

# Study Sheds Light on a Potential Cause of Insomnia

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In a study at Emory University, investigators have shed new light on a potential cause of insomnia, demonstrating that products of the immune system called cytokines may be the culprits. The study was published May 25, 2010 in the journal *Biological Psychiatry*.

Insomnia is a common [sleep](#) problem of unknown cause that occurs in about 10 percent of the population.

"[Sleep disturbances](#) are debilitating and often plague patients who have medical and psychiatric illnesses, exacerbating their conditions," says

Andrew Miller, MD, senior author and principal investigator of the study.

Miller is the William P. Timmie Professor of Psychiatry and Behavioral Sciences, Emory University School of Medicine, and director of Psychiatric Oncology, Winship Cancer Institute of Emory University.

"Our data suggests that cytokines may provide a link between disorders associated with chronic activation of the immune system, including medical and/or psychiatric illnesses and insomnia, which in turn is associated with fatigue and other problems," says Miller.

Cytokines are fundamental signaling molecules of the immune system that allow communication of [immune cells](#) with each other as well as communication with other tissues, including the brain.

In the Emory study, participants were exposed to standardized doses of the cytokine interferon (IFN)-alpha for the treatment of [hepatitis C](#) where it activates the immune system to fight the virus.

During the three months the individuals were exposed to IFN-alpha, they showed marked deterioration of their [sleep patterns](#). They woke up repeatedly during the night and spent much less time in the restorative, deep stages of sleep. During the day, these individuals were extremely fatigued. However, even when offered a nap, they still couldn't sleep.

The investigators believe these findings may hold promise for novel treatments of [insomnia](#) that target the effects of cytokines on sleep. The team is currently conducting a follow-up study to determine if blocking cytokines improves sleep in depressed patients.

**More information:** "Chronic interferon-alpha administration disrupts sleep continuity and depth in patients with hepatitis C: association with

fatigue, motor slowing and increased evening cortisol." Biol Psychiatry.  
The abstract can be found at PubMed at  
[www.ncbi.nlm.nih.gov/pubmed/20537611](http://www.ncbi.nlm.nih.gov/pubmed/20537611)

Provided by Emory University

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