

College students often miss mark when reporting hearing

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(PhysOrg.com) -- Some college students who think they have normal hearing may actually be overestimating their abilities. In a University of Florida study of college students who believed they had normal hearing, one-quarter did not have normal hearing sensitivity.

It was an unexpected discovery made during the early stages of another study. UF researchers at the College of Public Health and Health Professions were recruiting college students with normal [hearing](#) for a study on temporary [hearing loss](#) and personal music players.

"You would expect normal hearing in that population," said lead researcher Colleen Le Prell, an associate professor in the department of speech, language and hearing sciences. "The criteria for normal hearing we used for the study were, we thought, extremely liberal criteria."

The study findings appeared last month in a special supplement of the International *Journal of Audiology*.

The UF study involved 56 [college students](#) with an average age of 21. Prospective participants who reported normal hearing in initial phone interviews were asked to visit the lab for hearing tests to determine their study eligibility. The participants completed a health survey and a questionnaire about their previous exposure to loud noise, such as playing a musical instrument, listening to personal music players, using lawn equipment or attending sporting events or concerts. Participants then received hearing tests in a sound booth at all of the sound frequencies used in a traditional full clinical hearing test.

In 25 percent of the participants, researchers measured 15 decibels or more of hearing loss at one or more test frequencies, an amount that is not severe enough to require a hearing aid, but could disrupt learning, Le Prell said. Of the participants

who demonstrated hearing loss, 7 percent had 25 decibels or more of hearing loss, which is clinically diagnosed as mild hearing loss. Hearing loss occurred in both the range of frequencies identified as "speech frequencies" because of their importance for speech discrimination, as well as the higher frequencies of 6 and 8 kilohertz.

"With high frequency hearing loss a person can miss a lot of subtle speech sounds, making it much harder to discriminate different vowels or phonemes," Le Prell said. "It would also be much harder to hear sounds like bird songs or children's voices."

Several experts have speculated that increased rates of hearing loss in young adults may be related to the popularity of personal music players. The UF study did find that the highest levels of high frequency hearing loss were in male students who reported using personal music players. More research is needed with a larger sample size to determine the role of personal music players and gender in noise-induced hearing loss, Le Prell said.

"Dr. Le Prell's article is extremely interesting and her findings are consistent with what we know of early noise-induced hearing loss: It's insidious and more prevalent in young men than women," said Brian J. Fligor, director of diagnostic audiology at Children's Hospital Boston and an instructor in otology and laryngology at Harvard Medical School, who was not involved in the study. "Their sample size was fairly small, making it hard for the researchers to actually find something, but the fact they did shows the size of the effect is of both scientific and clinical significance. These small but measurable changes in hearing in this young adult population suggest that they will have communicatively important hearing deficits earlier, perhaps decades earlier, than they should, due to the premature wear and tear on their hearing system."

The UF study and other related studies on hearing loss in young adults point to the need for more thorough hearing tests in school children and better hearing health education for children and adolescents, Le Prell said.

"When you look carefully at hearing loss at specific frequencies or higher frequencies than you would in a traditional school-based hearing test, you find a much, much higher rate of hearing screening failures," Le Prell said. "The implication is that the current screening protocols are potentially missing a lot of hearing loss, based on the kinds of failure rates that we've detected when you broaden the criteria."

More sophisticated hearing screenings of school children, like those used in clinical tests, may help educators and parents intervene to improve a student's listening ability. The changes could involve enhancing classroom acoustics or be as simple as moving the student closer to the front of the class, Le Prell said.

"A number of studies have shown that even a mild hearing loss that isn't treated clinically is associated with behavioral issues in school, like poor performance on tests and lower evaluations by teachers," she said.

The study's other authors include James Hall III, a professor in the UF department of speech, language and hearing sciences, Brittany Hensley, a UF doctoral student in audiology, Kathleen Campbell, of Southern Illinois University and Kenneth Guire of the University of Michigan.

Provided by University of Florida

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