

Should You Try TMS (rTMS) for Depression?

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TMS refers to transcranial magnetic stimulation (TMS), a treatment method for clinical depression first developed in the 1980s. In the psychology research literature, TMS is often referred to as rTMS — the little 'r' is for *repetitive*, because the treatment needs to be delivered at regular intervals to be most effective. What exactly is it?

TMS is a simple, safe, external outpatient treatment procedure that pulses very specific wavelengths of magnetic fields to specific areas of your brain through your skull. It is believed these magnetic pulses help to reduce depression symptoms when administered in a course of treatment lasting 20-30 sessions over a period of six weeks (depending upon the response of the patient and the severity of the depression).

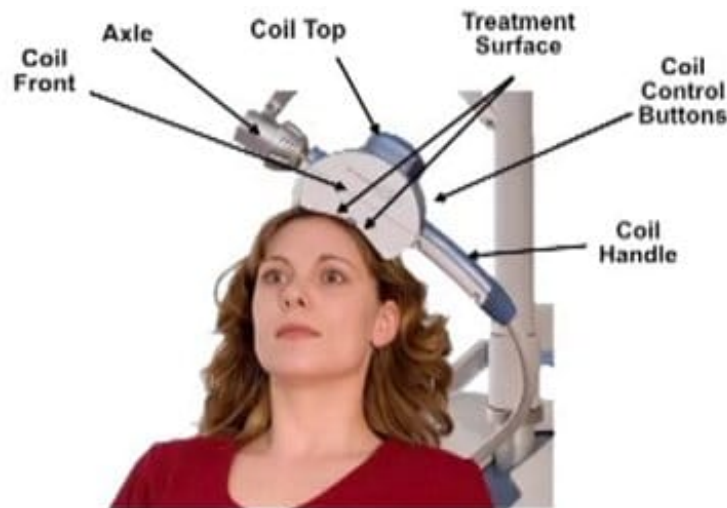
What's a treatment session of TMS like?

TMS treatment sessions typically last about 40 minutes after the initial consultation that determines whether TMS is right for the patient. The TMS procedure is painless and you remain fully conscious during it. Many people report feeling a tingling or tapping sensation on their head during the procedure. Ear plugs are typically worn to help reduce the noise made by the TMS machine. TMS is administered by a TMS technician who has been trained and certified in the treatment.

A typical treatment of rTMS includes high-frequency (10 Hz) stimulation of your brain's left-side dorsolateral prefrontal cortex. rTMS machines and procedures vary slightly, depending upon the manufacturer and the facility where you are receiving treatment.¹

Some patients also benefit from maintenance treatment once the initial course of 20-30 sessions has been completed. This maintenance treatment may occur every 6 to 12 months, depending on the patient and whether their depressive mood reoccurs.

Is TMS effective in the treatment of depression?



TMS is an effective treatment method for depression, especially treatment-resistant depression (TRD), according to the research literature. In one recent review the researchers wrote, "The studies reviewed reported satisfactory responses to rTMS in acute depressive episodes, as measured using depressive symptom scales. Remission of symptoms was achieved in many cases" (Felipe et al., 2016).

Research has produced thousands of studies examining the effectiveness of rTMS for depression. One meta-analysis — a systematic review of scientific studies designed to arrive at generalized conclusions — found that active rTMS was significantly superior to sham conditions (the equivalent of a placebo condition) in producing clinical response in subjects (Lam et al., 2008).

A more recent meta-analysis examined 18 good- or fair-quality treatment-resistant depression studies that employed rTMS compared to placebo (or sham treatment) (Gaynes et al., 2014). In every one of those studies, rTMS was better than placebo, significantly reducing depression severity in the subjects studied (a reduction of 4 or more points on the Hamilton Depression Rating Scale, a typical measure for depression used in research).

How will I know it's working?

Your therapist or clinician will regularly assess the treatment's effectiveness by asking you a series of questions about your depression, or by having you take a short quiz asking you those same questions. You should always answer these questions as truthfully as possible, to give

the clinician an accurate picture of your depressive symptoms.²

Research has shown that a patient's initial response to TMS predicts that patient's subsequent response and likelihood of relapse (Kelly et al., 2017). Therefore, if after a predetermined number of sessions your therapist determines that the treatment doesn't seem to be helping your depressive symptoms, they may suggest discontinuing it.

One thing to be aware of that just as in antidepressant therapy, research has demonstrated that the placebo effect is large in rTMS treatment (Razza et al., 2018). That simply means that some people benefit from a treatment that looks like rTMS, but doesn't actually do anything. Just like some people would benefit from an "antidepressant" pill that is made from nothing but sugar. Placebo response was lowest in people with treatment-resistant depression (TRD), suggesting that is a group of people it is likely to work best with as well.

Can I try TMS when I'm pregnant?

TMS is one of the few treatments, other than psychotherapy, that also appears to be safe for pregnant women. In a review of a dozen studies conducted with women who were pregnant during TMS treatment, researchers found no harm to the fetus or that any additional pregnancy complications resulted (Felipe et al., 2016). They wrote, "The data available at this time support the efficacy and tolerability of rTMS for depression in pregnant women. Controlled studies should corroborate this conclusion."

What are the side effects of TMS?

TMS appears to be safe for your brain (Tovar-Perdomo et al., 2017), or as the researchers put it, "cognitively safe." Unlike electroconvulsive therapy (ECT), which has potentially significant cognitive and memory side effects in some people who undergo it, TMS has very few side effects in most people who try it. (Research suggests that while ECT may be more effective than rTMS, it is also among the least well-tolerated treatments available (Chen et al., 2017).)

The primary side effect most people who try TMS experience is a mild headache that goes away on its own or with the help of an aspirin or Tylenol. Some people also experience scalp pain, that tends to also go away on its own after each treatment session. (Teenagers appear to experience more side effects than adults, perhaps owing to their still-developing brains.)

Should I try TMS?

Yes, especially if you have treatment-resistant depression and have already tried a combination of psychotherapy and antidepressant medications. TMS helps about one-third to one-half of the people who try it to become free of depression symptoms, and nowadays, is a treatment covered by most health insurance plans. The side effects of the treatment are minimal and well-tolerated by most people.



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Footnotes:

1. A newer type of rTMS that researchers are also studying is called intermittent theta burst stimulation (iTBS) that can be delivered in 3 minutes, versus 37 minutes for a standard 10 Hz treatment session. Initial research suggests that iTBS may be just as effective as standard rTMS, but that self-reported pain associated with the treatment may be slightly higher (Blumberger et al., 2018). []
2. It's not uncommon for patients to want to "please" their therapist by saying they are feeling less depressed, even when they feel no change in their mood. You should try and not do this, in order to give your therapist a clear picture as possible of how you're feeling. []

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