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Oral Presentation

The Mechanistic Role of Sleep in Posttraumatic Stress Disorder

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Abstract

Around 75% of civilians have experienced at least one traumatic event in their lives, and this number is considerably higher in many parts of the world, as well as in military veterans and first responders. Of those exposed to trauma, 15-25% will develop Posttraumatic Stress Disorder (PTSD). PTSD extracts enormous economic, health, and quality of life cost. Thus, it is critical to understand mechanisms underlying PTSD and modifiable factors influencing those mechanisms. Fear conditioning and fear inhibition are among the most fundamental mechanisms involved in development, maintenance, and treatment of PTSD. Developing fear extinction and safety signal learning, as well as retaining them over time, are critical to recovering from PTSD. A growing body of research shows sleep, particularly REM sleep, may support the acquisition and recall of fear inhibition. Animal studies report REM sleep disruption interferes with acquisition of fear extinction, as well as the subsequent ability to consolidate and recall extinction learning. This effect on recall is critical, as extinction recall is the strongest predictor of intact long-term extinction. Although few in number, studies translating these findings to humans also support the hypothesis that REM sleep is important for extinction learning and recall. This talk will review the latest of these human studies linking REM sleep to fear inhibition, as well as examining the impact of sleep deprivation on fear inhibition, and implications for improving treatment will be discussed.

Keywords: Sleep, Fear, Trauma

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