Identifying and Managing Posttraumatic Stress Disorder

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Posttraumatic stress disorder (PTSD) occurs in an estimated 8% of men and 20% of women who are exposed to traumatic events. PTSD is a trauma- and stress-related disorder associated with significant psychosocial morbidity, substance abuse, and other negative physical health outcomes. The hallmarks of PTSD include exposure to a traumatic event; reexperiencing the event or intrusion symptoms; avoidance of people, places, or things that serve as a reminder of the trauma; negative mood and thoughts associated with the trauma; and chronic hyperarousal symptoms. Self-report questionnaires can assist clinicians in identifying anxiety problems associated with traumatic events. For patients who meet criteria for PTSD, trauma-focused psychotherapy and pharmacotherapy improve symptoms. Benzodiazepines and atypical antipsychotics are not recommended because studies have shown that adverse effects outweigh potential health benefits. Primary care physicians should monitor patients with PTSD for comorbid conditions such as substance abuse, mood disorders, and suicidality, and should refer patients to behavioral health specialists and support groups when appropriate. (*Am Fam Physician*. 2013;88(12):827-834. Copyright © 2013 American Academy of Family Physicians.)

ILLUSTRATION BY JONATHAN DIMES

▶ **Patient information:** A handout on this topic is available at http://familydoctor.org/familydoctor/en/diseases-conditions/post-traumatic-stress-disorder.html.

CME This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz Questions on page 805.

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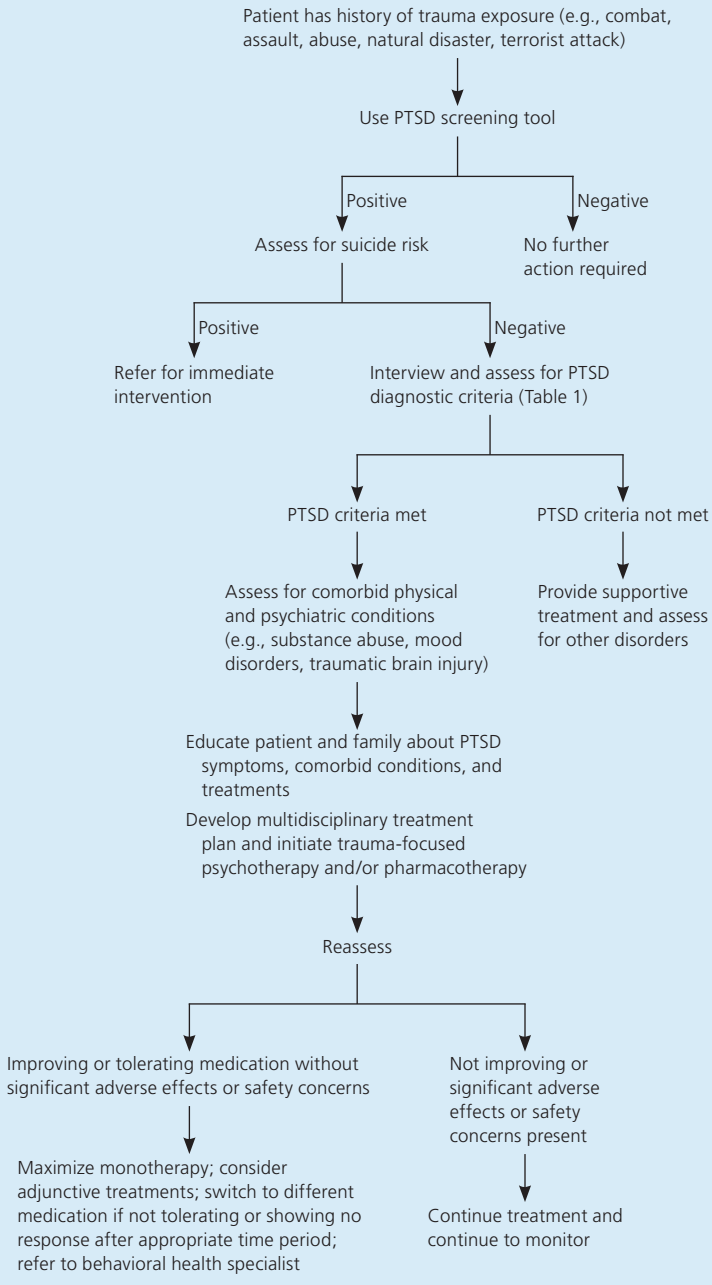
Posttraumatic stress disorder (PTSD) is a trauma- and stress-related disorder that has historically been diagnosed in combat veterans, but also occurs after many other types of traumatic events *(Figure 1)*. It is under-recognized and undertreated in primary care practices.[1,2] To improve outcomes in patients with PTSD, this article provides a practical approach to the recognition, diagnosis, and multidisciplinary treatment of PTSD.

