

Is addiction a brain disorder?

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Illustration: Matt Golding

MELBOURNE researchers hope a trial using magnetic fields to stimulate the brains of reformed alcoholics will unlock the key to addiction and discover what causes the urge to drink to excess.

Researchers at Monash Alfred Psychiatry Research Centre are using transcranial magnetic stimulation to study brain patterns of former addicts and detect changes that amplify the desire for booze.



The technology detects activity in the frontal region of the brain, thought to play a part in decision making and addictive behaviour. The non-invasive method sends magnetic pulses through a coil on the patient's head and delivers a gentle electric current that fires up nerve cells in the brain. The brain patterns are then monitored for reactions.

Magnetic therapy has previously been used by Alfred Monash on patients with bipolar disorder and those with traumatic brain injuries, but this is the first trial carried out on people recovering from alcoholism.

"There have been maybe four studies in the world which have used a similar technique," said chief investigator Jodie Feil. "But they've just given people alcohol, but not necessarily anyone with a history of addiction, to see if that changes their neural activity. Our study group is people who have detoxified."

The study involves 30 people who have been sober for at least six months, and 30 in a control group with no history of alcoholism. While receiving magnetic stimulation the brain's responses are measured and compared. Six people have already taken part, with promising results.

"We've already seen some differences which have been quite interesting and that shows that there is a biological aspect to addiction," Ms Feil said. "It suggests that for someone who does have an addiction, if these circuitries [in their brain] aren't working as well, the actual ability to stop drinking is harder than for someone who has this circuitry functioning properly."

"If you're making a wrong decision the brain has functions to step in and stop you. We think the research will show that these kinds of brakes aren't as strong in an addicted brain."

Will, who did not want his full name used, has taken part in the trial two years after he quit drinking and went into rehab. The 41-year-old engineer started as a social drinker but his addiction escalated and he was drinking 18 beers a day. "You just got to a point where you've hit the lowest you can go. You're at a fork in the road and you turn left and you die or you turn right and you live. I had to make some severe choices and get some help."

Researchers believe if the results show clear differences in the brain's neural pathways it could highlight the need for cognitive therapy to help alcoholics develop ways to make better decisions.

For more information on the trial call 9076 6564 or email j.feil@alfred.org.au

<http://www.theage.com.au/national/is-addiction-a-brain-disorder-20110618-1g9ar.html>