Genetics of why listening to music feels so good

That song you can't get out of your head might be doing something more than prompting you to hum the tune, according to a new scientific study on genes and music (Kanduri et al., 2015).

The study found that one of the genes that is turned on (or — in biological jargon — "expressed") when listening to music is called SNCA (synuclein-alpha) and it is involved in the secretion and transport of dopamine. Dopamine is your "go-get-em" neurotransmitter, providing that jolt of motivation that helps you learn a new language, get yourself to the gym, break a bad habit, get out of bed when you'd rather be hitting the snooze button, or choose a healthy snack instead of a Twinkie.

The researchers, working at the University of Helsinki in Finland, examined all 24,000 genes in 48 people who listened to an emotionally evocative piece of music, Mozart's third violin concerto. They compared their genomes to 15 control participants who didn't listen. Not only was the expression of SNCA enhanced, but genes that facilitate the transmission of signals in the brain, genes that prevent the degeneration of neural networks, and genes involved in learning and memory were upregulated too.

The effects were stronger for the music lovers in the group; for those with a high degree of musical aptitude, the expression of between 45 and 97 genes was beneficially altered. That's a lot of positive neurological and genetic improvement for a single brief pleasant experience.

This genetic basis of musical appreciation might also explain why music emerged independently in many primitive societies tens of thousands of years ago. Flutes made from bird bone and mammoth ivory have been found in caves inhabited by early humans, and carbon dating shows some to be more than 40,000 years old.

Read full, original article: Using Music to Help Change Your Genes