Diagnostic Criteria

PTSD is characterized by exposure to a traumatic event and the subsequent development of four general symptom domains: reexperiencing the event or intrusion symptoms; avoidance of people, places, or things that serve as a reminder of the trauma; negative changes in mood and thoughts associated with the event; and chronic hyperarousal symptoms *(Table 1)*.[3] Traumatic events generally involve threats to life, sense of personal safety or security, or physical integrity. A related condition, acute stress disorder, is distinguished from PTSD by the presence of similar symptoms (with the addition of dissociation) that last for less than one month.[4] PTSD is diagnosed only if symptoms persist beyond one month after the event.

Of note, the recently published fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) had several changes to the exposure criteria. The previous version of the DSM required the individual to directly experience or witness the event and to experience a sense of helplessness. However, recent evidence showed that persons working in military and first responder occupations did not report the typical responses of fear, helplessness, or horror that are common in persons who have experienced

Assessment and Management of PTSD



Suggested interview questions for assessing PTSD criteria

Reexperiencing:

- Do you have times during the day when you relive the event, even though it is not happening?
- Do you have nightmares or think about the event when you do not want to?
- When you are reminded of the event, do you get fearful or anxious?

Avoidance:

- Since the event, do you avoid certain places, people, or situations?
- Do you stay away from certain conversation topics or feelings because they remind you of the event?
- Do you find it difficult to remember the specifics of what happened?
- Since the event, are there things you used to enjoy doing that you no longer do? Why?
- Do you feel less connected to your family and friends? Have others noticed this?
- Have others noticed that you seem unhappy?
- Have your life goals or plans changed since the event? How so?

Increased arousal:

- Since the event, do you have trouble sleeping?
- Since the event, are you angrier, more prone to arguments, or even violent?
- Are you able to remain focused and complete tasks?
- Do you feel like you are always on guard? Where do you feel safe?
- Do certain things startle you that didn't before the event?

First-line treatments for PTSD:

Trauma-focused psychotherapy (e.g., cognitive processing therapy, eye movement desensitization and reprocessing, prolonged exposure)

Pharmacotherapy (Table 3)

- Selective serotonin reuptake inhibitors
- Serotonin–norepinephrine reuptake inhibitors

Figure 1. Algorithm for assessment and management of posttraumatic stress disorder (PTSD).

traumatic events.[5,6] In response to these findings, the DSM-5 removed the helplessness requirement and broadened the definition to include the types of repetitive threats experienced by persons in these professions.[3]

Onset and Course

Emotional and physical responses vary considerably after acute exposure to traumatic stressors, with some persons not becoming symptomatic until years after the event. Spontaneous recovery usually occurs. However, if coping mechanisms are inadequate, psychological distress can intensify over time, leading to the development of PTSD. Although there is no clear timeline for symptom development, studies in military populations returning from combat zones have shown an increase in symptoms three to six months after return.[7] Additionally, several studies have indicated that approximately one-third of persons with PTSD will develop chronic symptoms.[8,9]

Table 1. Diagnostic Criteria for Posttraumatic Stress Disorder in Persons Older Than Six Years

A. Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:

1. Directly experiencing the traumatic event(s).
2. Witnessing, in person, the event(s) as it occurred to others.
3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).

Note: Criterion A4 does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related.

B. Presence of one (or more) of the following intrusion syndromes associated with the traumatic event(s), beginning after the traumatic event(s) occurred:

1. Recurrent, involuntary, and intrusive distressing memories of the traumatic event(s).

Note: In children older than six years, repetitive play may occur in which themes or aspects of the traumatic event(s) are expressed.

2. Recurrent distressing dreams in which the content and/or affect of the dream are related to the traumatic event(s).

Note: In children, there may be frightening dreams without recognizable content.

3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring. (Such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings.)

Note: In children, trauma-specific reenactment may occur in play.

4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).
5. Marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).

C. Persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred, as evidenced by one or both of the following:

1. Avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).
2. Avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).

D. Negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following:

1. Inability to remember an important aspect of the traumatic event(s) (typically due to dissociative amnesia and not to other factors such as head injury, alcohol, or drugs).
2. Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., "I am bad," "No one can be trusted," "The world is completely dangerous," "My whole nervous system is permanently ruined").
3. Persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others.
4. Persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame).
5. Markedly diminished interest or participation in significant activities.
6. Feelings of detachment or estrangement from others.
7. Persistent inability to experience positive emotions (e.g., inability to experience happiness, satisfaction, or loving feelings).

E. Marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following:

1. Irritable behavior and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects.
2. Reckless or self-destructive behavior.
3. Hypervigilance.
4. Exaggerated startle response.
5. Problems with concentration.
6. Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep).

F. Duration of the disturbance (Criteria B, C, D, and E) is more than one month.

G. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

H. The disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition.

Specify whether:

With dissociative symptoms: The individual's symptoms meet the criteria for posttraumatic stress disorder, and in addition, in response to the stressor, the individual experiences persistent or recurrent symptoms of either of the following:

1. Depersonalization: Persistent or recurrent experiences of feeling detached from, and as if one were an outside observer of, one's mental processes or body (e.g., feeling as though one were in a dream; feeling a sense of unreality of self or body or of time moving slowly).

2. Derealization: Persistent or recurrent experiences of unreality of surroundings (e.g., the world around the individual is experienced as unreal, dreamlike, distant, or distorted).

NOTE: To use this subtype, the dissociative symptoms must not be attributable to the physiological effects of a substance (e.g., blackouts, behavior during alcohol intoxication) or another medical condition (e.g., complex partial seizures).

Specify if:

With delayed expression: If the full diagnostic criteria are not met until at least six months after the event (although the onset and expression of some symptoms may be immediate).

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Epidemiology and Risk Factors

The lifetime risk of being exposed to a traumatic stressor is high (60.7% for men, 51.2% for women), but only an estimated 8% of exposed men and 20% of exposed women develop PTSD.[9] The overall lifetime prevalence of PTSD in the United States is 8%.[9] However, prevalence estimates for combat veterans and survivors of severe natural or man-made disasters are much higher.[9] Identification and treatment are further complicated by the fact that most persons with PTSD do not seek mental health assistance.[10]

Risk factors associated with progression to chronic PTSD are not well understood. Although there may be a genetic component in a small percentage of cases, environmental and biologic factors (e.g., poor psychosocial support, history of trauma, history of mental health problems) are also important risk factors.[11] Resiliency development and positive psychology programs have been emphasized for persons with high-risk professions, but there is no evidence that these programs prevent PTSD.[12]

Diagnostic Approach

Early identification and treatment are important in improving the prognosis.[13,14] Clinicians should have a high index of suspicion for PTSD in patients at risk, including those with a history of sexual assault or military service in a combat zone, and survivors of natural disasters. Although most persons do not develop PTSD after trauma exposure and screening has not been shown to improve health outcomes, guidelines from the U.S. Departments of Defense and Veterans Affairs recommend that all new patients with a history of trauma exposure be screened for symptoms of PTSD initially, and then on an annual basis or more frequently if indicated.[14] There is insufficient evidence to recommend specific screening for persons of any ethnicity, race, or sex.[14]

Self-report questionnaires can assist clinicians in identifying anxiety associated with traumatic events. The most commonly used tools are the Primary Care PTSD Screen[15] and the 17-item PTSD Checklist (available on pages 209 and 210, respectively, of the Department of Defense and Veterans Affairs guideline at http://www.healthquality.va.gov/ptsd/cpg_PTSD-FULL-201011612.pdf), and the Short Screening Scale for PTSD.[16] However, there is insufficient evidence to recommend one tool over another.[14] These tools are not diagnostic for PTSD, but indicate the presence of symptoms consistent with the disorder *(Table 2[13])*. If the results are positive, a more thorough assessment should be conducted.[13,14] Clinicians should assess the time of onset; frequency, course, and severity of symptoms; level of distress; and degree of functional impairment.

