

SCIENCE**Are Depression and Insomnia Linked? Study Found a Connection in the Brain**

People with insomnia are twice as likely to develop depression, compared to those without insomnia. Chronic insomnia, meanwhile, may increase a person's risk for depression. In July, scientists discovered why these two states of being appear to be intrinsically connected: They are bonded by a neural link.

Researchers announced in *JAMA Psychiatry* that individuals with insomnia and depression experience increased functional activity in regions of the brain associated with short-term memory, a sense of identity, and negative emotions. Functional activity — a term describing when separate parts of the brain are connected by patterns of active neurons — means that there's a neural basis for the association of depression with poor sleep quality.

This story is #16 on Inverse's [25 Most Surprising Human Discoveries Made in 2018](#).

When *Inverse* reported on this study in July, co-author and University of Warwick professor [Edmund Rolls, Ph.D.](#), told us that “understanding the brain systems better that are involved in depression provides new insight into possible treatments.” The team hypothesizes that, because they were able to identify specific brain regions, forms of targeted treatment like repetitive transcranial stimulation (rTMS) could be used to treat depression-linked sleeplessness.



Insomnia and depression are linked in the brain. [Unsplash / Fernando @cferdo](#)



They identified a handful of brain regions involved in this process: the lateral orbitofrontal cortex, dorsolateral prefrontal cortex, anterior and posterior cingulate cortices, insula, parahippocampal gyrus, hippocampus, amygdala, temporal cortex, and precuneus.

The data underlying this study comes from fMRI scans taken of 1,017 Americans between the ages of 22 and 35 that took part in the [Human Connectome Project](#). These scans revealed changes in brain activity as measured by changes in blood flow. Overall, 162 functional neural activity links involved in the areas of the brain associated with sleep were found — 39 of these 162 were also associated with the parts of the brain that are active when someone is depressed.

Targeted treatments, the team explains, are something that can happen in the near future —some scientists have already begun to focus rTMS on the lateral orbitofrontal cortex of depressed patients, and there have been “satisfactory outcomes.” With millions of people around the world affected by these two dangers, help can’t come soon enough.

As 2018 winds down, Inverse is highlighting 25 surprising things we learned about humans this year. These stories told us weird stuff about our bodies and brains, uncovered insights into our social lives, and illuminated why we’re such complicated, wonderful, and weird animals. This story was #16. Read the original story [here](#).

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