TheNational

Fine tune your life

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Imagine this: you're visiting the doctor for help with a common problem like high cholesterol, and as well as a prescription or advice about diet, he hands you a CD. "Play it as loud as you like," he says as you leave the consulting room.

Research has shown that listening to music while working out increases your endurance. iStockphoto.com

It might sound strange, but according to some of the latest medical research, it wouldn't be a completely crazy thing to do. Medical schools across the globe are investigating the links between music and health – and it turns out that music could have a bigger effect on well-being than previously thought.

Dr Michael Miller of the University of Maryland School of Medicine in Baltimore has recently presented research that shows that listening to music can have a positive impact on blood vessel function.

"We had previously demonstrated that positive emotions such as laughter were good for vascular health. So a logical question was whether other emotions, such as those evoked by music, have a similar effect," he said when the study was released. "We knew that individual people would react differently to different types of music, so in this study, we enabled participants to select music based upon their likes and dislikes."

The results suggest that when people listen to music that they enjoy, high blood pressure and related cholesterol problems are reduced. Ten volunteers were first asked to not listen to their favourite music for two weeks to desensitise them to it. Then their blood pressure was monitored before, during and after four test phases. In the first, they listened to 30 minutes of their favourite music. In the second, conducted at least a week after the first, they listened to 30 minutes of music that they had identified as making them feel anxious. The third phase, again at least a week later, involved listening to 30 minutes of audio tapes that promote relaxation. And in the final segment the participants watched 30 minutes of a videotape designed to make them laugh. The study took six months to complete.

When the participants listened to music that made them feel good, the study found that tissue in the inner lining of blood vessels dilated on average by 26 per cent, increasing blood flow. Conversely, when they listened to music that they found stressful, their blood vessels narrowed by an average of six per cent. The laughter promoting videotape led to an average dilation of 19 per cent. The relaxation tape saw an average dilation of 11 per cent, but the researchers classified this as not statistically significant, which means it is likely to have occurred by chance and not as a result of the relaxation tape. The results were seen immediately after the experiment as a reaction to the stimulus, rather than a long-term health change.

"Listening to music evokes such raw positive emotions that it's likely in part to be due to the release of endorphins," Dr Miller said. "It's all part of that mind-heart connection that we yearn to learn so much more about. Needless to say, these results were music to my ears because they signal another preventive strategy that we may incorporate in our daily lives to promote heart health."

The mind-heart connection is currently being explored at universities and music schools all over the world. A joint study by the Max Planck Institute for Human Cognitive and Brain Sciences in Germany and the University of Sussex in the UK has found a clear link between listening to music and the release of hormones in the body. The study showed that after 50 minutes of uplifting dance music, the levels of antibodies in volunteers' bodies had increased, and that stress hormones had decreased. This means there is a possibility that listening to music can boost your immune system.

And while the soothing effect of music isn't exactly news – William Congreve wrote that "music has charms to soothe a savage breast" in 1697 – we can now actually see it happen, with MRI and PET brain scans showing exactly which areas of the brain are activated by tempo, rhythm and pitch, and suggesting how they affect our thought patterns. Researchers at Stanford University have found that listening to music can sharpen the brain's ability to anticipate events and sustain attention. There's also plenty of anecdotal evidence that listening to music aids pain relief, as it distracts and relaxes patients, as well as acts as an antidepressant. The Royal Northern College of Music (RNCM) in Manchester, UK, investigated these links in a conference at the end of 2008, with musical interludes between speakers.

Music has helped other mental health issues in addition to depression. A study from Glasgow Caledonian University has shown that it can improve the quality of life of those suffering from dementia by increasing their enjoyment and influencing their mood and self esteem. A Sheffield University study found that singing in a group had a positive effect on those suffering from eating disorders: being together for regular practice gave the participants somewhere to safely express their feelings, helped their confidence and allowed them to overcome mental barriers. Of course, it's not only about the music – the way it is performed and the group setting also can be beneficial.

This group therapy appeal has been significantly useful for people with autism, too, as it brings a sense of social engagement, communication and creative play to what can be a very socially isolated condition. This can lead to increased behavioural flexibility, one of the key challenges associated with autism.

New research also has shown that listening to music while working out increases your endurance. Brunel University in London found a strong link between music and cardiovascular performance. Participants were asked to run to the beat on a treadmill while listening to motivational rock tunes from the likes of Madonna, Red Hot Chili Peppers and Queen. The runners' endurance

increased on average by 15 per cent.

Similarly, the University of Wolverhampton has examined the impact on rugby teams when the crowd sings, and found that the voices of fans influence the players. But what spurs the teams on most is the sound of the opposition crowd – it makes them fight harder to prove their worth.

But not everybody finds that music is a panacea. Professional musicians suffer greatly for their art, with hearing loss, repetitive strain injury, musculoskeletal disorders and dental problems. The college of music and Texas Centre for Music and Medicine at the University of North Texas found that 91 per cent of piano teachers and 86 per cent of piano major students have pain when playing. Because the long hours, stress and practice take a toll on musicians' bodies, RNCM is working to promote healthy practices – including regular pilates sessions to improve endurance – for its students and associated professionals.

Piano playing has been beneficial, however, for the patients at the University of Hawaii's medical school. Dr Jorge Camera of the Department of Ophthalmology greeted his patients in the operating room by playing live classical music to them before they were sedated in an experiment to discover whether it impacted on the patients' vital signs. It was a good hunch: he found that with his group of first-time ophthalmology patients, the average patient's blood pressure lowered by 21 per cent, their heart rate dropped by eight per cent and their breathing slowed by 20 per cent.

"This validates the growing evidence that listening to relaxing music has profound beneficial effects on the physiological functions of the human body," he said.

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