

New study examines hearing loss, Viagra use

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Research by a University of Alabama at Birmingham (UAB) professor shows an association between hearing loss and the use of the erectile dysfunction drug Viagra.

Findings published May 18 in *Archives of Otolaryngology-Head and Neck Surgery* indicate a potential for long-term hearing loss following use of [Viagra](#), and possibly following use of other phosphodiesterase type 5 inhibitors (PDE-5i) drugs such as Cialis and Levitra, although results on those drugs are inconclusive.

"It appears from these findings that the current government warning regarding hearing loss and the use of PDE-5i medications is warranted," said study author Gerald McGwin, Ph.D., a professor of epidemiology in the UAB School of Public Health. "Though there are limitations to this study, it is prudent that patients using these medications be warned about the signs and symptoms of [hearing impairment](#) and be encouraged to seek immediate medical attention to potentially forestall permanent damage."

In 2007, following the report of several case studies potentially linking PDE-5i use and sudden hearing loss, the [Food and Drug Administration](#) announced labeling changes for PDE-5i medications so that the risk of hearing problems was more prominently displayed. McGwin said this is the first epidemiologic study to evaluate the relationship between PDE-5i drugs and long-term hearing loss.

McGwin examined data on 11,525 men over 40 years of age gathered by

the Medical Expenditure Panel Survey, a survey conducted by the federal Agency for Healthcare Research and Quality between 2003 and 2006. Men who reported use of PDE-5i medications were twice as likely to also report hearing loss as were men who had not used the drugs.

McGwin said the relationship was strongest for men reporting use of sildenafil (Viagra) over those who used tadalafil (Cialis) or vardenafil (Levitra), a finding he attributed in part to a small sample size for both of the latter drugs. McGwin said the findings indicated an elevated but not statistically significant increase in hearing loss for users of tadalafil and vardenafil.

PDE-5i drugs were originally designed to treat pulmonary hypertension and are now used extensively in the treatment of erectile dysfunction (ED). McGwin said one important consideration in evaluating the nature of the relationship between the drugs and hearing is the existence of a plausible biological mechanism of how these drugs might cause hearing loss.

"PDE-5i medications work in ED patients by their ability to increase blood flow to certain tissues in the body," said McGwin. "It has been hypothesized that they may have a similar effect on similar tissues in the ear, where an increase of blood flow could potentially cause damage leading to hearing loss."

McGwin acknowledged limitations in the study, including the limited sample size for tadalafil and vardenafil, concerns over under-reporting of use of PDE-5i medications and confounding factors such as pre-existing conditions that might also contribute to hearing loss. He suggested that additional research regarding the risk from PDE-5i is necessary due to the largely irreversible nature of [hearing loss](#) and its impact on quality of life.

"The results of the current study in conjunction with a plausible biologic mechanism lend support to the FDA's decision to warn patients about the potential risk posed by PDE-5i use," he said.

Provided by University of Alabama at Birmingham

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