

# Ear-resistible: Why there are some songs we simply can't get out of our head

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Credit: AI-generated image ([disclaimer](#))

Have you ever had a song that you couldn't get out of your head? You may not even like the tune that much, or remember where it came from, but there's just something about it that has it stuck on replay.

If there's a track running through your [mind](#) that you can't stop, chances

are you've picked up an earworm. Not a literal worm—that's just what it's called when a catchy piece of music is involuntarily wriggling around inside our heads.

The experience is quite common and may be a near-universal phenomenon. [Some research](#) suggests up to 98% of us have experienced an earworm—or involuntary musical imagery (INMI) as it's known in music terms.

Music researchers have been searching for the secrets behind these catchy tunes in their tempos and pitches. But new research published in the journal *Music & Science* suggests a different explanation for the kinds of music we can't seem to shake off.

The key, says Professor Emery Schubert, author of the systematic review study from the Empirical Musicology Laboratory in the School of the Arts & Media, is repetition.

"Drawing together the literature, it appears there's an essential characteristic necessary for a song to roll out the earworms—the music itself must have some repetition in it," Prof. Schubert says.

## **Stuck on replay**

Prof. Schubert says most reported earworms are the chorus of songs, which are inevitably the pieces of the music repeated the most.

"Most research on earworms to date analyzes what's in the hook—the short riff or passage to catch the ear of the listener," Prof. Schubert says. "But what hasn't been considered is that the hook is invariably repeated in the music, most commonly in the chorus.

"The implication is that earworms might not have anything to do with

the musical features at all. It largely doesn't matter what the music is, as long as repetition is part of the music structure."

But the repetition in a song is only one part of the equation. There are several preconditions for an earworm to occur, including recency and familiarity with the music. But to activate an earworm, we must also be in what's called a low-attentional state, according to the study.

"It's sometimes referred to as mind wandering, which is a state of relaxation. In other words, if you're deeply engaged with the environment you are in, really concentrating on a task, then you won't get an earworm," Prof. Schubert says.

"Inside your relaxed mind, you don't have to follow the exact structure of the music. Your mind is free to wander wherever it likes, and the easiest place to go is the repeated fragment and to simply repeat it."

## **Changing the track**

While earworms can be an unwelcome distraction at times, many people find them enjoyable.

"It's a bit of a misconception that they're a problem," Prof. Schubert says. "We're starting to see more research suggesting many find getting an earworm to be quite pleasant and it is not an issue that needs solving."

The cases where earworms are dreaded is when the music itself is not liked, Prof. Schubert says.

"The earworm doesn't care about enjoyment; it cares about how familiar the music is, how recently something similar was heard, and whether the music contains repetition."

While an earworm is not a [medical condition](#) or considered a danger in most cases, for those hoping to expel an unwelcome [tune](#), there are many theories for how to get rid of them.

"You may be able to wrap up an earworm by either finishing off the music, consciously thinking of another piece of music, or by removing yourself from the triggers, such as words or memories that relate to the [music](#) or lyrics," Prof. Schubert says.

Prof. Schubert also says that research into earworms gives us insights into consciousness and how we organize and recall material.

"We don't go out to find earworms, but earworms find us," Prof. Schubert says. "There are still several puzzles we need to solve to understand not only their nature but what it might mean for cognition and memory."

**More information:** Emery Schubert, Involuntary, Limited, and Contiguously Repeating Musical Imagery (InLaCReMI): Reconciling Theory and Data on the Musical Material Acquired by Earworms, *Music & Science* (2023). [DOI: 10.1177/20592043231165661](https://doi.org/10.1177/20592043231165661)

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