The power of music

Whether you are rocking out to Macklemore & Ryan Lewis in your car or reading with Bach in your bedroom, music has a special ability to pump us up or calm us down.

Scientists are still trying to figure out what’s going on in our brains when we listen to music and how it produces such potent effects on the psyche.

Listening to music feels good, but can that translate into physiological benefit? Daniel Levitin — a prominent psychologist who studies the neuroscience of music at McGill University in Montreal — and colleagues published a meta-analysis of 400 studies in the journal “Trends in Cognitive Sciences”, suggesting the answer is yes.

In one study reviewed, researchers studied patients who were about to undergo surgery. Participants were randomly assigned to either listen to music or take anti-anxiety drugs. Scientists tracked patient’s ratings of their own anxiety, as well as the levels of the stress hormone cortisol. The results: patients who listened to music had less anxiety and lower cortisol than people who took drugs. This is only one study, and more research needs to be done to confirm the results, but it points toward a powerful medicinal use for
music.

“The promise here is that music is arguably less expensive than drugs, and it’s easier on the body and it doesn’t have side effects,” said Levitin.

Levitin and colleagues also highlighted evidence that music is associated with immunoglobulin A, an antibody linked to immunity, as well as higher counts of cells that fight germs and bacteria.

A brain area called the superior temporal gyrus is intimately involved in the experience of music. The genres of music — that a person listens to over a lifetime — impact how the superior temporal gyrus is formed. However, the superior temporal gyrus alone doesn’t predict whether a person likes a given piece of music, but it’s involved in storing templates from what you’ve heard before. For instance, a person who has heard a lot of jazz before is more likely to appreciate a given piece of jazz music than someone with a lot less experience.

“The brain kind of works like a music recommendation system,” says researcher Valerie Salimpoor.

“Despite our idiosyncrasies in listening, the brain experiences music in a very consistent fashion across subjects,” said Daniel Abrams, lead author and postdoctoral researcher at Stanford University School of Medicine. Seventeen participants who had little or no music training took part in a study where they listened to four symphonies by composer William Boyce of the late Baroque period, which the researchers chose because they reflect Western music but were likely to be unfamiliar to subjects. Among participants, the researchers found synchronization in several key brain areas, and similar brain activity patterns in different people who listen to the same music. This suggests that the participants not only perceive the music the same way, but, despite whatever
personal differences they brought to the table, there’s a level on which they share a common experience.

The results also reflect the power of music to unite people, Levitin said.

“It’s not our natural tendency to thrust ourselves into a crowd of 20,000 people, but for a Muse concert or a Radiohead concert we’ll do it,” Levitin said. “There’s this unifying force that comes from the music, and we don’t get that from other things.”

Source: CNN

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