PTSD is associated with several comorbid physical and psychiatric conditions that can adversely affect treatment response unless they are addressed. The most common psychiatric comorbidities include substance abuse, mood disorders, and anxiety disorders.[9] In

Table 2. Common Symptoms After Exposure to Trauma

Behavioral	Emotional
Antisocial acts	Agitation
Change in activity	Anxiety
Change in appetite	Apprehension
Change in communication	Denial
Change in sexual functioning	Depression
Change in speech pattern	Emotional shock
Emotional outbursts	Fear
Inability to rest	Feeling overwhelmed
Increased alcohol consumption	Grief
Intensified startle reflex	Guilt
Pacing	Inappropriate emotional response
Social withdrawal	Irritability
Suspiciousness	Loss of emotional control
Cognitive	**Physical**
Blaming	Chills
Change in alertness	Difficulty breathing
Confusion	Dizziness
Hypervigilance	Elevated blood pressure
Increased or decreased awareness of surroundings	Fainting
	Fatigue
Intrusive images	Grinding teeth
Memory problems	Headaches
Nightmares	Muscle tremors
Poor abstract thinking	Nausea
Poor attention	Pain
Poor concentration	Profuse sweating
Poor decision making	Rapid heart rate
Poor problem solving	Twitching
	Weakness

Information from reference 13.

addition, physicians should screen for suicidal ideation; as many as one in five patients with PTSD may attempt suicide.[14,17] Generalized physical symptoms are also common among persons exposed to trauma.[18,19] Physical injuries from the traumatic event are risk factors for PTSD.

Management

The physician should educate the patient and his or her family about PTSD symptoms, other potential consequences of trauma exposure, and any comorbid conditions.[13,14,20,21] Because patients often are reluctant to discuss traumatic events and may avoid treatment as a result, it is important to elicit patient preferences for treatment interventions. Other factors that influence treatment choices include locally available resources, individual physicians' comfort level and experience, and severity of symptoms.

Trauma-focused psychotherapy and pharmacotherapy are first-line treatment options, but often must be combined with management of comorbid medical problems, such as chronic pain or sleep disturbance. Many persons with PTSD will attempt self-treatment methods, such as substance use. Physicians should have a low threshold for involving behavioral health specialists in PTSD management in the presence of comorbid substance abuse or psychiatric conditions. Patients who have substance use disorders should attempt a detoxification program, if necessary, and should be referred to a substance abuse or dual-diagnosis treatment program.

PSYCHOLOGICAL INTERVENTIONS

Although there is insufficient evidence that psychotherapy is more effective than medical therapy in the treatment of PTSD, most patients should be offered psychotherapy to address the specific symptoms of PTSD and any comorbid conditions. Trauma-focused psychotherapies that include narrative exposure, in vivo exposure (i.e., directly confronting anxiety triggers), cognitive restructuring, and relaxation techniques are the most effective.[14,20-25] Some examples of therapies that include these components are prolonged exposure, cognitive processing therapy, and eye movement desensitization and reprocessing. Other potentially effective therapies include imagery rehearsal, brief psychodynamic therapy, and hypnosis.[14] Psychoeducation and supportive interventions are also important components of therapy. PTSD can have significant effects on the spouses, children, and families of persons affected; therefore, referral to a marital or family therapist may also be indicated.[14]

PHARMACOTHERAPY

Table 3 lists medications available for the treatment of PTSD.[14,26-33] General guidelines include optimizing monotherapy; continuing the dosage for four weeks if the patient responds to treatment and tolerates the medication; switching to another agent if the patient does not tolerate the medication; and increasing the dosage or switching to another medication if no improvement is noted after eight weeks of therapy.[14] Treatment effectiveness is measured by subjective and objective symptom reduction.

Antidepressants. Selective serotonin reuptake inhibitors and serotonin–norepinephrine reuptake inhibitors have the most evidence supporting their use in the treatment of PTSD; sertraline (Zoloft) and paroxetine (Paxil) are approved by the U.S Food and Drug Administration for this use.[26,27] Selective serotonin reuptake inhibitors and serotonin–norepinephrine reuptake inhibitors may be prescribed as first-line therapy because there is no direct evidence that psychotherapy is more effective.[14] These medications help with most PTSD symptoms, including intrusive thoughts and flashbacks, irritability and anger, problems concentrating, hyperarousal, chronic restlessness and anxiety, and depressed mood.[13,14,26,27] Patients should be counseled that it may take six to eight weeks to achieve full therapeutic benefit,[34] and that suddenly stopping therapy can result in a discontinuation syndrome that may include anxiety, insomnia, depression, irritability, mood lability, vivid dreams, tremors, fatigue, lethargy, and dizziness.[34] These symptoms may be mistaken as a worsening of PTSD symptoms. Other antidepressants may also be effective, including mirtazapine (Remeron), nefazodone, tricyclic antidepressants, and monoamine oxidase inhibitors.[28] Safety considerations, adverse effects, and psychiatric and medical comorbidities make these second-line medication choices.[13,14,29]

