

Nightmares and the Brain



In the late 1700s, the popular reference text, *An Universal Etymological English Dictionary*, first published by Nathan Bailey in 1721 and reprinted through 1802, defined a nightmare as a “disease when a man in his sleep supposes he has a great weight laying upon him.” Although that definition doesn’t surface often today, nightmares are still considered to be frightening dreams that result in feelings of terror, fear, distress, or anxiety.

Dreams are understood to be recent autobiographical episodes that become woven with past memories to create a new memory that can be referenced later, but nightmares are simply dreams that cause a strong but unpleasant emotional response. Dreams are part of the brain’s default network, a system of interconnected regions, which includes the thalamus, medial prefrontal cortex, and posterior cingulate cortex, that remains active during comparatively quiet periods.

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What happens to your body and brain as you sleep? Why would you transition from the wakeful state of consciousness, cognition, and vigor to a state that makes you vulnerable and seemingly unproductive? But what exactly is happening during sleep that provides benefit to us? And how does the brain quickly and reversibly switch between wakefulness and sleep? These are some of the questions my lab is working to answer.

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