

Magnet treatment awakens car crash victim from coma

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A car crash victim who was in a coma for more than a year has become the first person to be brought back to consciousness using a pioneering magnet treatment.

The breakthrough, which involves placing a powerful magnet close to the patient's head, suggests gentle currents from a fluctuating magnetic field can be used to reverse the effects of traumatic brain injury.

Josh Villa was in a coma with massive head injuries for more than a year after a car crash and doctors felt there was nothing more they could do to awaken him.

But he is now being cared for at home and can speak very simple words after being given the therapy called transcranial magnetic stimulation (TMS).

The researchers who carried out the treatment are convinced TMS helped the patient but acknowledge further studies are required to demonstrate it is as beneficial in other people.

As a last resort Mr Villa, 29, was enrolled in the six-week study in which an electromagnetic coil was held over the front of his head to stimulate the underlying brain tissue.

TMS has been investigated as a way of treating migraine, stroke, Parkinson's disease and depression - with some promising results - but never before on someone with severe brain trauma.

The rapidly changing magnetic fields the coil creates can be used either to excite or inhibit brain cells - making it easier or harder for them to communicate with one another.

In Mr Villa's case the coil was used to excite brain cells in the right pre-frontal dorsolateral cortex. This area has strong connections to the brain-stem which sends out pulses to the rest of the brain that tell it to pay attention.

Dr Theresa Pape, of the US Department of Veterans Affairs in Chicago who treated him, said: "It's like an 'OK I'm awake' pulse."

At first there was little change in Mr Villa's condition but after around 15 sessions he began to show signs of improvement.

His mother Laurie McAndrews, of Rockford, Illinois, who became his carer, said: "You started talking to him and he would turn his head and look at you. That was huge."

Villa started obeying one-step commands such as following the movement of a thumb and speaking single words, reports New Scientist.

Dr Pape, who presented her findings at an international meeting on brain stimulation at Gottingen University in Germany, said: "They were very slurred but they were there. "He'd say like 'erm', 'help', 'help me'."

After the 30 planned sessions the TMS was stopped. Without it Mr Villa became very tired and his condition declined a little but he was still much better than before.

Six weeks later he was given another 10 sessions but there were no further improvements and he was sent home where he remains today. He is by no means cured. But he is easier to care for and can interact with visitors such as his girlfriend.