

### Alternative Treatments for Post Traumatic Stress Disorder

Sadly, war and violence are common problems. Serious emotional trauma affects millions of people around the world each year causing a condition known as Post Traumatic Stress Disorder [PTSD] in some victims. PTSD patients continually relive the traumatic experience in the form of nightmares and disturbing recollections and vivid daydreams often referred to as *flashbacks*. They are hyper-alert[ CITATION Fri07 \y \l 1033 ]. They may experience sleep problems, depression, feelings of emotional detachment or numbness, and may be easily aroused or startled[ CITATION Fri07 \y \l 1033 ]. They may lose interest in things they used to enjoy and have trouble feeling affectionate. They may feel irritable, be violent, or be more aggressive than before the traumatic exposure[ CITATION PTS09 \l 1033 ]. The diagnosis is further specified into categories based on whether symptoms last less than or greater than 3 months and whether onset of symptoms is less than or greater than 6 months after the traumatic event [ CITATION Ame94 \l 1033 ]. Current accepted treatment typically includes many different medications to treat the individual symptoms and counseling. These medications are not without undesirable and even harmful side effects. Several alternative treatments for PTSD are being studied. These alternative techniques may increase positive treatment outcomes while decreasing harmful side effects and may lead to a cure for Post Traumatic Stress Disorder.

In more than 100 countries there is recurring violence based on ethnicity, culture, religion or political orientation. Men, women and children suffer from hidden sexual and physical abuse. The trauma of molestation can cause PTSD[ CITATION Sch00 \y \l 1033 ]. So can rape, kidnapping, serious accidents such as car or train wrecks, natural

disasters such as floods or earthquakes, violent attacks such as mugging, torture, or being held captive and now being widely admitted is military or war time experience[ CITATION Fri07 \y \l 1033 ]. About 300,000 Iraq and Afghanistan war veterans suffer from PTSD or major depression[ CITATION Dob02 \l 1033 ]. The event that triggers PTSD may be something that threatened the person's life or jeopardized someone close to him or her[ CITATION Olt10 \y \l 1033 ]. On the other hand, simply witnessing acts of violence, such as a mass destruction or massacre can cause symptoms[ CITATION Col06 \y \l 1033 ]. PTSD can affect survivors, witnesses and relief workers, military members and public safety personnel[ CITATION Olt10 \y \l 1033 ].

There are currently only two medications approved as primary treatment options for PTSD, sertraline, trade name Zoloft, and paroxetine, trade name Paxil, [ CITATION Nat10 \l 1033 ]. These are antidepressants which may also help treat the feelings of sadness, numbness, worry and anger felt by PTSD patients [ CITATION Nat10 \l 1033 ]. Zoloft is a basic SSRI antidepressant, which is a serotonin re-uptake inhibitor. It controls the nerve synapse and is used as a mood or feeling stimulator[ CITATION Pos09 \y \l 1033 ]. Common side effects of Zoloft and other antidepressants are anxiety, constipation, decreased sexual desire or ability, diarrhea, dizziness, drowsiness, dry mouth, increased sweating, loss of appetite, nausea, nervousness, stomach upset, tiredness, trouble sleeping, vomiting, and weight loss [ CITATION Zol11 \l 1033 ]. Considering many of these are symptoms already experienced with PTSD, these side effects can be detrimental to the healing and control of PTSD.

In addition to these medications, doctors use an array of other medications to treat the symptoms of PTSD. Various benzodiazepines and antipsychotic medications are used to treat anxiety, mood changes and sleep disorders experienced as part of

PTSD [ CITATION Nat10 \l 1033 ]. Some experts state benzodiazepines are not effective for the treatment of anxiety [ CITATION Olt10 \l 1033 ], however, many veterans do find benzodiazepines to be effective in dealing with general anxiety and fear of leaving their homes or safe locations. One of the most commonly prescribed benzodiazepines for anxiety is clonazepam, trade name Klonopin [ CITATION Sch00 \l 1033 ]. Benzodiazepines can cause memory loss and addiction [ CITATION Nat10 \l 1033 ]. In my experience, the memory loss suffered by patients taking clonazepam tends to be memories of daily activities and parts of the daily routine needed to aid in recovery. Addiction comes with physical and mental dependencies that can also affect long term treatment and healing.

The mood disorders associated with PTSD are treated with antipsychotic mood stabilizers. There are many types of these medications available, but all come with unpleasant side effects. The first big one for the severe mood disorders is Lithium. Lithium can be a dangerous, toxic drug. This drug comes with a whole battery of weekly and monthly tests to obtain the right blood levels. Another strong mood stabilizer is Depakote, which does not require the weekly blood tests but does have a nasty side effect of major weight gain. Patients have been known to gain over 200 pounds in a period of months on high dosages of Depakote. Both medications do combat the flashbacks, the visual and auditory hallucinations of reliving the traumatic experience. A newer medication that is gaining favor among physicians is Invega or paliperidone [ CITATION Fri07 \l 1033 ].

