

Associations of Vestibular Disorders With Risk of All- Cause and Cause-Specific Dementia: A Longitudinal Cohort Study in UK Biobank

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In this large prospective cohort, vestibular disorders were associated with a significantly increased risk of all-cause dementia, Alzheimer's disease, and vascular dementia. The association between vestibular disorders and dementia was partially mediated by specific plasma metabolites.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES
Dementia remains a serious challenge for healthcare systems Worldwide1. Recent research has suggested that vestibular disorders, which affect the inner ear and balance system, may be associated with an increased risk of cognitive decline and dementia2. The objective of this study is to examine the associations between vestibular disorders and risks of all-cause and cause-specific dementia, as well as the possible biological mechanisms and neuroimaging changes underlying these associations.	We used a population-based cohort study of 406,348 participants from the UK Biobank data. The IPTW was employed to balance baseline covariates between participants with and without vestibular disorders. The primary outcomes were incident all-cause dementia, Alzheimer's Disease (AD), vascular dementia (VD) and non-AD non-VD (NAVD). Cox proportional hazards models were utilized to estimate the hazard ratios (HRs) and 95% confidence intervals (CI) between vestibular disorders at baseline and the risks of all-cause dementia and its subtypes. Furthermore, the potential roles for inflammatory markers, plasma metabolites and brain structures changes were also analyzed.	During 13.9 (SD 2.1) years of follow-up, 6702 dementia cases occurred. Vestibular disorders were linked to higher risks of all-cause dementia (HR 1.86 and 95% CI 1.04–3.30), Alzheimer's disease (AD, 2.36, and 1.01–5.51), and vascular dementia (VD, 3.35, and 1.48–7.59). Eight metabolites (e.g., VLDL cholesterol, and histidine) mediated the vestibular disorder - dementia association. Vestibular disorders also correlated with alterations in dementia-related brain structures (cortex, subcortical regions, and white matter tracts).	Vestibular disorders increased the risk of all-cause dementia and its subtypes, including AD and VD. This modifiable risk factor should be incorporated dementia prevention initiatives for dementia.	1. J. Yates, M. Stanyon, R. Samra, and L. Clare, "Challenges in Disclosing and Receiving a Diagnosis of Dementia: A Systematic Review of Practice From the Perspectives of People With Dementia, Carers, and Healthcare Professionals," <i>International Psychogeriatrics</i> 33, no. 11 (2021): 1161–1192 2. J. H. Baek, Y. Zheng, C. L. Darlington, and P. F. Smith, "Evidence That Spatial Memory Deficits Following Bilateral Vestibular Deafferentation in Rats Are Probably Permanent," <i>Neurobiology of Learning and Memory</i> 94, no. 3 (2010): 402–413 CONTACT dongqiuyue@sdent.com.cn ALZHEIMER'S ASSOCIATION 