MEDICAL TREATMENT UTILIZATION SCHEDULE (MTUS)

MENTAL ILLNESS & STRESS GUIDELINE

FEBRUARY 2016

ODG -TWC

ODG Treatment

Integrated Treatment/Disability Duration Guidelines

Mental Illness & Stress

(Based on ODG March 25, 2015)

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Explanation of Medical Literature Ratings (see Contents for more detail):

Ranking by Type of Evidence:
1. Systematic Review/Meta-Analysis
2. Controlled Trial – Randomized (RCT) or Controlled
3. Cohort Study - Prospective or Retrospective
4. Case Control Series
5. Unstructured Review
   OTHER:
6. Nationally Recognized Treatment Guideline (from guidelines.gov)
7. State Treatment Guideline
8. Other Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

Ranking by Quality within Type of Evidence:
a. High Quality
b. Medium Quality
c. Low Quality

This Chapter of the Medical Treatment Utilization Schedule is adopted from the Official Disability Guidelines (ODG) Treatment in Workers' Comp, published and copyrighted by the Work Loss Data Institute.

Any links to treatment guidelines external to this document refer to the Medical Treatment Utilization Schedule.

ODG Integrated Treatment/Disability Duration Guidelines
Mental Illness & Stress

Note: The Treatment Planning section is not designed to be a rule, and therefore should not be used as a basis for Utilization Review. The Treatment Planning section outlines the most common pathways to recovery, but there is no single approach that is right for every patient and these protocols do not mention every treatment that may be recommended. See the Procedure Summaries for complete lists of the various options that may be available, along with links to the medical evidence. The Procedure Summaries are the most important section of ODG Treatment, and that section, not the Treatment Planning section, should be used as a basis for Utilization Review.

1. Treatment planning

Initial response to presenting complaint

A case of mental illness will typically begin with the patient presenting some psychological complaint to a general medical clinician.

The general medical clinician's expertise will often be sufficient to allow him or her to make a preliminary determination about the patient's mental illness.

If the general medical clinician perceives the complaint to be potentially indicative of mental illness, he or she may want to recommend that mental health consultation take place outside of the workers compensation system, because…

- It may be difficult to establish work-relatedness for a presentation of mental illness, and…
- Unjustified involvement in workers' compensation is associated with a relatively poor clinical outcome.

If the general medical clinician decides to address the psychological complaint as a work-related issue, the ideal next step is for the general medical clinician to administer in-house psychological testing in order to collect objective data regarding whether the patient's presentation is consistent with mental illness.

- Such objective data will provide a scientifically credible basis for determining whether referral for mental health evaluation is justified.
- Such objective data will provide a scientifically credible, and individualized, basis for addressing issues of potential work-relatedness.

If the general medical clinician who is first confronted with the psychological complaint is not prepared to administer such preliminary psychological testing, it can often be arranged through some other general medical facility (such as an occupational medicine clinic), or through a psychologist who limits initial services to such testing.

Mental health evaluation

If the preliminary steps described above produce justification for mental health evaluation, referral can be made for such.

Such referral should typically be made to a specialist who can provide a comprehensive evaluation, such as a psychologist or psychiatrist, who will not be fettered by educational or licensure limitations.

Ideally, the evaluation will take place outside of workers compensation, given the difficulty in establishing a mental illness as work-related, and the harmful health effects of involvement in workers compensation.

If the evaluation needs to take place within workers compensation, then it should take place on an independent basis, with the mental health specialist agreeing that he or she will never take on a treating role for the claimant (professional standards in this regard are discussed below).

Diagnosis

Mental health science is primarily categorized by diagnosis, therefore a credible diagnostic formulation is of the greatest importance for evaluation and treatment planning.

The diagnostic process must be primarily based on full utilization of the current version of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*.

Psychological testing can be an extremely valuable method of introducing objectivity, credibility, and comprehensiveness into the diagnostic process, if it is used in a scientifically credible fashion.

Treatment

The information and guidelines described in the Procedure Summary section is the basis for treatment provided for the identified diagnosis.

Procedure Summary – Mental Illness & Stress	
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Abilify® (aripiprazole)	See Aripiprazole (Abilify).
Acceptance and commitment therapy (ACT)	Recommended. Acceptance and Commitment Therapy was found to be helpful when it sought to enhance people's ability to cope with work-related strain. (Bach, 2002) (Bond, 2000) (Varekamp, 2005) (Hayes, 2006)
Activity restrictions	See Work.
Acupressure	Not recommended. In some studies acupressure has been shown to be effective in decreasing both pre-operative anxiety; however, these effects are not sustained 30 min following release of acupressure. Further studies are needed to elucidate the duration for which acupressure is effective. (Agarwal, 2005) (Kober, 2003) Some positive response to specific auricular acupressure treatment has been shown on psychological distress, craving, and drug/alcohol use measures. (Tian, 2006)
Acupuncture	Recommended as an option. Bilateral acupuncture needling at HT7 was an effective method for reducing the rating of 'psychological stress' in 16 out of a group of 17 volunteers (94%), recruited from staff in a hospice. Further research is needed, including a suitable control group, to determine whether the effect observed in this study was a specific effect of needling at HT7. (Chan, 2002) (Walling, 2006) One high quality study on acupuncture for arthritic pain concludes that pain tolerability was significantly improved after acupuncture and remained so up to 6 months after treatment. The treatment may have a long-term effect on important aspects of cognitive and emotional pain coping. (Kukuk, 2005) (Honda, 2005) There is more limited evidence to support the effectiveness of acupuncture, music, autogenic training and meditation for generalized anxiety. (Jorm, 2005) *Recent research:* Acupuncture appears to be equal to counseling and may offer an additional nonpharmacologic treatment option for patients with moderate to severe depression, according to a high quality RCT. The study provided evidence that acupuncture and counseling are both associated with a significant reduction in symptoms of depression in the short to medium term, and are not associated with serious adverse events. Depression is the third most common reason for primary care consultation, and up to 60% of patients have an inadequate response to antidepressants, and 30% do not adhere to their medication regimen. Study participants received 12 weekly sessions of acupuncture plus usual care, 12 weekly sessions of counseling plus usual care, or usual care alone. The results revealed that compared with usual care, there was a statistically significant reduction in mean PHQ-9 depression scores at 3 months for acupuncture (-2.46) and counseling (-1.73). (MacPherson, 2013) See also Emotional freedom techniques (EFT). **ODG Acupuncture Guidelines:** Initial trial of 3-4 visits over 2 weeks With evidence of objective functional improvement, total of up to 8-12 visits over 4-6 weeks
Ambien® (zolpidem tartrate)	See Zolpidem.

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Anticholinergic	Anticholinergic agents block the neurotransmitter acetylcholine in the central and the peripheral nervous system. See Diphenhydramine (Benadryl).
Antidepressants	Recommended, although not generally as a stand-alone treatment. Antidepressants have been found to be useful in treating depression (Furukawa, 2002) (Joffe, 1996), including depression in physically ill patients (Gill, 1999), as well as chronic headaches associated with depression (Tomkins, 2001) (Holroyd-JAMA, 2001), although one meta-analysis of trials that tested antidepressants versus placebos determined that the differences between antidepressants and placebos were small, especially when active placebos were used, thereby making the patient believe that a true antidepressant was administered through active side effects. (Moncrieff-Cochrane, 2002) Another study had similar apprehension about the placebo effect. (Khan, 2003) In addition, it remains difficult to determine in what measured improvements observed in clinical trials of antidepressants may be attributable to the psychological predispositions of the subjects, and especially their sense of control. (Reynaert, 1995) In other studies, it was found that combined therapy (antidepressant plus psychotherapy) was found to be more effective than psychotherapy alone. (Thase, 1997) (Pampallona, 2004) A recent high quality study concluded that a substantial number of adequately treated patients did not respond to antidepressant therapy. (Corey-Lisle, 2004) Antidepressant medication exerts a modest beneficial effect for patients with combined depressive- and substance-use disorders. It is not a stand-alone treatment, and concurrent therapy directly targeting the addiction is also indicated. (Nunes-JAMA, 2004) More recently, there have been several medication algorithms that have been developed and supported by rigorous controlled studies in the treatment of MDD. The primary algorithms which were studied are the Texas Medication Algorithm Project and the sequenced treatment alternatives to relieve depression (STAR*D) algorithm. (Trivedi, 2004) (Rush, 2004) (Warren, 2005) Antidepressants offer significant benefit in the treatment of the severest depressive symptoms, but may have little or no therapeutic benefit over and above placebo in patients with mild to moderate depression. A recent meta-analysis concluded that drug effects increase with increased severity of symptoms. This study raises the question of whether patients with mild to moderate depression should have antidepressant therapy as a first-line approach, since the effect of drugs is milder in those cases (Fournier, 2010) There is an increased risk of depression in people with a physical illness, and depression is associated with reduced treatment adherence, poor prognosis, increased disability and higher mortality in many physical illnesses. This Cochrane review provides evidence that antidepressants are superior to placebo in treating depression in physical illness. (Rayner, 2010) A new review of 4 meta-analyses of efficacy trials submitted to the FDA suggests that antidepressants are only marginally efficacious compared with placebo and document profound publication bias that inflates their apparent efficacy. In addition, when the researchers also analyzed the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) trial, the largest antidepressant effectiveness trial ever conducted, they found that the effectiveness of antidepressant therapies was probably even lower than the modest one reported. In looking at sustained benefit, it was only 2.7%. They concluded that the findings argue for a reappraisal of the current recommended standard of care of depression. (Pigott, 2010) Expectations about how effective an antidepressant medication is going to be almost entirely predicts response, such that giving patients a placebo pill as active therapy during an 8-week period results in very similar reductions in symptoms. (Leuchter, 2014) See also more specific entries: Antidepressants for treatment of MDD (major depressive disorder); Antidepressants for treatment of PTSD (post-traumatic stress

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	disorder); Antidepressants - SSRI's versus tricyclics (class).
Antidepressants for treatment of MDD (major depressive disorder)	Recommended for initial treatment of presentations of Major Depressive Disorder (MDD) that are moderate, severe, or psychotic, *unless* electroconvulsive therapy is part of the treatment plan. Not recommended for mild symptoms. Professional standards defer somewhat to patient preference, allowing for a treatment plan for mild to moderate MDD to potentially exclude antidepressant medication in favor of psychotherapy if the patient favors such an approach. (American Psychiatric Association, 2006) A randomized controlled trial has indicated that the patient's smoking status is a credible factor that can be considered in the treatment plan. Specifically, one antidepressant medication (fluoxetine/Prozac) has been found to compromise the success of smoking cessation efforts. (Spring, 2007)) Another antidepressant (bupropion/Wellbutrin/Zyban) has demonstrable effect in improving one's ability to quit smoking, and is approved by the FDA for this purpose under the brand name Zyban. Consequently, if the patient is attempting to quit smoking, bupropion may be an attractive option. *Drug selection criteria*. The American Psychiatric Association has published the following considerations regarding the various types of anti-depressant medications: (1) Many treatment plans start with a category of medication called selective serotonin reuptake inhibitors (SSRIs), because of demonstrated effectiveness and less severe side effects; (2) In addition to the SSRIs, other anti-depressant medications that are likely to be optimal for most patients include desipramine, nortriptyline, bupropion, and venlafaxine, duloxetine; (3) Another group of antidepressant medications, called monoamine oxidase inhibitors (MAOIs), are not recommended as a primary treatment option, because they are associated with serious side effects, and they necessitate dietary restrictions. This category of medication should be considered only for cases that do not respond to other options. (American Psychiatric Association, 2006) Tricyclic antidepressants (TCAs) are among the most effective antidepressants available, although their poor tolerance at usual recommended doses and toxicity in overdose make them difficult to use. While selective serotonin reuptake inhibitors (SSRIs) are better tolerated than TCAs, they have their own specific problems, such as the aggravation of sexual dysfunction, interaction with coadministered drugs, and for many, a discontinuation syndrome. In addition, some of them appear to be less effective than TCAs in more severely depressed patients. Increasing evidence of the importance of norepinephrine in the etiology of depression has led to the development of a new generation of antidepressants, the serotonin and norepinephrine reuptake inhibitors (SNRIs). Milnacipran, one of the pioneer SNRIs, was designed from theoretic considerations to be more effective than SSRIs and better tolerated than TCAs, and with a simple pharmacokinetic profile. Milnacipran has the most balanced potency ratio for reuptake inhibition of the two neurotransmitters compared with other SNRIs (1:1.6 for milnacipran, 1:10 for duloxetine, and 1:30 for venlafaxine), and in some studies milnacipran has been shown to inhibit norepinephrine uptake with greater potency than serotonin (2.2:1). Clinical studies have shown that milnacipran has efficacy comparable with the TCAs and is superior to SSRIs in severe depression. In addition, milnacipran is well tolerated, with a low potential for pharmacokinetic drug-drug interactions. Milnacipran is a first-line therapy suitable for most depressed patients. It is frequently successful when other treatments fail for reasons of efficacy or tolerability. (Kasper, 2010) Note: In the US the FDA has approved milnacipran (Savella) for fibromyalgia, but not for depression. (FDA, 2009) See also the MTUS Chronic Pain Treatment

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	Guidelines. Antidepressants offer significant benefit in the treatment of the severest depressive symptoms, but may have little or no therapeutic benefit over and above placebo in patients with mild to moderate depression. A recent meta-analysis concluded that short term drug effects increase with severity of depression. The author questions whether patients with mild to moderate depression should have antidepressant therapy as a first-line approach. (Fournier, 2010) Placebos about did as well as antidepressants or brief psychotherapy in an RCT of MDD treatment in an urban clinic, although there were hints that the effects varied by gender and race. In the antidepressant group, 31% responded (as judged by improvements on the Hamilton Rating Scale for Depression). The same was true of about 28% of patients in the psychoanalytic-therapy group, and 24% in the placebo group. The researchers found that African-American men tended to improve more quickly with talk therapy than with medication or placebo. In contrast, white men fared best on placebo, while black women showed no differences in their responses to the three treatments. Only white women showed the expected pattern: a quicker response to both medication and talk therapy than to the placebo. (Barber, 2012) See the Antidepressants heading in this chapter for additional information and references. Also see Antidepressants for chronic pain in the MTUS Chronic Pain Treatment Guidelines.
Antidepressants for treatment of PTSD (post-traumatic stress disorder)	Recommended for the treatment of Post-traumatic stress disorder (PTSD). See PTSD pharmacotherapy. Strongly recommend selective serotonin reuptake inhibitors (SSRIs) for the treatment of PTSD. (VA/DoD, 2004) (Stein, 2000) See also Selective serotonin reuptake inhibitors (SSRIs). Recommend tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs) as second-line treatments for PTSD. (Stein, 2000) (Hawton-*Cochrane*, 2002) Consider an antidepressant therapeutic trial of at least 12 weeks before changing therapeutic regimen. (Martenyi, 2002) Consider a second-generation (e.g., nefazodone, trazodone, venlafaxine, mirtazapine,) in the management of PTSD. (Hidalgo, 1999) Long term trials show that while 30% of patients remit within 12 weeks, a substantial percentage do not achieve remission in less than 6 months (Friedman, 2013) Recommend medication compliance assessment at each visit. Since PTSD is a chronic disorder, responders to pharmacotherapy may need to continue medication indefinitely; however, it is recommended that maintenance treatment should be periodically reassessed. (Rapaport, 2002) There is insufficient evidence to support the recommendation for a pharmacological agent to prevent the development of PTSD. (VA/DoD, 2004)
Antidepressants - SSRI's versus tricyclics (class)	Not recommend SSRIs for depression over TCAs in every case. No definitive implications for clinical practice on superiority of SSRIs can be drawn, so treatment decisions should be based on considerations of clinical history, drug toxicity, patient acceptability, and cost. (Cipriani, 2012) There is some disagreement about the choice of first-line therapy between selective serotonin reuptake inhibitors (SSRI's), which include Prozac (fluoxetine), Zoloft, Paxil, and others, versus the older tricyclic antidepressants (TCA), such as amitriptyline, but most studies point to superior outcomes from the SSRI's. In all, 71.5% of depression trials reported significantly greater efficacy with antidepressants than placebo, but the lack of controlled head to head comparisons and other methodological design differences make crosstrial comparisons difficult. (Taylor, 2004) In the short-term treatment of bipolar depression, it may be prudent to use a selective serotonin reuptake inhibitor or a monoamine oxidase inhibitor rather than a tricyclic antidepressant as first-line treatment. (Gijsman, 2004) The risk of suicidal behavior after starting antidepressant treatment is similar among users of amitriptyline (a tricyclic) and fluoxetine (an SSRI). (Jick-JAMA, 2004) Data suggest that a reasonable approach could be the

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	first-line prescription of newer agents (SSRI's) in the routine outpatient care of depressive subjects, and the use of amitriptyline (a tricyclic) in hospital inpatients with severe depression. (Barbui, 2004) Besides being the most effective drugs for post-traumatic stress disorder (PTSD), SSRI's have a favourable adverse effect profile, making them the first-line treatment for PTSD. (Asnis, 2004) Only SSRI's have been proven effective and safe for post-traumatic stress disorder (PTSD) in long-term randomized controlled trials. (Stein, 2003) SSRI's have emerged as the most favorable treatment of panic disorder, as they have a beneficial side-effect profile, are relatively safe (even if taken in overdose), and do not produce physical dependency. (Pollack, 2003) In reviewing the tricyclic antidepressants, selective serotonin reuptake inhibitors, and dually acting antidepressants and their economic and treatment implications, it is important to note that pain and depression are both regulated by serotonin and norepinephine, and several studies suggest that using dual-action antidepressants may be helpful in patients who have an element of pain to their disorder. (Ticknor, 2004) Another study concluded that tricyclic antidepressants appear to produce moderate symptom reductions for patients with chronic low back pain, but SSRI's do not appear to be beneficial for patients with chronic low back pain, and there is conflicting evidence whether antidepressants improve functional status of patients with chronic low back pain. (Staiger, 2003) Despite the relative low prevalence of side effects associated with SSRIs a significant minority of older people find these drugs intolerable and experience nausea, vomiting, dizziness and drowsiness. TCA related drugs are comparable to SSRIs in terms of tolerability and may offer an alternative when SSRIs are either contra-indicated or clinically unacceptable. (Wilson, 2004) For panic disorder, tricyclic antidepressants and serotonin selective reuptake inhibitors are equal in efficacy and both are to be preferred to benzodiazepines. (Royal Australian, 2003) For social anxiety disorder, this review provides evidence that medication can be effective over the short term, with the strongest evidence of treatment efficacy observed amongst the SSRIs. (Stein, 2004) There are statistically significant differences in terms of efficacy and tolerability between fluoxetine and certain ADs, but the clinical meaning of these differences is uncertain, and no definitive implications for clinical practice can be drawn. From a clinical point of view the analysis of antidepressants' safety profile (adverse effect and suicide risk) remains of crucial importance and more reliable data about these outcomes are needed. Waiting for more robust evidence, treatment decisions should be based on considerations of clinical history, drug toxicity, patient acceptability, and cost. (Cipriani, 2005) A recent AHRQ review compares the effectiveness of second-generation antidepressants in the pharmacologic treatment of adult depression. In general, the fficacy of first- and second-generation antidepressant medications is similar. Howevr, first-generation antidepressants often produce multiple side effects that many patients find intolerable, and the risk for harm when taken in overdose or in combination with certain medications is high. (Gartlehner, 2007) For the treatment of PTSD, strongly recommend selective serotonin reuptake inhibitors (SSRIs), but recommend tricyclic antidepressants (TCAs) as a second-line treatment. (VA/DoD, 2004)
Antipsychotics	See Atypical antipsychotics.
Aripiprazole (Abilify)	Not recommended as a first-line treatment. Abilify (aripiprazole) is an antipsychotic medication. Antipsychotics are the first-line psychiatric treatment for schizophrenia.

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	There is insufficient evidence to recommend atypical antipsychotics as monotherapy for conditions covered in ODG. See Atypical antipsychotics; & PTSD pharmacotherapy. See also Anxiety medications in the MTUS Chronic Pain Medical Treatment Guidelines. According to a recent Cochrane systematic review, aripiprazole is an antipsychotic drug with a serious adverse effect profile and long-term effectiveness data are lacking. (Khanna, 2014). Aripiprazole is approved for schizophrenia and acute mania, and as an adjunct second-line therapy for bipolar maintenance and major depressive disorder. It is not approved or shown to be effective for personality disorder, substance abuse, or insomnia. (FDA, 2014)
Atypical antipsychotics	Not recommended as a first-line treatment. There is insufficient evidence to recommend atypical antipsychotics (eg, quetiapine, risperidone) as monotherapy for conditions covered in ODG. See PTSD pharmacotherapy. Adding an atypical antipsychotic to an antidepressant provides limited improvement in depressive symptoms in adults, new research suggests. The meta-analysis also shows that the benefits of antipsychotics in terms of quality of life and improved functioning are small to nonexistent, and there is abundant evidence of potential treatment-related harm. The authors said that it is not certain that these drugs have a favorable benefit-to-risk profile. Cinicians should be very careful in using these medications. (Spielmans, 2013) The American Psychiatric Association (APA) has released a list of specific uses of common antipsychotic medications that are potentially unnecessary and sometimes harmful. Antipsychotic drugs should not be first-line treatment to treat behavioral problems. Antipsychotics should be far down on the list of medications that should be used for insomnia, yet there are many prescribers using quetiapine (Seroquel), for instance, as a first line for sleep, and there is no good evidence to support this. Antipsychotic drugs should not be first-line treatment for dementia, because there is no evidence that antipsychotics treat dementia. (APA, 2013) Antipsychotic drugs are commonly prescribed off-label for a number of disorders outside of their FDA-approved indications, schizophrenia and bipolar disorder. In a new study funded by the National Institute of Mental Health, four of the antipsychotics most commonly prescribed off label for use in patients over 40 were found to lack both safety and effectiveness. The four atypical antipsychotics were aripiprazole (Abilify), olanzapine (Zyprexa), quetiapine (Seroquel), and risperidone (Risperdal). The authors concluded that off-label use of these drugs in people over 40 should be short-term, and undertaken with caution. (Jin, 2013) Atypical antipsychotic medications are linked to acute kidney injury (AKI) in elderly patients. A population-based study examining medical records for nearly 200,000 adults showed that those who received a prescription for quetiapine (Seroquel), risperidone (Risperdal), or olanzapine had an almost 2-fold increased risk for hospitalization for AKI within the next 90 days vs those who did not receive these prescriptions. In addition, patients who received one of these oral atypical antipsychotics had increased risk for acute urinary retention, hypotension, and even death. (Hwang, 2014) More than half of the prescriptions for antipsychotics are prescribed to patients with no diagnosis of a serious mental illness. They are more likely to be prescribed to older people, who may be more sensitive to adverse effects such as movement disorders and cardiometabolic risk. Providers should use caution concerning the use of antipsychotics for patients who do not have a diagnosis of psychosis, since the drugs are associated with serious adverse effects, including extrapyramidal symptoms with first-generation antipsychotics and weight gain and lipid/glucose dysregulation with second-generation agents. Moreover, antipsychotics may be linked to increased rates of stroke and all-cause mortality in patients with dementia. (Marston, 2014)

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BAP-2 (Behavioral Assessment of Pain-2)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. No current published studies exist. There is concern about how current this instrument is in terms of integrating pertinent and recent clinical research in the field of chronic pain. The latest research referenced in the BAP Manual is over 20 years old. The BAP-2 is currently not a widely used instrument in clinical research. In addition, very limited empirical data exist concerning the validity and extra-test correlates of several of the BAP scales. Specifically, no data are reported concerning the validity of the Pain Beliefs, Perceived Consequences, Coping and Physician Influence scales. There is a lack of clinical utility data demonstrating the predictive and discriminant validity of the BAP. Regarding predictive validity, there are no studies demonstrating that scores on BAP scales are related to meaningful variables, such as compliance with treatment, functional impairment, outcome, prognosis, or reports of pain intensity. As far as discriminant validity, it has not been demonstrated that BAP scales provide useful information in terms of classification of pain patients into groups that might respond differentially to various treatment strategies. There is also concern about the length and cost of the instrument. The BAP has more than 300 items, and the BAP-2 has 223 items, so the testing burden for patients may be great. Finally, there does not appear to be a Manual for the BAP-2. It should be noted that there are more current and psychometrically sound instruments available in the literature with good clinical research foundations to support them. See Psychological evaluations for some alternatives. They are much shorter, less costly, and have better up-to-date supporting data. The initial goals of the BAP were ambitious in an attempt to develop a comprehensive assessment tool relevant to the treatment of the chronic pain population. However, data concerning the BAP are unacceptably limited, and the test has no credible track record in clinical practice. Other more psychometrically sound and clinically appropriate assessment tools are available. The premiere reviewer of psychological tests has been the Buros Institute. They reviewed the BAP, and expressed strong reservations about the use of this test clinically. (Buros, 2012)
BBHI™ 2 (Brief Battery for Health Improvement – 2nd edition)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. The test is a brief measure of risk factors for delayed recovery, useful as a screen or as one test in a more comprehensive evaluation. Can identify patients complaining of depression and anxiety, and identify patients prone to somatization, pain magnification and self-perception of disability. *Strengths:* Has the only nationally normed 0-10 pain scale. *Weaknesses:* No measures of characterological or psychosocial factors. Lack of longitudinal research on predictive validity or long-term testretest stability. (Bruns, 2001)
BDI ® - II (Beck Depression Inventory-2nd edition)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Intended as a brief measure of depression, this test is useful as a screen or as one test in a more comprehensive evaluation. Can identify patients needing referral for further assessment and treatment for depression. *Strengths:* Well-known, well researched, keyed to DSM-IV criteria, brief, appropriate for ages 13-80. *Weaknesses:* Limited to assessment of depression, easily faked. Scale is unable to identify a non-depressed state, and is thus very prone to false positive findings. Should not be used as a stand-alone measure, especially when secondary gain is present. (Bruns, 2001)
Benzodiazepine	Not recommended for long-term use because long-term efficacy is unproven and there is a risk of psychological and physical dependence or frank addiction. Most guidelines limit use to 4 weeks. Benzodiazepines are a major cause of overdose,

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	particularly as they act synergistically with other drugs such as opioids (mixed overdoses are often a cause of fatalities). Their range of action includes sedative/hypnotic, anxiolytic, anticonvulsant, and muscle relaxant. Chronic benzodiazepines are the treatment of choice in very few conditions. Tolerance to hypnotic effects develops rapidly (3-14 day). Tolerance to anxiolytic effects occurs within months and long-term use may actually increase anxiety. A more appropriate treatment for anxiety disorder is an antidepressant. Tolerance to anticonvulsant and muscle relaxant effects occurs within weeks. Tolerance to lethal effects does not occur and a maintenance dose may approach a lethal dose as the therapeutic index increases. The best prevention for substance use disorders due to benzodiazepines is careful prescribing. See the MTUS Chronic Pain Medical Treatment Guidelines for more information. See also Insomnia treatment, Benzodiazepines. *Recent research:* Use of benzodiazepines to treat insomnia or anxiety may increase the risk for Alzheimer's disease (AD). A case-control study of nearly 9000 older individuals showed that risk for AD was increased by 43% to 51% in those who had ever used benzodiazepines in the previous 5 years. The association was even stronger in participants who had been prescribed benzodiazepines for 6 months or longer and in those who used long-acting versions of the medications. (Billioti, 2014) Despite inherent risks and questionable efficacy, long-term use of benzodiazepines increases with age, and almost all benzodiazepine prescriptions were from nonpsychiatrist prescribers. Physicians should be cognizant of the legal liability risk associated with inappropriate benzodiazepine prescription. benzodiazepines are little better than placebo when used for the treatment of chronic insomnia and anxiety, the main indications for their use. After an initial improvement, the effect wears off and tends to disappear. When patients try to discontinue use, they experience withdrawal insomnia and anxiety, so that after only a few weeks of treatment, patients are actually worse off than before they started, and these drugs are far from safe. (Olfson, 2015)
BHI™ 2 (Battery for Health Improvement – 2nd edition)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Useful for identifying affective, characterological, psychophysiological and social factors affecting pain and disability reports. Also useful for assessing patients referred for intensive treatment programs such as chronic pain, functional restoration, or work conditioning, for presurgical risk assessment, for impairment determinations, or when there are strong indications that psychological factors are delaying the recovery process. When used as a part of a comprehensive evaluation, this test can contribute substantially to the understanding of psychosocial factors underlying pain reports, perceived disability, somatic preoccupation, and help to design interventions. Serial administrations can track changes in a broad range of variables during the course of treatment, and assess outcome. *Strengths:* Has the only nationally normed 0-10 pain profiling. *Weaknesses:* Some dimensions of psychopathology are not assessed, such as psychosis. (Bruns, 2001)
Bibliotherapy	Recommended as an option for mild to moderate depression. Bibliotherapy uses an individual's relationship to the content of books and and other written words as therapy. It has been shown to be effective in the treatment of depression, and these results have been shown to be longlasting. An RCT of a physician-delivered bibliotherapy prescription to read the self-help book, *Feeling Good* (Burns, 1999), resulted in statistically significant decreases in depression symptoms, decreases in dysfunctional attitudes, and increases in quality of life. (Naylor, 2010) Bibliotherapy can be used to treat mild to moderate depression or subthreshold depressive symptoms, as a sole or supplementary therapy, as a form of guided self-help. The

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	patient works through a structured book, independently from the doctor. The role of the doctor is to support and motivate the patient as they continue through the book and to help clarify any questions or concerns the patient may have. Patients need to have a reading age above 12 years and have a positive attitude toward self-help. Bibliotherapy has highlevel evidence of efficacy and no serious adverse effects have been reported. (Usher, 2013) Cognitive bibliotherapy is an effective treatment of subthreshold depression. Changing automatic thoughts is important, as they mediate the bibliotherapy effect on depressive symptoms. Cognitive bibliotherapy is a potential alternative or adjunct to psychotherapy for mildly depressed adults. (Moldovan, 2012) This study examined the durability of cognitive bibliotherapy for mild to moderately depressed adults by conducting a 3-year follow-up of participants from a previous study, and treatment gains were maintained over the 3-year follow-up period, which support the usefulness of cognitive bibliotherapy as an adjunct to traditional treatment modalities in a general adult population. (Smith, 1997) Psychiatrist David Burns, author of *Feeling Good: The New Mood Therapy*, gets people to reason their way through anxiety and depression into happiness. The book explains the tenets of cognitive behavioral therapy (CBT) for the layperson -- that depression is caused by self-defeating beliefs and negative thoughts. The book includes exercises readers could use to change how they reacted to such thoughts and to stop depression before it spiraled down into an endless abyss of despair and pain. (Burns, 1999) See also Cognitive therapy for depression.
Botulinum toxin injections	Not recommended for treatment of mental health conditions. A single treatment with onabotulinumtoxinA (OBA) appears to ease depressive symptoms, according to a RCT. According to the authors, converging lines of evidence suggest there is a role for facial expressions in the pathophysiology and treatment of mood disorders. Facial expression of negative emotions such as fear, sadness, and anger all involve contraction of the corrugator muscles, and multiple lines of evidence specifically implicate the corrugator muscles in depression. OBA was the first botulinum toxin subtype to be approved by the FDA for the treatment of frown lines. The primary outcome measure was the response rate, as defined by a decrease of 50% or more in the score on the Montgomery-Åsberg Depression Rating Scale (MADRS) at 6 weeks from the date of injection. As shown on the MADRS scores, the response rates were 52% in the OBA group and 15% in the placebo group ($P < .001$). Patients treated with OBA also had greater remission rates, as defined by a MADRS score of 10 or less, compared with patients in the placebo group (27% vs 7%). Finally, there was a 47% reduction in depressive symptoms, as assessed by the MADRS scores in the OBA group, compared with a 20% reduction in the placebo group. The study's small size was a limitation, plus using OBA to treat depression is currently experimental and OBA is not FDA approved for that purpose. (Finzi, 2014)
Brain stimulation (for treatment of PTSD)	See Transcranial magnetic stimulation (TMS).
Brain wave synchronizers (for stress reduction)	Not recommended. Brain wave synchronizers, which are said to induce a relaxation response by entraining alpha brain-wave activity (8-13 Hz) through audiovisual stimulation, were found to have pleasant short-term effects in one small study but do not have a proven long-term effect on burnout and anxiety. (Ossebaarg, 2000)
Brainsway™ (TMS)	See Transcranial magnetic stimulation (TMS).
BSI® (Brief	Recommended as a first-line option psychological test in the assessment of chronic

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Symptom Inventory)	pain patients. See Psychological evaluations. The test is appropriate when a shorter version of the SCL-90 is desired. Designed for assessment of psychiatric patients, not pain patients, which can bias results, and this should be a consideration when using. Can identify patients needing treatment for depression and anxiety, as well as identify patients prone to somatization. *Strengths:* A shorter version of the SCL-90. Strong reputation and research base, brief. *Weaknesses:* Designed for and normed on psychiatric patients, not pain patients. (Bruns, 2001)
BSI® 18 (Brief Symptom Inventory-18)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. When a shorter version of the SCL-90 is desired. Designed for assessment of psychiatric patients, not pain patients, which can bias results, and this should be a consideration when using. Can identify patients needing treatment for depression and anxiety, as well as identify patients prone to somatization. *Strengths:* A shorter version of the SCL-90. Strong reputation and research base, brief. *Weaknesses:* Designed for and normed on psychiatric patients, not pain patients. (Bruns, 2001)
Bupropion (Wellbutrin®)	Recommended as a first-line treatment option for major depressive disorder. See Antidepressants for treatment of MDD (major depressive disorder). FDA has concluded that the generic drug Budeprion XL (bupropion hydrochloride) cannot be considered therapeutically equivalent to the brand-name product Wellbutrin®. (Woodcock, 2012) Not recommended for PTSD. (Friedman, 2013)
B vitamins for depression (vitamin B6, folic acid/folate, vitamin B12)	Recommended as an option for special populations for long-term management of depression as an adjunct to antidepressant therapy, in particular if there is a deficiency. One theory for the potential benefit is that high plasma homocysteine has been consistently associated with depression, and treatment with certain B vitamins reduces its concentration. *Recent research:* A recent randomized controlled trial (evaluating use of vitamin B6, folic acid and vitamin B12 in combination) and subsequent meta-analysis (evaluating folic acid and vitamin B12 in combination) indicated that these various B vitamins used as a supplement to antidepressant therapy do not appear to decrease the severity of depressive symptoms over a period of several weeks (short-term) in people with depressive disorder. The analysis did suggest that use over a long term period enhances and sustains antidepressant response. (Almeida, 2015) (Almeida, 2014) Other recent studies examining the role of folic acid and vitamin B12 found little evidence for potentiation of antidepressant medicine with this adjunct treatment. (Christensen, 2011) Future randomized placebo controlled trials are suggested to investigate use for improving response to antidepressants. There is insufficient evidence to recommend the use of B vitamins as a monotherapy for depression. (Sengül, 2014) (Nahas, 2011) *Vitamin B12 as a single supplement to antidepressants:* Patients with low normal B12 levels were randomized to receive antidepressants alone or antidepressants plus B12 injections (the treatment arm). HAM-D score was significantly improved in the treatment group (100% showed at least 20% reduction vs. 69% in the group that received antidepressants only). (Syed, 2013) *Folic acid as a single supplement to antidepressants:* A recent double-blinded randomized controlled trail comparing the use of folic acid alone as an adjunct to antidepressant medication over 12 weeks showed no clinical effectiveness in augmentation. The authors suggested that their findings undermined treatment guidelines that advocated the use of folic acid for treating depression, and suggested future trials of methylfolate to augment antidepressant medications. (Bedson, 2014) *Folic acid vs. L-methylfolate:* There are no head-to-head trials comparing these two

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	for adjunct treatment with antidepressants. *L-methylfolate:* See Deplin® (L-methylfolate) in this chapter. See also B vitamins & vitamin B complex in the MTUS Chronic Pain Medical Treatment Guidelines. **Criteria for use of B vitamins for depression:** If a clinician chooses to start vitamin B supplementation to antidepressant therapy, a recommended starting point is a trial of: - Oral folic acid (800 mcg/day); & - Vitamin B12 (1 mg daily). (Coppen, 2005) (Thachil, 2006) An added consideration is to obtain baseline lab values for both, as deficiency alone of either can be confused with depression and cognitive decline (particularly of B12).
Causality (determination)	Recommended as indicated below. Determination of causation typically involves mechanism of injury, temporal relationship, and dose effect. A recent high quality study documents a significant and clear dose-response relationship between stress (amount of combat) and serious productivity loss and disability among US troops in Iraq. Stress in business may not be nearly as dramatic as PTSD in US troops, but it may have similar effects. (Hoge-NEJM, 2004) See also Work; & ODG Capabilities & Activity Modifications for Restricted Work.
CES-D (Center for Epidemiological Studies Depression Scale)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Can identify patients needing referral for further assessment and treatment for depression. *Strengths:* Well-known, well-researched, brief, has been translated into numerous languages. *Weaknesses:* Limited to assessment of depression, easily faked. Psychometric characteristics are not well known, but well-established propensity for false positive findings. Should not be used as a stand-alone measure, especially when secondary gain is present. Public domain status has lead to widespread use of many modified or shortened forms of the test, which may not be equivalent. (Bruns, 2001)
Cognitive behavioral therapy (CBT)	For specific guidelines, see Cognitive therapy for amputation; Cognitive therapy for depression;; Cognitive therapy for panic disorder; Cognitive therapy for PTSD; Cognitive therapy for general stress; Cognitive behavioral stress management (CBSM) to reduce injury and illness; Dialectical behavior therapy; Exposure therapy (ET); Eye movement desensitization & reprocessing (EMDR); Hypnosis; Imagery rehearsal therapy (IRT); Insomnia treatment; Mind/body interventions (for stress relief); Psychodynamic psychotherapy; Psychological debriefing (for preventing post-traumatic stress disorder); Psychological evaluations; Psychological evaluations, IDDS & SCS (intrathecal drug delivery systems & spinal cord stimulators); Psychosocial /pharmacological treatments (for deliberate self harm); Psychosocial adjunctive methods (for PTSD); Psychotherapy for MDD (major depressive disorder); PTSD psychotherapy interventions; Stress management, behavioral/cognitive (interventions); Telephone CBT (cognitive behavioral therapy); Computer-assisted cognitive therapy. Studies show that a 4 to 6 session trial should be sufficient to provide evidence of symptom improvement, but functioning and quality of life indices do not change as markedly within a short duration of psychotherapy as do symptom-based outcome measures. (Crits-Christoph, 2001) CBT, whether self-guided, provided via telephone or computer, or provided face to face, is better than no care in a primary care setting and is also better than treatment as usual, according to a meta-analysis. A subanalysis showed the strongest evidence for CBT in anxiety. For depression alone, CBT compared with no treatment had a medium effect size, computerized CBT had a medium effect, and guided self-help CBT for both depression and anxiety produced a small effect size. (Twomey, 2014) See Number of psychotherapy sessions for more information.

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	ODG Psychotherapy Guidelines: - Up to 13-20 visits over 7-20 weeks (individual sessions), if progress is being made. (The provider should evaluate symptom improvement during the process, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate.) - In cases of severe Major Depression or PTSD, up to 50 sessions if progress is being made.
Cognitive therapy for amputation	Recommended. In adjustment to a leg amputation, it is importance to attend to common issues such as post-amputation depression and anxiety, body image, feelings of vulnerability, social support changes, grief, pre-amputation psychological issues and phantom limb pain and sensations. Psychological assessment and referrals for treatment should be included as part of the routine care provided to individuals with amputations. (Rybarczyk, 2004) Psychologic testing may play an important role in determining the rehabilitation potential of the dysvascular amputee. Of 28% of patients determined to be poor candidates for prosthetic limb fitting and gait training based on objective psychologic testing (severe deficits in cognitive ability, covert psychiatric illness, or both), 6% were capable of even minimal use of the prosthesis, and none approached their preamputation level of ambulation. (Pinzur, 1988) Studies demonstrated that pain, psychological illness, decreased physical and vocational function, and increased cardiovascular morbidity and mortality were common causes of disability after traumatic leg amputation. (Perkins, 2012) Supportive psychological and social interventions such as formal support groups and peer support programs may provide a powerful and inexpensive addition to routine care. (Liu, 2010)
Cognitive therapy for depression	Recommended. Cognitive behavior therapy for depression is recommended based on meta-analyses that compare its use with pharmaceuticals. Cognitive behavior therapy fared as well as antidepressant medication with severely depressed outpatients in four major comparisons. Effects may be longer lasting (80% relapse rate with antidepressants versus 25% with psychotherapy). (Paykel, 2006) (Bockting, 2006) (DeRubeis, 1999) (Goldapple, 2004) It also fared well in a meta-analysis comparing 78 clinical trials from 1977 -1996. (Gloaguen, 1998) In another study, it was found that combined therapy (antidepressant plus psychotherapy) was found to be more effective than psychotherapy alone. (Thase, 1997) A recent high quality study concluded that a substantial number of adequately treated patients did not respond to antidepressant therapy. (Corey-Lisle, 2004) A recent meta-analysis concluded that psychological treatment combined with antidepressant therapy is associated with a higher improvement rate than drug treatment alone. In longer therapies, the addition of psychotherapy helps to keep patients in treatment. (Pampallona, 2004) For panic disorder, cognitive behavior therapy is more effective and more cost-effective than medication. (Royal Australian, 2003) The gold standard for the evidence-based treatment of MDD is a combination of medication (antidepressants) and psychotherapy. The primary forms of psychotherapy that have been most studied through research are: Cognitive Behavioral Therapy and Interpersonal Therapy. (Warren, 2005) Delivering cognitive behavioral therapy (CBT) by telephone can be as effective as delivering it face-to-face in the short term, and telephone therapy is safe and has a higher patient retention rate. The attrition rate from psychotherapy can exceed 50% due to time constraints, lack of available and accessible services, transportation problems, and cost. Significantly fewer participants receiving telephone CBT discontinued their therapy than did those receiving face-to-face CBT.

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	Both treatment groups showed significant improvement in depression, and there were no significant treatment differences when measured at posttreatment between telephone and face-to-face CBT. However, face-to-face CBT was significantly superior to telephone CBT during the follow-up period. The RCT used 18 sessions of either telephone CBT or face-to-face CBT. (Mohr, 2012) Maintenance cognitive-behavioral therapy (CBT) to prevent recurrent depression is most effective in patients at highest risk for relapse, defined as those with 5 or more previous depressive episodes. For individuals at more moderate risk for recurrence (fewer than 5 prior episodes), structured patient psychoeducation may be equally effective. High-risk patients in particular may benefit from specific elements of maintenance CBT by reducing cognitive vulnerability factors for recurrent depression, such as ruminating, negative attributions and memories, and dysfunctional beliefs, or by maintaining positive emotions when experiencing stress. (Stangier, 2013) Studies show that a 4 to 6 session trial should be sufficient to provide evidence of symptom improvement, but functioning and quality of life indices do not change as markedly within a short duration of psychotherapy as do symptom-based outcome measures. (Crits-Christoph, 2001) See Number of psychotherapy sessions for more information. See also Bibliotherapy; Computer-assisted cognitive therapy; Mind/body interventions (for stress relief). Psychotherapy visits are generally separate from physical therapy visits. *Subclinical depression:* Psychotherapy may be effective in treating subclinical depression and may prevent progression to major depressive disorder (MDD), according to a meta-analysis. There has been recent controversy regarding the efficacy of psychotherapy in treating subclinical depression, and antidepressants and benzodiazepines are no better than placebo for treating this condition. The most common form of psychotherapy used was cognitive-behavioral therapy. Results showed that undergoing psychotherapy significantly reduced the incidence of MDD at the 6-month follow-up, with a relative risk (RR) of 0.61 vs the control groups. (Cuijpers, 2014) **ODG Psychotherapy Guidelines:** - Up to 13-20 visits over 7-20 weeks (individual sessions), if progress is being made. (The provider should evaluate symptom improvement during the process, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate.) - In cases of severe Major Depression or PTSD, up to 50 sessions if progress is being made.
Cognitive therapy for panic disorder	Recommended. The overwhelmingly effective psychotherapy treatment for Panic Disorder is Cognitive Behavioral Therapy (CBT). CBT produced rapid reduction in panic symptoms. Typically, CBT is provided over 12-14 sessions, conducted on a weekly basis. Each session lasts approximately 1 hour. CBT can be administered either as a stand-alone treatment or in conjunction with medication. For those individuals who don't respond to medication, CBT is likely to be the only viable treatment for panic symptoms. CBT individual therapy produced superior results over group CBT. (Warren, 2005)
Cognitive therapy for PTSD	Recommended. There is evidence that individual Trauma-focused cognitive behavioral therapy/exposure therapy (TFCBT), stress management and group TFCBT are very effective in the treatment of post-traumatic stress disorder (PTSD). Other non-trauma focused psychological treatments did not reduce PTSD symptoms as significantly. There was some evidence that individual TFCBT is superior to stress management in the treatment of PTSD at between 2 and 5 months following treatment, and also that TFCBT was also more effective than other therapies, but

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	many studies were underpowered, and there was limited follow up. There were more drop outs in the active treatment group than in the control group.(Bisson, 2013) (Bisson, 2007) (Devilly, 1999) (Foa, 1997) (Foa, 2006) Cognitive therapy is an effective intervention for recent-onset PTSD. (Ehlers, 2003) Empirical research has demonstrated consistently that Cognitive Behavioral Therapy (CBT) is supported for the treatment of PTSD. It has been demonstrated that CBT is more effective than self-help, de-briefing, or supportive therapy in preventing more entrenched PTSD symptoms. The technique of CBT involves working through traumatic memories, and helping the person through to re-frame one's interpretations of both the event and PTSD symptoms. Most importantly, CBT tended to have no to few side effects, unlike medications and could be employed efficiently for acute symptom treatment. (Warren, 2005) Cognitive Therapy (CT) is effective with civilian men and women exposed to combat and noncombat trauma. (VA/DoD, 2004) (Lovell, 2001) (Marks, 1998) CT is effective for women with PTSD associated with sexual assault. (Resick, 2002) Cognitive behavior programs, including exposure therapy, are currently the treatment of choice for PTSD. (Botella, 2009) The AHRQ study concluded that cognitive processing therapy has moderate evidence supporting efficacy for improving some outcomes for adults with PTSD, whereas the IOM report did not make a specific conclusion about cognitive processing therapy. (Jonas, 2013) CBT for PTSD not only reduces symptoms but also alters the underlying biology of PTSD. This study assessed the association between clinical response, hippocampal volume, and expression of the FKBP5 gene, which has been implicated in risk of developing PTSD and which plays a role in regulating stress hormones. Clinical improvement during CBT in PTSD was associated with increased hippocampal size and elevated FKBP5 gene expression. The results show that structural changes in the brain, such as the shrinkage of the hippocampus, are reversible in trauma victims, via talk therapy. (Levy-Gigi, 2013) A meta-analysis of relative effectiveness of psychological interventions for PTSD found the most robust evidence for cognitive therapy and exposure therapies, including Exposure therapy (ET) and Eye movement desensitization & reprocessing (EMDR). (Gerger, 2014) See also PTSD psychotherapy interventions. *Number of psychotherapy sessions:* There is very limited study of the exact number of sessions needed in a course of psychological or psychiatric treatment. There are a small number of studies offering some basic directions on this topic, and they are summarized below. This meta analysis found that the effects increased somewhat with a higher number of treatment sessions beyond 4 to 6 sessions, but this did not continue after 18 to 24 total sessions. However, there was a strong relationship between the number of treatment sessions per week and effect size. When two instead of one treatment session are given per week, without increasing the total number of sessions, the effect size increases by 0.45. (Cuijpers, 2013) This systematic review compared 12 to 20 sessions with abbreviated psychotherapy protocols (8 sessions), and they concluded that depression can be efficaciously treated with either protocol. (Nieuwsma, 2012) The benefit to the patient of a trial is that, if likely treatment failures can be identified early in the treatment process, alternative treatment strategies can be pursued. Nonresponse by session/week four was strongly associated with nonresponse at the end of treatment. This systematic review focused solely on symptom-based outcome measures, because functioning and quality of life indices do not change as markedly within a short duration of psychotherapy. (Crits-Christoph, 2001) This study showed early rapid response after 5 psychotherapy sessions, but complete response after 20 sessions. (Hayes, 2007) This study suggested that adolescents who have not demonstrated at least a 16%

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	reduction in their depressive symptoms after 4 sessions should consider a change in the treatment plan. (Gunlicks-Stoessel, 2011) Psychotherapy lasting for at least a year, or 50 sessions, is more effective than shorter-term psychotherapy for patients with complex mental disorders, according to a meta-analysis of 23 trials. Although short-term psychotherapy is effective for most individuals experiencing acute distress, short-term treatments are insufficient for many patients with multiple or chronic mental disorders or personality disorders. (Leichsenring, 2008) Many patients show remission of symptoms in 8-12 sessions, but a full course of treatment is considered to be 14-16 sessions although severe cases can take longer. (Butler, 1995) A range of 11-16 treatment sessions is suggested for short-term treatment of depression. (Ward, 2000) Long-term psychotherapy (30 sessions or more) is more effective than short-term therapy, particularly in cases of more severe psychiatric impairment. (Leichsenring, 2001) Clearly there is benefit in evaluating progress, but there is insufficient evidence in specify a specific number of visits for a trial, and there is risk that such a number could be used as a cap. Therefore, ODG recommends that at each visit the provider should look for evidence of symptom improvement, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate. **ODG Psychotherapy Guidelines:** - Up to 13-20 visits over 7-20 weeks (individual sessions), if progress is being made. (The provider should evaluate symptom improvement during the process, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate.) - In cases of severe Major Depression or PTSD, up to 50 sessions if progress is being made.
Cognitive therapy for general stress	Recommended. Stress management that includes cognitive therapy has the potential to prevent depression and improve psychological and physiological symptoms. As with all therapies, an initial trial may be warranted, with continuation only while results are positive. (Mino, 2006) (Granath, 2006) (Siversten, 2006) Psychotherapy may be effective in treating subclinical depression and may prevent progression to major depressive disorder (MDD), according to a meta-analysis. The most common form of psychotherapy used was cognitive-behavioral therapy. Results showed that undergoing psychotherapy significantly reduced the incidence of MDD at the 6-month follow-up, with a relative risk (RR) of 0.61 vs the control groups. (Cuijpers, 2014)
Cognitive behavioral stress management (CBSM) to reduce injury and illness	Recommended. Cognitive behavioral stress management (CBSM) has previously been found to reduce fatigue, depression, and cortisol response to heavy exercise training among competitive collegiate athletes and to speed physical and psychological recovery from surgery. In addition, CBSM has been found to reduce the incidence of injury and illness among competitive collegiate athletes. (Mino, 2006) (Perna, 2003)
Complex regional pain syndrome (CRPS)	See the MTUS Chronic Pain Medical Treatment Guidelines, CRPS (complex regional pain syndrome).
Computer-assisted cognitive therapy	Recommended. A multimedia, computer-assisted form of cognitive therapy with reduced therapist contact may be as efficacious as standard cognitive therapy. Computer-assisted therapy could decrease costs and improve access to cognitive therapy for depression. (Wright, 2005) According to another study, both cognitive behavior therapy and psychoeducation delivered via the internet are effective in

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	reducing symptoms of depression. (Christensen, 2004) A randomized controlled effectiveness trial of Coordinated Anxiety Learning and Management (CALM), including a computer-assisted cognitive behavioral therapy program delivered by nonexpert care managers, for multiple primary care anxiety disorders (panic, generalized anxiety, social anxiety, and posttraumatic stress disorders) with or without major depression, concluded that CALM resulted in greater improvement in anxiety symptoms, depression symptoms, functional disability, and quality of care during 18 months of follow-up. (Roy-Byrne, 2010) This study concluded that an at-home, 6-week internet-based cognitive behaviour therapy (CBT) program (MoodGYM) is appropriate and effective for patients with mild or moderate TBI and depression. (Topolovec-Vranic, 2010) This study concluded that computerized cognitive-behavioural therapy constitutes the most efficient treatment strategy for depression. (Gerhards, 2010) CBT, whether self-guided, provided via telephone or computer, or provided face to face, is better than no care in a primary care setting and is also better than treatment as usual, according to a meta-analysis. CBT compared with no treatment had a medium effect size, computerized CBT had a medium effect, and guided self-help CBT produced a small effect size. (Twomey, 2014) See also Cognitive behavioral therapy (CBT).
Cymbalta	See Duloxetine.
Deplin® (L-methylfolate)	Not recommended. Deplin is a prescription medical food that contains L-methylfolate (vitamin B9) in doses of 7.5 mg or 15 mg. There are no head-to-head studies comparing folic acid supplementation versus L-methylfolate in terms of augmenting antidepressant therapy for depression. Studies are equivocal as to the efficacy of such supplementation, including in terms of whether other B vitamins are added to treatment. Two poster studies were presented on Deplin in 2011 at the European Congress of Psychiatry. The first was a controlled study that compared patients who were resistant to SSRI antidepressants into three groups. (Deplin 7.5 mg for 30 days and then 15 mg/day for 30 days; Placebo for 30 days and then Deplin 7.5 mg for 30 days; Placebo for 60 days). All supplementation was as an adjunct to therapy. There was no difference in outcomes between the three groups. The second study evaluated patients with SSRI resistant depression in two groups with supplementation again used as an adjunct (Deplin 15 mg for 60 days or Placebo). Statistical differences were seen in reduction of the HAM-D score. The results of these posters were ultimately published. (Papakostas, 2012) All patients who completed the studies were offered an open-label treatment option with SSRI and L-methylfolate. The results emphasize 13 patients who achieved remission in the original studies. At 12 months, 53.8% of patients sustained full remission. Future research was recommended. (Jain R, et al, College of Psychiatric and Neurological Pharmacists Annual Meeting, 2012, Tampa, FL, April and May 2012) See also B vitamins for depression (vitamin B6, folic acid/folate, vitamin B12). *Additional Research:* An automated telephone survey was made of patients who took three months of either Deplin 7.5mg or 15 mg. There was no control group. Outcomes were measured in part with the PHQ-9. Those with a lower baseline score had higher remission rates. This study was funded by the manufacturer. Many of the P scores were reported as 0.000. The significance of this is not known. (Shelton, 2013) See also the MTUS Chronic Pain Medical Treatment Guidelines.
Depression screening	Recommended. In December 2002, the U.S. Preventive Services Task Force (USPSTF) updated its 1996 position on this topic, so that it now recommends screening adults for depression to assure accurate diagnosis, effective treatment, and followup, as a result of new, quality evidence. The new evidence shows that screening improves the accurate identification of depressed patients in primary care

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	settings and that treatment of depressed adults identified in primary care settings decreases clinical morbidity. (USPSTF, 2002) As a result, the Occupational Mental Health Committee and the Council on Scientific Affairs has recommended that the American College of Occupational and Environmental Medicine (ACOEM) endorse the USPSTF report and take the position that a depression-screening program is an effective and inexpensive way to identify some of the most emotionally distressed employees. (ACOEM, 2002) In addition, one meta-analysis concluded that, compared with usual care, screening for depression can improve outcomes, particularly when screening is coupled with system changes that help ensure adequate treatment and follow-up. (Pignone, 2002) Routine screening for depression in primary care, as recommended by organizations in the U.S. and Canada, has not been proven to be beneficial, and may even be harmful, according to a new review. About 100 people have to be screened for 1 person to receive treatment for depression. In the meantime, physicians should educate their patients about depression. General screening of anyone who comes into a primary care practice might not be high yield enough, but in certain subgroups, such as older patients, it may make sense to screen. (Thombs, 2011) See also Major depressive disorder (MDD).
Depression: effect on heart health	Recommend consideration.In a study done on the relationship between depression and coronary heart disease (CHD) incidence or mortality found that depression was associated with an increased risk of CHD incidence in both men and women, as well as CHD mortality in men. Depression had no effect on CHD mortality in women. (Ferketich, 2000) Another study was conducted to determine if clinical depression is an independent risk factor for incident coronary artery disease. The study found that clinical depression appears to be an independent risk factor for incident coronary artery disease for several decades after the onset of the clinical depression. (Ford, 1998) Regarding heart attacks, one study found that not only are mild to moderate levels of depressive symptoms (as characterized by Beck Depression Inventory (BDI) scores greater than or equal to 10) associated with decreased survival after acute myocardial infarction, but, in addition, depression levels as low as 4-9 are also associated with increased patient mortality. (Bush, 2001) Another evaluation concluded that major depression in patients hospitalized following a myocardial infarction (MI) is an independent risk factor for mortality at 6 months. Its impact is at least equivalent to that of left ventricular dysfunction and history of previous MI. (Frasure-Smith, 1993) Among women with suspected myocardial ischemia, a combination of depressive symptom severity and treatment history was a strong predictor of an elevated coronary artery disease (CAD) risk profile and increased risk of cardiac events compared with those without depression or with only 1 of the 2 measured depression markers. These findings reinforce the importance of assessing mental health factors in women at elevated CAD risk. (Rutledge, 2006) The prevalence of depression is high in younger women with acute myocardial infarction (AMI). Because depression after AMI has been associated with adverse outcomes, younger women, a high-risk group compared with men, may particularly benefit from aggressive screening and treatment of post-AMI depression. (Mallick, 2006) (Ruo, 2006) Chronic episodes of depression are causally linked to increased risk for coronary heart disease (CHD). Those who had depressive symptoms during 1 or 2 assessments over time did not have an added risk for CHD, but there was a highly significant increase in risk if they reported symptoms during 3 or more assessments. In addition, there was no reverse causation, the patients with prevalent major CHD were not found to be more likely to have depressive symptoms. In addition, there was no significant link between long-term depressive symptoms and an increased

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	risk for stroke. The age- and sex-adjusted hazard ratio (HR) for CHD when depressive symptoms were recorded on 1 or 2 questionnaires was 1.12, but the adjusted HR for 3 or 4 questionnaires was 2.06. (Brunner, 2014)
Depression: the gene factor	Recommend consideration. In a study on why some people become depressed after certain life experiences while others do not, a functional polymorphism in the promoter region of the serotonin transporter (5-HT T) gene was found to moderate the influence of stressful life events on depression. Individuals with one or two copies of the short allele of the 5-HT T promoter polymorphism exhibited more depressive symptoms, diagnosable depression, and suicidality in relation to stressful life events than individuals homozygous for the long allele. (Caspi, 2003) Studies are conflicting as to whether or not genes may have an affect on antidepressant effectiveness. According to one study the BDNF G196A polymorphism may in part determine the antidepressant effect of both milnacipran and fluvoxamine. (Yoshida, 2006) The efficacy of duloxetine did not differ significantly in male and female patients. (Kornstein, 2006)
Desvenlafaxine (Pristiq)	Recommended for depression and as an option in first-line treatment of neuropathic pain, especially if tricyclics are ineffective, poorly tolerated, or contraindicated. Pristiq (desvenlafaxine) is a serotonin and norepinephrine reuptake inhibitor (SNRI). See the MTUS Chronic Pain Medical Treatment Guidelines, (serotonin noradrenaline reuptake inhibitors).
Dialectical behavior therapy	Recommended as an option for selected patients, as indicated below. Consider Dialectical behavior therapy (DBT) for patients with a borderline personality disorder typified by parasuicidal behaviors. Dialectical behavior therapy (DBT) is a comprehensive cognitive-behavioral treatment for complex, difficult-to-treat mental disorders, specifically designed to treat chronically suicidal individuals, and multidisordered individuals with borderline personality disorder (BPD). The techniques used in DBT are extensive and varied, addressing essentially every aspect of therapy. These techniques are underpinned by a dialectical philosophy that recommends a balanced, flexible and systemic approach to the work of therapy. (Evans, 1999) (Hawton, 2000) (Linehan, 1993) (Safer, 2001) (Telch, 2001) (van den Bosch, 2002) (Verheul, 2003) DBT has since been adapted for other seemingly intractable behavioral disorders involving emotion dysregulation, including substance dependence in individuals with BPD and binge eating, to other clinical populations (e.g., depressed, suicidal adolescents), and to a variety of settings (e.g., inpatient, partial hospitalization, forensic). While considerable evidence supports the use of exposure-based treatment for PTSD, its utilization may pose some problems for patients where the symptoms of PTSD are complicated. High rates of attrition, suicidality, dissociation, destructive impulsivity, and chaotic life problems are reasons cited by clinicians for abandoning empirically supported exposure treatment. Some practitioners have suggest that the approach of DBT, designed to address many of these issues, offers useful strategies for addressing the needs of patients considered poor candidates for exposure therapy. The DBT approach incorporates what is valuable from other forms of therapy, and is based on a clear acknowledgement of the value of a strong relationship between therapist and patient. Therapy is structured in stages and at each stage a clear hierarchy of targets is defined. Patients are helped to understand their problem behaviors and then deal with situations more effectively. They are taught the necessary skills to enable them to do so and helped to deal with any problems that they may have in applying those skills. Advice and support is available between sessions. Patient is encouraged and helped to take responsibility for dealing with life's challenges. (VA/DoD, 2004) See also PTSD psychotherapy interventions.

