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The therapeutic effects of meditation

The conditions treated are stress related, and the evidence is weak

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Meditation includes techniques such as listening to the breath, repeating a mantra, or detaching from the thought process, to focus the attention and bring about a state of self awareness and inner calm. There are both cultic and non-cultic forms, the latter developed for clinical or research use. The relaxation and reduction of stress that are claimed to result from meditation may have prophylactic and therapeutic health benefits, and a plethora of research papers purport to show this. However, this research is fraught with methodological problems, which I outline here, along with a short summary of the best evidence for the therapeutic effects of meditation in clinical populations. There is no Cochrane review on meditation.

Showing that certain physiological effects such as a slowed heart rate or a particular electroencephalo-graphic pattern occur during meditation and characterise a “relaxed state” may give insight into how meditation works but does not prove its therapeutic value. Most trials of the cumulative effects of meditation have had weak designs. Trials of transcendental meditation (a popular form of mantra meditation), when controlled at all, often compared self selected meditators with non-meditators or long term meditators with novices. These trials did not control for systematic differences between people who elect to learn the technique and those who do not, and between people who persist with the practice and those who abandon it. Randomised trials have often recruited favourably predisposed subjects so that expectations of benefit differ from control subjects. In trials of transcendental meditation for cognitive effects I found that positive outcome was confined to trials with subjects so recruited and to trials with passive controls such as “eyes closed rest.” Trials with naive subjects and plausible controls (for example, pseudo-meditation) were negative. A similar association was previously found in a meta-analysis of cognitive behavioural techniques (including meditation) for hypertension. ¹ Other weaknesses have been use of multiple co-interventions, high attrition, and inadequate statistical analysis. Recent trials in clinical populations are slightly more rigorous but are limited in number.

Controlled trials of mindfulness meditation (detached awareness of experience) have all used co-interventions such as cognitive therapy and have largely not used active controls, so that specific effects cannot be isolated or separated from non-specific effects. Sahaja meditation (passive witnessing of thoughts) improved some outcomes in patients with poorly controlled asthma, but differences were not maintained at two months. ² People with epilepsy practising sahaja meditation showed a significant reduction in objective stress measures ³ and frequency of seizures, ⁴ but adequate intergroup comparisons are missing and there were marked differences in anxiety levels and frequency of seizures at baseline between groups. Added to a risk reduction

programme for elderly men with hypercholesteraemia, Benson relaxation response (a non-cultic form of transcendental meditation) had no significant effect on blood lipids, weight, or blood pressure,⁵ and although patients with irritable bowel syndrome reported a reduction in symptoms after six weeks of practising Benson relaxation response, the only significant difference from waiting list controls was for flatulence.⁶

Transcendental meditation has been studied extensively, but most of the research continues to be carried out by researchers directly involved in the organisation offering transcendental meditation, who seem keen to demonstrate its unique value. A meta-analysis of trials of relaxation and meditation for trait anxiety included 70 trials of meditation and showed that the 35 trials of transcendental meditation were associated with significantly larger effect sizes than other techniques.⁷ However, it included uncontrolled trials, and its assertion that outcome was not sensitive to research design, type of control, or other confounders is not supported by any data. As it excluded studies of patients with psychiatric illnesses the relevance to clinical populations is unclear. An updated and independent meta-analysis of studies of meditation for anxiety is therefore much needed.

The meta-analysis of trials of cognitive behavioural techniques for hypertension showed that effect sizes were highly sensitive to procedures used for baseline measurements.¹ Since then a trial using adequate baseline measures has reported that three months' practice of transcendental meditation significantly reduced clinic measured diastolic and systolic blood pressure over group controls given education.⁸ Progressive muscle relaxation produced an intermediate effect size. The mean adjusted changes in the transcendental meditation group were 10.7 mm Hg in systolic and 6.4 mm Hg in diastolic blood pressure. This and several other studies by authors associated with the transcendental meditation organisation indicate a positive effect on blood pressure, a claim that should be independently tested.

A trial reporting positive effects of transcendental meditation on exercise tolerance in men with coronary artery disease recruited favourably predisposed subjects, was not randomised, and had large baseline differences in exercise tolerance between groups that exceeded the reported effect sizes.⁹ The reported positive effect of transcendental meditation on the thickness of the intima media of the carotid artery, a measure of atherosclerosis, is confounded by co-intervention with diet, exercise, herbal supplements, and incomplete analysis of the data due to attrition and lack of funding.^{10,11} A small trial suggesting some benefit of transcendental meditation for asthma had serious problems related to compliance with the protocol.¹² Evidence for the therapeutic effectiveness of transcendental meditation in other indications is either similarly flawed or confined to isolated small scale trials.

Overall, current evidence for the therapeutic effectiveness of any type of meditation is weak, and evidence for any specific effect above that of credible control interventions even more so. The only safety issue seems to be in seriously disturbed patients, in whom meditation may trigger psychotic episodes. The limited evidence that does exist is in indications where reduction of stress may have an important beneficial effect, and future trials with improved design may yet provide more concrete positive results in this area.

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Notes

Competing interests: None declared.

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