Medical Xpress

Q&A: Cicadas and tinnitus—here's what you need to know

May 21 2024, by Jenna Kurtzweil

Credit: Unsplash/CC0 Public Domain

For many Illinois residents, the droning call of cicadas is central to summer's soundscape. But this year looks—and sounds—a bit different, courtesy of a timely collision between cicada Broods XIII and XIX. The

two broods emerge every 13 and 17 years, respectively. This summer, their schedules synched up for the first time since 1803.

Fatima Husain, a Beckman researcher and professor of speech and hearing science, explains why individuals with tinnitus may find peace among the audial onslaught and offers suggestions for how people can safely shield their ears from the impending "wall of sound."

In terms of sound levels, what makes this year different than most?

We are all aware of the sounds of summer, with the sounds of cicadas being a distinctive part of that. But what we are talking about this summer is the 13-year and 17-year periodical cicadas, which far outnumber the annual cicadas in number and in sheer sound levels.

How can these sounds affect us?

Cicadas can be quite loud, with the loudness being like a jet engine in some cases (90–110 decibels). Imagine this wall of sound outside, surrounding you as you go to run errands or work or take a stroll. But, the sounds are loudest near the trees harboring the insects; the sound reduces with distance from the sound source, so if you are standing 12–24 feet from the tree the sounds should be a quite manageable 80–85 decibels. There is little chance of the cicada noises causing hearing loss unless you are hearing them at say 3 feet for several hours consecutively.

I remember experiencing the 2004 brood in Maryland and the sounds and cicadas being everywhere, including our front yard, during that summer. At that time, I registered the loudness of the sound and the cicadas crawling out of the ground and falling from trees, but strange as these happenings were, I didn't quite grasp the effect it may have on the

hearing of people.

As I have researched tinnitus and hyperacusis more since 2004, I have learned more about how the sounds of cicadas may impact people.

Who is affected by cicada sounds? Are some people more impacted than others?

Tinnitus is the subjective perception of sound in the absence of external sources, sometimes known as ringing in the ears. (In other words, the sounds are self-generated in the brain. About 15% of the general population have tinnitus. The sounds of tinnitus may vary, from having low to high pitch or buzzing or whooshing sounds. Interestingly, quite a few individuals with tinnitus describe the sounds they hear as cicada-like.

In the 2004 and the 2021 cicada emergence in Maryland and the eastern U.S., there were several reports of individuals stating that their tinnitus was masked by the sounds of the cicadas. In masking, what happens is that the external sound (the cicadas) is loud enough and of sufficient breadth of frequencies that it reduces all or some part of your tinnitus, such that the tinnitus becomes soft or inaudible.

This effect is temporary: once the external sounds go away, the masking itself ends. This is the same idea behind popular sound generators in hearing aids or smartphone apps. But this depends on the type of tinnitus sounds you perceive, and the sounds produced by the different species, so the effect is not universal.

Can cicada sounds be harmful instead of helpful for people with tinnitus?

The loud sounds of the cicadas may also exacerbate tinnitus. So you need to check how the sounds make you feel.

What about other hearing disorders?

A second group of people who may be more affected by cicada sounds are those with hyperacusis. In hyperacusis, you are sensitive to the loudness of everyday sounds that don't bother those around you. Typically, loud sounds like those produced by vacuum cleaners or lawn mowers may be bothersome. If the same sounds are softer, they will not be perceived as bothersome.

The sounds of cicadas, being as loud as a jet engine, are likely to be bothersome. So you have to be careful and have sound protection if you are going to be exposed to the cicada sounds for an extended period of time.

How can we protect our ears this summer?

The sound of the cicadas are their mating calls, typically produced by males to attract females. Females of some species may also produce sounds, but they tend to be clicking (produced by the wings) rather than the high-pitched sounds of the males (produced by their vibrating abdominal muscles).

Various cicada species produce different sounds, patterns, and they differ in pitch. The sound is more noticeable outside among trees, so if you are in buildings or in cars with closed doors, it should not be noticeable.

What if you need to be outside?

The males produce the sounds as the sun warms up during the day. So, for one, you are quite safe after dusk, as the din subsides.

If you need to be outside near where the cicadas are buzzing, and the sounds are really loud, you should consider wearing foam ear plugs or earphones of your choice. If you have hyperacusis or tinnitus, check to see if the sounds actually bother you. Maybe you find the sounds to be not as bothersome as you imagined or in cases of tinnitus, there might even be masking effects.

If however, you find them bothersome, please use hearing protection. You can play music (at comfortable loudness levels) to mask the sounds of the cicadas or draw your attention away from them.

The hotter the day, the louder the sounds will be, which is another reason to seek air-conditioned comfort.

But rest assured, the sounds will subside in about six weeks. (Until, that is, the cicadas reappear in 13 or 17 years!)

Provided by Beckman Institute for Advanced Science and Technology

Citation: Q&A: Cicadas and tinnitus—here's what you need to know (2024, May 21) retrieved 17 July 2024 from https://medicalxpress.com/news/2024-05-qa-cicadas-tinnitus.html