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Diphenhydramine (Benadryl)	Not recommended. See Insomnia treatment, where sedating antihistamines are not recommended for long-term insomnia treatment. The AGS updated Beers criteria for inappropriate medication use includes diphenhydramine. () Anticholinergic drugs, including diphenhydramine, may increase the risk for dementia by 50% in older adults. There is an obvious dose-response relationship between anticholinergic drug use and risk of developing dementia, but chronic use, even at low doses, would be in the highest risk category. While there is awareness that these drugs may cause short-term drowsiness or confusion, which is included in the prescribing information, there is no mention of long-term effects on cognition, and generally awareness of this issue is very low, and both the public and doctors need to be encouraged to use alternative treatments where possible. (Gray, 2015)
Disease management (programs)	Recommended. Disease management programs (DMPs) significantly enhance the quality of care for depression. Costs are within the range of other widely accepted public health improvements. DMP had a significant effect on depression severity, with a relative risk of 0.75 (95% confidence interval 0.70-0.81) in a homogeneous dataset of 10 high-quality trials. It was robust in all sensitivity analyses (evidence level 1A). Patient satisfaction and adherence to the treatment regimen improved significantly. The costs per quality adjusted life year ranged between $9,051 and $49,500. (Neumeyer-Gromen, 2004) One meta analysis concluded that pooled results for disease management program effects on symptoms of depression showed statistically significant improvements. Programs also had statistically significant effects on patients' satisfaction with treatment, patients' compliance with the recommended treatment regimen, and adequacy of prescribed treatment. One program with an explicit screening component showed significant improvement in the rate of detection of depression by primary care physicians. (Badamgarav, 2003) Disease management studies have represented 11 chronic conditions: depression, diabetes, rheumatoid arthritis, chronic pain, coronary artery disease, asthma, heart failure, back pain, chronic obstructive pulmonary disease, hypertension, and hyperlipidemia. Disease management programs for patients with depression had the highest percentage of comparisons showing substantial improvements in patient care, whereas programs for patients with chronic obstructive pulmonary disease or chronic pain appeared to be the least effective. Of the depression outcomes more frequently studied, disease management appeared to improve patient satisfaction (71%), patient adherence (47%), and disease control (45%) most commonly and cost-related outcomes least frequently (11% to 16%). (Ofman, 2004) While effective in urban patients, according to one study, depression disease management may not improve clinical outcomes in rural patients. (Adams, 2006) The treatment of rural patients with symptoms of depression may be more likely to be improved by targeting primary care physicians' medical education than by efforts to increase the supply of specialty mental health providers in rural areas. (Hartley, 1998)
Distractive methods (to reduce acute stress)	Recommended. Distractive interventions (such as the playing of music during the procedure) have been found useful in reducing the anxiety of a patient coping with the stress of a painful medical procedure. (Fauerbach, 2002)
Drug therapy	See Medications.
Duloxetine (Cymbalta)	Recommended. Duloxetine (Cymbalta®), an inhibitor of serotonin and norepinephrine reuptake, has been approved for the treatment of major depressive disorder. Duloxetine has been shown to be effective in the treatment of first and subsequent episodes of major depressive disorder, and regardless of duration of the current depressive episode. (Perahia, 2006) (Fava, 2004) (Nelson, 2005) (Bymaster,

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	2005) (Brannan, 2005) (Acharya, 2006) One meta-analysis examining potential gender differences in the efficacy of duloxetine concluded that efficacy did not differ significantly in male and female patients. (Kornstein, 2006) Cymbalta, an SNRI from Lilly, has been approved by the FDA for both the treatment of depression and the management of pain associated with diabetic peripheral neuropathy. Cymbalta targets two chemicals, serotonin and norepinephrine, that are believed to play a role in how the brain and body affect mood and pain. Note: On October 17, 2005, Eli Lilly and the U.S. Food and Drug Administration (FDA) notified healthcare professionals of revision to the PRECAUTIONS/Hepatotoxicity section of the prescribing information for Cymbalta (duloxetine hydrochloride), indicated for treatment of major depressive disorder and diabetic peripheral neuropathic pain. Postmarketing reports of hepatic injury (including hepatitis and cholestatic jaundice) suggest that patients with preexisting liver disease who take duloxetine may have an increased risk for further liver damage. The new labeling extends the Precaution against using Cymbalta in patients with substantial alcohol use to include those patients with chronic liver disease. It is recommended that Cymbalta not be administered to patients with any hepatic insufficiency.
Education	Recommended. Patient education consisting of concrete, objective information on symptom management, including disease and treatment information, has been found to help reduce patient stress, especially when combined with emotional support and counseling. (Rawl, 2002) Patient education is recommended to provide a therapeutic intervention that reduces the symptoms and functional impairments of PTSD. Psychoeducation is especially recommended. (Foa, 1999) (Lubin, 1998) (VA/DoD, 2004)
Electroconvulsive therapy (ECT)	Recommended. In the event that antidepressant medications and psychotherapy have proven ineffective, the usage of Electroconvulsive Therapy (ECT) can be considered. ECT has been found in use for over 60 years. The empirical evidence of ECT in treating MDD is impressive and yet, this form of treatment is consistently underutilized by psychiatrists. ECT is a medical procedure in which a generalized tonic-clonic seizure is induced by the usage of medication and electrical current delivered via electrodes on the head. It has been determined to be not only highly effective, but also quite safe. The primary barrier to utilizing ECT is the MDD diagnosed individual's reluctance to undergo such a procedure. It is imperative that a discussion regarding the procedure, safe guards that are employed and the treatment outcome data are presented to the individual with treatment resistant MDD. Moreover, it is incumbent upon the physician to note that ECT is an option in the evidence based treatment protocol when the individual does not respond to antidepressant medication and Cognitive therapy. ECT has been found to be most effective in the treatment of individuals with psychotic symptoms, suicidal ideation, and comorbid physical illness. For ECT to be utilized in its most effective form, ECT must be delivered bilaterally. In addition, high dosage ECT is superior to low dosage in treatment outcome. (UK ECT Lancet, 2003) (Warren, 2005) (Kellner, 2006) (Husain, 2004) (Petrides, 2001) (McCall, 2006) (Pagnin, 2004) An FDA panel recommended that electroconvulsive therapy (ECT) devices retain their high-risk class III classification. In a statement before the advisory panel's 2-day discussion about a possible reclassification of ECT devices, comments were made that ECT is appropriate for a small percentage of patients, generally those with severe mental illnesses that have not responded to other treatments. When used properly, under appropriate guidelines and by a well-trained psychiatrist, ECT is extremely safe and effective. The panel's advice to the FDA for the maintenance of ECT's high-risk classification has many people worried that FDA could restrict access to ECT. (FDA,

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	2010) Recent quality studies continue to support use of ECT for severe depression. (Brown, 2014) (Fink, 2014) (Ren, 2014) (Charlson, 2012) ECT is far more effective than drug therapy for treatment-resistant bipolar depression. The mean MADRS score at the end of the 6-week treatment period was 6.6 points lower in the ECT group compared with the drug treatment group, and the mean score on the 30-item version of the Inventory of Depressive Symptomatology at 6 weeks was 9.4 points lower in the ECT group. More than twice as many ECT patients had a significant response (74% vs 35%), but the remission rate did not differ between the groups (35% vs 30%). (Schoeyen, 2015) **Criteria for Electroconvulsive therapy (ECT):** Diagnosis of severe Major Depression, especially in the presence of psychotic depression, when the following criteria are met: • Failure of a trial of Cognitive therapy; AND • Failure of at least 3 different medication trials, from at least 2 different classes, at adequate dose and duration or due to intolerable effects; OR • A positive clinical response to a previous course of treatment with ECT; • Bilateral electrode placement is recommended; • Standard treatment consists of less than 20 treatments over 10 weeks.
Emotional freedom techniques (EFT)	Recommended as an option. Emotional Freedom Techniques (EFT) has moved in the past two decades from a fringe therapy to professional acceptance. There is good evidence for psychological conditions such as anxiety, depression, phobias, and posttraumatic stress disorder (PTSD). The three essential ingredients of Clinical EFT are exposure, cognitive shift, and acupressure, which is an essential ingredient in EFT's efficacy. Research suggests that Clinical EFT is a stable and mature method with an extensive evidence base. These characteristics have led to growing acceptance in primary care settings as a safe, rapid, reliable, and effective treatment for both psychological and medical diagnoses. In the past, EFT was generally characterized as pseudoscience and had not garnered significant support in clinical psychology. Emotional Freedom Techniques (EFT) involves tapping specific points on your head and chest with your fingertips while thinking about your specific problem and voicing positive affirmations. This can be done alone or under the supervision of a qualified therapist. In this RCT, significant decreases from pre-treatment to 12-month follow-up were found for depression, interpersonal sensitivity, psychoticism, and hostility, in the EFT group. (Stapleton, 2013) This study examined the effect of EFT, a brief exposure therapy combining cognitive and somatic elements, on posttraumatic stress disorder (PTSD) and psychological distress symptoms in veterans. The EFT intervention consisted of 6 hour-long EFT coaching sessions concurrent with standard care. After the trial, 90% of the EFT group no longer met PTSD clinical criteria, compared with only 4% in the standard of care wait list group. (Church, 2013) In this RCT, the EFT group had significantly less depression than the control group at post-test, and indicated the clinical usefulness of EFT as a brief, cost-effective, and efficacious treatment. (Church, 2012) Both eye movement desensitization and reprocessing (EMDR) and emotional freedom techniques (EFT) for posttraumatic stress disorder produced significant therapeutic gains at posttreatment and follow-up in an equal number of sessions. (Karatzias, 2011) In a critical review by the American Psychological Association, researchers found that EFT consistently demonstrated strong effect sizes and other positive statistical results that far exceed chance after relatively few treatment sessions. (Feinstein, 2012)
Escitalopram (Lexapro®)	Recommended as a first-line treatment option for MDD and PTSD or anxiety disorder. See Antidepressants for treatment of MDD (major depressive disorder);

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	Selective serotonin reuptake inhibitors (SSRIs); PTSD pharmacotherapy.
Eszopicolone (Lunesta)	Not recommended for long-term use, but recommended for short-term use. See Insomnia treatment. See also the MTUS Chronic Pain Medical Treatment Guidelines. Recommend limiting use of hypnotics to three weeks maximum in the first two months of injury only, and discourage use in the chronic phase. While sleeping pills, so-called minor tranquilizers, and anti-anxiety agents are commonly prescribed in chronic pain, pain specialists rarely, if ever, recommend them for long-term use. They can be habit-forming, and they may impair function and memory more than opioid pain relievers. There is also concern that they may increase pain and depression over the long-term. In this study, eszopicolone (Lunesta) had a Hazard ratio for death of 30.62 (C.I., 12.90 to 72.72), compared to zolpidem at 4.82 (4.06 to 5.74). In general, receiving hypnotic prescriptions was associated with greater than a threefold increased hazard of death even when prescribed less than 18 pills/year. (Kripke, 2012) The FDA has lowered the recommended starting dose of eszopiclone (Lunesta) from 2 mg to 1 mg for both men and women. Previously recommended doses can cause impairment to driving skills, memory, and coordination as long as 11 hours after the drug is taken. Despite these long-lasting effects, patients were often unaware they were impaired. (FDA, 2014)
Exercise	Recommended. A review of multiple controlled studies from 1970 to date has demonstrated that physical exercise reduces Major Depressive Disorder (MDD) symptoms. The most effective forms of exercise that produce the strongest reduction are resistance training and aerobic exercise. Thus, the individual diagnosed with MDD must be encouraged to exercise as part of the evidence based treatment. (Warren, 2005) (Dunn, 2005) (Bartholomew, 2005) Results suggest that more physical activity is associated with reduced concurrent depression. In addition, it appears that physical activity may be especially helpful in the context of medical problems and major life stressors. (Harris, 2006) Resistance training reduces symptoms of generalized anxiety disorder (GAD), compared with aerobic exercise or no exercise at all. Anxiety remission was 60% in the resistance-training group, compared with 40% in the aerobic exercise group and 30% in the control group. (Herring, 2011)
Expatriate employee adjustment support	Recommended. One clinical trial studied the effects of international relocation on employees and found that during the years abroad, the expatriate employees experienced increased psychosocial stress as well as negative adjustment as reflected in circulating levels of prolactin and testosterone, worse mental well-being and worsening subjective work environment, as compared with the non-moving group. The greatest change occurred during the first year. These changes were especially prevalent in individuals without substantial social support, internal locus of control, self-esteem and sense of coherence. The study emphasizes the importance for multinational organizations to look at these individual characteristics before sending employees abroad. Companies also need to get more involved in supporting employees to manage stressors characteristic of the first year of foreign work. (Anderzen, 1999)
Exposure therapy (ET)	Recommended as an option. Exposure Therapy (ET) is effective in the treatment of PTSD (compared to placebo or waiting list); ET compared to other forms of therapy shows equivalent results. (Cooper, 1989) (Foa, 1991) (Foa, 1999) (Ironson, 2002) (Keane, 1989) (Marks, 1998) (Tarrier, 1999) (Paunovic, 2001) (Resick, 2001) (Schnurr, 2001) RCTs have shown that Exposure Therapy (ET) helps men and women with PTSD reduce the fear associated with their experience through repetitive, therapist-guided confrontation of feared places, situations, memories, thoughts, and feelings. ET usually lasts from 8 to 12 sessions depending on the

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	trauma and treatment protocol. Patients are repeatedly exposed to their own individualized fear stimuli, until their arousal and fear responses are consistently diminished. In session exposure is often supplemented by therapist-assigned and monitored self-exposure to the memories or situations associated with traumatization. ET providers can vary the pacing and intensity of exposing patients to the most frightening details of their trauma based on the patient's emotional response to the trauma and to the therapy itself. Exposure can be accomplished via "imaginal" exposure or "in vivo" exposure. Imaginal exposure involves encouraging the patient to revisit the experience in imagination, recalling the experience through verbally describing the emotional details of the trauma. In vivo exposure involves asking the patient to physically confront realistically safe but still feared stimuli (e.g. driving a car after having been in a serious motor vehicle accident). This exposure can also be arranged in a hierarchical fashion. In the preceding example the patient might first sit in a car in the passenger seat, and then in the driver's seat, and then start the car, etc. The patient repeats each situation until a reduction in the intensity of emotional and physiological response is achieved, at which point they move on to the next item in their hierarchy. RCTS of ET have demonstrated its efficacy in female victims of sexual and non-sexual assault, motor vehicle accidents, male combat-related trauma, and mixed trauma populations. In randomized trials comparing ET with other cognitive behavioral treatments ET has performed as well or better than any cognitive behavioral therapy (CBT) approach. (VA/DoD, 2004) Cognitive behavior programs, including exposure therapy, are currently the treatment of choice for PTSD. (Botella, 2009) Among the psychological treatments, the strongest evidence of efficacy for improving PTSD symptoms and achieving loss of PTSD diagnosis was for exposure-based therapy. (Jonas, 2013) A meta-analysis of relative effectiveness of psychological interventions for PTSD found the most robust evidence for cognitive therapy and exposure therapies, including Exposure therapy (ET) and Eye movement desensitization & reprocessing (EMDR). (Gerger, 2014) See also PTSD psychotherapy interventions. **Patient selection criteria for Exposure Therapy (ET):** - Patients need to be screened for their suitability prior to undergoing ET as it may temporarily increase their level of distress. - Patients living in dangerous circumstances (e.g., domestic violence or a threatening environment) are not candidates for ET until their security can be assured. - Other contraindications for ET have not been confirmed in empirical research, but may include health problems that preclude exposure to intense physiological arousal, current suicidal ideation, substance abuse not in stable remission, co-morbid psychosis, or lack of motivation to undergo the treatment. - Because this treatment may increase distress and PTSD symptoms in the short term, it is not well accepted by all patients, some of whom may drop out of treatment. Therefore, providers must take concrete steps to prepare patients for the treatment (e.g., present clear rationale, explore patient concerns, encourage realistic expectations, and build commitment to the therapy) in order to reduce the risk of dropout.
Eye movement desensitization & reprocessing (EMDR)	Recommended as an option. Eye movement desensitization and reprocessing (EMDR) is a recognized and accepted form of psychotherapy for posttraumatic stress disorder (PTSD). Yet, its mechanism of action remains unclear and much controversy exists about whether eye movements or other forms of bilateral kinesthetic stimulation contribute to its clinical effects beyond the exposure elements of the procedure. (Servan, 2006) (Seidler, 2006) (Macklin, 2000) Eye Movement

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	Desensitization and Reprocessing (EMDR) is more efficacious for PTSD than wait-list, routine care, and active treatment controls. (Chemtob, 2000) (Davidson, 2001) (Foa, 1997) (Maxfield, 2002) (Shepherd, 2000) (VA/DoD, 2004) Eye movements are not critical to the effects of EMDR. (Foa, 1997) EMDR compared with Exposure Therapy (ET) and Cognitive Therapy (CT) shows mixed results (Cahill, 2000) (Davidson, 2001) (Foa, 1997) (Ironson, 2002) (Lee, 2002) (Power, 2002) (Shepherd, 2000) (Taylor, 2002) (Van Etten, 1998) EMDR is a psychotherapy treatment that was originally designed to alleviate the distress associated with traumatic memories. The developer of EMDR, psychologist Dr. Francine Shapiro, proposes the idea that EMDR facilitates the accessing and processing of traumatic memories to bring these to an adaptive resolution. The possibility of obtaining significant clinical improvements in PTSD in a few sessions presents this treatment method as an attractive modality worthy of consideration. During EMDR, the patient is asked to identify: (1) a disturbing image that encapsulates the worst part of the traumatic event; (2) associated body sensations; (3) a negative self-referring cognition (in concise words) that expresses what the patient "learned" from the trauma; (4) a positive self-referring cognition that the patient wishes could replace the negative cognition. The patient is then asked to hold the disturbing image, sensations, and the negative cognition in mind while tracking the clinician's moving finger back and forth in front of his or her visual field for about 20 seconds. In successive tracking episodes, the patient concentrates on whatever changes or new associations have occurred. Tracking episodes are repeated according to the protocol until the patient has no further changes. More tracking episodes then reinforce the positive cognition. Between sessions, the patient is directed to keep a journal of any situations that provoke PTSD symptoms and of any insights or dreams about the trauma. The sessions required may be as few as two for uncomplicated PTSD. More sessions are required for multiple or more complicated trauma. Standard CBT rating scales are used throughout the sessions to document changes in the intensity of the symptoms and the negative cognition, and the patient's belief in the positive cognition. The patient only needs to tell the therapist the concise negative and positive cognitions and whether (and what) cognition, image, emotion, or body sensation has changed. The therapist is close to the patient and maintains direct eye contact as part of the protocol. This fosters a non-directive interaction that usually detects adverse reactions, which the therapist helps the patient manage with cognitive techniques. EMDR processing is internal to the patient, who does not have to reveal the traumatic event. The protocol allows for substitution of left-right alternating tone or touch as alternatives in place of the eye movements. Studies attempting to ascertain the relative contribution of the eye-movement component have suggested comparable treatment results with or without eye movements, indicating that this aspect of the treatment protocol may not be critical to effectiveness. (VA/DoD, 2004) EMDR therapy for PTSD provides more rapid results than cognitive behavioral therapy (CBT), an RCT suggests. Although there were no significant between-group differences in Impact of Event Scale–Revised (IES-R) scores at the end of the study, the response pattern showed a significantly sharper decline in PTSD symptoms at 6-weeks for those receiving EMDR therapy. The conclusion is that both treatments are equally effective, and the patient and clinician can choose a certain treatment based on their preferences, according to the authors. If a patient values fast symptom reduction, EMDR is the treatment of choice. If a patient feels the need to make meaning out of the traumatic experience and learn from it, brief eclectic psychotherapy is the best choice. (Nijdam, 2012) A meta-analysis of relative effectiveness of psychological interventions for PTSD found the

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	most robust evidence for cognitive therapy and exposure therapies, including Exposure therapy (ET) and Eye movement desensitization & reprocessing (EMDR). (Gerger, 2014) See also PTSD psychotherapy interventions.
Fluoxetine (Prozac®)	Recommended as a first-line treatment option for major depressive disorder and PTSD. See Antidepressants for treatment of MDD (major depressive disorder); Selective serotonin reuptake inhibitors (SSRIs); PTSD pharmacotherapy.
Folate (for depressive disorders)	Not recommended based on current data. The limited available evidence suggests folate may have a potential role as a supplement to other treatment for depression. See Deplin® (L-methylfolate) & B vitamins for depression (vitamin B6, folic acid/folate, vitamin B12).
Folic acid	See Folate.
GABAdone™	Not recommended. See the MTUS Chronic Pain Medical Treatment Guidelines.
Group therapy	Recommended as an option. Group therapy should provide a supportive environment in which a patient with Post-traumatic stress disorder (PTSD) may participate in therapy with other PTSD patients. While group treatment should be considered for patients with PTSD (Donovan, 2001) (Foy, 2000) (Rogers, 1999), current findings do not favor any particular type of group therapy over other types. (Foy, 2000) See also PTSD psychotherapy interventions.
Hypnosis	Recommended as an option, as indicated below. Hypnosis is a therapeutic intervention that may be an effective adjunctive procedure in the treatment of Post-traumatic stress disorder (PTSD), and hypnosis may be used to alleviate PTSD symptoms, such as pain, anxiety, dissociation and nightmares, for which hypnosis has been successfully used. (VA/DoD, 2004) (Brom, 1989) (Sherman, 1998) In a study testing the effect of hypnosis on irritable bowel syndrome (IBS), it was found that the hypnosis was effective in reducing psychological distress and as a result, the IBS symptoms improved substantially, despite there being no measured physiological change. More testing should be done to measure the effect of hypnosis on stress reduction, with or without physical ailment, as preliminary results are positive. (Palsson, 2002) According to one meta analysis, hypnotherapy is highly effective for patients with refractory IBS, but definite efficacy of hypnosis in the treatment of IBS remain unclear (Gholamrezaei, 2006) Hypnosis is not a therapy per se, but an adjunct to psychodynamic, cognitive-behavioral, or other therapies, and has been shown to enhance significantly their efficacy for a variety of clinical conditions. In the specific context of post-traumatic symptomatology, hypnotic techniques have been used for the psychological treatment of shell shock, battle fatigue, traumatic neuroses, and more recently, PTSD, and dissociative symptomatology. Hypnosis is defined by the APA as “a procedure during which a health professional or researcher suggests that a client, patient, or subject experience changes in sensations, perceptions, thought, or behavior.” The hypnotic context is generally established by an induction procedure. An induction procedure typically entails instructions to disregard extraneous concerns and focus on the experiences and behaviors that the therapist suggests or that may arise spontaneously. Most of the case studies that reported that hypnosis was useful in treating post-trauma disturbances following a variety of traumas lack methodological rigor, and therefore strong conclusions about the efficacy of hypnosis to treat PTSD cannot be drawn. Various meta-analyses of studies on the treatment of anxiety, pain, and other conditions imply that hypnosis can substantially enhance the effectiveness of psychodynamic and CBTs; however, most of the literature on the use of hypnosis for PTSD is based on service and case studies. Hypnotic techniques have been reported to be effective for symptoms often associated with PTSD such as pain, anxiety and repetitive nightmares. (VA/DoD, 2004)

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	Criteria for the use of Hypnosis: *Providers:* Hypnosis should only be used by credentialed health care professionals, who are properly trained in the clinical use of hypnosis and are working within the areas of their professional expertise. *Indications:* There are a number of indications for using hypnosis in the treatment of PTSD: (1) Hypnotic techniques may be especially valuable for symptoms often associated with PTSD, such as dissociation and nightmares, for which they have been successfully used; (2) PTSD patients who manifest at least moderate hypnotizability may benefit from the addition of hypnotic techniques to their treatment; (3) Because confronting traumatic memories may be very difficult for some PTSD patients, hypnotic techniques may provide them with a means to modulate the emotional and cognitive distance from such memories as they are worked through therapeutically. *Contraindications:* There are a number of contraindications for using traditional hypnotic techniques in the treatment of PTSD: (1) In the rare cases of individuals who are refractory or minimally responsive to suggestions, hypnotic techniques may not be the best choice, because there is some evidence that hypnotizability is related to treatment outcome efficacy; (2) Some PTSD patients may be reluctant to undergo hypnosis, either because of religious belief or other reasons. If the resistance is not cleared after dispelling mistaken assumptions, other suggestive techniques can be tried, including emotional self-regulation therapy (ESRT), which is done with open eyes and uses sensory recall exercises rather than a hypnotic induction; (3) For patients who have low blood pressure or are prone to fall asleep, hypnotic procedures such as “alert hand,” which emphasize alertness and acitivity rather than relaxation, may be substituted. *Sessions:* Number of visits should be contained within the total number of Psychotherapy visits.
Hypnotics	See Sedative hypnotics.
Imagery rehearsal therapy (IRT)	Recommended as an option for patients suffering from nightmares and associated sleep disruption. Imagery Rehearsal Therapy (IRT) can be considered for treatment of PTSD (nightmare and sleep disruption in particular). IRT is a cognitive-behavioral technique in which patients learn in a waking state to change a nightmare and then to visualize the new set of images. Imagery rehearsal consists of three steps, all of which are performed in the waking state: (a) select a nightmare, (b) "change the nightmare any way you wish," and (c) rehearse the images of the new version ("new dream") 5 to 20 min each day. Post-traumatic nightmares are a hallmark of PTSD and distinct from general nightmares as they are often repetitive and faithful representations of the traumatic event. (Krakow-*JAMA*, 2001) (Krakow, 1995) (Krakow, 2001) (Forbes, 2001) Occurrence of nightmare as a problem is frequent: 4-8 percent in the general population and 60 percent in PTSD. Evidence shows that nightmares are associated with psychological distress and sleep impairment. A conditioning pattern similar to classic psycho-physiological insomnia is produced in the nightmare-disturbed loop, along with the negative cognition of “fear of going to sleep.” Studies using brief CBT (desensitization and imagery rehearsal) have demonstrated large reduction in nightmares. Many studies suggest that PTSD is associated with a propensity toward image, particularly where the post-traumatic symptom picture is characterized by nightmares and flashbacks. IRT incorporates a system to increase the imagery control. IRT is aimed at changing the content of the patient’s nightmare to promote mastery over the content-threat, thereby altering the meaning, importance, and orientation to the nightmare. The key to successful treatment is the use of imagery. DSM-IV-TR suggests that nightmares occurring with

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	another psychiatric disorder are not a distinctly treatable condition and its remission occurs only through treatment of the primary disorder, such as anxiety disorder, and PTSD. (VA/DoD, 2004) **Imagery Rehearsal Therapy (IRT) criteria:** IRT focuses on the following main approaches: • Deemphasizes exposure by avoiding discussion of trauma or traumatic content of nightmares • Focuses on habitual components of disturbing dreams and sleeplessness • Provides no group psychotherapy • Offers minimal instruction for dealing with unpleasant imagery • Emphasizes relaxation • Conveys no specific non-sleep-related instructions for managing post-traumatic stress, anxiety, or depressive symptoms
Injections	See Botulin injections; Ketamine.
Insomnia	Recommend correcting deficits, as nonrestorative sleep is one of the strongest predictors for pain. Definition: Difficulty in sleep initiation or maintenance, and/or early awakening. Also characterized by impairment in daily function due to sleep insufficiency. These impairments include fatigue, irritability, decreased memory, decreased concentration, and malaise. See the MTUS Chronic Pain Medical Treatment Guidelines for more information and references. Classifications: (1) *Based on symptoms:* Categories of symptoms include sleep onset, sleep maintenance, non-restorative sleep. These symptoms have been found to change over time. (2) *Based on duration:* (a) *Acute insomnia (transient insomnia):* Usually the result of specific environmental or social events. Generally treated by addressing the episode directly (death of a family member, working on a different shift, travel), or prophylactically. (b) *Chronic insomnia:* Generally defined as lasting more than one month. This condition may be correlated with other intrinsic sleep disorders, primary insomnia, or chronic medical conditions. Chronic insomnia is more likely to occur in the elderly, depressed patients, and medically ill populations. (3) *Based on etiology:* (a) *Primary insomnia:* No known physical or mental condition is noted as an etiology. This condition is generally consistent and responsive to treatment. (b) *Secondary insomnia (comorbid insomnia):* insomnia that is secondary to other medical and psychiatric illnesses, medications, or sleep disorders. Examples include chronic pain, gastroesophogeal reflux disease (GERD), heart failure, end-stage renal disease, diabetes, neurologic problems, psychiatric disorders, and certain medications. Diabetic patients appear to suffer insomnia due to alterations of circadian rhythm. They may also suffer from sleep disorders related to obesity. Psychiatric disorders associated with insomnia include depression, anxiety and alcoholism. Poor or insufficient sleep is the strongest predictor for pain in adults over 50. Among factors associated with new-onset pain were: age (OR 0.97); baseline pain status (OR 1.1); anxiety (OR 1.5); physical health–related quality of life (OR 1.3); cognitive complaint (OR 1.3); & nonrestorative sleep (OR 1.9; 95% CI 1.2 - 2.8). This study points to the need to address underlying sleep problems to bring pain relief. (McBeth, 2014) See Insomnia treatment. See also Sleep studies.
Insomnia treatment	Recommend that treatment be based on the etiology, with the medications recommended below. See Insomnia. Pharmacological agents should only be used after careful evaluation of potential causes of sleep disturbance. Failure of sleep disturbance to resolve in a 7 to 10 day period may indicate a psychiatric and/or medical illness. Primary insomnia is generally addressed pharmacologically. Secondary insomnia may be treated with pharmacological and/or psychological measures. The specific component of insomnia should be addressed: (a) Sleep

onset; (b) Sleep maintenance; (c) Sleep quality; & (d) Next-day functioning. See the MTUS Chronic Pain Medical Treatment Guidelines for detailed recommendations and references.

Pharmacologic Treatment: There are four main categories of pharmacologic treatment: (1) Benzodiazepines; (2) Non-benzodiazepines; (3) Melatonin receptor agonists; & (4) Sedating antihistamines (primarily over-the-counter medications).

(1) Benzodiazepines: These medications are only recommended for short-term use due to risk of tolerance, dependence, and adverse events (daytime drowsiness, anterograde amnesia, next-day sedation, impaired cognition, impaired psychomotor function, and rebound insomnia). These drugs have been associated with sleep-related activities such as sleep driving, cooking and eating food, and making phone calls (all while asleep). Particular concern is noted for patients at risk for abuse or addiction. Withdrawal occurs with abrupt discontinuation or large decreases in dose. Decrease slowly and monitor for withdrawal symptoms. Benzodiazepines are similar in efficacy to benzodiazepine-receptor agonists; however, the less desirable side-effect profile limits their use as a first-line agent, particularly for long-term use.

(2) Non-Benzodiazepine sedative-hypnotics (Benzodiazepine-receptor agonists): First-line medications for insomnia. Although direct comparisons between benzodiazepines and the non-benzodiazepine sedative-hypnotics have not been studied, it appears that the non-benzodiazepines have similar efficacy to the benzodiazepines with fewer side effects and short duration of action. ***Zolpidem*** *[Ambien® (generic available), Ambien CR, Edluar, Intermezzo]* is indicated for the short-term treatment of insomnia with difficulty of sleep onset (7-10 days). Ambien CR is indicated for treatment of insomnia with difficulty of sleep onset and/or sleep maintenance. Longer-term studies have found Ambien CR to be effective for up to 24 weeks in adults. FDA has also approved sublingual zolpidem (Edluar). (FDA, 2009) FDA approved zolpidem tartrate sublingual tablets (Intermezzo) for use as needed for insomnia characterized by middle-of-the-night wakening followed by difficulty returning to sleep. (FDA, 2011) Due to adverse effects, FDA now requires lower doses for zolpidem. The dose of zolpidem for women should be lowered from 10 mg to 5 mg for IR products and from 12.5 mg to 6.25 mg for ER products. (FDA, 2013) The ER product is still more risky than IR. See the MTUS Chronic Pain Medical Treatment Guidelines. ***Zaleplon*** *(Sonata®)* reduces sleep latency. Because of its short half-life (one hour), may be readministered upon nocturnal wakening provided it is administered at least 4 hours before wake time. This medication has a rapid onset of action. Short-term use (7-10 days) is indicated with a controlled trial showing effectiveness for up to 5 weeks. ***Eszopicolone*** *(Lunesta™)* has demonstrated reduced sleep latency and sleep maintenance. The only benzodiazepine-receptor agonist FDA approved for use longer than 35 days. ***Sedating antidepressants*** (e.g., amitriptyline, trazodone, mirtazapine) have also been used to treat insomnia; however, there is less evidence to support their use for insomnia, but they may be an option in patients with coexisting depression. Trazodone is one of the most commonly prescribed agents for insomnia. Side effects of this drug include nausea, dry mouth, constipation, drowsiness, and headache. Improvements in sleep onset may be offset by negative next-day effects such as ease of awakening. Tolerance may develop and rebound insomnia has been found after discontinuation. See also Sentra PM™.

(3) Melatonin-receptor agonist: ***Ramelteon*** *(Rozerem™)* is a selective melatonin agonist (MT_1 and MT_2) indicated for difficulty with sleep onset; is nonscheduled (has been shown to have no abuse potential). One systematic review concluded that there is evidence to support the short-term and long-term use of ramelteon to

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	decrease sleep latency; however, total sleep time has not been improved. **(4) Sedating antihistamines (primarily over-the-counter medications):** Sedating antihistamines have been suggested for sleep aids (for example, diphenhydramine [Benadryl, OTC in U.S.], promethazine [Phenergan, prescription in U.S., OTC in other countries]). Tolerance seems to develop within a few days. Next-day sedation has been noted as well as impaired psychomotor and cognitive function. This RCT determined that diphenhydramine has been shown to build tolerance against its sedation effectiveness very quickly, with placebo-like results after a third day of use. (Richardson, 2002) Due to adverse effects, the U.S. National Committee for Quality Assurance (NCQA) has included diphenhydramine in the HEDIS® (Healthcare Effectiveness Data and Information) recommended list of high-risk medications to avoid in the elderly. (NCQA, 2012) ***Non-pharmacologic treatment:*** Empirically supported treatment includes stimulus control, progressive muscle relaxation, and paradoxical intention. Treatments that are thought to probably be efficacious include sleep restriction, biofeedback, and multifaceted cognitive behavioral therapy. **Suggestions for improved sleep hygiene:** (a) Wake at the same time everyday; (b) Maintain a consistent bedtime; (c) Exercise regularly (not within 2 to 4 hours of bedtime); (d) Perform relaxing activities before bedtime; (e) Keep your bedroom quiet and cool; (f) Do not watch the clock; (g) Avoid caffeine and nicotine for at least six hours before bed; (h) Only drink in moderation; & (i) Avoid napping. In terms of first-line therapy, for acute insomnia lasting less than 6 months, medication is probably the best treatment approach, but for chronic insomnia, a combined approach with CBT might give the best of both worlds; however, after a few weeks, the recommendation is to discontinue the medication and continue with CBT. **Cognitive therapy for insomnia:** Recommended for chronic insomnia, as also summarized above. Even brief cognitive behavioral therapy for insomnia can have good outcomes and reduce healthcare utilization and costs. In this study patients were offered up to 6 weekly sessions of CBT, including sleep education, sleep hygiene, stimulus control therapy, sleep restriction, a 10-minute relaxation exercise, and cognitive therapy, plus a patient workbook. Of patients attending 3 or more sessions 86% saw significant improvement in sleep. The cost of the brief CBT, about $460 in this study, has the potential to yield substantial savings in the long term and reduce healthcare utilization costs. (McCrae, 2014) Curing insomnia in people with depression could double their chance of a full recovery, according to studies from the National Institute of Mental Health. Over 87% of patients who resolved their insomnia in four biweekly CBT sessions also saw their depression symptoms dissolve after eight weeks of treatment, either with an antidepressant drug or a placebo, almost twice the rate of those who could not correct their insomnia. According to the author, we need to start augmenting standard depression treatment with therapy focused on insomnia. (Carey, 2013) CBT may help relieve insomnia and pain among patients with knee osteoarthritis. This RCT included eight sessions of CBT or behavioral desensitization placebo and evaluated sleep duration and quality. The trial is the largest to evaluate the efficacy of CBT as a sole intervention for insomnia in chronic pain and the only study to include PSG measures of outcome. (Smith, 2015) See also Mind/body interventions (for stress relief). *Other:* According to a small study, sleep deprivation can improve depression symptom and executive function in depression patients. (Lu, 2014) *Recent research:* According to the AHRQ Comparative Effectiveness Review, Cognitive behavioral therapy for insomnia (CBT-I) and brief behavioral therapy (BBT-I) are safe and effective for insomnia. Nonbenzodiazepines are effective without

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	serious adverse effects in the short term only. Broad applicability, comparative effectiveness and long-term efficacy and harms of drug treatments are less well understood. All nonbenzodiazepine hypnotics improved some sleep outcomes (low to moderate strength evidence), but mean effect sizes were larger with eszopiclone, zolpidem, and zolpidem 'as needed.' Melatonin PR decreased sleep onset latency, but evidence was insufficient for other sleep outcomes and adverse effects. Ramelteon was similar to placebo for sleep outcomes. Evidence on benzodiazepines was insufficient to support them for all outcomes and populations. Evidence for antidepressants was also limited and insufficient for most outcomes. Doxepin improved global outcomes in older adults without significant adverse effects, but this improvement was not clinically significant. (AHRQ, 2014) **ODG Psychotherapy Guidelines:** - Up to 13-20 visits over 7-20 weeks (individual sessions), if progress is being made. (The provider should evaluate symptom improvement during the process, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate.)
Kava extract (for anxiety)	Not recommended. There are concerns about hepatotoxicity; furthermore, lack of regulation may result in inconsistent dosing. A systematic review of seven clinical trials testing the use of kava extract to treat anxiety found that all of the trial results suggest that kava extract is superior compared with placebo as a treatment option for anxiety. (Pittler-Cochrane, 2002) (Jorm, 2005) However, the effect size ws small. One study regarding dosage concluded that concluded that the applied 150 mg WS 1490 per day is an effective and safe treatment of non-psychotic anxiety syndromes in the described population. This was applied during a four-week treatment period. WS 1490 was well tolerated and showed a safety profile with no drug-related adverse events or post-study withdrawal symptoms. (Geier, 2004) Piper methysticum (Kava) has been withdrawn in European, British, and Canadian markets due to concerns over hepatotoxic reactions, and the WHO recently recommended research into "aqueous" extracts of Kava. This RCT concluded that the aqueous Kava preparation produced significant anxiolytic and antidepressant activity and raised no safety concerns. In addition, Kava appears equally effective in cases where anxiety is accompanied by depression. (Sarris, 2009)
Ketamine	Not recommended for depression and for PTSD. Ketamine is a rapid, effective treatment for patients with treatment-resistant depression, limited new research suggests, but it is not yet ready for clinical practice. A single intravenous dose of ketamine, a glutamate N-methyl-D-aspartate (NMDA) receptor antagonist, improved depression in 64% of patients within 24 hours of administration vs 28% of patients who received the anesthetic midazolam. More research is needed to identify strategies to prolong and maintain ketamine's initial antidepressant response and to determine the drug's long-term safety profile. (Murrough, 2013) According to a RCT, the anesthetic agent ketamine may provide rapid symptom reduction in patients with chronic posttraumatic stress disorder (PTSD) when delivered intravenously. Ketamine has made headlines in recent years because several trials have shown that it delivers a rapid antidepressant effect when delivered intravenously and, most recently, intranasally in spray form. Study results showed that ketamine infusions were associated with a significant and rapid reduction in PTSD symptom severity compared with midazolam 24 hours after infusion (mean difference in IES-R score, 12.7). These results provide the first evidence that a single dose of IV ketamine was associated with rapid reduction of core PTSD symptoms and reduction in comorbid depressive symptoms, but the results need to be replicated in other trials. (Feder, 2014) Hydroxynorketamine (HNK), a by-product of the psychoactive drug ketamine,

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	may treat symptoms of depression just well as ketamine without the unwanted side effects. The clinical use of ketamine is limited because the drug is administered intravenously and may produce adverse effects, such as hallucinations and sedation to the point of anesthesia. (Paul, 2014) *Recent systematic reviews:* The AHRQ systematic review concluded that the drug could have an important impact across many health system parameters, including lowering costs incurred from ineffective treatment, reducing suicide risk because of its rapid action, and changing care setting from outpatient oral therapy prescribed in a physician's office to outpatient infusion therapy administered by a different type of provider in an infusion clinic. However, experts also suggested that barriers to diffusion may exist, stemming from potential relapse. Experts also noted the requirement for additional patient monitoring, given that ketamine and scopolamine introduce unique adverse effect profiles compared with existing antidepressant medications. (ECRI, 2013) This meta-analysis confirms ketamine's efficacy in depressive disorders, but middle- and long-term efficacy and safety have yet to be explored. Extrapolation should be cautious: Patients included in existing studies had no history of psychotic episodes and no history of alcohol or substance use disorders, which is not representative of all the depressed patients who may benefit from this therapy. (Fond, 2014) While preliminary studies demonstrate promising short-term outcomes in patients suffering from treatment-resistant depression, there is insufficient long-term data to support its integration into the clinical treatment armamentarium at this time. Not only do investigators need to decipher the neurobiological mechanisms underlying the putative antidepressant actions of ketamine, more studies demonstrating its safety and efficacy are necessary on critical issues such as dose optimization, delivery drug routes and methods to prevent relapse following the resolution of depressive symptoms. There are several known potential risks associated with repeat ketamine administration that include physiological and psychological effects, substance abuse potential, urinary cystitis and hepatotoxicity. Ketamine is FDA approved as an anesthetic, but it is not approved for use on depression, and it is currently considered an experimental treatment. The cost of each infusion is about $750, and a course of treatment typically costs $4,000 and can range up to $15,000, and it may need to be repeated as the effects wear off. Absent large-scale clinical trials, ketamine for depression will remain a form of drug development based on testimonial and anecdote. (Papadimitropoulou, 2015)
Light therapy	Recommended. Meta-analyses revealed that a significant reduction in depression symptom severity was associated with bright light treatment and dawn simulation in seasonal affective disorder and with bright light treatment in nonseasonal depression. Results are mixed as to whether or not bright light as an adjunct to antidepressant pharmacotherapy for nonseasonal depression is effective. (Golden, 2005) (Benedetti, 2003) (Martiny, 2005) Most studies conclude that for patients suffering from non-seasonal depression, bright light therapy offers modest though promising antidepressive efficacy, especially when administered during the first week of treatment, in the morning, and as an adjunctive treatment to sleep deprivation responders. Hypomania as a potential adverse effect needs to be considered. (Tuunainen-Cochrane, 2004) (Lam, 2006) (Terman, 2006)
Low-field magnetic stimulation	Not recommended, as there is only one published study, and more evidence is needed. In this small study, stimulation with this low-strength electromagnetic field device immediately improves mood in patients with MDD and BPD, according to a RCT. The ability of the rapidly oscillating electromagnetic field, called low-field

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(LFMS)	magnetic stimulation (LFMS), to improve mood was discovered about a decade ago. The LFMS device is similar in size and shape to a mailbox. Patients lie on a bed with a padded headrest. The top of their head fits into the device, leaving the rest of their head, including their eyes, exposed. Compared with transcranial magnetic stimulation (TMS), which uses electromagnetic pulses to stimulate nerve cells, and electroconvulsive therapy (ECT), which induces small self-repairing seizures, LFMS uses fields that are at least 100 times weaker. Patients were randomly assigned to receive 20 minutes of active or sham treatment. (Rohan, 2014) see also Transcranial magnetic stimulation (TMS).
Lunesta (Eszopicolone)	See Eszopicolone (Lunesta).
Lustral	See Sertraline (trade names Zoloft and Lustral) for the treatment of Posttraumatic Stress Disorder
Magneto-encephalography (MEG) for PTSD	Not recommended as the evidence is limited. Magnetoencephalography (MEG) may have the potential to objectively diagnose post-traumatic stress disorder (PTSD), while conventional brains scans, including computed tomography and magnetic resonance imaging, have failed to do this. However, it is premature to recommend MEG as a definitive diagnostic test for PTSD. A total of 74 veterans with PTSD and a control group of 250 healthy controls recruited from the general public participated in the study, which was able to differentiate PTSD patients from healthy control subjects with more than 90% accuracy. Limitations include that the control group was recruited from the general public, not from the same population as the patients, and many factors could differentiate the two groups, including general education, socioeconomic status, depressive symptoms, somatization, and especially drug abuse or history of medication. Many of these were older patients, who might be expected to have hypertension, cardiovascular problems, diabetes, or other conditions. Even just drinking coffee vs not drinking coffee can affect MEG, so it would be important to account for medications. (Georgopoulos, 2010)
Major depressive disorder (MDD)	See Major depressive disorder, definition; Major depressive disorder, diagnosis; & Major depressive disorder, initial treatment.
Major depressive disorder, definition	Definition (not a procedure): The American Psychiatric Association's diagnostic manual (American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision. Washington, D.C., American Psychiatric Association, 2000) defines Major Depressive Disorder as a mental illness that is characterized by one or more Major Depressive Episodes without a history of Manic, Mixed, or Hypomanic Episodes (some details that will help to provide an understanding of what this definition means are provided below). (American Psychiatric Association, 2000) This mental illness is typically manifested in phases – the person is mentally ill for a period of time, and is then typically free from the symptoms of the mental illness for a period of time, but will probably develop additional episodes of symptoms in the future. The "major depressive episodes" to which the above definition refers are the phases when the symptoms are present. These episodes are defined as: (1) a period of at least 2 weeks during which there is either depressed mood or the loss of interest or pleasure in nearly all activities; (2) the individual also experiences at least four additional symptoms drawn from a list that includes changes in appetite or weight, sleep disturbance, psychomotor agitation or psychomotor retardation, decreased energy, feelings of worthlessness or guilt, difficulty thinking/concentrating/making decisions, recurrent thoughts of death or suicidal ideation/plans/attempts; & (3) the symptoms must persist for most of the day, nearly every day, for at least 2 consecutive weeks. The portion of the definition

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	which reads "without a history of Manic, Mixed, or Hypomanic Episodes" serves to separate Major Depressive Disorder from the Bipolar and Cyclothymic Disorders.
Major depressive disorder, diagnosis	Recommend using the protocol provided in the American Psychiatric Association's diagnostic manual as the essential core of the diagnostic evaluation. (American Psychiatric Association, 2000) The diagnostician should compare the claimant's presentation to all of the information in that protocol, including diagnostic features, associated features and disorders, course, and differential diagnosis. The following examples of issues from that protocol are not intended to serve as a substitute for the full protocol. These examples are only being provided in order to give readers some idea of what the protocol involves, and to at least partially convey the complex nature of the protocol. For example, the protocol specifies that MDD is characterized by a history of one or more Major Depressive Episodes, which are phases when the symptoms are present. These episodes are defined as: a period of at least 2 weeks during which there is a depressed mood and/or the loss of interest or pleasure in nearly all activities; the individual also experiences at least four additional symptoms drawn from a list that includes changes in appetite or weight, sleep disturbance, psychomotor agitation (e.g., observable restlessness) or psychomotor retardation (e.g., observably moving more slowly than usual), decreased energy, feelings of worthlessness or guilt, difficulty thinking/ concentrating/ making decisions, recurrent thoughts of death or suicidal ideation/plans/attempts; and the symptoms persist for most of the day, nearly every day, for at least 2 consecutive weeks. The person with this disorder has not experienced any Manic, Mixed, or Hypomanic Episodes, (which would push the diagnosis toward the Bipolar and Cyclothymic disorders, instead of MDD). This mental illness is typically manifested in phases – the person is mentally ill for a period of time, and is then typically free from the symptoms of the mental illness for a period of time, but will probably develop additional episodes of symptoms in the future. Some psychological tests (e.g., Minnesota Multiphasic Personality Inventory, Battery for Health Improvement, Millon Clinical Multiaxial Inventory, Structured Interview of Reported Symptoms) can be used as an important adjunct to the diagnostic process, specifically for the purpose of introducing an objective element to a process that is otherwise completely subjective. (Bruns, 2001) (Butcher, 2004) (Millon, 2001) (Rogers, 1992) In order to enhance the credibility of diagnostic findings, the claimant's history can be thoroughly reviewed. Such a review can ideally involve an examination of records from the claimant's entire life, and collateral reports.(Barsky, 2002) (Lees-Haley, 1996) (Carragee, 2007)(Barth, 2005) Mexican immigrants have a significantly higher risk for depression or anxiety disorder compared to nonmigrant family members of migrants in Mexico (odds ratio, 1.42), and this was especially high in the most recent birth cohort (18-25), where the odds ratio was 3.89. (Breslau, 2011)
Major depressive disorder, initial treatment (MDD)	See MDD treatment, mild presentations; MDD treatment, moderate presentations; MDD treatment, severe presentations; & MDD treatment, psychotic presentations.
Massage therapy (MT)	Recommended. Reductions of depression and trait anxiety were massage therapy's (MT) largest effects, with a course of treatment providing benefits similar in magnitude to those of psychotherapy. Single applications of massage therapy reduced state anxiety, blood pressure, and heart rate but not negative mood, immediate assessment of pain, and cortisol level. Multiple applications reduced delayed assessment of pain. (Moyer, 2004)
MBHI™ (Millon Behavioral	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. The updated version of the test, the MBMD, should be administered instead. *Strengths:* Assesses a number of

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Health Inventory)	factors relevant to medical patients. *Weaknesses:* Designed for assessment of general medical patients with illness, rather than injury and pain. Obsolescent test has been replaced by the MBMD. (Bruns, 2001)
MBMD™ (Millon Behavioral Medical Diagnostic)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Useful for assessment of basic personality types and how they cope with illness. Also useful for patients being referred for intensive treatment programs such as chronic pain, functional restoration, or work conditioning, for presurgical risk assessment, for impairment determinations, or when there are strong indications that psychological factors are delaying the recovery process. When used as a part of a comprehensive evaluation, can contribute substantially to the understanding of psychosocial factors affecting medical patients. Understanding risk factors and patient personality type can help to optimize treatment protocols for a particular patient. *Strengths:* Assesses a number of factors relevant to medical patients. *Weaknesses:* Designed for general medical use. Best suited for assessment of patients with illness, rather than injury and pain. (Bruns, 2001)
MCMI-111™ (Millon Clinical Multiaxial Inventory, 3rd edition)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Useful for patients undergoing a more comprehensive psychological assessment. Especially useful for the differential diagnosis of personality disorders. Designed for the assessment of psychiatric patients, not pain patients, which can bias results, and this should be a consideration when using. When used as a part of a part of a comprehensive evaluation, can screen for a broad range of DSM-IV diagnoses. *Strengths:* Strong research and theoretical base, scales are keyed to DSM-IV diagnostic criteria. Strength is the differential diagnosis of personality isorders. *Weaknesses:* Designed for and normed on psychiatric patients, not pain patients. May overpathologize patients, unusually high item overlap, resulting in highly interrelated scales. (Bruns, 2001)
MDD treatment, mild presentations	Recommend options as indicated below. A "mild" manifestation is defined as involving five to six of the diagnostic criteria for a major depressive episode, and a similarly mild presentation of impairment. (American Psychiatric Association, 2000) Treatment options: *A. Psychotherapy:* Cognitive behavioral psychotherapy (CBT) has received a clear recommendation for such mild presentations, from the American Psychiatric Association's Practice Guidelines. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of psychotherapy, and those considerations are summarized in the Procedure Summary, Psychotherapy for MDD (Major Depressive Disorder) - *Patient selection*. (American Psychiatric Association, 2006) *B. Medication:* Current practice standards defer to patient preference for much of the treatment planning. (American Psychiatric Association, 2006) One example is a recommendation that antidepressant medication is an option for such mild presentations, ***IF*** the patient prefers medication over psychotherapy. The American Psychiatric Association has published additional considerations in regard to various types of anti-depressant medications, and those considerations are summarized in the Procedure Summary, Antidepressants for treatment of MDD (major depressive disorder). (American Psychiatric Association, 2006) A randomized controlled trial has indicated that the patient's smoking status is a credible factor that can be considered in the treatment plan. Specifically, anti-depressant medication (fluoxetine/Prozac) has been found to compromise the success of smoking cessation efforts. (Spring, 2007) Subsequently, if the patient is attempting to quit smoking, that effort causes

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	anti-depressant medication to be a less attractive treatment option than standards typically indicate. *C. Combined use of both psychotherapy and medication:* Another example of the tendency for professional standards to defer to patient preference is a recommendation for a combined use of psychotherapy and antidepressant medication for mild presentations of MDD, ***IF*** the patient prefers such an approach. (American Psychiatric Association, 2006) The standards also call for this combined approach ***IF*** the presentation of MDD involves significant social issues/interpersonal problems. (American Psychiatric Association, 2006) The considerations that were referenced above in regard to psychotherapy and medication options can also be applied to considerations of using both together.
MDD treatment, moderate presentations	Recommend options as indicated below. Professional standards call for treatment planning to be based on the severity of the presentation of MDD (American Psychiatric Association, 2006), but the standards do not provide adequate definitions of what is involved in a moderate or severe presentation. (American Psychiatric Association, 2000) Subsequently, this discussion will not have the ability to eliminate the confusion that will be caused by attempts to follow professional standards, because confusion is actually inherent to those standards. A "moderate" presentation is defined as falling somewhere between the vague definition of severe presentation (defined as involving most of the diagnostic features for a major depressive episode, and a similarly severe presentation of impairment) and the definition of mild that was discussed above (five to six of the diagnostic features for a major depressive episode, and a similarly mild presentation of impairment). (American Psychiatric Association, 2000) Treatment options: *A. Medication:* The American Psychiatric Association strongly recommends anti-depressant medications for moderate presentations of MDD, unless electroconvulsive therapy (ECT) is being planned. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of anti-depressant medications, and those considerations are summarized in the Procedure Summary, Antidepressants for treatment of MDD (major depressive disorder). (American Psychiatric Association, 2006) *B. Psychotherapy:* The American Psychiatric Association's standards note that Cognitive behavioral psychotherapy (CBT) may be considered as a solo initial treatment for moderate presentations of MDD. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of psychotherapy, and those considerations are summarized in the Procedure Summary, Psychotherapy for MDD (Major Depressive Disorder) - *Patient selection*. (American Psychiatric Association, 2006) Standards call for psychotherapy to be given special consideration ***IF*** the claimant is experiencing any of the following: (1) significant stressors; (2) internal conflict; (3) interpersonal difficulties; (4) a personality disorder. (American Psychiatric Association, 2006) A randomized controlled trial has indicated that the patient's smoking status is a credible factor that can be considered in the treatment plan. Specifically, anti-depressant medication (fluoxetine/Prozac) has been found to compromise the success of smoking cessation efforts. (Spring, 2007) Subsequently, if the patient is attempting to quit smoking, that effort is an indication that psychotherapy in the absence of anti-depressant medication might be a more acceptable plan than standards would normally indicate. *C. Combined use of both psychotherapy and medication:* Practice standards endorse using both treatment options for moderate presentations of MDD which

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	simultaneously involve: (1) social issues/interpersonal problems; (2) a personality disorder; & (3) a history of only partial response to treatment plans which involved only psychotherapy or only medication. (American Psychiatric Association, 2006) The considerations that were referenced above in regard to psychotherapy and medication options can also be applied to considerations of using both together.
MDD treatment, severe presentations	Recommend options as indicated below. Professional standards call for treatment planning to be based on the severity of the presentation of MDD (American Psychiatric Association, 2006), but the standards do not provide an adequate definition of what is involved in a severe presentation. (American Psychiatric Association, 2000) Subsequently, this discussion will not have the ability to eliminate the confusion that will be caused by attempts to follow professional standards. A "severe" manifestation is defined as involving most of the diagnostic features for a major depressive episode, and a similarly severe presentation of impairment. (American Psychiatric Association, 2000) Treatment options: *A. Medication:* The American Psychiatric Association strongly recommends anti-depressant medications for severe presentations of MDD, unless electroconvulsive therapy (ECT) is being planned. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of anti-depressant medications, and those considerations are summarized in the Procedure Summary, Antidepressants for treatment of MDD (major depressive disorder). (American Psychiatric Association, 2006) *B. Psychotherapy in combination with medication:* The American Psychiatric Association's standards note that Cognitive behavioral psychotherapy (CBT) may be considered as part of a combined treatment plan for severe presentations of MDD. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of psychotherapy, and those considerations are summarized in the Procedure Summary, Psychotherapy for MDD (Major Depressive Disorder) - *Patient selection*. (American Psychiatric Association, 2006) Standards call for psychotherapy to be given special consideration ***IF*** the claimant is experiencing any of the following: (1) significant stressors; (2) internal conflict; (3) interpersonal difficulties/social problems; (4) a personality disorder; & (5) a history of limited/partial response to treatment plans which involved only psychotherapy or only medication. (American Psychiatric Association, 2006) *C. Electroconvulsive therapy:* The American Psychiatric Association's standards endorse electroconvulsive therapy (ECT) as a treatment option for severe manifestations of MDD, presentations which specifically involve acute suicidality, cases in which nutritional compromise has occurred subsequent to the claimant refusing food, cases which involve catatonia, or cases which involve psychosis (psychotic presentations are discussed individually below). (American Psychiatric Association, 2006)
MDD treatment, psychotic presentations	Recommend options as indicated below. This diagnostic classification applies to manifestations of MDD that involve active delusions or hallucinations. (American Psychiatric Association, 2000) Treatment options: *A. Combined use of antipsychotic and antidepressant medications:* Professional standards strongly recommend that either this approach, or the following option, should be implemented for psychotic manifestations of MDD. (American Psychiatric Association, 2006) The American Psychiatric Association has published additional considerations in regard to various types of anti-depressant medication, and those considerations are summarized in the Procedure Summary, Antidepressants for treatment of MDD (major depressive disorder). (American Psychiatric Association,

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	2006) *B. Combined use of antipsychotic medication and electroconvulsive therapy (ECT):* Professional standards strongly recommend that either this approach, or the preceding option, should be implemented for psychotic manifestations of MDD. (American Psychiatric Association, 2006) This option may be preferable to the preceding option for circumstances that involve catatonia, acute suicidality, or nutritional compromise subsequent to refusing food. *C. Psychotherapy as an adjunct to the above options:* Professional standards fail to endorse psychotherapy as a stand-alone initial treatment for psychotic manifestations of MDD. (American Psychiatric Association, 2006) Cognitive behavioral psychotherapy can be considered as an adjunct to the options discussed above. The American Psychiatric Association has published additional considerations in regard to various types of psychotherapy, and those considerations are summarized in the Procedure Summary, Psychotherapy for MDD (Major Depressive Disorder) - *Patient selection*. (American Psychiatric Association, 2006) Circumstances which create added support for psychotherapy to be added to such treatment plans include: (1) significant stressors; (2) internal conflict; (3) interpersonal difficulties/social problems; (4) a personality disorder; & (5) a history of only limited/partial response to treatment plans which did not involve psychotherapy.
MDMA (ecstasy)	Not recommended for PTSD until proven in larger studies. Methlylenedioxymethamphetamine (MDMA), also known as ecstasy, combined with psychotherapy provides lasting and clinically meaningful relief of symptoms in patients with treatment-resistant posttraumatic stress disorder (PTSD), according to a small preliminary study which showed that 74% of patients with PTSD who were unresponsive to other treatments sustained symptom resolution for an average of 3.5 years. The effect size of the treatment was much larger than what you see with SSRIs. MDMA is thought to help PTSD by helping a patient access emotionally upsetting memories and change how they react to those memories. (Mithoefer, 2013) This needs to be confirmed in larger studies.
Medications	For detailed information see the MTUS Chronic Pain Medical Treatment Guidelines. In this Mental/Stress Chapter, these listings may also be relevant: Antidepressants (therapy); Antidepressants - SSRI's versus tricyclics (class); Aripiprazole (Abilify); Atypical antipsychotics; Benzodiazepine; Botulin injections; Desvenlafaxine (Pristiq); Duloxetine (Cymbalta); Eszopicolone (Lunesta); Folate (for depressive disorders); Kava extract (for anxiety); Ketamine; MDMA (ecstasy); Nuedexta; Olanzapine (Zyprexa). Opioid antagonists (especially naltrexone) for alcohol dependence; Psychobiotics; PTSD pharmacotherapy; Quetiapine (Seroquel); Risperidone (Risperdal); SAMe (S-adenosylmethionine); St. John's wort (for depression); Trazodone (Desyrel); Vilazodone (Viibryd®); Vitamin B6; Vitamin B12; Vitamin use (for stress reduction); Zolpidem. NSAIDs may help ease depressive symptoms, a meta-analysis suggests. In particular, add-on treatment with celecoxib (Celebrex) improved antidepressant effects, remission, and response. Evidence suggests a link between depression and inflammation. The analyses favored NSAID treatment over placebo for both remission (OR 2.73) and response (OR 2.41). Celecoxib seemed most beneficial compared with placebo, for both remission (OR 7.89) and response (OR 6.59). (Köhler, 2014)
Meditation	See Yoga. See also Mind/body interventions (for stress relief).
Melatonin	Recommended as an option. See also the MTUS Chronic Pain Medical Treatment Guidelines, where melatonin is recommended for delayed sleep phase syndrome and rapid eye movement sleep behavior disorders. Melatonin appears to reduce sleep onset latency to a greater extent in people with delayed sleep phase

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	syndrome than in people with insomnia. Delayed sleep phase syndrome is characterized by late sleep onset and wake up time. It results in late wake up time, resulting in excessive daytime sleepiness, insomnia and daytime functional impairment. This may indicate that this substance "re-sets" the endogenous circadian pacemaker rather than as a direct action of sonmogenic structures of the brain. Individuals with delayed sleep phase syndrome are distinguished from individuals with insomnia by the presence of circadian abnormality. Melatonin is also used for treatment of rapid eye movement sleep behavior disorder. This is characterized with motor activity during sleep, acting out of dreams, and polysomnography showing increased muscle tone. There is no evidence that melatonin is effective in treating secondary sleep disorders accompanying sleep restriction, such as jet lag and shiftwork disorder. The literature reporting treatment of chronic insomnia disorder with melatonin remains inconclusive. See also Insomnia treatment.
Mind/body interventions (for stress relief)	Recommended. Mind/body intervention programs have been shown to reduce perceived stress and anxiety. One clinical trial on college students tested the effect of a mind/body intervention (consisting of 6 90-minute group-training sessions in relaxation response and cognitive behavioral skills) to reduce stress and found that significantly greater reductions in psychological distress, anxiety, and perceived stress were found in the experimental group. (Deckro, 2002) An extensive review of therapies that include meditation as a key component, referred to as mindfulness-based practices, shows convincing evidence that such interventions are effective in the treatment of psychiatric symptoms and pain, when used in combination with more conventional therapies. Studies indicate that mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) have broad-spectrum antidepressant and antianxiety effects and decrease general psychological distress. MBCT is strongly recommended as an adjunctive treatment for unipolar depression. The evidence suggests that both MBSR and MBCT have efficacy as adjunctive interventions for anxiety symptoms. MBSR is beneficial for general psychological health and stress management in those with medical and psychiatric illness as well as in healthy individuals. Finally, MBSR and Zen meditation have a role in pain management. (Marchand, 2012) Mindfulness- based stretching and deep breathing exercises (MBX) may elicit symptom relief in patients with posttraumatic stress disorder (PTSD). PTSD is associated with disruption of the hypothalamic-pituitary-adrenal axis, characterized in part by abnormally low levels of cortisol, and this is one of the distinct neuroendocrine profiles that differentiates PTSD from other mental illnesses. The 8-week MBX intervention consisted of twice-weekly hour-long sessions that included stretching and balancing movements combined with breathing and a focus on mindfulness. The authors describe mindfulness as a quality of consciousness that is associated with control of attention and awareness promoting a direct awareness of bodily movement, sensations, and surroundings, thus often inducing positive psychological and behavioral responses. The researchers found that every unit increase in cortisol was associated with a mean decrease in PCL-C score of 0.75 points, demonstrating that as PTSD symptoms improved cortisol levels normalized. The authors concluded that, considering that early intervention is critical in ameliorating the development of PTSD and that PTSD symptoms are strongly correlated with the degree of distress immediately following trauma, mind-body interventions such as MBX may provide an effective non-pharmacological treatment for individuals with PTSD symptoms. (Kim, 2013) Meditation may provide moderate improvement in psychological stress, including anxiety, depression, and pain, according to an AHRQ systematic review. The two

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	types of meditation in the trials were mantra meditation and mindfulness meditation. While there was low evidence of no effect for mantra meditation programs, mindfulness meditation programs showed moderate evidence of improved anxiety, with an effect size (ES) of 0.38 at 8 weeks, and an ES of 0.22 at 3 to 6 months. In addition, mindfulness meditation improved depression (ES, 0.30) and also pain (ES 0.33). It could be that mindfulness programs teach individuals to reduce the way they react to negative emotions or symptoms, and this may lessen the effect that those negative emotions or symptoms have on them. The format most tested is called mindfulness-based stress reduction, or MBSR, an 8-week course involving 2.5 hours per week of classes, costing between $200 to $500. (Goyal, 2014) An RCT found that a mindful meditation program (MAP) resulted in improved sleep quality as well as less daytime fatigue and depression, compared with a sleep hygiene education (SHE) program. The MAP program is a weekly 2-hour, 6-session, group-based course available in person or online, engaging in a mean of 10 to 30 minutes of mindful experiential practice in each class in addition to group discussion and mindfulness practice homework. The SHE program is a weekly 2-hour, 6-session, group-based course in sleep hygiene and education, including avoidance of noise, bright lights, and the drinking of caffeine before bed. The effect size of 0.89 for improvement in sleep quality was large and of clinical relevance considering that other studies have shown the effect sizes of behavioral interventions on self-reported sleep quality outcomes averaged 0.76. Previous research has shown that in adults with insomnia, the mean effect sizes were 0.87 for pharmacotherapy, such as benzodiazepines, and 0.96 for cognitive-behavioral therapy (CBT). (Black, 2015) Mindfulness group therapy is as effective as individual cognitive-behavioral therapy (CBT) for treating depression, anxiety, and stress, according to this RCT. Patients receiving 8 weeks of a structured group mindfulness program and those receiving CBT had significantly improved scores on the Patient Health Questionnaire–9 (PHQ-9), the Hospital Anxiety and Depression Scale (HADS), and the Montgomery-Åsberg Depression Rating Scale (MADRS). Mean scores for two depression scales (MADRS-S and HADS-D) decreased by 50% in the mindfulness group, so group mindfulness treatment should be considered as an alternative to individual psychotherapy, especially at primary healthcare centers that cannot offer everyone individual therapy. (Sundquist, 2015)
Minnesota multiphasic personality inventory (MMPI)	Recommended to determine the existence of suspected psychological problems that are comorbid with chronic pain, to help to tailor treatment. Not recommended as an initial screening tool for all cases of chronic pain. The MMPI and a revised version, MMPI-2, provide a psychological questionnaire that contains three validity scales and ten clinical scales that assesses the patient's levels of somatic concern, depression, anxiety, paranoid and deviant thinking, antisocial attitudes, and social introversion-extraversion. The instrument, one of the most commonly used assessment tools in chronic pain clinics, can be useful to evaluate which behaviors and expressions related to pain are secondary to psychological stress and which are related to personality traits. It is not recommended as an initial screening tool for general psychological adjustment in relationship to chronic pain. It cannot be used to corroborate the differential between organic and functional-based pain. Several MMPI profiles have been described in relation to pain patients: - *Conversion V profile:* An elevation of scores on the hypochondriasis scale (scale 1, Hs) and hysteria scale (scale 3, Hy), with at least 10 points greater on these scales than on the depression scale (scale 2, D). Evidence of this profile has been interpreted as evidence of a preexisting personality that is a major contributing factor in chronic low back pain, although this is disputed. Elevations of hypochondriasis

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	(scale 1) and hysteria (scale 3) have been found to negatively correlate with return to work. - *"Neurotic triad":* has been coined to describe a cluster of elevated scores of hypochondriasis, depression and hysteria. Evidence has been supportive that these scales are consistently elevated in pain patients, predicting both decreased short- and long-term pain relief. Evidence has also been found to be conflicting as to whether scales 1 and 3 are associated with functional impairment related to pain. - *PAIN*: A clustering of pain scales based on the MMPI that was described by Costello, et al., including the following: P: Nearly all scales are elevated; A: The Conversion V profile; I: The "neurotic triad'; & N: Normal. **Criteria for Use of the MMPI:** (a) To determine the existence of psychological problems that are comorbid with chronic pain; (b) To help to pinpoint precise psychological maladjustment and help to tailor treatment; (c) To garner information that may help to develop rapport and enhance level of motivation; (d) To detect psychological problems not discussed in the clinical interview. One particular area that may be helpful is the use of the Addiction Acknowledgement Scale. (McGrath, 1998) (Ruchinskas, 2000) (Slesinger, 2002) (Chapman, 1994) (Trief, 1983) (Arbisi, 2004) (Vendrig, 2000)
MMPI-2™ (Minnesota Inventory- 2nd edition ™)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Minnesota multiphasic personality inventory (MMPI). See also Psychological evaluations. Useful for patients undergoing a more comprehensive psychological assessment. Designed for assessment of psychiatric patients, not pain patients, but commonly used in chronic pain and presurgical assessment. Especially useful for the assessment of exaggerating or minimizing symptoms. *Strengths:* Extremely strong research basis, with both strengths and weaknesses in pain assessment being well documented. Strength is the assessment of faking or biased responding. *Weaknesses:* Designed for and normed on psychiatric patients, not pain patients. Length can be prohibitive. (Bruns, 2001)
MPI (Multidimensional Pain Inventory)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Moderate length instrument that is especially useful in assessing the spouse/ significant other's reaction to the patient's condition, as well as a broad range of disability perceptions. Can identify patients with high levels of disability perceptions, affective distress, or those prone to pain magnification. *Strengths:* Provides an assessment of subjective pain, assesses individual differences among pain patients, 12 scales designed to measure the impact on a patient's activities of daily living. Well-researched instrument. *Weaknesses:* Unpublished test with no test manual available. Less comprehensive than major measures of chronic pain, no measures of faking. Some scales are extremely short, which negatively impacts reliability. (Bruns, 2001)
MPQ (McGill Pain Questionnaire)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Assesses pain experience, useful as a screen or as one test in a more comprehensive evaluation. Can identify patients prone to pain magnification. *Strengths:* Well-known and researched in the pain community. *Weaknesses:* Unpublished test with no test manual. Good reliability, but psychometric problems include a lack of discriminate validity and high intercorrelations between subscales that reduce their usefulness. (Bruns, 2001)
MPQ-SF (McGill	Recommended as a first-line option psychological test in the assessment of chronic

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Pain Questionnaire - Short Form)	pain patients. See Psychological evaluations. A shorter version of the MPQ, that intercorrelates highly with it, and may make administering the whole test unnecessary. *Strengths:* Shorter version of a well known test. *Weaknesses:* Unpublished test with no test manual. (Bruns, 2001)
Music (for relaxation/stress management)	Recommended. Relaxing music has been found to have a positive effect on stress reduction. (Knight, 2001) (Pelletier, 2004) In addition, the playing of music during painful medical procedures has been found useful in reducing the anxiety of a patient coping with the stress of the procedure. (Fauerbach, 2002) (Jorm, 2005) Music therapy appears to result in greater mood improvement than standard care alone for depression, according to a review of 5 small controlled trials by Cochrane. Music therapy may be best targeted to people who are not in the usual psychotherapy groups: adolescents and older adults. Music therapy given by a trained therapist might be used to engage a teenager who does not want to do cognitive behavior therapy homework or an older adult who may be unfamiliar with talking about feelings but used to singing or listening to songs. The study also found good outcomes with music therapy in schizophrenia. (Maratos, 2008) Music therapy can improve the symptoms of depression when added to standard antidepressant treatment, with 20 biweekly sessions producing a beneficial effect. The people who will probably benefit the most from the addition of music therapy are those with natural capacity for symbolic thinking and creative functioning, since music stimulates the mind and triggers images, metaphors, and emotions that often are preconscious by nature. (Erkkilä, 2011) There are 2 kinds of music therapy: receptive or active. In receptive music therapy, a person listens to music with a therapist, and the music can be used for relaxation and motivation and as a bridge to emotions, cognitive work, personal development, and self-reflection. In active music therapy, the patient and therapist play improvisational music together, but the patient does not need to be a skilled musician.
NeoPulse (TMS)	See Transcranial magnetic stimulation (TMS).
NeuroStar® (TMS)	See Transcranial magnetic stimulation (TMS).
Nitrous oxide (for depression)	Not recommended for treatment-resistant major depression. Preliminary proof-of-concept testing indicates that nitrous oxide, known as laughing gas, appears to have rapid antidepressant effects in patients with treatment-resistant major depression, that were sustained for at least 24 hours and in some patients for 1 week. The mechanism of action of nitrous oxide is as an N-methly-D-aspartate (NMDA) inhibitor, the same mechanism linked to ketamine, but with fewer side effects compared to ketamine. (Nagele, 2014) More research is necessary.
Nuedexta	Not recommended. The FDA has approved this treatment for pseudobulbar affect (PBA) in adults (Nuedexta, Avanir Pharmaceuticals Inc), a combination of dextromethorphan hydrobromide and quinidine sulphate. PBA is seen in a number of neurologic conditions and is characterized by sudden and uncontrollable bouts of laughing or crying that is either unrelated or disproportionate to the emotional state of the patient. This agent has been studied to date in patients with multiple sclerosis (MS) and amyotrophic lateral sclerosis (ALS). PBA occurs when neurological disorders such as MS or stroke damage areas of the brain involved in the control of normal expression of emotion. Although it is not a life-threatening condition, it can have a significant effect on the patient's ability to interact normally in society and their relationships. Nuedexta is not suitable for treating episodes of laughing or crying brought on by mood swings and not due to pseudobulbar affect. (FDA, 2012) There are no quality published studies of the off label use of Nuedexta to treat chronic neuropathic pain. There had been a study initiated to compare the

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	effectiveness of dextromethorphan at reducing hyperalgesia in individuals addicted to opioids, but this study was discontinued. (NCT, 2008)
Office visits	Recommended as determined to be medically necessary. Evaluation and management (E&M) outpatient visits to the offices of medical doctor(s) play a critical role in the proper diagnosis and return to function of an injured worker, and they should be encouraged. The need for a clinical office visit with a health care provider is individualized based upon a review of the patient concerns, signs and symptoms, clinical stability, and reasonable physician judgment. The determination is also based on what medications the patient is taking, since some medicines such as opiates, or medicines such as certain antibiotics, require close monitoring. As patient conditions are extremely varied, a set number of office visits per condition cannot be reasonably established. The determination of necessity for an office visit requires individualized case review and assessment, being ever mindful that the best patient outcomes are achieved with eventual patient independence from the health care system through self care as soon as clinically feasible. Studies have and are being conducted as to the value of "virtual visits" compared with inpatient visits, however the value of patient/doctor interventions has not been questioned.(Dixon, 2008)(Wallace, 2004) Further, ODG does provide guidance for therapeutic office visits not included among the E&M codes, for example Chiropractic manipulation and Physical/Occupational therapy.
Olanzapine (Zyprexa)	Not recommended as a first-line treatment. Zyprexa (olanzapine) is used to treat the symptoms of psychotic conditions such as schizophrenia and bipolar disorder. There is insufficient evidence to recommend atypical antipsychotics for conditions covered in ODG. See Atypical antipsychotics; & PTSD pharmacotherapy. See also Anxiety medications in the MTUS Chronic Pain Medical Treatment Guidelines.
Opioid antagonists (especially naltrexone) for alcohol dependence	Recommended as targeted treatment for alcohol dependence. The majority of double-blind clinical trials in the literature favored prescribing targeted naltrexone for alcohol dependence to reduce heavy drinking. This finding is consistent with naltrexone's mechanism of action of decreasing excessive drinking by reducing the reward associated with drinking alcohol. (Pettinati, 2006) (Hernandez, 2006) Naltrexone at the dose of 50 mg/day is effective for alcohol dependence in short-term treatment. The optimal duration of naltrexone treatment may be longer than 3 months, although it is recommended that more studies be conducted with larger sample sizes. (Srisurapanont-Cochrane, 2002), (Sirusapanont-*Cochrane*, 2005) According to one meta-analysis, both acamprosate and naltrexone are effective as adjuvant therapies for alcohol dependence in adults. Acamprosate appears to be especially useful in a therapeutic approach targeted at achieving abstinence, whereas naltrexone seems more indicated in programs geared to controlled consumption. Both drugs are safe and acceptably tolerated but issues of compliance need to be addressed adequately to assure their usefulness in clinical practice. (Bouza, 2004)
Optimism (and its effect on schema-focused therapy)	Recommended. The role of optimism has been shown to have positive effects on the process of schema-focused cognitive therapy for personality problems. 35 patients with panic disorder and/or agoraphobia were studied for 11 weeks. Results of the study showed that initial therapist optimism resulted in subsequent patient optimism and improvement, decreased patient distress, increased empathy, insight, and optimism on behalf of the therapist. (Hoffart, 2002)
Oswestry Disability Questionnaire	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. The ODI may be recommended as a disease-specific disability measure to establish a level of disability in low back pain patients.. See Psychological evaluations. Can measure patients' self-perceptions of disability.

