

Music and Your Mind

By Kirsten Weir and Debbie Nevins

Listen up! Music has you in its power—physically and mentally.

New Orleans resident Ashton C., 13, likes to rock out. When he's not practicing guitar or drums, he's often listening to Led Zeppelin, AC/DC, or The Beatles. "I listen to the music over and over and just let it get into my system," he says.

Ashton is more right than he may know. Music really does get into our systems. It affects us physically—loud music can harm our ears, while soft music can help put us to sleep. And it affects us mentally—music can improve our moods. It can also help us memorize information. Think of the ABC song you learned as a child. There's a good reason the alphabet was made into a song. Without the melodic cue, you would have had a much harder time remembering it.

Music: It's Only Human

Why does music have such power over us? After all, it isn't essential as food, water, and air are. We might enjoy it, but we don't need music to live. Or do we?

Music has been important to people as long as humankind has been around. Scientists have discovered ancient flutes made of animal bones that date to prehistoric times. Some researchers think early humans might have made music even before they developed language and speech.

And music exists everywhere humans do, says Diana Deutsch, an expert in music and memory. "People have not found a culture where there isn't music."

Likewise, you won't find music where there aren't people. Wait—are you wondering about birds? It's true that birdsong sounds musical to our ears. But to the birds, the calls are simply their way of communicating.

In general, all members of a given species make the same sounds. A robin speaks robin. A blackbird speaks blackbird. A sparrow doesn't create its own tone, melody, or pitch. Those chirps, pretty as they are, aren't music.

Only humans make music—it is literally part of us. Our brains are hardwired for it. Scientists don't know why. Perhaps it has to do with music's ability to communicate emotion. Studies have shown that even infants as young as eight months old can tell "happy" music from "sad" music.

Pump It Up, Slow It Down

Music has the power to affect the body. Listening to fast, upbeat songs can make a person's heart rate and breathing rate speed up. That's why fast music is perfect for a workout—as Sarah S., of Deerfield, Ill., knows. "If I have a basketball game, I'll listen to music that will get me pumped up," the 14-year-old says.

Soothing music does the opposite. It brings down heart and breathing rates. Listening to gentle, slow music before bed helps people get a better night's sleep. Music can even reduce pain and depression.

A Sound Track in Your Mind

As the ABC song shows, music is tied to memory. One study in China found that kids who took lessons on musical instruments did better on certain memory tests than kids who didn't play instruments.

And if the sound of an organ playing reminds you of that time your Uncle Mike took you to a big-league baseball game, you know how powerfully music can trigger memories—sometimes even long-lost ones.

“What seems to happen is that a piece of familiar music serves as a sound track for a mental movie that starts playing in our head,” says Petr Janata. He is a scientist who studies music and the brain. “It calls back memories of a particular person or place, and you might all of a sudden see that person's face in your mind's eye.”

Scientists are trying to solve the mystery of music's power. They are working to piece together a picture of what happens in the brain when people listen to or play music. So far, they know there's no one music center in our heads—music activates many areas of the brain.

Right now, while your brain is still growing, music plays an important role. Catriona Morrison, a researcher with the University of Leeds in England, found that music leaves its most lasting impression on people around age 14. And the songs you listen to in your teens will probably influence the type of music you listen to for the rest of your life.

Attack of the Earworms



Getty Images

Do songs ever get “stuck in your head”? Those tunes have a name: earworms.

What makes certain jingles so catchy? Nobody knows for sure, but James Kellaris—also known as “Dr. Earworm”—is trying to find out. Kellaris is a researcher at the University of Cincinnati. He says that almost any song can become an earworm. But simple, repetitive, or surprising songs are the usual culprits.

Kellaris says earworms are more likely to strike if you're stressed or fatigued. So play some calming tunes and get a good night's rest—or you might wake up with a tune such as Subway's “\$5 Footlong” song playing on an endless loop in your head!

What's Your Earworm?

Kellaris says some songs, such as "Y.M.C.A.," are common earworms. Sarah S. says she gets jingles from TV commercials stuck in her head. Ashton C. says the singer Lady Gaga is responsible for some of his worst earworms. Michael P., 12, of New Jersey gets tunes from *Hannah Montana* commercials lodged in his brain—and he hates that show. Clearly, earworms are all in the ear of the beholder!

Name: _____ Date: _____

1. What is something that only humans make?

- A sound
- B music
- C loud noise
- D soft noise

2. What is an effect of listening to gentle, slow music before bed?

- A getting a better night's sleep
- B falling asleep later than usual
- C waking up early the next morning
- D having pleasant, soothing dreams

3. "Music has been around as long as humans have." What evidence in the article supports this statement?

- A "Scientists have discovered ancient flutes made of animal bones that date to prehistoric times."
- B "In general, all members of a given species make the same sounds."
- C "Studies have shown that even infants as young as eight months old can tell 'happy' music from 'sad' music."
- D "Music has the power to affect the body."

4. What is an example of music affecting people mentally?

- A Music can make a person's heart rate speed up.
- B Music can help people memorize information.
- C Music can harm people's ears.
- D Music can make a person's breathing rate slow down.

5. What is the main idea of this text?

- A All members of a given species make the same sounds.
- B Listening to fast songs can make a person's heart rate speed up.
- C Music is connected to memory.
- D Music affects people physically and mentally.

6. Read these sentences from the text.

“Why does music have such power over us? After all, it isn’t essential as food, water, and air are. We might enjoy it, but we don’t need music to live. Or do we?”

Based on these sentences, what does the word "essential" mean?

- A strong
- B unimportant
- C necessary
- D enjoyable

7. Choose the answer that best completes the sentence.

There’s no one music center in our heads. _____, music activates many areas of the brain.

- A In particular
- B On the contrary
- C Previously
- D In the end

8. According to the text, what can reduce pain and depression?

9. The authors state that music can "help us memorize information." What evidence in the text supports this statement?

10. The authors claim that music is "important to people." Support this claim with evidence from the text.