Augmenting Agents. Augmentation with other medications may be necessary if symptoms persist despite first-line pharmacotherapy. The alpha-adrenergic blocker prazosin (Minipress) alleviates sleep disturbance caused by nightmares.[14,30,31] The effectiveness of other alpha-adrenergic blockers, $alpha_2$ agonists (e.g., clonidine [Catapres], guanfacine [Tenex]), and beta antagonists (e.g., propranolol, atenolol [Tenormin]) in the treatment of PTSD is unknown.[14,30]

Benzodiazepines have been used to treat symptoms of hyperarousal in patients with PTSD. However, they can worsen other PTSD symptoms and should be avoided.[14,30,35] Because of their potential for abuse, dissociative effects, and disinhibiting properties, benzodiazepines have been associated with adverse effects in PTSD.

Table 3. Medications for Treating Posttraumatic Stress Disorder

Medication	*Starting dosage*	*Typical effective dosage*	*Maximum dosage*	*Cost* (brand prices in parentheses)*
SSRI and SNRI antidepressants (first-line agents)				
Citalopram (Celexa)	20 mg per day	20 to 40 mg per day	60 mg per day	$4 ($160)
Desvenlafaxine (Pristiq)	50 mg per day	50 mg per day	100 mg per day	NA ($195)
Duloxetine (Cymbalta)	30 to 60 mg per day	60 mg per day	120 mg per day	NA ($240)
Escitalopram (Lexapro)	10 mg per day	10 to 20 mg per day	20 mg per day	$15 ($175)
Fluoxetine (Prozac)	20 mg per day	20 to 40 mg per day	80 mg per day	$4 ($230 to $455)
Paroxetine (Paxil)	20 mg per day	20 to 50 mg per day	50 mg per day	$4 to $20 ($145 to $285)
Sertraline (Zoloft)	50 mg per day	50 to 200 mg per day	200 mg per day	$10 to $20 ($65 to $330)
Venlafaxine	37.5 to 75 mg twice per day	50 to 150 mg twice per day	300 mg per day	$35 to $55
Non-SSRI/SNRI antidepressants				
Amitriptyline	25 to 100 mg before bedtime	50 to 300 mg before bedtime	300 mg per day	$4 to $15
Clomipramine (Anafranil)	25 mg before bedtime	25 to 250 mg before bedtime	250 mg per day	$15 to $65 ($440 to $2,200)
Desipramine (Norpramin)	25 mg per day	100 to 300 mg per day	300 mg per day	$55 to $200 ($155 to $450)
Doxepin	25 mg before bedtime	75 to 300 mg before bedtime	300 mg per day	$15 to $30
Imipramine (Tofranil)	25 mg before bedtime	50 to 300 mg before bedtime	300 mg per day	$15 to $60 ($220 to $1,325)
Mirtazapine (Remeron)	15 mg before bedtime	15 to 45 mg before bedtime	45 mg per day	$15 ($150)
Nortriptyline (Pamelor)	25 mg before bedtime	50 to 150 mg before bedtime	150 mg per day	$15 to $20 ($770 to $1,600)
Phenelzine (Nardil)	15 mg three times per day	15 to 30 mg three times per day	90 mg per day	$60 to $100 ($115 to $230)
Trazodone	25 to 50 mg before bedtime	25 to 150 mg before bedtime	175 mg per day	$4 to $10
Augmenting agents				
Alpha-adrenergic blockers				
Clonidine (Catapres)	0.1 mg twice per day	0.2 to 1.2 mg per day	2.4 mg per day	$4 to $20 ($90 to $430)
Guanfacine (Tenex)	1 mg before bedtime	1 to 2 mg before bedtime	3 mg per day	$4 to $10 ($70 to $120)
Prazosin (Minipress)	2 mg before bedtime	2 to 20 mg before bedtime	40 mg per day	$10 to $50 ($50 to $330)
Propranolol	20 to 40 mg twice per day	160 to 480 mg per day	640 mg per day	$4 to $10
Mood stabilizers/anticonvulsants				
Carbamazepine (Tegretol)	200 mg per day	Blood levels 4 to 12 mcg per mL	Blood levels > 12 mcg per mL	Varies
Gabapentin (Neurontin)	300 mg before bedtime	300 to 600 mg three times per day	3,600 mg per day	$15 to $20 ($240 to $475)
Lamotrigine (Lamictal)	25 to 50 mg per day	50 to 250 mg twice per day	500 mg per day	$10 to $15 ($240 to $565)
Lithium	300 to 600 mg twice per day	300 to 600 mg three times per day	Blood levels > 1.2 mEq per L	$4 to $25
Topiramate (Topamax)	25 to 50 mg per day	100 to 400 mg per day	400 mg per day	$15 to $25 ($320 to $740)
Valproate (Depacon)	300 to 600 mg twice per day	Blood levels 50 to 100 mcg per mL	Blood levels > 100 mcg per mL	Varies
Other agents				
Buspirone (Buspar)	7.5 mg twice per day	30 mg per day	60 mg per day	$30 ($150)
Diphenhydramine (Benadryl)	25 mg before bedtime	25 to 50 mg before bedtime	50 mg per day	$5
Zaleplon (Sonata)	5 mg before bedtime	5 to 10 mg before bedtime	20 mg per day	$20 ($170)
Zolpidem (Ambien)	5 mg before bedtime	5 to 10 mg before bedtime	10 mg per day	$10 ($280)