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(ODI)	*Strengths:* Considerable research base, commonly used as an outcome measure, well known. *Weaknesses:* Unpublished test with no test manual, and no norms. Limited to use with low back pain patients. Does not assess any psychological variables. (Bruns, 2001)
P-3™ (Pain Patient Profile)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Brief measure useful when assessing risk factors associated with disability, or as one test in a more comprehensive evaluation. Developed as a screen to measure psychological factors related to chronic pain conditions. Can identify patients needing treatment for depression and anxiety, as well as identify patients prone to somatization. *Weaknesses:* Not comprehensive, somewhat lengthy administration time for a screen. (Bruns, 2001)
PAB (Pain Assessment Battery)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Useful for the assessment of pain coping strategies and stress symptoms. When used as a part of a comprehensive evaluation, can contribute substantially to the understanding of patient stress, pain reports and pain coping strategies, and help to design interventions. *Strengths:* Strengths include assessment of nonorganic pain complaints, qualitative pain analysis, and pain coping strategies. *Weaknesses:* No information provided about the nature of the patient norm group, no community norms, complicated test to interpret with many overlapping subscales and indices. (Bruns, 2001)
PAI™ (Personality Assessment Inventory)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Useful for patients undergoing a more comprehensive psychological assessment. Designed for assessment of psychiatric patients, not pain patients, which can bias results, and this should be a consideration when using. When used as a part of a part of a comprehensive evaluation, can contribute substantially to the identification of a wide variety of risk factors that could potentially affect the medical patient. *Strengths:* Brief 5-minute screen can be administered first to see if the remainder of the test should be administered. *Weaknesses:* Designed for psychiatric patients, not pain or rehab patients. Does not assess factors specific to pain treatment. (Bruns, 2001)
Paroxetine (Paxil®)	Recommended as a first-line treatment option for major depressive disorder and PTSD. See Antidepressants for treatment of MDD (major depressive disorder); Selective serotonin reuptake inhibitors (SSRIs); PTSD pharmacotherapy.
Patient education	See Education.
PDS™ (Post Traumatic Stress Diagnostic Scale)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Helps confirm PTSD diagnosis. *Strengths:* Highly specific test designed for a single disorder, closely tied to DSM-IV criteria. *Weaknesses:* Test is not well researched, useful only for this single diagnosis. (Bruns, 2001)
Peer support (for postpartum depression)	Recommended in women at high risk for either family dysfunction or postpartum depression. Peer support and/or home visitation was found to be very effective in decreasing depressive symptomatology among mothers identified as high-risk for postpartum depression (PPD). (Shaw, 2006) (Dennis, 2003)
Pharmaceuticals	See Medications.
PHQ (Patient Health Questionnaire)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Able to screen primary care patients for commonly seen mental disorders. *Strengths:* Has diagnostic validity comparable to the PRIME-MD, although limited to 8 diagnoses. *Weaknesses:* Approach uses a decision tree method of administration. While this shortens

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	administration, it also precludes many common psychometric methods, such as the development of norms. No norms for pain patients, no assessment of pain, and no validity measures. (Bruns, 2001) The use of brief depression symptom measures in the 9-item Patient Health Questionnaire (PHQ-9) may lead to overdiagnosis of the disorder and to the overprescribing of antidepressants. Use of brief depression symptom measures for identifying or screening cases may help to address depression undertreatment, but whether it also leads to diagnosis and treatment of patients with few or no symptoms, a group unlikely to have major depression or benefit from antidepressants, is unknown. In contrast with the US Preventive Services Task Force, the Canadian Task Force on Preventive Health Care has recommended not using brief depression symptom measures because of concerns about overtreatment with antidepressants. (Jerant, 2014)
Physical medicine treatment	Recommended. A review of multiple controlled studies has demonstrated that physical exercise reduces depression. The most effective forms of exercise that produce the strongest reduction are resistance training and aerobic exercise. Resistance training also reduces symptoms of generalized anxiety disorder. See Exercise. **ODG Physical Therapy Guidelines –** Allow for fading of treatment frequency, plus active self-directed home PT.. **Any mental condition**: 6 visits over 6 weeks
Physical therapy (PT)	See Physical medicine treatment.
Piper methysticum	See Kava extract (for anxiety).
Polysomnography (PSG)	Recommended after at least six months of an insomnia complaint (at least four nights a week), unresponsive to behavior intervention and sedative/sleep-promoting medications, and after psychiatric etiology has been excluded. Not recommended for the routine evaluation of transient insomnia, chronic insomnia, or insomnia associated with psychiatric disorders. Home portable monitor testing may be an option. A polysomnogram measures bodily functions during sleep, including brain waves, heart rate, nasal and oral breathing, sleep position, and levels of oxygen saturation. It is administered by a sleep specialist, a physician who is Board eligible or certified by the American Board of Sleep Medicine, or a pulmonologist or neurologist whose practice comprises at least 25% of sleep medicine. See the MTUS Chronic Medical Treatment Guidelines for more information and references. In its Choosing Wisely list, the American Academy of Sleep Medicine (AASM) advises against polysomnography (PSG) in patients with chronic insomnia unless symptoms suggest a comorbid sleep disorder. Although PSG may confirm self-reported symptoms of chronic insomnia, it does not provide additional information necessary for diagnosis of chronic insomnia. However, PSG is indicated in some specific circumstances, for example when sleep apnea or sleep-related movement disorders are suspected, the initial diagnosis is uncertain, behavioral or pharmacologic treatment fails, or sudden arousals occur with violent or injurious behavior. In addition, do not use polysomnography to diagnose restless legs syndrome. (AASM, 2015) **Criteria for Polysomnography:** Polysomnograms / sleep studies are recommended for the combination of indications listed below: (1) Excessive daytime somnolence;

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	(2) Cataplexy (muscular weakness usually brought on by excitement or emotion, virtually unique to narcolepsy); (3) Morning headache (other causes have been ruled out); (4) Intellectual deterioration (sudden, without suspicion of organic dementia); (5) Personality change (not secondary to medication, cerebral mass or known psychiatric problems); (6) Sleep-related breathing disorder or periodic limb movement disorder is suspected; (7) Insomnia complaint for at least six months (at least four nights of the week), unresponsive to behavior intervention and sedative/sleep-promoting medications and psychiatric etiology has been excluded. A sleep study for the sole complaint of snoring, without one of the above mentioned symptoms, is not recommended; (8) Unattended (unsupervised) home sleep studies for adult patients are appropriate with a home sleep study device with a minimum of 4 recording channels (including oxygen saturation, respiratory movement, airflow, and EKG or heart rate).
Post-traumatic stress disorder	See Cognitive therapy for PTSD; Dialectical behavior therapy (DBT); Exposure Therapy (ET); Eye movement desensitization & reprocessing (EMDR); Hypnosis; Imagery rehearsal therapy (IRT); Magnetoencephalography (MEG) for PTSD; Post-traumatic stress disorder (PTSD), definition; Psychodynamic psychotherapy; Psychological debriefing (for preventing post-traumatic stress disorder); Psychosocial adjunctive methods (for PTSD); PTSD pharmacotherapy; PTSD psychotherapy interventions; Spiritual support; Stress inoculation training (SIT); Transcranial magnetic stimulation (TMS); Virtual reality (VR).
Post-traumatic stress disorder (PTSD), definition	Definition (not a procedure): According to the fourth edition of the American Psychiatric Association's diagnostic manual (American Psychiatric Association, 2000), the diagnosis of PTSD involves at least eight elements, which are outlined in the blue criteria below. According to the APA, posttraumatic stress disorder (PTSD) may develop 30 days or more after a person experiences a life-threatening event that engenders extreme feelings of helplessness, fear, or horror. Numerous studies of victims of large-scale disasters have shown that people exposed to the exact same stressor have widely varying responses. Both the meaning of a stressful event and the individual's resilience to stress depend upon a person's prior history with similar stressors, as well as other inherited dispositional factors such as temperament and personality. More detailed diagnostic criteria can be found here. (American Psychiatric Association, 1994) Updated DSM 5 criteria are here. (American Psychiatric Association, 2013) Note: This was characterized in DSM-IV by three symptom clusters which persist for more than one month, and cause clinically significant distress: re-experiencing the event; emotional numbing/avoidance of stimuli associated with trauma; and hyperarousal. DSM-5 adds another cluster, negative alterations in cognitions and mood associated with the traumatic event.Magnetoencephalography (MEG) may have the potential to objectively diagnose post-traumatic stress disorder (PTSD); however, it is premature to recommend MEG as a definitive diagnostic test for PTSD at this time. (Georgopoulos, 2010) The New York PTSD Risk Score is a simple, 10-item screening tool that includes core PTSD symptoms plus depression symptoms, access to care status, sleep disturbance, and trauma history. Men and women require different screening tests to accurately predict PTSD. (Boscarino, 2011) Research has called into question the accuracy of new diagnostic criteria for posttraumatic stress disorder (PTSD), as outlined in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). The definition of PTSD underwent substantial changes in the DSM-5. The DSM-5 PTSD symptom criteria

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	did not appear to have greater clinical utility compared with DSM-IV-TR. More than 30% of soldiers who met criteria for PTSD under DSM-IV-TR did not meet DSM-5 criteria, and an equal number met criteria only under DSM-5. (Hoge, 2014). See Magnetoencephalography (MEG) for PTSD **Definition of Posttraumatic Stress Disorder (PTSD):** (1) The person witnessed death, a threat of death, or physical danger. (2) The person responded to that experience with intense fear, helplessness, or horror. (3) The person has symptoms which involve "re-experiencing" item #1 (example: repeating memories of item #1, with those memories being perceived as intrusive, and with those memories causing distress). (4) The person demonstrates avoidance of things that remind them of item #1. (5) The person experiences a "numbing of general responsiveness" (example: the person is unable to have loving feelings). (6) The person experiences symptoms of "increased arousal" (example: difficulty falling or staying asleep). (7) The involved distress or impairment is "clinically significant". (8) The symptoms last for more than a month after item #1. (Nemeroff, 2006)
PPI (Pain Presentation Inventory)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Intended for the assessment of chronic pain patients, attempts to assess the degree to which functional factors are contributing to pain reports and pain behaviors. Can be used to identify non-physiological variables associated with pain reports and behaviors, promoting a deeper understanding of factors contributing to chronic pain. No internal reliability, test/retest reliability or interjudge reliability information available. (Bruns, 2001)
PRIME-MD (Primary Care Evaluation for Mental Disorders)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Able to screen primary care patients for commonly seen mental disorders. Structured interview has good interjudge reliability. Mood, alcohol and eating disorder modules have good criterion validity. Very demanding of physician time. Approach is more of a clinical decision tree method as opposed to a psychometric assessment. (Bruns, 2001)
Pristiq® (desvenlafaxine)	See Desvenlafaxine (Pristiq).
Promethazine (Phenergan)	See Insomnia treatment, where sedating antihistamines are not recommended for long-term insomnia treatment.
Psychobiotics	Not recommended for mental health conditions until there is higher quality evidence. Psychobiotics are live organisms (probiotics) that when ingested may produce health benefits in patients suffering from mental illness. The term psychobiotic was created as recent studies have begun to explore a possible link between probiotics and behavior. Several preclinical studies showed a link between specific probiotics and beneficial behavioral effects. Preclinical studies suggest that depression is associated with an alteration in the microbiota. Psychobiotics are good bacteria that have the potential to increase microbial diversity and treat the symptoms of depression. Human studies are still largely lacking, but one study showed that healthy volunteers who received Lactobacillus helveticus R0052 plus B longum for 30 days reported significantly lower stress levels than those who received placebo, as well as significantly reduced urinary free cortisol levels. (Dinan, 2013)
Psychodynamic psychotherapy	Recommended as an option for the treatment of PTSD, although there are briefer and more effective psychotherapies (e.g., Trauma-focused CBT). (Brom, 1989) Psychodynamic psychotherapy is especially recommended for patients with complex

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	PTSD (e.g., sexual abuse, childhood incest). (Courtois, 1999) (Roth, 1997) (Shengold, 1989) In 1895, Joseph Breuer and Sigmund Freud based their *Studies on Hysteria* on the proposition that traumatic life events can cause mental disorder. This principle, radical for its time, grew in scope and application over the next century and strongly influenced military psychiatry in World War I and World War II. Psychodynamic principles were later applied to the psychological problems of Holocaust survivors, Vietnam veterans, rape survivors, adult survivors of childhood sexual trauma, and survivors of other traumatic events. Psychodynamic ideas have also helped providers manage the sometimes-complex issues that may surface in the relationship between survivor and psychotherapist. Because of its focus on basic problems in interpersonal relationships, psychodynamic psychotherapy may be useful in working with patients with complex PTSD. Clinical case studies suggest that psychodynamic psychotherapy may be of particular value in work with adult survivors of childhood sexual abuse. Psychodynamic psychotherapy may also be useful in treating patients suffering complex PTSD stemming from other stressors but there is, as yet, little research evidence to support this recommendation. (VA/DoD, 2004) **Psychodynamic psychotherapy criteria:** The following statements summarize the basic elements of psychodynamic psychotherapy: (1) Based on the assumption that addressing unconscious mental contents and conflicts (including those that may have been blocked from consciousness as part of a maladaptive response) can help survivors better cope with the effects of psychological trauma; (2) Explores psychological meanings of post-traumatic responses by sifting and sorting through fears, fantasies, and defenses stirred up by the traumatic event; (3) Spans a continuum ranging from supportive to expressive but usually includes a mixture of both; (4) Transference and countertransference are recognized and managed by the therapist but may or may not be brought to the patient's attention; (5) Approached within the context of a therapeutic relationship that emphasizes safety and honesty and which is, in itself, a crucial factor in the patient's response. Course of Treatment for psychodynamic therapy: (a) Most commonly involves one to two meetings per week and can be relatively short term (10 to 20 sessions) and focal or long term (lasting years) and open ended; (b) Sessions usually last 45 to 50 minutes and, although they average once a week, may be held more or less frequently depending on the patient's needs and tolerance; (c) Can be conducted individually, in groups, or in family settings on an inpatient or outpatient basis.
Psychological debriefing (for preventing post-traumatic stress disorder)	Not recommended. A systematic review to assess the effectiveness of brief psychological debriefing for the management of psychological distress after trauma, and the prevention of post traumatic stress disorder determined that there was no evidence that debriefing reduced general psychological morbidity, depression or anxiety, nor did it reduce psychological distress nor prevent the onset of post traumatic stress disorder (PTSD). (Sijbrandij, 2006) (Rose-Cocrane, 2002) In recent years, providing psychological debriefings to subjects following exposure to a traumatic event has been touted as an effective means of reducing subsequent development of PTSD. It has been widely used with victims of natural and man-made disaster as well as public safety personnel, crime and accident victims. The approach grew out of practices and experiences involving the military of the United States and other western nations. For soldiers exhibiting signs of acute stress reactions following combat-related traumatic events, the practice of conducting early debriefings as part of a larger restoration approach, appeared to have significant impact on reducing more permanent disability. The use of debriefings soon after

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	exposure to traumatic events became part of military doctrine in the United States and elsewhere, as well as part of standards for early response to catastrophe for organizations such as the Red Cross. Unfortunately, the technique appears to be of little help, and potentially harmful, as prophylaxis for PTSD. We recommend against Psychological Debriefing as a viable means of reducing acute post-traumatic distress (ASR or ASD) or progression to post-traumatic stress disorder. In a group setting, There is insufficient evidence to recommend for or against conducting structured group debriefing, but compulsory repetition of traumatic experiences in a group may be counterproductive, group debriefing with pre-existing groups (teams, units, EMTs, co-workers, family members) may assist with group cohesion, morale and other important variables that have not been demonstrated empirically, and group participation should be voluntary. (VA/DoD, 2004)
Psychological evaluations	Recommended. Psychological evaluations are generally accepted, well-established diagnostic procedures not only with selected use in pain problems, but also with more widespread use in subacute and chronic pain populations. Diagnostic evaluations should distinguish between conditions that are preexisting, aggravated by the current injury or work related. Psychosocial evaluations should determine if further psychosocial interventions are indicated. See "Psychological Tests Commonly Used in the Assessment of Chronic Pain Patients" from the Colorado Division of Workers' Compensation, which describes and evaluates the following 26 tests: (1) BHI - Battery for Health Improvement, (2) MBHI - Millon Behavioral Health Inventory, (3) MBMD - Millon Behavioral Medical Diagnostic, (4) PAB - Pain Assessment Battery, (5) MCMI-111 - Millon Clinical Multiaxial Inventory, (6) MMPI-2 - Minnesota Inventory, (7) PAI - Personality Assessment Inventory, (8) BBHI 2 - Brief Battery for Health Improvement, (9) MPI - Multidimensional Pain Inventory, (10) P-3 - Pain Patient Profile, (11) Pain Presentation Inventory, (12) PRIME-MD - Primary Care Evaluation for Mental Disorders, (13) PHQ - Patient Health Questionnaire, (14) SF 36, (15) SIP - Sickness Impact Profile, (16) BSI - Brief Symptom Inventory, (17) BSI 18 - Brief Symptom Inventory, (18) SCL-90 - Symptom Checklist, (19) BDI–II - Beck Depression Inventory, (20) CES-D - Center for Epidemiological Studies Depression Scale, (21) PDS - Post Traumatic Stress Diagnostic Scale, (22) Zung Depression Inventory, (23) MPQ - McGill Pain Questionnaire, (24) MPQ-SF - McGill Pain Questionnaire Short Form, (25) Oswestry Disability Questionnaire, (26) Visual Analogue Pain Scale – VAS. (Bruns, 2001) See also Psychological evaluations, SCS (spinal cord stimulators) & the MTUS Chronic Pain Medical Treatment Guidelines.
Psychological evaluations, IDDS & SCS (intrathecal drug delivery systems & spinal cord stimulators)	Recommended pre intrathecal drug delivery systems (IDDS) and spinal cord stimulator (SCS) trial. The existing behavioral literature provides considerable support, including psychological assessments and treatments, for patients undergoing spinal cord stimulators or implanted medication pumps. (Van Dorsten, 2006) The following is a list of patients who are especially recommended for psychological evaluation pre- trial (Doleys): (a) Those who present with constant pain and report high overall levels of distress; (b) Patients' who have a history of failure of conservative therapy; (c) Patients who have a history of failed surgery; (d) Patients who have significant psychological risk factors such as substance abuse, serious mood disorders, or serious personality disorders. Psychological predictors of success and/or failure of implantable treatment are still under research, and there is at least one study that has found psychological testing to be of modest value (although this was based on a cohort of patients that had been pre-screened by their surgeon). (North, 1996) However, the screening should be performed by a neutral independent psychologist or psychiatrist unaffiliated with treating physician/ spine

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	surgeon to avoid bias. Current suggestions for the evaluation include the following three pronged approach (Prager, 2001) (Beltrutti, 2004) (Monsalve, 2000): (1) A clinical interview including the following: (a) Social history including education, psychosocial stress factors, childhood history (including history of abuse), family situation and work history; (b) Comprehensive history including previous treatment (and response), psychological history; (c) History of substance abuse; (c) Attitudes towards pain and treatment, including painful behavior and moods of the patient; (e) Current emotional state; (f) Mental status exam; (g) Determination of motivation for recovery and return to work; (h) Issues related to implantation therapy. The interview should allow for measures of personality structure (both before and after the illness), environmental factors that influence pain, and personal strengths and internal resources. (2) An interview with a significant other (if approved by the patient) to confirm findings, alert for other significant information, and allow for assessment of social support. (3) Psychological testing. This supplements information provided in the clinical interview and, at the minimum, should evaluate personality style and coping ability. At least one test should contain validity scales. The current "gold standard" is the Minnesota Multiphasic Personality Inventory (MMPI, or a second version, the MMPI-2). MMPI scores of concern are findings of elevated neurotic triad scores (scales 1,2, and 3; also defined as hypochondriasis [Hs], depression [D], and hysteria [Hy], or a Conversion V score [elevations of scales 1 and 3 at least 10 points above scale 2]). See Minnesota multiphasic personality inventory (MMPI). Other tests have included the Speilberger State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Hospital Anxiety and Depression Scale (HAD), Millon Clinical Multiaxial Inventory (M-CMI-II), Symptom Checklist-90-R (SCL-90-R), Behavioral Analysis of Pain, Chronic Illness Problem Inventory (CIPI), McGill Pain Questionnaire (MPQ), Coping Strategies questionnaire (CSQ), and Pain Beliefs and Perception Inventory (PBPI). Post-evaluation, three general categories of patients have been identified: - *Group 1*: Patients with no contraindications for implantation - *Group 2*: Patients who have a high likelihood of failure. Falling into this category does not mean that an implantable should not be used, but that contraindications should be treated prior to this intervention. The following are current suggested exclusionary criteria for the use of an implantable pain treatment (Nelson, 1996): (a) Active psychosis; (b) Active suicidal ideation; (c) Active homicidal ideation; (d) Untreated or poorly treated major depression or major mood disturbance. Depression in and of itself in reaction to chronic pain does not disqualify a patient from implantable treatment, although moderately severe to severe depression should be treated prior to trial. Anxiety/panic disorder should also be stabilized; (e) Somatization disorder or other somatoform disorder involving multiple bodily complaints that are unexplained or exceed that could be explained by the physical exam; (f) Alcohol or drug dependence (including drug-seeking behavior and/or uncontrolled escalated use); (g) Lack of appropriate social support; (h) Neurobehavioral cognitive deficits that compromise reasoning, judgment and memory. Other "red flags" include: a) unusual pain ratings (for example, the pain rating never changes from 9-10); b) unstable personality and interpersonal function; c) non-physiological signs reported on physical exam; d) unresolved compensation and litigation issues. - *Group 3*: Patients who may require brief cognitive and/or behavioral intervention

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	prior to the trial. These have also been referred to as "yellow flag" patients. The following are factors that have been found to increase the risk for a poor outcome: (a) Mild to moderate depression or anxiety; (b) Somatization disorder in the presence of medically explained pain; (c) Hypochondriasis if the focus is on something other than pain; (d) Mild to moderate impulsive or affective disorder; (e) Family distress/dysfunctional behavior; (f) Social distress/dysfunctional behavior; (g) Job distress/dysfunctional behavior. There is no good research as to what patients fall into this group. Treatment duration has been suggested according to severity of symptoms, with a general suggestion of approximately 6 sessions. Williams has suggested that this therapeutic intervention should include: a) education; b) skills training (training for a variety of cognitive and behavioral pain coping skills including relaxation training, activity pacing, pleasant activity scheduling, problem solving, and sleep hygiene); and c) an application phase to apply the above learned skills. (Doleys) (Beltrutti, 2004) (Gybels, 1998) (Prager, 2001) (Williams, 2003) (Monsalve, 2000) See also Psychological evaluations (above), plus Spinal cord stimulators (SCS) & Intrathecal drug delivery systems (IDDS)in the MTUS Chronic Pain Medical Treatment Guidelines.
Psychological evaluations, surgery	See Psychological evaluations, IDDS & SCS (intrathecal drug delivery systems & spinal cord stimulators).
Psychological treatment	See Cognitive therapy for depression; Cognitive therapy for panic disorder; Cognitive therapy for PTSD; Cognitive therapy for general stress; Cognitive behavioral stress management (CBSM) to reduce injury and illness; Dialectical behavior therapy; Exposure therapy (ET); Eye movement desensitization & reprocessing (EMDR); Hypnosis; Imagery rehearsal therapy (IRT); Insomnia treatment; Mind/body interventions (for stress relief); Psychodynamic psychotherapy; Psychological debriefing (for preventing post-traumatic stress disorder); Psychological evaluations; Psychological evaluations, IDDS & SCS (intrathecal drug delivery systems & spinal cord stimulators); Psychosocial /pharmacological treatments (for deliberate self harm); Psychosocial adjunctive methods (for PTSD); Psychotherapy for MDD (major depressive disorder); PTSD psychotherapy interventions; Stress management, behavioral/cognitive (interventions); Telephone CBT (cognitive behavioral therapy).
Psychosocial /pharmacological treatments (for deliberate self harm)	Refer to treatment recommendations for Major Depression. Self harm is a symptom that usually results from major depression. One meta-analysis compared randomized controlled trials of psychosocial and/or psychopharmacological treatment versus standard or less intensive types of aftercare for patients who shortly before entering a study engaged in any type of deliberately initiated self-poisoning or self-injury. The analysis concluded that there is a trend towards reduced repetition of deliberate self-harm for problem-solving therapy compared with standard aftercare, and for provision of an emergency contact card in addition to standard care compared with standard aftercare alone. Significantly reduced rates of further self-harm were observed for depot flupenthixol vs. placebo in multiple repeaters and for dialectical behavior therapy vs. standard aftercare. The analysis also concluded that most of the studies had small sample sizes and it is advised that the results of small single trials, which have been associated with statistically significant reductions in repetition, should be interpreted with caution. (Hawton-Cochrane, 2002)
Psychosocial adjunctive	Recommended as an option for PTSD. Psychosocial Adjunctive Methods/Services should provide a therapeutic intervention that facilitates generalizing skills for coping with post-traumatic stress disorder (PTSD) from clinic to home/work/community.

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methods (for PTSD)	Psychosocial rehabilitation techniques should be considered once the client and clinician identify the following kinds of problems associated with the diagnosis of PTSD: (a) persistent high-risk behaviors; (b) lack of self-care/independent living skills; (c) homelessness; (d) interactions with a family that does not understand PTSD; (e) socially inactive; (f) unemployed; & (g) encounters with barriers to various forms of treatment/rehabilitation services. Client and clinician should determine whether such problems are associated with core symptoms of PTSD and, if so, then ensure that rehabilitation techniques are used as a contextual vehicle for alleviating PTSD symptoms. Psychosocial rehabilitation should occur concurrently or shortly after a course of treatment for PTSD, since psychosocial rehabilitation is not trauma-focus. There are six models of psychosocial rehabilitation services that are currently recommended as an adjunct to accompany other forms of treating PTSD. None of these models have undergone randomized, controlled trials for patients with PTSD. However, all these models have been supported by surveys and studies. Positive results with other disorders (e.g., schizophrenia) provide additional support for using these techniques in the treatment of PTSD. If psychosocial rehabilitation services are to be implemented, the client first identifies that a particular problem exists, and then the client and clinician set personal goals and adapt appropriate rehabilitation techniques/services for PTSD. When to initiate these techniques is decided by the client and individually tailored to each stage of recovery. (Wang, 1996) Psychosocial rehabilitation techniques are contraindicated when client and clinician conclude that the problems are resolved. **Models of Psychosocial Rehabilitation Services:** (1) *Self-Care and Independent Living Skills Techniques* • While social rehabilitative therapies (i.e., teaching social, coping, and life function skills) have been proven effective in chronic schizophrenic and other persistently impaired psychiatric cohorts, they have yet to be formally tested with PTSD clients. Since they appear to generalize well from clients with one mental disorder to another, it is reasonable to expect that they will also work with PTSD clients. There is clinical consensus that appropriate outcomes would be improvement in self-care, family function, independent living, social skills, and maintenance of employment. • Given the positive impact of independent skills training techniques for mental disorders in general, PTSD-centered modules should be developed and tested for effectiveness. (Halford, 1995) (2) *Supported Housing* • Forms of housing considered more effective are those in which clinical services are integrated or efforts are made by treating staff to foster community living. (Goldfinger, 1997) (Schutt, 1992) • Existing literature for persons with other forms of mental illness demonstrates that case management linked to specialized clinical services is more effective than "single-room occupancy" or "warehousing" in shelters without other forms of support. (Goldfinger, 1997) (3) *Marital/Family Skills Training* • Marital and family treatments for trauma survivors fall into one of two general categories: systemic approaches designed to treat marital or family disruption, and supportive approaches designed to help family members offer support for an individual being treated for PTSD. These treatments are usually provided as an adjunct to other forms of treatment that are designed to directly address the PTSD symptoms. • A single, low-quality RCT compared the addition of family therapy to individual therapy for war veterans with PTSD. (Glynn, 1999) It found no significant benefit to

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	the addition of behavioral family therapy (BFT), largely due to a high dropout rate, nor did it add significantly to the treatment of PTSD with direct therapeutic exposure (DTE) (an individual psychotherapy technique). • There are no research studies on the effectiveness of marital/family therapy for the treatment of PTSD. However, because of trauma's unique effects on interpersonal relatedness, clinical wisdom indicates that spouses and families be included in treatment of those with PTSD. Of note, marriage counseling is typically contraindicated in cases of domestic violence, until the batterer has been successfully (individually) rehabilitated. (4) *Social Skills Training* • Effectiveness of social skills training has been well demonstrated over many years in many RCTs but not specifically for PTSD. (Dilk, 1996) • Effectiveness of social skills training has been demonstrated for reducing social isolation of persons with severe mental disorders (e.g., schizophrenia); similar techniques may be promising for PTSD, particularly if adapted to address antecedent conditions involved in trauma and its consequences. (Rothbaum, 1996) (5) *Vocational Rehabilitation* • Effectiveness of vocational rehabilitation techniques in treating mental disorders has been demonstrated under controlled experimental conditions (Bell, 1996) (Bell, 1993) (Bond, 1997) and controlled, clinical studies. (Anthony, 1995) (Drake, 1996) (Lehman, 1995) (Lysaker, 1993) (6) *Case Management* Although case management has been shown to be useful for a range of other psychiatric disorders, there is currently no evidence available from RCTs or from systematic reviews to support or reject the use of case management for PTSD patients. • Among populations with histories of trauma, the assertive community treatment models have been empirically validated under controlled (but not with random assignment) conditions. (Mueser, 1998) • Most of the research that empirically validates case management has been conducted among persons with severe mental disorders, presumably including persons with co-occurring PTSD and other disorders. (Mueser, 1998) • Evidence suggests that outcomes are more favorable for intensive case management (well-trained clinician teaches client psychosocial rehabilitation skills in the client's home/community) than for simple case management (clinician links client to needed services). • Case management has been demonstrated to reduce inpatient hospitalizations and severe symptoms, as well as to stabilize housing for formerly homeless persons; however, there is little evidence to suggest that case management improves vocational adjustment/social functioning. (Mueser, 1998)
Psychotherapy for depression	See Cognitive therapy for depression.
Psychotherapy for MDD (major depressive disorder)	Recommended. Cognitive behavioral psychotherapy is a standard treatment for mild presentations of MDD; a potential treatment option for moderate presentations of MDD, either in conjunction with antidepressant medication, or as a stand-alone treatment (if the patient has a preference for avoiding antidepressant medication); and a potential treatment option for severe presentations of MDD (with or without psychosis), in conjunction with medications or electroconvulsive therapy. Not recommended as a stand-alone treatment plan for severe presentations of MDD. (American Psychiatric Association, 2006) See also Cognitive therapy for additional information and references, including specific **ODG Psychotherapy Guidelines**

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	(number and timing of visits). *Patient selection*. Standards call for psychotherapy to be given special consideration *if* the patient is experiencing any of the following: (1) Significant stressors; (2) Internal conflict; (3) Interpersonal difficulties/social issues; (4) A personality disorder; & (5) A history of only partial response to treatment plans which did not involve psychotherapy. *Types of psychotherapy*. The American Psychiatric Association has published the following considerations regarding the various types of psychotherapy for MDD: - Cognitive behavioral psychotherapy is preferable to other forms of psychotherapy, because of a richer base of outcome studies to support its use, and because its structured and tangible nature provides a means of monitoring compliance and progress. - In contrast, psychodynamic psychotherapy is not recommended because it has specifically been identified as lacking scientific support, and is severely vulnerable to abuse because it can involve a lack of structure. (American Psychiatric Association, 2006) Placebos about did as well as antidepressants or cognitive therapy in this RCT on MDD treatment, although there were hints that the effects varied by gender and race. In the antidepressant group, 31% responded (as judged by improvements on the Hamilton Rating Scale for Depression). The same was true of about 28% of patients in the psychoanalysis-therapy group, and 24% in the placebo group. The researchers found that African-American men tended to improve more quickly with talk therapy than with medication or placebo. In contrast, white men fared best on placebo, while black women showed no differences in their responses to the three treatments. Only white women showed the expected pattern: a quicker response to both medication and talk therapy than to the placebo. (Barber, 2012)
Psychotherapy for PTSD	See PTSD psychotherapy.
PTSD pharmacotherapy	Recommended as indicated below. *Monotherapy:* Strongly recommend selective serotonin reuptake inhibitors (SSRIs) for the treatment of PTSD. (VA/DoD, 2004) (Stein, 2000) Recommend tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs) as second-line treatments for PTSD. (Stein, 2000) (Hawton-*Cochrane*, 2002) Consider an antidepressant therapeutic trial of at least 12 weeks before changing therapeutic regimen. (Martenyi, 2002) Consider a second-generation (e.g., nefazodone, trazodone, venlafaxine, mirtazapine, bupropion) in the management of PTSD. (Hidalgo, 1999) *Augmented Therapy for Targeted Conditions:* Consider prazosin to augment the management of nightmares and other symptoms of PTSD. (Raskind, 2003) Recommend medication compliance assessment at each visit. Since PTSD is a chronic disorder, responders to pharmacotherapy may need to continue medication indefinitely; however, it is recommended that maintenance treatment should be periodically reassessed. (Rapaport, 2002) ***Topiramate*** has a broad spectrum effect on PTSD symptoms, comparable to other psychopharmacological agents. (Watts, 2013),(Akuchekian, 2004), (Tucker, 2007), (Yeh, 2011) Eighteen clinical trials (10 double-blind placebo-controlled, eight open-label) of atypical antipsychotics for PTSD were found and reviewed. Effect sizes in double-blind placebo-controlled trials were small, but were positive for risperidone and quetiapine. There is insufficient evidence to recommend other atypical antipsychotics (olanzapine, ziprasidone, aripiprazole) for the treatment of PTSD. (Hamner, 2003)

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	(Ahearn, 2011) There is insufficient evidence to support the recommendation for a pharmacological agent to prevent the development of PTSD. (VA/DoD, 2004) Recommend against the long-term use of benzodiazepines to manage core symptoms in PTSD. (Kosten, 2000) Recommend against typical antipsychotics (chlorpromazine, haloperidol and thioridazine) in the management of PTSD. (Stein, 2000) Administering morphine for pain relief shortly after being injured may reduce the risk for post-traumatic stress disorder (PTSD) by up to 50%, a new study in the *NEJM* suggests. The analysis included military personnel who did not sustain a serious traumatic brain injury because morphine is contraindicated in such injuries. There are several theories about how pain-relieving agents may protect against PTSD. PTSD rates are higher in unpredictable vs predictable traumatic events. In addition, opiates may interfere with or prevent memory consolidation through a β-adrenergic mechanism. Morphine also changes consolidation of the memory so that memories are stored without as much associated physical pain and perhaps mental distress. The results of the study may have implications for emergency medicine, because the tendency now is to not give opiates to patients injured in an accident to keep them cognitively clear and to find out what happened to them. (Holbrook, 2010) Among the pharmacological treatments for PTSD, there is evidence of moderate strength supporting the efficacy of fluoxetine, paroxetine, sertraline, topiramate, and venlafaxine for improving PTSD symptoms. Paroxetine and venlafaxine may have the best evidence supporting their efficacy. Unlike the other medications with evidence of efficacy for improving PTSD symptoms, they both also have evidence of efficacy for achieving remission, with NNTs ~8 to achieve one remission. In addition, paroxetine has evidence of efficacy for improving depression symptoms and functional impairment, and venlafaxine has evidence of efficacy for improving depression symptoms, quality of life, and functional impairment. Further, the meta-analysis found paroxetine to be one of the best treatments. (Jonas, 2013)
PTSD psychotherapy interventions	Recommended as indicated below. Providers should explain to all patients with PTSD the range of available and effective therapeutic options for PTSD. Cognitive Therapy (CT), Exposure Therapy (ET), Stress Inoculation Training (SIT), and Eye Movement Desensitization and Reprocessing (EMDR) are strongly recommended for treatment of PTSD in military and non-military populations. EMDR has been found to be as effective as other treatments in some studies and less effective than other treatments in some other studies. Imagery Rehearsal Therapy [IRT] and Psychodynamic Therapy may be considered for treatment of PTSD. Patient education is recommended as an element of treatment of PTSD for all patients. Consider Dialectical Behavioral Therapy (DBT) for patients with a borderline personality disorder typified by parasuicidal behaviors. Consider hypnotic techniques especially for symptoms associated with PTSD, such as pain, anxiety, dissociation and nightmares, for which hypnosis has been successfully used. Specialized PTSD psychotherapies may be augmented by additional problem specific methods/services and pharmacotherapy. Combination of cognitive therapy approaches (e.g., ET plus CT), while effective, has not proven to be superior to either component alone. Specific psychotherapy techniques may not be uniformly effective across all patients. When selecting a specific treatment modality, consideration of patient characteristics such as gender, type of trauma (e.g., combat vs. other trauma), and past history may be warranted. Patient and provider preferences should drive the selection of evidence-based psychotherapy and/or evidence-based pharmacotherapy as the first line treatment. Selection of individual interventions should be based upon patient preference, provider level of skill and comfort with a given modality, efforts to maximize benefit and minimize risks to the

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	patient, and consideration of feasibility and available resources. Psychotherapies should be provided by practitioners who have been trained in the particular method of treatment, whenever possible. A stepped care approach to therapy administration may be considered, though supportive evidence is lacking. Psychotherapy interventions are aimed at reduction of symptoms severity and improvement of global functioning. However, the clinical relevance and importance of other outcome indicators (e.g., improvement of quality of life, physical and mental health) are not currently well known. (VA/DoD, 2004) Studies show that a 4 to 6 session trial should be sufficient to provide evidence of symptom improvement, but functioning and quality of life indices do not change as markedly within a short duration of psychotherapy as do symptom-based outcome measures. (Crits-Christoph, 2001) See Number of psychotherapy sessions for more information. **ODG Psychotherapy Guidelines:** - Up to 13-20 visits over 7-20 weeks (individual sessions), if progress is being made. (The provider should evaluate symptom improvement during the process, so treatment failures can be identified early and alternative treatment strategies can be pursued if appropriate.) - In cases of severe Major Depression or PTSD, up to 50 sessions if progress is being made.
Quetiapine (Seroquel)	Not recommended as a first-line treatment. There is insufficient evidence to recommend atypical antipsychotics (e.g., quetiapine, risperidone) as monotherapy or conditions covered in ODG. It may be useful to augment antidepressant treatment in treatment refractory patients. See Atypical antipsychotics; & PTSD pharmacotherapy. See also Anxiety medications in the MTUS Chronic Pain Medical Treatment Guidelines.
Reiki	Not recommended for mental health conditions. There are no quality studies on the use of Reiki for the treatment of anxiety or post-traumatic stress disorder. A short trial of one or two Reiki sessions may be a cost effective and beneficial option, at least before considering medication, but it would not be recommended over Cognitive behavioral psychotherapy. (Robinson-*Cochrane*, 2007)
Return to work	Recommended. While depressed individuals have frequently requested leave from the workplace, this is not the best way in which to help the depressed employee. It is true that a person may temporarily become impaired so that a short-term leave, such as a week or two may be required. However, there is no empirical evidence to indicate that long-term leave is beneficial to the depressed person. In fact, when looking at the research for physical concerns and injuries, a person frequently becomes depressed when unable to complete normal, everyday activities. Thus, a long-term leave may actually increase MDD symptoms, instead of decreasing them. There are several reasons for this: 1) A depressed person naturally seeks to isolate oneself from others. 2) Being on leave reinforces this isolation, instead of encouraging the person to increase social interactions; 3) Being on long-term leave causes an individual to identify with a “disabled” lifestyle; and 4) Based on the DSM-IV-TR criteria for MDD, when one is depressed, one tends to not lead a healthy lifestyles. (Warren, 2005) Employment has a very positive long-term impact on mental health service use and costs for persons with severe mental illness. In a ten-year study of overall mental health costs among patients with serious mental illness, the results suggest that cost savings to the mental health system for high service users accrue rapidly after the first year of employment and continue to increase for many years. The ten-year cost reduction is enough to justify offering supported employment to all persons who use high levels of services and express interest in working. (Bush, 2009) See ODG Capabilities & Activity Modifications for Restricted

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Risperdal® (risperidone)	See Risperidone (Risperdal).
Risperidone (Risperdal)	Not recommended as a first-line treatment. There is insufficient evidence to recommend atypical antipsychotics (e.g., quetiapine, risperidone) as monotherapy for conditions covered in ODG. See Atypical antipsychotics; & PTSD pharmacotherapy. See also Anxiety medications in chronic pain in the MTUS Chronic Pain Medical Treatment Guidelines.
SAMe (S-adenosylmethionine)	Not recommended. Studies show good response for parenteral administarion but evidence of benefit following oral administration is not clear. SAMe (S-adenosylmethionine) is a synthetic form of a chemical produced naturally in the body. It is essential to a great number of chemical processes, including maintaining cells, manufacturing substances used by the nerves, and influencing emotions and moods. Among other things, SAM-e supplements are sold as a "natural" treatment for depression, arthritis, and liver disease. There appears to be a role for SAMe in the treatment of major depression in adults. Questions remain about mechanism of action, bioavailability, and absorption of oral SAMe. (Williams, 2005) (Delle, 2002) (Pancheri, 2002) (Shippy, 2004) Controlled trials have found SAM-e to be more efficacious than placebo and equal in efficacy to the tricyclic antidepressants for treating MDD when administered parenterally (either intravenously or intramuscularly). Less evidence supports the use of oral SAM-e, and there is a paucity of evidence examining whether oral forms of SAM-e can be safe, well tolerated, and efficacious when used as adjunctive treatment for antidepressant nonresponders with MDD. Although preliminary data suggest SAM-e may be useful as an adjunctive therapy to antidepressants, controlled studies are needed to confirm or refute these preliminary findings. (Papakostas, 2009)
SCL-90-R® (Symptom Checklist -90 Revised)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Can identify patients needing treatment for depression and anxiety, as well as identify patients prone to somatization. *Strengths:* Strong research base, relatively brief, computerized progress tracking. *Weaknesses:* Designed for and normed on psychiatric patients, not pain patients. Current norm base not appropriate for medical populations. (Bruns, 2001)
Sedative hypnotics	Not recommended for long-term use, but recommended for short-term use. See Insomnia treatment. Recommend limiting use of hypnotics to three weeks maximum in the first two months of injury only, and discourage use in the chronic phase. While sleeping pills are commonly prescribed in chronic pain, pain specialists rarely, if ever, recommend them for long-term use. They can be habit-forming, and they may impair function and memory more than opioid pain relievers. There is also concern that they may increase pain and depression over the long-term. In this study, receiving hypnotic prescriptions was associated with greater than a threefold increased hazard of death even when prescribed less than 18 pills/year. (Kripke, 2012) In this large cohort of patients attending UK primary care, anxiolytic and hypnotic drugs were associated with significantly increased risk of mortality over a seven-year period. The age adjusted hazard ratio for mortality during the whole follow-up period for use of any study drug in the first year after recruitment was 3.46 (95% confidence interval 3.34 to 3.59) and 3.32 (3.19 to 3.45) after adjusting for other potential confounders. Dose-response associations were found for all three classes of study drugs (benzodiazepines, Z drugs [zaleplon, zolpidem, and zopiclone], and other drugs). (Weich, 2014) In its Choosing Wisely list, the American Academy of Sleep Medicine (AASM) advises against use of hypnotics as primary

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	therapy for chronic insomnia; instead offer cognitive-behavioral therapy, because CBT is generally as effective as or more effective than hypnotics at improving sleep, and can be effective over an extended period of time without side-effects associated with hypnotics. (AASM, 2015)
Selective serotonin reuptake inhibitors (SSRIs) for PTSD	Recommended as a first-line choice for the treatment of Post-traumatic stress disorder (PTSD). See PTSD pharmacotherapy. This class includes Fluoxetine, Paroxetine, Sertraline, Escitalopram, Fluvoxamine, & Citalopram.
Self-directed CBT	See Bibliotherapy; Computer-assisted cognitive therapy.
Sentra PM™	Not currently recommended for insomnia. Preliminary results are promising, from a single study sponsored by the manufacturer, but independent unbiased studies are necessary for a recommendation. Sentra PM™ is a medical food from Targeted Medical Pharma (aka Physician Therapeutics), Los Angeles, CA, intended for use in management of sleep disorders, that is a proprietary blend of choline bitartrate, glutamate, and 5-hydroxytryptophan. In a RCT published in a pay-to-publish journal, and written by employees of the marketer of Sentra PM, the authors concluded that Sentra PM can improve the quality of sleep, the response to trazodone as a sleep medication and parasympathetic autonomic nervous system activity. (Shell, 2012) See also Insomnia treatment, where it says there is limited evidence to support trazodone for insomnia, but it may be an option in patients with coexisting depression. See also Sentra PM™ in the MTUS Chronic Pain Medical Treatment Guideline.
Seroquel® (quetiapine)	See Quetiapine (Seroquel).
Sertraline (Zoloft®)	Recommended as a first-line treatment option for MDD and PTSD. See Antidepressants for treatment of MDD (major depressive disorder); Selective serotonin reuptake inhibitors (SSRIs); PTSD pharmacotherapy.
SF 36 ™	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Brief measure useful to assess patient perception of physical and emotional functioning, as an outcome measure, or as one test in a more comprehensive evaluation. *Strengths:* Widely used outcome measure in research and practice, considerable research base. *Weaknesses:* Uses non-standardized scoring procedure, that makes identifying high or low scores much more difficult. (Bruns, 2001)
SIP (Sickness Impact Profile)	Recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Assesses a broad spectrum of patient disability reports. *Strengths:* Considerable research base, assesses a broad range of ADLs relevant to disability. *Weaknesses:* Unpublished test with no test manual, no pain patient norms, cumbersome to score. (Bruns, 2001)
Sleep medicine	See Insomnia.
Sleep studies	See Polysomnography.
Somnicin™	Not recommended. See the MTUS Chronic Pain Medical Treatment Guideline.
Spiritual support	Recommended for mental conditions if sought by the patient. The objective of Spiritual Support is to reduce symptoms of post-traumatic stress disorder (PTSD) and improve the patient's functioning through social and spiritual support. It is recommended to provide access to religious/spiritual resources, if sought, and also to provide opportunities to vent & defuse, to share feelings and talk. (Bogia, 1985) (Everly, 2000) (Hunter, 1996)

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	Trauma as Shattered Life Assumptions: Recent research on cognitive processes in victimization indicates that major changes in the individual's basic life assumptions may occur. These assumptions involve the security and meaningfulness of the world and one's sense of self-worth in relation to perception of the environment. Specifically, these assumptions are: (1) that one's environment is physically and psychologically safe; (2) that events are predictable, meaningful and fair; (3) that one's own sense of self-worth is positive in relation to experiences with other people and events. *Social system interventions involve* community action, organization and mobilization; education and consultation with advice for leaders; mobilization of action plans and recover process; facilitation of adaptation and mastery in social change; development of community networks; development of a positive recover organization; communication; and community theater and art geared to working through and recovering from the trauma. Recommend providing space and opportunities for prayers, mantras, rites and rituals and end-of-life care as determined important by the patient. (VA/DoD, 2004) *Recent research:* This meta-analysis identified statistically significant benefits of using faith-adapted treatment, but quality assessment using the Cochrane risk of bias tool revealed methodological limitations. (Anderson, 2015) In this RCT of a spiritual care program including supportive presence and support for religious rituals, depression was significantly lower in the experiment group than in the control group. (Musarezaie, 2014)
SSRIs	See Selective serotonin reuptake inhibitors (SSRIs).
St. John's wort (for depression)	Recommended as an option, especially for minor depression. Mixed evidence, but minimal side effects. St. John's wort is an effective antidepressant according to one meta-analysis (Linde, 1996), although a second meta-analysis says the studies can be challenged due to questionable methodology. (Kim, 1999) A recent meta-analysis of 30 studies demonstrated a significant advantage for St. John's Wort compared to placebo. This result viewed together with St. John's Wort's favourable side-effects profile, leading to a lower rate of drop-outs, suggests treatment with St. John's Wort should be attempted for milder forms of depression. (Roder, 2004) In patients who have moderate to severe depression, St. John's wort is at least as effective as paroxetine (Paxil) after six weeks of therapy. It also is tolerated better than paroxetine. Scores on measures of depression were significantly better in the patients treated with St. John's wort. (Szegedi, 2005) Updated guidance from NIH concludes that, while scientific evidence regarding the effectiveness of St. John's wort for depression is inconsistent, a new analysis of 37 clinical trials indicates that it may have minimal beneficial effects on major depression, but it is clearly useful for milder forms of depression, and these benefits may be similar to those from standard antidepressants. Plus, St. John's wort produced fewer side effects than standard antidepressants. (NIH, 2009)
Stress, occupational	Recommend steps as indicated below. **Initial Evaluation** Focus on identifying possible red flags or warning signs for potentially serious psychopathology that would require immediate specialty referral. Red flags may include impairment of mental functions, overwhelming symptoms, signs of substance abuse, or debilitating depression. In the absence of red flags, the occupational or primary care physician can handle most common stress-related conditions safely. In talking to the patient, it is important for the physician to get him or her to try and

explain or pinpoint incidents or reasons for the stress, rather than to just generalize (i.e. "I hate my job," "Everything makes me stressed out," etc.). The physician may have to ask more specific questions about work or home life if the patient is initially unwilling or unable to address specific issues.

Occupational stress usually stems from one of three common models:

(1) *Person-environment fit model:* Poor job fit, such as a mismatch between the skills of the individual and the demands of the job, or a disparity between the individual's career-related desires vs. actual opportunities presented, is a leading cause of workplace stress.

2) *Demand control model:* Jobs that place high demands on the worker but give him or her little control or opportunities for decision-making lead to high job strain, a source of stress that is consistently linked as a contributor to physical conditions such as cardiovascular mortality, heart disease, and hypertension. Consideration should be given to the influence of the individual's occupational and personal history, which may have an effect on how this model applies to his or her situation.

3) *Effort-reward model:* Shows that stress is often the result of high effort without social reward. Like the demand control model, this model points out that a low ratio of effort to reward leads to sustained autonomic arousal and can cause physical effects such as high blood pressure or myocardial infarction.

Exploration of how and if the patient's stress follows the path of one of the above models will be helpful in determining treatment.

More specific sources of stress include bereavement, illness, familial changes or disorder, or other common and/or traumatic life changes. Time off work may be helpful, although the ultimate goal should be to preserve the patient's ability to function both occupationally and socially. Time off should not be so excessive that the employee loses his or her sense of function and appreciation at work and at home.

Initial Therapy

(1) Pursuing the patient's thoughts on how his or her stress relates to the above models may help determine the source of stress and cultivate ideas on how to eliminate or cope with the stress. Patient education and understanding about stress is necessary for effective stress management to take place.

(2) Other common treatment pathways include the use of one or more of the following:

(a) Relaxation techniques (such as meditation);
(b) Exercise (aerobic exercise has been shown to positively influence mood);
(c) Behavioral training (such as time management, anger management, assertiveness or conflict resolution training);
(d) Stress inoculation therapy;
(e) Cognitive therapy;
(f) Modified work;
(g) Organizational interventions

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	(3) Pharmaceutical therapy (limited, short-term use of anti-anxiety agents to improve function – anything else should be used in conjunction with a specialty referral). Follow-up visits are an important part of treatment and may be conducted by a mid-level practitioner in person or via phone every three or four days, depending on the severity of the case, while a path to recognizable treatment is established and followed. Failure to improve or make significant progress after several weeks may indicate the need for psychiatric assessment or counseling.
Stress & atherosclerosis (effect)	Recommend consideration (not a treatment recommendation). The results of one clinical trial suggest that men with greater work-related stress are at increased risk for atherosclerotic disease. The results for women are uncertain. (Nordstrom, 2001)
Stress & blood pressure (effect)	Recommend consideration (not a treatment recommendation). Stress management has been shown to reduce blood pressure. (Linden, 2001) (Cesana, 2003) Another study emphasized that stress alone was not shown to have an effect on blood pressure although the coping work/life methods used to cope with stress (i.e. alcohol intake, unhealthy eating habits, drug use, and physical inactivity) are shown to cause increased blood pressure. (Lindquist, 1995)
Stress & cancer (effect)	Not a treatment recommendation. There is no link between work-related stress and several common cancer types, according to a large meta-analysis. The authors note that about 90% of cancers have been linked to environment and lifestyle, but evidence of associations with other factors, including psychosocial ones, is tentative. The physiological stress response is characterized by the secretion of more hypothalamic and pituitary stress hormones, and these stress biomarkers trigger and maintain chronic inflammation, which has been shown to play a role in the promotion and progression of cancer. Work and work-related factors are sources of stress for many people, but work can also be beneficial to well being. The authors used a validated, harmonized measure of work stress, job strain, which is defined as high demands and low control over work, and found that this measure is not associated with cancer risk. The study involved more than 116,000 participants. The researchers concluded that, after adjustment for age and sex, job strain was not associated with the overall risk for cancer (HR for any cancer, 0.95). The associations were similar in analyses that included nonmelanoma skin cancer and those that excluded it. The researchers also found no association between job strain and the risk for colorectal (HR, 1.16), lung (HR, 1.17), breast (HR, 0.97), or prostate (HR, 0.86) cancer. Thus, clear evidence demonstrating an association between job strain and the risk of cancer is lacking. (Heikkilä, 2013)
Stress & depression (effect)	Recommend consideration (not a treatment recommendation). Work-related stress reduction programs can be used to reduce depressive symptoms and sick leave, as was shown in a clinical trial of Japanese blue-collar workers. (Kawakami, 1997) New research suggests mild traumatic brain injury (i.e., concussion) may not be the primary driver of posttraumatic stress disorder and related physical health problems. Physical health symptoms and the postconcussive symptoms that have been attributed to concussion actually are related to PTSD and depression. Symptoms such as poor concentration, irritability, forgetfulness, dizziness, and balance problems, that were typically associated with concussion, were correlated with PTSD and depression, and not with a history of mild TBI (Hoge, 2008).
Stress & physiology/mental performance	Recommend consideration (not a treatment recommendation). Stress may have negative effects on overall health. For example, an epidemiological survey of 17,000 randomly selected people from the Bristol electoral register, and a follow-up survey 12 months later found that there is a correlation between potentially stressful

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(effect)	working conditions and impaired physical and mental health, including job performance. (Smith, 2000) (Vanitallie, 2002) (Duijts, 2003) (Rosch, 2003) (Segerstrom, 2004)
Stress & heart-related interventions	Recommend consideration (not a treatment recommendation). Post-myocardial infarction interventions that reduce psychological distress have the potential to improve long-term prognosis and psychological status for both men and women. (Cossette, 2001) A recent suggests that job-related stress can cause inflammation that leads to heart attacks. (Clays, 2005) Weekly stress management classes were found to offer a significant clinical and economic benefit to patients with myocardial ischemia. (Blumenthal, 2002) A new study shows that acute-stress responses to the terrorist attacks of 9/11/2001 were associated with a 53% increased incidence of cardiovascular ailments over the following three years. And the people who were particularly at risk were those who had an acute-stress response and cited ongoing concerns about terrorism--these individuals had a more than threefold increased risk of physician-diagnosed heart problems three years after the event. Extremely stressful events may precipitate biological processes that increase an individual's risk of developing cardiovascular ailments. (Holman, 2008) Posttraumatic stress disorder (PTSD) significantly raises the risk of early death from heart disease, according to results of a long-term prospective study of Vietnam veterans. (Boscarino, 2008) Job strain is associated with a small but consistent increased risk of coronary heart disease, based on a large study, but it is still not known whether the relationship between job strain and heart disease is causal. After adjustment for sex and age, the hazard ratio for job strain vs no job strain was 1.23; this remained the same even after taking into account factors such as lifestyle, age, gender, and socioeconomic status. However, the effect estimate was higher in published (HR 1.43) than in unpublished (1.16) studies. The worst kind of job stress is to have high demands/pressure but little decision authority and so very little say on what goes on at work, and the opportunities to learn are poor. They found the highest risk of CHD in those who reported high demands and low control (HR 1.28 compared with low demands/high control). (Kivimäki, 2012) Working in a highly stressful job may raise the risk for stroke, particularly for women, according to a meta-analysis. Epidemiological studies have shown that high strain jobs are associated with an increased risk of coronary heart disease, but studies so far regarding the association between job strain categories and the risk of stroke have been inconsistent. In this meta-analysis, from more than 130,000 individuals, being exposed to high-strain jobs was associated with an increased risk of stroke, especially for ischemic stroke. Jobs were classified into 1 of 4 categories according to how much control workers had over their jobs and how hard they worked, or the psychological (but not physical) demands of the job, such as time pressure, mental load, and coordination burdens. The categories are: (1) Passive jobs with low demand and low control, including the jobs performed by janitors, miners, and other manual laborers. (2) Low-strain jobs with low demand and high control, such as those done by natural scientists and architects. (3) High-strain jobs with high demand and low control, as found in service industry workers (waitresses and nursing aides, for example). (4) Active jobs with high demand and high control, including those performed by doctors, teachers, and engineers. People with high-strain jobs had a relative risk [RR] of 1.22 for stroke compared to those with low-strain jobs. The risk with high-strain work was most pronounced for ischemic stroke (RR, 1.58) and in women (RR, 1.33). No other job strain types were

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	associated with stroke risk. The population attributable risk for stroke with high-strain jobs was 4.4% overall and 6.5% for women. (Huang, 2015)
Stress inoculation training	Recommended. Studies show that stress inoculation training is an effective means for reducing performance anxiety, reducing state anxiety, and enhancing performance under stress. (Saunders, 1996) Stress Inoculation Training (SIT) is effective as a treatment for PTSD related to sexual assault. (Foa, 1991) (Foa, 1999) (Kilpatrick, 1982) (Rothbaum, 2000) (VA/DoD, 2004) Stress inoculation training (SIT) is a type of CBT that can be thought of as a toolbox or set of skills for managing anxiety and stress. This treatment was developed for the management of anxiety symptoms and adapted for treating women rape trauma survivors. SIT typically consists of education and training of coping skills, including deep muscle relaxation training, breathing control, assertiveness, role playing, covert modeling, thought stopping, positive thinking and self-talk. The rationale for this treatment is that trauma related anxiety can generalize to many situations. Anxiety management is among the most useful psychotherapeutic treatments for patients. (VA/DoD, 2004) The AHRQ reached different conclusions regarding the efficacy of stress inoculation training, compared to the APA guideline, which supports stress inoculation with moderate clinical confidence, while AHRQ concluded that there was insufficient evidence to determine its efficacy. (Jonas, 2013) See also PTSD psychotherapy interventions. **Stress inoculation training (SIT) criteria:** SIT is designed to "inoculate" people with PTSD from heightened stress responses through teaching anxiety management skills which can include: • Relaxation training: teaching patients to control fear and anxiety through the systematic relaxation of the major muscle groups. • Breathing retraining: teaching slow, abdominal breathing to help the patient relax and/or avoid hyperventilation with its unpleasant and often frightening physical sensations. • Positive thinking and self-talk: Teaching the person how to replace negative thoughts (e.g., 'I'm going to lose control') with positive thoughts (e.g., 'I did it before and I can do it again') when anticipating or confronting stressors. • Assertiveness training: teaching the person how to express wishes, opinions, and emotions appropriately and without alienating others. • Thought stopping: distraction techniques to overcome distressing thoughts by inwardly 'shouting stop.
Stress management, behavioral/cognitive (interventions)	Recommended. A meta-analysis of the occupational stress-reducing interventions, including cognitive-behavioral interventions, relaxation techniques, multimodal programs, and organization-focused interventions, found that a small but significant overall effect was found. Cognitive-behavioral interventions were found to be the most effective, followed by multimodal interventions. A small effect was found for relaxation techniques, while the effect size for organization-focused interventions was nonsignificant. (Van der Klink, 2001) Another study tested the effects of workplace group meetings with a focus on stress reduction and found that participants exhibited improved total coping, cognitive/rational coping, state of mind, confidence and home/work balance. (Horan, 2002) Other similar studies also had positive results with regard to behavioral stress management interventions. (Zolnierczyk, 2002) (Rahe, 2002) In addition, behavioral stress management combined with physical exercise was shown to have even more of a positive effect than behavior techniques alone, according to one high quality clinical trial. (Eriksen, 2002)
Stress	Recommended. Aerobic exercise has been found by multiple studies to have a

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management, physical (interventions)	positive effect on state of mind and perceived stress and anxiety. (Blumenthal, 2002) (Eriksen, 2002) See also Exercise.
Suvorexant (Belsomra)	Not recommended as a first-line treatment due to adverse effects. FDA approved a first-in-class insomnia drug suvorexant (Belsomra, Merck) after the manufacturer lowered the dosages to satisfy the agency's safety concerns. Originally the FDA had declined to approve suvorexant until the starting dose for most patients was 10 mg. The agency also said that proposed upper-limit doses of 30 mg for elderly patients and 40 mg for nonelderly patients were unsafe. Suvorexant, an orexin receptor antagonist, is the first drug of its kind to be approved for patients with insomnia. It alters the signaling of orexins, neurotransmitters responsible for regulating the sleep-wake cycle. Drowsiness was the most commonly reported adverse event for clinical trial participants taking suvorexant, which is classified as a Schedule IV controlled substance. In next-day driving tests, both male and female participants who took the 20-mg dose proved to be impaired drivers. The FDA advises physicians to caution patients against next-day driving or other activities requiring full alertness. (FDA, 2014)
Tapping techniques	See Emotional freedom techniques (EFT).
Telephone CBT (cognitive behavioral therapy)	Recommended as an option where there are barriers to accessing face-to-face care. Delivering cognitive behavioral therapy (CBT) by telephone is as effective as delivering it face-to-face in the short term, and telephone therapy is safe and has a higher patient retention rate. The attrition rate from psychotherapy can exceed 50% due to time constraints, lack of available and accessible services, transportation problems, and cost. Significantly fewer participants receiving telephone CBT discontinued their therapy (20.9%) than did those receiving face-to-face CBT (32.7%) in this RCT. Both treatment groups showed significant improvement in depression, and there were no significant treatment differences when measured posttreatment between telephone and face-to-face CBT on either the HAM-D or the PHQ-9. However, face-to-face CBT was significantly superior to telephone CBT during the follow-up period. By 6 months, 19% of patients who received the telephone intervention had undergone full remission, compared with 32% of those who received face-to-face CBT. The RCT used 18 sessions of either telephone CBT or face-to-face CBT. (Mohr, 2012) CBT, whether self-guided, provided via telephone or computer, or provided face to face, is better than no care in a primary care setting and is also better than treatment as usual, according to a meta-analysis. (Twomey, 2014) See also Cognitive therapy for depression.
Therapeutic touch (TT)	Not recommended for mental health conditions. Given the high prevalence of anxiety disorders and the current paucity of evidence on therapeutic touch in this population, there is a need for well conducted randomized controlled trials to examine the effectiveness of therapeutic touch for anxiety disorders. (Robinson-*Cochrane*, 2007)
Thought field therapy (TFT)	See Emotional freedom techniques (EFT).
Transcranial magnetic stimulation (TMS)	Recommended for severe treatment-resistant MDD as indicated below. Not recommended for PTSD, with initial promising results. Transcranial magnetic stimulation (TMS) is a non-invasive method of delivering electrical stimulation to the brain. A magnetic field is delivered through the skull, where it induces electric currents that affect neuronal function. Repetitive TMS (rTMS) is being used as a treatment of depression and other psychiatric/neurologic brain disorders. In contrast to electroconvulsive therapy (ECT), TMS does not require anesthesia and does not

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	induce a convulsion. TMS is also being tested as a treatment for a variety of other disorders including alcohol dependence, Alzheimer's disease, neuropathic pain, obsessive-compulsive disorder (OCD), post-partum depression, depression associated with Parkinson's disease, stroke, posttraumatic stress disorder, panic disorder, epilepsy, dysphagia, Tourette's syndrome, schizophrenia, migraine, spinal cord injury, fibromyalgia, and tinnitus. *Depression:* Although questions still need to be answered about TMS, including the optimal length of treatment and the usefulness of maintenance treatment, the most recent studies demonstrate efficacy and real-world effectiveness of TMS in the treatment of MDD and psychotic depression (i.e. Major Depression with psychotic features). Antidepressant medication remains the biological treatment of first choice for MDD, with cognitive therapy being overall first choice. ECT continues to be the most effective treatment for treatment-resistant depression, but the high incidence of functionally-impairing adverse cognitive effects renders ECT undesirable in many cases. In addition, there is a cohort of patients who have failed or cannot tolerate antidepressant medications and ECT. For those patients, with the possible exception of major chest surgery and its attendant potential complications (i.e. for a Vagus Nerve stimulator implant, which is not recommended), TMS is the only treatment option that stands between possible relief of depression and continued indefinite suffering. That rationale, coupled with the results of the most recent studies, and with the knowledge that continued antidepressant medication trials after 3-4 trials have a high failure rate, leads to the conclusion that TMS is a reasonable and appropriate next intervention after 3 failed medication trials plus a failed ECT trial, or after 4 failed medication trials. (Lam, 2008) (Brunelin, 2014) (Gaynes, 2014) (Hovington, 2013) (Ren, 2014) See also Low-field magnetic stimulation (LFMS); Electroconvulsive therapy (ECT). *PTSD:* Noninvasive transcranial magnetic stimulation (TMS) of the dorsolateral prefrontal cortex relieves the core symptoms of PTSD, according to a recent doubleblind RCT. Repetitive TMS (rTMS) has been tested in several small studies and is emerging as a potentially effective treatment for PTSD. In this study patients were randomized either to right-side rTMS, left-side rTMS, or sham procedures. The treatments were given in 10 sessions every weekday for 2 weeks. At 5 and 10 days, right or left rTMS induced significant decreases in PTSD symptoms, whereas sham treatments had no significant effect. Improvements in the PTSD Checklist and the Treatment Outcome PTSD Scale were greater after right rTMS than after left rTMS, but the differences were only marginally significant. The improvement in avoidance and hyperarousal was larger after right rTMS than after left rTMS, the investigators say, whereas the improvement in re-experiencing was similar for the two sides. Depression scores were significantly improved only after left rTMS treatment, and anxiety scores were significantly improved only after right rTMS treatment. Performance in verbal fluency (as measured by the Controlled Oral Word Association Test) improved only after right rTMS, but other changes in cognitive function did not differ significantly between right and left rTMS. The beneficial effects persisted up to last follow-up (at 3 months) for both the PTSD Checklist and the Treatment Outcome PTSD Scale. This study supports the continuation of clinical investigation of brain stimulation for the treatment of PTSD, the authors concluded. The results confirm that high-frequency rTMS over the right dorsolateral prefrontal cortex may be the best approach in most patients, yet patients with high levels of depression may show greater benefit from high-frequency rTMS applied over the left dorsolateral prefrontal cortex. (Boggio, 2009) **Criteria for Transcranial magnetic stimulation (TMS):**

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	Diagnosis of severe Major Depression when the following criteria are met: • Failure of at least 3 different medication trials, from at least 2 different classes, at adequate dose and duration or due to intolerable effects, plus • Failure of a trial of electroconvulsive therapy (ECT) due to inadequate response or intolerable effects or bona-fide contraindication to ECT, OR • Failure of at least 4 different antidepressant medication trials, from at least 2 different classes, at adequate dose and duration or due to intolerable effects, OR • A positive clinical response to a previous course of treatment with TMS. • Standard treatment consists of the following: - A course of 30 treatments over 6-7 weeks, followed by a 6 treatment taper over 2-3 weeks; - The first treatment session may include treatment planning, cortical mapping, and initial motor threshold determination; - Treatments include 1-2 sessions for motor threshold re-determination during the course of treatment with TMS; - Continued treatment with TMS after 30 treatments due to partial resolution of acute symptoms should be determined on a case-by-case basis; - Maintenance treatment with TMS should be determined on a case-by-case basis.
Trauma-focused CBT	See Cognitive therapy for PTSD
Trazodone (Desyrel)	Recommended as an option for insomnia, only for patients with potentially coexisting mild psychiatric symptoms such as depression or anxiety. Not recommended as a first-line treatment for insomnia in patients generally, or as a first-line treatment for depression or for pain. See also Insomnia treatment, where it says there is limited evidence to support its use for insomnia, but it may be an option in patients with coexisting depression. See Antidepressants for treatment of MDD (major depressive disorder), which recommends starting with either SSRIs, or desipramine, nortriptyline, bupropion, and venlafaxine. See also Anxiety medications in the MTUS Chronic Pain Medical Treatment Guidelines, where other medications are recommended as first-line agents, and Fibromyalgia in the MTUS Chronic Pain Medical Treatment Guidelines, where trazodone was used successfully in fibromyalgia in the MTUS Chronic Pain Medical Treatment Guideline. Trazodone was approved in 1982 for the treatment of depression. It is unrelated to tricyclic or tetracyclic antidepressants and has some action as an anxiolytic. Off-label uses include alcoholism, anxiety, insomnia, and panic disorder. Although approved to treat depression, the American Psychiatric Association notes that it is not typically used for major depressive disorder. Over the period 1987 through 1996, prescribing trazodone for depression decreased throughout the decade, while off-label use of the drug for insomnia increased steadily until it was the most frequently prescribed insomnia agent. To date, there has been only one randomized, double blind, placebo-controlled trial studying trazodone in primary insomnia. It was observed that relative to placebo, patients reported significant improvement in subjective sleep latency, sleep duration, wake time after sleep onset, and sleep quality with trazodone and zolpidem during week one, but during week two the trazodone group did not differ significantly from the placebo group whereas the zolpidem group demonstrated significant improvement compared to placebo for sleep latency and sleep duration.(Walsh, 1998) The AHRQ Comparative Effectiveness Research on insomnia concludes that trazodone is equal to zolpidem. (AHRQ, 2008) Evidence for the off-label use of trazodone for treatment of insomnia is weak. The current recommendation is to utilize a combined pharmacologic and psychological and behavior treatment when primary insomnia is diagnosed. Also worth noting, there

