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Poor sleep at night, more pain the next day

29/01/2019



After one night of inadequate sleep, brain activity ramps up in pain-sensing regions while activity is scaled back in areas responsible for modulating how we perceive painful stimuli. This finding, published in *JNeurosci*, provides the first brain-based explanation for the well-established relationship between sleep and pain.

In two studies -- one in a sleep laboratory and the other online -- Matthew Walker and colleagues show how the brain processes pain differently when individuals are sleep deprived and how self-reported sleep quality and pain sensitivity can change night-to-night and day-to-day. When the researchers kept healthy young adults awake through the night in the lab, they observed increased activity in the primary somatosensory cortex and reduced activity in regions of the striatum and insula cortex during a pain sensitivity task. Participants in the online study, recruited via the crowdsourcing marketplace Amazon Mechanical Turk, reported increased pain during the day after reporting poor sleep the night before.

These results suggest improving sleep quality, especially in hospital settings, could be an effective approach for pain management. More generally, the research highlights the interrelationship between sleep and pain, which is

decreasing and increasing, respectively, in societies around the world.

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**Story Source:**

Materials provided by [Society for Neuroscience](#). *Note: Content may be edited for style and length.*

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