

Three-minute version of brain stimulation therapy effective for hard-to-treat depression

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In the largest study of its kind, a three-minute version of a brain stimulation treatment was shown to be just as effective as the standard 37-minute version for hard-to-treat depression.

These results were published in a new Canadian study in *The Lancet* co-

led by the Centre for Addiction and Mental Health (CAMH) and the University Health Network's Krembil Research Institute, in collaboration with the University of British Columbia.

The [treatment](#) is called repetitive transcranial magnetic stimulation (rTMS), which is a form of treatment that uses magnetic field pulses to non-invasively stimulate a part of the brain called the [dorsolateral prefrontal cortex](#), which is associated with mood regulation. The study compared standard rTMS treatment, which uses high frequency (10 Hz) brain stimulation for 37.5 minutes per session, with a newer form of rTMS called intermittent theta burst stimulation (iTBS), that mimics the brain's natural rhythms and takes just over three minutes per treatment.

"The main impact of this study is that the number of people who are able to be treated using theta burst stimulation compared to the standard form of rTMS can be increased by three to four fold," says lead author Dr. Daniel Blumberger, Co-Director of the Temerty Centre for Therapeutic Brain Intervention at CAMH.

"These findings will have a significant impact on our ability to treat patients," says Dr. Jonathan Downar, Co-Director, University Health Network's rTMS Clinic; Scientist, Krembil Research Institute and senior author of the study. "This will allow every device in Canada to treat several times more people per day, meaning shorter wait lists and better access to this treatment."

The study, conducted with Dr. Fidel Vila-Rodriguez, Assistant Professor, University of British Columbia, focused on people with treatment-resistant [depression](#), defined as a condition whereby people do not experience a sufficient improvement in their symptoms after trying antidepressant medications. Up to 40 per cent of people with depression may experience treatment resistance.

In the study, 414 participants were randomly allocated to receive either the standard form of rTMS treatment or the shorter iTBS treatment for five days a week for up to six weeks.

For 49 per cent of study participants who had the iTBS treatment, depression symptoms reduced significantly, with 32 per cent reporting a remission of depression symptoms. Those who received standard rTMS had a remission rate of 27 per cent. Those results are consistent with previous large-scale studies and meta-analyses over the past 20 years that have confirmed the efficacy and safety of the standard form of rTMS.

rTMS treatment was approved for treating depression by Health Canada in 2002 and by the U.S. Food and Drug Administration in 2008. Due to the cost of treatment (it is not covered by public health insurance outside Quebec and Saskatchewan), it has only been made available to a fraction of the estimated 600,000 Canadians living with treatment-resistant depression each year.

"rTMS has changed my life in so many ways," says study participant Shelley Hofer, 43, who has had treatment-resistant depression for most of her life. "I really wish it had been around a long time ago because I believe it would have been my go-to treatment. In my personal opinion, I feel rTMS could improve the lives of so many people who are still struggling to find the answers to their own mental illness."

Provided by Centre for Addiction and Mental Health

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