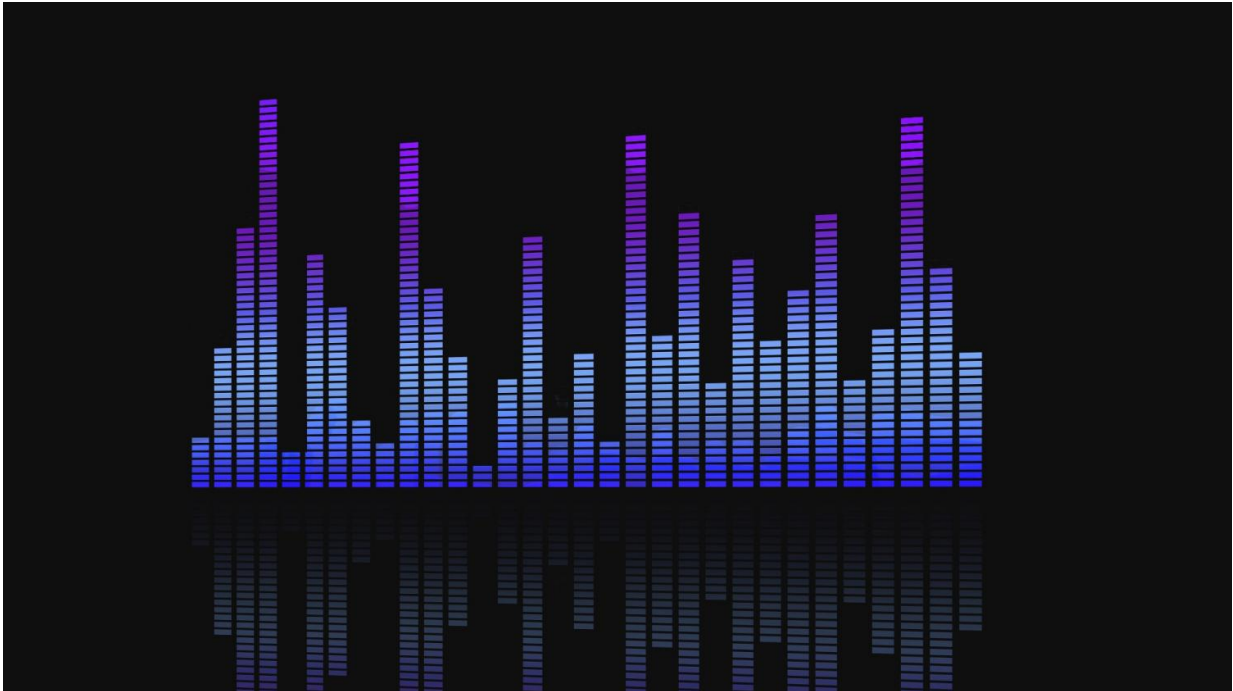


# Why some songs get stuck in your head

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Almost all of us get songs stuck in our heads from time to time but why do certain tunes have the 'stick factor'?

The first large-scale study, led by Dr Kelly Jakubowski at Durham University, may have some answers to this musical stickiness.

It has shown that songs that get stuck in your head - called earworms or

involuntary musical imagery - are usually faster, with a fairly generic and easy-to-remember melody but with some unique intervals such as leaps or repetitions that set it apart from the "average pop song".

Prime examples of earworms named in the study include Bad Romance by Lady Gaga, Don't Stop Believing by Journey and perhaps not surprisingly Can't Get You Out Of My Head by Kylie Minogue.

It is often assumed that songs that get more radio time and have more recently featured in the charts are more likely to be reported as earworms. The current study has also confirmed this idea by testing it scientifically for the first time.

However, there has previously been limited evidence about what makes the actual song catchy regardless of popularity or how often people may have heard it.