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	has been no dose-finding study performed to assess the dose of trazodone for insomnia in non-depressed patients. Other pharmacologic therapies should be recommended for primary insomnia before considering trazodone, especially if the insomnia is not accompanied by comorbid depression or recurrent treatment failure. There is no clear-cut evidence to recommend trazodone first line to treat primary insomnia. (Mendelson, 2005)
Vagus nerve stimulation (VNS)	Not recommended for depression. Vagus nerve stimulation (VNS) therapy is the first FDA approved somatic clinical intervention for treatment-resistant depression (TRD). Further clinical studies, in addition to prospective cost utilization and health economic investigations, are needed to better understand VNS therapy and the impact it holds on TRD care. (Nahas, 2006) Currently, insufficient data are available to conclude that VNS is effective in the treatment of depression. In addition, it cannot be ruled out that the positive results observed in the uncontrolled studies might have been mainly due to a placebo effect. (Martin, 2012) The Centers of Medicare and Medicaid Services (CMS) declined to approve vagus nerve stimulation (VNS) therapy for patients with treatment-resistant depression. (CMS, 2013) VNS is a pulse generator, similar to a pacemaker, manufactured by Cyberonics, that is surgically implanted under the skin of the left chest and an electrical lead (wire) is connected from the generator to the left vagus nerve. Electrical signals are sent from the battery-powered generator to the vagus nerve via the lead. These signals are in turn sent to the brain. FDA approved VNS for treatment of refractory epilepsy in 1997 and for resistant depression in 2005.
VAS (Visual Analogue Pain Scale)	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. The VAS may be recommended as a measurement of a patient's pain intensity. See Psychological evaluations. Extremely brief measure of pain, useful when relative, as opposed to standardized, assessment of pain is acceptable. *Strengths:* Very simple nonpsychometric instrument, extremely quick to administer and score. Widely used in research, and has been shown to correlate with the intensity of physical stimuli. *Weaknesses:* Unpublished test with no test manual. No standardized visual stimulus, with both vertical and horizontal versions. No standardized instructions (rate pain right now, rate pain recently, etc.), and no agreement as to what label to apply to the highest score. This has resulted in a multitude of versions of the VAS scale that are not equivalent. No norms or reliability information is available. Some individuals have difficulty with the spatial aspect of responding required. (Bruns, 2001)
Vilazodone (Viibryd®)	Not recommended for pain. Recommended for PTSD and MDD. Viibryd (vilazodone) is a selective serotonin reuptake inhibitor (SSRI). See the MTUS Chronic Pain Medical Treatment Guidelines, SSRIs (selective serotonin reuptake inhibitors). See also Antidepressants for treatment of MDD (major depressive disorder); & Antidepressants for treatment of PTSD (post-traumatic stress disorder) in this chapter.
Virtual reality (VR)	Recommended as an option in conjunction with Exposure therapy (ET) for the treatment of PTSD. This is not a treatment in itself. It is a tool that may be usedin conjunction with Exposure therapy (ET) for the treatment of PTSD. New approaches to treatment of PTSD are relying on technology, such as virtual reality, to alleviate the psychologically damaging effects of PTSD. Exposure therapy has been recognized as a highly promising method for treating patients with PTSD. Rather than relying on patients' visualization skills to "relive" the traumatic experience, technological strategies such as virtual reality (VR) provide a controlled environment in which patients can experience a situation or scenario while learning to cope with their emotional responses. This study presents preliminary data on the efficacy of a

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	VR adaptive display as applied in the treatment of diverse trauma PTSD victims. Results support the utility of VR in the treatment of PTSD. (Botella, 2009) Exposure therapy (ET) has been observed to be an effective modality for the treatment of PTSD. Recently, efforts have been made to use virtual reality (VR) to enhance outcome with modes of ET. This study demonstrates that ET with the use of VR can be an effective treatment. (McLay, 2009) For the treatment of combat-related PTSD, virtual reality exposure with arousal control (VRE-AC) may be more effective than prolonged exposure therapy with simulation. VRE-AC is 3-dimensional computer simulation of settings that are triggers for PTSD episodes. The treatment teaches participants to tolerate anxiety and then exposes them to the feared situation in a simulator that is manipulated and monitored by a clinician. The clinician can modulate sights and sounds and the intensity of the scenario. (McLay, 2010)
Vitamin B6	See B vitamins for depression (vitamin B6, folic acid/folate, vitamin B12).
Vitamin B12	See B vitamins for depression (vitamin B6, folic acid/folate, vitamin B12).
Vitamin use (for stress reduction)	Not recommended.Multi-vitamin and mineral supplements were been found to help reduce feelings of stress and anxiety in one clinical trial. More trials need to be conducted. (Carroll, 2000)
Weaning of medications (antidepressants)	Recommended as indicated below. See also Antidepressant discontinuation in the MTUS Chronic Pain Medical Treatment Guidelines, under Antidepressants for chronic pain. Weaning of antidepressants is complicated as this class of medications is indicated for multiple reasons including psychiatric use and chronic pain. When indicated for psychiatric pathology, an evaluation should be made in terms of the underlying disease prior to any decision about stopping an antidepressant. With this in mind, an assessment of the patient's current mood state as well as for factors that may indicate the likelihood of relapse or recurrence of the underlying pathology should occur. The types of factors evaluated include number and severity of previous episodes, success of treatment of earlier episodes, and the risk of suicide with another episode. Risk factors that support long-term treatment in terms of depression include the following: (1) older age; (2) recurrent episodes (3 or more); (3) psychotic episodes; (4) chronic, severe and/or difficult to treat episodes; (5) significant comorbidity (psychiatric or medical); (6) residual symptoms (lack of remission) with current treatment. Most major psychiatric guidelines recommend continuation of treatment with antidepressants after remission as well as maintenance treatment for those at high risk of recurrence (the definition of high risk varies as per guidelines as well as the recommended duration of treatment). (Piek, 2010) It should be remembered that many patients may have undiagnosed psychiatric pathology and are started on antidepressants for off-label indications. These individuals may run the risk of exacerbation of undiagnosed psychiatric illness if their drug is discontinued. The patient's condition should be monitored for recurrence of symptoms and for discontinuation symptoms while dosages are adjusted, and for some time afterwards. ***Weaning:*** There are no precise guidelines for weaning of antidepressants used for FDA-approved or for off-label conditions. It is generally agreed that they should not be stopped abruptly if used for psychiatric conditions. Once the decision is made to undertake weaning after use of an antidepressant for psychiatric use, this may take as long as 3 to 6 months. After shorter durations of therapy (as for pain treatment without evidence of depression) a shorter duration of weaning may be utilized (6 to 8 weeks - consensus opinion). The clinician should be aware that antidepressants prescribed for chronic pain may also be treating undiagnosed psychiatric conditions. Careful monitoring should occur with discontinuation of both patients treated for psychiatric conditions and those treated for off-label conditions. When weaning is

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	undertaken in patients with psychiatric pathology, the patient should be warned that signs and symptoms might recur. (Schweitzer, 2001) (Warner, 2006) *Discontinuation reaction symptoms*: Nearly all classes of antidepressants have been linked to discontinuation reactions that are distinct from the risk of relapse and/or recurrence of psychiatric illness. These symptoms can occur during tapering. Commonly patients describe both psychological and somatic symptoms. A mnemonic has been suggested of the most common symptoms (FINISH: Flu-like symptoms; Insomnia; Nausea; Imbalance; Sensory disturbances; Hyperarousal). Symptoms tend to emerge within 2 to 5 days after discontinuation/tapering with a usual duration of 1 to 2 weeks. The primary risk factors for these reactions include use of antidepressants with shorter half-lives (such as paroxetine and venlafaxine), longer duration of treatment, and abrupt discontinuation. (Looper, 2007) (Fava, 2006) (Schatzberg, 2006) (Schweitzer, 2001) (Lam, 2009) (Warner, 2006) (Shelton, 2006) (Berber, 1998) (Lader, 2007) ***Clinical management of discontinuation reaction symptoms:*** (1) Reassure the patient that symptoms are likely to be short-lived and mild; (2) For severe and distressing symptoms, reinstate the dose of drug that was prescribed immediately before the decrease that led to symptoms and slow the taper; (3) Gradual tapering is recommended (with the exception of fluoxetine); (4) Consider switching to fluoxetine (an agent with an extended half-life) for the taper. Monitoring should be open-ended during the usual window for development of discontinuation symptoms (time of discontinuation to approximately 2 weeks afterwards). (Rosenbaum, 1997) (Hadded, 2001) (Schatzberg, 2006) ***Differentiating discontinuation symptoms from depression:*** A clinician should be able to distinguish between the onset of discontinuation symptoms and the return of psychiatric pathology. Differentiating factors include looking for symptoms that are more likely to occur with discontinuation reaction (dizziness, electric shock-like sensations, "rushing" sensations, headache and nausea) as well as observing for rapid reversal of symptoms (complete resolution within 1 to 2 weeks is more likely to be due to discontinuation). Later onset of symptoms (after at least two to three weeks of discontinuation/tapering) or prolonged symptoms (for greater than 3 weeks after discontinuation/tapering) are more commonly associated with a relapse of psychiatric pathology or to another intercurrent disease. (Warner, 2006) (Shelton, 2006) See also Antidepressants; Antidepressants for treatment of MDD (major depressive disorder); Antidepressants for treatment of PTSD (post-traumatic stress disorder); Antidepressants - SSRI's versus tricyclics (class). See also Antidepressants for chronic pain in the MTUS Chronic Pain Medical Treatment Guidelines.
Work	Recommended as indicated below. A recent high quality study documents a significant and clear dose-response relationship between stress (amount of combat) and serious productivity loss and disability among US troops in Iraq. Stress in business may not be nearly as dramatic as PTSD in US troops, but it may have similar effects. (Hoge-NEJM, 2004) There is evidence to suggest that flexible working might be beneficial for employees' health only if they are allowed to have input into their own working patterns, a review by Cochrane suggests. Flexible working seems to be more beneficial for health and wellbeing where the individuals control their own work patterns, rather than where employers are in control. Given the absence of ill health effects associated with employee-controlled flexibility and the evidence of some positive improvements in some health outcomes, more flexibility in work schedules has the potential to promote healthier workplaces and improve work practices. In addition to physical risks, the workplace can pose a threat

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	to health due to factors like high workloads, time pressures, lack of control and limited social interaction with others, and stress can contribute to conditions like heart disease, depression and anxiety. One study linked more flexibility over shifts to less mental strain and stress. Another study looked at men who were employed inadequately (i.e., they had involuntary part-time jobs), and found that they were more depressed than were fully employed people. (Joyce, 2010) Female nurses who feel they are under too much pressure at work have a significantly increased risk of developing ischemic heart disease (IHD), independent of traditional coronary risk factors. This study adds to the previous body of evidence suggesting harmful effects of excessive psychological demands at work on cardiac health but is one among very few that demonstrates the effect among women. The researchers focused their analyses on answers to one question on level of work pressure (too low, suitable, a little too high, or much too high) and one question on level of job influence (major influence, a certain influence, or minor or no influence). Having work pressure that was much too high was a significant predictor of IHD, but no significant association was found between job influence and IHD. (Allesøe, 2010) Employment has a very positive long-term impact on mental health service use and costs for persons with severe mental illness. In a ten-year study of overall mental health costs among patients with serious mental illness, the results suggest that cost savings to the mental health system for high service users accrue rapidly after the first year of employment and continue to increase for many years. The ten-year cost reduction is enough to justify offering supported employment to all persons who use high levels of services and express interest in working. (Bush, 2009) Job strain is associated with a small but consistent increased risk of coronary heart disease, based on a large study, but it is still not known whether the relationship between job strain and heart disease is causal. After adjustment for sex and age, the hazard ratio for job strain vs no job strain was 1.23; this remained the same even after taking into account factors such as lifestyle, age, gender, and socioeconomic status. However, the effect estimate was higher in published (HR 1.43) than in unpublished (1.16) studies. The worst kind of job stress is to have high demands/pressure but little decision authority and so very little say on what goes on at work, and the opportunities to learn are poor. They found the highest risk of CHD in those who reported high demands and low control (HR 1.28 compared with low demands/high control). (Kivimäki, 2012) Negative working conditions, including low job satisfaction, little control, and a lack of appreciation by employers, are responsible for a sizeable proportion of depression in middle-aged adults, according to the JOEM. According to the authors, these findings underscore the importance of the role of good jobs in enhancing worker productivity and reducing the costs of depression for workers, their families, and healthcare systems. (Burgard, 2013) Shift work over a period of 10 or more years, and the disruption in circadian rhythm it causes, impairs cognitive function, with potentially important safety consequences. The harmful effects on the brain can be reversed when shift work ends, but it may take up to 5 years to achieve full recovery. While it is known that shift work is associated with chronic health complaints (e.g., cardiovascular disease, metabolic syndrome, breast cancer and reproductive problems), very little was previously known about the long-term consequences of shift work on cognitive abilities. For exposures to rotating shift work lasting longer than 10 years, the cognitive loss was equal to 6.5 years of age-related decline. (Marquié, 2014) See Return to work. See also Stress & atherosclerosis (effect); Stress & blood pressure (effect); Stress & cancer (effect); Stress & depression (effect); Stress & physiology/mental performance (effect); Stress & heart-related interventions

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	ODG Capabilities & Activity Modifications for Restricted Work: Avoid eliciting symptoms affecting work/other job issues: Limit to low project responsibility and minimal supervision of others; avoid situations of conflict and stress; minimal interaction with the public; personal driving only; minimal handling of heavy machinery (if not limited by medication). Non-cognitive/modified work: Limit to moderate project responsibility and moderate supervision of others; personal driving only; minimal handling of heavy machinery (if not limited by medication).
Yoga	Recommended. Practicing yoga at the workplace may possibly teach employees to use relaxation techniques to reduce stress and risks of injury on the job. (Gura, 2002) (Parshad, 2004) (Lee, 2004) Yoga has also been found to be an effective treatment for depression and obsessive-compulsive disorder. (Woolery, 2004) (Galantino, 2004) (Shannahoff-Khalsa, 2004) Overall, the initial indications are of potentially beneficial effects of yoga interventions on depressive disorders. Variation in interventions, severity and reporting of trial methodology suggests that the findings must be interpreted with caution. Several of the interventions may not be feasible in those with reduced or impaired mobility. Nevertheless, further investigation of yoga as a therapeutic intervention is warranted. (Pilkington, 2005) (Granath, 2006) Women suffering from mental distress participating in a 3-month Iyengar yoga class show significant improvements on measures of stress and psychological outcomes. (Michalsen, 2005) Yoga induces a feeling of wellbeing in healthy people, and can reverse the clinical and biochemical changes associated with metabolic syndrome, according to results of studies from Sweden and India. Yoga induces a "relaxation response" associated with reduced sympathetic nervous system activity and a feeling of wellbeing probably due to an increase in antioxidants and lower levels of cortisol. (Khatri, 2007) Transcendental meditation (TM) may help alleviate symptoms of post-traumatic stress disorder (PTSD). In a small pilot study, those who practiced TM showed a significant reduction in PTSD symptoms, significant increases in quality-of-life measures, and improvements in communication and sleep after 8 weeks. The benefits may be due to the long-term changes in sympathetic nervous system activity that come from regular practice of TM, including decreased blood pressure and lower reactivity to stress. (Rosenthal, 2011) Regular, long-term meditation may significantly improve mental wellbeing. (Verma, 2011)
Zoloft	See Sertraline (trade names Zoloft and Lustral) for the treatment of Posttraumatic Stress Disorder. (Brady, 2000) (Davidson, 2001)
Zolpidem (Ambien)	Not recommended for long-term use, but recommended for short-term use. See Insomnia treatment for zolpidem (brand names Ambien, Edluar, Intermezzo, Zolpimist). See also the MTUS Chronic Pain Medical Treatment Guidelines. Zolpidem is approved for the short-term (usually two to six weeks) treatment of insomnia. It can be habit-forming, and it may impair function and memory. Ambien CR offers no significant clinical advantage over regular release zolpidem, and Ambien CR causes a greater frequency of dizziness, drowsiness, and headache compared to immediate release zolpidem. Due to adverse effects, recommended doses for zolpidem have been reduced lately. Even at the lower dose of Ambien CR now recommended by the FDA, 15% of women and 5% of men still had high levels of the drug in their system in the morning. Emergency department (ED) visits for adverse reactions related to zolpidem increased by almost 220% in a recent 5-year period, according to the Substance Abuse and Mental Health Services Administration (SAMHSA). Women and the elderly appear to be most prone to adverse reactions linked to zolpidem. Doctors should look at alternative strategies for treating insomnia such as sleep hygiene and Cognitive Behavioral Therapy. By

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	2010 there were 64,175 ED visits involving zolpidem. The report stresses that zolpidem should be used safely for only a short period of time. (SAMHSA, 2013) Zolpidem (Ambien) increases the ability to remember images, but only those that have negative or highly arousing content. The findings have potential ramifications for patients prescribed zolpidem for relief of insomnia due to anxiety disorders, including posttraumatic stress disorder (PTSD). Physicians should watch out for this countertherapeutic effect in patients with anxiety disorders and PTSD, because these are people who already have heightened memory for negative and high-arousal memories. The study also identified sleep spindles as the mechanism that enables the brain to consolidate emotional memory. Sleep spindles are brief bursts of brain activity that occur primarily during non-rapid eye movement (REM) sleep. (Kaestner, 2013) New analysis from SAMHSA shows that overmedicating with zolpidem led to a near doubling of emergency department (ED) visits during the periods 2005-2006 and 2009-2010. (SAMHSA, 2014)
Zung Depression Inventory	Not recommended as a first-line option psychological test in the assessment of chronic pain patients. See Psychological evaluations. Can identify patients needing referral for further assessment and treatment for depression. *Strengths:* Well-known, brief measure. *Weaknesses:* Limited to assessment of depression, easily faked. Psychometric characteristics are not well established, and similar scales are prone to false positive findings. Should not be used as a stand-alone measure, especially when secondary gain is present. (Bruns, 2001)
Zyprexa® (olanzapine)	See Olanzapine (Zyprexa).

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REFERENCE SUMMARIES

ACOEM Occupational Mental Health Committee. A Screening Program for Depression. http://www.acoem.org/guidelines/article.asp?ID=54. 2002

Abstract

A depression-screening program is an effective and inexpensive way to identify some of the most emotionally distressed employees. While there are many screening instruments available, a simple approach may be useful for identifying those employees where there should be an increased level of concern. Not all distressed employees will be identified by use of a screening tool, and the results indicate a need for greater concern, rather than a specific diagnosis. Optimal utilization of the results requires careful attention to differential diagnosis of psychosocial factors, psychiatric diagnoses, and medical illnesses, in order to select appropriate treatment. Proper diagnosis and treatment is likely to lead to significant clinical improvement, with at least some costs offset by enhanced workplace performance and reductions in some other benefits costs. Optimal diagnosis and treatment of employee psychiatric illness should be a focus of further attention.

Final Recommendation

The Occupational Mental Health Committee and the Council on Scientific Affairs recommends that ACOEM:

1. endorse the Report of the US Preventive Services Task Force on Screening for Depression;

2. take the position that depression screening is an appropriate part of the practice of clinical occupational medicine, which can be a valuable addition to acute injury or illness care, fitness-for-duty evaluations, and clinical preventive medical examinations; and adopt this report as policy.

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Western Interstate Commission for Higher Education (WICHE) Mental Health Program, Boulder, CO 80301-9752, USA. sadams@wiche.edu

Depression disease management improved the mental health status of urban patients over 18 months but not rural patients. Effects were not mediated by antidepressant medication or specialty care counseling in urban or rural patients. CONCLUSIONS: Depression disease management appears to improve clinical outcomes in urban but not rural patients.

PMID: 17010032

Rating: 3b

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The AHRQ Comparative Effectiveness Research concludes that trazodone is equal to zolpidem: http://www.ncbi.nlm.nih.gov/books/NBK47207/pdf/TOC.pdf#page=83

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Seventy-six adults, ASA grade I and II, undergoing elective surgery, were randomly assigned to two equal groups. Acupressure is effective in decreasing both pre-operative anxiety and BIS; however, these effects are not sustained 30 min following release of acupressure.

PMID: 16179042

Rating: 2c

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Rating: 1c

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Rating: 2b

Allesøe K, Hundrup YA, Thomsen JF, Osler M. Psychosocial work environment and risk of ischaemic heart disease in women: the Danish Nurse Cohort Study. *Occup Environ Med*. 2010 May;67(5):318-22.

OBJECTIVES: To investigate the effect of work pressure and job influence on the development of ischaemic heart disease (IHD) in women. METHODS: A total of 12,116 participants, aged 45-64 years, were examined in 1993 using a questionnaire and were followed. CONCLUSIONS: In this study we find that work pressure that is too high is a significant risk factor for IHD in younger female employees (<51 years of age).

PMID: 20447987

Rating: 3a

Almeida OP, Ford AH, Flicker L. Systematic review and meta-analysis of randomized placebo-controlled trials of folate and vitamin B12 for depression. *Int Psychogeriatr*. 2015:1-11.

PMID: 25644193

Rating: 1a

Almeida OP, Ford AH, Hirani V, Singh V, vanBockxmeer FM, McCaul K, Flicker L. B vitamins to enhance treatment response to antidepressants in middle-aged and older adults: results from the B-VITAGE randomised, double-blind, placebo-controlled trial. *Br J Psychiatry*. 2014;205:450-7.

PMID: 25257064

Rating: 2a

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision.* Washington, D.C., American Psychiatric Association, 2000.

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the standard classification of mental disorders used by mental health professionals in the United States. It is intended to be applicable in a wide array of contexts and used by clinicians and researchers of many different orientations (e.g., biological, psychodynamic, cognitive, behavioral, interpersonal, family/systems). DSM-IV has been designed for use across settings--inpatient, outpatient, partial hospital, consultation-liaison, clinic, private practice, and primary care, and with community populations and by psychiatrists, psychologists, social workers, nurses, occupational and rehabilitation therapists, counselors, and other health and mental health professionals. It is also a necessary tool for collecting and communicating accurate public health statistics. The DSM consists of three major components: the diagnostic classification, the diagnostic criteria sets, and the descriptive text.

Rating: 9b

American Psychiatric Association. Work Group on Psychiatric Evaluation; American Psychiatric Association Steering Committee on Practice Guidelines. Psychiatric evaluation of adults. Second edition. *Am J Psychiatry*. 2006 Jun;163(6 Suppl):3-36.

APA practice guidelines are intended to assist psychiatrists in clinical decision-making and to improve patient care. They also document evidence available to determine appropriate care. A practice guideline is not a "standard of care." The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the psychiatrist in light of the clinical data presented by the patient and the diagnostic and treatment options available.

PMID: 16866240

Rating: 5a

American Psychiatric Association. 309.81 Posttraumatic Stress Disorder. In: *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition. American Psychiatric Association, Washington 1994:424-429.

Diagnostic criteria for 309.81 Posttraumatic Stress Disorder
A. The person has been exposed to a traumatic event in which both of the following were present: (1) the person experienced witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of others; (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior.
B. The traumatic event is persistently re-experienced in one (or more) of the following ways: (1) recurrent and distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed. (2) Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognizable content. (3) acting or feeling if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur. (4) Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event (5) Physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three or more of the following: (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma (2) efforts to avoid activities, places, or people that arouse recollections of the trauma (3) inability to recall an important aspect of the trauma (4) markedly diminished interest or participation in significant activities (5) feeling of detachment or estrangement from others (6) restricted range of affect. (e.g., unable to have loving feelings) (7) Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)
D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following: (1) difficulty falling or staying asleep (2) irritability or outbursts of anger (3) difficulty concentrating (4) hypervigilance (5) exaggerated startle response
E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than one month.
F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
Specify if: Acute: if duration of symptoms is less than three months. Chronic: if duration of symptoms is three months or more
Specify if: With Delayed Onset: if onset of symptoms is at least 6 months after the stressor

Rating: 9b

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Rating: 9a

Anderson N, Heywood-Everett S, Siddiqi N, Wright J, Meredith J, McMillan D. Faith-adapted psychological therapies for depression and anxiety: Systematic review and meta-analysis.
***J Affect Disord*. 2015 May 1;176:183-96. doi: 10.1016/j.jad.2015.01.019.**

PMID: 25723562

Rating: 1b

Anderzen I, Arnetz BB. Psychophysiological reactions to international adjustment. Results from a controlled, longitudinal study. *Psychother Psychosom.* 1999 Mar-Apr;68(2):67-75.

BACKGROUND: This controlled prospective study examines psychophysiological reactions in employees during their first and second year abroad to identify individual as well as work-related factors predictive of positive adjustment. RESULTS: During the years abroad, the expatriate employees experienced increased psychosocial stress as well as negative adjustment as reflected in circulating levels of prolactin and testosterone, worse mental well-being and worsening subjective work environment, as compared with the non-moving group. The greatest change occurred during the first year. Individual factors such as social support, internal locus of control, self-esteem and sense of coherence modified the stress response and predicted employees' ability to adjust to foreign assignments. CONCLUSIONS: The study emphasizes the importance for multinational organizations to look at these individual characteristics before sending employees abroad. They also need to get more involved in supporting employees to manage stressors characteristic of the first year of foreign work.

PMID: 10026457

Rating: 2b

Anthony WA, Rogers ES, Cohen M, Davies RR. Relationships between psychiatric symptomatology, work skills, and future vocational performance. *Psychiatr Serv.* 1995 Apr;46(4):353-8.

Center for Psychiatric Rehabilitation, Boston University, Massachusetts, USA.

METHODS: Subjects were 275 clients of three psychosocial rehabilitation programs who had expressed a vocational goal. RESULTS: Among subjects remaining in the study for one year, both symptomatology and work skills improved significantly. Moderately significant negative correlations were found between symptoms and work skills; subjects who became employed had lower symptom scores and higher work skills than persons who never became employed. CONCLUSIONS: Although a moderate relationship was found between symptomatology and work skills, symptoms should not be considered a proxy measure for vocational functioning among persons with severe mental illness.

PMID: 7788456

Rating: 3a

Acharya N, Rosen AS, Polzer JP, D'Souza DN, Perahia DG, Cavazzoni PA, Baldessarini RJ. Duloxetine: meta-analyses of suicidal behaviors and ideation in clinical trials for major depressive disorder. *J Clin Psychopharmacol*. 2006 Dec;26(6):587-94.

Eli Lilly Research Center, Indianapolis, IN 46285, USA. acharya_nayan@lilly.com

We found no evidence of an increased risk of suicidal behaviors or ideation during treatment with duloxetine compared with placebo in MDD patients.

PMID: 17110815

Rating: 1b

Arbisi PA, Butcher JN. Psychometric perspectives on detection of malingering of pain: use of the Minnesota Multiphasic Personality Inventory-2. *Clin J Pain*. 2004 Nov-Dec;20(6):383-91.

Minneapolis VA Medical Center, Minneapolis, MN 55417, USA. arbis001@umn.edu

Self-report plays a primary but not exclusive role in pain assessment. As is true of all self-reported experiences, under certain circumstances, the report of chronic pain can be distorted and misrepresented.. The current paper provides a rationale for the use of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) in the comprehensive assessment of chronic pain with an emphasis on the advantage the MMPI-2 provides in the detection of response bias or malingering.

PMID: 15502681

Rating: 5b

Asnis GM, Kohn SR, Henderson M, Brown NL. SSRIs versus non-SSRIs in post-traumatic stress disorder: an update with recommendations. *Drugs*. 2004;64(4):383-404.

Department of Psychiatry and Behavioral Sciences, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, New York 10467, USA. asnisarts@aol.com

Post-traumatic stress disorder (PTSD) is a highly prevalent (7.8% lifetime rate) anxiety disorder with impairment in daily functioning, frequent suicidal behaviour and high rates of co-morbidity. Besides being the most studied and effective drugs for PTSD, SSRIs have a favourable adverse effect profile, making them the first-line treatment for PTSD. Benzodiazepines were ineffective in a double-blind, placebo-controlled study despite encouraging case reports. They should be avoided or used only short term because of potential depressogenic effects, and the possibility that they may promote or worsen PTSD.

PMID: 14969574

Rating: 5b

Bach P, Hayes SC. The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: a randomized controlled trial*. J Consult Clin Psychol*. 2002 Oct;70(5):1129-39.

Department of Psychology, University of Nevada, Reno 89557-0062, USA.
hayes@unr.nevada.edu

ACT participants showed significantly higher symptom reporting and lower symptom believability and a rate of rehospitalization half that of TAU participants over a 4-month follow-up period.

PMID: 12362963

Rating: 2c

Badamgarav E, Weingarten SR, Henning JM, Knight K, Hasselblad V, Gano A Jr, Ofman JJ. Effectiveness of disease management programs in depression: a systematic review. *Am J Psychiatry.* 2003 Dec;160(12):2080-90.

Zynx Health, 9100 Wilshire Blvd., East Tower, Suite 655, Beverly Hills, CA 90212, USA. ebadamgarav@cerner.com

OBJECTIVE: The authors systematically evaluated the published evidence to assess the effectiveness of disease management programs in depression. RESULTS: Pooled results for disease management program effects on symptoms of depression showed statistically significant improvements (effect size=0.33, N=24). Programs also had statistically significant effects on patients' satisfaction with treatment (effect size=0.51, N=6), patients' compliance with the recommended treatment regimen (effect size=0.36, N=7), and adequacy of prescribed treatment (effect size=0.44, N=11).CONCLUSIONS: Disease management appears to improve the detection and care of patients with depression. Further research is needed to assess the cost-effectiveness of disease management in depression, and consideration should be given to more widespread implementation of these programs.

PMID: 14638573

Rating: 1b

Barber JP, Barrett MS, Gallop R, Rynn MA, Rickels K. Short-term dynamic psychotherapy versus pharmacotherapy for major depressive disorder: a randomized, placebo-controlled trial. *J Clin Psychiatry.* 2012 Jan;73(1):66-73.

This trial of urban MDD patients failed to confirm that either active treatment was better than placebo. Minority status and gender had significant and differential effects on outcome that warrant replication in future studies.

PMID: 22152401

Rating: 2b

Barbui C, Guaiana G, Hotopf M. Amitriptyline for inpatients and SSRIs for outpatients with depression? Systematic review and meta-regression analysis. *Pharmacopsychiatry.* 2004 May;37(3):93-7.

Department of Medicine and Public Health, Section of Psychiatry, University of Verona, Italy. corrado.barbui@univr.it

BACKGROUND: The aim of this study was to investigate the contribution of study setting on outcome in clinical trials comparing amitriptyline with any other AD. METHODS: The electronic search yielded 181 randomised clinical trials, 47% enrolling inpatients and 53% outpatients with depression. CONCLUSIONS: These data suggest that a reasonable approach could be the first-line prescription of newer agents in the routine outpatient care of depressive subjects, and the use of amitriptyline in inpatients with severe depression.

PMID: 15179966

Rating: 1a

Barsky AJ. Forgetting, fabricating, and telescoping: the instability of the medical history. *Arch Intern Med.* 2002 May 13;162(9):981-4.

Department of Psychiatry, Brigham and Women's Hospital, 75 Francis St, Boston, MA 02115, USA.

Patients' recollections of their past symptoms, illnesses, and episodes of care are often inconsistent from one inquiry to the next. Patients frequently fail to recall (and therefore underreport) the incidence of previous symptoms and events; tend to combine separate, similar occurrences into a single, generic memory; and falsely recall medical events and symptoms that did not in fact occur.

PMID: 11996606

Rating: 5b

Barth RJ, Brigham CR. Who is in the better position to evaluate, the treating physician or an independent evaluator. *The Guides Newsletter*. September/October 2005: 8-11. American Medical Association.

Rating: 5b

Barth RJ, Roth VS. Health Benefits of Returning to Work. *Occupational and Environmental Medicine Report.* 17, 3, March, 2003, p13-17.

"Work is a blessing not a curse. Work supports good health."
Being without work:
- Increases mortality
- Decreases social interaction & self-esteem
- Removes a sense of identity and purpose in life
- Increases mental health problems
- Introduces financial difficulties and a lack of security

Rating: 5b

Bartholomew JB, Morrison D, Ciccolo JT. Effects of acute exercise on mood and well-being in patients with major depressive disorder. *Med Sci Sports Exerc*. 2005 Dec;37(12):2032-7.

The University of Texas at Austin, Department of Kinesiology and Health Education, Exercise Psychology Laboratory, Austin, TX 78712, USA. john.bart@mail.utexas.edu

Although 30 min of either moderate-intensity treadmill exercise or quiet rest is sufficient to improve the mood and well-being of patients with MDD, exercise appears to have a greater effect on the positively valenced states measured.

PMID: 16331126

Rating: 2c

Bedson E, Bell D, Carr D, Carter B, Hughes D, Jorgensen A, Lewis H, Lloyd K, McCaddon A, Moat S, Pink J, Pirmohamed M, Roberts S, Russell I, Sylvestre Y, Tranter R, Whitaker R, Wilkinson C, Williams N. Folate Augmentation of Treatment--Evaluation for Depression (FolATED): randomised trial and economic evaluation. *Health Technol Assess*. 2014;18(48):vii-viii, 1-159.

PMID: 25052890

Rating: 2a

Bell MD, Lysaker PH, Milstein RM. Clinical benefits of paid work activity in schizophrenia. *Schizophr Bull.* 1996;22(1):51-67.

Psychology Service, VA Medical Center, West Haven, CT 06516, USA.

We concluded that pay increased participation and that, in this study, participation in work activity was primarily responsible for symptom reduction.

PMID: 8685664

Rating: 2b

Bell MD, Milstein RM, Lysaker PH. Pay as an incentive in work participation by patients with severe mental illness. *Hosp Community Psychiatry*. 1993 Jul;44(7):684-6.

Veterans Affairs Medical Center, West Haven, CT 06516.

PMID: 8354510

Rating: 5b

Beltrutti D; Lamberto A; Barolat G; Bruehl SP;Doleys D;Krames E; Meglio M; North R;Olson K; Reig E; Simpson B; Turk D; Aronoff G; Melzack R. The Psychological Assessment of Candidates for Spinal Cord Stimulation for Chronic Pain Management. *Pain Practice* 2004;4:204-221.

To improve treatment outcomes of SCS, seems to be essential to perform psychosocial evaluations on all persons clinically indicated for SCS to exclude those patients, who most probably, on a psychosocial level, will fail the procedure. To maximize treatment efficacy, authors believe spinal cord stimulation for chronic pain control must be part of a comprehensive program. An accurate preoperative psychosocial assessment and a course of psychological assistance both before and after therapy seems to be crucial for improving outcomes.

PMID: 17173602

Rating: 5a

Benedetti F, Colombo C, Pontiggia A, Bernasconi A, Florita M, Smeraldi E. Morning light treatment hastens the antidepressant effect of citalopram: a placebo-controlled trial. J Clin Psychiatry. 2003 Jun;64(6):648-53.

Universita Vita-Salute San Raffaele, School of Medicine, Department of Neuropsychiatric Sciences, Milano, Italy. benedetti.francesco@hsr.it

The combination of citalopram and light treatment was more effective than citalopram and placebo in the treatment of major depression.

PMID: 12823078

Rating: 2c

Berber MJ. FINISH: remembering the discontinuation syndrome. Flu-like symptoms, Insomnia, Nausea, Imbalance, Sensory disturbances, and Hyperarousal (anxiety/agitation). *J Clin Psychiatry*. 1998;59:255.

A pneumonic has been suggested of the most common symptoms (FINISH: Flu-like symptoms; Insomnia; Nausea; Imbalance; Sensory disturbances; Hyperarousal).

Rating: 11a

Billioti de Gage S, Moride Y, Ducruet T, Kurth T, Verdoux H, Tournier M, Pariente A, Bégaud B. Benzodiazepine use and risk of Alzheimer's disease: case-control study. *BMJ.* 2014 Sep 9;349:g5205. doi: 10.1136/bmj.g5205.

PMID: 25208536

Rating: 4a

Binder LM, Rohling ML. Money matters: a meta-analytic review of the effects of financial incentives on recovery after closed-head injury. *Am J Psychiatry*. 1996 Jan;153(1):7-10.

Psychology Service, Portland VA Medical Center, OR 97207, USA.

Clinical evaluation of patients after closed-head injury, particularly mild head trauma, must include consideration of the effect of financial incentives on symptoms and disability.

PMID: 8540596

Rating: 1a

Bisson J, Andrew M. Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database Syst Rev.* 2007 Jul 18;(3):CD003388.

Cardiff University, Department of Psychological Medicine, Monmouth House, University Hospital of Wales, Heath Park, Cardiff, UK, CF14 4XW. bissonji@cardiff.ac.uk

BACKGROUND: Psychological interventions are widely used in the treatment of post-traumatic stress disorder (PTSD). OBJECTIVES: To perform a systematic review of randomised controlled trials of all psychological treatments following the guidelines of The Cochrane Collaboration. SELECTION CRITERIA: Types of participants - Adults suffering from traumatic stress symptoms for three months or more. Types of interventions - Trauma-focused cognitive behavioural therapy/exposure therapy (TFCBT); stress management (SM); other therapies (supportive therapy, non-directive counselling, psychodynamic therapy and hypnotherapy); group cognitive behavioural therapy (group CBT); eye movement desensitisation and reprocessing (EMDR). CONCLUSIONS: There was evidence individual TFCBT, EMDR, stress management and group TFCBT are effective in the treatment of PTSD. Other non-trauma focused psychological treatments did not reduce PTSD symptoms as significantly. There was some evidence that individual TFCBT and EMDR are superior to stress management in the treatment of PTSD at between 2 and 5 months following treatment, and also that TFCBT, EMDR and stress management were more effective than other therapies.

PMID: 17636720

Rating: 1a

Bisson JI, Roberts NP, Andrew M, Cooper R, Lewis C. Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *Cochrane Database Syst Rev*. 2013 Dec 13;12:CD003388. doi: 10.1002/14651858.CD003388.pub4.

PMID: 24338345

Rating: 1a

Black DS, O'Reilly GA, Olmstead R, Breen EC, Irwin MR. Mindfulness Meditation and Improvement in Sleep Quality and Daytime Impairment Among Older Adults With Sleep Disturbances: A Randomized Clinical Trial. *JAMA Intern Med.* 2015 Feb 16. doi: 10.1001/jamainternmed.2014.8081.

PMID: 25686304

Rating: 2b

Blumberg Lapidus L, Shin SK, Hutton EM. An evaluation of a six-week intervention designed to facilitate coping with psychological stress. J Clin Psychol. 2001 Dec;57(12):1381-401.

Clinical Psychology Program, Columbia University, Teachers College, New York, NY 10027, USA. l.b.lapidus@columbia.edu

A three-month follow-up showed greater attendance at mental health appointments for the experimental group over controls and for total sample differentiation gainers over nongainers.

PMID: 11745583

Rating: 2c

Blumenthal JA, Babyak M, Wei J, O'Connor C, Waugh R, Eisenstein E, Mark D, Sherwood A, Woodley PS, Irwin RJ, Reed G. Usefulness of psychosocial treatment of mental stress-induced myocardial ischemia in men. Am J Cardiol. 2002 Jan 15;89(2):164-8.

Duke University Medical Center, Durham, North Carolina 27710, USA. Blume003@mc.duke.edu

These results suggest that there may be clinical and economic benefit to offering the type of preventive stress management and exercise interventions provided to patients with myocardial ischemia. Moreover, these findings suggest that the financial benefits that accrue from an appropriately targeted intervention may be substantial and immediate.

PMID: 11792336

Rating: 2b

Bockting CL, Spinhoven P, Koeter MW, Wouters LF, Visser I, Schene AH; DELTA study group. Differential predictors of response to preventive cognitive therapy in recurrent depression: a 2-year prospective study*. Psychother Psychosom*. 2006;75(4):229-36.

Department of Psychiatry, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands. c.l.bockting@amc.uva.nl

The finding that preventive CT protects against the influence of a consistently found risk factor of relapse/recurrence, i.e. the number of depressive episodes, underlines the potential of psychological preventive interventions. Preventive CT seemed to be especially effective in reducing presumably internally provoked, relapse/recurrence but may be quite ineffective in reducing externally provoked relapse/recurrence. CT possibly prevents either stress generation or disrupts kindling effects.

PMID: 16785772

Rating: 2b

Boggio PS, Rocha M, Oliveira MO, Fecteau S, Cohen RB, Campanhã C, Ferreira-Santos E, Meleiro A, Corchs F, Zaghi S, Pascual-Leone A, Fregni F. Noninvasive brain stimulation with high-frequency and low-intensity repetitive transcranial magnetic stimulation treatment for posttraumatic stress disorder. *J Clin Psychiatry*. 2009 Dec 29. [Epub ahead of print]

METHOD: In this double-blind, placebo-controlled phase II trial conducted between October 2005 and July 2008, 30 patients with DSM-IV-diagnosed PTSD were randomly assigned to receive 1 of the following treatments: active 20 Hz rTMS of the right DLPFC, active 20 Hz rTMS of the left DLPFC, or sham rTMS. Treatments were administered in 10 daily sessions over 2 weeks. CONCLUSIONS: These results support the notion that modulation of prefrontal cortex can alleviate the core symptoms of PTSD and suggest that high-frequency rTMS of right DLPFC might be the optimal treatment strategy.

PMID: 20051219

Rating: 2b

Bogia B, Preston. Responding to questions in pastoral care. *J Pastoral Care* 1985;39(4):357-69.

Rating: 5b

Bond FW, Bunce D. Mediators of change in emotion-focused and problem-focused worksite stress management interventions. J Occup Health Psychol. 2000 Jan;5(1):156-63.

Ninety volunteers in a media organization were randomly allocated to an Acceptance and Commitment Therapy (ACT, n = 30) group that sought to enhance people's ability to cope with work-related strain, an Innovation Promotion Program (IPP, n = 30) that helped individuals to identify and then innovatively change causes of occupational strain, or a waitlist control group (n = 30). As hypothesized, changes in outcome variables in the ACT condition were mediated only by the acceptance of undesirable thoughts and feelings. In the IPP condition, outcome change was mediated only by attempts to modify stressors.

PMID: 10658893

Rating: 2c

Bond GR, Drake RE, Becker DR et al. Effectiveness of psychiatric rehabilitation approaches for employment of people with severe mental illness; 1997.

Rating: 9b

Boscarino JA. A prospective study of PTSD and early-age heart disease mortality among Vietnam veterans: implications for surveillance and prevention. *Psychosom Med*. 2008 Jul;70(6):668-76. Epub 2008 Jul 2.

Center for Health Research, Geisinger Clinic, 100 N. Academy Avenue, Danville, PA 17822, USA. jaboscarino@geisinger.edu

OBJECTIVE: To examine prospectively early-age heart disease (HD) among a national random sample of 4328 male Vietnam veterans, who did not have HD at baseline in 1985.
CONCLUSION: PTSD was prospectively associated with HD mortality among veterans free of HD at baseline. This study suggests that early-age HD may be an outcome after military service among PTSD-positive veterans.

PMID: 18596248

Rating: 3a

Posttraumatic stress disorder (PTSD) significantly raises the risk of early death from heart disease, according to results of a long-term prospective study of Vietnam veterans. Until now, the evidence linking PTSD with cardiovascular disease was inconclusive, "but this study confirms that PTSD is a major cause of heart disease," Dr. Joseph Boscarino told Reuters Health. "We controlled for key confounders, lifetime depression, and combat exposure in the current study to assess the prospective contribution of PTSD in early-age heart disease independent of the latter factors, something rarely done in past investigations," Dr. Boscarino explains in his paper. Among both Vietnam "theatre" veterans (i.e., those who served in Vietnam) and Vietnam "era" veterans (i.e., those who served elsewhere during the Vietnam era), having PTSD was associated with a hazard ratio of heart disease mortality of 2.25, based on the DSM-III measure of PTSD. The effects for theatre veterans alone were stronger, with a hazard ratio of 2.58. Having higher PTSD symptoms was associated with mortality, with a 5-point increase associated with approximately a 20% increase in mortality risk ($p < 0.05$). "Men in the study, on average, were in their mid 50s. Yet they were developing heart disease from PTSD and dying too early," Dr. Boscarino noted. "Physicians should be aware of (PTSD as a) risk factor for heart disease, just like they are for smoking, cholesterol, etc.," he concluded. "PTSD should be on doctors' radar screens because it increases inflammation that over time corrodes a person's arteries and can cause premature mortality."

Boscarino JA, Kirchner HL, Hoffman SN, Sartorius J, Adams RE, Figley CR. A brief screening tool for assessing psychological trauma in clinical practice: development and validation of the New York PTSD Risk Score. Gen Hosp Psychiatry. 2011 Jul 19. [Epub ahead of print]

CONCLUSION: The New York PTSD Risk Score is a multifactor prediction tool that includes the Primary Care PTSD Screen, depression symptoms, access to care, sleep disturbance, trauma history and demographic variables and appears to be effective in predicting PTSD among patients seen in healthcare settings. This prediction tool is simple to administer and appears to outperform other screening measures.

PMID: 21777981

Rating: 5b

Botella C, García-Palacios A, Guillen V, Baños RM, Quero S, Alcaniz M. An Adaptive Display for the Treatment of Diverse Trauma PTSD Victims. *Cyberpsychol Behav*. 2009 Dec 20. [Epub ahead of print]

Cognitive behavior programs, including exposure therapy, are currently the treatment of choice for PTSD. Application of new technologies, especially virtual reality (VR), could help to overcome these issues. Several VR programs that address PTSD already exist. This study presents preliminary data on the efficacy of a VR adaptive display called EMMA's World, as applied in the treatment of diverse trauma PTSD victims. This VR program is unique; its flexibility allows it to be used to treat patients who suffer from PTSD due to different kinds of traumatic events. Results support the utility of EMMA's World in the treatment of PTSD.

PMID: 20021278

Rating: 4b

Bouza C, Angeles M, Munoz A, Amate JM. Efficacy and safety of naltrexone and acamprosate in the treatment of alcohol dependence: a systematic review. Addiction. 2004 Jul;99(7):811-28.

Agency for Health Technology Assessment, Madrid, Spain. cbouza@iscii.es

Both acamprosate and naltrexone are effective as adjuvant therapies for alcohol dependence in adults. Acamprosate appears to be especially useful in a therapeutic approach targeted at achieving abstinence, whereas naltrexone seems more indicated in programmes geared to controlled consumption. Both drugs are safe and acceptably tolerated but issues of compliance need to be addressed adequately to assure their usefulness in clinical practice.

PMID: 15200577

Rating: 1b

Brady K, Pearlstein T, Asnis GM, Baker D, Rothbaum B, Sikes CR, Farfel GM. Efficacy and safety of sertraline treatment of posttraumatic stress disorder: a randomized controlled trial. *JAMA*. 2000 Apr 12;283(14):1837-44.

Department of Psychiatry, Medical University of South Carolina, Charleston 29425, USA. brady@musc.edu

OBJECTIVE: To determine if treatment with sertraline hydrochloride effectively diminishes symptoms of PTSD of moderate to marked severity. PATIENTS: A total of 187 outpatients with a Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition diagnosis of PTSD and a Clinician Administered PTSD Scale Part 2 (CAPS-2) minimum total severity score of at least 50 at baseline (mean age, 40 years; mean duration of illness, 12 years; 73% were women; and 61.5% experienced physical or sexual assault). CONCLUSIONS: Our data suggest that sertraline is a safe, well-tolerated, and effective treatment for PTSD.

PMID: 10770145

Rating: 2b

Brannan SK, Mallinckrodt CH, Brown EB, Wohlreich MM, Watkin JG, Schatzberg AF. Duloxetine 60 mg once-daily in the treatment of painful physical symptoms in patients with major depressive disorder. *J Psychiatr Res*. 2005 Jan;39(1):43-53.

Cyberonics, Houston, TX 77058, USA.

BACKGROUND: While emotional symptoms such as depressed mood and loss of interest have traditionally been considered to constitute the core symptoms of major depressive disorder (MDD), the prevalence and importance of painful physical symptoms such as back pain, abdominal pain, and musculoskeletal pain is becoming increasingly appreciated. METHODS: In this multicenter, double-blind, placebo-controlled study, patients meeting DSM-IV criteria for MDD were randomized to receive placebo (N=141) or duloxetine 60 mg QD (N=141). RESULTS: Mean changes in BPI Average Pain for duloxetine- and placebo-treated patients differed significantly at most visits, but only approached significance at endpoint p=0.066. For the main effect of treatment (pooling all visits), significant advantages for duloxetine-treated patients were found in 10 of 11 assessed BPI pain severity and pain interference items, in addition to VAS overall pain and back pain. CONCLUSIONS: In this study, duloxetine (60 mg QD) was shown to be an effective treatment for the painful physical symptoms which are frequently associated with depression. Improvements in pain severity occurred independently of changes in depressive symptom severity.

PMID: 15504423

Rating: 2b

Breslau J, Borges G, Tancredi D, Saito N, Kravitz R, Hinton L, Vega W, Medina-Mora ME, Aguilar-Gaxiola S. Migration from Mexico to the United States and subsequent risk for depressive and anxiety disorders: a cross-national study. *Arch Gen Psychiatry*. 2011 Apr;68(4):428-33.

PARTICIPANTS: Two thousand five hundred nineteen nonmigrant family members of migrants in Mexico and 554 Mexican migrants in the United States. RESULTS: After arrival in the United States, migrants had a significantly higher risk for first onset of any depressive or anxiety disorder than did nonmigrant family members of migrants in Mexico (odds ratio, 1.42). Elevated risk among migrants relative to nonmigrants was restricted to the 2 younger cohorts (those aged 18-25 or 26-35 years at interview). In the most recent birth cohort, the association between migration and first onset of any depressive or anxiety disorder was particularly strong (odds ratio, 3.89).

PMID: 21464367

Rating: 3a

Brom D, Kleber RJ, Defares PB. Brief psychotherapy for posttraumatic stress disorders. *J Consult Clin Psychol* 1989 Oct;57(5):607-12.

A large-scale study of the effectiveness of psychotherapeutic methods for the treatment of posttraumatic stress disorders was conducted. The sample consisted of 112 persons suffering from serious disorders resulting from traumatic events (bereavement, acts of violence, and traffic accidents) that had taken place not more than 5 years before. Trauma desensitization, hypnotherapy, and psychodynamic therapy were tested for their effectiveness in comparison with a waiting-list control group. The results indicated that treated cases were significantly lower in trauma-related symptoms than the control group.

PMID: 2571625

Rating: 4b

Brown ED, Lee H, Scott D, Cummings GG. Efficacy of continuation/maintenance electroconvulsive therapy for the prevention of recurrence of a major depressive episode in adults with unipolar depression: a systematic review. *J ECT*. 2014 Sep;30(3):195-202. doi: 10.1097/YCT.0000000000000085.

PMID: 24979654

Rating: 1b

Brunelin J, Jalenques I, Trojak B, Attal J, Szekely D, Gay A, Januel D, Haffen E, Schott-Pethelaz AM, Brault C; The STEP Group, Poulet E. The Efficacy and Safety of Low Frequency Repetitive Transcranial Magnetic Stimulation for Treatment-resistant Depression: The Results From a Large Multicenter French RCT. *Brain Stimul.* 2014 Aug 7. pii: S1935-861X(14)00269-1. doi: 10.1016/j.brs.2014.07.040.

PMID: 25192980

Rating: 2a

Brunner EJ, Shipley MJ, Britton AR, Stansfeld SA, Heuschmann PU, Rudd AG, Wolfe CD, Singh-Manoux A, Kivimaki M. Depressive disorder, coronary heart disease, and stroke: dose-response and reverse causation effects in the Whitehall II cohort study. *Eur J Prev Cardiol*. 2014 Mar;21(3):340-346.

PMID: 24491401

Rating: 3b

Bruns D. Colorado Division of Workers' Compensation, Comprehensive Psychological Testing: Psychological Tests Commonly Used in the Assessment of Chronic Pain Patients. 2001

This comprehensive review shows test name; test characteristics; strengths and weaknesses; plus length, scoring options & test taking time. The following 26 tests are described and evaluated:

1) BHI™ 2 (Battery for Health Improvement – 2nd edition)
2) MBHI™ (Millon Behavioral Health Inventory)
3) MBMD™ (Millon Behavioral Medical Diagnostic)
4) PAB (Pain Assessment Battery)
5) MCMI-111™ (Millon Clinical Multiaxial Inventory, 3rd edition)
6) MMPI-2™ (Minnesota Inventory- 2nd edition ™)
7) PAI™ (Personality Assessment Inventory)
8) BBHI™ 2 (Brief Battery for Health Improvement – 2nd edition)
9) MPI (Multidimensional Pain Inventory)
10) P-3™ (Pain Patient Profile)
11) Pain Presentation Inventory
12) PRIME-MD (Primary Care Evaluation for Mental Disorders)
13) PHQ (Patient Health Questionnaire)
14) SF 36 ™
15) (SIP) Sickness Impact Profile
16) BSI® (Brief Symptom Inventory)
17) BSI® 18 (Brief Symptom Inventory-18)
18) SCL-90-R® (Symptom Checklist –90 Revised)
19) BDI ®–II (Beck Depression Inventory-2nd edition)
20) CES-D (Center for Epidemiological Studies Depression Scale)
21) PDS™ (Post Traumatic Stress Diagnostic Scale)
22) Zung Depression Inventory
23) MPQ (McGill Pain Questionnaire)
24) MPQ-SF (McGill Pain Questionnaire – Short Form)
25) Oswestry Disability Questionnaire
26) Visual Analogue Pain Scale (VAS)

All tests were judged to have acceptable evidence of validity and reliability except as noted. Tests published by major publishers are generally better standardized, and have manuals describing their psychometric characteristics and use. Published tests are also generally more difficult to fake, as access to test materials is restricted to qualified professionals. Third party review (by journal peer review or Buros Institute) supports the credibility of the test. Test norms provide a benchmark to which an individual's score can be compared. Tests with patient norms detect patients who are having unusual psychological reactions, but may overlook psychological conditions common to patients. Community norms are often more sensitive to detecting psychological conditions common to patients, but are also more prone to false positives. Double normed tests (with both patient and community norms) combine the advantages of both methods. Preference should be given to psychological tests designed and normed for the population you need to assess. Psychological tests designed for medical patients often assess syndromes unique to medical patients, and seek to avoid common pitfalls in the psychological assessment of medical patients. Psychological tests designed for psychiatric patients are generally more difficult to interpret when administered to medical patients, as they tend to

assume that all physical symptoms present are psychogenic in nature (i.e. numbness and tingling may be assumed to be a sign of somatization). This increases the risk of false positive psychological findings. Tests sometimes undergo revision and features may change. When a test is updated, the use of the newer version of the test is strongly encouraged. Document developed by Daniel Bruns, PsyD and accepted after review and revisions by the Chronic Pain Task Force, June 2001. Dr. Bruns is the coauthor of the BHI 2 and BBHI 2 tests.

Rating: 7a

Burgard SA, Elliott MR, Zivin K, House JS. Working conditions and depressive symptoms: a prospective study of US adults. *J Occup Environ Med*. 2013 Sep;55(9):1007-14. doi: 10.1097/JOM.0b013e3182a299af.

PMID: 24013657

Rating: 4b

Burton WN, Conti DJ, Chen C-Y, et al. The role of health risk factors and disease on worker productivity. *JOEM.* 1999;41(10):863-877.

Department of Medicine, Northwestern University Medical School, Chicago, Ill., USA.

The study presented here “includes a measure of the actual decrease in the productivity of employees while they are on the job, in addition to measures of absenteeism and disability. As the number of health risks increased, an employee's productivity decreased.”

PMID: 10529942

Rating: 4a

Bush DE, Ziegelstein RC, Tayback M, et al: Even minimal symptoms of depression increase mortality risk after acute myocardial infarction. *Am J Cardiol.* 2001;88:337-341.
Department of Medicine, Division of Cardiology, John Hopkins Bayview Medical Center, Baltimore, Maryland 21224, USA. dbush@mail.jhmi.edu

Mild to moderate levels of depressive symptoms as characterized by Beck Depression Inventory (BDI) scores of > or =10 are associated with decreased survival after acute myocardial infarction (AMI). Highest mortality rates were observed in patients with most severe depressive symptoms. However, compared with those without depression, higher mortality was also observed at very low levels of depressive symptoms (BDI 4 to 9) not generally considered clinically significant and below the level usually considered predictive of increased post-AMI mortality.

PMID: 11545750

Rating: 3a

Bush PW, Drake RE, Xie H, McHugo GJ, Haslett WR. The long-term impact of employment on mental health service use and costs for persons with severe mental illness. *Psychiatr Serv.* 2009 Aug;60(8):1024-31.

Dartmouth Psychiatric Research Center, Dartmouth Medical School, 2 Whipple Pl., Suite 202, Lebanon, NH 03766, USA. philip.w.bush@dartmouth.edu

METHODS: Latent-class growth analysis of competitive employment identified trajectory groups. The authors calculated annual costs of outpatient services and institutional stays for 187 participants and examined group differences in ten-year utilization and cost. CONCLUSIONS: Highly significant reductions in service use were associated with steady employment. Given supported employment's well-established contributions to recovery, evidence of long-term reductions in the cost of mental health services should lead policy makers and insurers to promote wider implementation.

PMID: 19648188

Rating: 3a

Butler AC, Beck AT. Cognitive therapy for depression. *The Clinical Psychologist*, 1995, 48(3), 3-5.

Rating: 11b

Note: Publication not accepted into Medline

Bymaster FP, Lee TC, Knadler MP, Detke MJ, Iyengar S. The dual transporter inhibitor duloxetine: a review of its preclinical pharmacology, pharmacokinetic profile, and clinical results in depression. *Curr Pharm Des*. 2005;11(12):1475-93.

Lilly Research Laboratories, Eli Lilly and Company, Indianapolis, IN, USA.

In these studies, duloxetine was found to be effective in the treatment of emotional/psychological and painful physical symptoms associated with depression. More importantly, duloxetine appears to have better response rates and remission from depressive symptoms, perhaps due to its ability to treat a wider range of symptoms.

PMID: 15892657

Rating: 5b

Cahill SP. Counterpoint: evaluating EMDR in treating PTSD. *Psychiatr Time* 2000;17(7)

Rating: 5c

Caine ED. Determining causation in psychiatry, in: Phillips KA, First MB, and Pincus HA. *Advancing DSM: Dilemmas in Psychiatric Diagnosis*. American Psychiatric Association, Washington, DC, 2003.

In this book, leading clinicians and researchers present diagnostic dilemmas from clinical practice that are intriguing, controversial, unresolved, and remarkable in their theoretical and scientific complexity. Chapters present a specific case study of a disorder or an area of diagnosis that illuminates the need for a revised diagnostic system. Chapter by chapter, Advancing DSM raises important, clinically relevant questions about the nature of diagnosis under the current DSM system and recommends new approaches.

Rating: 9b

Carragee EJ. Validity of self-reported history in patients with acute back or neck pain after motor vehicle accidents. *Spine J.* 2007 May 22 [Epub ahead of print]

Stanford University School of Medicine, 800 Pasteur Drive, #R171, Stanford, California 94305, USA.

BACKGROUND CONTEXT: Determining the presence of comorbid conditions in patients with persistent axial pain after motor vehicle accident (MVA) is important to direct appropriate care and as a public health measure against future traffic injuries. PURPOSE: To establish the validity of certain elements of the self-reported history in patients with back or neck pain attributed to an MVA. PATIENT SAMPLE: Medium-sized (n>400) clinical cohort of patients without fracture or dislocation seen within 3 months after an MVA in a university spine clinic. RESULTS: Four hundred twenty-two subjects were enrolled, and random audits of 100 subjects were completed. In 68% of the random audits, comorbid conditions denied in the postaccident history (previous axial pain, drug or alcohol abuse, and psychological diagnoses) were documented. In subjects pursuing compensation claims and retaining an attorney, 80% had significant past axial pain history or serious comorbidities in their records not disclosed in the spine clinic evaluation. CONCLUSIONS: In patients being seen for continued pain related to an MVA, the validity of self-reported previous axial pain and comorbid conditions appeared poor. The self-reported prevalence of previous axial pain and drug, alcohol, and psychological problems is much less than the documented prevalence in prior medical records. This effect was seen most prominently in patients perceiving the accident to be another party's fault and in those filing compensation claims.

PMID: 17662666

Rating: 3a

Carroll D, Ring C, Suter M, Willemsen G. The effects of an oral multivitamin combination with calcium, magnesium, and zinc on psychological well-being in healthy young male volunteers: a double-blind placebo-controlled trial. Psychopharmacology (Berl). 2000 Jun;150(2):220-5.

School of Sport and Exercise Sciences, University of Birmingham, UK. carrolld@bham.ac.uk

OBJECTIVE: The present study tested the effects of a multivitamin and mineral supplement (Berocca) on psychological well-being. RESULTS: Relative to placebo, treatment with Berocca was associated with consistent and statistically significant reductions in anxiety and perceived stress. CONCLUSION: These findings demonstrate that Berocca significantly reduces anxiety and perceived stress.

PMID: 10907676

Rating:2b

Caspi A, Sugden K, Moffitt TE, Taylor A, Craig IW, Harrington H, McClay J, Mill J, Martin J, Braithwaite A, Poulton R. Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. Science. 2003 Jul 18;301(5631):386-9.

Medical Research Council Social, Genetic, and Developmental Psychiatry Research Centre, Institute of Psychiatry, King's College London, PO80 De Crespigny Park, London, SE5 8AF, UK.

A functional polymorphism in the promoter region of the serotonin transporter (5-HT T) gene was found to moderate the influence of stressful life events on depression. This epidemiological study thus provides evidence of a gene-by-environment interaction, in which an individual's response to environmental insults is moderated by his or her genetic makeup.

PMID: 12869766

Rating: 3c

Cesana G, Sega R, Ferrario M, Chiodini P, Corrao G, Mancia G. Job strain and blood pressure in employed men and women: a pooled analysis of four northern italian population samples. *Psychosom Med.* 2003 Jul-Aug;65(4):558-63.

Department of Clinical Medicine, Prevention and Biotechnology of S. Gerardo Hospital, Milan, Italy. giancarlo.cesana@unimib.it

OBJECTIVE: The extent to which psychosocial stress concurs to raise blood pressure is still uncertain. Here the association between job strain and office blood pressure in a pooled analysis of four population samples from northern Italy is assessed. METHODS: Four surveys assessing prevalence of major coronary risk factors were performed in 1986, 1990, 1991, and 1993 in area "Brianza" (Milan), a World Health Organization-MONItoring cardiovascular disease (WHO-MONICA) Project collaborating center. Ten year age- and gender-stratified independent samples were randomly recruited from the 25- to 64-year-old residents. Analysis was restricted to 25- to 54-year-old participants, untreated for hypertension (1799 men and 1010 women). RESULTS: Among men, there was a 3 mm Hg increase of systolic blood pressure ($p<.001$) moving from low to high strain job categories. This difference was independent from age, education, body mass index, alcohol intake, smoking habits, leisure time physical activity, and survey. No relevant differences among job strain categories were found in women and for diastolic blood pressure in both gender groups. CONCLUSIONS: These results carried out on a large population-based sample confirm previous findings obtained adopting ambulatory blood pressure measurements in more restricted samples of population or patients.

PMID: 12883105

Rating: 1a

Chemtob CM, Tolin DF, van der Kolk BA. Guidelines for treatment of PTSD: eye movement desensitization and reprocessing. *J Trauma Stress* 2000;13:569-70.

Rating: 8b

Chan J, Briscomb D, Waterhouse E, Cannaby AM. An uncontrolled pilot study of HT7 for 'stress'. Acupunct Med. 2002 Aug;20(2-3):74-7.

Kingsway Surgery Leicester, UK. joe@chan23.fsnet.co.uk

Bilateral acupuncture needling at HT7 was an effective method for reducing the rating of 'psychological stress' in 16 out of of a group of 17 volunteers (94%), recruited from staff in a hospice. Ratings were made using the Edinburgh Postnatal Depression Scale (EPDS), which was felt to be the most useful scale of those considered, despite not being validated in this population. Further research is needed, including a suitable control group, to determine whether the effect observed in this study was a specific effect of needling at HT7.

PMID: 12216604

Rating: 2c

Chapman SL, Pemberton JS. Prediction of treatment outcome from clinically derived MMPI clusters in rehabilitation for chronic low back pain. *Clin J Pain*. 1994;10(4):267-76.

Emory University School of Medicine, Atlanta, Georgia.

OBJECTIVE: The aim of this study was to assess the ability of specific and clinically relevant Minnesota Multiphasic Personality Inventory (MMPI) profile types to predict outcomes in a structured interdisciplinary pain-management program for patients with low back pain. PATIENTS: 122 subjects with chronic low back pain who completed the program, provided follow-up data, and fit into the definition of one of seven clusters. CONCLUSION: Even when subjects with chronic pain are divided into cluster groups associated with highly similar clinical interpretations, the MMPI for the most part fails to predict self-reported outcomes in an interdisciplinary pain-management program.

PMID: 7858355

Rating: 4b

Charlson F, Siskind D, Doi SA, McCallum E, Broome A, Lie DC. ECT efficacy and treatment course: a systematic review and meta-analysis of twice vs thrice weekly schedules. *J Affect Disord*. 2012 Apr;138(1-2):1-8. doi: 10.1016/j.jad.2011.03.039.

PMID: 21501875

Rating: 1b

Christensen H, Griffiths KM, Jorm AF. Delivering interventions for depression by using the internet: randomised controlled trial. *BMJ*. 2004 Jan 31;328(7434):265.

Centre for Mental Health Research, Australian National University, Canberra, ACT 0200, Australia. Helen.Christensen@anu.edu.au

OBJECTIVE: To evaluate the efficacy of two internet interventions for community-dwelling individuals with symptoms of depression--a psychoeducation website offering information about depression and an interactive website offering cognitive behaviour therapy. PARTICIPANTS: 525 individuals with increased depressive symptoms recruited by survey and randomly allocated to a website offering information about depression (n = 166) or a cognitive behaviour therapy website (n = 182), or a control intervention using an attention placebo (n = 178). RESULTS: Intention to treat analyses indicated that information about depression and interventions that used cognitive behaviour therapy and were delivered via the internet were more effective than a credible control intervention in reducing symptoms of depression in a community sample. CONCLUSIONS: Both cognitive behaviour therapy and psychoeducation delivered via the internet are effective in reducing symptoms of depression.

PMID: 14742346

Rating: 2b

Christensen H, Aiken A, Batterham PJ, Walker J, Mackinnon AJ, Fenech M, Hickie IB. No clear potentiation of antidepressant medication effects by folic acid+vitamin B12 in a large community sample. *J Affect Disord*. 2011;130:37-45.

PMID: 20805005

Rating: 2b

Church D, Hawk C, Brooks AJ, Toukolehto O, Wren M, Dinter I, Stein P. Psychological trauma symptom improvement in veterans using emotional freedom techniques: a randomized controlled trial. *J Nerv Ment Dis.* 2013 Feb;201(2):153-60. doi: 10.1097/NMD.0b013e31827f6351.

PMID: 23364126

Rating: 2b

Church D, De Asis MA, Brooks AJ. Brief group intervention using emotional freedom techniques for depression in college students: a randomized controlled trial. *Depress Res Treat*. 2012; 2012:257172. doi: 10.1155/2012/257172.

PMID: 22848802

Rating: 2a

Cipriani A, Brambilla P, Furukawa T, Geddes J, Gregis M, Hotopf M, Malvini L, Barbui C. Fluoxetine versus other types of pharmacotherapy for depression. Cochrane Database Syst Rev. 2005 Oct 19;4:CD004185.

There are statistically significant differences in terms of efficacy and tolerability between fluoxetine and certain ADs, but the clinical meaning of these differences is uncertain, and no definitive implications for clinical practice can be drawn. From a clinical point of view the analysis of antidepressants' safety profile (adverse effect and suicide risk) remains of crucial importance and more reliable data about these outcomes are needed. Waiting for more robust evidence, treatment decisions should be based on considerations of clinical history, drug toxicity, patient acceptability, and cost.

PMID: 16235353

Rating: 1b

Clays E, De Bacquer D, Delanghe J, Kittel F, Van Renterghem L, De Backer G. Associations between dimensions of job stress and biomarkers of inflammation and infection. *J Occup Environ Med*. 2005 Sep;47(9):878-83.

Department of Public Health, Ghent University, University Hospital, Belgium.
els.clays@UGent.be

Results confirm previous findings regarding elevated plasma fibrinogen and low job control.

PMID: 16155472

Rating: 4a

Cooper NA, Clum GA. Imaginal flooding as a supplementary treatment for PTSD in combat veterans: a controlled study. *Behav Ther* 1989;20:381-91.

Rating: 2c

Coppen A, Bailey J. Enhancement of the antidepressant action of fluoxetine by folic acid: a randomised, placebo controlled trial*. J Affect Disord*. 2002 Dec;72(3):297-8.

MRC Neuropsychiatry Laboratory, West Park Hospital, KT19 8PB, Surrey, Epsom, UK.

BACKGROUND: A consistent finding in major depression has been a low plasma and red cell folate which has also been linked to poor response to antidepressants. LIMITATIONS AND CONCLUSIONS: Folic acid is a simple method of greatly improving the antidepressant action of fluoxetine and probably other antidepressants. Folic acid should be given in doses sufficient to decrease plasma homocysteine. Men require a higher dose of folic acid to achieve this than women, but more work is required to ascertain the optimum dose of folic acid.

PMID: 10967371

Rating: 2b

Coppen A, Bolander-Gouaille C. Treatment of depression: time to consider folic acid and vitamin B12. *J Psychopharmacol*. 2005 Jan;19(1):59-65.

MRC Neuropsychiatric Research Laboratory, Epsom, Surrey, UK. acoppen@globalnet.co.uk

We review the findings in major depression of a low plasma and particularly red cell folate, but also of low vitamin B12 status. Both low folate and low vitamin B12 status have been found in studies of depressive patients, and an association between depression and low levels of the two vitamins is found in studies of the general population. Low folate levels are furthermore linked to a poor response to antidepressants, and treatment with folic acid is shown to improve response to antidepressants. A recent study also suggests that high vitamin B12 status may be associated with better treatment outcome. On the basis of current data, we suggest that oral doses of both folic acid (800 microg daily) and vitamin B12 (1 mg daily) should be tried to improve treatment outcome in depression.