NOTE: *Paroxetine and sertraline are the only medications listed that are approved by the U.S. Food and Drug Administration for the treatment of posttraumatic stress disorder.*

NA = not available; SNRI = serotonin–norepinephrine reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor.

**—Estimated retail cost for one month of therapy at typical effective dosages, based on information obtained at http://www.goodrx.com and http://www.drugstore.com (accessed September 6, 2013).*

Information from references 14, and 26 through 33.

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendations	*Evidence rating*	*References*
New patients with a history of trauma exposure should be screened for symptoms of PTSD initially, and then on an annual basis or more frequently if clinically indicated.	C	14
Trauma-focused psychotherapy and pharmacotherapy with selective serotonin reuptake inhibitors or serotonin–norepinephrine reuptake inhibitors are first-line treatment options for PTSD.	A	14, 20, 21
Monotherapy for PTSD should be optimized before prescribing additional agents.	C	14
Adjunctive treatment with prazosin (Minipress) is recommended for patients with PTSD who have sleep disturbance.	B	14, 31
Benzodiazepines should be avoided in the treatment of PTSD.	B	14, 30, 35
Atypical antipsychotics should generally be avoided in the treatment of PTSD.	C	14

PTSD = posttraumatic stress disorder.

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.

Antihistamines or hypnotics (e.g., zolpidem [Ambien], zaleplon [Sonata]) may be used for short-term treatment of insomnia in persons with PTSD, and the antidepressant trazodone may be used on a longer-term basis.[14,30] There is insufficient evidence to support the use of buspirone (Buspar) as an adjunctive or single agent in the treatment of PTSD.[14,30]

Mood stabilizers are used to treat mood swings, irritability, impulsivity, and violent behaviors in persons with bipolar disorder, and have been postulated to be effective for the target symptoms of PTSD. However, study results have been mixed.[14,29] Thus far, there is only limited support for the adjunctive use of lithium, valproate (Depacon), carbamazepine (Tegretol), lamotrigine (Lamictal), topiramate (Topamax), gabapentin (Neurontin), or second-line agents in the treatment of PTSD, and some guidelines recommend against their use because of their risks and monitoring requirements.[14,30,32]

Initially, several open-label and controlled studies supported the use of adjunctive atypical antipsychotics in the treatment of severe and refractory PTSD.[36] However, a recent large multisite trial of risperidone (Risperdal) reported no benefit over placebo for the treatment of PTSD.[37] Consequently, antipsychotics are not recommended.[10,14]

OTHER ASPECTS OF MANAGEMENT

In addition to the treatments above, other therapies may improve treatment adherence and address certain symptoms adjunctively (e.g., anxiety, chronic pain, sleep disturbance). Acupuncture and yoga have shown promising results, although larger studies are needed.[14,38,39] Mobile applications can also be used to manage PTSD symptoms.[33]

Patients may benefit from a referral to a minister or chaplain to address spiritual needs. Peer-to-peer and family support groups in local communities can augment ongoing treatment. Websites such as the National Center for PTSD (http://www.ptsd.va.gov/public/index.asp), the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (http://www.dcoe.mil/psychologicalhealth.aspx), and the National Child Traumatic Stress Network (http://www.nctsnet.org) provide useful information for patients and physicians.

