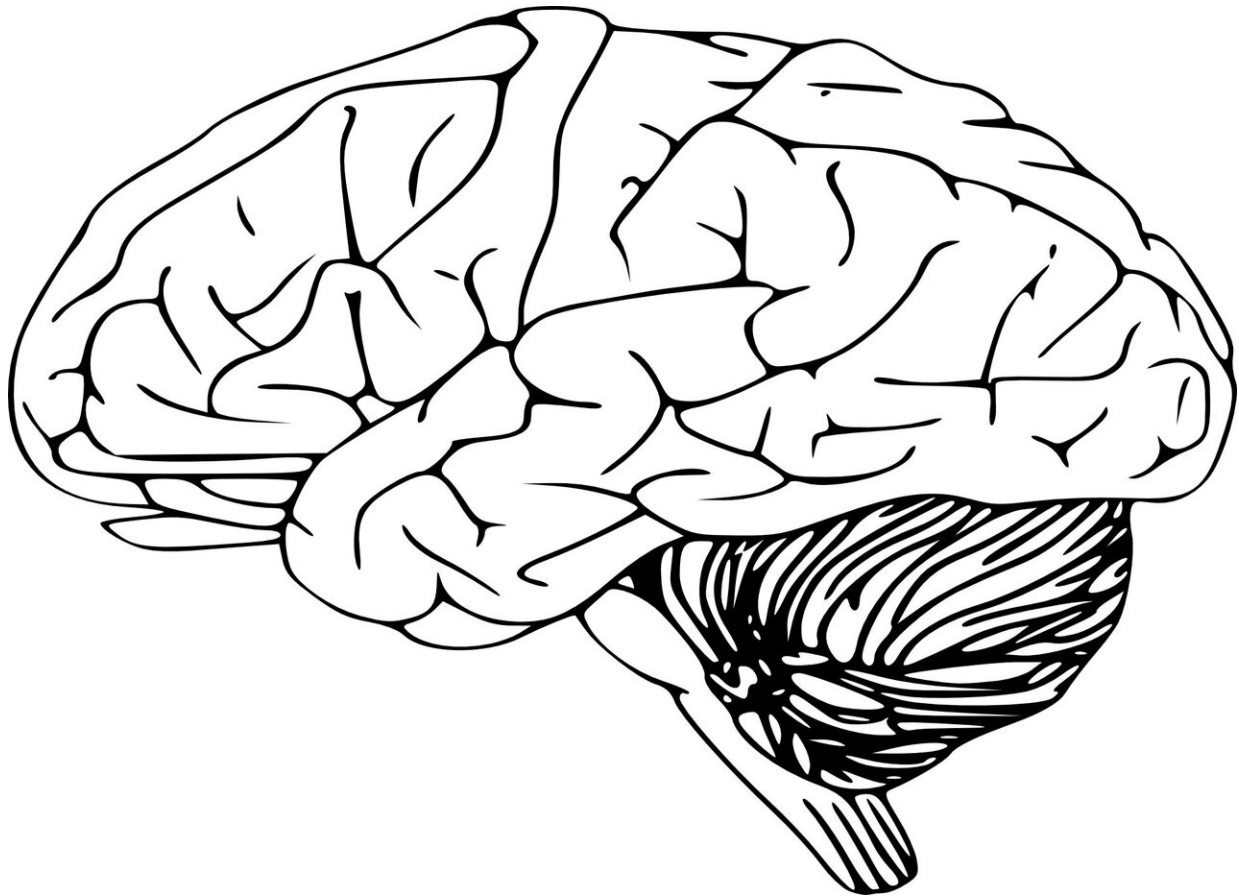


The 'Mozart effect' shown to reduce epileptic brain activity, new research reveals

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Music by Mozart has been shown to have an anti-epileptic effect on the brain and may be a possible treatment to prevent epileptic seizures,

according to new research presented today at the 7th Congress of the European Academy of Neurology (EAN).

Researchers believe that the acoustic (physical) properties within the [music](#) are responsible for this effect.

Listening to the famous 18th century composer's Sonata for Two Pianos K448 led to a 32% reduction in epileptiform discharges (EDs). These are electrical brain waves associated with epilepsy and can cause seizures or bursts of electrical activity that temporarily affect how the brain works.

A team led by Professor Ivan Rektor, from the Epilepsy Centre at the Hospital St Anne and CEITEC Masaryk University, Brno, Czech Republic, compared the effects of listening to Mozart's Sonata for Two Pianos K448 with Haydn's Symphony No 94. The effects on [brain activity](#) were measured by intracerebral electrodes that had been implanted in the brains of epilepsy patients prior to surgery.

"To our surprise, there were significant differences between the effects of listening to Mozart's K448 and Haydn's No 94", commented Professor Rektor. "Listening to Mozart led to a 32% decrease in EDs, but listening to Haydn's No 94 caused a 45% increase."

"In the second part of our study, we set out to explain the 'Mozart effect' in epilepsy", furthered Professor Rektor. The study found that men and women responded differently to the two pieces of music. Listening to Haydn's music led to suppressed epileptiform discharges only in women; in the men, there was an increase of epileptiform discharges. The acoustic properties, such as the rhythm, dynamics and tone, showed that the acoustic features of music composition have a different effect on men and women.

"We believe the physical 'acoustic' features of the Mozart music affect brain oscillations—or brain waves—which is responsible for reducing EDs".

Researchers have previously hypothesised that the Mozart effect in epilepsy was connected to the emotional effects of music, as dopamine (the main neurotransmitters of the brain's reward system) is released when listening to music. Still, there is no direct proof of the mechanism.

"We found that the reduction in EDs was larger in the lateral [temporal lobe](#), which the part of the brain which participates in translating acoustic signals, rather than in the mesiotemporal limbic region, which plays an important role in the emotional response to music."

"The effects of listening to music on epilepsy cannot be explained by the effect of dopamine released by the reward system", explained Professor Rektor. "Our patients were not music connoisseurs and said they were emotionally indifferent to the two pieces of music. There was, therefore, no reason to believe that K448 evoked more pleasure than No. 94."

Experts believe the study's findings could pave the way for individualised music therapies to be developed to prevent and control [epileptic seizures](#) in the future and have called for more research into the effects of music on the [brain](#). Epilepsy affects 6 million people in Europe, and 15 million Europeans have one seizure at some time in their lives.

"Based on our research, we suggest studying the use of musical pieces with well-defined acoustic properties as a non-invasive method to reduce epileptic activity in patients with [epilepsy](#)", concluded Professor Rektor.

More information: K Stillova et al. Mozart effect in epilepsy: Why is Mozart better than Haydn? Acoustic quality-based analysis of stereo

electroencephalography.

Provided by Spink Health

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