PMID: 15671130

Rating: 5b

Corey-Lisle PK, Nash R, Stang P, Swindle R, Response, partial response, and nonresponse in primary care treatment of depression, *Arch Intern Med*. 2004 Jun 14;164(11):1197-204.

Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285, USA.

BACKGROUND: This study identifies factors related to poor response to depression treatment with selective serotonin reuptake inhibitors (SSRIs) in primary care settings by (1) examining clinical response taking into account treatment, (2) comparing baseline characteristics and outcomes between patients classified by response, and (3) examining characteristics predicting poor response. METHODS: A Randomized Trial Investigating SSRI Treatment (ARTIST) was a prospective naturalistic trial comparing effectiveness of SSRI therapy. Eligible patients were randomized to treatment (N = 601) and followed up for 9 months. Significant predictors of nonresponse included older age, diagnosis, worse physical functioning, and lower energy level. CONCLUSIONS: A substantial number of adequately treated patients did not respond to antidepressant therapy.

PMID: 15197045

Rating: 2a

Cossette S, Frasure-Smith N, Lesperance F. Clinical implications of a reduction in psychological distress on cardiac prognosis in patients participating in a psychosocial intervention program. Psychosom Med. 2001 Mar-Apr;63(2):257-66.

Faculty of Nursing, University of Montreal, Research Center, Montreal Heart Institute, QC, Canada. cossets@scinf.umontreal.ca

CONCLUSIONS: “Post-myocardial infarction interventions that reduce psychological distress have the potential to improve long-term prognosis and psychological status for both men and women.”

PMID: 11292273

Rating: 2c

Courtois CA. Recollections of sexual abuse: treatment principles and guidelines. New York (NY): Norton; 1999.

Rating: 9b

Crits-Christoph P, Connolly MB, Gallop R, Barber JP, Tu X, Gladis M, Siqueland L. Early improvement during manual-guided cognitive and dynamic psychotherapies predicts 16-week remission status. *J Psychother Pract Res.* 2001 Summer;10(3):145-54.

PMID: 11402077

Rating: 1b

Cuijpers P, Huibers M, Ebert DD, Koole SL, Andersson G. How much psychotherapy is needed to treat depression? A metaregression analysis. *J Affect Disord*. 2013 Jul;149(1-3):1-13. doi: 10.1016/j.jad.2013.02.030.

PMID: 23528438

Rating: 1b

Cuijpers P, Koole SL, van Dijke A, Roca M, Li J, Reynolds CF 3rd. Psychotherapy for subclinical depression: meta-analysis. *Br J Psychiatry*. 2014 Oct;205(4):268-274.

PMID: 25274315

Rating: 1b

Davidson JR, Rothbaum BO, van der Kolk BA, Sikes CR, Farfel GM. Multicenter, double-blind comparison of sertraline and placebo in the treatment of posttraumatic stress disorder. *Arch Gen Psychiatry.* 2001 May;58(5):485-92.

Anxiety and Traumatic Stress Program, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC 27710, USA.

BACKGROUND: Posttraumatic stress disorder (PTSD) is a common illness associated with significant disability. Few large, placebo-controlled trials have been reported. METHODS: Outpatients with a DSM-III-R diagnosis of moderate-to-severe PTSD were randomized to 12 weeks of double-blind treatment with either sertraline (N = 100) in flexible daily doses in the range of 50 to 200 mg or placebo (N = 108). CONCLUSION: The results of the current study suggest that sertraline is a safe, well-tolerated, and significantly effective treatment for PTSD.

PMID: 11343529

Rating: 2b

Davidson PR, Parker KC. Eye movement desensitization and reprocessing (EMDR): a meta-analysis. *J Consult Clin Psychol* 2001 Apr;69(2):305-16.

Department of Psychiatry, Queen's University, Kingston, Ontario, Canada.

Eye movement desensitization and reprocessing (EMDR), a controversial treatment suggested for posttraumatic stress disorder (PTSD) and other conditions, was evaluated in a meta-analysis of 34 studies that examined EMDR with a variety of populations and measures. EMDR showed an effect on both when compared with no treatment and with therapies not using exposure to anxiety-provoking stimuli and in pre post EMDR comparisons. However, no significant effect was found when EMDR was compared with other exposure techniques. No incremental effect of eye movements was noted when EMDR was compared with the same procedure without them. In sum, EMDR appears to be no more effective than other exposure techniques, and evidence suggests that the eye movements integral to the treatment, and to its name, are unnecessary.

PMID: 11393607

Rating: 1b

Deckro GR, Ballinger KM, Hoyt M, Wilcher M, Dusek J, Myers P, Greenberg B, Rosenthal DS, Benson H. The evaluation of a mind/body intervention to reduce psychological distress and perceived stress in college students. J Am Coll Health. 2002 May;50(6):281-7.

Mind/Body Medical Institute, Harvard Medical School, Boston, MA 02215, USA.
gdeckro@caregroup.harvard.edu

The authors examined the effect of a 6-week mind/body intervention on college students' psychological distress, anxiety, and perception of stress. Significantly greater reductions in psychological distress, state anxiety, and perceived stress were found in the experimental group.

PMID: 12701653

Rating: 2b

Delle Chiaie R, Pancheri P, Scapicchio P. Efficacy and tolerability of oral and intramuscular S-adenosyl-L-methionine 1,4-butanedisulfonate (SAMe) in the treatment of major depression: comparison with imipramine in 2 multicenter studies. *Am J Clin Nutr.* 2002 Nov;76(5):1172S-6S.

III Clinica Psichiatrica La Sapienza University, Rome, Italy. delle.chiaie@flashnet.it

BACKGROUND: S-Adenosyl-L-methionine (SAMe), a natural compound, is the most important methyl donor in the central nervous system. In several clinical trials, SAMe showed antidepressant activity. CONCLUSIONS: The antidepressive efficacy of 1600 mg SAMe/d orally and 400 mg SAMe/d intramuscularly is comparable with that of 150 mg imipramine/d orally, but SAMe is significantly better tolerated.

PMID: 12418499

Rating: 3b

Dennis CL. The effect of peer support on postpartum depression: a pilot randomized controlled trial. Can J Psychiatry. 2003 Mar;48(2):115-24.

Faculty of Nursing, University of Toronto, Toronto, Ontario. cindylee.dennis@utoronto.ca

Telephone-based peer support may effectively decrease depressive symptomatology among new mothers. The high maternal satisfaction with, and acceptance of, the intervention suggests that a larger trial is feasible.

PMID: 12655910

Rating: 2c

DeRubeis RJ, Gelfand LA, Tang TZ, Simons AD. Medications versus cognitive behavior therapy for severely depressed outpatients: mega-analysis of four randomized comparisons. Am J Psychiatry. 1999 Jul;156(7):1007-13.

Department of Psychology, University of Pennsylvania, Philadelphia 19104-6196, USA. derubeis@psych.upenn.edu

OBJECTIVE: The purpose of this study was to compare the acute outcomes of antidepressant medication and cognitive behavior therapy in the severely depressed outpatient subgroups of four major randomized trials. RESULTS: The overall effect sizes comparing antidepressant medication to cognitive behavior therapy favored cognitive behavior therapy, but tests comparing the two modalities did not reveal a significant advantage for either modality overall. CONCLUSIONS: Cognitive behavior therapy has fared as well as antidepressant medication with severely depressed outpatients in four major comparisons.

PMID: 10401443

Devilly GJ, Spence SH. The relative efficacy and treatment distress of EMDR and a cognitive-behavior trauma treatment protocol in the amelioration of posttraumatic stress disorder. *J Anxiety Disord*. 1999 Jan-Apr;13(1-2):131-57.

Department of Psychology, University of Queensland, Australia. dev@psy.uq.edu.au

It was found that TTP was both statistically and clinically more effective in reducing pathology related to PTSD and that this superiority was maintained and, in fact, became more evident by 3-month follow-up.

PMID: 10225505

Rating: 2c

Dewa CS, Goering P, Lin E, Paterson M, Depression-related short-term disability in an employed population, *J Occup Environ Med* 2002 Jul;44(7):628-33

Health Systems Research and Consulting Unit, Centre for Addiction and Mental Health, Department of Psychiatry, University of Toronto. carolyn_dewa@camh.net

This study concluded, “compared with other nervous and mental disorders, depression-related short-term disability generally affected more employees, lasted longer, and had a higher rate of recurrence.”

PMID: 12134526

Dilk MN, Bond GR. Meta-analytic evaluation of skills training research for individuals with severe mental illness. *J Consult Clin Psychol*. 1996 Dec;64(6):1337-46.

Psychological Resources, Indianapolis, Indiana 46256, USA.

A meta-analysis of 68 studies examined the effectiveness of skills training for individuals with severe mental illness and the influence of such factors as methodological rigor, choice of outcome measures, and service settings. Skills training was found to be moderately to strongly effective in increasing skill acquisition and reducing psychiatric symptoms.

PMID: 8991320

Rating: 1b

Dinan TG, Stanton C, Cryan JF. Psychobiotics: a novel class of psychotropic. *Biol Psychiatry*. 2013 Nov 15;74(10):720-6. doi: 10.1016/j.biopsych.2013.05.001.

PMID: 23759244

Rating: 5b

Dixon RF, Stahl JE. Virtual visits in a general medicine practice: a pilot study. *Telemed J E Health*. 2008 Aug;14(6):525-30.

Massachusetts General Hospital, Department of Medicine, Center for the Integration of Medicine and Innovative Technologies, Harvard Medical School, Boston, Massachussetts 02114, USA.

The purpose of this pilot study is to investigate the feasibility, effectiveness, and acceptability of a patient-physician real-time encounter using videoconferencing technology (a virtual visit) compared to a face-to-face office visit in the general medical setting. Physical examination effectiveness was significantly worse in the virtual visit modality (2.3 versus 4.9 for the face-to-face visit, $p < 0.0001$), but history and therapeutic effectiveness were not significantly different. Results suggest that both patients and the physician found the virtual visit a potentially useful alternative to the traditional visit for many medical conditions. This may have significant implications for the general medical care environment. Patients may benefit from reduced opportunity costs associated with physician visits and clinicians may benefit from decrease overhead costs.

PMID: 18729750

Rating: 3b

Doleys DM, Olson K. Psychological assessment and intervention in implantable pain therapies. Sponsored by Medtronic, Inc. Available at: http://www.medtronic.com/neuro/paintherapies/pain_treatment_ladder/library.html#pain

This article, sponsored by Medtronic, Inc., outlines current suggested psychological assessment and intervention for implantable therapies. It is extremely comprehensive and includes good descriptions of current exclusionary criteria for implantation, and the use of psychological testing as a predictor of treatment failure.

Rating: 5c

Note: Sponsored and available on the Medtronic website

Donovan B, Padin-Rivera E, Kowaliw S. "Transcend": initial outcomes from a posttraumatic stress disorder/substance abuse treatment program. *J Trauma Stress* 2001 Oct;14(4):757-72.

Louis Stokes Cleveland Veterans Affairs Medical Center, Ohio 44141, USA. beverly.donovan@med.va.gov

Outcome data are presented on 46 male patients who completed treatment between 1996 and 1998. Significant symptom changes revealed on CAPS and ASI scores at discharge and follow-up are analyzed.

PMID: 11776422

Rating: 4b

Drake RE, McHugo GJ, Becker DR, Anthony WA, Clark RE. The New Hampshire study of supported employment for people with severe mental illness. *J Consult Clin Psychol.* 1996 Apr;64(2):391-9.

Department of Psychology, Dartmouth Medical School, Concord, New Hampshire, USA. Robert.E.Drake@Dartmouth.edu.

People with severe mental disorders who expressed interest in competitive employment (N = 143) were randomly assigned to 1 of these 2 programs. Results showed that clients in the IPS program were more likely to be competitively employed throughout most of the 18-month follow-up.

PMID: 8871423

Rating: 2b

Druss BG, Schlesinger M, Allen HM. Depressive symptoms satisfaction with health care, and 2-year work outcomes in an employed population. *Am J Psychiatry.* 2001;158(5):731-734.

Department of Psychiatry, Yale University, New Haven, Connecticut, USA.
benjamin.druss@yale.edu

Depressive disorders in the workplace persist over time and have a major effect on work performance, most notably on "presenteeism," or reduced effectiveness in the workplace.

PMID: 11329394

Rating: 3a

Duijts SF, Zeegers MP, Borne BV. The association between stressful life events and breast cancer risk: a meta-analysis. *Int J Cancer*. 2003 Dec 20;107(6):1023-9.

Department of Epidemiology, Maastricht University, PO Box 616, 6200 MD Maastricht, The Netherlands. sfa.duijts@epid.unimaas.nl

The results of this meta-analysis do not support an overall association between stressful life events and breast cancer risk. Only a modest association could be identified between death of spouse and breast cancer risk.

PMID: 14601065

Rating: 1a

Dunn AL, Trivedi MH, Kampert JB, Clark CG, Chambliss HO. Exercise treatment for depression: efficacy and dose response. *Am J Prev Med*. 2005 Jan;28(1):1-8.

Cooper Institute, Behavioral Science Research Center, Golden, Colorado, USA.

SETTING/PARTICIPANTS: All exercise was performed in a supervised laboratory setting with adults (n =80) aged 20 to 45 years diagnosed with mild to moderate MDD. RESULTS: The main effect of energy expenditure in reducing HRSD(17) scores at 12 weeks was significant. Adjusted mean HRSD(17) scores at 12 weeks were reduced 47% from baseline for PHD, compared with 30% for LD and 29% for control.. CONCLUSIONS: Aerobic exercise at a dose consistent with public health recommendations is an effective treatment for MDD of mild to moderate severity. A lower dose is comparable to placebo effect.

PMID: 15626549

Rating: 2b

A growing body of medical literature, including at least three 2005 studies, shows aerobic routines, including weight lifting, effectively combat depression, says the Wall Street Journal. The website of the American Psychological Association features an entire page describing exercise as a legitimate third leg of treatment, along with psychotherapy and medication. Researchers found that treating depression through exercise benefits the patient in a number of ways:

- It is beneficial both immediately and long term; exercise is most effective for those most physically and/or psychologically unhealthy at the start of the exercise program.
- It is equally effective for both genders; the longer the exercise program and the larger the number of sessions, the greater the decrease in depression.

In a recent study in the Journal of Preventive Medicine, researchers suggested a half-hour a day of exercise, six days a week -- the same amount recommended by the government for all Americans -- as potentially ideal. Comparing two groups of depressed patients, researchers found:

- The group who performed only 80-minutes-a-week received little to no mental-health benefit while the three-hour-a-week group had a substantial reduction in symptoms.
- Around-the-clock relief sets in several weeks after the establishment of a regular exercise routine.

However, obvious problems with this treatment exist, says the Journal.

- Mental-health experts usually are not fitness trainers and have no way of monitoring patient compliance.
- Moreover, prescribing thirty minutes on the treadmill to a patient who can barely climb out of bed does not make much sense.
- Exercising three hours a week is challenging enough for those who are not suffering from depression, says Harvard’s Dr. Jacobs.

ECRI Institute AHRQ Healthcare Horizon Scanning System Potential High Impact Interventions: Priority Area 05: Depression and Other Mental Health Disorders. (Prepared by ECRI Institute under Contract No. HHSA290201000006C.) Rockville, MD: Agency for Healthcare Research and Quality. December 2013.

Rating: 1a

Ehlers A, Clark DM, Hackmann A, McManus F, Fennell M, Herbert C, Mayou R, A randomized controlled trial of cognitive therapy, a self-help booklet, and repeated assessments as early interventions for posttraumatic stress disorder. *Arch Gen Psychiatry*. 2003 Oct;60(10):1024-32

Department of Psychology, Institute of Psychiatry, London, UK. a.ehlers@iop.kcl.ac.uk

OBJECTIVE: To determine whether cognitive therapy or a self-help booklet given in the initial months after a traumatic event is more effective in preventing chronic posttraumatic stress disorder (PTSD) than repeated assessments. DESIGN: Randomized controlled trial.Patients Motor vehicle accident survivors (n = 97) who had PTSD in the initial months after the accident and met symptom criteria that had predicted persistent PTSD in a large naturalistic prospective study of a comparable population. RESULTS: At follow-up, fewer cognitive therapy patients (3 [11%]) had PTSD compared with those receiving the self-help booklet (17 [61%]; odds ratio, 12.9; 95% confidence interval, 3.1-53.1) or repeated assessments (16 [55%]; odds ratio, 10.3; 95% confidence interval, 2.5-41.7). CONCLUSIONS: Cognitive therapy is an effective intervention for recent-onset PTSD.

PMID: 14557148

Rating: 2b

Eriksen HR, Ihlebaek C, Mikkelsen A, Gronningsaeter H, Sandal GM, Ursin H. Improving subjective health at the worksite: a randomized controlled trial of stress management training, physical exercise and an integrated health programme. Occup Med (Lond). 2002 Oct;52(7):383-91.

Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway. hege.eriksen@psych.uib.no

Our objective was to evaluate the effect of 12 weeks of stress management training (SMT), physical exercise (PE) and an integrated health programme (IHP) in a worksite setting on subjective health complaints. The PE group showed improved general health, physical fitness and muscle pain, while the SMT group showed improved stress management. The IHP group showed the strongest effects, affecting most goals set for treatment.

PMID: 12422025

Rating: 2a

Erkkilä J, Punkanen M, Fachner J, Ala-Ruona E, Pöntiö I, Tervaniemi M, Vanhala M, Gold C. Individual music therapy for depression: randomised controlled trial. *Br J Psychiatry*. 2011 Aug;199:132-9.

Method Participants (n = 79) with an ICD-10 diagnosis of depression were randomised to receive individual music therapy plus standard care (20 bi-weekly sessions) or standard care only, and followed up at baseline, at 3 months (after intervention) and at 6 months. Conclusions Individual music therapy combined with standard care is effective for depression among working-age people with depression. The results of this study along with the previous research indicate that music therapy with its specific qualities is a valuable enhancement to established treatment practices.

PMID: 21474494

Rating: 2b

Evans K, Tyrer P, Catalan J, Schmidt U, Davidson K, Dent J, Tata P, Thornton S, Barber J, Thompson S. Manual-assisted cognitive-behaviour therapy (MACT): a randomized controlled trial of a brief intervention with bibliotherapy in the treatment of recurrent deliberate self-harm. *Psychol Med* 1999 Jan;29(1):19-25.

Department of Psychiatry, Imperial College School of Medicine, Chelsea and Westminister Hospital, London.

METHODS: Thirty-four patients, aged between 16 and 50, seen after an episode of deliberate self-harm, with personality disturbance within the flamboyant cluster and a previous parasuicide episode within the past 12 months, were randomly assigned to treatment with manual-assisted cognitive-behaviour therapy (MACT N = 18) or treatment as usual (TAU N = 16).
CONCLUSIONS: Although limited by the small sample, the results of this pilot study suggest that this new form of cognitive-behaviour therapy is promising in its efficacy and feasible in clinical practice.

PMID: 10077290

Rating: 2b

Everly GS Jr. The role of pastoral crisis intervention in disasters, terrorism, violence, and other community crises. *Int J Emerg Ment Health* 2000 Fall;2(3):139-42.

Johns Hopkins University and Loyola College, Maryland, USA.

The term "pastoral crisis intervention" has been defined by Everly (2000) as the functional integration of faith-based resources with traditional crisis intervention assessment and intervention technologies.

PMID: 11232093

Rating: 5b

Fauerbach JA, Lawrence JW, Haythornthwaite JA, Richter L. Coping with the stress of a painful medical procedure. Behav Res Ther. 2002 Sep;40(9):1003-15.

Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21287, USA. jfauerba@jhmi.edu

When coping during the target procedure by ignoring, reinterpreting, and catastrophizing were covaried, the music distraction group experienced significantly fewer intrusions, and the attention focus group had more intrusions.

PMID: 12296486

Rating: 2c

Fava M, Mallinckrodt CH, Detke MJ, Watkin JG, Wohlreich MM. The effect of duloxetine on painful physical symptoms in depressed patients: do improvements in these symptoms result in higher remission rates? *J Clin Psychiatry*. 2004 Apr;65(4):521-30.

Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA.

METHOD: Efficacy data were pooled from 2 identical, but independent, 9-week randomized, double-blind clinical trials of duloxetine 60 mg q.d. (N = 251) and placebo (N = 261). RESULTS: Duloxetine-treated patients demonstrated significantly greater improvement in overall pain (p =.016), back pain (p =.002), and shoulder pain (p =.021) at week 9 compared with patients receiving placebo. CONCLUSIONS: Treatment with duloxetine, 60 mg q.d., significantly reduced pain compared with placebo. Improvements in pain severity were attributable equally to the direct effect of duloxetine and to associated changes in depression severity. Improvement in painful physical symptoms was associated with higher remission rates even after accounting for improvement in core emotional symptoms.

PMID: 15119915

Rating: 1c

Fava M. Prospective studies of adverse events related to antidepressant discontinuation. *J Clin Psychiatry*. 2006;67:14-21.

The value of a prospective assessment of discontinuation-emergent symptoms proximal to the termination of antidepressant treatment cannot be overstated. Though varying in frequency and intensity, nearly all classes of antidepressants have been linked with discontinuation reactions and the associated psychological, physical, and somatic discomfort.

PMID: 1668385

Rating: 5a

Feder A, Parides MK, Murrough JW, Perez AM, Morgan JE, Saxena S, Kirkwood K, Aan Het Rot M, Lapidus KA, Wan LB, Iosifescu D, Charney DS. Efficacy of intravenous ketamine for treatment of chronic posttraumatic stress disorder: a randomized clinical trial. *JAMA Psychiatry*. 2014 Jun 1;71(6):681-8. doi: 10.1001/jamapsychiatry.2014.62.

PMID: 24740528

Rating: 2b

Ferketich MA, Schwartzbaum JA, et al. Depression as an antecedent to heart disease among women and men in the NHANES I study. *Arch Intern Med.* 2000;160:1261-1268.
Division of Epidemiology and Biometrics, The Ohio State University College of Medicine and Public Health, Columbus 43210, USA. ferketich.1@osu.edu

BACKGROUND: The present investigation was conducted to evaluate the differential effect depression may have on CHD incidence and mortality in women and men. CONCLUSIONS: In this sample, while controlling for possible confounding factors, depression was associated with an increased risk of CHD incidence in both men and women, as well as CHD mortality in men. Depression had no effect on CHD mortality in women.

PMID: 10809028

Rating: 4a

Fiellin DA, Barry DT, Sullivan LE, Cutter CJ, Moore BA, O'Connor PG, Schottenfeld RS. A randomized trial of cognitive behavioral therapy in primary care-based buprenorphine. *Am J Med*. 2013 Jan;126(1):74.e11-7. doi: 10.1016/j.amjmed.2012.07.005.

Among patients receiving buprenorphine/naloxone in primary care for opioid dependence, the effectiveness of physician management did not differ significantly from that of physician management plus cognitive behavioral therapy.

PMID: 23260506

Rating: 2b

Fink M. What was learned: studies by the consortium for research in ECT (CORE) 1997-2011. *Acta Psychiatr Scand*. 2014 Jun;129(6):417-26. doi: 10.1111/acps.12251.

PMID: 24571807

Rating: 1b

Finzi E, Rosenthal NE. Treatment of depression with onabotulinumtoxinA: a randomized, double-blind, placebo controlled trial*. J Psychiatr Res*. 2014 May;52:1-6. doi: 10.1016/j.jpsychires.2013.11.006.

PMID: 24345483

Rating: 2b

Foa EB, Meadows EA. Psychosocial treatments for posttraumatic stress disorder: a critical review*. Annu Rev Psychol.* 1997;48:449-80.

Allegheny University of the Health Sciences, Philadelphia, Pennsylvania 19129, USA.

Posttraumatic stress disorder (PTSD) has been the subject of growing recognition since its inception in 1980. Owing in part to the relatively recent inclusion of PTSD in the psychiatric nomenclature, research is only beginning to address its treatment in methodologically rigorous studies.

PMID: 9046566

Rating: 5b

Foa EB. Psychosocial therapy for posttraumatic stress disorder*. J Clin Psychiatry*. 2006;67 Suppl 2:40-5.

Center for the Treatment and Study of Anxiety, University of Pennsylvania, Philadelphia, PA 19104, USA. foa@mail.med.upenn.edu

Several clinical studies have shown that programs of cognitive-behavioral therapy (CBT) can be effective in the management of patients with PTSD.

PMID: 16602814

Rating: 5b

Foa EB, Dancu CV, Hembree EA, Jaycox LH, Meadows EA, Street GP. A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *J Consult Clin Psychol* 1999 Apr;67(2):194-200.

Center for the Treatment and Study of Anxiety, Medical College of Pennsylvania-Hahnemann University, Philadelphia 19129, USA. foa@auhs.edu

Ninety-six female assault victims with chronic posttraumatic stress disorder (PTSD) were randomly assigned to 4 treatment conditions: prolonged exposure (PE), stress inoculation training (SIT), combined treatment (PE-SIT), or wait-list control (WL). Treatment consisted of 9 twice-weekly, individual sessions. Independent evaluations were conducted at pretreatment; posttreatment; and 3-, 6-, and 12-month follow-ups. All 3 active treatments reduced severity of PTSD and depression compared with WL but did not differ significantly from each other, and these gains were maintained throughout the follow-up period. However, in the intent-to-treat sample, PE was superior to SIT and PE-SIT on posttreatment anxiety and global social adjustment at follow-up and had larger effect sizes on PTSD severity, depression, and anxiety. SIT and PE-SIT did not differ significantly from each other on any outcome measure.

PMID: 10224729

Raing: 2b

Foa EB, Rothbaum BO, Riggs DS, Murdock TB. Treatment of posttraumatic stress disorder in rape victims: a comparison between cognitive-behavioral procedures and counseling. *J Consult Clin Psychol* 1991 Oct;59(5):715-23.

Department of Psychiatry, Medical College of Pennsylvania, Philadelphia.

Rape victims with posttraumatic stress disorder (PTSD; N = 45) were randomly assigned to one of four conditions: stress inoculation training (SIT), prolonged exposure (PE), supportive counseling (SC), or wait-list control (WL). Treatments consisted of nine biweekly 90-min individual sessions conducted by a female therapist. All conditions produced improvement on all measures immediately post-treatment and at follow-up. However, SIT produced significantly more improvement on PTSD symptoms than did SC and WL immediately following treatment. At follow-up, PE produced superior outcome on PTSD symptoms.

PMID: 1955605

Ratig: 2b

Foa EB, Meadows EA. Psychosocial treatments for posttraumatic stress disorder: a critical review. *Annu Rev Psychol* 1997;48:449-80. [105 references]

Allegheny University of the Health Sciences, Philadelphia, Pennsylvania 19129, USA.

Finally, we include a discussion of issues specific to various trauma populations and factors that may influence treatment efficacy across types of trauma.

PMID: 9046566

Rating: 5b

Foa EB, Davidson JR, Frances A. The expert consensus guideline series: treatment of posttraumatic stress disorder. *J Clin Psychiatry* 1999;60(Suppl 16)

Rating: 9b

Fond G, Loundou A, Rabu C, Macgregor A, Lançon C, Brittner M, Micoulaud-Franchi JA, Richieri R, Courtet P, Abbar M, Roger M, Leboyer M, Boyer L. Ketamine administration in depressive disorders: a systematic review and meta-analysis. *Psychopharmacology* (Berl). 2014 Sep;231(18):3663-76. doi: 10.1007/s00213-014-3664-5.

PMID: 25038867

Rating: 1b

Forbes D, Phelps A, McHugh T. Treatment of combat-related nightmares using imagery rehearsal: a pilot study. *J Trauma Stress* 2001 Apr;14(2):433-42.

PTSD Program, Austin and Repatriation Medical Centre, Melbourne, Australia.
d.forbes@medicine.unimelb.edu.au

Posttraumatic nightmares are a hallmark of PTSD and distinct from general nightmares as they are often repetitive and faithful representations of the traumatic event. This paper presents data from a pilot study that examined the use of Imagery Rehearsal in treating combat-related nightmares of 12 Vietnam veterans with PTSD. The data demonstrate significant reductions in nightmares targeted, and improvements in PTSD and comorbid symptomatology.

PMID: 11469167

Rating: 3c

Ford DE, Mead LA, et al. Depression is a risk factor for coronary artery disease in men. *Arch Intern Med.* 1998;158:1422-14226.
Department of Medicine, The Johns Hopkins University School of Medicine, Welch Center for Prevention, Epidemiology, and Clinical Research, Baltimore, MD 21205-2223, USA.

Clinical depression appears to be an independent risk factor for incident coronary artery disease for several decades after the onset of the clinical depression.

PMID: 9665350

Rating: 3a

Fournier JC, DeRubeis RJ, Hollon SD, Dimidjian S, Amsterdam JD, Shelton RC, Fawcett J. Antidepressant drug effects and depression severity: a patient-level meta-analysis. *JAMA*. 2010 Jan 6;303(1):47-53.

STUDY SELECTION: Data from 6 studies (718 patients) were included. CONCLUSIONS: The magnitude of benefit of antidepressant medication compared with placebo increases with severity of depression symptoms and may be minimal or nonexistent, on average, in patients with mild or moderate symptoms. For patients with very severe depression, the benefit of medications over placebo is substantial.

PMID: 20051569

Foy DW, Glynn SM, Schnurr PP, et al. Chapter 8: group therapy. In: Foa EB, Keane TM, Friedman MJ, editor(s). Effective treatment for PTSD: practice guidelines from the International Society for Traumatic Stress Studies. New York (NY): Guilford Press; 2000. p. 155-75.

Rating: 9b

Frasure-Smith N, Lesperance F, Talajic M. Depression following myocardial infarction: impact on 6-month survival. *JAMA.* 1993;270:1819-1825.
Research Center, Montreal Heart Institute, Quebec, Canada.

Major depression in patients hospitalized following a myocardial infarction is an independent risk factor for mortality at six months. The risk factor is at least equivalent to that of left ventricular dysfunction and history of previous MI.

PMID: 8411525

Rating: 3b, 222 patients

Friedman, Matthew J (2013), "PTSD: Pharmacotherapeutic Approaches," *Focus* 11:315-320.

This article reviews the scientific support for the various medications that have been prescribed for patients with PTSD, with major attention to randomized clinical trials. The strongest evidence is for antidepressant medications, especially selective serotonin and serotonin/norepinephrine reuptake inhibitors. With the exception of prazosin, there is little evidence for the effectiveness of antiadrenergic agents either for monotherapy or for prevention of PTSD. Other classes of medications that are not recommended at this time include anticonvulsants, benzodiazepines, and atypical antipsychotic agents. The literature search for this review focused primarily on randomized clinical trials cataloged in the National Center for PTSD's PILOTS bibliographic database and from the Agency for Healthcare Research and Quality's recent meta-analysis of treatments for PTSD.
There have been significant advances in the clinical psychopharmacology of PTSD. Most, but not all, clinical practice guidelines for PTSD recommend medication as a first-line treatment. Growing understanding of the unique pathophysiology of this disorder has laid the groundwork for rational pharmacotherapy so that newer clinical trials are testing medications that might correct neurobiological alterations shown to be associated with the disorder. The most notable benchmark is approval by U.S. Food and Drug Administration (FDA) for two medications, sertraline and paroxetine, both selective serotonin reuptake inhibitors (SSRIs), as indicated treatment for PTSD. Unfortunately, there have been no new FDA-approved medications for over 10 years.

Rating: 5b

Furukawa TA, McGuire H, Barbui C. Meta-analysis of effects and side effects of low dosage tricyclic antidepressants in depression: systematic review. BMJ. 2002 Nov 2;325(7371):991.

Department of Psychiatry, Nagoya City University Medical School, Nagoya 467-8601, Japan. furukawa@med.nagoya-cu.ac.jp

Treatment of depression in adults with low dose tricyclics is justified.

PMID: 12411354

Rating: 1b

Gabbard GO, Lazar SG, Hornberger J, Spiegel D. The economic impact of psychotherapy: a review. *Am J Psychiatry*. 1997 Feb;154(2):147-55.

Menninger Clinic, Topeka, KS 66606, USA. gabbargo@menninger.edu

Psychotherapy appears to have a beneficial impact on a variety of costs when used in the treatment of the most severe psychiatric disorders, including schizophrenia, bipolar affective disorder, and borderline personality disorder.

PMID: 9016261

Rating: 1b

Galantino ML, Bzdewka TM, Eissler-Russo JL, Holbrook ML, Mogck EP, Geigle P, Farrar JT. The impact of modified Hatha yoga on chronic low back pain: a pilot study. *Altern Ther Health Med.* 2004 Mar-Apr;10(2):56-9.

Program in Physical Therapy, Richard Stockton College of New Jersey, USA.

PURPOSE: The purpose of this randomized pilot study was to evaluate a possible design for a 6-week modified hatha yoga protocol to study the effects on participants with chronic low back pain. PARTICIPANTS: Twenty-two participants (M = 4; F = 17), between the ages of 30 and 65, with chronic low back pain (CLBP) were randomized to either an immediate yoga based intervention, or to a control group with no treatment during the observation period but received later yoga training. RESULTS: Potentially important trends in the functional measurement scores showed improved balance and flexibility and decreased disability and depression for the yoga group but this pilot was not powered to reach statistical significance. CONCLUSION: Also, the impact on depression and disability could be considered as important outcomes for further study.

PMID: 15055095

Rating: 2c

Gartlehner G, Hansen RA, Thieda P, DeVeaugh-Geiss AM, Gaynes BN, Krebs EE, Lux LJ, Morgan LC, Shumate JA, Monroe LG, Lohr KN. Comparative Effectiveness of Second-Generation Antidepressants in the Pharmacologic Treatment of Adult Depression. Comparative Effectiveness Review No. 7. (Prepared by RTI International-University of North Carolina Evidence-based Practice Center under Contract No. 290-02-0016.) Rockville, MD: Agency for Healthcare Research and Quality. January 2007.

Pharmacotherapy dominates the medical management of depressive disorders and may include first-generation antidepressants (tricyclic antidepressants and monoamine oxidase inhibitors) and more recently developed second-generation antidepressants. These second-generation treatments include selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs). The mechanism of action of most of these agents is poorly understood. These drugs work, at least in part, through their effects on neurotransmitters such as serotonin, norepinephrine, or dopamine in the central nervous system. In general, the efficacy of first- and second-generation antidepressant medications is similar. However, first-generation antidepressants often produce multiple side effects that many patients find intolerable, and the risk for harm when taken in overdose or in combination with certain medications is high. Because of their relatively favorable side effect profile, the second-generation antidepressants play a prominent role in the management of patients with major depressive disorder and are the focus of this review. This report summarizes the available evidence on the comparative efficacy, effectiveness, and harms of 12 second-generation antidepressants—bupropion, citalopram, duloxetine, escitalopram, fluoxetine, fluvoxamine, mirtazapine, nefazodone, paroxetine, sertraline, trazodone, and venlafaxine—in treating patients with MDD, dysthymia, and subsyndromal depression. It also evaluates the comparative efficacy and effectiveness for maintaining remission and for treating accompanying symptoms such as anxiety, insomnia, or neurovegetative symptoms.

Rating: 1a

Gaynes BN, Lloyd SW, Lux L, Gartlehner G, Hansen RA, Brode S, Jonas DE, Swinson Evans T, Viswanathan M, Lohr KN. Repetitive transcranial magnetic stimulation for treatment-resistant depression: a systematic review and meta-analysis. *J Clin Psychiatry*. 2014 May;75(5):477-89; quiz 489. doi: 10.4088/JCP.13r08815.

PMID: 24922485

Rating: 1b

Geier FP, Konstantinowicz T. Kava treatment in patients with anxiety. *Phytother Res.* 2004 Apr;18(4):297-300.

Geriatric Hospital Elbroich, Am Falder 6, 40589 Duesseldorf, Germany.

In several clinical trials, mainly conducted with a dose of 300 mg kava extract per day, kava has been employed successfully for the treatment of anxiety disorders. It can be concluded that the applied 150 mg WS 1490 per day is an effective and safe treatment of non-psychotic anxiety syndromes in the described population. Copyright 2004 John Wiley & Sons, Ltd.

PMID: 15162364

Rating: 2c

Georgopoulos AP, Tan HR, Lewis SM, Leuthold AC, Winskowski AM, Lynch JK, Engdahl B. The synchronous neural interactions test as a functional neuromarker for post-traumatic stress disorder (PTSD): a robust classification method based on the bootstrap. *J Neural Eng.* 2010 Feb;7(1):16011. Epub 2010 Jan 20.

Here we show that the synchronous neural interactions (SNI) test which assesses the functional interactions among neural populations derived from magnetoencephalographic (MEG) recordings can successfully differentiate PTSD patients from healthy control subjects. In addition, all but one of 18 patients who were not receiving medications for their disease were correctly classified.

PMID: 20086271

Rating: 3c

Gerger H, Munder T, Gemperli A, Nüesch E, Trelle S, Jüni P, Barth J. Integrating fragmented evidence by network meta-analysis: relative effectiveness of psychological interventions for adults with post-traumatic stress disorder. *Psychol Med*. 2014 Nov;44(15):3151-64. doi: 10.1017/S0033291714000853.

PMID: 25066766

Rating: 1b

Gerhards SA, de Graaf LE, Jacobs LE, Severens JL, Huibers MJ, Arntz A, Riper H, Widdershoven G, Metsemakers JF, Evers SM. Economic evaluation of online computerised cognitive-behavioural therapy without support for depression in primary care: randomised trial. *Br J Psychiatry*. 2010 Apr;196:310-8.

CONCLUSIONS: On balance, CCBT constitutes the most efficient treatment strategy, although all treatments showed low adherence rates and modest improvements in depression and quality of life.

PMID: 20357309

Rating: 3b

Gholamrezaei A, Ardestani SK, Emami MH. Where does hypnotherapy stand in the management of irritable bowel syndrome? A systematic review. *J Altern Complement Med.* 2006 Jul-Aug;12(6):517-27.

Clinical Hypnotherapy Research Group, Medical Student Research Committee, Isfahan University of Medical Sciences (IUMS), Isfahan, Iran. gholamrezaei@edc.mui.ac.ir

Although there are some methodologic inadequacies, all studies show that hypnotherapy is highly effective for patients with refractory IBS, but definite efficacy of hypnosis in the treatment of IBS remains unclear due to lack of controlled trials supporting this finding.

PMID: 16884342

Rating: 1b

Gill D, Hatcher S. A systematic review of the treatment of depression with antidepressant drugs in patients who also have a physical illness. J Psychosom Res. 1999 Aug;47(2):131-43.

Department of Liaison Psychiatry, Whipps Cross Hospital, London, UK. wkyey80@hotmail.com

To determine whether antidepressants are clinically effective and acceptable for the treatment of depression in people who also have a physical illness. The "atypical" antidepressant mianserin produced significantly less dropout than placebo. The review provides evidence that antidepressants, significantly more frequently than either placebo or no treatment, cause improvement in depression in patients with a wide range of physical diseases.

PMID: 10579497

Rarting: 1b

Gijsman HJ, Geddes JR, Rendell JM, Nolen WA, Goodwin GM. Antidepressants for bipolar depression: a systematic review of randomized, controlled trials. *Am J Psychiatry*. 2004 Sep;161(9):1537-47.

Scutari Clinic, St. Thomas' Hospital, Lambeth Palace Rd., London, U.K.
harm.gijsman@doctors.net.uk

OBJECTIVE: This study reviewed the evidence from randomized, controlled trials on the efficacy and safety of antidepressants in the short-term treatment of bipolar depression. RESULTS: Twelve randomized trials were included, with a total of 1,088 randomly assigned patients. CONCLUSIONS: Antidepressants are effective in the short-term treatment of bipolar depression. The trial data do not suggest that switching is a common early complication of treatment with antidepressants. It may be prudent to use a selective serotonin reuptake inhibitor or a monoamine oxidase inhibitor rather than a tricyclic antidepressant as first-line treatment.

PMID: 15337640

Rating: 1b

Gloaguen V, Cottraux J, Cucherat M, Blackburn IM. A meta-analysis of the effects of cognitive therapy in depressed patients. J Affect Disord. 1998 Apr;49(1):59-72.

Anxiety Disorder Unit Hopital Neurologique, Lyon, France.

BACKGROUND: Cognitive therapy (CT) has been studied in 78 controlled clinical trials from 1977 to 1996. CONCLUSION: CT is effective in patients with mild or moderate depression.

PMID: 9574861

Rating: 2a

Glynn SM, Eth S, Randolph ET, Foy DW, Urbaitis M, Boxer L, Paz GG, Leong GB, Firman G, Salk JD, Katzman JW, Crothers J. A test of behavioral family therapy to augment exposure for combat-related posttraumatic stress disorder. *J Consult Clin Psychol*. 1999 Apr;67(2):243-51.

Research Service, VAMC, West Los Angeles, California 90073, USA. sglynn@ucla.edu

Participation in exposure therapy reduced PTSD positive symptoms (e.g., reexperiencing and hyperarousal) but not PTSD negative symptoms. Positive symptom gains were maintained at 6-month follow-up. However, participation in BFT had no additional impact on PTSD symptoms.

PMID: 10224735

Goel N, Kim H, Lao RP. An olfactory stimulus modifies nighttime sleep in young men and women. *Chronobiol Int.* 2005;22(5):889-904.

Department of Psychology, Wesleyan University, Middletown, Connecticut 06459, USA.
ngoel@wesleyan.edu

Lavender increased the percentage of deep or slow-wave sleep (SWS) in men and women. All subjects reported higher vigor the morning after lavender exposure, corroborating the restorative SWS increase. Lavender also increased stage 2 (light) sleep, and decreased rapid-eye movement (REM) sleep and the amount of time to reach wake after first falling asleep (wake after sleep onset latency) in women, with opposite effects in men. Thus, lavender serves as a mild sedative and has practical applications as a novel, nonphotic method for promoting deep sleep in young men and women and for producing gender-dependent sleep effects.

PMID: 16298774

Rating: 2c

Goetzel RZ, Ozminkowski RJ, Sederer LI, Mark TL. The business case for quality mental health services: why employers should care about the mental health and well-being of their employees. *JOEM.* 2002;44(4):320-330.
MEDSTAT Group, Inc, Washington, D.C., USA.

Conclusion: “Evidence is mounting that worker depression may have its greatest impact on productivity losses, including increased absenteeism and short-term disability, higher turnover, and suboptimal performance at work.”

PMID: 11977418

Rating: 5b

Goetzel RZ, Anderson DR, Whitmer RW, et al. The relationship between modifiable health risks and health care expenditures: an analysis of the multi-employer HERO health risk and cost database. *JOEM.* 1998;40(10):843-854.

MEDSTAT Group, Washington, DC 20008, USA.

Conclusion: “Results show that employees at high risk for poor health outcomes had significantly higher expenditures than did subjects at lower risk in seven of ten risk categories: those who reported themselves as depressed (70% higher expenditures), at high stress (46%).”

PMID: 9800168

Rating: 5b

Goldapple K, Segal Z, Garson C, Lau M, Bieling P, Kennedy S, Mayberg H, Modulation of cortical-limbic pathways in major depression: treatment-specific effects of cognitive behavior therapy, *Arch Gen Psychiatry*. 2004 Jan;61(1):34-41

Rotman Research Institute at Baycrest Centre, 3560 Bathurst Street, Toronto, Ontario, Canada M6A 2E1.

OBJECTIVE: To examine changes associated with cognitive behavior therapy (CBT).
RESULTS: A full course of CBT resulted in significant clinical improvement in the 14 study completers (mean +/- SD posttreatment Hamilton Depression Rating Scale score of 6.7 +/- 4).
CONCLUSIONS: Like other antidepressant treatments, CBT seems to affect clinical recovery by modulating the functioning of specific sites in limbic and cortical regions. Unique directional changes in frontal cortex, cingulate, and hippocampus with CBT relative to paroxetine may reflect modality-specific effects with implications for understanding mechanisms underlying different treatment strategies.

PMID: 14706942

Rating: 2b

Golden RN, Gaynes BN, Ekstrom RD, Hamer RM, Jacobsen FM, Suppes T, Wisner KL, Nemeroff CB. The efficacy of light therapy in the treatment of mood disorders: a review and meta-analysis of the evidence. *Am J Psychiatry*. 2005 Apr;162(4):656-62.

Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7160, USA. robert_golden@med.unc.edu

OBJECTIVE: The purpose of this study was to assess the evidence base for the efficacy of light therapy in treating mood disorders. RESULTS: Meta-analyses revealed that a significant reduction in depression symptom severity was associated with bright light treatment (eight studies, having an effect size of 0.84 and 95% confidence interval [CI] of 0.60 to 1.08) and dawn simulation in seasonal affective disorder (five studies; effect size=0.73, 95% CI=0.37 to 1.08) and with bright light treatment in nonseasonal depression (three studies; effect size=0.53, 95% CI=0.18 to 0.89). Bright light as an adjunct to antidepressant pharmacotherapy for nonseasonal depression was not effective (five studies; effect size=-0.01, 95% CI=-0.36 to 0.34). CONCLUSIONSThis analysis of randomized, controlled trials suggests that bright light treatment and dawn simulation for seasonal affective disorder and bright light for nonseasonal depression are efficacious, with effect sizes equivalent to those in most antidepressant pharmacotherapy trials.

PMID: 15800134

Goldfinger SM, Schutt RK, Tolomiczenko GS et al. Housing persons who are homeless and mentally ill: independent living or evolving consumer households? In: WR Breakey; JW Thompson, editors, translator and editor Mentally ill and homeless special programs for special needs. Amsterdam: Harwood; 1997; p. 29-49.

Rating: 9b

Gorman JM. Treatment of generalized anxiety disorder. J Clin Psychiatry. 2002;63 Suppl 8:17-23.

At present, the use of psychosocial therapy and second-generation antidepressants, such as some selective serotonin reuptake inhibitors and venlafaxine, offer the best approach to attaining long-term benefit for patients with GAD.

PMID: 12044104

Rating: 5b

Goyal M, Singh S, Sibinga EM, Gould NF, Rowland-Seymour A, Sharma R, Berger Z, Sleicher D, Maron DD, Shihab HM, Ranasinghe PD, Linn S, Saha S, Bass EB, Haythornthwaite JA. Meditation Programs for Psychological Stress and Well-being: A Systematic Review and Meta-analysis. *JAMA Intern Med.* 2014 Jan 6. doi: 10.1001/jamainternmed.2013.13018.

PMID: 24395196

Rating: 1a

Granath J, Ingvarsson S, von Thiele U, Lundberg U. Stress management: a randomized study of cognitive behavioural therapy and yoga. *Cogn Behav Ther*. 2006;35(1):3-10.

Department of Psychology and Centre for Health Equity Studies (CHESS), Stockholm University, Stockholm, Sweden.

Psychological (self-rated stress and stress behaviour, anger, exhaustion, quality of life) and physiological (blood pressure, heart rate, urinary catecholamines, salivary cortisol) measurements obtained before and after treatment showed significant improvements on most of the variables in both groups as well as medium-to-high effect sizes. However, no significant difference was found between the 2 programs. The results indicate that both cognitive behaviour therapy and yoga are promising stress management techniques.

PMID: 16500773

Rating: 2c

Gray SL, Anderson ML, Dublin S, Hanlon JT, Hubbard R, Walker R, Yu O, Crane PK, Larson EB. Cumulative use of strong anticholinergics and incident dementia: a prospective cohort study. *JAMA Intern Med.* 2015 Mar 1;175(3):401-7. doi: 10.1001/jamainternmed.2014.7663.

PMID: 25621434

Rating: 3a

Greenberg SA, Shuman DW. Irreconcilable conflict between therapeutic and forensic rules*. Professional Psychology: Research and Practice, 1997*, volume 28, number 1, 50-57.

Tightened insurance reimbursement rules, a growing market for forensic mental health professionals, and zealous patient advocacy by therapists have combined to induce many therapists, including those who once avoided the judicial system, to appear as forensic expert witnesses on behalf of their patients. Although there are explicit ethical precepts about psychologists and psychiatrists engaging in these conflicting dual roles, they have not eliminated this conduct. Psychologists and psychiatrists have not understood either why these ethical precepts exist or how they affect the behavior of even the most competent therapists. The specific problem addressed here is that of the psychologist or psychiatrist who provides clinical assessment or therapy to a patient-litigant and who concurrently or subsequently attempts to serve as a forensic expert for that patient in civil litigation.

Rating: 5b

Gunlicks-Stoessel M, Mufson L. Early patterns of symptom change signal remission with interpersonal psychotherapy for depressed adolescents. *Depress Anxiety*. 2011 Jul;28(7):525-31. doi: 10.1002/da.20849.

PMID: 21721071

Rating: 2b

Gura ST, Yoga for stress reduction and injury prevention at work, *Work*. 2002;19(1):3-7.

In-Alignment, Inc., 1450 Catherine Drive, Berkeley, CA 94702, USA. shirataylor@hotmail.com

Practicing yoga at the workplace teaches employees to use relaxation techniques to reduce stress and risks of injury on the job.

PMID: 12454346

Rating: 5b

Gybels J, Erdine S, Maeyaert J, Meyerson B, Winkelmuller W, Augustinsson L, Bonezzi C, Brasseur L, DeJongste M, Kupers R, Marchettini P, Muller-Schwefe G, Nitescu P, Plaghki L, Reig E, Spincemaille G, Thomson S, Tronnier V, Van Buyten JP. Neuromodulation of pain. A consensus statement prepared in Brussels 16-18 January 1998 by the following task force of the European Federation of IASP Chapters (EFIC). *Eur J Pain*. 1998;2(3):203-9.

No abstract was provided for this unstructured overall review of neuromodulation. The role of psychological evaluation is discussed.

Rating: 5c

Note: This document was made possible, in part, by an educational grant from Medtronic, Inc.

Haddad PM. Antidepressant discontinuation syndromes. *Drug Saf*. 2001;24:183-97.

Discontinuation symptoms are recognised with tricyclic antidepressants, monoamine oxidase inhibitors, selective serotonin reuptake inhibitors (SSRIs) and miscellaneous antidepressants. Preventative strategies include tapering antidepressants prior to stoppage and educating patients and healthcare professionals to ensure that antidepressants are taken consistently and not stopped abruptly. Reinstatement usually leads to symptom resolution within 24 hours. With SSRIs and venlafaxine another strategy to consider is switching to fluoxetine, which may suppress the discontinuation symptoms, but which has little tendency to cause such symptoms itself.

PMID: 11347722

Rating: 5c

Hales RE, Yudofsky, SC. *The American Psychiatric Publishing Textbook of Clinical Psychiatry, Fourth Edition.* American Psychiatric Publishing. 2002.

This densely informative textbook comprises 40 scholarly, authoritative chapters by an astonishing 89 experts and combines junior and senior authors alike to enhance the rich diversity and quality of clinical perspectives.

Rating: 9b

Halford WK, Harrison C, Kalyansundaram, Moutrey C, Simpson S. Preliminary results from a psychoeducational program to rehabilitate chronic patients. *Psychiatr Serv*. 1995 Nov;46(11):1189-91.

School of Applied Psychology, Griffith University, Nathan, Queensland, Australia.

Twenty-two chronic psychiatric patients enrolled in a psychoeducational rehabilitation program were assessed before and after the program to determine whether participation decreased severity of psychopathology and improved community functioning and quality of life. The program appears helpful to clients, and a controlled trial to further evaluate its effects is underway.

PMID: 8564511

Rating: 4b

Hamner MB, Deitsch SE, Brodrick PS, Ulmer HG, Lorberbaum JP. Quetiapine treatment in patients with posttraumatic stress disorder: an open trial of adjunctive therapy. *J Clin Psychopharmacol* 2003 Feb;23(1):15-20.

Mental Health Service, Ralph H. Johnson VA Medical Center, 109 Bee Street, Charleston, SC 29401, USA. hamnermb@musc.edu

Eighteen of 20 patients enrolled in the study completed 6 weeks of open-label treatment. This preliminary open trial suggests that quetiapine is well tolerated and may have efficacy in reducing PTSD symptoms in patients who have not had an adequate response other medications.

PMID: 12544370

Rating: 2c

Harris AH, Cronkite R, Moos R. Physical activity, exercise coping, and depression in a 10-year cohort study of depressed patients*. J Affect Disord*. 2006 Jul;93(1-3):79-85.

Center for Health Care Evaluation, Department of Veterans Affairs Health Care System and Stanford University, Menlo Park, California 94025, USA. Alexander.Harris2@va.gov

Our results suggest that more physical activity is associated with reduced concurrent depression. In addition, it appears that physical activity may be especially helpful in the context of medical problems and major life stressors.

PMID: 16545873

Rating: 3a

Harris I, Mulford J, Solomon M, van Gelder JM, Young J. Association between compensation status and outcome after surgery: a meta-analysis. *JAMA*. 2005 Apr 6;293(13):1644-52.

Orthopaedic Department, Liverpool Hospital, Liverpool, Australia. iaharris@optushome.com.au

The conclusion is, “Compensation status is associated with poor outcome after surgery. This effect is significant, clinically important, and consistent. Compensation status should be considered a potential confounder in all studies of surgical intervention.”

PMID: 15811984

Rating: 1a

Hartley D, Korsen N, Bird D, Agger M. Management of patients with depression by rural primary care practitioners. *Arch Fam Med*. 1998 Mar-Apr;7(2):139-45.

Maine Rural Health Research Center, Edmund S. Muskie School of Public Service, University of Southern Maine, Portland 04104-9300, USA.

OBJECTIVE: To investigate the extent to which variations in treatment and referral patterns for adult patients with diagnosed symptoms of depression seen in primary care practices are explained by practitioner characteristics, such as training, years in primary practice, sex, and knowledge about depression; practice characteristics, such as size, patient volume, and payer mix; and service area characteristics, such as availability of specialty mental health services and rural location. MAIN OUTCOME MEASURE: Major barriers to referral to a mental health provider, as reported by the PCP, are long wait for an appointment, lack of available services, patients' unwillingness to use services, and reimbursement issues. Multivariate analyses indicate that PCP characteristics measuring knowledge and attitudes, as well as the lack of available services, are significantly related to treatment and referral patterns while practice characteristics and mental health provider supply are not. CONCLUSION: The treatment of rural patients with symptoms of depression is more likely to be improved by targeting PCPs' medical education than by efforts to increase the supply of specialty mental health providers in rural areas.

PMID: 9519918

Rating: 3c

Hawton K, Townsend E, Arensman E, Gunnell D, Hazell P, House A, van Heeringen K. Psychosocial and pharmacological treatments for deliberate self harm (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software.

Objectives: To identify and synthesise the findings from all randomised controlled trials that have examined the effectiveness of treatments of patients who have deliberately harmed themselves.
Search strategy: Electronic databases screened: MEDLINE (from 1966-February 1999); PsycLit (from 1974-March 1999); Embase (from 1980-January 1999); The Cochrane Controlled Trials Register (CCTR) No.1 1999. Ten journals in the field of psychiatry and psychology were hand searched for the first version of this review. We have updated the hand search of three specialist journals in the field of suicidal research until the end of 1998. Reference lists of papers were checked and trialists contacted.
Selection criteria: All RCTs of psychosocial and/or psychopharmacological treatment versus standard or less intensive types of aftercare for patients who shortly before entering a study engaged in any type of deliberately initiated self-poisoning or self-injury, both of which are generally subsumed under the term deliberate self-harm.
Data collection and analysis: Data were extracted from the original reports independently by two reviewers. Studies were categorized according to type of treatment. The outcome measure used to assess the efficacy of treatment interventions for deliberate self-harm was the rate of repeated suicidal behaviour. We have been unable to examine other outcome measures as originally planned (e.g. compliance with treatment, depression, hopelessness, suicidal ideation/thoughts, change in problems/problem resolution).
Main results: A total of 23 trials were identified in which repetition of deliberate self-harm was reported as an outcome variable. The trials were classified into 11 categories. The summary odds ratio indicated a trend towards reduced repetition of deliberate self-harm for problem-solving therapy compared with standard aftercare (0.70; 0.45 to 1.11) and for provision of an emergency contact card in addition to standard care compared with standard aftercare alone (0.45; 0.19 to 1.07). The summary odds ratio for trials of intensive aftercare plus outreach compared with standard aftercare was 0.83 (0.61 to 1.14), and for antidepressant treatment compared with placebo was 0.83 (0.47 to 1.48). The remainder of the comparisons were in single small trials. Significantly reduced rates of further self-harm were observed for depot flupenthixol vs. placebo in multiple repeaters (0.09; 0.02 to 0.50), and for dialectical behaviour therapy vs. standard aftercare (0.24; 0.06 to 0.93).
Reviewers' conclusions: There still remains considerable uncertainty about which forms of psychosocial and physical treatments of self-harm patients are most effective, inclusion of insufficient numbers of patients in trials being the main limiting factor. There is a need for larger trials of treatments associated with trends towards reduced rates of repetition of deliberate self-harm. The results of small single trials which have been associated with statistically significant reductions in repetition must be interpreted with caution and it is desirable that such trials are also replicated.

Hoffart A, Sexton H. The role of optimism in the process of schema-focused cognitive therapy of personality problems. Behav Res Ther. 2002 Jun;40(6):611-23.

There appears to be a positive feedback in the process of schema-focused cognitive therapy between decreased schema belief and increased optimism. In addition, optimism appears to mediate the effects of schema belief and therapist empathy on overall improvement, and to serve as an antecedent to decreased distress and to increased empathy, insight, and therapist's optimism.

PMID: 12051481

Reating: 4c

Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: model, processes and outcomes. *Behav Res Ther*. 2006 Jan;44(1):1-25.

Department of Psychology, University of Nevada, Reno, NV 89557-0062, USA. hayes@unr.edu

What evidence is available suggests that ACT works through different processes than active treatment comparisons, including traditional Cognitive-Behavior Therapy (CBT). There are not enough well-controlled studies to conclude that ACT is generally more effective than other active treatments across the range of problems examined, but so far the data are promising.

PMID: 16300724

Rating: 5c

Hayes AM, Laurenceau JP, Feldman G, Strauss JL, Cardaciotto L. Change is not always linear: the study of nonlinear and discontinuous patterns of change in psychotherapy. *Clin Psychol Rev.* 2007 Jul;27(6):715-23.

PMID: 17316941

Rating: 5b

Heikkilä K, Nyberg ST, Theorell T, Fransson EI, Alfredsson L, Bjorner JB, Bonenfant S, Borritz M, Bouillon K, Burr H, Dragano N, Geuskens GA, Goldberg M, Hamer M, Hooftman WE, Houtman IL, Joensuu M, Knutsson A, Koskenvuo M, Koskinen A, Kouvonen A, Madsen IE, Magnusson Hanson LL, Marmot MG, Nielsen ML, Nordin M, Oksanen T, Pentti J, Salo P, Rugulies R, Steptoe A, Suominen S, Vahtera J, Virtanen M, Väänänen A, Westerholm P, Westerlund H, Zins M, Ferrie JE, Singh-Manoux A, Batty GD, Kivimäki M; IPD-Work Consortium. Work stress and risk of cancer: meta-analysis of 5700 incident cancer events in 116 000 European men and women. *BMJ.* 2013 Feb 7;346:f165. doi: 10.1136/bmj.f165.

These findings suggest that work related stress, measured and defined as job strain, at baseline is unlikely to be an important risk factor for colorectal, lung, breast, or prostate cancers.

PMID: 23393080

Rating: 1a

Hernandez-Avila CA, Song C, Kuo L, Tennen H, Armeli S, Kranzler HR. Targeted versus daily naltrexone: secondary analysis of effects on average daily drinking. *Alcohol Clin Exp Res*. 2006 May;30(5):860-5.

Alcohol Research Center, Department of Psychiatry, University of Connecticut School of Medicine, Farmington, Connecticut, USA.

METHODS: In a double-blind, placebo-controlled study, problem drinkers (n=150, 58% men) were randomly assigned to 8 weeks of treatment with naltrexone (50 mg/day) or placebo, either daily or on a targeted schedule. All subjects also received brief coping skills therapy. CONCLUSIONS: Although in both genders, targeted treatments appeared to reduce the volume of drinking, treatment with targeted naltrexone was somewhat better. In contrast, heavy drinking women showed no benefit from daily naltrexone treatment.

PMID: 16634855

Rating: 2b

Herring MP, Coppel DB. Resistance Training Improves Generalized Anxiety Disorder. American College of Sports Medicine (ACSM) 58th Annual Meeting: Abstract 601. Presented June 1, 2011.

Resistance training reduces symptoms of generalized anxiety disorder (GAD), compared with aerobic exercise or no exercise at all. Patients with GAD tend to be physically inactive, although exercise training has been shown to reduce anxiety symptoms in healthy adults and patients with chronic disease, and to benefit patients with major depressive disorder. To investigate the potential benefits of exercise on worry symptoms and anxiety remission rates in patients with GAD, researchers randomized a group of 30 sedentary women with a primary DSM-IV diagnosis of GAD to receive a 6-week regimen of either resistance training or aerobic exercise training, or to be placed on a wait list (control group). After the 6-week training period, the researchers found rates of anxiety remission to be as high as 60% in the resistance training group, compared with 40% in the aerobic exercise group and 30% in the control group. The resistance training consisted of 2 weekly sessions of lower-body weightlifting, starting at 50% of 1 repetition maximum during week 1, and progressing 5% weekly. The aerobic exercise training involved 2 weekly sessions of leg cycling, matched with resistance training on the body region exercised, and weekly load progression.

Rating: 10b

Hertzberg MA, Butterfield MI, Feldman ME, Beckham JC, Sutherland SM, Connor KM, Davidson JR. A preliminary study of lamotrigine for the treatment of posttraumatic stress disorder. *Biol Psychiatry* 1999 May 1;45(9):1226-9.

Duke University Medical Center, Department of Psychiatry, Durham, NC, USA.

RESULTS: Fifteen subjects entered treatment, fourteen of whom returned for subsequent visits. Of 10 patients who received lamotrigine, 5 (50%) responded according to the DGRP, compared to 1 of 4 (25%) who received placebo. CONCLUSIONS: Lamotrigine may be effective as a primary psychopharmacologic treatment in both combat and civilian PTSD and could also be considered as an adjunct to antidepressant therapy used in the treatment of PTSD.

PMID: 10331117

Rating: 2c

Hidalgo R, Hertzberg MA, Mellman T, Petty F, Tucker P, Weisler R, Zisook S, Chen S, Churchill E, Davidson J. Nefazodone in post-traumatic stress disorder: results from six open-label trials. *Int Clin Psychopharmacol* 1999 Mar;14(2):61-8.

Duke University Medical Center, Durham, North Carolina, USA.

Nefazodone, an antidepressant which blocks serotonin (5-HT)2 receptors and 5-HT reuptake, was evaluated in the treatment of post-traumatic stress disorder (PTSD) in six open-label studies involving both civilians and combat veterans. Nefazodone showed a broad spectrum of action on PTSD symptoms. This profile might make nefazodone a useful drug to treat PTSD. Predictors of response include age, sex and trauma type.

PMID: 10220119

Rating: 1b

Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *N Engl J Med.* 2004 Jul 1;351(1):13-22

Department of Psychiatry and Behavioral Sciences, Walter Reed Army Institute of Research, U.S. Army Medical Research and Materiel Command, Silver Spring, Md 20910, USA. charles.hoge@na.amedd.army.mil

METHODS: We studied members of four U.S. combat infantry units (three Army units and one Marine Corps unit) using an anonymous survey that was administered to the subjects either before their deployment to Iraq (n=2530) or three to four months after their return from combat duty in Iraq or Afghanistan (n=3671). The outcomes included major depression, generalized anxiety, and post-traumatic stress disorder (PTSD), which were evaluated on the basis of standardized, self-administered screening instruments. RESULTS: The percentage of study subjects whose responses met the screening criteria for major depression, generalized anxiety, or PTSD was significantly higher after duty in Iraq (15.6 to 17.1 percent) than after duty in Afghanistan (11.2 percent) or before deployment to Iraq (9.3 percent); the largest difference was in the rate of PTSD. CONCLUSIONS: Our findings indicate that among the study groups there was a significant risk of mental health problems and that the subjects reported important barriers to receiving mental health services, particularly the perception of stigma among those most in need of such care.

PMID: 15229303

Rating: 3a

This article documents a significant and clear dose-response relationship between stress (amount of combat) and serious productivity loss and disability among US troops in Iraq. Stress in business is not nearly so dramatic as PTSD in US troops, but it is a major, and widely under appreciated, source of both short and long term problems for stress ridden corporations and the society in general; conversely, low stress environments are a potential major source of competitive advantage for organizations that learn to motivate and optimize human performance primarily with rewards rather than punishments. George Anstadt

Mental Illness: The Hidden Cost of War in Iraq
It has been well established for some time that post-traumatic stress disorder and other mental health illnesses are a predictable outcome of war. However, a landmark study in the New England Journal of Medicine of U.S. troops in Iraq has, for the first time, documented this hidden cost of war in real time and projected a continued price for Americans in the years ahead.
As noted by the authors from the Walter Reed Army Institute of Research, "Research conducted after ... military conflicts has shown that deployment stressors and exposure to combat result in considerable risks of mental health problems, including post-traumatic stress disorder (PTSD), major depression, substance abuse, impairment in social functioning and in the ability to work, and the increased use of health care services." This study, completed in the first half of this year, is unique because it compares rates of mental disorders in soldiers before they were deployed to Iraq with rates of mental disorders in soldiers after they had returned from Iraq. 2,530 soldiers were studied prior to deployment and 1,709 were studied several months after their return. The percentage of soldiers with mental health issues prior to war was 9.3 percent, compared with about 16 percent after returning from Iraq. The demographics of the study participants were very similar to those of the general, deployed, non-officer population in Iraq.

Most of the study participants were young males, under 30 years old, with a high school education or less. According to responses, PTSD is the most prevalent of the mental illnesses experienced by soldiers returning from the Iraq war. This is consistent with findings from studies of soldiers involved in past wars. While PTSD occurs in the general population at a rate of 3 percent to 4 percent, 2 past studies have shown that Vietnam veterans were affected at a rate of 15 percent, and veterans of the first Gulf War experienced PTSD 2 percent to 10 percent of the time. The incidence of PTSD in U.S. soldiers returning from Iraq was directly related to the intensity of their wartime experience. The greater the number of firefights encountered, the greater the incidence of PTSD. Those unexposed to firefights had a PTSD incidence rate of 4.5 percent, close to that in the general population. That rate more than doubled to 9.3 percent if a soldier saw significant firefighting once or twice. Three to five firefights yielded an incidence of PTSD of 13 percent, and greater than five exposures brought the incidence rate to nearly 20 percent. And these numbers, in the opinion of the authors of the study, are likely to be somewhat understated, not only because the prevalence of PTSD may increase during the two years after exposure to trauma, but also because of soldiers' fears of repercussions. Even among soldiers with no mental health symptoms, general distrust and perceived barriers to seeking mental health services were obvious. 18 percent of these study participants reported they would be too embarrassed to seek mental health services. 24 percent felt admitting a problem could hurt their careers, and 31 percent felt they would be seen as weak. Even more striking were the findings related to the soldiers with active mental health issues. 38 percent answered that they lack trust in mental health professionals, 41 percent said they would be embarrassed to seek help, half felt seeking help would damage their careers, and 65 percent feared being labeled as weak. Together, the incidence of mental illness and the stigma and barriers to treatment create a Catch-22 for today's Iraq war veterans. As stated by Dr. Matthew J. Friedman of the National Center for PTSD at the Department of Veterans Affairs, "The sticking point is skepticism among military personnel that the use of mental health services can remain confidential." Nearly 30 percent of male civilians with a mental health disorder seek treatment, but fewer than 20 percent of servicemen with a mental health disorder seek treatment. This is remarkably unfortunate since it is well established that both cognitive and pharmacologic therapies can help those with PTSD. PTSD is a price of war. Its cost to everyone involved is chronic in nature. At the least, those affected deserve intensive therapy without fear of reprisal. At the most, those affected should expect that this cost, as well as many others, would be honestly and carefully considered and fully factored in as a part of war before military action is taken and people are placed in harm's way. Mike Magee.

Hoge CW, McGurk D, Thomas JL, Cox AL, Engel CC, Castro CA. Mild traumatic brain injury in U.S. Soldiers returning from Iraq. *N Engl J Med*. 2008 Jan 31;358(5):453-63.

Division of Psychiatry and Neuroscience, Walter Reed Army Institute of Research, U.S. Army Medical Research and Materiel Command, Silver Spring, MD 20910, USA. charles.hoge@us.army.mil

METHODS: We surveyed 2525 U.S. Army infantry soldiers 3 to 4 months after their return from a year-long deployment to Iraq. CONCLUSIONS: Mild traumatic brain injury (i.e., concussion) occurring among soldiers deployed in Iraq is strongly associated with PTSD and physical health problems 3 to 4 months after the soldiers return home.

PMID: 18234750

Rating: 4a

January 30, 2008 — New research suggests mild traumatic brain injury (TBI), also known as concussion, may not be the primary driver of posttraumatic stress disorder (PTSD) and physical health problems among US troops returning from the current war in Iraq. Rather, it may be that mild TBI serves as a surrogate of an intense, life-threatening, traumatic event that significantly increases the risk for PTSD and depression. "The most startling finding, that we were indeed surprised by, was the fact that the physical health symptoms and the postconcussive symptoms that we expected to be able to attribute to concussion actually turned out to be related to PTSD and depression," principal investigator Charles Hoge, MD, from Walter Reed Army Institute of Research, in Silver Springs, Maryland, told Medscape Neurology & Neurosurgery. "Symptoms such as poor concentration, irritability, forgetfulness, dizziness, and balance problems, things that we typically associate with concussion — were correlated with PTSD and depression, and not with a history of mild TBI," he added.

