

## Doctors communicate with man assumed to be in vegetative state using fMRI

November 14 2012, by Bob Yirka

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Credit: National Institute of Mental Health

(Medical Xpress)—Doctors in Canada claim they have opened a communication channel, using fMRI, with a man assumed to be in a vegetative state for over twelve years. By asking the patient to envision two different types of mental exercises and assigning a value of yes or no respectively to each, while undergoing a brain scan, they believe car accident patient Scott Routley has informed them that he is not experiencing any pain.

Routley was severely injured in a car accident in 2000. Subsequent tests indicated that his brain was in a vegetative state, which is described as one where the patient is incapable of displaying any signs of consciousness and shows no signs of responsiveness to [external stimuli](#). The brain of such a patient is not considered to be dead however, as EEGs continue to show activity.

To try to communicate with Routley, doctors asked him to try to visualize himself playing tennis and recorded the way his brain responded using fMRI. They then asked him next to try to visualize himself walking around in his house and recorded the way his brain responded to that exercise as well. Then, they asked Routley to use the visualizations as a means of responding to questions – to visualize the tennis match as a means of answering yes to a question, for example. The doctors note that different [parts of the brain](#) are used to conjure up the two different types of thought processes making them easy to tell apart on fMRI scans. In interviews with the BBC, which is making a documentary about using fMRI to communicate with those thought to be in a [vegetative state](#), team lead Prof Adrian Owen, said tests were run multiple times using the same question and answer process and he reports that the results indicate that Routley was definitely communicating with him and his team.

Not everyone agrees with the results of course as reading [fMRI](#) results is still part art as well as science. Also, such research raises the possibility that science will discover that some people have been left to lie immobile for years under the assumption that they are unaware of the reality of their situation – a situation that would have to be addressed if it's determined that they are and have been, capable of conscious thought.

**More information:** via [BBC](#)

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