The views expressed herein are those of the authors and do not reflect the official policy of the Department of the Army, the U.S. Department of Defense, or the U.S. government.

Data Sources: A PubMed search was completed in Clinical Queries using the key terms posttraumatic stress disorder, detection, treatment, and primary care. The search included meta-analyses, randomized controlled trials, clinical trials, and reviews. Also searched were the Cochrane Database of Systematic Reviews, evidence-based guidelines from the National Guidelines Clearinghouse, the National Center for Complementary and Alternative Medicine, the U.S. Preventive Services Task Force, and UpToDate. Search date: August 22, 2012.

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REFERENCES

1. Rodriguez BF, Weisberg RB, Pagano ME, Machan JT, Culpepper L, Keller MB. Mental health treatment received by primary care patients with posttraumatic stress disorder. *J Clin Psychiatry.* 2003;64(10):1230-1236.

2. Liebschutz J, Saitz R, Brower V, et al. PTSD in urban primary care: high prevalence and low physician recognition. *J Gen Intern Med*. 2007;22 (6):719-726.
3. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Washington, DC: American Psychiatric Association; 2013.
4. Kavan MG, Elsasser GN, Barone EJ. The physician's role in managing acute stress disorder. *Am Fam Physician*. 2012;86(7):643-649.
5. Adler AB, Wright KM, Bliese PD, Eckford R, Hoge CW. A2 diagnostic criterion for combat-related posttraumatic stress disorder. *J Trauma Stress*. 2008;21(3):301-308.
6. Castro CA, Adler AB. Reconceptualizing combat-related post-traumatic stress disorder as an occupational hazard. In: Adler AB, Bliese PD, Castro CA, eds. *Deployment Psychology*. Washington, DC: American Psychological Association; 2011:217-42.
7. 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;351(1):13-22.
8. Davidson JR, Hughes D, Blazer DG, George LK. Post-traumatic stress disorder in the community: an epidemiological study. *Psychol Med*. 1991; 21(3):713-721.
9. Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52(12):1048-1060.
10. Hoge CW. Interventions for war-related posttraumatic stress disorder: meeting veterans where they are. *JAMA*. 2011;306(5):549-551.
11. True WR, Rice J, Eisen SA, et al. A twin study of genetic and environmental contributions to liability for posttraumatic stress symptoms. *Arch Gen Psychiatry*. 1993;50(4):257-264.
12. Lester PB, McBride S, Bliese PD, Adler AB. Bringing science to bear: an empirical assessment of the Comprehensive Soldier Fitness program. *Am Psychol*. 2011;66(1):77-81.
13. Ursano RJ, Bell C, Eth S, et al.; Work Group on ASD and PTSD; Steering Committee on Practice Guidelines. Practice guideline for the treatment of patients with acute stress disorder and posttraumatic stress disorder. *Am J Psychiatry*. 2004;161(11 suppl):3-31.
14. Department of Veterans Affairs; Department of Defense. VA/DoD clinical practice guideline for management of post-traumatic stress. http://www.healthquality.va.gov/ptsd/cpg_PTSD-FULL-201011612.pdf. Accessed September 9, 2013.
15. Prins A, Ouimette P, Kimerling R, et al. The primary care PTSD screen (PC-PTSD): development and operating characteristics. *Prim Care Psychiatry*. 2003;9(1):9-14.
16. Breslau N, Peterson EL, Kessler RC, Schultz LR. Short screening scale for DSM-IV posttraumatic stress disorder. *Am J Psychiatry*. 1999;156(6): 908-911.
17. Davidson JR, Hughes D, Blazer DG, George LK. Post-traumatic stress disorder in the community: an epidemiological study. *Psychol Med*. 1991;21(3):713-721.
18. Engel CC Jr, Liu X, McCarthy BD, Miller RF, Ursano R. Relationship of physical symptoms to posttraumatic stress disorder among veterans seeking care for gulf war-related health concerns. *Psychosom Med*. 2000;62(6):739-745.
