

Title:	Repetitive transcranial magnetic stimulation as a treatment for major depression
Agency:	Medical Services Advisory Committee (MSAC) MDP 106 Commonwealth Department of Health and Ageing GPO Box 9849 Canberra ACT 2601 http://www.msac.gov.au
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Aim:

To assess the safety, effectiveness and cost-effectiveness of repetitive transcranial magnetic stimulation (rTMS) for major depression, compared to electroconvulsive therapy (ECT).

Results and Conclusions:

Safety:

Seven comparative studies were identified. Most adverse events with rTMS were of low severity. Seizures and psychosis were rare, and mania was seen mainly in patients suffering from bipolar depression. ECT was associated with some short-term cognitive problems.

Effectiveness:

Where reported, all studies considered response to therapy to be a $\geq 50\%$ reduction of the baseline value of a common depression scale. Mean response rate was 48 per cent for rTMS and 62 per cent for ECT ($p=0.12$). In the course of completing the review, two new comparative studies were published. Meta-analysis of these two studies in addition to the studies already included in the review showed ECT to be more effective than rTMS as a treatment for depression ($p=0.007$).

Cost Effectiveness:

The costs and consequences of rTMS vary in magnitude and direction by patient (who would otherwise have ECT and/or be hospitalised), site (multi-day or same-day admission, outpatient or private clinic) and sector (public or private). The added cost per additional responder (3 months depression-free) is estimated to be \$1,952. The expected net increase in responders and financial and resource implications (additional \$12.9M to the MBS and \$11.2M to health system overall) depends upon the mix of patients who have rTMS and uptake by patients currently treated in the community. It is unlikely that the entire estimated additional MBS rebateable private clinic consultations will be met within capacity. This will reduce the additional cost to the MBS but may be at a cost of displaced services.

Recommendation:

MSAC has considered the safety, effectiveness and cost-effectiveness of rTMS for moderate to severe refractory treatment resistant depression compared with ECT. MSAC finds evidence that rTMS is safe and less invasive than ECT. MSAC finds limited evidence that rTMS may be less effective than ECT. The financial and resource implications will depend upon the mix of patients who have rTMS, including uptake amongst patients who would otherwise not have ECT. At present, MSAC finds there is insufficient evidence to support public funding. The Minister for Health and Ageing endorsed this recommendation on 4 June 2007.

Methods:

The evidence for rTMS in the treatment of major depression was systematically assessed. MEDLINE, EMBASE, PsychINFO and a number of other databases were searched for literature from inception to May 2006.