Lead author Dr Kelly Jakubowski from the Department of Music at Durham University, said: "Our findings show that you can to some extent predict which songs are going to get stuck in people's heads based on the song's melodic content. This could help aspiring song-writers or advertisers write a jingle everyone will remember for days or months afterwards.

"These musically sticky songs seem to have quite a fast tempo along with a common melodic shape and unusual intervals or repetitions like we can hear in the opening riff of Smoke On The Water by Deep Purple or in the chorus of Bad Romance by Lady Gaga."

The study, published in the academic journal *Psychology of Aesthetics, Creativity and the Arts*, was conducted by researchers based at Durham University, Goldsmiths, University of London and the University of Tübingen in Germany with funding from the Leverhulme Trust.

The current study found that the tunes most likely to get stuck in people's heads were those with more common global melodic contours, meaning they have very typical overall melodic shapes commonly found in pop music.

An example of one of the most common contour patterns in Western music is that heard in Twinkle Twinkle Little Star where the first phrase rises in pitch and the second falls. Numerous other nursery rhymes follow the same pattern making it easy for young children to remember. The opening riff of Moves Like Jagger by Maroon 5, one of the top-named earworm tunes in the study, also follows this common contour pattern of rising then falling in pitch.

In addition to a common melodic shape, the other crucial ingredient in the earworm formula is an unusual interval structure in the song such as some unexpected leaps or more repeated notes than you would expect to hear in the "average pop song". The instrumental riff of My Sharona by the Knack and In The Mood by Glen Miller both have this unusual interval structure.

Dr Jakubowski, who conducted the research whilst based at Goldsmiths, University of London but has since joined the Department of Music at Durham University, added: "We already know that recent and frequent exposure to a song makes it more likely to get stuck in your head and people who sing and listen to music a lot tend to get earworms more often than others.

"We now also know that, regardless of the chart success of a song, there are certain features of the melody that make it more prone to getting stuck in people's heads like some sort of private musical screensaver."

The researchers asked 3,000 people for their most frequent earworm tunes and compared these to tunes which had never been named as

earworms in the database but were a match in terms of popularity and how recently they had been in the UK Music Charts. The melodic features of the earworm and non-earworm tunes were then analysed and compared. Songs were limited to popular music genres, such as pop, rock, rap, rhythm & blues.

Studies of earworms can help to understand how brain networks, which are involved in perception, emotions, memory and spontaneous thoughts, behave in different people.

Ninety per cent of us get a song stuck in our heads playing on an endless loop at least once a week. It normally happens at times when the brain is not doing much such as in the shower, whilst walking or doing chores.

As well as recent and frequent exposure to songs, words, images or other associations can also dig up a song in our brains out of nowhere and lead it to play in our mind over and over again.

The data for the study was collected from 2010 to 2013.

## **Most frequently named earworms in study**

1. Bad Romance - Lady Gaga
2. Can't Get You Out Of My Head - Kylie Minogue
3. Don't Stop Believing - Journey
4. Somebody That I Used To Know - Gotye
5. Moves Like Jagger - Maroon 5
6. California Gurls - Katy Perry
7. Bohemian Rhapsody - Queen
8. Alejandro - Lady Gaga
9. Poker Face - Lady Gaga

## How to get rid of an earworm

1. Engage with the song: Many people report that actually listening to the earworm song all the way through can help to eliminate having it stuck on a loop.
2. Distract yourself by thinking of or listening to a different song. The top-named "cure [song](#)" for displacing earworms is God Save the Queen.
3. Let it be: Others find that the best way to get rid of an earworm is to just try not to think about it and let it fade away naturally on its own.

**More information:** "Dissecting an earworm: Melodic features and song popularity predict involuntary musical imagery", Jakubowski et al, published in *Psychology of Aesthetics, Creativity and the Arts*, 3 November 2016, ACA-2015-0211. [www.apa.org/pubs/journals/rels/aca-aca0000090.pdf](http://www.apa.org/pubs/journals/rels/aca-aca0000090.pdf)

Provided by Durham University

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