Hoge CW, Riviere LA, Wilk JE, Herrell RK, Weathers FW. The prevalence of post-traumatic stress disorder (PTSD) in US combat soldiers: a head-to-head comparison of DSM-5 versus DSM-IV-TR symptom criteria with the PTSD checklist. *The Lancet Psychiatry*, Volume 1, Issue 4, Pages 269 - 277, September 2014.

Rating: 5b

Holbrook TL, Galarneau MR, Dye JL, Quinn K, Dougherty AL. Morphine use after combat injury in Iraq and post-traumatic stress disorder. *N Engl J Med*. 2010 Jan 14;362(2):110-7.

METHODS: We identified 696 injured U.S. military personnel without serious traumatic brain injury from the Navy-Marine Corps Combat Trauma Registry Expeditionary Medical Encounter Database. CONCLUSIONS: Our findings suggest that the use of morphine during trauma care may reduce the risk of subsequent development of PTSD after serious injury.

PMID: 20071700

Rating: 3b

Holman EA, Silver RC, Poulin M, Andersen J, Gil-Rivas V, McIntosh DN. Terrorism, acute stress, and cardiovascular health: a 3-year national study following the September 11th attacks. *Arch Gen Psychiatry*. 2008 Jan;65(1):73-80.

Program in Nursing Science, College of Health Sciences, 205B Irvine Hall, University of California, Irvine, CA 92697-3959, USA. aholman@uci.edu

OBJECTIVE: To examine the degree to which acute stress reactions to the 9/11 terrorist attacks predict cardiovascular outcomes in a national probability sample over the subsequent 3 years. DESIGN, SETTING, AND PARTICIPANTS: A national probability sample of 2729 adults (78.1% participation rate), 95.0% of whom had completed a health survey before 9/11 (final health sample, 2592), completed a Web-based assessment of acute stress responses approximately 9 to 14 days after the terrorist attacks. RESULTS: Acute stress responses to the 9/11 attacks were associated with a 53% increased incidence of cardiovascular ailments over the 3 subsequent years, even after adjusting for pre-9/11 cardiovascular and mental health status, degree of exposure to the attacks, cardiovascular risk factors (ie, smoking, body mass index, and number of endocrine ailments), total number of physical health ailments, somatization, and demographics. CONCLUSION: Using health data collected before 9/11 as a baseline, acute stress response to the terrorist attacks predicted increased reports of physician-diagnosed cardiovascular ailments over 3 years following the attacks.

PMID: 18180431

Rating: 4a

January 8, 2008 (Irvine, CA) – A new study shows that acute-stress responses to the terrorist attacks of 9/11/2001 were associated with a 53% increased incidence of cardiovascular ailments over the following three years. And the people who were particularly at risk were those who had an acute-stress response and cited ongoing concerns about terrorism--these individuals had a more than threefold increased risk of physician-diagnosed heart problems three years after the event. Dr E Alison Holman (University of California, Irvine) and colleagues report their findings in the January 2008 issue of the *Archives of General Psychiatry*. Holman, a nurse practitioner, told heart*wire*: "Most doctors and cardiologists know that acute stress can trigger problems with the heart--we all know about broken-heart syndrome--but those are people who have experienced a highly stressful event themselves; they were directly affected. What makes our findings unique is that the majority of the people in our study watched the news of 9/11 on TV--they saw the second tower get hit live on TV, or they watched it afterward. The fact that these folks for the most part had not directly experienced anything is what makes this stand out." The other important factor in this study is that the majority of the sample did not have preexisting cardiovascular problems, Holman notes. "There have been some small studies done in New York that show that, post-9/11 compared with pre-9/11, there were more heart problems, but those were particular to people who had preexisting heart disease. This shows that in a sample of people who were exposed indirectly and for the most part did not have preexisting cardiovascular disease, over the course of three years there is an increased risk of the development of some kind of cardiovascular ailment if they had the high acute-stress type of reaction and that these effects were exacerbated by ongoing worry about terrorism." "What this means for cardiologists, for doctors, is that we have to find a way to make time for issues of stress," she explains. "When we know our patients have been exposed in some way to a highly stressful event, we need to take seriously the risk that this may pose to them, and we can't minimize it and say, 'Oh well, it didn't happen to you.' " Holman does acknowledge, however,

that 9/11 was unique: "The US had not been hit with this kind of attack in more than 50 years, since Pearl Harbor, and to the American public, this was a major event, a collective trauma. I have no idea whether individual exposure to lesser events would create the same kind of problem." Holman and colleagues used health data collected from a sample of just over 2500 people before 9/11 and therefore had baseline data. They then asked the same people to complete a web-based assessment of acute-stress responses approximately 9 to 14 days after the terrorist attacks. Individuals who met *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed (*DSM-IV*)--described by Holmes as "the bible of psychiatrists"--criteria B, C, and D for acute-stress disorder were deemed to have had an acute-stress response. Holmes noted that most participants were not deemed to have acute-stress disorder, because direct exposure is one of the criteria for this diagnosis (there was a very small group who were directly linked--ie, they lost a loved one or were at the site of the attacks and got out). She also points out that her study recorded a direct response, collected right after 9/11, and therefore it was not a retrospective analysis. Follow-up health surveys, which were self-reported, assessed physician-diagnosed cardiovascular ailments one (n=1923), two (n=1576), and three years (n=1950) after the attacks. These asked people whether they had ever had or had ever been told by a doctor that they had had hypertension, stroke, or heart problems in the generic sense. Holmes said that participants had to have reported at least two of these three to be deemed at increased risk. Around 12% of the sample was deemed to have had an acute-stress response to 9/11. Acute-stress responses were associated with a 53% increased incidence of cardiovascular ailments over the subsequent three years. Even after adjustment for pre-9/11 cardiovascular and mental-health status, degree of exposure to the attacks, cardiovascular risk factors, total number of physical-health ailments, somatization, and demographics, individuals reporting high levels of stress immediately following the attacks reported around a threefold increased incidence of heart problems (relative risk ratio 2.98 at one year and 3.12 at two years) compared with individuals who did not record high levels of stress following 9/11. Each annual 9/11-related survey also included two questions designed to assess continuing concerns about terrorism. Items were scored on a five-point Likert scale and combined as an index of ongoing worry. Holman explains: "We found that for the first two years post-9/11 there was a direct impact of acute stress. It didn't matter if you were worrying about terrorism or not. But then starting at two years, when you look at the people who had high levels of acute stress and also had high levels of ongoing worry about terrorism, then we see an almost fivefold increased risk for new-onset cardiovascular ailments compared with those who had neither acute stress nor ongoing concerns about attacks."

Relative risk ratio* for high 9/11-related acute stress predicting heart problems two and three years after the attacks for low vs high levels of ongoing worry about terrorism

Ongoing concern about terrorism	2 years after attacks (95% CI)	3 years after attacks (95% CI)
Low	0.99 (0.19–5.07)	0.37 (0.10–1.36)
High	4.67 (1.80–12.16)	3.22 (1.05–9.85)

*Risk ratio adjusted for demographics, pre-9/11 physician-diagnosed cardiac and mental-health ailments, pre- and post-9/11 cardiac risk factors, lifetime exposure to stressful events, total number of concurrent physician-diagnosed mental- and physical-health ailments, and post-9/11 somatization

"The people who had ongoing worry who are at risk are the people who had acute stress," she points out. "If they had ongoing worry but did not have acute stress, they did not appear to be at risk. "To have a reaction within the first two to three weeks following 9/11 that, somehow, three years later, is predicting that something more serious is going on is pretty amazing," she says.

She explains that extremely stressful events may precipitate biological processes that increase an individual's risk of developing cardiovascular ailments. "While acute stress may trigger immediate potentially lethal cardiovascular responses, acute, subacute, and chronic stress can gradually increase cardiovascular risk through neurohormonal arousal. This physiologic reactivity may be easily rekindled by trauma reminders, leaving individuals vulnerable to the detrimental effects of arousal over time. "What this means," Holman continues, "is that we need to think about how we use terror alerts for the public. We need to think about the impact. How can we best alert the public so people can take the action they need to take but not put them at risk for other problems? That's a challenging question that there is not enough research, right now, to answer."

Holmes S. Work-related stress: a brief review. J R Soc Health. 2001 Dec;121(4):230-5.

This paper reviews the concept of work-related stress showing how its deleterious impact may exert both direct and indirect effects on the workforce thus affecting both individual and organisational effectiveness.

PMID: 11811093

Rating: 5c

Holroyd KA, O'Donnell FJ, Stensland M, Lipchik GL, Cordingley GE, Carlson BW. Management of chronic tension-type headache with tricyclic antidepressant medication, stress management therapy, and their combination: a randomized controlled trial. JAMA. 2001 May 2;285(17):2208-15.

Department of Psychology, Ohio University, Athens, OH, USA. holroyd@ohio.edu

”Tricyclic antidepressant medication and stress management therapy each produced larger reductions in headache activity, analgesic medication use, and headache-related disability than placebo, but antidepressant medication yielded more rapid improvements in headache activity.”

Antidepressant medication and stress management therapy are each modestly effective in treating chronic tension-type headache however, combined therapy may improve outcome relative to monotherapy.

PMID: 11325322

Rating: 2b
203 patients

Honda K, Jacobson JS. Use of complementary and alternative medicine among United States adults: the influences of personality, coping strategies, and social support. Prev Med. 2005 Jan;40(1):46-53.

Department of Epidemiology, Columbia University, New York, NY 10032, USA.
kh2086@columbia.edu

Understanding the relationships between psychological factors and CAM use may help researchers and health care providers to address patients' needs more effectively and to achieve better adherence to treatment recommendations.

PMID: 15530580

Rating:3a

Horan AP. An effective workplace stress management intervention: Chicken Soup for the Soul at Work Employee Groups. Work. 2002;18(1):3-13.

This pilot study supports the effectiveness of a new workplace stress intervention: Chicken Soup for the Soul at Work Employee Groups. Participants exhibited improved total coping resources, cognitive/rational coping, state of mind, confidence and home/work balance. Participant comments and their continued participation in a similar company-sponsored program bolster these empirical results.

PMID: 12441586

Rating: 3c

Hovington CL, McGirr A, Lepage M, Berlim MT. Repetitive transcranial magnetic stimulation (rTMS) for treating major depression and schizophrenia: a systematic review of recent meta-analyses. *Ann Med*. 2013 Jun;45(4):308-21. doi: 10.3109/07853890.2013.783993.

PMID: 23687987

Rating: 1a

Huang Y, Xu S, Hua J, Zhu D, Liu C, Hu Y, Liu T, Xu D. Association between job strain and risk of incident stroke: A meta-analysis. *Neurology*. 2015 Nov 10;85(19):1648-54. doi: 10.1212/WNL.0000000000002098.

PMID: 26468409

Rating: 1b

Hunter R, editor(s). Dictionary of pastoral care and counseling. Nashville (TN): Abington Press; 1996.

Rating: 9b

Hurrell JJ Jr, Nelson DL, Simmons BL. Measuring job stressors and strains: where we have been, where we are, and where we need to go. J Occup Health Psychol. 1998 Oct;3(4):368-89.

It is concluded that closer attention to measurement-related issues is critical to the advancement of knowledge in the field. Important needs include the identification and more frequent use of objective measures, the increased use of triangulation strategies, and a careful examination of the adequacy of existing constructs and measures for capturing the demands of contemporary work.

PMID: 9805282

Rating: 5b

Husain MM, Rush AJ, Fink M, Knapp R, Petrides G, Rummans T, Biggs MM, O'Connor K, Rasmussen K, Litle M, Zhao W, Bernstein HJ, Smith G, Mueller M, McClintock SM, Bailine SH, Kellner CH. Speed of response and remission in major depressive disorder with acute electroconvulsive therapy (ECT): a Consortium for Research in ECT (CORE) report. *J Clin Psychiatry.* 2004 Apr;65(4):485-91.

Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, USA.

ECT was associated with rapid response and remission in a high percentage of patients. ECT warrants early consideration in treatment algorithms for patients with MDD.

PMID: 15119910

Rating: 2b

Hvas AM, Juul S, Bech P, Nexo E. Vitamin B6 level is associated with symptoms of depression. *Psychother Psychosom*. 2004 Nov-Dec;73(6):340-3.

Department of Clinical Biochemistry, Aarhus University Hospital, AKH, Aarhus, Denmark. am.hvas@dadlnet.dk

Our study suggests that a low level of plasma PLP is associated with symptoms of depression. Randomized trials are now justified and needed in order to examine whether treatment with vitamin B6 may improve symptoms of depression.

PMID: 15479988

Rating: 3b

Hvas AM, Juul S, Lauritzen L, Nexo E, Ellegaard J. No effect of vitamin B-12 treatment on cognitive function and depression: a randomized placebo controlled study. *J Affect Disord*. 2004 Sep;81(3):269-73.

Department of Haematology, AAS, Aarhus University Hospital, Aarhus, Denmark. am.hvas@dadlnet.dk

BACKGROUND: Associations between vitamin B-12 deficiency and impaired cognitive function and depression have been reported. CONCLUSIONS: A high proportion of individuals with an increased plasma methylmalonic acid had impaired cognitive function, and a rather high prevalence of depression was observed. However, vitamin B-12 treatment did not improve cognitive function or symptoms of depression within the 3-months study period.

PMID: 15337331

Rating: 2a

Hwang YJ, Dixon SN, Reiss JP, Wald R, Parikh CR, Gandhi S, Shariff SZ, Pannu N, Nash DM, Rehman F, Garg AX. Atypical antipsychotic drugs and the risk for acute kidney injury and other adverse outcomes in older adults: a population-based cohort study. *Ann Intern Med*. 2014 Aug 19;161(4):242-8. doi: 10.7326/M13-2796.

PMID: 25133360

Rating: 3a

Ironson G, Freund B, Strauss JL, Williams J. Comparison of two treatments for traumatic stress: a community-based study of EMDR and prolonged exposure. *J Clin Psychol*. 2002 Jan;58(1):113-28.

Behavioral Medicine Program, University of Miami, Coral Gables, FL 33124-2070, USA. gironson@aol.com

This pilot study compared the efficacy of two treatments for postraumatic stress disorder (PTSD): Eye Movement Desensitization and Reprocessing (EMDR) and Prolonged Exposure (PE). Finally, Subjective Units of Distress (SUDS) ratings decreased significantly during the initial session of EMDR, but changed little during PE. Postsession SUDS were significantly lower for EMDR than for PE. Suggestions for future research are discussed. Copyright 2002 John Wiley & Sons, Inc.

PMID: 11748600

Rating: 2c

Jerant A, Kravitz RL, Fernandez Y Garcia E, Feldman MD, Cipri C, Nishio D, Knoepfler A, Wooddell MK, Baquero V, Franks P. Potential antidepressant overtreatment associated with office use of brief depression symptom measures. *J Am Board Fam Med*. 2014 Sep-Oct;27(5):611-20. doi: 10.3122/jabfm.2014.05.140038.

PMID: 25201931

Rating: 2b

Jick H, Kaye JA, Jick SS. Antidepressants and the risk of suicidal behaviors. *JAMA*. 2004 Jul 21;292(3):338-43.

Boston Collaborative Drug Surveillance Program, Boston University School of Medicine, Lexington, Mass 02421, USA. hjick@bu.edu

Matched case-control study of patients treated in UK general practices using the UK General Practice Research Database for 1993-1999 including 159,810 users of the 4 antidepressant drugs.

The risk of suicidal behavior is increased in the first month after starting antidepressants, especially during the first 1 to 9 days, and it is similar among users of amitriptyline, fluoxetine and dothiepin.

PMID: 15265848

Rating: 4a

Jin H, Shih PA, Golshan S, Mudaliar S, Henry R, Glorioso DK, Arndt S, Kraemer HC, Jeste DV. Comparison of longer-term safety and effectiveness of 4 atypical antipsychotics in patients over age 40: a trial using equipoise-stratified randomization. *J Clin Psychiatry*. 2013 Jan;74(1):10-8. doi: 10.4088/JCP.12m08001.

PMID: 23218100

Rating: 2b

Joffe R, Sokolov S, Streiner D. Antidepressant treatment of depression: a metaanalysis. Can J Psychiatry. 1996 Dec;41(10):613-6.

Department of Psychiatry, McMaster University, Hamilton, Ontario.

We conclude that the superior efficacy of antidepressants over placebo can be demonstrated.

PMID: 8978938

Rating: 1b

Jonas DE, Cusack K, Forneris CA, Wilkins TM, Sonis J, Middleton JC, Feltner C, Meredith D, Cavanaugh J, Brownley KA, Olmsted KR, Greenblatt A, Weil A, Gaynes BN. Psychological and Pharmacological Treatments for Adults With Posttraumatic Stress Disorder (PTSD). Comparative Effectiveness Review No. 92. (Prepared by the RTI International–University of North Carolina Evidence-based Practice Center under Contract No. 290-2007-10056-I.) AHRQ Publication No. 13-EHC011-EF. Rockville, MD: Agency for Healthcare Research and Quality; April 2013.

Rating: 1a

Jorm AF, Christensen H, Griffiths KM, Parslow RA, Rodgers B, Blewitt KA. Effectiveness of complementary and self-help treatments for anxiety disorders. *Med J Aust.* 2004 Oct 4;181(7 Suppl):S29-46.

The treatments with the best evidence of effectiveness are kava (for generalised anxiety), exercise (for generalised anxiety), relaxation training (for generalised anxiety, panic disorder, dental phobia and test anxiety) and bibliotherapy (for specific phobias). There is more limited evidence to support the effectiveness of acupuncture, music, autogenic training and meditation for generalised anxiety; for inositol in the treatment of panic disorder and obsessive-compulsive disorder; and for alcohol avoidance by people with alcohol-use disorders to reduce a range of anxiety disorders.

PMID: 15462640

Rating: 1c

Joyce K, Pabayo R, Critchley JA, Bambra C. Flexible working conditions and their effects on employee health and wellbeing. *Cochrane Database Syst Rev*. 2010 Feb 17;2:CD008009.

RESULTS: Ten studies fulfilled the inclusion criteria. CONCLUSIONS: The findings of this review tentatively suggest that flexible working interventions that increase worker control and choice (such as self-scheduling or gradual/partial retirement) are likely to have a positive effect on health outcomes. In contrast, interventions that were motivated or dictated by organisational interests, such as fixed-term contract and involuntary part-time employment, found equivocal or negative health effects.

PMID: 20166100

Rating: 1b

Kaestner EJ, Wixted JT, Mednick SC. Pharmacologically increasing sleep spindles enhances recognition for negative and high-arousal memories. *J Cogn Neurosci*. 2013 Oct;25(10):1597-610. doi: 10.1162/jocn_a_00433.

PMID: 23767926

Rating: 3b

Karatzias T, Power K, Brown K, McGoldrick T, Begum M, Young J, Loughran P, Chouliara Z, Adams S. A controlled comparison of the effectiveness and efficiency of two psychological therapies for posttraumatic stress disorder: eye movement desensitization and reprocessing vs. emotional freedom techniques. *J Nerv Ment Dis.* 2011 Jun;199(6):372-8. doi: 10.1097/NMD.0b013e31821cd262.

PMID: 21629014

Rating: 2b

Kasper S, Pail G. Milnacipran: a unique antidepressant? *Neuropsychiatr Dis Treat*. 2010 Sep 7;6:23-31.

Milnacipran, one of the pioneer SNRIs, was designed from theoretic considerations to be more effective than SSRIs and better tolerated than TCAs, and with a simple pharmacokinetic profile.

PMID: 20856597

Rating: 5b

Kawakami N, Araki S, Kawashima M, Masumoto T, Hayashi T. Effects of work-related stress reduction on depressive symptoms among Japanese blue-collar workers. Scand J Work Environ Health. 1997 Feb;23(1):54-9.

A stress reduction program directed towards worksite supervisors can be used to reduce depressive symptoms and sick leave among Japanese blue-collar workers.

PMID: 9098913

Rating: 2b

Keane TM, Fairbank JA, Caddell JM, et al. Implosive (flooding) therapy reduces symptoms of PTSD in Vietnam combat veterans. *Behav Ther* 1989;20:245-60.

Rating:2c

Kellner CH, Knapp RG, Petrides G, Rummans TA, Husain MM, Rasmussen K, Mueller M, Bernstein HJ, O'connor K, Smith G, Biggs M, Bailine SH, Malur C, Yim E, McClintock S, Sampson S, Fink M. Continuation Electroconvulsive Therapy vs Pharmacotherapy for Relapse Prevention in Major Depression: A Multisite Study From the Consortium for Research in Electroconvulsive Therapy (CORE). *Arch Gen Psychiatry*. 2006 Dec;63(12):1337-44.

Author Affiliations: Department of Psychiatry, University of Medicine and Dentistry of New Jersey-New Jersey Medical School, Newark.

BACKGROUND: Although electroconvulsive therapy (ECT) has been shown to be extremely effective for the acute treatment of major depression, it has never been systematically assessed as a strategy for relapse prevention. OBJECTIVE: To evaluate the comparative efficacy of continuation ECT (C-ECT) and the combination of lithium carbonate plus nortriptyline hydrochloride (C-Pharm) in the prevention of depressive relapse. CONCLUSIONS: Both C-ECT and C-Pharm were shown to be superior to a historical placebo control, but both had limited efficacy, with more than half of patients either experiencing disease relapse or dropping out of the study. Even more effective strategies for relapse prevention in mood disorders are urgently needed.

PMID: 17146008

Rating: 2b

Khan A, Detke M, Khan SR, Mallinckrodt C. Placebo response and antidepressant clinical trial outcome. J Nerv Ment Dis. 2003 Apr;191(4):211-8.

Northwest Clinical Research Center, 1900 116th Avenue NE #112, Bellevue, Washington 98004, USA.

Conclusion: “A statistically significant positive correlation was seen between placebo and antidepressant response magnitude and between placebo response magnitude and the advantage of antidepressants over placebo.”

PMID: 12695731

Rating: 5b

Khanna P, Suo T, Komossa K, Ma H, Rummel-Kluge C, El-Sayeh HG, Leucht S, Xia J. Aripiprazole versus other atypical antipsychotics for schizophrenia. *Cochrane Database Syst Rev*. 2014 Jan 2;1:CD006569. doi: 10.1002/14651858.CD006569.pub5.

PMID: 24385408

Rating: 1a

Khatri D, Mathur KC, Gahlot S, Jain S, Agrawal RP. Effects of yoga and meditation on clinical and biochemical parameters of metabolic syndrome. *Diabetes Res Clin Pract*. 2007 Dec;78(3):e9-10. Epub 2007 Jun 26.

PMID: 17597249

Rating: 2b

CHANNAI, India (Reuters Health) Dec 28 - Yoga induces a feeling of well-being in healthy people, and can reverse the clinical and biochemical changes associated with metabolic syndrome, according to results of studies from Sweden and India. Dr. R.P. Agrawal, of the SP Medical College, Bikaner, India, and colleagues evaluated the beneficial effects of yoga and meditation in 101 adults with features of metabolic syndrome. In their randomized study, 55 subjects were assigned to 3 months of regular daily yoga, including standard postures, and Raja Yoga, a form of transcendental meditation, while the remaining received standard care. Waist circumference, systolic blood pressure, fasting blood sugar, and triglycerides were significantly lower, and high density lipoprotein levels were higher in the yoga group as compared to controls, Dr. Agrawal's team reports in the December issue of Diabetes Research and Clinical Practice. "Yoga and meditation have always been an essential part of life in the traditional system of treatment," Dr. R.P Agrawal and colleagues write. They attribute the effects to the redistribution of body fat, decreased arterial tone and peripheral resistance due to parasympathetic predominance, and increased sensitivity of beta cells of the pancreas. In the second report, published on December 19 in BioMed Central Complementary and Alternative Medicine, Dr. Anette Kjellgren from the University of Karlstad, Sweden and her team evaluated the beneficial effects of yogic breathing exercises on healthy volunteers. Fifty-five adults were advised to practice "Sudarshan Kriya," which involves cycles of slow normal and rapid breathing exercises. The exercises were practiced for an hour daily, six days a week for six weeks, while 48 controls were advised to relax in an armchair for 15 minutes daily. At the end of the study period, feelings of anxiety, stress and depression were significantly decreased, and optimism was significantly increased, in the yoga group compared to controls, Dr. Kjellgren and colleagues report. Yoga induces a "relaxation response" associated with reduced sympathetic nervous system activity and a feeling of well-being probably due to an increase in antioxidants and lower levels of cortisol, Dr. Kjellgren's team suggests. Yoga not only helps in prevention of lifestyle diseases, but can also be "a powerful adjunct therapy when these diseases arise," co-author Dr. Faahri Saatiglou, from the University of Oslo, told Reuters Health. "We do not emphasize this point enough in our Western health care."

Kilpatrick DG, Veronen LJ, Resick PA. Psychological sequelae to rape: assessment and treatment strategies. In: Dolays DM, Meredith RL, editor(s). Behavioral medicine: assessment and treatment strategies. New York (NY): Plenum Press; 1982. p. 473-97.

Rating: 9a

Kim HL, Streltzer J, Goebert D. St. John's wort for depression: a meta-analysis of well-defined clinical trials. J Nerv Ment Dis. 1999 Sep;187(9):532-8.

Department of Psychiatry, University of Hawaii, John A. Burns School of Medicine, Honolulu 96813, USA.

Conclusion: “design problems in existing studies prevent definitively concluding that St. John's wort is an effective antidepressant.”

PMID: 10496508

Rating: 1b

Kim SH, Schneider SM, Bevans M, Kravitz L, Mermier C, Qualls C, Burge MR. PTSD symptom reduction with mindfulness-based stretching and deep breathing exercise: randomized controlled clinical trial of efficacy. *J Clin Endocrinol Metab*. 2013 Jul;98(7):2984-92. doi: 10.1210/jc.2012-3742.

PMID: 23720785

Rating: 2b

Kivimaki M, Kalimo R. Self-esteem and the occupational stress process: testing two alternative models in a sample of blue-collar workers. J Occup Health Psychol. 1996 Apr;1(2):187-96.

Department of Psychology, Finnish Institute of Occupational Health, Vantaa, Finland. miki@occuphealth.fi

The results of multiple regression analyses did not support the latter model, whereas the first model was partially supported: Monotony was associated with increased strain and decreased SE among younger (< or = 35 years) male participants and older (> 35 years) female participants, and lack of control related to increased strain and decreased SE among older male participants.

PMID: 9547045

Rating: 1b

Kivimäki M, Nyberg ST, Batty GD, Fransson EI, Heikkilä K, Alfredsson L, Bjorner JB, Borritz M, Burr H, Casini A, Clays E, De Bacquer D, Dragano N, Ferrie JE, Geuskens GA, Goldberg M, Hamer M, Hooftman WE, Houtman IL, Joensuu M, Jokela M, Kittel F, Knutsson A, Koskenvuo M, Koskinen A, Kouvonen A, Kumari M, Madsen IE, Marmot MG, Nielsen ML, Nordin M, Oksanen T, Pentti J, Rugulies R, Salo P, Siegrist J, Singh-Manoux A, Suominen SB, Väänänen A, Vahtera J, Virtanen M, Westerholm PJ, Westerlund H, Zins M, Steptoe A, Theorell T; IPD-Work Consortium. Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data. *Lancet.* 2012 Oct 27;380(9852):1491-7. doi: 10.1016/S0140-6736(12)60994-5.

Published work assessing psychosocial stress (job strain) as a risk factor for coronary heart disease is inconsistent and subject to publication bias and reverse causation bias. Our findings suggest that prevention of workplace stress might decrease disease incidence; however, this strategy would have a much smaller effect than would tackling of standard risk factors, such as smoking.

PMID: 22981903

Rating: 1a

Knight WE, Rickard PhD NS. Relaxing music prevents stress-induced increases in subjective anxiety, systolic blood pressure, and heart rate in healthy males and females. J Music Ther. 2001 Winter;38(4):254-72.

Monash University, Victoria, Australia.

These stress-induced increases were each prevented by exposure to music, and this effect was independent of gender. Music also enhanced baseline salivary IgA levels in the absence of any stress-induced effects. These findings provide experimental support for claims that music is an effective anxiolytic treatment, the robustness of which is demonstrated by retention of the effect in the presence of a range of potentially mediating variables.

PMID: 11796077

Rating: 2c

Kober A, Scheck T, Schubert B, Strasser H, Gustorff B, Bertalanffy P, Wang SM, Kain ZN, Hoerauf K. Auricular acupressure as a treatment for anxiety in prehospital transport settings. Anesthesiology. 2003 Jun;98(6):1328-32.

Department of Anesthesiology and General Intensive Care, University Hospital of Vienna, Austria.

It was concluded that auricular acupressure is an effective treatment for anxiety in prehospital emergency settings.

PMID: 12766639

Rating: 2c

Köhler O, Benros ME, Nordentoft M, Farkouh ME, Iyengar RL, Mors O, Krogh J. Effect of Anti-inflammatory Treatment on Depression, Depressive Symptoms, and Adverse Effects: A Systematic Review and Meta-analysis of Randomized Clinical Trials. *JAMA Psychiatry*. 2014 Oct 15. doi: 10.1001/jamapsychiatry.2014.1611.

PMID: 25322082

Rating: 1b

Kornstein SG, Wohlreich MM, Mallinckrodt CH, Watkin JG, Stewart DE. Duloxetine efficacy for major depressive disorder in male vs. female patients: data from 7 randomized, double-blind, placebo-controlled trials*. J Clin Psychiatry.* 2006 May;67(5):761-70.

Department of Psychiatry, Medical College of Virginia Campus, Virginia Commonwealth University, Richmond, USA.

In this analysis of pooled data, the efficacy of duloxetine did not differ significantly in male and female patients.

PMID: 16841626

Rating: 1b

Kosten TR, Fontana A, Sernyak MJ, Rosenheck R. Benzodiazepine use in posttraumatic stress disorder among veterans with substance abuse. *J Nerv Ment Dis* 2000 Jul;188(7):454-9.

Department of Psychiatry, Yale University School of Medicine, West Haven, Connecticut 06516, USA.

Veterans with posttraumatic stress disorder (PTSD) and substance abuse may abuse benzodiazepines and develop violent dyscontrol when using them. A total of 370 veterans were compared by substance abuse diagnosis (50%), benzodiazepine use (36%), and their interaction on 1-year outcomes after inpatient discharge. Substance abusers were less likely to be prescribed benzodiazepines (26% vs. 45%). No outcome showed a differential worsening by substance abuse or benzodiazepines, although some baseline differences were noted.

PMID: 10919705

Rating: 3b

Krakow B, Hollifield M, Johnston L, Koss M, Schrader R, Warner TD, Tandberg D, Lauriello J, McBride L, Cutchen L, Cheng D, Emmons S, Germain A, Melendrez D, Sandoval D, Prince H. Imagery rehearsal therapy for chronic nightmares in sexual assault survivors with posttraumatic stress disorder: a randomized controlled trial. *JAMA* 2001 Aug 1;286(5):537-45.

Sleep & Human Health Institute, 4775 Indian School Rd NE, Suite 305, Albuquerque, NM 87110, USA. bkrakow@salud.unm.edu

DESIGN: Randomized controlled trial conducted from 1995 to 1999 among 168 women in New Mexico. CONCLUSIONS: Imagery rehearsal therapy is a brief, well-tolerated treatment that appears to decrease chronic nightmares, improve sleep quality, and decrease PTSD symptom severity.

PMID: 11476655

Rating: 2a

Krakow B, Kellner R, Pathak D, Lambert L. Imagery rehearsal treatment for chronic nightmares. *Behav Res Ther* 1995 Sep;33(7):837-43.

Department of Emergency Medicine, University of New Mexico School of Medicine, Albuquerque 87131, USA.

Fifty-eight chronic nightmare sufferers were randomly assigned to two groups: treatment (n = 39) and wait-list control (n = 19). Treated Ss were taught a cognitive-behavioral technique called imagery rehearsal in which they learned in a waking state to change a nightmare and then to visualize the new set of images. Significant improvement in self-rated sleep quality occurred in those treated compared with controls (P = 0.004); and, reduction in nightmares was a significant predictor of improvement in sleep (r = 0.55, P = 0.0001). These preliminary results lend support to the theory that, for some chronic sufferers, nightmares may be conceptualized as a primary sleep disorder which can be effectively and inexpensively treated with cognitive-behavioral therapy.

PMID: 7677723

Rating: 2b

Krakow B, Sandoval D, Schrader R, Keuhne B, McBride L, Yau CL, Tandberg D. Treatment of chronic nightmares in adjudicated adolescent girls in a residential facility. *J Adolesc Health* 2001 Aug;29(2):94-100.

Sleep and Human Health Institute, 4775 Indian School N.E., Albuquerque, New Mexico 87110, USA. bkrakow@salud.unm.edu

METHODS: Adolescent girls ranging in age from 13 to 18 years were recruited from the Wyoming Girls School in Sheridan, Wyoming (treatment group, n = 9; control group, n = 10). These girls had previously suffered a high prevalence of unwanted sexual experiences in childhood and adolescence, and thus many suffered from nightmares, sleep complaints, and posttraumatic stress symptoms. Imagery rehearsal therapy was provided in a 1-day (6-h) workshop. Imagery rehearsal consists of three steps, all of which are performed in the waking state: (a) select a nightmare, (b) "change the nightmare any way you wish," and (c) rehearse the images of the new version ("new dream") 5 to 20 min each day. Control participants received no intervention. CONCLUSION: Imagery rehearsal therapy was an effective treatment option for chronic nightmares in this adjudicated adolescent population.

PMID: 11472867

Rating: 2c

Kranzler HR, Van Kirk J. Efficacy of naltrexone and acamprosate for alcoholism treatment: a meta-analysis. Alcohol Clin Exp Res. 2001 Sep;25(9):1335-41.

Alcohol Research Center, Department of Psychiatry, University of Connecticut School of Medicine, Farmington, Connecticut, USA. Kranzler@psychiatry.uchc.edu

RESULTS: Both antidipsotropics exerted significant, but modest, effects on treatment retention and/or drinking outcomes. CONCLUSIONS: Both naltrexone and acamprosate are efficacious in reducing alcohol consumption in alcoholics.

PMID: 11584154

Rating: 1b

Kripke DF, Langer RD, Kline LE. Hypnotics' association with mortality or cancer: a matched cohort study. *BMJ Open*. 2012 Feb 27;2(1):e000850. doi: 10.1136/bmjopen-2012-000850.

PMID: 22371848

Rating: 3a

Kukuk P, Lungenhausen M, Molsberger A, Endres HG. Long-term improvement in pain coping for cLBP and gonarthrosis patients following body needle acupuncture: a prospective cohort study. *Eur J Med Res*. 2005 Jun 22;10(6):263-72.

Department of Medical Informatics, Statistics and Epidemiology, Ruhr University Bochum, Germany.

RESULTS: The scores for all post-acupuncture questionnaires showed no significant changes over time, with the exception of treatment effectiveness for gonarthrosis. CONCLUSIONS: Pain tolerability was significantly improved after acupuncture and remained so up to 6 months after treatment. The mean scores of almost all questionnaires did not change significantly between 3 and 6 months. We therefore conclude that acupuncture had a long-term effect on important aspects of cognitive and emotional pain coping.

PMID: 16033716

Rating: 3b

Kurimori S, Kakizaki T. Evaluation of work stress using psychological and physiological measures of mental activity in a paced calculating task. Ind Health. 1995;33(1):7-22.

National Institute of Industrial Health, Kanagawa, Japan.

Based on the results, it was inferred that females might sustain somewhat more severe work stress than males.

PMID: 7591860

Rating: 3b

Lader M. Pharmacotherapy of mood disorders and treatment discontinuation. *Drugs.* 2007;67:1657-63.

Patients should be warned of the possibility of developing such a reaction, but reassured that it is usually mild and self limiting. Tapering the dose, if practicable, is worthwhile. In severe cases, temporary reinstatement of the SSRI and slower tapering may be necessary.

PMID: 17683167

Rate: 5c

Lam RW, Kennedy SH, Grigoriadis S, McIntyre RS, Milev R, Ramasubbu R, Parikh SV, Patten SB, Ravindran AV; Canadian Network for Mood and Anxiety Treatments (CANMAT). Canadian Network for Mood and Anxiety Treatments (CANMAT) clinical guidelines for the management of major depressive disorder in adults. III. Pharmacotherapy. *J Affect Disord*. 2009;117:S26-43.

BACKGROUND: In 2001, the Canadian Psychiatric Association and the Canadian Network for Mood and Anxiety Treatments (CANMAT) partnered to produce evidence-based clinical guidelines for the treatment of depressive disorders. A revision of these guidelines was undertaken by CANMAT in 2008-2009 to reflect advances in the field.

PMID: 19674794

Rating: 6a

This article discusses when to discontinue antidepressants.

Lam RW, Chan P, Wilkins-Ho M, Yatham LN. Repetitive transcranial magnetic stimulation for treatment-resistant depression: a systematic review and metaanalysis. *Can J Psychiatry*. 2008 Sep;53(9):621-31.

PMID: 18801225

Rating: 1b

Lee IS, Lee GJ. Effects of lavender aromatherapy on insomnia and depression in women college students*. Taehan Kanho Hakhoe Chi*. 2006 Feb;36(1):136-43.

Department of Nursing, Keukdong College, Chungcheongbuk-Do, Korea. ilee001@kdc.ac.kr

According to the study results, it can be concluded that the lavender fragrance had a beneficial effect on insomnia and depression in women college students. Repeated studies are needed to confirm effective proportions of lavender oil and carrier oil for insomnia and depression.

PMID: 16520572

Rating: 3c

Lee SW, Mancuso CA, Charlson ME. Prospective study of new participants in a community-based mind-body training program. *J Gen Intern Med*. 2004 Jul;19(7):760-5.

Center for Complementary and Integrative Medicine, Weill Medical College of Cornell University, New York, NY, USA. SWL9001@med.cornell.edu

OBJECTIVE: To measure changes in health-related quality of life associated with 3 months of mind-body training as practiced in community-based settings. PARTICIPANTS: One hundred ninety-four English-speaking adults who had taken no more than 10 classes at the centers prior to enrollment in the study. MEASUREMENTS AND MAIN RESULTS: After 3 months of training, within-patient change scores improved in all domains (P <.0001), including a change of +15.5 (standard deviation +/-21) in the mental health domain. In hierarchical regression analysis, younger age (P=.0003), baseline level of depressive symptoms (P=.01), and reporting a history of hypertension (P=.0054) were independent predictors of greater improvement in the SF-36 mental health score. CONCLUSIONS: New participants in a community-based mind-body training program reported poor health-related quality of life at baseline and moderate improvements after 3 months of practice.

PMID: 15209590

Rating: 3b

Lee C, Gavriel H, Drummond P, Richards J, Greenwald R. Treatment of PTSD: stress inoculation training with prolonged exposure compared to EMDR. *J Clin Psychol* 2002 Sep;58(9):1071-89.

Sir Charles Gairdner Hospital, QEII Medical Centre, Perth, Australia.
chlee@central.murdoch.edu.au

Twenty-four participants who had a diagnosis of Post Traumatic Stress Disorder (PTSD) were randomly assigned to one of the treatment conditions. On global PTSD measures, there were no significant differences between the treatments at the end of therapy. However on the subscale measures of the degree of intrusion symptoms, EMDR did significantly better than SITPE. At follow-up EMDR was found to lead to greater gains on all measures.

PMID: 12209866

Rating: 2c

Lees-Haley PR, Williams CW, English LT. Response bias in self-reported history of plaintiffs compared with nonlitigating patients. *Psychol Rep*. 1996 Dec; 79(3 Pt 1):811-8.

Lees-Haley Psychological Corporation, Woodland Hills, California, USA. plh@ix.netcom.com

The present study tested whether patients in litigation exhibit different response patterns than nonlitigating patients when asked about their preinjury problems. 34 litigants and 80 nonlitigants rated various areas of cognitive and emotional functioning as problematic in the past and currently. The primary finding was that plaintiffs reported pre-injury functioning superior to that of controls. These findings suggest the need for caution in inferences that litigants are either reliable or deceitful because response biases may affect self-reports in a misleading fashion.

PMID: 8969087

Rating: 3c

Lehman AF. Vocational rehabilitation in schizophrenia. *Schizophr Bull*. 1995;21(4):645-56.

Dept. of Psychiatry, University of Maryland School of Medicine, Baltimore 21201, USA.

Most vocational rehabilitation programs have a positive influence on work-related activities, but most have failed to show substantial and enduring impacts on independent, competitive employment. Recent advances in supported employment suggest that vocational rehabilitation offers greater promise than do transitional and sheltered employment approaches.

PMID: 8749891

Rating: 5b

Leichsenring F. Comparative effects of short-term psychodynamic psychotherapy and cognitive-behavioral therapy in depression: a meta-analytic approach. *Clin Psychol Rev*. 2001 Apr;21(3):401-19.

PMID: 11288607

Rating: 1c

Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *JAMA*. 2008 Oct 1;300(13):1551-65.

CONCLUSIONS: There is evidence that LTPP is an effective treatment for complex mental disorders.

PMID: 18827212

Rating: 1a

Lerner V, Kanevsky M, Dwolatzky T, Rouach T, Kamin R, Miodownik C. Vitamin B12 and folate serum levels in newly admitted psychiatric patients. *Clin Nutr.* 2006 Feb;25(1):60-7.

Division of Psychiatry, Ministry of Health Mental Health Center, Faculty of Health Sciences Ben-Gurion University of the Negev, Be'er-Sheva, Israel. lernervld@yahoo.com

BACKGROUND & AIMS: Deficiencies of cobalamin and folate may play a causal role in the development or exacerbation of psychiatric illnesses. We compared cobalamin and folate levels in newly admitted psychiatric patients to mentally healthy controls and assessed their correlation with various psychiatric conditions. RESULTS:. About 30% of patients had low folate values compared to 2.5% in the control group (P<0.0001). Mean folate level in controls was significantly higher than in patients (P<0.0001), where a positive correlation was found between low folate levels and depression. CONCLUSIONS: The results of our study suggest that folate levels be assessed in patients admitted to psychiatric wards, especially in those with depression. Further study is needed to evaluate the role of folate and cobalamin in psychiatric illness.

PMID: 16216392

Rating: 3b

Leuchter AF, Hunter AM, Tartter M, Cook IA. Role of pill-taking, expectation and therapeutic alliance in the placebo response in clinical trials for major depression. *Br J Psychiatry*. 2014 Sep 11. pii: bjp.bp.113.140343.

PMID: 25213159

Rating: 2b

Levy-Gigi E, Szabó C, Kelemen O, Kéri S. Association among clinical response, hippocampal volume, and FKBP5 gene expression in individuals with posttraumatic stress disorder receiving cognitive behavioral therapy. *Biol Psychiatry*. 2013 Dec 1;74(11):793-800. doi: 10.1016/j.biopsych.2013.05.017.

PMID: 23856297

Rating: 3b

Linde K, Ramirez G, Mulrow CD, Pauls A, Weidenhammer W, Melchart D. St John's wort for depression--an overview and meta-analysis of randomised clinical trials. BMJ. 1996 Aug 3;313(7052):253-8.

Projekt Munchener Modell, Ludwig-Maximilians-Universitat, Munich, Germany.

There is evidence that extracts of hypericum are more effective than placebo for the treatment of mild to moderately severe depressive disorders. Further studies comparing extracts with standard antidepressants in well defined groups of patients and comparing different extracts and doses are needed.

PMID: 8704532

Rating: 1b

Linden W, Lenz JW, Con AH. Individualized stress management for primary hypertension: a randomized trial. Arch Intern Med. 2001 Apr 23;161(8):1071-80.

Psychology/UBC 2136 West Mall, Vancouver, British Columbia, Canada V6T 1Z4.
wlinden@cortex.psych.ubc.ca

OBJECTIVE: To test the efficacy of individualized stress management for primary hypertension in a randomized clinical trial with the use of ambulatory blood pressure (BP) measures. RESULTS: Blood pressure was significantly reduced in the immediate treatment group and did not change in control subjects (-6.1 vs +0.9 mm Hg for systolic and -4.3 vs +0.0 mm Hg for diastolic pressure). CONCLUSIONS: Individualized stress management is associated with ambulatory BP reduction. The effects were replicated and further improved by follow-up. Reductions in psychological stress and improved anger coping appear to mediate the reductions in BP change.

PMID: 11322841

Rating: 2b

Lindquist TL, Beilin LJ, Knuiman M. Effects of lifestyle, coping and work-related stress on blood pressure in office workers. Clin Exp Pharmacol Physiol. 1995 Aug;22(8):580-2.

1. The relative importance of perceived stress compared with coping behaviours and 'lifestyle' characteristics known to influence blood pressure were studied in 337 male and 317 female office workers. 2. Males had significantly higher mean systolic ($P < 0.01$; t-test, 652 d.f.) and diastolic ($P < 0.01$; t-test, 652 d.f.) blood pressure and unhealthier lifestyles than females, particularly in the areas of alcohol intake ($P < 0.01$; t-test, 653 d.f.) and diet ($P = 0.01$; t-test, 663 d.f.) 3. In males drinking alcohol was correlated to job and home/work stress ($P < 0.05$), and eating more atherogenic foods was correlated to home/work stress ($P < 0.05$). 4. Blood pressure was not correlated with stress in males or females. 5. in males. Stress made no additional contribution to blood pressure in either analysis.

PMID: 7586716

Rating: 3b

Linehan MM, Heard HL, Armstrong HE. Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. *Arch Gen Psychiatry* 1993 Dec;50(12):971-4.

Department of Psychology, University of Washington, Seattle.

METHODS: We analyzed 39 women who met criteria for borderline personality disorder, defined by Gunderson's Diagnostic Interview for Borderline Personality Disorder and DSM-III-R criteria, and who had a history of parasuicidal behavior. CONCLUSION: In general, the superiority of DBT over treatment-as-usual, found in previous studies at the completion of 1 year of treatment, was retained during a 1-year follow-up.

PMID: 8250683

Rating: 4b

Liu F, Williams RM, Liu HE, Chien NH. The lived experience of persons with lower extremity amputation. *J Clin Nurs*. 2010 Aug;19(15-16):2152-61. doi: 10.1111/j.1365-2702.2010.03256.x.

Health professionals also need to expand the scope of services beyond a physical and prosthetic focus.

PMID: 20659195

Rating: 5b

Looper KJ. Potential medical and surgical complications of serotonergic antidepressant medications. Psychosomatics. 2007;48:1-9.

This article reviews the association of serotonergic antidepressants and the following medical complications: syndrome of inappropriate antidiuretic hormone secretion, bleeding, serotonin syndrome, serotonin-discontinuation syndrome, and adverse pregnancy and neonatal effects.

PMID: 17209143

Rating: 5c

Lovell K, Marks IM, Noshirvani H, et al. Do cognitive and exposure treatments improve various PTSD symptoms differently? A randomized controlled trial. *Behav Cognit Psychother* 2001; 29(1):107-12.

Rating: 2c

Lu Y, Ren Q, Zong L, Wu Y, Zhang Q, Ma X, Pu J, Dong H, Liu Q, Tang Y, Song L, Chen X, Pan X, Cui Y. Effects of sleep deprivation on polysomnography and executive function in patients with depression. *Chin Med J (Engl).* 2014 Sep;127(18):3229-32.

PMID: 25266518

Rating: 3c

Lubin H, Loris M, Burt J, Johnson DR. Efficacy of Psychoeducational Group Therapy in reducing symptoms of posttraumatic stress disorder among multiply traumatized women. *Am J Psychiatry* 1998 Sep;155(9):1172-7.

Department of Psychiatry, Yale University School of Medicine, New Haven, Conn, USA.

CONCLUSIONS: The role of group therapy in PTSD treatment should not be prematurely restricted to addressing self-esteem and interpersonal dimensions only. The use of structured, cognitive-behavioral elements within the group format may allow for more targeted treatment of core symptoms of the disorder.

PMID: 9734538

Lysaker P, Bell M, Milstein R, Bryson G, Shestopal A, Goulet JB. Work capacity in schizophrenia. *Hosp Community Psychiatry*. 1993 Mar;44(3):278-80.

Veterans Affairs Medical Center (116B), West Haven, CT 06516.

PMID: 8444442

Macklin ML, Metzger LJ, Lasko NB, Berry NJ, Orr SP, Pitman RK. Five-year follow-up study of eye movement desensitization and reprocessing therapy for combat-related posttraumatic stress disorder. *Compr Psychiatry*. 2000 Jan-Feb;41(1):24-7.

Research Service, Veterans Affairs Medical Center, Manchester, NH 03103, USA.

Analysis of variance showed that the modest to moderate therapeutic benefits that were manifest immediately following EMDR were lost at the 5-year follow-up evaluation, and there was an overall worsening of PTSD symptomatology over the 5-year period in both EMDR-treated and nontreated control subjects.

PMID: 10646615

Rating: 3c

MacPherson H, Richmond S, Bland M, Brealey S, Gabe R, Hopton A, Keding A, Lansdown H, Perren S, Sculpher M, Spackman E, Torgerson D, Watt I. Acupuncture and counselling for depression in primary care: a randomised controlled trial. *PLoS Med.* 2013 Sep;10(9):e1001518. doi: 10.1371/journal.pmed.1001518.

PMID: 24086114

Rating: 2a

Malouf R, Grimley Evans J. The effect of vitamin B6 on cognition. *Cochrane Database Syst Rev.* 2003;(4):CD004393.

Dept. of Clinical Geratology, Cochrane Dementia and Cognitive Improvement Group, Radcliffe Infirmary, Woodstock Road, Oxford, UK, OX2 6HE. rmalouf@sghms.ac.uk

BACKGROUND: Micronutrient status can affect cognitive function at all ages. Vitamin deficiencies could influence memory function and might contribute to age-associated cognitive impairment and dementia. OBJECTIVES: To assess the efficacy of vitamin B6 supplementation in reducing the risk of developing cognitive impairment by older healthy people, or improving cognitive functioning of people with cognitive decline and dementia, whether or not vitamin B6 deficiency has been diagnosed. REVIEWER'S CONCLUSIONS: This review found no evidence for short-term benefit from vitamin B6 in improving mood (depression, fatigue and tension symptoms) or cognitive functions.

PMID: 14584010

Rating: 1a

Mallik S, Spertus JA, Reid KJ, Krumholz HM, Rumsfeld JS, Weintraub WS, Agarwal P, Santra M, Bidyasar S, Lichtman JH, Wenger NK, Vaccarino V; PREMIER Registry Investigators. Depressive symptoms after acute myocardial infarction: evidence for highest rates in younger women. Arch Intern Med. 2006 Apr 24;166(8):876-83.
Department of Medicine, Division of General Medicine, Emory University School of Medicine, Atlanta, GA 30303, USA.
BACKGROUND: Depression is common in patients hospitalized with acute myocardial infarction (AMI). In the community, younger women are uniquely prone to depression. CONCLUSIONS: The prevalence of depression is high in younger women with AMI. Because depression after AMI has been associated with adverse outcomes, younger women, a high-risk group compared with men, may particularly benefit from aggressive screening and treatment of post-AMI depression.
PMID: 16636213
Rating: 3a

Maratos A, Gold C, Wang X, Crawford M. Music therapy for depression. *Cochrane Database Syst Rev*. 2008 Jan 23;(1):CD004517.

MAIN RESULTS: Five studies met the inclusion criteria of the review. AUTHORS' CONCLUSIONS: Findings from individual randomised trials suggest that music therapy is accepted by people with depression and is associated with improvements in mood.

PMID: 18254052

Rating: 1c

January 24, 2008 — Music therapy appears to result in greater mood improvement than standard care alone for depression, according to a review of 5 small controlled trials, published online January 23, 2008 in the *Cochrane Database of Systematic Reviews*. "All [4] studies that had formal music therapy approaches showed positive results," lead author Anna Moratos, from the Central and Northwest London Foundation NHS Trust, in London, United Kingdom, told *Medscape Psychiatry*. The study that did not report a significant improvement in mental state with music therapy compared with standard care did not appear to offer a formal therapy approach, she observed. The group notes, however, that due to the small number of studies and the poor quality of the reporting, these promising findings need to be studied more rigorously in future trials.

Receptive vs Active Music Therapy: Music therapy has been defined as "an interpersonal process in which the therapist uses music and all of its facets to help patients to improve, restore, or maintain health," the group writes. Ms. Moratos explained that there are 2 kinds of music therapy: receptive or active. In receptive music therapy, a person listens to music with a therapist, and the music can be used for relaxation and motivation and as a bridge to emotions, cognitive work, personal development, and self-reflection. In active music therapy, the patient and therapist play improvisational music together. The patient does not need to be a skilled musician. "Gradually you draw out from the patient something musical and build a piece of music together that can be used as the basis for a discussion, or it can be the therapeutic agent in itself," she said. "We often work with people who do not [respond to] verbal cognitive behavioral therapies," who cannot articulate difficult feelings, she added. The formal profession has been around since about the 1950s, she said, noting that it is becoming more recognized now, and in the United Kingdom training is available at the master's level. Music therapy appears to be beneficial for people who suffer from depression, but its impact is unclear. The researchers conducted a systematic review of randomized controlled trials to determine whether musical therapy is effective in reducing the symptoms of clinical depression. Their search identified 5 studies that met the selection criteria. The studies, done from 1992 to 1999, were small, had diverse patient populations (older patients, adolescents), and used different types of music therapy. At study start, most participants had moderate to severe depression.

Music Therapy Study Characteristics

Study	Participants, n	Age, y	Music Therapy Type	Session Frequency, time(s)/wk[c]	Duration, wk
1[a]	68	60 – 77	Active	6	8
2	30	> 60	Receptive[b]	1	8
3	19	14 – 15	Receptive[b]	1	—

4[a]	60	21 – 62	Receptive[b]	2	6
5	60	70 – 82	Receptive[b]	2	10

a. In-patients.
b. Listening to prerecorded music with a therapist, either in a group of 6 to 8 or individually.
c. Sessions ranged from 20 to 90 minutes.

In 4 of 5 of the studies, music therapy plus standard therapy led to better outcomes compared with standard care alone, as determined using various scales to measure depression symptoms. The fifth study, in which music therapy was used as an active treatment, reported no significant change in mental state with music therapy compared with standard care. The data were not suitable for a meta-analysis, due to marked variations in the interventions, populations studied, and outcome measures used. The dropout rate for music therapy was low for all studies. "Somewhat surprisingly, music therapy seems to be best targeted to people who are not in the usual 'psychotherapy radar' — adolescents and older adults," Ms. Maratos said, adding that music therapy given by a trained therapist might be used to engage a teenager who does not want to do cognitive behavior therapy homework or an older adult who may be unfamiliar with talking about feelings but used to singing or listening to songs. They also found good outcomes with music therapy in schizophrenia, in a recent review of that illness, she observed.

A Note of Hope: "These small-scale studies suggest that music therapy is associated, at least in the short term, with improvements in mood that go beyond those found with standard care alone and, based on low dropout rates, appears to be a well-tolerated treatment," the group summarizes. They caution, however, that the number of studies was small and the quality of the methodology was low; therefore, large-scale, high-quality trials looking at music therapy for depression are needed to provide confidence about its effectiveness. *Anna Maratos is a state registered music therapist.*

Marchand WR. Mindfulness-based stress reduction, mindfulness-based cognitive therapy, and Zen meditation for depression, anxiety, pain, and psychological distress. *J Psychiatr Pract.* 2012 Jul;18(4):233-52. doi: 10.1097/01.pra.0000416014.53215.86.

Studies indicate that mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) have broad-spectrum antidepressant and antianxiety effects and decrease general psychological distress. MBCT is strongly recommended as an adjunctive treatment for unipolar depression. The evidence suggests that both MBSR and MBCT have efficacy as adjunctive interventions for anxiety symptoms. MBSR is beneficial for general psychological health and stress management in those with medical and psychiatric illness as well as in healthy individuals. Finally, MBSR and Zen meditation have a role in pain management.

PMID: 22805898

Rating: 5b

Marks I, Lovell K, Noshirvani H, Livanou M, Thrasher S. Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: a controlled study. *Arch Gen Psychiatry* 1998 Apr;55(4):317-25.

Institute of Psychiatry and Bethlem-Maudsley Hospital, London, England.
I.Marks@iop.bpmf.ac.uk

METHODS: In a controlled study, 87 patients with posttraumatic stress disorder of at least 6 months' duration were randomly assigned to have 10 sessions of 1 of 4 treatments: prolonged exposure (imaginal and live) alone; cognitive restructuring alone; combined prolonged exposure and cognitive restructuring; or relaxation without prolonged exposure or cognitive restructuring. CONCLUSION: Both prolonged exposure and cognitive restructuring were each therapeutic on their own, were not mutually enhancing when combined, and were each superior to relaxation.

PMID: 9554427

Rating: 2b

Marquié JC, Tucker P, Folkard S, Gentil C, Ansiau D. Chronic effects of shift work on cognition: findings from the VISAT longitudinal study. *Occup Environ Med.* 2014 Nov 3. pii: oemed-2013-101993. doi: 10.1136/oemed-2013-101993.

PMID: 25367246

Rating: 3a

Marston L, Nazareth I, Petersen I, Walters K, Osborn DP. Prescribing of antipsychotics in UK primary care: a cohort study. *BMJ Open*. 2014 Dec 18;4(12):e006135. doi: 10.1136/bmjopen-2014-006135.

PMID: 25524544

Rating: 3a

Martenyi F, Brown EB, Zhang H, Koke SC, Prakash A. Fluoxetine v. placebo in prevention of relapse in post-traumatic stress disorder. *BJP Rev Books* 2002 Oct;181:315-20.

Novartis Pharmaceuticals, Basel, Switzerland.

METHOD: This was a double-blind, randomised, placebo-controlled study. Following 12 weeks of acute treatment, patients who responded were rerandomised and continued in a 24-week relapse prevention phase with fluoxetine (n=69) or placebo (n=62). CONCLUSIONS: Fluoxetine is effective and well tolerated in the prevention of PTSD relapse for up to 6 months.

PMID: 12356658

Rating: 2b

Martin JL, Martín-Sánchez E. Systematic review and meta-analysis of vagus nerve stimulation in the treatment of depression: variable results based on study designs*. Eur Psychiatry*. 2012 Apr;27(3):147-55. doi: 10.1016/j.eurpsy.2011.07.006.

PMID: 22137776

Rating: 1b

Martiny K. Adjunctive bright light in non-seasonal major depression. *Acta Psychiatr Scand Suppl.* 2004;(425):7-28. 2005 Aug;8(3):73.

Psychiatric Research Unit, Frederiksborg General Hospital, Hilleroed, Denmark. kmar@fa.dk

The study results support the use of bright light as an adjunct treatment to antidepressants in non-seasonal depression.

PMID: 15527426

Rating: 2b

Maxfield L, Hyer L. The relationship between efficacy and methodology in studies investigating EMDR treatment of PTSD. *J Clin Psychol* 2002 Jan;58(1):23-41.

Psychology Department, Lakehead University, Thunder Bay, Canada.
jlmaxfie@flash.lakeheadu.ca

The controlled treatment outcome studies that examined the efficacy of EMDR in the treatment of posttraumatic stress disorder have yielded a range of results, with the efficacy of EMDR varying across studies. Results indicated a significant relationship between scores on the GS Scale and effect size, with more rigorous studies according to the GS Scale reporting larger effect sizes.

PMID: 11748595

Rating: 5b

McBeth J, Lacey RJ, Wilkie R. Predictors of New-Onset Widespread Pain in Older Adults: Results From a Population-Based Prospective Cohort Study in the UK. *Arthritis Rheumatol*. 2014 Mar;66(3):757-67. doi: 10.1002/art.38284.

PMID: 24574238

Rating: 3a

McCall WV, Prudic J, Olfson M, Sackeim H. Health-related quality of life following ECT in a large community sample*. J Affect Disord*. 2006 Feb;90(2-3):269-74.
Department of Psychiatry and Behavioral Medicine, Wake Forest University Health Sciences, Medical Center Blvd., Winston-Salem, NC 27157, USA. vmccall@wfub.mc.edu
BACKGROUND: While electroconvulsive therapy (ECT) is a potent antidepressant, little is known about its long-term effects on health-related quality of life (HRQOL). CONCLUSIONS: ECT is associated with improved HRQOL in the short- and long-term, with the enhancements largely explained by improvements in depressive symptoms. The acute cognitive effects of ECT may also influence HRQOL assessment, and evaluations removed in time from the treatment may have greater validity.

PMID: 16412519

Rating: 3b

McCrae CS, Bramoweth AD, Williams J, Roth A, Mosti C. Impact of brief cognitive behavioral treatment for insomnia on health care utilization and costs. *J Clin Sleep Med*. 2014 Feb 15;10(2):127-35. doi: 10.5664/jcsm.3436.

PMID: 24532995

Rating: 3b

McGrath RE, Sweeney M, O'Malley WB, Carlton TK. Identifying psychological contributions to chronic pain complaints with the MMPI-2: the role of the K scale. *J Pers Assess*. 1998 Jun;70(3):448-59.

School of Psychology, Fairleigh Dickinson University, USA.

Although the 1-3/3-1 Minnesota Multiphasic Personality Inventory (MMPI) code type is traditionally interpreted as suggesting that somatic complaints are caused or exacerbated by psychological factors, prior research has raised questions about the validity of this interpretation for chronic pain patients. A sample of 125 chronic pain patients completed the MMPI-2.

PMID: 9760738

Rating: 4b

McLay RN, McBrien C, Wiederhold M, Wiederhold B. Exposure Therapy with and without Virtual Reality to Treat PTSD while in the Combat Theater: A Parallel Case Series. *Cyberpsychol Behav*. 2009 Dec 20. [Epub ahead of print]

Exposure therapy (ET) has been observed to be an effective modality for the treatment of combat-related posttraumatic stress disorder (PTSD). Recently, efforts have been made to use virtual reality (VR) to enhance outcome with modes of ET. This demonstrates that ET, with or without the use of VR, can be an effective means of helping service members with mental health issues while they serve in theater.

PMID: 20021277

Rating: 4b

McLay R, Borenstein J. Virtual Reality Exposure Enhances Treatment of PTSD. American Psychiatric Association (APA) 2010 Annual Meeting: Abstract NR7-55. Presented May 25, 2010.

For the treatment of combat-related posttraumatic stress disorder (PTSD), virtual reality exposure with arousal control (VRE-AC) may be more effective than prolonged exposure therapy with simulation, according to US Navy investigators who are studying the approach in service members returning from Iraq and Afghanistan. One of the few things that have proven effective for PTSD is exposure therapy. Added to exposure therapy, simulator and physiological monitoring may allow greater control to both the patient and the therapist. So we took the approach that seems to work best and we tried to make it better. We asked if we could use a simulator to help subjects confront their fears in a controlled way, to tolerate it gradually as the clinician pushed forward. VRE-AC is 3-dimensional computer simulation of settings that are triggers for PTSD episodes. The treatment teaches participants to tolerate anxiety and then exposes them to the feared situation in a simulator that is manipulated and monitored by a clinician. The clinician can modulate sights and sounds and the intensity of the scenario. The participant, wearing a headset, has the experience of being in a city in Iraq. The therapist sits nearby and controls all aspects of this world, changing the sounds, the weather, and the level of violence. With some software we can even introduce smells and vibrations. The study compared VRE-AC with treatment as usual for combat PTSD in 20 active duty members diagnosed as having PTSD related to their service in Iraq or Afghanistan, most of whom had not responded to standard therapies. The study was conducted at 2 military hospitals in Southern California. Participants were randomly assigned to receive 10 weeks of treatment with VRE-AC (n = 10) or standard therapy (n = 10), which was primarily traditional approaches to exposure. Outcomes were tracked using the Clinician Administered PTSD Scale (CAPS), with treatment success defined as a 30% or greater response. Postassessment outcomes were available in all VRE-AC participants and in 9 members of the control group. People improved with both types of treatment, but the gains with the virtual reality treatment were more impressive. The issue of making use of exposure therapy is important, and this appears to be a way to enhance it.

Rating: 10b

Mendelson WB. A review of the evidence for the efficacy and safety of trazodone in insomnia. *J Clin Psychiatry.* 2005 Apr;66(4):469-76.

STUDY SELECTION: A total of 18 studies were identified from the literature search. CONCLUSION: Given the relative absence of efficacy data in patients with insomnia and the adverse events associated with trazodone's use in general, it is uncertain whether the risk/benefit ratio warrants trazodone's use in nondepressed patients with insomnia.

PMID: 15816789

Rating: 1c

Michalsen A, Grossman P, Acil A, Langhorst J, Ludtke R, Esch T, Stefano GB, Dobos GJ. Rapid stress reduction and anxiolysis among distressed women as a consequence of a three-month intensive yoga program. *Med Sci Monit*. 2005 Dec;11(12):CR555-561.

Women suffering from mental distress participating in a 3-month Iyengar yoga class show significant improvements on measures of stress and psychological outcomes.

PMID: 16319785

Rating: 3c

Mino Y, Babazono A, Tsuda T, Yasuda N. Can stress management at the workplace prevent depression? A randomized controlled trial. *Psychother Psychosom*. 2006;75(3):177-82.

BACKGROUND: Stress, mental health and depression at the workplace have emerged as common and significant problems. The effectiveness of a stress-management program at the workplace was investigated. METHODS: The stress-management program was carried out for 3 months, and perceived work-related stress and psychological symptoms were evaluated using: General Health Questionnaire (GHQ)-30, Center for Epidemiologic Study for Depression (CES-D), the Questionnaire of Work-Related Stress and the Effort-Reward Imbalance Questionnaire. RESULTS: In the stress-management group, a significant improvement in the depressive symptoms was observed, compared with the control group in CES-D ($p = 0.003$ by two-tailed paired t-test, and $p = 0.042$ by repeated measure analysis of variance). In the multiple regression analysis, the effect of stress management on depressive symptoms at follow-up was significant ($p = 0.041$), controlling for potential confounding factors. CONCLUSIONS: A stress-management program based on the cognitive behavioral approach at the workplace may have potential for the prevention of depression.

PMID: 16636633

Rating: 2c

Mithoefer MC, Wagner MT, Mithoefer AT, Jerome L, Martin SF, Yazar-Klosinski B, Michel Y, Brewerton TD, Doblin R. Durability of improvement in post-traumatic stress disorder symptoms and absence of harmful effects or drug dependency after 3,4-methylenedioxymethamphetamine-assisted psychotherapy: a prospective long-term follow-up study. *J Psychopharmacol*. 2013 Jan;27(1):28-39. doi: 10.1177/0269881112456611.

PMID: 23172889

Rating 2c

Mohr DC, Ho J, Duffecy J, Reifler D, Sokol L, Burns MN, Jin L, Siddique J. Effect of telephone-administered vs face-to-face cognitive behavioral therapy on adherence to therapy and depression outcomes among primary care patients: a randomized trial. *JAMA.* 2012 Jun 6;307(21):2278-85.

Among primary care patients with depression, providing CBT over the telephone compared with face-to-face resulted in lower attrition and close to equivalent improvement in depression at posttreatment. At 6-month follow-up, patients remained less depressed relative to baseline; however, those receiving face-to-face CBT were less depressed than those receiving T-CBT. These results indicate that T-CBT improves adherence compared with face-to-face delivery, but at the cost of some increased risk of poorer maintenance of gains after treatment cessation.

PMID: 22706833

Rating: 2a

Moldovan R, Cobeanu O, David D. Cognitive Bibliotherapy for Mild Depressive Symptomatology: Randomized Clinical Trial of Efficacy and Mechanisms of Change. *Clin Psychol Psychother.* 2012 Sep 2. doi: 10.1002/cpp.1814.

PMID: 22941790

Rating: 2b

Moncrieff J, Wessely S, Hardy R. Active placebos versus antidepressants for depression (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software.

Background: Although there is a consensus that antidepressants are effective in depression, placebo effects are also thought to be substantial.
Reviewers' conclusions: The more conservative estimates from the present analysis found that differences between antidepressants and active placebos were small. This suggests that unblinding effects may inflate the efficacy of antidepressants in trials using inert placebos. Further research into unblinding is warranted.

PMID: 14974002

Rating: 1a

Monsalve V, de Andres JA, Valia JC. Application of a Psychological Decision Algorithm for the Selection of Patients Susceptible to Implantation of Neuromodulation Systems for the Treatment of Chronic Pain. A Proposal. *Neuromodulation* 2000;3:191-200.

Objective. The application of a decision algorithm is described here for the inclusion of patients in a protocol of therapeutic intervention by the use of an implantable neuromodulation system. This algorithm is based on the assessment of the psychological profiles of the patients and their environment. Materials and methods. This algorithm was applied to patients in the Multidisciplinary Unit for Pain Treatment at the General University Hospital of Valencia (Spain) by means of a clinical interview performed by the Psychology Department prior to the therapeutic decision. It was applied to two samples. The first sample was made up of patients psychologically assessed prior to implantation; the second sample was made up of implanted patients to whom the algorithm was applied retrospectively, by reviewing their clinical medical history. Results. In the first sample, pain relief of 50% or higher was obtained by 80% of the subjects studied, while in the second the percentage decreased to 63%. While the rate of implants removed in sample 1 was 4.2%, the rate of implants removed in sample 2 was 7.5% due to lack of efficacy. In a third sample, made up of implanted patients from sample 1 and sample 2, a discriminant analysis was performed using a pooled variable. Conclusion. The results of the application of the pooled analysis confirm the need for considering the psychological profile as a variable predicting an optimum result in the therapeutic treatment of chronic pain.

