

NEWS & TECHNOLOGY

Very creative people have a special kind of brain activity



Nurturing your talents can help ease you into that alpha state

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IF YOU need to produce your best **creative work**, try boosting your alpha **brainwaves**.

Joel Lopata at the University of Western Ontario, Canada, and his colleagues have found that people with more

synchronised alpha waves are more creative and produce work of higher quality.

The team asked 22 pianists to listen to, play back or improvise jazz melodies. As they did so, the researchers monitored electrical activity in the prefrontal cortex, a brain region that orchestrates our thoughts.

When groups of neurons send signals at the same time, the result is a wave of electrical activity that EEG caps can pick up. Certain brainwave types have been linked with mental states – delta waves are detectable during deep sleep, for instance, whereas beta waves signify that someone is analysing something critically.

Alpha brainwaves, with a frequency of 7 to 14 hertz or so, have been linked with coming up with creative ideas, such as answering questions like "name as many original uses for a mop as you can".

When the researchers analysed the pianists' brainwaves, they found the alpha waves became more in sync – more neurons were firing at the same time – the more creative someone was at the time.

However, they only saw this in people who had formal training in improvisation. Among these pianists, alpha waves became more synchronised when they played back music they had previously heard, and even more so when they were improvising their own melodies.

When expert musicians listened to and rated them, the improvisations that were associated with the highest alpha-wave synchronisation got the best scores

(*Neuropsychologia*, [doi.org/f97w8t](https://doi.org/10.1016/j.neuropsychologia.2014.08.011)).

But there was no increase in alpha-wave synchronisation in pianists who had no improvisation training. "Our results suggest that creativity can be characterised as a distinct mental state – one that can be nurtured through training, and that can reflect the quality of the finished product," says Lopata.

So would boosting alpha-wave activity make you more musical? Researchers have found that electrical brain stimulation can **improve the playing of novice jazz musicians**. "This may have put them into an alpha state, where they were better able to come up with new ideas," suggests Lopata, who was not involved in that experiment. But in 2016, Rachel Wurzman at the University of Pennsylvania warned in an open letter of many safety issues in sourcing brain stimulation gear online. Instead, Lopata says that an activity like free-writing, where you write a spontaneous stream of ideas, would probably help you practise getting into the alpha zone.

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