

Successful insomnia treatment may require nothing more than a placebo

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A new study published in *Brain* indicates that successful treatment for insomnia may not actually require complicated neurofeedback (direct training of brain functions). Rather, it appears patients who simply

believe they're getting neurofeedback training appear to get the same benefits.

Insomnia affects between 10 and 35% of the population worldwide. However, despite the burden of insomnia on our society, only few studies have addressed this issue non-pharmacologically. Researchers here recruited thirty patients with [primary insomnia](#), who underwent [neurofeedback treatment](#) and placebo-feedback treatment over several weeks.

In the study researchers sought to test whether earlier findings on the positive effect of neurofeedback on [sleep quality](#) and memory could also be replicated in a double-blind placebo-controlled study. Patients spent nine nights and twelve sessions of neurofeedback and twelve sessions of placebo-feedback training (sham) in researchers' laboratory.

As this study focuses on neurofeedback effects on EEG, [sleep](#) and quality of life in insomnia patients, insomnia patients underwent this procedure before and after real as well as placebo neurofeedback training. In between the first and second, as well as the third and fourth of these visits insomnia patients completed twelve sessions of neurofeedback treatment and twelve sessions of placebo-feedback treatment, i.e. a placebo or sham condition (with real EEG feedback, yet on varying frequency bands). The order of trainings, that is, real or placebo neurofeedback treatment was counterbalanced across subjects and the twelve sessions were completed within 4 weeks. Participants' sleep-wake cycle was assessed using eight sleep laboratory nights, as well as sleep diaries and actigraphy over the course of the whole protocol.

Researchers found both neurofeedback and placebo-feedback to be equally effective as reflected in subjective measures of sleep complaints, suggesting that the observed improvements were due to unspecific factors such as experiencing trust and receiving care and empathy from

experimenters. In addition, these improvements were not reflected in objective EEG-derived measures of sleep quality.

Researchers conclude that for the treatment of primary insomnia, neurofeedback does not have a specific efficacy beyond unspecific placebo effects. They did not find an advantage of neurofeedback over placebo-feedback.

The results show that patients benefitted from any treatment on some subjective measures of sleep and life quality. Objectively, however, this improvement was not verified in any EEG-derived measures of sleep or oscillatory brain activity.

"Given our results," said lead author Manuel Schabus, "one has to question how much of published neurofeedback effects are due to simple expectations on the side of the participants or, in other words, unspecific placebo effects".

Researchers find that improvement of symptoms was not specific to neurofeedback training, but rather seems to have been brought about by unspecific factors such as affection and care. Altogether, it therefore has to be questioned whether sensorimotor-rhythm neurofeedback can be promoted as an alternative to established therapeutic approaches. The findings may also stimulate a discussion regarding the usefulness of neurofeedback on a more general level. Especially in patient populations where various complaints are often associated with learning difficulties positive neurofeedback effects beyond the subjective level may be hard to achieve.

More information: "Better than sham? - A double-blind placebo-controlled neurofeedback study in primary insomnia," *Brain* (2017).
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