

# Alex Neaveill, Psychology

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## **Finding alternative methods of treating post-traumatic stress disorder**

*Alex Neaveill, Ajay Nair, and Satish Nair*

Post-traumatic stress disorder is a mental condition that affects many veterans and others who have been through a traumatic experience. One widely used method to combat PTSD is debriefing, which is an interview between the therapist/psychologist and the patient(s) that is to discuss the traumatic event. However, recent studies are not only showing that debriefing does not work as well as previously thought, but debriefing may actually be aiding in the onset of PTSD by effectively putting the subject(s) through more fear conditioning by talking about the experience. We wish to further investigate this by trying to investigate the link of fear conditioning to PTSD using 'fear circuit' models report in the literature. We also study the effect of different levels of fear conditioning on PTSD, as well as what can be done to inhibit the onset of PTSD. Data from rat studies will be used in the analysis. We will use computer models of certain neurons in the amygdala and prefrontal cortex (the two main structures of the fear circuit) to study changes to their firing properties with conditioning. This could possibly be related to data from imaging studies of normal and PTSD patients. One objective is to look for possible sites for drug actions such as ways to inhibit or weaken synapses in the fear circuit or to improve the effectiveness of another treatment for PTSD known as extinction. This research is still ongoing and it will take more time before we hope to yield results.