Medical Xpress

Osteoporosis diagnosis contributes to hearing loss risk

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People who have osteoporosis face a 1.76-fold higher risk of developing sudden deafness than those who do not have the bone disease, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

Osteoporosis is a progressive condition in which bones become structurally weak and are more likely to fracture or break, according to the Hormone Health Network. More than 40 million people nationwide already have osteoporosis or are at risk of developing the condition due to low bone mass, according to the National Institute of Arthritis and Musculoskeletal and Skin Diseases.

Sudden sensorineural hearing loss (SSHL), also called sudden deafness, is an unexplained, rapid loss of hearing that typically happens in one ear, according to the National Institute on Deafness and Other Communication Disorders. It can happen at once or over the course of several days. About half of the people who develop SSHL will spontaneously regain their hearing, but it is important to seek treatment immediately. About 85 percent of those who are treated for the condition recover some hearing.

"A growing body of evidence indicates that osteoporosis affects not only bone health, but the cardiovascular and cerebrovascular systems," said one of the study's authors, Kai-Jen Tien, MD, of the Chi Mei Medical Center in Taiwan. "Our findings suggest sudden sensorineural hearing loss (SSHL) can be another broader health problem connected to

osteoporosis."

The retrospective cohort study examined medical records for 10,660 Taiwan residents who were diagnosed with osteoporosis between 1999 and 2008, compared them to 31,980 people who did not have the condition. Using national insurance records, the researchers analyzed how many participants were diagnosed with sudden deafness by the end of 2011.

The participants who were diagnosed with osteoporosis had a much higher risk of developing sudden sensorineural hearing loss than the control group. Among the participants who had osteoporosis, 91 were diagnosed with SSHL during the follow-up period. In comparison, the control group, which was triple the size, included 155 people who were diagnosed with SSHL.

Researchers aren't sure what biological mechanism is responsible for the relationship. Tien theorizes cardiovascular risk factors, bone demineralization, inflammation and endothelial dysfunction may contribute to the association.

"More people worldwide are suffering from osteoporosis, and our work shows they are at risk of sensorineural hearing loss as well as bone fracture and other problems," Tien said. "Patients who have osteoporosis should be aware they need to seek medical help immediately if they experience hearing loss."

More information: Increased Risk of Sudden Sensorineural Hearing Loss in Patients With Osteoporosis: A Population-based, Propensity Score-matched, Longitudinal Follow-up Study : DOI: 10.1210/jc.2014-4316