19. Hoge CW, Terhakopian A, Castro CA, Messer SC, Engel CC. Association of posttraumatic stress disorder with somatic symptoms, health care visits, and absenteeism among Iraq war veterans. *Am J Psychiatry*. 2007; 164(1):150-153.
20. Foa EB. Psychosocial treatment of posttraumatic stress disorder. *J Clin Psychiatry*. 2000;61(suppl 5):43-48, discussion 49-51.
21. Bisson J, Andrew M. Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database Syst Rev*. 2007;(3):CD003388.
22. Monson CM, Schnurr PP, Resick PA, Friedman MJ, Young-Xu Y, Stevens SP. Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *J Consult Clin Psychol*. 2006;74(5):898-907.
23. Rothbaum BO. A controlled study of eye movement desensitization and reprocessing in the treatment of posttraumatic stress disordered sexual assault victims. *Bull Menninger Clin*. 1997;61(3):317-334.
24. Resick PA, Galovski TE, O'Brien Uhlmansiek M, Scher CD, Clum GA, Young-Xu Y. A randomized clinical trial to dismantle components of cognitive processing therapy for posttraumatic stress disorder in female victims of interpersonal violence. *J Consult Clin Psychol*. 2008;76(2):243-258.
25. Rothbaum BO, Cahill SP, Foa EB, et al. Augmentation of sertraline with prolonged exposure in the treatment of posttraumatic stress disorder. *J Trauma Stress*. 2006;19(5):625-638.
26. Cooper J, Carty J, Creamer M. Pharmacotherapy for posttraumatic stress disorder: empirical review and clinical recommendations. *Aust N Z J Psychiatry*. 2005;39(8):674-682.
27. Bisson J. Post-traumatic stress disorder. *Clin Evid*. 2004;(11):1343-1361.
28. Stein DJ, Bandelow B, Hollander E, et al.; World Council of Anxiety. WCA recommendations for the long-term treatment of posttraumatic stress disorder. *CNS Spectr*. 2003;8(8 suppl 1):31-39.
29. Schoenfeld FB, Marmar CR, Neylan TC. Current concepts in pharmacotherapy for posttraumatic stress disorder. *Psychiatr Serv*. 2004; 55(5):519-531.
30. Hamner MB, Robert S, Frueh BC. Treatment-resistant posttraumatic stress disorder: strategies for intervention. *CNS Spectr*. 2004;9(10): 740-752.
31. Raskind MA, Peskind ER, Hoff DJ, et al. A parallel group placebo controlled study of prazosin for trauma nightmares and sleep disturbance in combat veterans with post-traumatic stress disorder. *Biol Psychiatry*. 2007;61(8):928-934.
32. Andrus MR, Gilbert E. Treatment of civilian and combat-related posttraumatic stress disorder with topiramate. *Ann Pharmacother*. 2010;44 (11):1810-1816.
33. Dyer EA, Kansagara D, McInnes DK, Freeman M, Woods S. *Mobile Applications and Internet-based Approaches for Supporting Non-professional Caregivers: A Systematic Review*. Washington, DC: Dept. of Veterans Affairs; 2012.
34. Warner CH, Bobo W, Warner CM, Reid S, Rachal J. Antidepressant discontinuation syndrome. *Am Fam Physician*. 2006;74(3):449-456.
35. Braun P, Greenberg D, Dasberg H, Lerer B. Core symptoms of posttraumatic stress disorder unimproved by alprazolam treatment. *J Clin Psychiatry*. 1990;51(6):236-238.
36. Pae CU, Lim HK, Peindl K, et al. The atypical antipsychotics olanzapine and risperidone in the treatment of posttraumatic stress disorder: a meta-analysis of randomized, double-blind, placebo-controlled clinical trials. *Int Clin Psychopharmacol*. 2008;23(1):1-8.
37. Krystal JH, Rosenheck RA, Cramer JA, et al.; Veterans Affairs Cooperative Study No. 504 Group. Adjunctive risperidone treatment for antidepressant-resistant symptoms of chronic military service-related PTSD: a randomized trial. *JAMA*. 2011;306(5):493-502.
38. Cabral P, Meyer HB, Ames D. Effectiveness of yoga therapy as a complementary treatment for major psychiatric disorders: a meta-analysis. *Prim Care Companion CNS Disord*. 2011;13(4).
39. Hollifield M, Sinclair-Lian N, Warner TD, Hammerschlag R. Acupuncture for posttraumatic stress disorder: a randomized controlled pilot trial. *J Nerv Ment Dis*. 2007;195(6):504-513.