

Finding where ‘consciousness resides in the human brain’ could help us awaken comatose patients

Some people may gradually come out of a coma or wake up after a few weeks....

To help these people, scientists have been trying to pinpoint where consciousness resides in the human brain. Doing so would not only solve one of the [central questions of neuroscience](#), but it could also lead to treatments to “awaken” people in comas.

Brain scans have suggested that an area called the thalamus, which is located just above the brain stem, plays a role in consciousness. In a [paper published](#) in the journal Neuron on [February 12], researchers at the University of Wisconsin-Madison identified a tiny zone within this region — just a few millimeters in size — that, when stimulated appropriately, appears to wake unconscious monkeys.

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“It is a very tough area to target,” [psychologist Yuri] Saalman says of the central lateral thalamus. That may explain why only a handful of patients with disorders of consciousness have benefited from brain stimulation while many others have not.

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Meanwhile, a few ongoing clinical trials are testing the effectiveness of noninvasive types of stimulation, like [transcranial direct current stimulation](#) and vagus nerve stimulation on people in comas. Neuroscientists are also exploring the use of ultrasound, which was used to [wake up](#) a man in a coma.

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