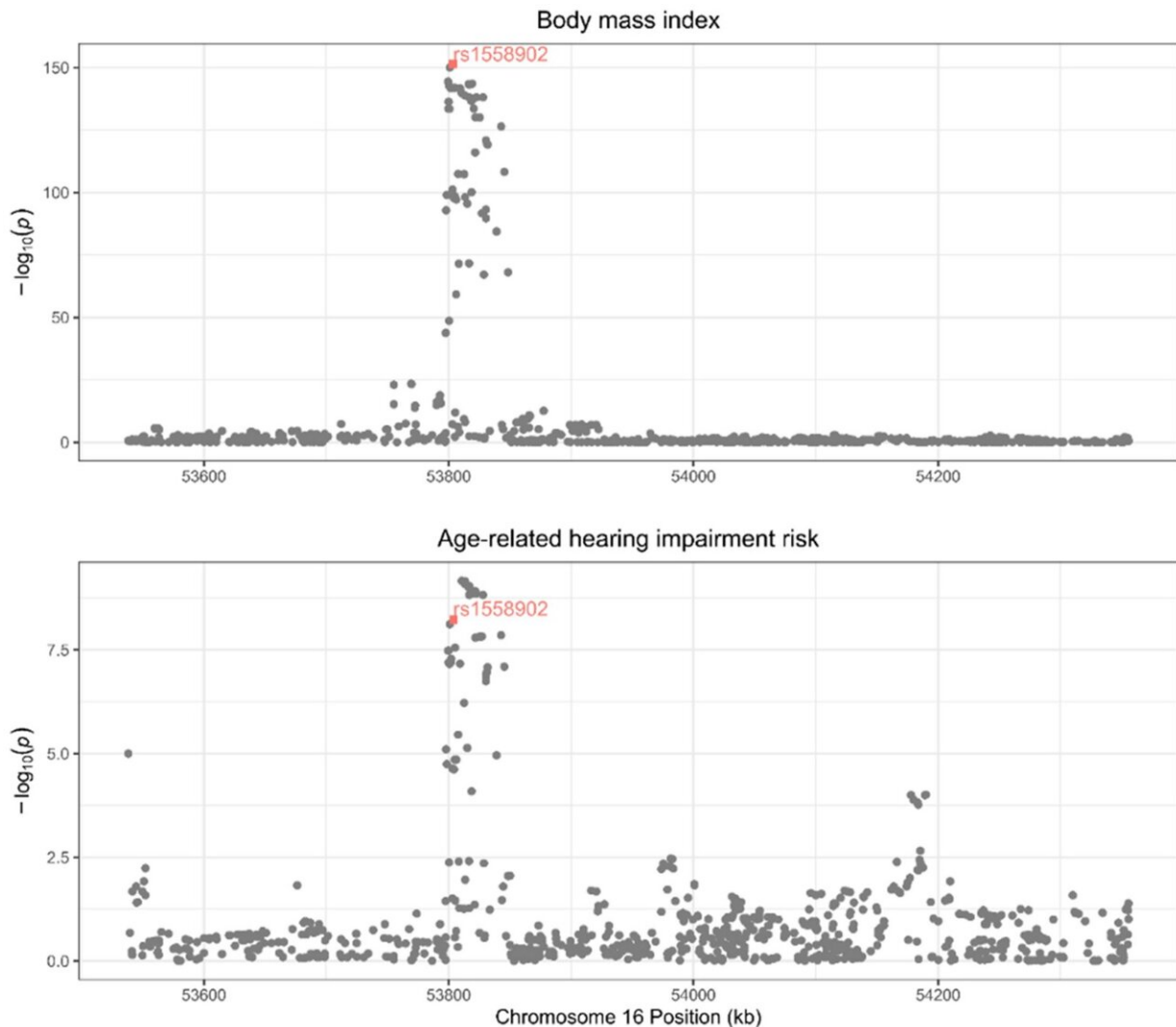


Age-related hearing loss can lead to lower body mass index and total body fat

November 24 2023



Regional association plots at the FTO locus for body mass index (BMI) and age-related hearing impairment (ARHI) risk. The hit single nucleotide polymorphisms (SNP) rs1558902 was marked in a colored square shape. The

regional plots have been drawn for the associations reported in the GIANT consortium and the UK biobank, respectively, for BMI and ARHI. Credit: *Scientific Reports* (2023). DOI: 10.1038/s41598-023-44735-x

A new study from the University of Oulu, Finland, sheds light on the complex interactions between noise exposure, hearing loss and body constitution.

Environmental noise has emerged as a critical public health concern, with prolonged exposure posing risks such as hearing loss. Observational studies have suggested a potential association between long-term exposure to traffic noise and the risk of obesity.

In 2019, the World Health Organization [environmental noise guidelines](#) for the European region rated the evidence for the association between transportation noise and obesity as low or very low quality and emphasized the importance of studying hearing-related outcomes associated with noise exposure.

Addressing this complex interplay, researchers in the [LongITools project](#) embarked on a genetically informed study led by doctoral researcher Yiyang He. The study aimed to unravel the [causal relationship](#) between body constitution and hearing loss, posing the question: Is hearing function a key factor to consider in understanding the link between [noise exposure](#) and obesity?

Using data from publicly available genome-wide association studies (GWAS) in repositories such as the UK Biobank, FinnGen, and the Genetic Investigation of Anthropometric Traits (GIANT) consortium, the study focused on participants with mean ages ranging from 52 to 63 years. The results were [published](#) in *Scientific Reports*.

The findings presented in the study challenge the notion that an increase in adiposity-related measures directly causes hearing loss. However, the research did reveal a noteworthy association: age-related hearing impairment could lead to a lower BMI and reduced body fat percentage in the European-descent adult population. This suggests a unique relationship where age-related hearing impairment may influence body weight and fat.

Lead researcher and author, Yiyan He, commented on the implications of the study, stating, "Our research provides evidence that older individuals with hearing problems may experience weight loss and reduced fat. This poses challenges for those dealing with hearing loss and undernutrition simultaneously. Increased nutritional support is crucial for this vulnerable group."

More information: Yiyan He et al, A bidirectional Mendelian randomisation study to evaluate the relationship between body constitution and hearing loss, *Scientific Reports* (2023). [DOI: 10.1038/s41598-023-44735-x](https://doi.org/10.1038/s41598-023-44735-x)

Provided by University of Oulu

Citation: Age-related hearing loss can lead to lower body mass index and total body fat (2023, November 24) retrieved 13 May 2024 from <https://medicalxpress.com/news/2023-11-age-related-loss-body-mass-index.html>

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