Sleep disorders are another major component of PTSD, and are usually treated with tranquilizers and high dose sedatives [ CITATION Nat10 \l 1033 ]. For many sufferers of PTSD, sleep can be rare. Patients can either be too manic to sleep, or just plain afraid to try to sleep since nighttime can be a prevalent time to re-experience

traumatic events or have horrible nightmares[ CITATION PTS09 \l 1033 ]. Temazepam and trazadone are commonly prescribed sleep aids, as well as Benadryl [ CITATION Fri07 \l 1033 ]. Some anti-depressants have a side effect of drowsiness and sleepiness like Elavil and are sometimes prescribed to combat the insomnia, too. The treatments for PTSD include many medications that are taken to combat only a few of the problems and as with most medications, they do not mix well.

A controversial, alternative treatment that can combat many symptoms of PTSD is the use of Cannabis or Marinol. Preliminary research by Dr. Mitch Earleywine shows that many veterans report using herbal cannabis, from both legal and illegal sources to self-medicate their PTSD symptoms [ CITATION Can10 \l 1033 ]. There is a large body of evidence that suggests that cannabis enhances the ability to cope with PTSD[ CITATION Dav09 \l 1033 ]. Dr. Robert Melamede, CEO of Cannabis Science, Inc, claims “medical cannabis has far fewer and milder side effects than most currently prescribed pharmaceutical products do.” It can also treat clinical depression, anxiety and schizophrenias.

Recent research sheds light on how cannabis may work to treat PTSD. The early studies have been done on animals, not on humans, but they still show potential for success[ CITATION Dav09 \l 1033 ]. Neuronal and molecular mechanisms underlying fearful memories are often studied in animals by using “fear conditioning”. Under the theory of classical conditioning, scientists give animals PTSD-like symptoms by using neutral or conditioned stimuli, which is typically a tone or a light, pairing the stimuli with an aversive stimulus, typically a small electric shock to the foot[ CITATION Dav09 \l 1033 ]. In classical conditioning, after repeated pairing of the neutral stimulus and the meaningful one, the subject will begin to associate the neutral stimuli with the outcome of the meaningful stimuli [ CITATION Ber10 \l 1033 ]. The

conditioned stimuli alone will then evoke the stereotypical physical features of the fearful response, including changes in heart rate and blood pressure and freezing of ongoing movements. Repeated presentation of the conditioned stimulus alone leads to extinction of the fearful response as the animal learns that it need no longer fear a shock from the tone or light, a condition called Fear Extinction[ CITATION Dav09 \y \l 1033 ].

The limbic system regulates emotions and memory formation, and includes the hypothalamus, the hippocampus, the amygdale, and several other structures in the brain that are particularly rich in type one cannabinoid [CB1] receptors, which are cell membrane receptors in the G protein-coupled receptor super family[ CITATION Dav09 \y \l 1033 ]. The amygdale, a small, almond-shaped region lying below the cerebrum, is crucial in acquiring and, possibly, storing the memory of conditioned fear[ CITATION Dav09 \y \l 1033 ]. It is thought that at the cellular and molecular level, learned behavior including fear involves neurons in the base-lateral part of the amygdale, and changes in the strength of their connection with other neurons [ CITATION Dav09 \y \l 1033 ]. CB1 receptors are among the most abundant neuroreceptors in the central nervous system. They are found in high levels in the cerebellum and basal ganglia, as well as the limbic system[ CITATION Roy06 \y \l 1033 ]. The classical behavioral effects of exogenous cannabinoids such as sedation and memory changes can be correlated with the presence of CB1 receptors in the limbic system[ CITATION Dav09 \y \l 1033 ].

This effect needs further study, but in practical use, marijuana has shown to be effective in treating most symptoms of PTSD, without the harmful side effects of a multitude of medications to treat the individual symptoms. Another potential alternative treatment is the use of MDMA or Ecstasy to combat flashbacks and other symptoms [ CITATION Dob02 \l 1033 ]. The Pentagon has begun studies of various alternative

treatments, such as animal therapy, acupuncture, meditation, and Eye-movement desensitization and reprocessing psychotherapy [EMDR], in addition to studies on MDMA and cannabis [ CITATION Dob02 \l 1033 ]. These non-medication treatment alternatives have no lasting physical side effects. These research studies show initial positive findings for new sources of treatment.

While the traditional medications are FDA approved and more heavily tested, the harsh chemicals in them can cause further problems for patients, in some cases worse than the PTSD. Both courses of treatment show some effect on the symptoms of PTSD, but the side effects are vastly different. While not all doctors will accept the use of alternative treatments for PTSD, they certainly show potential and should be studied further to help treat this debilitating condition.

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