

Viewpoint: We should be skeptical of memory boosting promises by wearable brain stimulators like 'Humm'

I came across a brain stimulation device called [Humm](#) that promises to improve your cognitive function and memory if you stick it to your forehead.

There are several broadly similar devices on the market, which make use of the principle of transcranial alternating current stimulation (tACS) – passing a current through the head (the front of the head, generally) in order to modulate brain activity.

In the case of Humm, the stimulation is applied at a frequency of 6 Hz which is meant to enhance [theta waves](#) in the prefrontal cortex.

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What caught my eye about Humm is that they report doing a randomized, controlled study to show that their device really works and isn't just a placebo. Here's the write-up of the experiment.

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Humm stimulation might be in phase with my theta waves, enhancing them, but it would be equally likely to be out of phase and suppress them. There is indeed evidence that individually-tailored theta tACS can [disrupt working memory](#), although to be fair, plenty of other studies show [a benefit](#). My point is that, a priori, there is no reason to assume a beneficial effect of this kind of stimulation.

**Read full, original post:** [An Electric "Humm" To Make You Smarter?](#)