Rating: 4b

Motomura N, Sakurai A, Yotsuya Y. Reduction of mental stress with lavender odorant. Percept Mot Skills. 2001 Dec;93(3):713-8.

Department of Health Science, Osaka Kyoiku University, Kashiwara City, Japan.
motomura@cc.osaka-kyoiku.ac.jp

Analysis suggested that lavender odorants were associated with reduced mental stress and increased arousal rate.

PMID: 11806592

Rating: 2c

Moyer CA, Rounds J, Hannum JW. A meta-analysis of massage therapy research. Psychol Bull. 2004 Jan;130(1):3-18.

Department of Educational Psychology, University of Illinois at Urbana-Champaign, Champaign, IL 61820-6990, USA.

Massage therapy (MT) is an ancient form of treatment that is now gaining popularity as part of the complementary and alternative medical therapy movement. A meta-analysis was conducted of studies that used random assignment to test the effectiveness of MT. Mean effect sizes were calculated from 37 studies for 9 dependent variables. Single applications of MT reduced state anxiety, blood pressure, and heart rate but not negative mood, immediate assessment of pain, and cortisol level. Multiple applications reduced delayed assessment of pain. Reductions of trait anxiety and depression were MT's largest effects, with a course of treatment providing benefits similar in magnitude to those of psychotherapy.

PMID: 14717648

Rating: 1c

Mueser KT, Drake RE, Wallach MA. Dual diagnosis: a review of etiological theories. *Addict Behav*. 1998 Nov-Dec;23(6):717-34.

New Hampshire-Dartmouth Psychiatric Research Center, Concord, NH 03301, USA. Kim.T.Mueser@Dartmouth.edu

Among secondary substance use disorder models, there is support for the supersensitivity model, which posits that biological vulnerability of psychiatric disorders results in sensitivity to small amounts of alcohol and drugs, leading to substance use disorders. There is minimal support for the self-medication model, but the accumulation of multiple risk factors related to mental illness, including dysphoria, may increase the risk of substance use disorder.

PMID: 9801712

Rating: 5b

Murrough JW, Iosifescu DV, Chang LC, Al Jurdi RK, Green CE, Perez AM, Iqbal S, Pillemer S, Foulkes A, Shah A, Charney DS, Mathew SJ. Antidepressant efficacy of ketamine in treatment-resistant major depression: a two-site randomized controlled trial. *Am J Psychiatry*. 2013 Oct 1;170(10):1134-42. doi: 10.1176/appi.ajp.2013.13030392.

PMID: 23982301

Rating: 2b

Musarezaie A, Moeini M, Taleghani F, Mehrabi T. Does spiritual care program affect levels of depression in patients with Leukemia? A randomized clinical trial. *J Educ Health Promot.* 2014 Aug 28;3:96. doi: 10.4103/2277-9531.139678. eCollection 2014.

PMID: 25250362

Rating: 2b

Nagele P, Duma A, Kopec M, Gebara MA, Parsoei A, Walker M, Janski A, Panagopoulos VN, Cristancho P, Miller JP, Zorumski CF, Conway CR. Nitrous Oxide for Treatment-Resistant Major Depression: A Proof-of-Concept Trial. *Biol Psychiatry.* 2014 Dec 9. pii: S0006-3223(14)00910-X. doi: 10.1016/j.biopsych.2014.11.016.

PMID: 25577164

Rating: 2c

Nahas Z, Burns C, Foust MJ, Short B, Herbsman T, George MS. Vagus nerve stimulation (VNS) for depression: what do we know now and what should be done next? *Curr Psychiatry Rep*. 2006 Dec;8(6):445-51.

PMID: 17094924

Rating: 5b

Nahas R, Sheikh O. Complementary and alternative medicine for the treatment of major depressive disorder. *Can Fam Physician*. 2011;57:659-63.

PMID: 21673208

Rating: 5a

Naylor EV, Antonuccio DO, Litt M, Johnson GE, Spogen DR, Williams R, McCarthy C, Lu MM, Fiore DC, Higgins DL. Bibliotherapy as a treatment for depression in primary care. *J Clin Psychol Med Settings*. 2010 Sep;17(3):258-71. doi: 10.1007/s10880-010-9207-2.

PMID: 20803165

Rating: 2b

Nelson JC, Wohlreich MM, Mallinckrodt CH, Detke MJ, Watkin JG, Kennedy JS. Duloxetine for the treatment of major depressive disorder in older patients. *Am J Geriatr Psychiatry*. 2005 Mar;13(3):227-35.

Department of Psychiatry, University of California at San Francisco, San Francisco, CA, USA.

METHODS: Efficacy data were obtained from patients age > or =55 who participated in two identical, multicenter, double-blind studies in which patients with MDD were randomized to receive placebo (N=43) or duloxetine (60 mg/day; N=47) for 9 weeks. Pain symptoms were assessed with visual-analog scales. Safety data for patients age > or =55 were pooled from six randomized, 8- or 9-week, double-blind studies of duloxetine in which patients with MDD were randomized to receive placebo (N=90) or duloxetine (40 mg/day-120 mg/day; N=119). RESULTS: The combined results of these two investigations found that duloxetine was significantly superior to placebo for mean change in Ham-D-17 total score. TReductions in overall pain, back pain, and pain while awake were also significantly greater for duloxetine than placebo. CONCLUSIONS: In these two investigations, duloxetine 60 mg/day was an efficacious treatment for MDD and also alleviated pain symptoms in depression patients age 55 and older.

PMID: 15728754

Rating: 1c

Nelson DV, Kennington M, Novy DM. Psychological selection criteria for implantable spinal cord stimulators. *Pain Forum* 1996;5:93-103.

Nearly three decades of spinal cord stimulation (SCS) as a treatment for chronic pain have seen a waxing and waning of enthusiasm for SCS but more recently, an expanding role of SCS in contemporary chronic pain management. Increased refinement of patient selection criteria has been an important focus to improve SCS outcomes. This article reviews the history of psychological selection criteria in SCS implantation, assesses the data to support their utility, and offers a conceptualization for the incorporation of psychological factors in determining suitability for SCS implantation. When conceptualized properly within a multidisciplinary rehabilitation process, the clinical judgments and assessment procedures of experienced psychological practitioners have played, and should continue to play, a role in the evaluation for, and treatment with SCS.

Rating: 5a

Nemeroff CB, Bremner JD, Foa EB, Mayberg HS, North CS, Stein MB. Posttraumatic stress disorder: a state-of-the-science review*. J Psychiatr Res*. 2006 Feb;40(1):1-21.

Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine, 1639 Pierce Drive, Atlanta, GA 30322-4990, USA. cnemero@emory.edu

This article reviews the state-of-the-art research in posttraumatic stress disorder (PTSD) from several perspectives: (1) Sex differences: PTSD is more frequent among women, who tend to have different types of precipitating traumas and higher rates of comorbid panic disorder and agoraphobia than do men.

PMID: 16242154

Rating: 5b

Neumeyer-Gromen A, Lampert T, Stark K, Kallischnigg G. Disease Management Programs for Depression: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Med Care.* 2004 Dec;42(12):1211-1221.

From the *Federal Institute for Occupational Safety and Health; the daggerRobert Koch Institute; and the double daggerTechnical University Berlin, Institute of Health Science, Berlin, Germany.

OBJECTIVE:: This study was a systematic review and meta-analysis of randomized controlled trials investigating the effectiveness of DMP for depression as compared with usual primary care. RESULTS:: DMP had a significant effect on depression severity, with a relative risk of 0.75 (95% confidence interval 0.70-0.81) in a homogeneous dataset of 10 high-quality trials. It was robust in all sensitivity analyses (evidence level 1A). Funnel plot symmetry indicated a low probability of publication bias. Patient satisfaction and adherence to the treatment regimen improved significantly, but only in heterogeneous models. The costs per quality adjusted life year ranged between $9,051 and $49,500. CONCLUSION:: DMP significantly enhance the quality of care for depression. Costs are within the range of other widely accepted public health improvements. Future research should focus on the effect of long-term interventions, and the compatibility with health care systems other than managed-care driven ones.

PMID: 15550801

Rating: 1b

Nieuwsma JA, Trivedi RB, McDuffie J, Kronish I, Benjamin D, Williams JW. Brief psychotherapy for depression: a systematic review and meta-analysis. *Int J Psychiatry Med*. 2012;43(2):129-51.

PMID: 22849036

Rating: 1b

Nijdam MJ, Gersons BP, Reitsma JB, de Jongh A, Olff M. Brief eclectic psychotherapy v. eye movement desensitisation and reprocessing therapy for post-traumatic stress disorder: randomised controlled trial. *Br J Psychiatry*. 2012 Mar;200:224-31.

Although both treatments are effective, EMDR results in a faster recovery compared with the more gradual improvement with brief eclectic psychotherapy.

PMID: 22322458

Rating: 2b

Nordstrom CK, Dwyer KM, Merz CN, Shircore A, Dwyer JH. Work-related stress and early atherosclerosis. Epidemiology. 2001 Mar;12(2):180-5.

These findings suggest that men with greater work-related stress are at increased risk for atherosclerotic disease. Women in this age group may be protected from such effects, or current work-place questionnaires may not accurately assess stress in women.

PMID: 11246578

Rating: 2a

North RB, Kidd DH, Wimberly RL, Edwin D. Prognostic value of psychological testing in patients undergoing spinal cord stimulation: a prospective study. *Neurosurgery.* 1996 Aug;39(2):301-10; discussion 310-1.

Department of Neurosurgery, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

METHODS: Fifty-eight patients selected for SCS were tested prospectively with a battery of standardized psychological tests: Minnesota Multiphasic Personality Inventory with Wiggins content scales, Symptom Check List-90, and Derogatis Affects Balance Scale. RESULTS: Significant associations (P < or = 0.01) were observed between the outcome of the therapeutic trial of stimulation and psychological test results; patients with low "anxiety" scores on the Derogatis Affects Balance Scale and with high "organic symptoms" scores on the Wiggins test were significantly more likely to proceed to permanent implants, as determined by multivariate statistical models. Because self-reported outcome measures may themselves reflect the patient's psychological state, these findings should be considered carefully, in overall clinical context.

PMID: 8832667

Rating: 4c

Nunes EV, Levin FR. Treatment of depression in patients with alcohol or other drug dependence: a meta-analysis. *JAMA*. 2004 Apr 21;291(15):1887-96.

Depression Evaluation Service, New York State Psychiatric Institute and Department of Psychiatry, Columbia University, New York 10032, USA. nunesed@pi.cpmc.columbia.edu

300 citations extracted, 44 were placebo-controlled clinical trials, 14 of which were selected for this analysis and included 848 patients

Antidepressant medication is moderately beneficial for patients with combined depressive- and substance-use disorders. It is not a stand-alone treatment. Concurrent therapy directly targeting the addiction is recommended.

PMID: 15100209

Rating: 1b

Ofman JJ, Badamgarav E, Henning JM, Knight K, Gano AD Jr, Levan RK, Gur-Arie S, Richards MS, Hasselblad V, Weingarten SR. Does disease management improve clinical and economic outcomes in patients with chronic diseases? A systematic review. *Am J Med.* 2004 Aug 1;117(3):182-92.

Cedars-Sinai Department of Medicine, Los Angeles, California, USA.

RESULTS: Two reviewers evaluated 16,917 titles and identified 102 studies that met the inclusion criteria. Identified studies represented 11 chronic conditions: depression, diabetes, rheumatoid arthritis, chronic pain, coronary artery disease, asthma, heart failure, back pain, chronic obstructive pulmonary disease, hypertension, and hyperlipidemia. Disease management programs for patients with depression had the highest percentage of comparisons (48% [41/86]) showing substantial improvements in patient care, whereas programs for patients with chronic obstructive pulmonary disease (9% [2/22]) or chronic pain (8% [1/12]) appeared to be the least effective. Of the outcomes more frequently studied, disease management appeared to improve patient satisfaction (71% [12/17]), patient adherence (47% [17/36]), and disease control (45% [33/74]) most commonly and cost-related outcomes least frequently (11% to 16%). CONCLUSION: Disease management programs were associated with marked improvements in many different processes and outcomes of care.

PMID: 15300966

Rating: 1b

Olfson M, King M, Schoenbaum M. Benzodiazepine use in the United States. *JAMA Psychiatry*. 2015 Feb;72(2):136-42. doi: 10.1001/jamapsychiatry.2014.1763.

PMID: 25517224

Rating: 3a

Ossebaard HC. Stress reduction by technology? An experimental study into the effects of brainmachines on burnout and state anxiety. Appl Psychophysiol Biofeedback. 2000 Jun;25(2):93-101.

Trimbos-Institute (Netherlands Institute of Mental Health and Addiction), Utrecht, The Netherlands.

A double blind, quasi-experiment was conducted among employees at a Dutch addiction care center to investigate the possible effects of two distinct brainmachine programs on burnout and anxiety. Subjects in both conditions showed a significant, immediate decrease in state anxiety as assessed by Spielberger's State-Trait Anxiety Inventory (STAI) and reported a range of subjective effects. However, a long-term effect on burnout, as measured with Maslach's Burnout Inventory (MBI-NL), could not be established.

PMID: 10932334

Rating: 2c

Pagnin D, de Queiroz V, Pini S, Cassano GB. Efficacy of ECT in depression: a meta-analytic review. *J ECT.* 2004 Mar;20(1):13-20.

Department of Psychiatry, Neurobiology, Pharmacology and Biotechnology. University of Pisa, Italy. d.pagnin@psico.med.unipi.it

The review revealed a significant superiority of ECT in all comparisons: ECT versus simulated ECT, ECT versus placebo, ECT versus antidepressants in general, ECT versus TCAs and ECT versus MAOIs. Data analyzed suggest that ECT is a valid therapeutic tool for treatment of depression, including severe and resistant forms.

PMID: 15087991

Rating: 1c

Palsson OS, Turner MJ, Johnson DA, Burnelt CK, Whitehead WE. Hypnosis treatment for severe irritable bowel syndrome: investigation of mechanism and effects on symptoms. Dig Dis Sci. 2002 Nov;47(11):2605-14.

University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27599-7080 USA.

All central IBS symptoms improved substantially from treatment in both studies. Rectal pain thresholds, rectal smooth muscle tone, and autonomic functioning (except sweat gland reactivity) were unaffected by hypnosis treatment. However, somatization and psychological distress showed large decreases. In conclusion, hypnosis improves IBS symptoms through reductions in psychological distress and somatization. Improvements were unrelated to changes in the physiological parameters measured.

PMID: 12452403

Rating: 4c

Pampallona S, Bollini P, Tibaldi G, Kupelnick B, Munizza C. Combined pharmacotherapy and psychological treatment for depression: a systematic review. *Arch Gen Psychiatry.* 2004 Jul;61(7):714-9.

forMed, Evolene, Switzerland.

OBJECTIVES: To study the relationship between adherence to use of and efficacy of antidepressant drugs plus psychological treatment vs drug treatment alone in depressive disorders. DATA SYNTHESIS: Sixteen trials met the inclusion criteria, with 932 patients randomized to pharmacotherapy alone and 910 to combined treatment. Overall, patients receiving combined treatment improved significantly compared with those receiving drug treatment alone (odds ratio [OR], 1.86; 95% confidence interval [CI], 1.38-2.52), but dropouts and nonresponders did not differ in distribution between the 2 treatment modalities (OR, 0.86; 95% CI, 0.60-1.24). CONCLUSIONS: Psychological treatment combined with antidepressant therapy is associated with a higher improvement rate than drug treatment alone. In longer therapies, the addition of psychotherapy helps to keep patients in treatment.

PMID: 15237083

Rating: 1b

Pancheri P, Scapicchio P, Chiaie RD. A double-blind, randomized parallel-group, efficacy and safety study of intramuscular S-adenosyl-L-methionine 1,4-butanedisulphonate (SAMe) versus imipramine in patients with major depressive disorder. *Int J Neuropsychopharmacol.* 2002 Dec;5(4):287-94.

III Clinica Psichiatrica, Universita 'La Sapienza', Viale dell'Universita 30 (00185), Rome, Italy.

SAMe and IMI did not differ significantly on any efficacy measure, either main or secondary. Adverse events were significantly less in patients treated with SAMe compared to those treated with IMI. These data show 400 mg/d i.m. SAMe to be comparable to 150 mg/d oral IMI in terms of antidepressive efficacy, but significantly better tolerated. These findings suggest interesting perspectives for the use of SAMe in depression.

PMID: 12466028

Rating: 2b

Papadimitropoulou K, Vossen C, Karabis A, Donatti C, Kubitz N. Comparative Efficacy Of Ketamine And Other Pharmacological And Somatic Interventions In Adult Patients With Treatment-Resistant Depression: A Network Meta-Analysis. *Value Health*. 2015 Nov;18(7):A407. doi: 10.1016/j.jval.2015.09.957.

PMID: 26532294

Rating: 1a

Papakostas GI. Evidence for S-adenosyl-L-methionine (SAM-e) for the treatment of major depressive disorder. *J Clin Psychiatry*. 2009;70 Suppl 5:18-22. doi: 10.4088/JCP.8157su1c.04.

PMID: 19909689

Rating: 5b

Papakostas GI, Petersen T, Mischoulon D, Green CH, Nierenberg AA, Bottiglieri T, Rosenbaum JF, Alpert JE, Fava M. Serum folate, vitamin B12, and homocysteine in major depressive disorder, Part 2: predictors of relapse during the continuation phase of pharmacotherapy*. J Clin Psychiatry.* 2004 Aug;65(8):1096-8.

Depression Clinical and Research Program, Massachusetts General Hospital, Harvard Medical School, Boston, MA 02114, USA. gpapakostas@partners.org

RESULTS: The presence of low serum folate levels (p =.004), but not low B12 (p >.05) or elevated homocysteine levels (p >.05), was associated with relapse during continuation treatment with fluoxetine. CONCLUSION: Low serum folate levels were found to place patients with remitted MDD at risk for depressive relapse during the continuation phase of treatment with fluoxetine.

PMID: 15323595

Rating: 3c

Papakostas GI, Shelton RC, Zajecka JM, Etemad B, Rickels K, Clain A, Baer L, Dalton ED, Sacco GR, Schoenfeld D, Pencina M, Meisner A, Bottiglieri T, Nelson E, Mischoulon D, Alpert JE, Barbee JG, Zisook S, Fava M. L-methylfolate as adjunctive therapy for SSRI-resistant major depression: results of two randomized, double-blind, parallel-sequential trials. *Am J Psychiatry.* 2012;169):1267-74.

PMID: 23212058

Rating: 2c

Partnership for Workplace Mental Health. Assessing and Treating Psychiatric Occupational Disability: New Behavioral Health Functional Assessment Tools Facilitate Return to Work. 2005.

Executive Summary: Nearly every member of the mental health continuum would like to find a way to limit, or reverse, the detrimental effects of mental illness on employees, employers, providers, and society as a whole. Many stakeholders would agree, however, that this goal has yet to be achieved. Psychiatric illness is a difficult, pervasive, and persistent problem that requires a collective effort by all concerned parties to solve. At present, however, stakeholders lack the processes and tools necessary to bring to bear on this problem the full force of their collective resources. This report describes new process recommendations and functional assessment tools to speed recovery of function and return to work. These recommendations and tools target a subsection of the universe of persons with a psychiatric illness, specifically those who formerly were high-functioning individuals as reflected in the fact that they worked, and who currently are disabled by a mental health condition. Work is central to a person's identity and social role. It provides income, but more than that, it is often essential to feeling valued as a person. Loss of work capacity for any reason is a life crisis, but especially so when the loss is due to a mental health disability. A person's inability to work because of a mental health condition requires focused and significant professional attention and a team response.

Rating: 5b

Paul RK, Singh NS, Khadeer M, Moaddel R, Sanghvi M, Green CE, O'Loughlin K, Torjman MC, Bernier M, Wainer IW. (R,S)-Ketamine metabolites (R,S)-norketamine and (2S,6S)-hydroxynorketamine increase the mammalian target of rapamycin function. *Anesthesiology*. 2014 Jul;121(1):149-59. doi: 10.1097/ALN.0000000000000285.

PMID: 24936922

Rating: 5b

Parshad O. Role of yoga in stress management. *West Indian Med J*. 2004 Jun;53(3):191-4.

Department of Basic Medical Sciences, The University of the West Indies, Kingston 7, Jamaica, West Indies. oparshad@uwimona.edu.jm

Physiological benefits which follow, help yoga practitioners become more resilient to stressful conditions and reduce a variety of important risk factors for various diseases, especially cardio-respiratory diseases.

PMID: 15352751

Rating: 5b

Paunovic N, Ost LG. Cognitive-behavior therapy vs exposure therapy in the treatment of PTSD in refugees. *Behav Res Ther* 2001 Oct;39(10):1183-97.

Department of Psychology, Stockholm University, Sweden. npc@psychology.su.se

Sixteen outpatients fulfilling the DSM-IV criteria for PTSD were randomized to one of the two treatments. The results showed that both treatments resulted in large improvements on all the measures, which were maintained at the follow-up. There was no difference between E and CBT on any measure. E and CBT led to a 48 and 53% reduction on PTSD-symptoms, respectively, a 49 and 50% reduction on generalized anxiety, and a 54 and 57% reduction on depression. The results were maintained at the 6-month follow-up. The conclusion that can be drawn is that both E and CBT can be effective treatments for PTSD in refugees.

PMID: 11579988

Pavlovich N. Herbal remedies: the natural approach to combating stress. J Perianesth Nurs. 1999 Jun;14(3):134-8.

Generally speaking, therapeutic herbs are, for the most part, safe and effective and result in general good health.

PMID: 10603816

Rating: 5b

Paykel ES. Cognitive therapy in relapse prevention in depression. *Int J Neuropsychopharmacol*. 2006 Jun 20;:1-6.

Department of Psychiatry, University of Cambridge, Cambridge, UK.

Modern follow-up studies indicate that, in spite of the efficacy of pharmacotherapy, relapse and recurrence rates in some depressed patients remain high. There have now been seven randomized controlled trials of cognitive therapy designed specifically to test relapse and recurrence prevention. All have shown significant benefit, which lasts beyond the cessation of therapy. The effect appears to be more on preventing symptom return than on lessening current symptoms, to summate well with continuation and maintenance antidepressant, and not to be due simply to enhanced medication adherence. Incorporation into routine clinical practice is now appropriate and recommendations are proposed.

PMID: 16787553

Rating: 5c

Pelletier CL. The effect of music on decreasing arousal due to stress: a meta-analysis. J Music Ther. 2004 Fall;41(3):192-214.

The Florida State University, USA.

A meta-analytic review of research articles using music to decrease arousal due to stress was conducted on 22 quantitative studies. Results demonstrated that music alone and music assisted relaxation techniques significantly decreased arousal (d = +.67).

PMID: 15327345

Rating: 1c

Perahia DG, Kajdasz DK, Royer MG, Walker DJ, Raskin J. Duloxetine in the treatment of major depressive disorder: an assessment of the relationship between outcomes and episode characteristics. *Int Clin Psychopharmacol*. 2006 Sep;21(5):285-95.

Lilly Research Centre, Windlesham, Surrey, UK. d.perahia@lilly.com

Duloxetine, an inhibitor of serotonin and norepinephrine reuptake, has been approved for the treatment of major depressive disorder. Overall, changes on all outcome measures and response and remission rates were significantly greater in duloxetine-treated patients than in placebo-treated patients. Furthermore, the effect of duloxetine was similar across all episode characteristic groups (first/subsequent episode, short/medium/long episode duration). Duloxetine was effective in the treatment of first and subsequent episodes of major depressive disorder, and regardless of duration of the current depressive episode.

PMID: 16877900

Rating: 1b

Perkins ZB, De'Ath HD, Sharp G, Tai NR. Factors affecting outcome after traumatic limb amputation. *Br J Surg.* 2012 Jan;99 Suppl 1:75-86. doi: 10.1002/bjs.7766.

Clinicians involved in their care have many opportunities to improve their outcome using a variety of therapeutic variables.

PMID: 22441859

Rating: 5b

Perna FM, Antoni MH, Baum A, Gordon P, Schneiderman N. Cognitive behavioral stress management effects on injury and illness among competitive athletes: a randomized clinical trial. Ann Behav Med. 2003 Winter;25(1):66-73.

Division of Psychiatry, Boston University School of Medicine, MA 02118, USA. fperna@bu.edu

Athletes randomly assigned to a CBSM group experienced significant reductions in the number of illness and injury days as compared to control group athletes. CBSM participants also had half the number of health service visits as did controls. The data suggest that a time-limited CBSM intervention designed specifically for an athlete population may be an effective prophylactic treatment to reduce the incidence of injury and illness among competitive collegiate athletes.

PMID: 12581938

Rating: 2c

Peterson M, Wilson JF. The Culture-Work-Health model and work stress. Am J Health Behav. 2002 Jan-Feb;26(1):16-24.

RESULTS: Culture is an important component of work stress and may be a key to creating effective organizational stress interventions. CONCLUSION: Work stress is as much a managerial and business concern as a health concern when it is framed in a cultural argument, and the Culture-Work-Health model provides a theoretical basis for new directions in ameliorating work stress.

PMID: 11795601

Rating: 1c

Pettinati HM, O'Brien CP, Rabinowitz AR, Wortman SP, Oslin DW, Kampman KM, Dackis CA. The status of naltrexone in the treatment of alcohol dependence: specific effects on heavy drinking. *J Clin Psychopharmacol*. 2006 Dec;26(6):610-25.

Center for the Study of Addictions, Department of Psychiatry, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6178, USA. Pettinati_H@mail.trc.upenn.edu

The majority of double-blind clinical trials in the literature favored prescribing naltrexone for alcohol dependence to reduce heavy drinking. This finding is consistent with our understanding of naltrexone's mechanism of action of decreasing excessive drinking by reducing the reward associated with drinking alcohol. Thus, we conclude that outcome measures related to heavy or excessive drinking are most relevant to defining naltrexone's therapeutic effects. Factors influencing naltrexone response (treatment adherence and distinct patient subgroups) are also discussed.

PMID: 17110818

Rating: 1b

Petrides G, Fink M, Husain MM, Knapp RG, Rush AJ, Mueller M, Rummans TA, O'Connor KM, Rasmussen KG Jr, Bernstein HJ, Biggs M, Bailine SH, Kellner CH. ECT remission rates in psychotic versus nonpsychotic depressed patients: a report from CORE. *J ECT*. 2001 Dec;17(4):244-53.

Research Department, Hillside Hospital, North Shore-Long Island Jewish Health System, Glen Oaks, New York 11004, USA. petrides@lij.edu

OBJECTIVE: To compare the relative efficacy of electroconvulsive therapy (ECT) in psychotic and nonpsychotic patients with unipolar major depression. CONCLUSION: Bilateral ECT is effective in relieving severe major depression. Remission rates are higher and occur earlier in psychotic depressed patients than in nonpsychotic depressed patients. These data support the argument that psychotic depression is a distinguishable nosological entity that warrants separate treatment algorithms.

PMID: 11731725

Rating: 3b

Phillips KA, First MB, and Pincus HA. *Advancing DSM: Dilemmas in Psychiatric Diagnosis*: *Forward.* Hyman, SE. American Psychiatric Association, Washington, DC, 2003.

In this book, leading clinicians and researchers present diagnostic dilemmas from clinical practice that are intriguing, controversial, unresolved, and remarkable in their theoretical and scientific complexity. Chapters present a specific case study of a disorder or an area of diagnosis that illuminates the need for a revised diagnostic system. Chapter by chapter, Advancing DSM raises important, clinically relevant questions about the nature of diagnosis under the current DSM system and recommends new approaches.

Rating: 9b

Piek E, van der Meer K, Nolen WA. Guideline recommendations for long-term treatment of depression with antidepressants in primary care-a critical review. *Eur J Gen Pract*. 2010 Mar 18.

Results: Thirteen depression guidelines were collected. These guidelines recommend continuation treatment with antidepressants after remission for all patients including patients from primary care, and maintenance treatment for those at high risk of recurrence. Recommendations vary for duration of treatment and definitions of high risk. Conclusions: Recommendations on maintenance treatment with antidepressants in primary care cannot be considered evidence-based.

PMID: 20297924

Rating: 5b

Pignone MP, Gaynes BN, Rushton JL, et al. Screening for depression in adults: a summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med.* 2002;136(10):765-776
University of North Carolina Hospitals, Chapel Hill, USA.

PURPOSE: To clarify whether screening adults for depression in primary care settings improves recognition, treatment, and clinical outcomes. DATA SYNTHESIS: Meta-analysis suggests that overall, screening and feedback reduced the risk for persistent depression (summary relative risk, 0.87 [95% CI, 0.79 to 0.95]). CONCLUSION: Compared with usual care, screening for depression can improve outcomes, particularly when screening is coupled with system changes that help ensure adequate treatment and follow-up.

PMID: 12020146

Rating: 1b

Pigott HE, Leventhal AM, Alter GS, Boren JJ. Efficacy and effectiveness of antidepressants: current status of research. *Psychother Psychosom*. 2010;79(5):267-79. Epub 2010 Jul 9.

METHODS: This paper reviews four meta-analyses of efficacy trials submitted to America's Food and Drug Administration (FDA) and analyzes STAR*D (Sequenced Treatment Alternatives to Relieve Depression), the largest antidepressant effectiveness trial ever conducted. RESULTS: Meta-analyses of FDA trials suggest that antidepressants are only marginally efficacious compared to placebos and document profound publication bias that inflates their apparent efficacy.

PMID: 20616621

Rating: 1a

Pilkington K, Kirkwood G, Rampes H, Richardson J. Yoga for depression: The research evidence. J Affect Disord. 2005 Sep 23.

Research Council for Complementary Medicine, London, UK; School of Integrated Health, University of Westminster, 115 New Cavendish Street, London W1W 6UW, UK.

BACKGROUND: The aim of this study is to systematically review the research evidence on the effectiveness of yoga for this indication. RESULTS: Five randomised controlled trials were located, each of which utilised different forms of yoga interventions and in which the severity of the condition ranged from mild to severe. CONCLUSIONS: Overall, the initial indications are of potentially beneficial effects of yoga interventions on depressive disorders. Variation in interventions, severity and reporting of trial methodology suggests that the findings must be interpreted with caution. Several of the interventions may not be feasible in those with reduced or impaired mobility. Nevertheless, further investigation of yoga as a therapeutic intervention is warranted.

PMID: 16185770

Rating: 1b

Pinzur MS, Graham G, Osterman H. Psychologic testing in amputation rehabilitation. *Clin Orthop Relat Res.* 1988 Apr;(229):236-40.

Psychologic testing may play an important role in determining the rehabilitation potential of the dysvascular amputee.

PMID: 3349683

Rating: 3b

Pittler MH, Ernst E. Kava extract for treating anxiety (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software.

Objectives: To systematically review the evidence from rigorous clinical trials assessing the efficacy and safety of kava extract versus placebo for the treatment of anxiety.
Main results: Seven trials met the inclusion criteria. All of the reviewed trials suggest superiority of kava extract over placebo.
Reviewers' conclusions: The evidence presented implies that kava extract is superior compared with placebo and relatively safe as a treatment option for anxiety. These findings warrant further and more rigorous investigations into the efficacy and safety of kava extract.

PMID: 12076477

Rating: 1b

Pollack MH, Allgulander C, Bandelow B, Cassano GB, Greist JH, Hollander E, Nutt DJ, Okasha A, Swinson RP; World Council of Anxiety. WCA recommendations for the long-term treatment of panic disorder. *CNS Spectr*. 2003 Aug;8(8 Suppl 1):17-30

Division of Psychiatry, Huddinge University Hospital, Stockholm, Sweden.
mpollack@partners.org

Selective serotonin reuptake inhibitors have emerged as the most favorable treatment, as they have a beneficial side-effect profile, are relatively safe (even if taken in overdose), and do not produce physical dependency.

PMID: 14767395

Rating: 5a

Power KG, McGoldrick T, Brown K, et al. A controlled comparison of eye movement desensitization and reprocessing versus exposure plus cognitive restructuring, versus waiting list in the treatment of posttraumatic stress disorder. 2002;9:299-318.

Rating: 1c

Prager J, Jacobs M. Evaluation of patients for implantable pain modalities: medical and behavioral assessment. *Clin J Pain*. 2001 Sep;17(3):206-14.

California Pain Medicine Centers and Reflex Sympathetic Dystrophy Institute, University of California School of Medicine, Los Angeles 90095, USA. paindoc@UCLA.edu

Patients with chronic pain are subject to neurophysiological, emotional, and behavioral influences that govern their perception of pain and of pain relief. Therefore, treatment of chronic pain is multidisciplinary, drawing on cognitive and behavioral psychological therapies, functional rehabilitation, orthopedic and neurologic surgery, medications, nerve blockade, neuroaugmentative procedures, and sometimes neurodestructive procedures. Appropriate selection of patients helps ensure that implantable therapies are used for those who are most likely to benefit.

PMID: 11587110

Rating: 5c

Rahe RH, Taylor CB, Tolles RL, Newhall LM, Veach TL, Bryson S. A novel stress and coping workplace program reduces illness and healthcare utilization. Psychosom Med. 2002 Mar-Apr;64(2):278-86.

Nevada Stress Center, Code 151-C, VA Sierra Nevada Health Care System, 1000 Locust Street, Reno, NV 89502-2597, USA. rahe@equinox.unr.edu

OBJECTIVE: The purpose of this study was to determine if a novel workplace stress management program, delivered either face-to-face or by self-help, would reduce illness and health services utilization among participants. RESULTS: All three groups reported significant improvement in their stress, anxiety, and coping across the year. Full intervention participants showed a more rapid reduction in negative responses to stress than did participants from the other groups. Full-intervention subjects also reported fewer days of illness than subjects in the other groups. CONCLUSIONS: These results indicated that a work-site program that focuses on stress, anxiety, and coping measurement along with small-group educational intervention can significantly reduce illness and healthcare utilization.

PMID: 11914444

Rating: 2a

Rapaport MH, Endicott J, Clary CM. Posttraumatic stress disorder and quality of life: results across 64 weeks of sertraline treatment. *J Clin Psychiatry* 2002 Jan;63(1):59-65.

Department of Psychiatry, University of California, San Diego, La Jolla, CA 92037, USA.

METHOD: QOL and psychosocial functioning were analyzed in 359 randomly assigned patients across a 3-phase study of sertraline in the treatment of chronic DSM-III-R-defined PTSD. CONCLUSION: Sertraline treatment of chronic PTSD is associated with rapid improvement in quality of life that is progressive and sustained over the course of more than 1 year of treatment.

PMID: 11838628

Rating: 2a

Raskind MA, Peskind ER, Kanter ED, Petrie EC, Radant A, Thompson CE, Dobie DJ, Hoff D, Rein RJ, Straits-Troster K, Thomas RG, McFall MM. Reduction of nightmares and other PTSD symptoms in combat veterans by prazosin: a placebo-controlled study. *Am J Psychiatry*. 2003 Feb;160(2):371-3.

Northwest Network VISN 20 Mental Illness Research, Eduation, and Clinical Center, VA Puget Sound Healthcare System, Seattle, USA. murray.raskind@med.va.gov

METHOD: Ten Vietnam combat veterans with chronic PTSD and severe trauma-related nightmares each received prazosin and placebo in a 20-week double-blind crossover protocol. CONCLUSIONS: These data support the efficacy of prazosin for nightmares, sleep disturbance, and other PTSD symptoms.

PMID: 12562588

Rating: 2c

Rawl SM, Given BA, Given CW, Champion VL, Kozachik SL, Kozachik SL, Barton D, Emsley CL, Williams SD. Intervention to improve psychological functioning for newly diagnosed patients with cancer. Oncol Nurs Forum. 2002 Jul;29(6):967-75.

School of Nursing, Indiana University, Indianapolis, IN, USA. srawl@iupui.edu

PURPOSE/OBJECTIVES: To test the effects of a computer-based nursing intervention designed to provide patients and family caregivers with concrete, objective information on symptom management; provide education about disease and treatment; coordinate medical resources; and provide emotional support and counseling. IMPLICATIONS FOR NURSING: This nurse-directed intervention resulted in improved mental health for patients; however, physical subscales were not changed.

PMID: 12096294

Rating: 2b

Rayner L, Price A, Evans A, Valsraj K, Higginson IJ, Hotopf M. Antidepressants for depression in physically ill people. *Cochrane Database Syst Rev*. 2010 Mar 17;3:CD007503.

RESULTS: Fifty-one studies including 3603 participants were included in the review. CONCLUSIONS: This review provides evidence that antidepressants are superior to placebo in treating depression in physical illness.

PMID: 20238354

Reid WH. Treating clinicians and expert testimony. *Journal of Practical Psychiatry and Behavioral Health.* March, 1998, 4:121-123.

Rating: 5b

Ren J, Li H, Palaniyappan L, Liu H, Wang J, Li C, Rossini PM. Repetitive transcranial magnetic stimulation versus electroconvulsive therapy for major depression: a systematic review and meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry*. 2014 Jun 3;51:181-9. doi: 10.1016/j.pnpbp.2014.02.004.

PMID: 24556538

Rating: 1a

Resick PA, Nishith P, Weaver TL, Astin MC, Feuer CA. A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *J Consult Clin Psychol* 2002 Aug;70(4):867-79.

Center for Trauma Recovery, Department of Psychology, University of Missouri-St. Louis, 63121, USA. resick@umsl.edu

One hundred seventy-one female rape victims were randomized into 1 of the 3 conditions, and 121 completed treatment. The 2 therapies had similar results except that CPT produced better scores on 2 of 4 guilt subscales.

PMID: 12182270

Rating: 2b

Resick PA, Nishith P. Two-year follow-up of a clinical trial comparing cognitive processing therapy and prolonged exposure for the treatment of PTSD. In: Reaching underserved trauma survivors through community-based programs: 17th Annual Meeting of the International Society for Traumatic Stress Studies. 2001.

Rating: 2c

Reynaert C, Janne P, Vause M, Zdanowicz N, Lejeune D. Clinical trials of antidepressants: the hidden face: where locus of control appears to play a key role in depression outcome. Psychopharmacology (Berl). 1995 Jun;119(4):449-54.

Psychosomatic Medicine Unit, Cliniques Universitaires de Mont-Godinne, Catholic University of Louvain, Yvoir, Belgium.

Conclusion: “Results show that with a classical design of clinical trials of antidepressants, locus of control plays a significant role if it is internal ($P < 0.001$) in consolidating the improvement process, and that this is true irrespective of type of antidepressant.”

PMID: 7480525

Rating: 2c

Richardson GS, Roehrs TA, Rosenthal L, Koshorek G, Roth T. Tolerance to daytime sedative effects of H1 antihistamines. *J Clin Psychopharmacol*. 2002 Oct;22(5):511-5.

These data provide the first objective confirmation that tolerance develops to the sedative effect of a prototypical first-generation H1 antihistamine, diphenhydramine. On this dosing regimen, tolerance was complete by the end of 3 days of administration.

PMID: 12352276

Rating: 2b

Robinson J, Biley F, Dolk H. Therapeutic touch for anxiety disorders. *Cochrane Database Syst Rev.* 2007 Jul 18;(3):CD006240.

Given the high prevalence of anxiety disorders and the current paucity of evidence on therapeutic touch in this population, there is a need for well conducted randomised controlled trials to examine the effectiveness of therapeutic touch for anxiety disorders.

PMID: 17636838

Rating: 1b

Roder C, Schaefer M, Leucht S. Meta-analysis of effectiveness and tolerability of treatment of mild to moderate depression with St. John's Wort. *Fortschr Neurol Psychiatr.* 2004 Jun;72(6):330-43.

Humboldt Universitat zu Berlin, Institut fur Klinische Pharmakologie.

After anxiety, depression is one of the most common psychiatric diseases, showing a lifetime prevalence of 4.4 - 18 %. Thirty studies met the inclusion as well as the quality criteria and were included in the meta-analysis. Four studies consisted of all three arms and were thus included in both analyses. Our results demonstrated a significant advantage for St. John's Wort compared to placebo (n = 2129, RR = 0.66, 95 % CI 0.57 - 0.78, p < 0.00001, NNT = 4.2 95 % CI 3.0 - 6.6, mean response: 53.3 vs. 32.7 %). This result viewed together with St. John's Wort's favourable side-effects profile, leading to a lower rate of drop-outs, suggests treatment with St. John's Wort should be attempted for milder forms of depression. Funnel plot analysis suggested publication bias could exist for the comparison with placebo. To put this in a perspective the fail-safe-N-test calculated that 423 studies with no effect would be needed to negate the presented result for placebo studies.

PMID: 15211398

Rating: 1b

Rogers R, Kropp PR, Bagby RM, Dickens SE. Faking specific disorders: a study of the Structured Interview of Reported Symptoms (SIRS). *J Clin Psychol*. 1992 Sep;48(5):643-8.

Department of Psychology, University of North Texas, Denton 76203-3587.

We tested the effectiveness of the Structured Interview of Reported Symptoms (SIRS) to detect feigning of three diagnostic groupings: schizophrenia, mood disorders, and PTSD on 45 psychologically knowledgeable correctional residents. We found that the SIRS maintained its powers of discrimination with respect to clinical samples.

PMID: 1401150

Rating: 4b

Rogers S, Silver SM, Goss J, Obenchain J, Willis A, Whitney RL. A single session, group study of exposure and eye movement desensitization and reprocessing in treating posttraumatic stress disorder among Vietnam war veterans: preliminary data. *J Anxiety Disord* 1999 Jan-Apr;13(1-2):119-30.

PTSD Program, Department of Veterans Affairs Medical Center, Coatesville, Pennsylvania 19320, USA. rogers.susan@coatesville.va.gov

Two groups (total N = 12) of Vietnam War veterans diagnosed with Posttraumatic Stress Disorder (PTSD) received a single session of exposure or Eye Movement Desensitization and Reprocessing (EMDR) focusing on the veterans' most distressing war experience. EMDR treatment resulted in greater positive changes in within-session Subjective Units of Discomfort levels and on self-monitored severity of intrusive recollection.

PMID: 10225504

Rating: 2c

Rohan ML, Yamamoto RT, Ravichandran CT, Cayetano KR, Morales OG, Olson DP, Vitaliano G, Paul SM, Cohen BM. Rapid mood-elevating effects of low field magnetic stimulation in depression. *Biol Psychiatry*. 2014 Aug 1;76(3):186-93. doi: 10.1016/j.biopsych.2013.10.024.

PMID: 24331545

Rating: 2b

Rohling ML, Binder LM, Langhinrichsen-Rohling J. Money matters: A meta-analytic review of the association between financial compensation and the experience and treatment of chronic pain. *Health Psychol*. 1995 Nov;14(6):537-47.

Department of Psychology, University of Nebraska, Lincoln 68588-0308, USA.

Meta-analytic procedures were used to determine the relation between disability compensation and pain. Of the 157 relevant identified studies, only 32 contained quantifiable data from treatment and control groups. The majority of these exclusively examined chronic low back pain patients (72%). Overall, 136 comparisons were obtained, on the basis of 3,802 pain patients and 3,849 controls. Liberal procedures for estimating effect sizes (ESs) yielded an ES of .60 ($p < .0002$). Conservative procedures yielded an ES of .48 ($p < .0005$). Both ESs differed from zero, indicating that compensation is related to increased reports of pain and decreased treatment efficacy.

PMID: 8565928

Rating: 1b

Rosch P, Work Stress Taking Larger Financial Toll, *American Institute of Stress (AIS)*, 08/12/03

By Steve James NEW YORK (Reuters) - In the 1999 movie "Office Space," stressed-out workers crammed in cubicles and belittled by incompetent bosses plot to break out of their bored existence. One smashes the permanently jammed photocopy machine and another finally loses it and burns down the office. Hollywood fantasy? Perhaps, but job stress is a leading cause of illness, depression and work place violence in America today and is increasing, experts say.

It is estimated to cost U.S. industry a staggering $300 billion a year in absenteeism, health costs and programs to help workers manage stress as unemployment rises and companies cut staff in what is euphemistically known as "down-sizing." Fears of losing jobs as the economy stalls, or not having a personal life as pagers, cell phones and the Internet keep employees linked to their work 24 hours a day, have Americans complaining of muscular pain or fatigue or even seeking therapy. Surveys show more people are driven to frustration or physical violence by the daily demands they face at work. "Stress is increasing dramatically," said Dr. Paul Rosch, president of the American Institute of Stress (AIS), which estimates 1 million workers are absent daily due to stress. Causes range from the demands of competing in the global marketplace, the need to keep up with new equipment and technology and creeping depersonalization in the work place.

"VERY FRUSTRATING" - "People sit 6 feet apart in little cubicles and never speak with each other except by computer. You never hear a human voice and it's 'press one' or 'press three', it's very frustrating," Rosch told Reuters by telephone from his office in Yonkers, New York. The European Agency for Safety and Health at Work reports that more than half of the 550 million working days lost annually in the United States from absenteeism are stress-related and that one-in-five of all last minute no-shows are due to job stress.

"We estimate it (stress) costs American industry $300 billion a year in terms of diminished productivity, employee turnover and insurance," the AIS's Rosch said. His institute cites a 2000 Gallup Poll, "Attitudes in the American Workplace," sponsored by The Marlin Co., a North Haven, Connecticut-based work place communications firm. It found that 80 percent of workers feel stress on the job and nearly half say they need help coping with it. Twenty-five percent have felt like screaming or shouting because of job stress, 14 percent felt like striking a co-worker and 10 percent are concerned about a colleague becoming violent.

According to AIS, an average of 20 workers are murdered each week in the United States, making homicide the second leading cause of work place deaths. "Postal workers who work in a safe environment have experienced so many fatalities due to job stress that 'going postal' has crept into our language," the Institute's Web site, http://www.stress.org, says. "Desk rage" and "phone rage" have also become increasingly common terms, it said. Adding to the increasing stress of modern living, Americans work longer hours and take fewer vacations to unwind, than people in Europe or elsewhere. An International Labor Organization study showed that Americans worked the equivalent of an extra 40-hour week in 2000 than 10 years before. Americans work almost a month longer than the Japanese and three months more than Germans, it said.

MORALE CAN SUFFER - Stress can manifest itself in different ways, from breaking out in hives to chronic headaches, back pain, obesity, insomnia and depression, all contriving to drive up health-care costs. In addition, morale often suffers. Betsy Robinson, director of strategic program development at Intracorp, a medical and disability management company, said a recent survey by Mercer Management Consulting revealed that although muscular and skeletal problems are the leading cause of disability in the work place, 70 percent of employers said stress was the fastest growing cause.

"It's a strong driver of absence and requires management," she told Reuters. "It's in a kind of stealth mode, because although headaches or insomnia may be the reason for long-term absence, underneath could be stress." Diane Larson, employee assistance consultant at Cigna Behavioral Health, a subsidiary of health insurer Cigna Corp. (NYSE:CI - News), said stress covers many things such as uncertainty over the future, lack of recognition by employers, a lack of control or unsure job responsibilities. She said she speaks to employers about different ways to identify stress in workers and institute programs to prevent or deal with it on an individual basis or in wellness seminars. "We talk of red flags, such as increasing absenteeism, decreases in job performance, not being able to complete jobs, or even crying and anger on the job," Larson said. "Earlier intervention is better."

Rose Suzanna, Jonathan Bisson, Simon Wessely. Psychological debriefing for preventing post traumatic stress disorder (PTSD) (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software.

Background: Over approximately the last last fifteen years early psychological interventions such as psychological 'debriefing' have been increasingly used to treat psychological trauma. While these intervention have become popular and their use spread to several settings - efficacy had largely not been tested emprically.
Main results: Single session individual debriefing did not reduce psychological distress nor prevent the onset of post traumatic stress disorder (PTSD).
There was also no evidence that debriefing reduced general psychological morbidity, depression or anxiety.
Reviewers' conclusions: There is no current evidence that psychological debriefing is a useful treatment for the prevention of post traumatic stress disorder after traumatic incidents. Compulsory debriefing of victims of trauma should cease.

PMID: 12076399

Rating: 1a

Rosenbaum JF, Zajecka J. Clinical management of antidepressant discontinuation. *J Clin Psychiatry*. 1997;58:37-40

To minimize the symptoms of antidepressant discontinuation, gradual tapering is necessary for all serotonin reuptake inhibitors (SRIs) except fluoxetine, which has an extended half-life. Agents with shorter half-lives such as venlafaxine, fluvoxamine, and paroxetine should be tapered gradually. The symptoms may be somatic (e.g., dizziness and light-headedness; nausea and vomiting; fatigue, lethargy, myalgia, chills, and other flu-like symptoms; sensory and sleep disturbances) or psychological (anxiety and/or agitation, crying spells, irritability).

PMID: 9219493

Rating: 5b

Rosenthal JZ, Grosswald S, Ross R, Rosenthal N. Effects of transcendental meditation in veterans of Operation Enduring Freedom and Operation Iraqi Freedom with posttraumatic stress disorder: a pilot study. *Mil Med.* 2011 Jun;176(6):626-30.

TM may have helped to alleviate symptoms of PTSD and improve quality of life in this small group of veterans.

PMID: 21702378

Rating: 5c

Roth S, Batson R. Naming the shadows: a new approach to individual and group psychotherapy for adult survivors of childhood incest. New York (NY): Free Press; 1997.

Rating: 9b

Rothbaum BO, Meadows EA, Resick P, et al. Chapter 4: cognitive-behavioral therapy. In: Foa EB, Keane TM, Friedman MJ, editor(s). Effective treatment for PTSD: practice guidelines from the International Society for Traumatic Stress Studies. New York (NY): Guilford Press; 2000. p. 60-83.

Rating: 9a

Rothbaum B. Psychosocial treatments for posttraumatic stress disorder. TEN 2001; 3 (10):59-63.

Rating: 5b

Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines Team for Panic Disorder and Agoraphobia. Australian and New Zealand clinical practice guidelines for the treatment of panic disorder and agoraphobia. *Aust N Z J Psychiatry*. 2003 Dec;37(6):641-56.

TREATMENT RECOMMENDATIONS: Education for the patient and significant others covering: (i) the nature and course of panic disorder and agoraphobia; (ii) an explanation of the psychopathology of anxiety, panic and agoraphobia; (iii) rationale for the treatment, likelihood of a positive response, and expected time frame. Cognitive behaviour therapy (CBT) is more effective and more cost-effective than medication. Tricyclic antidepressants (TCAs) and serotonin selective reuptake inhibitors are equal in efficacy and both are to be preferred to benzodiazepines.

PMID: 14636376

Rating: 1b

Roy-Byrne P, Craske MG, Sullivan G, Rose RD, Edlund MJ, Lang AJ, Bystritsky A, Welch SS, Chavira DA, Golinelli D, Campbell-Sills L, Sherbourne CD, Stein MB. Delivery of evidence-based treatment for multiple anxiety disorders in primary care: a randomized controlled trial. *JAMA*. 2010 May 19;303(19):1921-8.

DESIGN, SETTING, AND PATIENTS: A randomized controlled effectiveness trial of Coordinated Anxiety Learning and Management (CALM) compared with UC in 17 primary care clinics in 4 US cities. Between June 2006 and April 2008, 1004 patients with anxiety disorders (with or without major depression). INTERVENTION: CALM allowed choice of cognitive behavioral therapy (CBT), medication, or both; included real-time Web-based outcomes monitoring to optimize treatment decisions; and a computer-assisted program to optimize delivery of CBT by nonexpert care managers who also assisted primary care clinicians in promoting adherence and optimizing medications. RESULTS: A significantly greater improvement for CALM vs UC in global anxiety symptoms was found. CONCLUSION: For patients with anxiety disorders treated in primary care clinics, CALM compared with UC resulted in greater improvement in anxiety symptoms, depression symptoms, functional disability, and quality of care during 18 months of follow-up.

PMID: 20483968

Rating: 2a

Ruchinskas R, O'Grady T. Psychological Variables Predict Decisions Regarding Implantation of a Spinal Cord Stimulator *Neuromodulation*; 2000;3:183-189.

Objectives. To examine the psychological status of candidates for spinal cord stimulator implantation and elucidate possible personality variables that impact implantation decisions. Materials and Methods. This study surveyed 47 consecutively referred patients for possible implantation in an academic medical center outpatient pain clinic. Participants completed the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), McGill Pain Questionnaire, and a locus of control scale. MANOVA and discriminant analysis was utilized to examine personality variables and implantation decisions. Results. Individuals who ultimately declined implantation of the stimulator were psychologically different from those acceding to permanent implantation. Permanently implanted patients were more open to admitting psychological distress, less somatically preoccupied, and possibly more submissive than those who refused. Conclusions. The MMPI-2 was able to predict final implantation status. The results suggest that patient personality characteristics exercise a significant role in decisions regarding stimulator implantation

Rating: 5c

Ruo B, Bertenthal D, Sen S, Bittner V, Ireland CC, Hlatky MA. Self-rated health among women with coronary disease: depression is as important as recent cardiovascular events. Am Heart J. 2006 Nov;152(5):921.e1-7.

Division of General Internal Medicine, Department of Internal Medicine, Feinberg School of Medicine, Northwestern University, Chicago, IL 60611-2927, USA.

Women with persistent or new depression are more likely to report fair/poor self-rated health. The magnitude of the impact of persistent or new depression is comparable to that of major cardiac events.

PMID: 17070159

Rating: 3b

Rutledge T, Reis SE, Olson MB, Owens J, Kelsey SF, Pepine CJ, Mankad S, Rogers WJ, Merz CN, Sopko G, Cornell CE, Sharaf B, Matthews KA, Vaccarino V. Depression symptom severity and reported treatment history in the prediction of cardiac risk in women with suspected myocardial ischemia: The NHLBI-sponsored WISE study. *Arch Gen Psychiatry*. 2006 Aug;63(8):874-80.

Department of Psychiatry, VA San Diego Healthcare System and University of California, San Diego, CA 92161, USA. Thomas.Rutledge@med.va.gov

Among women with suspected myocardial ischemia, a combination of depressive symptom severity and treatment history was a strong predictor of an elevated CAD risk profile and increased risk of cardiac events compared with those without depression or with only 1 of the 2 measured depression markers.

PMID: 16894063

Rating: 3b

Rush AJ, Fava M, Wisniewski SR, Lavori PW, Trivedi MH, Sackeim HA, Thase ME, Nierenberg AA, Quitkin FM, Kashner TM, Kupfer DJ, Rosenbaum JF, Alpert J, Stewart JW, McGrath PJ, Biggs MM, Shores-Wilson K, Lebowitz BD, Ritz L, Niederehe G; STAR*D Investigators Group. Sequenced treatment alternatives to relieve depression (STAR*D): rationale and design. *Control Clin Trials*. 2004 Feb;25(1):119-42.

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STAR*D is a multisite, prospective, randomized, multistep clinical trial of outpatients with nonpsychotic major depressive disorder. The study compares various treatment options for those who do not attain a satisfactory response with citalopram, a selective serotonin reuptake inhibitor antidepressant. The study enrolls 4000 adults (ages 18-75) from both primary and specialty care practices who have not had either a prior inadequate response or clear-cut intolerance to a robust trial of protocol treatments during the current major depressive episode.

PMID: 15061154

Rating: 5b

Rybarczyk B, Edwards R, Behel J. Diversity in adjustment to a leg amputation: case illustrations of common themes. *Disabil Rehabil*. 2004 Jul 22-Aug 5;26(14-15):944-53.

Psychological assessment and referrals for treatment should be included as part of the routine care provided to individuals with amputations, irrespective of the length of time that has passed since the amputation.

PMID: 15497926

Rating: 5b

Sadock BJ, Sadock VA (2003). *Kaplan and Sadock's Synopsis of Psychiatry, Ninth Edition.* Lippincott Williams and Wilkins.

The best-selling general psychiatry text since 1972, Kaplan and Sadock's Synopsis of Psychiatry is now in its thoroughly updated Tenth Edition. This complete, concise overview of the entire field of psychiatry is a staple

Rating: 9b

Safer DL, Telch CF, Agras WS. Dialectical behavior therapy for bulimia nervosa. *Am J Psychiatry* 2001 Apr;158(4):632-4.

Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, 401 Quarry Road, Stanford, CA 94305-5722, USA. dlsafer@stanford.edu

METHOD: Thirty-one women (averaging at least one binge/purge episode per week) were randomly assigned to 20 weeks of dialectical behavior therapy or 20 weeks of a waiting-list comparison conditionCONCLUSIONS: The use of dialectical behavior therapy adapted for treatment of bulimia nervosa was associated with a promising decrease in binge/purge behaviors.

PMID: 11282700

Sarris J, Kavanagh DJ, Byrne G, Bone KM, Adams J, Deed G. The Kava Anxiety Depression Spectrum Study (KADSS): a randomized, placebo-controlled crossover trial using an aqueous extract of Piper methysticum. *Psychopharmacology* (Berl). 2009 Aug;205(3):399-407. Epub 2009 May 9.

School of Medicine, The University of Queensland, Brisbane, Australia, j.sarris@uq.edu.au.

DESIGN: The Kava Anxiety Depression Spectrum Study was a 3-week placebo-controlled, double-blind crossover trial that recruited 60 adult participants with 1 month or more of elevated generalized anxiety. Five Kava tablets per day were prescribed containing 250 mg of kavalactones/day. CONCLUSIONS: The aqueous Kava preparation produced significant anxiolytic and antidepressant activity and raised no safety concerns at the dose and duration studied. Kava appears equally effective in cases where anxiety is accompanied by depression. This should encourage further study and consideration of globally reintroducing aqueous rootstock extracts of Kava for the management of anxiety.

PMID: 19430766

Rating: 2b

Saunders T, Driskell JE, Johnston JH, Salas E. The effect of stress inoculation training on anxiety and performance. J Occup Health Psychol. 1996 Apr;1(2):170-86.

Florida Maxima Corporation, Winter Park 32789, USA.

A meta-analysis was conducted to determine the overall effectiveness of stress inoculation training and to identify conditions that may moderate the effectiveness of this approach.. Results indicated that stress inoculation training was an effective means for reducing performance anxiety, reducing state anxiety, and enhancing performance under stress.

PMID: 9547044

Rating: 1b

Schatzberg AF, Blier P, Delgado PL, Fava M, Haddad PM, Shelton RC. Antidepressant discontinuation syndrome: consensus panel recommendations for clinical management and additional research*. J Clin Psychiatry*. 2006;67:27-30.

OBJECTIVE: Currently, no evidence-based guidelines exist for the management of serotonin reuptake inhibitor (SRI) discontinuation syndrome. This article summarizes recommendations with respect to future research as well as clinical management recommendations for SRI discontinuation syndrome.

PMID: 16683860

Rating: 5a

Schnurr PP. Outcome of a randomized clinical trial of group therapy for PTSD. In: Reaching undeserved trauma survivors through community-based programs: 17th Annual Meeting of the International Society for Traumatic Stress Studies. 2001 Dec 6-9.

Rating: 2c

Schoeyen HK, Kessler U, Andreassen OA, Auestad BH, Bergsholm P, Malt UF, Morken G, Oedegaard KJ, Vaaler A. Treatment-resistant bipolar depression: a randomized controlled trial of electroconvulsive therapy versus algorithm-based pharmacological treatment. *Am J Psychiatry*. 2015 Jan;172(1):41-51. doi: 10.1176/appi.ajp.2014.13111517.

PMID: 25219389

Rating: 2b

Schutt RK, Garrett GR. Responding to the homeless: policy and practice. New York: Plenum; 1992.

Rating: 9b

Schweitzer I, Maguire K. Stopping antidepressants. *Aust Prescr* 2001;24:13-5.

A review of discontinuation of antidepressants.

Rating: 5c

Segerstrom SC, Miller GE. Psychological stress and the human immune system: a meta-analytic study of 30 years of inquiry. *Psychol Bull*. 2004 Jul;130(4):601-30.

Department of Psychology, University of Kentucky, Lexington, KY 40506, USA.
scsege0@uky.edu

The present report meta-analyzes more than 300 empirical articles describing a relationship between psychological stress and parameters of the immune system in human participants. In some cases, physical vulnerability as a function of age or disease also increased vulnerability to immune change during stressors.

PMID: 15250815

Rating: 1c

Seidler GH, Wagner FE. Comparing the efficacy of EMDR and trauma-focused cognitive-behavioral therapy in the treatment of PTSD: a meta-analytic study. *Psychol Med*. 2006 Nov;36(11):1515-22.

Department of Psychotraumatology, Psychosomatic Hospital, University of Heidelberg, Germany. guenter_seidler@med.uni-heidelberg.de

BACKGROUND: Eye movement desensitization and reprocessing (EMDR) and trauma-focused cognitive-behavioral therapy (CBT) are both widely used in the treatment of post-traumatic stress disorder (PTSD). There has, however, been debate regarding the advantages of one approach over the other. CONCLUSIONS: Our results suggest that in the treatment of PTSD, both therapy methods tend to be equally efficacious.

PMID: 16740177

Rating: 1b

Sengül O, Uygur D, Güleç M, Dilbaz B, Simsek EM, Göktolga U. The comparison of folate and vitamin B12 levels between depressive and nondepressive postmenopausal women. *Turk J Med Sci*. 2014;44:611-5.

PMID: 25551931

Rating: 3b

Servan-Schreiber D, Schooler J, Dew MA, Carter C, Bartone P. Eye movement desensitization and reprocessing for posttraumatic stress disorder: a pilot blinded, randomized study of stimulation type. *Psychother Psychosom*. 2006;75(5):290-7.

University of British Columbia, Vancouver, Canada. ddss@pitt.edu

BACKGROUND: Eye movement desensitization and reprocessing (EMDR) is becoming a recognized and accepted form of psychotherapy for posttraumatic stress disorder (PTSD). RESULTS: All three stimulation types resulted in clinically significant reductions of subjective units of distress (SUD). Yet, alternating stimulation resulted in faster reductions of SUD when only sessions starting with a new target memory were considered. CONCLUSIONS: There are clinically significant effects of the EMDR procedure that appear to be independent of the nature of the kinesthetic stimulation used. However, alternating stimulation may confer an additional benefit to the EMDR procedure that deserves attention in future studies.

PMID: 16899965

Rating: 3c

Shannahoff-Khalsa DS. An introduction to Kundalini yoga meditation techniques that are specific for the treatment of psychiatric disorders. *J Altern Complement Med*. 2004 Feb;10(1):91-101.

The Research Group for Mind-Body Dynamics, Institute for Nonlinear Science, University of California, San Diego, La Jolla, 92093-0402, USA. dsk@ucsd.edu

The ancient system of Kundalini yoga includes a vast array of meditation techniques and many were discovered to be specific for treating the psychiatric disorders as we know them today. One such technique was found to be specific for treating obsessive-compulsive disorder (OCD), the fourth most common psychiatric disorder, and the tenth most disabling disorder worldwide. Two published clinical trials are described here for treating OCD using a specific Kundalini yoga protocol. These techniques are specific for phobias, addictive and substance abuse disorders, major depressive disorders, dyslexia, grief, insomnia and other sleep disorders.

PMID: 15025884

Rating: 5b

Shaw E, Levitt C, Wong S, Kaczorowski J; The McMaster University Postpartum Research Group. Systematic review of the literature on postpartum care: effectiveness of postpartum support to improve maternal parenting, mental health, quality of life, and physical health. *Birth*. 2006 Sep;33(3):210-20.

RESULTS: In women at high risk for family dysfunction and child abuse, nurse home visits combined with case conferencing produced a statistically significant improvement in home environment quality using the HOME (Home Observation for Measurement of the Environment) program. Similarly, in women at high risk for either family dysfunction or postpartum depression, home visitation or peer support, respectively, produced a statistically significant reduction in Edinburgh Postnatal Depression Scale scores (difference - 2.23, 95% CI -3.72 to -0.74, p= 0.004; and 15.0% vs 52.4%, OR 6.23, 95% CI 1.40 to 27.84, p= 0.01, respectively). CONCLUSIONS: No randomized controlled trial evidence was found to endorse universal provision of postpartum support to improve parenting, maternal mental health, maternal quality of life, or maternal physical health. There is some evidence that high-risk populations may benefit from postpartum support.

PMID: 16948721

Rating: 1b

Shell WE, May LA, Bullias DH, Pavlik SL, Silver DS. Sentra PM (a Medical Food) and Trazodone in the Management of Sleep Disorders. *J Cent Nerv Syst Dis*. 2012 Apr 23;4:65-72. doi: 10.4137/JCNSD.S9381.

PMID: 23650468

Rating: 2c

Note: The *Journal of Central Nervous System Disease* is a pay-to-publish journal, changing $1,848 per article. And the primary authors are employees of Targeted Medical Pharma (TMP). All authors are employees or consultants of TMP, and TMP is also the institution at which the data was compiled and prepared for the manuscript.

Shelton RC. The nature of the discontinuation syndrome associated with antidepressant drugs. *J Clin Psychiatry*. 2006;67:3-7.

A common phenomenon accompanying treatment with nearly every major class of antidepressant is the emergence of the discontinuation syndrome in some patients. It is seen most frequently after the abrupt cessation of agents with shorter half-lives.

PMID: 16683856

Rating: 5c

Shelton RC, Sloan Manning J, Barrentine LW, Tipa EV. Assessing Effects of l-Methylfolate in Depression Management: Results of a Real-World Patient Experience Trial. Prim Care Companion *CNS Disord.* 2013;15

PMID: 24392264

Rating: 3c

Shengold L. Soul murder: the effects of childhood abuse and deprivation. New Haven (CT): Yale University Press; 1989.

Rating: 9b

Shepherd J, Stein K, Milne R. Eye movement desensitization and reprocessing in the treatment of post-traumatic stress disorder: a review of an emerging therapy. *Psychol Med* 2000 Jul;30(4):863-71. [45 references]

Wessex Institute for Health Research and Development, University of Southampton.

RESULTS: We found 16 published randomized controlled trials (RCTs) comparing EMDR with alternative psychotherapy treatments, variants of EMDR and with delayed treatment groups. Studies were generally small (mean number of patients = 35) and of variable methodological quality, with only five reporting blinding of outcome assessors to treatment allocation, and in some cases with high loss to follow-up. In most cases EMDR was shown to be effective at reducing symptoms up to 3 months after treatment. In one case benefit was maintained up to 9 months and in another (uncontrolled) follow-up treatment effect was present at 15 months. Two studies suggest that EMDR is as effective as exposure therapies, three claim greater effectiveness in comparison to relaxation training, and three claim superiority over delayed treatment groups. Of the studies examining specific treatment components, two found that treatment with eyes moving was more effective than eyes fixed, while three studies found the two procedures to be of equal effectiveness. CONCLUSION: The evidence in support of EMDR is of limited quality but results are encouraging for this inexpensive, simple therapy.

PMID: 11037095

Rating: 1b

Sherman JJ. Effects of psychotherapeutic treatments for PTSD: a meta-analysis of controlled clinical trials. *J Trauma Stress* 1998 Jul;11(3):413-35.

University of Washington, College of Medicine, Department of Psychiatry and Behavioral Science, Seattle 98195-6560, USA.

The impact of psychotherapy on PTSD and psychiatric symptomatology was significant, d = .52, r = .25, when measured immediately after treatments were administered. Similarly, there was no decay in the effect of treatment at follow-up, d = .64, r = .31. Moreover, for target symptomes of PTSD and general psychological symptomes (intrusion, avoidance, hyperarousal, anxiety, and depression), effect sizes were significant, ranging from r's of .2-.49.

PMID: 9690185

Rating: 1b

Shippy RA, Mendez D, Jones K, Cergnul I, Karpiak SE. S-adenosylmethionine (SAM-e) for the treatment of depression in people living with HIV/AIDS. *BMC Psychiatry*. 2004 Nov 11;4:38.

ACRIA (AIDS Community Research Initiative of America), 230 West 38th St, 17th Floor, New York, NY 10018, USA. ashippy@acria.org

SAM-e has a rapid effect evident as soon as week 1 ($p < .001$), with progressive decreases in depression symptom rating scores throughout the 8 week study.

PMID: 15538952

Rating: 3c

Sijbrandij M, Olff M, Reitsma JB, Carlier IV, Gersons BP. Emotional or educational debriefing after psychological trauma. Randomised controlled trial. *Br J Psychiatry*. 2006 Aug;189:150-5.

Academic Medical Centre, Department of Psychiatry, Tafelbergweg 25, 1105 BC, Amsterdam, The Netherlands. e.m.sijbrandij@amc.uva.nl

Our study did not provide evidence for the usefulness of individual psychological debriefing in reducing symptoms of PTSD, anxiety and depression after psychological trauma.

PMID: 16880485

Rating: 2b

Sivertsen B, Omvik S, Pallesen S, Bjorvatn B, Havik OE, Kvale G, Nielsen GH, Nordhus IH. Cognitive behavioral therapy vs zopiclone for treatment of chronic primary insomnia in older adults: a randomized controlled trial. *JAMA*. 2006 Jun 28;295(24):2851-8.

Department of Clinical Psychology, University of Bergen, Bergen, Norway.
borge.sivertsen@psykp.uib.no

Results suggest that interventions based on cognitive behavioral therapy are superior to zopiclone treatment both in short- and long-term management of insomnia in older adults.

PMID: 16804151

Rating: 2c, 46 patients

Slesinger D, Archer RP, Duane W. MMPI-2 characteristics in a chronic pain population. *Assessment*. 2002 Dec;9(4):406-14.

Virginia Consortium Program in Clinical Psychology, USA.

This study investigated the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) characteristics of 209 chronic pain patients in an inpatient pain treatment program. The MMPI-2 basic scales Hypochondriasis, Depression, and Hysteria were the most useful discriminating factors between chronic pain patients and normal controls, and the content scales Health Concerns and Depression showed significant elevations for the chronic pain group.

