

Brain scans may help predict recovery from coma

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Brain scans of people in a coma may help predict who will regain consciousness, according to a study published in the November 11, 2015, online issue of *Neurology*, the medical journal of the American Academy of Neurology. The study looked at connections between areas of the brain that play a role in regulating consciousness.

For the study, 27 people in a [coma](#) with severe brain injuries were compared to 14 healthy people of the same ages. All of the participants had functional magnetic resonance imaging (fMRI) scans taken of their brains. For those in a coma, the scans were conducted after any sedative drugs were out of their systems. Three months after their injuries, four of the people with coma had recovered consciousness. The others remained in a [minimally conscious state](#) or a [vegetative state](#) at three months.

All of the comatose people had significant disruption in the connections between brain areas and the posterior cingulate cortex. These changes were the same whether the brain injury was due to trauma or to lack of oxygen, such as from cardiac arrest.

The researchers found that the coordination of activity between the [posterior cingulate cortex](#) and the [medial prefrontal cortex](#) was significantly different between those who went on to recover from the coma and those who remained in a minimally conscious state or a vegetative state. The coordination between the two [brain areas](#) was the same for the healthy participants and those who regained consciousness.

Study author Stein Silva, MD, PhD, of the French national research institute, INSERM U825, in Toulouse, said that more research is needed before these results can be used to guide decisions about people in comas.

"We need to do more studies with larger numbers of patients to substantiate these results, but the findings are promising," Silva said. "We could be able to predict better who is more likely to recover from a coma and eventually develop innovative networks-based personalized treatments for people with brain injuries."

Provided by American Academy of Neurology

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