

Speaker 1:

The Missouri State Journal, a weekly program keeping you in touch with Missouri State University.

Nicki Donnelson:

Does everything seem extraordinarily loud? It could be a migraine settling in. This connection between migraines and the auditory system has often been overlooked, but new research at Missouri State University is making a big bang. Dr. Wafaa Kaf has been researching inner ear diseases that can cause dizziness for many years. This led to this interest in migraines, and so she began collaborating with Dr. Paul Durham, who is an internationally recognized expert on migraine research. Now they've partnered with Clinvest, a research organization to help learn more about the effect of migraines on the auditory system. I'm Nicki Donnelson. Today on the Missouri State Journal, I have Dr. Wafaa Kaf, Professor of Audiology at Missouri State University and Kayleigh Putnam, an audiology student. They're here to talk about this ongoing research.

Wafaa Kaf:

Those who have migraines, the literature reported that patients may have sudden hearing loss originated from the inner ear. And some of those could be an ear or could be migraine. We do not know. So those causes of migraine that are not known actually could be related to migraine cause. And studying the effect of migraine, whether it is acute migraine or chronic migraine, could shed light on the length between migraine and sudden hearing loss.

Nicki Donnelson:

As part of the audiology program, third year students must complete a thesis or research project which is how Putnam got involved with support from Missouri State's graduate college. Putnam's project is actively recruiting patients who suffer from chronic or episodic migraines. They hope to complete the data collection this semester.

Kayleigh Putnam:

We decided we're going to test chronic, episodic, and normal patients two different visits just to see if there's a change from baseline when they're not having a migraine to testing them second visit when they are having that migraine. We're monitoring changes in their hearing and their inner ear status. So we're looking at if they have a shift in what we call threshold, so a shift in their hearing loss. And we're also looking to see if they have sensitivity to sounds. So we'll be testing that as well through a threshold test to see how much the loudness, how their sensitivity to that.

Nicki Donnelson:

In previous studies, migrainers have reported hypersensitivity to sounds. Through these current MSU studies, one on lab animals and one with human participants, Kaf hopes to learn more about how these afflictions are linked.

Wafaa Kaf:

So we want to know if the migraine attacks will increase the likelihood or show not just hearing loss, but also hypersensitivity to sound, and which type of sounds or noises that can trigger, the hypersensitivity to sounds or intolerance to normal sounds.

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Nicki Donnelson:

Thanks to funding from the Provost Office of Missouri State, the multidisciplinary team was able to purchase a piece of sophisticated equipment for the animal study. The team triggers the migraine and records their baseline and reaction during the migraine. Kaf tells us more.

Wafaa Kaf:

Because these rats cannot tell us yes we hear or not, so we are recording the responses to sound from the auditory nerve and the auditory structures in their brain while they are asleep and under anesthesia. And actually we have seen very interesting findings. They showed hearing loss from just sleep deprivation and meaning that they could have an acute hearing loss. Then with the progress of the procedures for chronic migraine, they're hearing deteriorates more, so went from a mild hearing loss to a moderate hearing loss in most of the rats. And they also showed signs of brain fogging, where we have seen enhancement of their brain responses to sound, actually larger response not smaller as you would expect. So we are using that model to develop some maybe therapeutic medications that can help those who have acute or chronic migraine.

Nicki Donnelson:

To volunteer for the MSU study contact Clinvest at 417-883-7889. Participants who complete the study will receive a \$100 gift card to Amazon. That was Dr. Wafaa Kaf and Kayleigh Putnam. I'm Nicki Donnelson for the Missouri State Journal

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For more information, contact the office of strategic communication at 417-836-6397.