

Why is music good for the brain?



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Can music really affect your well-being, learning, cognitive function, quality of life, and even happiness? A recent survey on music and brain health conducted by AARP revealed some interesting findings about the impact of music on cognitive and emotional well-being:

- Music listeners had higher scores for mental well-being and slightly reduced levels of anxiety and depression compared to people overall.
- Of survey respondents who currently go to musical performances, 69% rated their brain health as “excellent” or “very good,” compared to 58% for those who went in the past and 52% for those who never attended.
- Of those who reported often being exposed to music as a child, 68% rated their ability to learn new things as “excellent” or “very good,” compared to 50% of those who were not exposed to music.
- Active musical engagement, including those over age 50, was associated with higher rates of happiness and good cognitive function.
- Adults with no early music exposure but who currently engage in some music appreciation show above average mental well-being scores.

Let's take a closer look at this study!

Those are pretty impressive results, to be sure. However, this 20-minute online survey has some limitations. For one, it included 3,185 US adults ages 18 and older; that is a small number if you are extrapolating to 328 million people across the country. For another, it is really a survey of people's opinions. For example, although people might report their brain health as "excellent," there was no objective measure of brain health such as an MRI scan, or even a test to measure their cognition.

Lastly, even if the ratings were true, the findings are only correlations. They do not prove that, for example, it was the exposure to music as a child that led to one's improved ability to learn new things. It may be equally likely that those children brought up in more affluent households were both more likely to be exposed to music and to be given a good education that led to their being able to easily learn new things later in life.

But let's assume that the results of the AARP survey are indeed true. How can music have such impressive brain effects? Although we don't know the answers for sure, developments in cognitive neuroscience over the last few years have allowed us to speculate on some possible mechanisms.

Music activates just about all of the brain

Music has been shown to activate some of the broadest and most diverse networks of the brain. Of course, music activates the auditory cortex in the temporal lobes close to your ears, but that's just the beginning. The parts of the brain involved in emotion are not only activated during emotional music, they are also synchronized. Music also activates a variety of memory regions. And, interestingly, music activates the motor system. In fact, it has been theorized that it is the activation of the brain's motor system that allows us to pick out the beat of the music even before we start tapping our foot to it!

Use it or lose it

Okay, so music activates just about all of the brain. Why is that so important? Well, have you ever heard the expression, "If you don't use it, you'll lose it"? It turns out this is actually true in the brain. Brain pathways — and even whole networks — are strengthened when they are used and are weakened when they are not used. The reason is that the brain is efficient; it isn't going to bother keeping a brain pathway strong when it hasn't been used in many years. The brain will use the neurons in that pathway for something else. These types of changes should be intuitively obvious to you — that's why it is harder to speak that foreign language if you haven't used it in 20 years; many of the old pathways have degraded and the neurons are being used for other purposes.

Music keeps your brain networks strong

So just how does music promote well-being, enhance learning, stimulate cognitive function, improve quality of life, and even induce happiness? The answer is, because music can activate almost all brain regions and networks, it can help to keep a myriad of brain pathways and networks strong, including those networks that are involved in well-being, learning, cognitive function, quality of life, and happiness. In fact, there is only one other situation in which you can activate so many brain networks all at once, and that is when you participate in social activities.

Dance the night away

How do you incorporate music into your life? It's easy to do. Although the AARP survey found that those who actively listened to music showed the strongest brain benefits, even those who primarily listened to background music showed benefits, so you can turn that music on right now. Music can lift your mood, so put on a happy tune if you are feeling blue. Uptempo music can give you energy. And if you combine music with an aerobic and social activity, you can receive the maximum health benefit from it. Participate in a Zumba class. Do jazz aerobics. Jump to the rhythms of rock & roll. Or, better yet, go dancing. (And yes, in a pandemic, you can still benefit by doing these activities virtually.)

REFERENCES

Andrew E. Budson, M. (2020) *Why is music good for the brain?*, *Harvard Health*. Available at: <https://www.health.harvard.edu/blog/why-is-music-good-for-the-brain-2020100721062> (Accessed: 19 May 2023).