Vegetative state patients can respond to questions

By Fergus Walsh

Medical correspondent, BBC News

Scientists have been able to reach the mind of a brain-damaged man and even talk to him using his thoughts.

The research, carried out at the New England Journal of Medicine shows that scans can detect signs of awareness in patients who are diagnosed as being in a vegetative state.

Patients in a vegetative state are awake, but do not have any awareness because of severe brain damage.

Scanning technique

The scientists used functional magnetic resonance imaging (fMRI) which shows brain activity in real time.

They asked patients and healthy volunteers to imagine playing tennis while they were being scanned.

In 2004, the study involved scientists from the Medical Research Council (MRC), the Wolfson Brain Imaging Centre in Cambridge and a Belgian team used the same technique to establish initial contact with a patient diagnosed as vegetative.

This is a continuation of research published three years ago, when the team used the same technique to establish verbal contact with a patient diagnosed as vegetative.

But this time they went further.

With one patient - a Belgian man injured in a traffic accident seven years ago - they asked a series of questions.

The patient responded accurately to five out of six autobiographical questions posed by the scientists.

For example, he confirmed that his father's name was Christian.

The study involved scientists from the Medical Research Council (MRC), the Wolfson Brain Imaging Centre in Cambridge and a Belgian team at the University of Liege.

Dr Adrian Owen from the MRC in Cambridge co-authored the report:

"This changes things" Dr Adrian Owen, co-author of the research:

"It does raise many ethical issues - for example - it is lawful to allow patients to reach into the mind of a person who was alive but now in a vegetative state."

"Vegetative patient 'communicates'"

This also happened in four out of 23 of the patients presumed to be in a vegetative state.

It is not clear yet how widespread the technique is.

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