PMID: 12462761

Rating: 4b

Smith A. The scale of perceived occupational stress. Occup Med (Lond). 2000 Jul;50(5):294-8.

This study had three main aims: firstly, to determine the scale and severity of occupational stress in a random population sample; secondly, to distinguish the effects of stress at work from those of stress in general life; and finally, to determine whether objective indicators of health status and performance efficiency were related to perceived occupational stress. The results revealed that approximately 20% of the sample reported that they had very high or extremely high levels of stress at work. This effect was reliable over time, related to potentially stressful working conditions and associated with impaired physical and mental health. The cohort study also suggested that high levels of occupational stress may influence physiology and mental performance.

PMID: 10975123

Rating: 5b

Smith NM, Floyd MR, Scogin F, Jamison CS. Three-year follow-up of bibliotherapy for depression. *J Consult Clin Psychol.* 1997 Apr;65(2):324-7.

PMID: 9086697

Rating: 2b

Smith MT, Finan PH, Buenaver LF, Robinson M, Haque U, Quain A, McInrue E, Han D, Leoutsakis J, Haythornthwaite JA. Cognitive-behavior therapy for insomnia in knee osteoarthritis: A double-blind, randomized, active placebo controlled clinical trial. *Arthritis Rheumatol*. 2015 Jan 26. doi: 10.1002/art.39048.

PMID: 25623343

Rating: 2a

Spielmans GI, Berman MI, Linardatos E, Rosenlicht NZ, Perry A, Tsai AC. Adjunctive atypical antipsychotic treatment for major depressive disorder: a meta-analysis of depression, quality of life, and safety outcomes. *PLoS Med*. 2013 Mar;10(3):e1001403. doi: 10.1371/journal.pmed.1001403.

PMID: 23554581

Rating: 1b

Spring B, Doran N, Pagoto S, McChargue D, Cook JW, Bailey K, Crayton J, Hedeker D. Fluoxetine, smoking, and history of major depression: A randomized controlled trial. *J Consult Clin Psychol*. 2007 Feb;75(1):85-94.

Psychology Department, University of Illinois at Chicago, Chicago, IL, USA.
bspring@northwestern.edu

The study was a randomized placebo-controlled trial testing whether fluoxetine selectively enhances cessation for smokers with a history of depression. Six months after quit date, fluoxetine-treated participants were 3.3 times more likely to be smoking (p = .02).

PMID: 17295567

Rating: 2b

Srisurapanont M, Jarusuraisin N. Opioid antagonists for alcohol dependence (Cochrane Review). In: *The Cochrane Library,* Issue 2, 2002. Oxford: Update Software.

Objectives: To determine the effectiveness of opioid antagonists in attenuating or preventing the recommencement of alcohol consumption in patients with alcohol dependence in comparison to placebo, other medications and psychosocial treatments.
Main results: The review included 19 RCTs or CCTs presented in 26 articles. In comparison to placebo, two of four short-term primary outcomes were significantly in favour of NTX.
Reviewers' conclusions: NTX at the dose of 50 mg/day is effective for alcohol dependence in short-term treatment. The optimal duration of NTX treatment may be longer than 3 months. NMF has no role for the treatment of alcohol dependence in clinical practice. Randomised, double-blind, placebo-controlled trials of NTX treatment in patients with alcohol dependence are still needed.

PMID: 12076425

Rating: 1a

Srisurapanont M, Jarusuraisin N. Opioid antagonists for alcohol dependence. Cochrane Database Syst Rev. 2005 Jan 25;(1):CD001867.

Department of Psychiatry, Chiang Mai University, P.O. Box 102, Amphur Muang, Chiang Mai 50202, Thailand. msrisura@med.cmu.ac.th

OBJECTIVES: To determine the effectiveness of opioid antagonists in attenuating or preventing the recommencement of alcohol consumption in patients with alcohol dependence in comparison to placebo, other medications and psychosocial treatments. SELECTION CRITERIA: All relevant randomised controlled trials (RCTs) were included. Participants were people with alcohol dependence. Naltrexone (NTX), nalmefene (NMF) and other opioid antagonists with/without other biological or psychosocial treatments were examined. AUTHORS' CONCLUSIONS: The review findings support that short-term treatment of NTX decreases the chance of alcohol relapses for 36% (number-needed-to-treat or NNT = 7) and likely to reduce the chance of returning to drinking for 13% (NNT = 12). In comparison to placebo group, NTX treatment can lower the risk of treatment withdrawal in alcohol-dependent patients for 28% (NNT = 13).

PMID: 15674887

Rating: 1a

Staiger TO, Gaster B, Sullivan MD, Deyo RA, Systematic review of antidepressants in the treatment of chronic low back pain, *Spine*. 2003 Nov 15;28(22):2540-5

Department of Medicine, University of Washington, Seattle, WA, USA.
staiger@u.washington.edu

BACKGROUND: Three previous reviews have reached conflicting conclusions regarding the efficacy of antidepressants for patients with back pain. OBJECTIVES: To systematically review the efficacy of antidepressants for the treatment of patients with back pain and to determine whether there is evidence that outcomes vary between classes of antidepressants. RESULTS: Twenty-two trials of antidepressants for the treatment of back pain were identified, of which seven studies of chronic low back pain met inclusion criteria. CONCLUSIONS: Based on a small number of studies, tricyclic and tetracyclic antidepressants appear to produce moderate symptom reductions for patients with chronic low back pain. This benefit appears to be independent of depression status. SSRIs do not appear to be beneficial for patients with chronic low back pain. There is conflicting evidence whether antidepressants improve functional status of patients with chronic low back pain.

PMID: 14624092

Rating: 1b

Stangier U, Hilling C, Heidenreich T, Risch AK, Barocka A, Schlösser R, Kronfeld K, Ruckes C, Berger H, Röschke J, Weck F, Volk S, Hambrecht M, Serfling R, Erkwoh R, Stirn A, Sobanski T, Hautzinger M. Maintenance cognitive-behavioral therapy and manualized psychoeducation in the treatment of recurrent depression: a multicenter prospective randomized controlled trial. *Am J Psychiatry*. 2013 Jun 1;170(6):624-32. doi: 10.1176/appi.ajp.2013.12060734.

PMID: 23732968

Rating: 2a

Stapleton P, Church D, Sheldon T, Porter B, Carlopio C. Depression symptoms improve after successful weight loss with emotional freedom techniques. *ISRN Psychiatry*. 2013 Jul 28;2013:573532. doi: 10.1155/2013/573532.

PMID: 23984182

Rating: 2b

Stein DJ, Bandelow B, Hollander E, Nutt DJ, Okasha A, Pollack MH, Swinson RP, Zohar J; World Council of Anxiety. WCA Recommendations for the long-term treatment of posttraumatic stress disorder. *CNS Spectr*. 2003 Aug;8(8 Suppl 1):31-9.

Medical Research Council Research Unit on Anxiety Disorder, University of Stellenbosch, Cape Town, Tygerberg, South Africa. djs2@sun.ac.za

Only SSRIs have been proven effective and safe in long-term randomized controlled trials. Current guidelines from the Expert Consensus Panel for PTSD recommend treatment of chronic PTSD for a minimum of 12-24 months.

PMID: 14767396

Rating: 5a

Stein Dj, Ipser J, Balkom A. Pharmacotherapy for social phobia. *Cochrane Database Syst Rev*. 2004 Oct 18;(4):CD001206.

Psychiatry, University of Stellenbosch, PO Box 19063, Tygerberg, Cape Town, SOUTH AFRICA, 7505.

BACKGROUND: Social phobia (SP), or social anxiety disorder, is a prevalent and disabling disorder. There is growing evidence that SP is mediated by specific neurobiological factors, and increased interest in the use of medication in its treatment. OBJECTIVES: To assess the effects of pharmacotherapy for Social Phobia, and to determine whether particular classes of medication are more effective and/or acceptable than others in its treatment. MAIN RESULTS: 36 RCTs of a range of medications were included in the analysis (4268 participants), of which 26 were short-term (14 weeks or less). REVIEWERS' CONCLUSIONS: This review provides evidence that medication can be effective in treating SP over the short term, with the strongest evidence of treatment efficacy observed amongst the SSRIs. Furthermore, the data support continued pharmacotherapy in medication responders over the longer-term.

PMID: 15495010

Rating: 1b

Stein DJ, Seedat S, van der Linden GJ, Zungu-Dirwayi N. Selective serotonin reuptake inhibitors in the treatment of post-traumatic stress disorder: a meta-analysis of randomized controlled trials. *Int Clin Psychopharmacol* 2000 Aug;15 Suppl 2:S31-9.

MRC Research Unit on Anxiety Disorders, University of Stellenbosch, Cape Town, South Africa. djs2@mail.sun.ac.zq

Advances in the neurobiology of post-traumatic stress disorder (PTSD) and the availability of modern psychotropics have led to renewed interest in the pharmacotherapy of this disorder. In this paper we focus on trials of the selective serotonin reuptake inhibitors (SSRIs) in PTSD. Nevertheless, pharmacotherapy for PTSD appears to have reasonably robust effects, with odds ratios for responder status, defined as 'much improved' or 'very much improved' on the Clinical Global Impression Scale (CGI), on drug versus placebo varying from 2.2 to 5.6 in randomized controlled trials of different agents. The SSRIs appear both safe and effective for this indication. The SSRIs can be recommended as a first-line medication for the treatment of PTSD.

PMID: 11110017

Rating: 1b

Sundquist J, Lilja Å, Palmér K, Memon AA, Wang X, Johansson LM, Sundquist K. Mindfulness group therapy in primary care patients with depression, anxiety and stress and adjustment disorders: randomised controlled trial. *Br J Psychiatry*. 2015 Feb;206(2):128-35. doi: 10.1192/bjp.bp.114.150243.

PMID: 25431430

Rating: 2a

Syed EU, Wasay M, Awan S. Vitamin B12 supplementation in treating major depressive disorder: a randomized controlled trial. *Open Neurol J.* 2013;7:44-8

PMID: 24339839

Rating: 2b

Szegedi A, Kohnen R, Dienel A, Kieser M. Acute treatment of moderate to severe depression with hypericum extract WS 5570 (St John's wort): randomised controlled double blind non-inferiority trial versus paroxetine. BMJ. 2005 Mar 5;330(7490):503.

Charite-Universitatsmedizin Berlin, Campus Benjamin Franklin, Department of Psychiatry and Psychotherapy, Eschenallee 3, 14050 Berlin, Germany.

OBJECTIVE: To investigate the efficacy of hypericum extract WS 5570 (St John's wort) compared with paroxetine in patients with moderate to severe major depression. SETTING: 21 psychiatric primary care practices in Germany. PARTICIPANTS: 251 adult outpatients with acute major depression with total score > or = 22 on the 17 item Hamilton depression scale. CONCLUSIONS: In the treatment of moderate to severe major depression, hypericum extract WS 5570 is at least as effective as paroxetine and is better tolerated.

PMID: 15708844

Rating: 2a

Clinical Question: In adults with moderate to severe major depression, is an extract of St. John's wort as effective as paroxetine (Paxil) in the short term?
Setting: Outpatient (specialty)
Study Design: Randomized controlled trial (double-blinded)
Allocation: Concealed
Synopsis: Researchers enrolled 251 adult outpatients with a first or recurrent episode of major depression without psychotic features as demonstrated by symptoms persisting from two weeks to one year (average: 5.33 months) and a score of 22 or higher on the 52-point Hamilton Depression Scale. The products used were hypericum extract WS 5570 in a dosage of 300 mg three times per day standardized to contain 3 to 6 percent hyperforin and 0.12 to 0.28 percent hypericin (which is lower than the usual standard of at least 0.3 percent hypericins in U.S. products), and paroxetine in a dosage of 20 mg per day.
Patients were randomized to receive St. John's wort or paroxetine with corresponding placebo for two weeks. Dosages were doubled at two weeks if an initial response was not seen, which occurred in 57 percent of patients receiving St. John's wort and 48 percent of patients receiving paroxetine. At baseline, both groups averaged scores of 25.5 on the Hamilton Depression Scale; at the end of the study, scores had decreased by 14.4 in the St. John's wort group and by 11.4 in the paroxetine group (one-sided P < .025). Scores on other measures of depression (i.e., Montgomery-Asberg scale, Beck Depression Self-Assessment Inventory) also were significantly better in the patients treated with St. John's wort.
Reports of adverse effects, namely gastrointestinal and nervous system effects, were higher among patients treated with paroxetine (55 versus 76 percent; number needed to treat to harm = five).
Bottom Line: In patients who have moderate to severe depression, St. John's wort is at least as effective as paroxetine after six weeks of therapy. It also is tolerated better than paroxetine. In this study, more than one half of the patients who received St. John's wort required a dosage of 600 mg three times per day of a product containing a smaller amount of the purported active ingredients than is used commonly in other studies. Patients in clinical practice may experience a benefit at a dosage of 300 mg three times per day using commercial products that contain a larger amount of the active ingredients. (Level of Evidence: 1b)

Rating: 2a

Talmage J. Contemplating retirement: should I keep working? *Tenn Med.* 2006 Jan; 99(1):607, 609.

PMID: 16475588

Ratig: 5c

Tarrier N, Pilgrim H, Sommerfield C, Faragher B, Reynolds M, Graham E, Barrowclough C. A randomized trial of cognitive therapy and imaginal exposure in the treatment of chronic posttraumatic stress disorder. *J Consult Clin Psychol* 1999 Feb;67(1):13-8.

Department of Clinical Psychology, Research and Teaching Building, Withington Hospital, University of Manchester, United Kingdom. ntarrier@fs1.with.man.ac.uk

Patients who continued to meet PTSD caseness at the end of a 4-week symptom-monitoring baseline period (n = 72) were randomly allocated to either IE or CT. There was a significant improvement in all measures over treatment and at follow-up, although there were no significant differences between the 2 treatments at any assessment. It was concluded that either exposure or a challenge to cognition can result in symptom reduction, although neither resulted in complete improvement.

PMID: 10028204

Ratng: 2b

Taylor WD, Doraiswamy PM. A Systematic Review of Antidepressant Placebo-Controlled Trials for Geriatric Depression: Limitations of Current Data and Directions for the Future, *Neuropsychopharmacology*. 2004 Sep 1

Department of Psychiatry, Duke University Medical Center, Durham, NC, USA.

A total of 18 placebo-controlled trials examining acute efficacy met our criteria. The combined sample size in these studies was 2252. The mean sample size was 51 (range 20-728) and mean trial duration was 7 weeks. A total of 12 trials examined tricyclic antidepressants (TCAs), five trials examined selective serotonin reuptake inhibitors (SSRIs), two trials examined bupropion, and one trial examined mirtazapine. In all, 71.5% of trials reported significantly greater efficacy with drug than placebo. Large placebo response rates, lack of controlled head to head comparisons, and other methodological design differences make crosstrial comparisons difficult.

PMID: 15340391

Rating: 1b

Taylor MJ, Carney SM, Goodwin GM, Geddes JR. Folate for depressive disorders: systematic review and meta-analysis of randomized controlled trials. *J Psychopharmacol*. 2004 Jun;18(2):251-6.

Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford, UK.

The objective of this review was to determine the effectiveness, adverse effects and acceptability of folate in the treatment of depression. Three randomized trials (247 participants) were included. The limited available evidence suggests folate may have a potential role as a supplement to other treatment for depression. It is currently unclear if this is the case both for people with normal folate levels, and for those with folate deficiency.

PMID: 15260915

Rating: 1c

Taylor S, Thordarson DS, Maxfield L. Efficacy, speed, and adverse effects of three PTSD treatments: exposure therapy, relaxation training, and EMDR. *Can Psychol* 2002;43:139.

Rating: 5c

Telch CF, Agras WS, Linehan MM. Dialectical behavior therapy for binge eating disorder. *J Consult Clin Psychol* 2001 Dec;69(6):1061-5.

Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, California 94305-5722, USA.

This study evaluated the use of dialectical behavior therapy (DBT) adapted for binge eating disorder (BED). Women with BED (N = 44) were randomly assigned to group DBT or to a wait-list control condition and were administered the Eating Disorder Examination in addition to measures of weight, mood, and affect regulation at baseline and posttreatment. Treated women evidenced significant improvement on measures of binge eating and eating pathology compared with controls, and 89% of the women receiving DBT had stopped binge eating by the end of treatment.

PMID: 11777110

Rating: 2b

Tennant C. Work-related stress and depressive disorders. *J Psychosom* Res. 2001 Nov;51(5):697-704.

Employees are commonly faced with greater demands and less job security, both of which are likely to be stressful, thus psychological disorders especially depression may increasingly be caused by work-related stressors. Not surprisingly, the findings from occupational stress research is consistent with the more general life event stress literature showing that specific acute work-related stressful experiences contribute to "depression" and, more importantly perhaps, that enduring "structural" occupational factors, which may differ according to occupation, can also contribute to psychological disorders.

PMID: 11728512

Rating: 5b

Terman M, Terman JS. Controlled trial of naturalistic dawn simulation and negative air ionization for seasonal affective disorder. *Am J Psychiatry.* 2006 Dec;163(12):2126-33.

Department of Psychiatry, Columbia University, and New York State Psychiatric Institute, 1051 Riverside Dr., Unit 50, New York, NY 10032. mt12@columbia.edu.

Thachil AF, Mohan R, Bhugra D. The evidence base of complementary and alternative therapies in depression*. J Affect Disord*. 2006 Aug 18.

Kings College London, Section of Cultural Psychiatry, HSRD, PO: 25, Institute of Psychiatry, DeCrespigny Park, London SE5 8AF, UK.

BACKGROUND: Depression is one of the leading indications for using Complementary and Alternative Medicine (CAM). This paper reviews the evidence of efficacy of different types of CAM in depression with the aim of identifying the highest level of evidence. RESULTS: We found Grade 1 evidence on the use of St. John's wort, Tryptophan/5-Hydroxytryptophan, S-adenosyl methionine, Folate, Inositol, Acupuncture and Exercise in Depressive disorders, none of which was conclusively positive. CONCLUSIONS: None of the CAM studies show evidence of efficacy in depression according to the hierarchy of evidence.

PMID: 16926053

Rating: 1b

Thase ME, Greenhouse JB, Frank E, Reynolds CF 3rd, Pilkonis PA, Hurley K, Grochocinski V, Kupfer DJ. Treatment of major depression with psychotherapy or psychotherapy-pharmacotherapy combinations. Arch Gen Psychiatry. 1997 Nov;54(11):1009-15.

Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, Pa., USA.

Using this method, we found new evidence in support of the widespread clinical impression that combined therapy is superior to psychotherapy alone for treatment of more severe, recurrent depressions.

PMID: 9366657

Rating: 1b

Theorell T. How to deal with stress in organizations?--a health perspective on theory and practice. Scand J Work Environ Health. 1999 Dec;25(6):616-24.

This review is focused on organizational aspects of stress reduction. Theoretical models are presented. The association with a few health outcomes (cardiovascular disease, musculoskeletal disorders, and functional gastrointestinal illness) is examined.

PMID: 10884162

Rating: 5c

Thombs BD, Coyne JC, Cuijpers P, de Jonge P, Gilbody S, Ioannidis JP, Johnson BT, Patten SB, Turner EH, Ziegelstein RC. Rethinking recommendations for screening for depression in primary care. *CMAJ.* 2011 Sep 19. [Epub ahead of print]

PMID: 21930744

Rating: 5b

Tian X, Krishnan S. Efficacy of auricular acupressure as an adjuvant therapy in substance abuse treatment: a pilot study. *Altern Ther Health Med.* 2006 Jan-Feb;12(1):66-9.

Department of Health Science at New Mexico State University, Las Cruces, NM, USA.

Overall, there was a positive response to the specific auricular acupressure treatment on psychological distress, craving, and drug/alcohol use measures.

PMID: 16454149

Rating: 2c

Ticknor CB, Pharmacologic considerations in treating depression: a patient-centered approach*. J Manag Care Pharm.* 2004 Mar;10(2 Suppl):S8-15.

University of Texas Health Science Center, San Antonio, TX, USA. cbticknor@aol.com

OBJECTIVE: To review the tricyclic antidepressants, selective serotonin reuptake inhibitors, and dually acting antidepressants and their economic and treatment implications. SUMMARY: Pain and depression are both regulated by serotonin and norepinephine, and several studies suggest that using dual-action antidepressants may be helpful in patients who have an element of pain to their disorder.

PMID: 15046545

Rating: 5b

Tolmunen T, Hintikka J, Ruusunen A, Voutilainen S, Tanskanen A, Valkonen VP, Viinamaki H, Kaplan GA, Salonen JT. Dietary folate and the risk of depression in Finnish middle-aged men. A prospective follow-up study. *Psychother Psychosom.* 2004 Nov-Dec;73(6):334-9.

Department of Psychiatry, University of Kuopio, Kuopio, Finland.

A low dietary intake of folate may be a risk factor for severe depression. This also indicates that nutrition may have a role in the prevention of depression.

PMID: 15479987

Rating: 3b

Tomkins GE, Jackson JL, O'Malley PG, Balden E, Santoro JE. Treatment of chronic headache with antidepressants: a meta-analysis. Am J Med. 2001 Jul;111(1):54-63.

Department of Medicine, Dwight David Eisenhower Army Medical Center, Augusta, Georgia, USA.

Antidepressants are effective in preventing chronic headaches. Whether this is independent of depression and whether there are differences in efficacy by class of agent needs further study.

PMID: 11448661

Rating: 1b

Topolovec-Vranic J, Cullen N, Michalak A, Ouchterlony D, Bhalerao S, Masanic C, Cusimano MD. Evaluation of an online cognitive behavioural therapy program by patients with traumatic brain injury and depression. *Brain Inj.* 2010;24(5):762-72.

RESULTS: Twenty-one patients were recruited. CONCLUSIONS: The MoodGYM program may be effective for treating symptoms of depression in patients with TBI.

PMID: 20370383

Rating: 4c

Trief PM, Yuan HA. The use of the MMPI in a chronic back pain rehabilitation program. *J Clin Psychol*. 1983 Jan;39(1):46-53.

Assessed the usefulness of the MMPI in predicting treatment outcome for chronic low back pain patients. One hundred and thirty-two chronic low back pain patients who participated in a 6-week rehabilitation program were differentiated according to "successful" outcome. Results demonstrate that the MMPI can predict successful outcome. However, the strength of the relationship varies according to the outcome measure employed and the type of analysis completed on the data. It is concluded that, though an interesting research tool, at this time the MMPI is not a consistently valid clinical tool with the chronic back pain population in terms of predicting response to rehabilitation.

PMID: 6219129

Rating: 4c

Tucker P, Trautman RP, Wyatt DB, Thompson J, Wu SC, Capece JA, Rosenthal NR. Efficacy and safety of topiramate monotherapy in civilian posttraumatic stress disorder: a randomized, double-blind, placebo-controlled study. *J Clin Psychiatry*. 2007 Feb;68(2):201-6.

PMID: 17335317

Rating: 2b

Twomey C, O'Reilly G, Byrne M. Effectiveness of cognitive behavioural therapy for anxiety and depression in primary care: a meta-analysis. *Fam Pract*. 2014 Sep 22. pii: cmu060.

PMID: 25248976

Rating: 1b

Trivedi MH, Rush AJ, Crismon ML, Kashner TM, Toprac MG, Carmody TJ, Key T, Biggs MM, Shores-Wilson K, Witte B, Suppes T, Miller AL, Altshuler KZ, Shon SP. Clinical results for patients with major depressive disorder in the Texas Medication Algorithm Project. *Arch Gen Psychiatry.* 2004 Jul;61(7):669-80.

Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, 75235, USA. madhukar.trivedi@utsouthwestern.edu

CONTEXT: The Texas Medication Algorithm Project is an evaluation of an algorithm-based disease management program for the treatment of the self-declared persistently and seriously mentally ill in the public mental health sector. OBJECTIVE: To present clinical outcomes for patients with major depressive disorder (MDD) during 12-month algorithm-guided treatment (ALGO) compared with treatment as usual (TAU). RESULTS: All patients improved during the study (P<.001), but ALGO patients had significantly greater symptom reduction on both the IDS-C(30) and IDS-SR(30) compared with TAU. ALGO was also associated with significantly greater improvement in the SF-12 mental health score (P =.046) than TAU. CONCLUSION: The ALGO intervention package during 1 year was superior to TAU for patients with MDD based on clinician-rated and self-reported symptoms and overall mental functioning.

PMID: 15237079

Rating: 2b

Tuunainen A, Kripke DF, Endo T. Light therapy for non-seasonal depression. *Cochrane Database Syst Rev*. 2004;(2):CD004050.

Department of Psychiatry, University of Helsinki, Lapinlahdentie, P.O.Box 320, HUS, Finland, FIN-00180.

OBJECTIVES: To evaluate clinical effects of bright light therapy in comparison to the inactive placebo treatment for non-seasonal depression. MAIN RESULTS: Twenty studies (49 reports) were included in the review. The result was mainly based on studies of less than 8 days of treatment. The response to bright light was significantly better than to control treatment in high-quality studies (standardized mean difference (SMD) -0.90, 95% confidence interval (CI) -1.50 to -0.31), in studies applying morning light treatment (SMD -0.38, CI -0.62 to -0.14), and in sleep deprivation responders (SMD -1.02, CI -1.60 to -0.45). REVIEWERS' CONCLUSIONS: For patients suffering from non-seasonal depression, bright light therapy offers modest though promising antidepressive efficacy, especially when administered during the first week of treatment, in the morning, and as an adjunctive treatment to sleep deprivation responders. Hypomania as a potential adverse effect needs to be considered. Due to limited data and heterogeneity of studies these results need to be interpreted with caution.

PMID: 15106233

Rating: 1b

UK ECT Review Group. Efficacy and safety of electroconvulsive therapy in depressive disorders: a systematic review and meta-analysis. *Lancet*. 2003 Mar 8;361(9360):799-808.

BACKGROUND: We aimed to review published work for the efficacy and safety of electroconvulsive therapy (ECT) with simulated ECT, ECT versus pharmacotherapy, and different forms of ECT for patients with depressive illness. FINDINGS: Real ECT was significantly more effective than simulated ECT (six trials, 256 patients, standardised effect size [SES] -0.91, 95% CI -1.27 to -0.54). Treatment with ECT was significantly more effective than pharmacotherapy (18 trials, 1144 participants, SES -0.80, 95% CI -1.29 to -0.29). Bilateral ECT was more effective than unipolar ECT (22 trials, 1408 participants, SES -0.32, 95% CI -0.46 to -0.19). INTERPRETATION: ECT is an effective short-term treatment for depression, and is probably more effective than drug therapy. Bilateral ECT is moderately more effective than unilateral ECT, and high dose ECT is more effective than low dose.

PMID: 12642045

Rating: 1b

Usher T, HANDI Project Team. Bibliotherapy for depression. *Aust Fam Physician.* 2013 Apr;42(4):199-200.

PMID: 23550243

Rating: 5c

US Preventive Services Task Force: Screening for Depression: Recommendations and Rationale. *Ann Intern Med.* 2002;136(10):760-764.

The U.S. Preventive Services Task Force, Agency for Healthcare Research and Quality, Rockville, Maryland, USA.

This statement summarizes the current U.S. Preventive Services Task Force (USPSTF) recommendations for screening for depression and the supporting scientific evidence and updates the 1996 USPSTF recommendations on this topic. At that time, the USPSTF concluded that there was insufficient evidence to recommend for or against routine use of standardized questionnaires to screen for depression in primary care patients. The complete information on which the current statement is based, including evidence tables and references, is available in the accompanying article in this issue and in the systematic evidence review on this topic, which can be obtained through the USPSTF Web site (http://www.ahrq.gov/clinic/uspstfix.htm) and in print through the Agency for Healthcare Research and Quality Publications Clearinghouse (800-358-9295).

Summary of 2002 Recommendations

- **The U.S. Preventive Services Task Force (USPSTF) recommends screening adults for depression in clinical practices that have systems in place to assure accurate diagnosis, effective treatment, and followup. B recommendation**.
- *Rationale:* The USPSTF found good evidence that screening improves the accurate identification of depressed patients in primary care settings and that treatment of depressed adults identified in primary care settings decreases clinical morbidity. Trials that have directly evaluated the effect of screening on clinical outcomes have shown mixed results. Small benefits have been observed in studies that simply feed back screening results to clinicians. Larger benefits have been observed in studies in which the communication of screening results is coordinated with effective followup and treatment. The USPSTF concluded the benefits of screening are likely to outweigh any potential harms.
- **The USPSTF concludes the evidence is insufficient to recommend for or against routine screening of children or adolescents for depression. I recommendation**.
- *Rationale:* The USPSTF found limited evidence on the accuracy and reliability of screening tests in children and adolescents and limited evidence on the effectiveness of therapy in children and adolescents identified in primary care settings.

Publication Types:

- Guideline
- Practice Guideline

PMID: 12020145

van den Bosch LM, Verheul R, Schippers GM, van den Brink W. Dialectical Behavior Therapy of borderline patients with and without substance use problems. Implementation and long-term effects. *Addict Behav* 2002 Nov-Dec;27(6):911-23.

Amsterdam Institute for Addiction Research, University of Amsterdam, Amsterdam, Netherlands. wiesvdbosch@wxs.nl

METHOD: The impact of comorbid SA on its efficacy, as well as on its efficacy in terms of reducing SA, is investigated in a randomized clinical trial comparing DBT with treatment-as-usual (TAU) in 58 female borderline patients with (n = 31) and without (n = 27) SA. CONCLUSIONS: Standard DBT can be effectively applied with borderline patients with comorbid SA problems, as well as those without.

PMID: 12369475

van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ. The benefits of interventions for work-related stress. Am J Public Health. 2001 Feb;91(2):270-6.

Stress management interventions are effective. Cognitive-behavioral interventions are more effective than the other intervention types.

PMID: 11211637

Rating: 1b

Van Dorsten B. Psychological Considerations in Preparing Patients for Implantation Procedures. *Pain Medicine.* Volume 7, Issue Supplement s1, pages S47–S57, May 2006

Surgical implantation devices—spinal cord stimulators or implanted medication pumps—are increasingly being used for the treatment of intractable pain, and considerable evidence exists to support the value of presurgical psychological assessment and treatment of those biopsychosocial factors which may adversely impact the acquisition of positive functional outcomes after spine surgery. The empiric support for psychological preparation of patients for spine and pain-related surgeries is reviewed in this article, and specific topics including the providing specialized presurgical psychoeducation, evaluating and shaping appropriate treatment expectations, mood management, encouraging pre- and postsurgical monitoring of outcome measures, instruction in relaxation techniques, and improving sleep hygiene skills will be addressed. Taken collectively, the existing behavioral literature provides considerable support, including psychological assessments and treatments, for patients undergoing surgical pain treatment.

Rating: 5b

Van Etten M, Taylor S. Comparative efficacy of treatments for post-traumatic stress disorder: a meta-analysis. *Clin Psychol Psychother* 1998;5:126-44.

Rating: 1c

Vanitallie TB. Stress: a risk factor for serious illness. Metabolism. 2002 Jun;51(6 Suppl 1):40-5.

The body's principal adaptive responses to stress stimuli are mediated by an intricate stress system, which Includes the hypothalamic-pituitary-adrenocortical (HPA) axis and the sympathoadrenal system (SAS). Dysregulation of the system, caused by the cumulative burden of repetitive or chronic environmental stress challenges (allostatic load) contributes to the development of a variety of illnesses including hypertension, atherosclerosis, and the insulin-resistance-dyslipidemia syndrome, as well as certain disorders of immune function. Adult patients with PTSD also have been shown to exhibit exaggerated catecholamine responses to trauma-related stimuli. On the other hand, severely maltreated prepubertal children with PTSD continue to excrete greater than normal urinary cortisol, catecholamines, and dopamine years after disclosure of the causative abuse.

PMID: 12040540

Rating: 5b

Varekamp I, Haafkens JA, Detaille SI, Tak PP, van Dijk FJ. Preventing work disability among employees with rheumatoid arthritis: what medical professionals can learn from the patients' perspective. *Arthritis Rheum.* 2005 Dec 15;53(6):965-72.

Academic Medical Center, University of Amsterdam, The Netherlands. i.varekamp@amc.uva.nl

OBJECTIVE: To compare the perspectives of employees with rheumatoid arthritis (RA) with those of medical professionals regarding what persons with RA need to prevent work disability.RESULTS: The 6 most important themes were well-informed professionals who cooperate effectively; employees' coping capacities and commitment to work; financial regulations at the workplace; adequate social security provisions, medication, and therapy; a positive attitude on the part of employers and colleagues; and suitable working conditions. CONCLUSION: Factors that enable continued employment lie at different levels, including the psychosocial, practical, organizational, and social policy levels. Health professionals appear to underestimate factors that are important from the patient's perspective, especially support from employers.

PMID: 16342108

Rating: 5c

Vendrig AA. The Minnesota Multiphasic Personality Inventory and chronic pain: a conceptual analysis of a long-standing but complicated relationship. *Clin Psychol Rev.* 2000 Aug;20(5):533-59.

Rug AdviesCentra Nederland, Zeist, The Netherlands. vendrig@rac-zeist.nl

The Minnesota Multiphasic Personality Disorder (MMPI) and its successor, the MMPI-2, have a long-standing tradition in the assessment of patients with chronic pain. With the introduction of more narrowly defined and factor-analyzed pain inventories, however, the utility of the MMPI-2 for pain assessment has been brought into question. It is concluded that many of the (recent) criticisms are largely ungrounded. Rather than the test itself being at fault or of little utility in the field of pain assessment, it has simply been applied inappropriately (i.e., for determination of pain etiology or underlying personality structure "explaining" the chronic pain).

PMID: 10860166

Rating: 5b

Verheul R, Van Den Bosch LM, Koeter MW, De Ridder MA, Stijnen T, Van Den Brink W. Dialectical behaviour therapy for women with borderline personality disorder: 12-month, randomised clinical trial in The Netherlands. *BJP Rev Books* 2003 Feb;182:135-40.

DeViersprong Center of Psychotherapy, University of Amsterdam, Halsteren, The Netherlands. roel.verheul@deviersprong.net

METHOD: Fifty-eight women with BPD were randomly assigned to either 12 months of DBT or usual treatment in a randomised controlled study. CONCLUSIONS: Dialectical behaviour therapy is superior to usual treatment in reducing high-risk behaviours in patients with BPD.

PMID: 12562741

Rating: 2b

Verma G, Araya R, Kondwani K. Meditation Improves Mental Well-Being, Reduces Stress. International Congress of the Royal College of Psychiatrists (RCP) 2011. Presented June 28, 2011.

Regular, long-term meditation significantly improves mental well-being, new research suggests. The study investigated the association between meditation and psychological distress in 317 Buddhist monks and nuns living in Dharamshala, India, who practice meditation regularly. The study showed that the monks and nuns who had meditated for 10 years or more, which was the longest period in the study, had better mental health. For every year they had been meditating, there was a 0.21-point decrease in GHQ score. Meditation could be suggested in primary care for the management of mild depression or anxiety, just as exercise has been. However, to imply that if it works for monks and nuns in Buddhist monasteries it should work in the West is still unsubstantiated.

Rating: 10b

Veterans Health Administration, Department of Defense VA/DoD clinical practice guideline for the management of post-traumatic stress. Version 1.0. Washington (DC): Veterans Health Administration, Department of Defense; 2004 Jan. Various p. [479 references] Summary at: http://www.guideline.gov/summary/summary.aspx?ss=15&doc_id=5187#s23

POST-TRAUMATIC STRESS DISORDER (PSTD) PHARMACOTHERAPY

Summary Table for PTSD Pharmacotherapy*

R*	Significant Benefit	Some Benefit	Unknown	No Benefit/Harm
A	SSRIs			
B		TCAs MAOIs		
C		Sympatholytics Novel Antidepressants		
I			Anticonvulsants Atypical Antipsychotics Buspirone Nonbenzodiazepine hypnotics	
D				Benzodiazepines Typical Antipsychotics

*R = level of recommendation; SSRIs = selective serotonin reuptake inhibitors; TCAs = tricyclic antidepressants; MAOIs = monoamine oxidase inhibitors.

Objective: To minimize signs and symptoms of PTSD and maintain function.

Recommendations

Monotherapy: Strongly recommend selective serotonin reuptake inhibitors (SSRIs) for the treatment of PTSD. (Stein et al., 2000) (QE – I; Overall Quality – Good; Net Effect – M; R – A); Recommend tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs) as second-line treatments for PTSD. (Stein et al., 2000; Cochrane Review) (QE – I; Overall Quality – Good; Net Effect – M; R – B); Consider an antidepressant therapeutic trial of at least 12 weeks before changing therapeutic regimen. (Martenyi et al., 2002) (QE – I; Overall Quality – Fair; Net Effect – M; R – B) ; Consider a second-generation (e.g., nefazodone, trazodone, venlafaxine, mirtazapine, bupropion) in the management of PTSD. (Hidalgo et al., 1999) (QE – II-2; Overall Quality – Fair; Net Effect – S; R – C)

Augmented Therapy for Targeted Conditions: Consider prazosin to augment the management of nightmares and other symptoms of PTSD. (Raskind et al., 2003) (QE – I; Overall Quality – Fair; Net Effect – M; R – C); Recommend medication compliance assessment at each visit. (Group Consensus) (QE – III; Overall Quality – Poor; R – I) ; Since PTSD is a chronic disorder, responders to pharmacotherapy may need to continue medication indefinitely;

however, it is recommended that maintenance treatment should be periodically reassessed. (Rapaport, Endicott, & Clary, 2002) (QE – II; Overall Quality – Fair; Net Effect – S; R – C) ; There is insufficient evidence to recommend a mood stabilizer (e.g., lamotrigine) for the treatment of PTSD. (Hertzberg et al., 1999) (QE – I; Overall Quality – Fair; Net Effect – M; R – C) ; There is insufficient evidence to recommend atypical antipsychotics for the treatment of PTSD. (Hamner et al., 2003) (QE – I; Overall Quality – Good; Net Effect – S; R – I); There is insufficient evidence to support the recommendation for a pharmacological agent to prevent the development of PTSD. (QE – III; Overall Quality – Poor; Net Effect – S; R – I) ; Recommend against the long-term use of benzodiazepines to manage core symptoms in PTSD. (Kosten et al., 2000) (QE – II-2; Overall Quality – Fair; Net Effect – M; R – I) ; Recommend against typical antipsychotics in the management of PTSD. (Stein et al., 2000) (QE – I; Overall Quality – Poor; Net Effect – S; R – D)

PSYCHOTHERAPY INTERVENTIONS

Objective: Reduce symptoms severity and improve of global functioning.

Summary Table for Psychotherapy Interventions

R*	Significant Benefit	Some Benefit	Unknown	Harm
A	Cognitive Therapy (CT) Exposure Therapy (ET) Stress Inoculation Training (SIT) Eye Movement Desensitization and Reprocessing (EMDR)			
B		Imagery Rehearsal Therapy (IRT) Psychodynamic Therapy		
C				
D				
I		PTSD- Patient Education		

*R = level of recommendation

Recommendations

Providers should explain to all patients with PTSD the range of available and effective therapeutic options for PTSD. (Expert Consensus) Cognitive Therapy (CT), Exposure Therapy

(ET), Stress Inoculation Training (SIT), and Eye Movement Desensitization and Reprocessing (EMDR) are strongly recommended for treatment of PTSD in military and non-military populations. EMDR has been found to be as effective as other treatments in some studies and less effective than other treatments in some other studies. (A*) Imagery Rehearsal Therapy [IRT] and Psychodynamic Therapy may be considered for treatment of PTSD. (B*) Patient education is recommended as an element of treatment of PTSD for all patients. (C*) Consider Dialectical Behavioral Therapy (DBT) for patients with a borderline personality disorder typified by parasuicidal behaviors. (B) Consider hypnotic techniques especially for symptoms associated with PTSD, such as pain, anxiety, dissociation and nightmares, for which hypnosis has been successfully used. (B*) Specialized PTSD psychotherapies may be augmented by additional problem specific methods/services and pharmacotherapy. (Expert Consensus) Combination of cognitive therapy approaches (e.g., ET plus CT), while effective, has not proven to be superior to either component alone. (B) Specific psychotherapy techniques may not be uniformly effective across all patients. When selecting a specific treatment modality, consideration of patient characteristics such as gender, type of trauma (e.g., combat vs. other trauma), and past history may be warranted. (Expert Consensus) Patient and provider preferences should drive the selection of evidence-based psychotherapy and/or evidence-based pharmacotherapy as the first line treatment. (Expert Consensus) Selection of individual interventions should be based upon patient preference, provider level of skill and comfort with a given modality, efforts to maximize benefit and minimize risks to the patient, and consideration of feasibility and available resources. (Expert Consensus) Psychotherapies should be provided by practitioners who have been trained in the particular method of treatment, whenever possible. (Expert Consensus) A stepped care approach to therapy administration may be considered, though supportive evidence is lacking. (Expert Consensus) Note: Psychotherapy interventions are aimed at reduction of symptoms severity and improvement of global functioning. However, the clinical relevance and importance of other outcome indicators (e.g., improvement of quality of life, physical and mental health) are not currently well known.

Selection of Therapy for PTSD

In clinical practice, providers and patients alike are often faced with important decisions relating to type, number, frequency, and dose of various psychotherapies and pharmacologic therapies. Therapies may be broadly divided into (1) evidence-based psychotherapies, (2) evidence-based pharmacotherapies, and (3) key adjunctive or supplemental treatment modalities. Providers should explain to all patients with PTSD the range of therapeutic options that are available and effective for PTSD. This discussion should include general advantages and disadvantages (including side-effects) associated with each therapeutic option. In general, PTSD therapy research has provided insufficient evidence to favor medication or evidence-based psychotherapy as a first-line treatment. There is also insufficient evidence to suggest for or against combined medication and psychotherapy over only one of the two approaches. It may be helpful to add therapies using a stepped care approach, even though supporting evidence does not exist. The use of stepped care has been advocated for many chronic conditions including hypertension, low back pain, and depression. In stepped care, the intensity of care is augmented for patients who do not achieve an acceptable outcome with lower levels of care. Stepped care is based on three assumptions: different people require different levels of care; finding the right level of care often depends on monitoring outcomes; and moving from lower to higher levels of care based on patient outcomes often offers efficient increases in overall effectiveness. The level or intensity of care is guided by illness trajectory (degree of chronicity and current illness severity), observed outcomes, and previously attempted therapies. Active follow-up is used to determine the level of care each patient requires over time. In PTSD for example, the patient and provider may determine that the first-line therapy will be psychotherapy. If, after a period of treatment, the patient is not responding adequately, the

patient may be "stepped up" in therapeutic intensity by adding a medication, such as a selective serotonin reuptake inhibitor (SSRI) to the regimen of ongoing psychotherapy. Contrary to clinical intuition, there is no evidence indicating the superiority of programs that combine different cognitive behavioral therapies.

Cognitive Therapy (CT). Recommendations: CT is effective with civilian men and women exposed to combat and noncombat trauma. (Lovell, et al., 2001; Marks et al., 1998) (QE – I; Overall Quality – Good; R – A) CT is effective with military and veterans with combat- and noncombat-related PTSD. (Working Group Consensus) (QE – III; Overall Quality – Poor; R – I) CT is effective for women with PTSD associated with sexual assault. (Resick et al., 2002)(QE – I, Overall Quality – Good, R – A)

Exposure Therapy. Recommendations: ET is effective in the treatment of PTSD (compared to placebo or waiting list) (Cooper & Clum, 1989; Foa et al., 1991; Foa et al., "A comparison," 1999; Ironson et al., 2002; Keane et al., 1989; Marks et al., 1998; Tarrier et al., 1999) (QE – I; Overall Quality – Good; R – A) ET compared to other forms of therapy show equivalent results (Foa et al., 1991; Foa et al., "A comparison,"1999; Marks et al., 1998; Paunovic & Ost, 2001; Resnick & Nishisth, 2001; Schnurr, 2001; Tarrier et al., 1999) (QE – I; Overall Quality – Good; R – A)

Stress Inoculation Training (SIT). Recommendations: SIT is effective as a treatment for PTSD related to sexual assault (Foa et al., 1991; Foa et al., "A comparison," 1999; Kilpatrick, Veronen, & Resick, 1982; Rothbaum et al., 2000) (QE – I; Overall Quality – Good; R – A)

Eye Movement Desensitization and Reprocessing (EMDR). Recommendations: EMDR is more efficacious for PTSD than wait-list, routine care, and active treatment controls. (Chemtob, Tolin, & van der Kolk, 2000; Davidson & Parker, 2001; Foa & Meadows, 1997; Maxfield & Hyer, 2002; Shepherd, Stein, & Milne, 2000) (QE – I; Overall Quality – Good; R – A) ; Eye movements are not critical to the effects of EMDR (Foa & Meadows, 1997) (QE – I; Overall Quality – Poor; R – C); EMDR compared with ET and CT shows mixed results (Cahill, 2000; Davidson & Parker, 2001; Foa & Meadows, 1997; Ironson et al., 2002; Lee et al., 2002; Power et al., 2002; Servan-Schrieber, 2000; Shepherd, Stein, & Milne, 2000; Taylor, Thordarson, & Maxfield, 2002; Van Etten & Taylor, 1998) (QE – I, Overall Quality – Fair, R – B)

Imagery Rehearsal Therapy (IRT). Recommendations: IRT can be considered for treatment of PTSD (nightmare and sleep disruption in particular). (Krakow et al., 1995; Krakow et al., "Imagery rehearsal," 2001; Krakow et al., "Treatment of chronic nightmares," 2001; Forbes, Phelps, & McHugh, 2001) (QE – I; Overall Quality – Fair; R – B)

Psychodynamic Therapy. Recommendations: Psychodynamic psychotherapy for the treatment of PTSD (Brom, Kleber, & Defares, 1989) (QE – I; Overall Quality – Good; R – B); Psychodynamic psychotherapy for patients with complex PTSD (Courtois, 1999; Roth & Batson, 1997; Shengold, 1989) (QE – II-2; Overall Quality – Fair; R – B)

Patient Education. Objective: Provide a therapeutic intervention that reduces the symptoms and functional impairments of PTSD. Recommendation: Psychoeducation is recommended (Foa, Davidson, & Frances, 1999) (QE – III; Overall Quality – Poor; R – C) (Lubin et al., 1998) (QE – II-2; Overall Quality – Fair; R – B)

Group Therapy. Objective: Provide a supportive environment in which a patient with PTSD may participate in therapy with other PTSD patients. Recommendations: Consider group treatment for patients with PTSD (Donovan, Padin-Rivera, & Kowaliw, 2001; Foy et al., 2000; Rogers et al., 1999) (QE – III, II, I; Overall Quality – Fair; R – B); Current findings do not favor any particular type of group therapy over other types. (Foy et al., 2000) (QE – II, Overall Quality – Poor, R – I)

Dialectical Behavior Therapy. Consider DBT for patients with a borderline personality disorder typified by parasuicidal behaviors. (Evans et al., 1999; Hawton et al., 2000; Linehan, Heard, &

Armstrong, 1993; Safer, Telch, & Agras, 2001; Telch, Agras, & Linehan, 2001; van den Bosch et al., 2002; Verheul et al., 2003) (QE – I; Overall Quality – Fair; R – B)

Hypnosis. Objective: A therapeutic intervention that may be an effective adjunctive procedure in the treatment of PTSD. Recommendation: Hypnosis may be used to alleviate PTSD symptoms. (Brom, Kleber, & Defares, 1989; Sherman, 1998) (QE – I; Overall Quality –Fair; R – B)

Psychosocial Adjunctive Methods/Services. Objective: Provide a therapeutic intervention that facilitates generalizing skills for coping with PTSD from clinic to home/work/community. Recommendations: Consider psychosocial rehabilitation techniques once the client and clinician identify the following kind of problems associated with the diagnosis of PTSD: persistent high-risk behaviors, lack of self care/independent living skills, homelessness, interactions with a family that does not understand PTSD, socially inactive, unemployed, and encounters with barriers to various forms of treatment/rehabilitation services. Client and clinician should determine whether such problems are associated with core symptoms of PTSD and, if so, then ensure that rehabilitation techniques are used as a contextual vehicle for alleviating PTSD symptoms. Psychosocial rehabilitation should occur concurrently or shortly after a course of treatment for PTSD, since psychosocial rehabilitation is not trauma-focus.

Spiritual Support. Objective: Reduce symptoms of PTSD and improve patient's functioning through social and spiritual support. Recommendation: Provide access to religious/spiritual resources, if sought. Evidence: Provide opportunities to vent & defuse, to share feelings and talk (Bogia & Preston, 1985; Everly, "The role of pastoral crisis," 2000; Hunter, 1996) (QE – II, Overall Quality – Fair, R – C)

Rating Scheme for the Strength of the Evidence:

I At least one properly done randomized controlled trial (RCT)
II-1 Well designed controlled trial without randomization
II-2 Well designed cohort or case-control analytic study
II-3 Multiple time series, dramatic results of uncontrolled experiment
III Opinion of respected authorities, case reports, and expert committees

Overall Quality

Good -- High grade evidence (I or II-1) directly linked to health outcome
Fair -- High grade evidence (I or II-1) linked to intermediate outcome; *or* moderate grade evidence (II-2 or II-3) directly linked to health outcome
Poor -- Level III evidence or no linkage of evidence to health outcome

Net Effect of the Intervention

Substantial -- More than a small relative impact on a frequent condition with a substantial burden of suffering; *or* a large impact on an infrequent condition with a significant impact on the individual patient level
Moderate -- A small relative impact on a frequent condition with a substantial burden of suffering; *or* a moderate impact on an infrequent condition with a significant impact on the individual patient level
Small -- A negligible relative impact on a frequent condition with a substantial burden of suffering; *or* a small impact on an infrequent condition with a significant impact on the individual patient level
Zero or Negative -- Negative impact on patients; *or* no relative impact on either a frequent condition with a substantial burden of suffering; *or* an infrequent condition with a significant impact on the individual patient level.

Final Grade of Recommendation is determined according to the following chart:

	The net benefit of the intervention			
Quality of Evidence	**Substantial**	**Moderate**	**Small**	**Zero or Negative**
Good	**A**	**B**	**C**	**D**
Fair	**B**	**B**	**C**	**D**
Poor	**I**	**I**	**I**	**I**

Rating Scheme for the Strength of the Recommendations
A A strong recommendation that the intervention is always indicated and acceptable
B A recommendation that the intervention may be useful/effective
C A recommendation that the intervention may be considered
D A recommendation that a procedure may be considered not useful/effective, or may be harmful
I Insufficient evidence to recommend for or against – the clinician will use clinical judgment

Rating: 6a

Waddell G, Burton K, Aylward M. Work and common health problems. *J Insur Med*. 2007;39(2):109-20.

Aylward - Unumprovident Centre for Psychosocial and Disability Research, Cardiff University, UK. gordon.waddell@virgin.net

This paper reviews the evidence on the relationship between work and health. It concludes that, overall, the beneficial effects of work outweigh the risks of work, and are greater than the harmful effects of long-term worklessness.

PMID: 17941336

Rating: 5b

Wallace P, Barber J, Clayton W, Currell R, Fleming K, Garner P, Haines A, Harrison R, Jacklin P, Jarrett C, Jayasuriya R, Lewis L, Parker S, Roberts J, Thompson S, Wainwright P. Virtual outreach: a randomised controlled trial and economic evaluation of joint teleconferenced medical consultations. *Health Technol Assess*. 2004 Dec;8(50):1-106, iii-iv

Department of Primary Care and Population Sciences, Royal Free and University College Medical School, London, UK.

OBJECTIVES: To test the hypotheses that virtual outreach would reduce offers of hospital follow-up appointments and reduce numbers of medical interventions and investigations, reduce numbers of contacts with the health care system, have a positive impact on patient satisfaction and enablement, and lead to improvements in patient health status. RESULTS: Patients in the virtual outreach group were more likely to be offered a follow-up appointment. Significant differences in effects were observed between the two sites and across different specialities. Patient satisfaction was greater after a virtual outreach consultation than after a standard outpatient consultation, with no heterogeneity between specialities or sites. CONCLUSIONS: Virtual outreach consultations result in significantly higher levels of patient satisfaction than standard outpatient appointments and lead to substantial reductions in numbers of tests and investigations, but they are variably associated with increased rates of offer of follow-up according to speciality and site.

PMID: 15546515

Rating: 2a

Walling A. Therapeutic modulation of the psychoneuroimmune system by medical acupuncture creates enhanced feelings of well-being. *J Am Acad Nurse Pract.* 2006 Apr;18(4):135-43.

PURPOSE: This article includes an explanation of how stressors disrupt physiologic regulatory mechanisms leading to disease states, how environmental challenges alter the function of the psychoneuroimmune system, and how correction of aberrant action potentials will stabilize homeostatic regulatory functions, inducing an escape response from stressors and leading to enhanced feelings of well-being. An explanation of how medical acupuncture accomplishes this stabilization concludes the article. DATA SOURCE: Extensive review of the worldwide scientific literature from the 1970s through current literature, on acupuncture, neurophysiology, and psychoneuroimmune system, using the theoretical framework of Martha Rogers. CONCLUSIONS: It is estimated that 80% of all illnesses are stress induced, although the physiologic mechanisms by which stress induces detrimental changes are not well understood by the medical profession. When the nervous system is in homeostatic balance, individuals will report enhanced feelings of well-being, be more effective in coping with their conditions of living, and therefore be less susceptible to illness.

PMID: 16573726

Rating: 5c

Walsh JK, Erman M, Erwin CW, Jamieson A, Mahowald M, Regestein Q, Scharf M, Tigel P, Vogel G, Ware J C. Subjective hypnotic efficacy of trazodone and zolpidem in DSM-III-R primary insomnia. *Hum Psychopharmacol* 1998;13:191-198.

Trazodone is an antidepressant which is used at low doses as a hypnotic. Both trazodone and zolpidem improved self-reported sleep latency and duration of non-depressed, primary insomniacs; zolpidem was somewhat more efficacious at the doses studied.

Rating: 2a

Wang S, Wilson JP, Mason JW. Stages of decompensation in combat-related posttraumatic stress disorder: a new conceptual model. *Integr Physiol Behav Sci.* 1996 Jul-Sep;31(3):237-53.

VA Medical Center, West Haven, CT 06516, USA.

There appear to be "stages" of decompensation that can be described clinically and may be distinct physiologically. The stages describe a wide range of functioning, from adaptive to totally dysfunctional PTSD core symptoms, as well as several other dimensions of clinical functioning, such as affect regulation, defenses, ego states, interactions with the environment, capacity for self-destruction/suicide and capacity for attachment and insight are described for each stage.

PMID: 8894726

Rating: 5b

Ward E, King M, Lloyd M, Bower P, Sibbald B, Farrelly S, Gabbay M, Tarrier N, Addington-Hall J. Randomised controlled trial of non-directive counselling, cognitive-behaviour therapy, and usual general practitioner care for patients with depression. I: clinical effectiveness. *BMJ*. 2000 Dec 2;321(7273):1383-8.

PMID: 11099284

Rating: 2b

Warner CH, Bobo W, Warner C, Reid S, Rachal J. Antidepressant discontinuation syndrome. *Am Fam Physician*. 2006;74:449-56.

Antidepressant discontinuation syndrome occurs in approximately 20 percent of patients after abrupt discontinuation of an antidepressant medication that was taken for at least six weeks. Typical symptoms of antidepressant discontinuation syndrome include flu-like symptoms, insomnia, nausea, imbalance, sensory disturbances, and hyperarousal. These symptoms usually are mild, last one to two weeks, and are rapidly extinguished with reinstitution of antidepressant medication. Antidepressant discontinuation syndrome is more likely with a longer duration of treatment and a shorter half-life of the treatment drug.

PMID: 16913164

Rating: 5c

Warren PA. The Management of Workplace Mental Health Issues and Appropriate Disability Prevention Strategies. Work Loss Data Institute. March 2005.

A review of multiple controlled studies from 1970 to 2000 has demonstrated that physical exercise reduces Major Depressive Disorder (MDD) symptoms. The most effective forms of exercise that produce the strongest reduction are resistance training and aerobic exercise. Thus, the individual diagnosed with MDD must be encouraged to exercise as part of the evidence based treatment.

The gold standard for the evidence based treatment of MDD is a combination of medication (antidepressants) and psychotherapy. The primary forms of psychotherapy that have been most studied through research are: Cognitive Behavioral Therapy and Interpersonal Therapy.

While depressed individuals have frequently requested leave from the workplace, this is not the best way in which to help the depressed employee. It is true that a person may temporarily become impaired so that a short-term leave, such as a week or two may be required. However, there is no empirical evidence to indicate that long-term leave is beneficial to the depressed person. In fact, when looking at the research for physical concerns and injuries, a person frequently becomes depressed when unable to complete normal, everyday activities. Thus, a long-term leave may actually increase MDD symptoms, instead of decreasing them. There are several reasons for this: 1) A depressed person naturally seeks to isolate oneself from others. 2) Being on leave reinforces this isolation, instead of encouraging the person to increase social interactions; 3) Being on long-term leave causes an individual to identify with a “disabled” lifestyle; and 4) Based on the DSM-IV-TR criteria for MDD, when one is depressed, one tends to not lead a healthy lifestyles.

More recently, there have been several medication algorithms that have been developed and supported by rigorous controlled studies in the treatment of MDD. The primary algorithms in usage are the Texas Medication Algorithm Project and the sequenced treatment alternatives to relieve depression (STAR*D) algorithm. Already, the repeated controlled trials studies (RCTs) have demonstrated superior medication management of MDD with the usage of these algorithms. Additional ongoing RCTs are currently underway to examine the efficacy of the algorithms with severe, psychotic MDD or the treatment of serious organic psychological disorders, such as Schizophrenia.

In the event that antidepressant medications are proven ineffective, the usage of Electroconvulsive Therapy (ECT) must be considered. ECT has been found in use for over 60 years. The empirical evidence of ECT in treating MDD is impressive and yet, this form of treatment is consistently underutilized by psychiatrists. ECT is a medical procedure in which a generalized tonic-clonic seizure is induced by the usage of medication and electrical current delivered via electrodes on the head. It has been determined to be not only highly effective, but also quite safe. The primary barrier to utilizing ECT is the MDD diagnosed individual’s reluctance to undergo such a procedure. It is imperative that a discussion regarding the procedure, safe guards that are employed and the treatment outcome data are presented to the individual with treatment resistant MDD. Moreover, it is incumbent upon the physician to note that ECT is the next step in the evidence based treatment protocol when the individual does not respond to antidepressant medication and Cognitive therapy. ECT has been found to be most effective in the treatment of individuals with psychotic symptoms, suicidal ideation, and comorbid physical illness. For ECT to be utilized in its most effective form, ECT must be

delivered bilaterally. In addition, high dosage ECT is superior to low dosage in treatment outcome.

The overwhelmingly effective psychotherapy treatment for Panic Disorder is Cognitive Behavioral Therapy (CBT). CBT produced rapid reduction in panic symptoms. Typically, CBT is provided over 12-14 sessions, conducted on a weekly basis. Each session lasts approximately 1 hour. The training must be completed live by a psychologist or psychiatrist trained in evidence based CBT. Importantly, CBT can be administered either as a stand-alone treatment or in conjunction with medication. For those individuals who don't respond to medication, CBT is likely to be the only viable treatment for panic symptoms. CBT individual therapy produced superior results over group CBT.

Empirical research has demonstrated consistently that Cognitive Behavioral Therapy (CBT) is supported for the treatment of PTSD. It has been demonstrated that CBT is more effective than self-help, de-briefing, or supportive therapy in preventing more entrenched PTSD symptoms. Importantly, it is unclear if supportive therapy was of any clinical value in the treatment of PTSD since it appeared to impede psychological recovery. Strengths of CBT is difference in the safety and efficacy of providing treatment, working through traumatic memories, and helping the person through to re-frame one's interpretations of both the event and PTSD symptoms. Most importantly, CBT tended to have no to few side effects, unlike medications and could be employed efficiently for acute symptom treatment.

Rating: 5a

Watts BV, Schnurr PP, Mayo L, Young-Xu Y, Weeks WB, Friedman MJ. Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *J Clin Psychiatry*. 2013 Jun;74(6):e541-50. doi: 10.4088/JCP.12r08225.

PMID: 23842024

Rating: 1b

Weich S, Pearce HL, Croft P, Singh S, Crome I, Bashford J, Frisher M. Effect of anxiolytic and hypnotic drug prescriptions on mortality hazards: retrospective cohort study. *BMJ.* 2014 Mar 19;348:g1996. doi: 10.1136/bmj.g1996.

PMID: 24647164

Rating: 3a

Westen D, Morrison K. A multidimensional meta-analysis of treatments for depression, panic, and generalized anxiety disorder: an empirical examination of the status of empirically supported therapies. J Consult Clin Psychol. 2001 Dec;69(6):875-99.

The results suggest that a substantial proportion of patients with panic improve and remain improved; that treatments for depression and GAD produce impressive short-term effects: that most patients in treatment for depression and GAD do not improve and remain improved at clinically meaningful follow-up intervals: and that screening procedures used in many studies raise questions about generalizability, particularly in light of a systematic relation across studies between exclusion rates and outcome.

PMID: 11777114

Rating: 1b

Williams AL, Girard C, Jui D, Sabina A, Katz DL. S-adenosylmethionine (SAMe) as treatment for depression: a systematic review. *Clin Invest Med*. 2005 Jun;28(3):132-9.

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PURPOSE: To assess the evidence evaluating S-adenosylmethionine (SAMe) supplementation as treatment for depression. RESULTS: Eleven articles met initial inclusion criteria; five intervention trials, two RCTs, two reviews, one controlled clinical trial, and one meta-analysis. CONCLUSION: However, there appears to be a role for SAMe in the treatment of major depression in adults. Questions remain about mechanism of action, bioavailability, and absorption of oral SAMe.

PMID: 16021987

Rating: 1b

Williams AL, Cotter A, Sabina A, Girard C, Goodman J, Katz DL. The role for vitamin B-6 as treatment for depression: a systematic review. *Fam Pract.* 2005 Oct;22(5):532-7.

Yale Prevention Research Center, Derby, CT 06418, USA. Anna-leila.Williams@yalegriffinprc.org

Viewed as a whole, meaningful treatment effect of vitamin B-6 for depression in general was not apparent. However, examination of papers addressing depression in pre-menopausal women only, reveals a consistent message about the value of using vitamin B-6 supplementation. Further study of vitamin B-6 as independent and adjuvant therapy for hormone related depression in women is indicated.

PMID: 15964874

Rating: 1c

Williams DA, Gehrman C, Ashmore J, Keefe FJ. Psychological Considerations in the Surgical Treatment of Patients With Chronic Pain. *Techniques in Neurosurgery*. 2003;8:168-175.

Implantable pain management devices are becoming increasingly popular. The success of these devices, however, often depends on psychological factors being screened out prior to or addressed concomitantly with implanting the device. Currently there is little consensus in practice regarding the parameters of the screening process. A review of the literature is presented that reveals many psychological and behavioral risk factors for implanted pain management devices. However, little consistency exists in how these risk factors have been addressed, and a few attempts actually categorize the level of risk these factors pose to the neurosurgical procedures. Based on the literature review, this article provides recommendations for clinical decision making that transforms the psychological screening process into one that both facilitates patient selection, and enhances the development of a long-range treatment plan that can include preimplant preparation to help convert marginal implant candidates into those more likely to benefit from these procedures. Future practice in this arena will need to emphasize physicians' routine use of psychological screening prior to implantation, gaining comfort in recommending screening to patients, and integrating screening and preimplant preparation into practice. Future research in this area will need to include more randomized clinical trials of screening effectiveness, preimplant preparation effectiveness, and the development of uniform criteria for success.

Rating: 5b

Wilson K, Mottram P. A comparison of side effects of selective serotonin reuptake inhibitors and tricyclic antidepressants in older depressed patients: a meta-analysis. *Int J Geriatr Psychiatry.* 2004 Aug;19(8):754-62.

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OBJECTIVE: To examine the relative tolerability and side effect profile of tricyclic antidepressants and selective serotonin reuptake inhibitors in older depressed people. METHODS: A systematic literature search generated 37 randomised controlled trials of TCAs and SSRIs of which 11 were entered into a meta analysis comparing withdrawal rates and side effect profiles. RESULTS: TCAs had an increased withdrawal rate (RR: 0.24, CI 1.04, 1.47). A similar result was found when comparing classical TCAs (451 patients) (amitriptyline, clomipramine, doxepin and dothiepin) with SSRIs (466 patients) (RR 1.30 CI: 1.02,1.64). These findings were reflected in the increased TCA prevalence of side effects including dry mouth, drowsiness, dizziness and lethargy. CONCLUSIONS: Despite the relative low prevalence of side effects associated with SSRIs a significant minority of older people find these drugs intolerable and experience nausea, vomiting, dizziness and drowsiness. We conclude that TCA related drugs are comparable to SSRIs in terms of tolerability and may offer an alternative when SSRIs are either contra-indicated or clinically unacceptable.

PMID: 15290699

Rating: 1b

Woodcock J, Khan M, Yu LX. Withdrawal of generic budeprion for nonbioequivalence. *N Engl J Med*. 2012 Dec 27;367(26):2463-5. doi: 10.1056/NEJMp1212969.

PMID: 23216549

Rating: 5b

Woolery A, Myers H, Sternlieb B, Zeltzer L. A yoga intervention for young adults with elevated symptoms of depression. *Altern Ther Health Med*. 2004 Mar-Apr;10(2):60-3.

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CONTEXT: Yoga teachers and students often report that yoga has an uplifting effect on their moods, but scientific research on yoga and depression is limited. OBJECTIVE: To examine the effects of a short-term Iyengar yoga course on mood in mildly depressed young adults. PARTICIPANTS: Twenty-eight volunteers ages 18 to 29. RESULTS: Subjects who participated in the yoga course demonstrated significant decreases in self-reported symptoms of depression and trait anxiety. These effects emerged by the middle of the yoga course and were maintained by the end. Changes also were observed in acute mood, with subjects reporting decreased levels of negative mood and fatigue following yoga classes. Finally, there was a trend for higher morning cortisol levels in the yoga group by the end of the yoga course, compared to controls. These findings provide suggestive evidence of the utility of yoga asanas in improving mood and support the need for future studies with larger samples and more complex study designs to more fully evaluate the effects of yoga on mood disturbances.

PMID: 15055096

Rating: 2b

Wright JH, Wright AS, Albano AM, Basco MR, Goldsmith LJ, Raffield T, Otto MW. Computer-assisted cognitive therapy for depression: maintaining efficacy while reducing therapist time. Am J Psychiatry. 2005 Jun;162(6):1158-64.

Norton Psychiatric Center, Department of Psychiatry and Behavioral Sciences, University of Louisville School of Medicine, P.O. Box 35070, Louisville, KY 40232. jwright@iglou.com.

OBJECTIVE: The aim of this investigation was to compare the efficacy of computer-assisted cognitive therapy against standard cognitive therapy and a control group without treatment for outpatients with nonpsychotic major depressive disorder. METHOD: Medication-free participants (N=45) with major depressive disorder were randomly assigned to cognitive therapy (N=15), computer-assisted cognitive therapy (N=15), or a wait list (N=15). Therapist time was reduced after the first visit for computer-assisted cognitive therapy, with 25-minute sessions rather than 50-minute sessions. CONCLUSIONS: A multimedia, computer-assisted form of cognitive therapy with reduced therapist contact was as efficacious as standard cognitive therapy. Computer-assisted therapy could decrease costs and improve access to cognitive therapy for depression.

PMID: 15930065

Rating: 2b

Yeh MS, Mari JJ, Costa MC, Andreoli SB, Bressan RA, Mello MF. A double-blind randomized controlled trial to study the efficacy of topiramate in a civilian sample of PTSD. *CNS Neurosci Ther.* 2011 Oct;17(5):305-10. doi: 10.1111/j.1755-5949.2010.00188.x.

PMID: 21554564

Rating: 2b

Yoshida K, Higuchi H, Kamata M, Takahashi H, Inoue K, Suzuki T, Itoh K, Ozaki N. The G196A polymorphism of the brain-derived neurotrophic factor gene and the antidepressant effect of milnacipran and fluvoxamine. *J Psychopharmacol*. 2006 Nov 8.

Department of Psychiatry, Nagoya University Graduate School of Medicine, Nagoya, Japan.

The purpose of the present study was to investigate whether the G196A polymorphism of the brain-derived neurotrophic factor (BDNF) gene is associated with the antidepressant effect of milnacipran, a serotonin norepinephrine reuptake inhibitor, and fluvoxamine, a selective serotonin reuptake inhibitor. These results suggest that the BDNF G196A polymorphism in part determines the antidepressant effect of both milnacipran and fluvoxamine.

PMID: 17092970

Rating: 3c

Zolnierczyk-Zreda D. The effects of worksite stress management intervention on changes in coping styles. Int J Occup Saf Ergon. 2002;8(4):465-82.

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In this study the effects of a worksite stress management intervention on changes in coping styles were examined. Ninety-five participants were randomly assigned to an experimental group participating in the intervention or to a control group with a delayed intervention. The stress management intervention was structured on enhancing so-called positive coping styles focused on problem solving and social diversion and on decreasing negative-emotion-focused and distraction-coping. The results showed that in the experimental group the level of positive coping styles significantly increased. The effect of decreased negative coping styles due to the intervention was observed only in the group of participants with a high level of negative affectivity.

PMID: 12427351

Rating: 2b

Appendix

This Appendix contains documents found on the archived web pages that may be accessed through external hyperlinks in the "frozen" November 12, 2015 version of the ODG Mental Illness and Stress Guideline that is the basis of this MTUS section. These documents are additional resources for the reader and are not considered primary evidence-based references to the guideline.

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