



# Risky Substance Avoidance (Smoking/Drinking) and Hearing Health

Hearing loss ranks as the third most prevalent disability in the US. Hearing loss significantly impacts individuals and society. The World Health Organization estimates approximately one-third of hearing losses are caused by preventable factors. Recent research has a link between smoking and hearing loss.

## 4 facts about the relationship between smoking, alcohol use and hearing health.

#1

### Smokers are more likely to acquire hearing loss

A prospective study of over 50,000 Japanese workers (ages 20–64) tracked up to eight years using annual audiometric testing. This is a clear dose-response: more cigarettes/day meant higher hearing loss risk. (Hu et al, 2019.).

#2

### Former smokers are at greater risk for acquiring hearing loss than non-smokers

The relationship between smoking, smoking cessation, and risk of self-reported moderate or worse hearing loss among 81,505 women in the Nurses' Health Study II (1991-2013). Current and former smokers were significantly linked to moderate or worse self-reported hearing loss. (Lin, B. et al 2020).

#3

### Smoking and noise exposure is a highly damaging condition

A metaanalysis of 27 observational studies ( $n \approx 30,000$ ) focused on smoking and workplace noise exposure and hearing loss.

Current smokers had over 2× the odds of noiseinduced hearing loss versus nonsmokers. Former smokers still had modestly elevated odds. A dose-response relationship: risk increased with more packyears, peaking at  $>5\times$  odds at  $\sim 15$  packyears, then gradually declining. (Li, et al 2020).

#4

### Heavy alcohol use is associated with hearing loss

A pooled analysis of 18 observational studies, including cross-sectional, case-control, and cohort designs, totaling 27,849 participants found that drinkers had a significantly higher risk of hearing loss than nondrinkers, with a pooled Odds Ratio (OR) of 1.22. Overall, alcohol consumption is associated with about a 22% increased odds of hearing impairment versus nondrinking. (Curhan, et al, 2015).

Another study found a dose relationship: risk increased as volume of alcohol intake increased (Lee, et al 2024), while a third study suggests moderate wine in-take might offer a protective effect. (Curhan et al 2015).



## Risky Substance Avoidance (Smoking/Drinking) and Hearing Health (Continued)

### KEY POINTS

Multiple, well-designed studies consistently show smoking is a modifiable risk factor for hearing loss. Heavier smoking and longer duration correlate with greater risk, while quitting reduces it over time. Especially in noisy environments, smoking compounds damage and increases susceptibility. The effects of drinking on hearing health are more subtle, although heavy drinkers (more than 3 drinks per day) appear to be at greatest risk for hearing loss.

### ACTIONS

Besides encouraging individuals to stop smoking and limit their use of alcohol, individuals over the age of 50 should be encouraged to get a baseline hearing test from an audiologist. The American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) recommends that all adults aged 50 and older undergo regular hearing screenings. This recommendation is specifically for those who haven't noticed any issues with their hearing and aims to detect age-related hearing loss early.

### References:

Curhan, S. G., Eavey, R., Wang, M., Stampfer, M. J., & Curhan, G. C. (2015). Prospective study of alcohol consumption and self-reported hearing loss in women. *Alcohol (Fayetteville, N.Y.)*, 49(1), 71-77.

Hu, H., Sasaki, N., Ogasawara, T., Nagahama, S., Akter, S., Kuwahara, K., Kochi, T., Eguchi, M., Kashino, I., Murakami, T., Shimizu, M., Uehara, A., Yamamoto, M., Nakagawa, T., Honda, T., Yamamoto, S., Hori, A., Nishiura, C., Okazaki, H., Imai, T., ... Japan Epidemiology Collaboration on Occupational Health Study Group (2019). Smoking, Smoking Cessation, and the Risk of Hearing Loss: Japan Epidemiology Collaboration on Occupational Health Study. *Nicotine & Tobacco research*, 21(4), 481-488.

Lee, J., Jeong, Y., Kim, J., Kwon, S., Seo, E., Jeong, J., & Lee, W. (2024). The impact of alcohol consumption on hearing loss in male workers with a focus on alcohol flushing reaction: the Kangbuk Samsung Cohort Study. *Annals of occupational and environmental medicine*, 36, e1.

Li, X., Rong, X., Wang, Z., & Lin, A. (2020). Association between Smoking and Noise-Induced Hearing Loss: A Meta-Analysis of Observational Studies. *International journal of environmental research and public health*, 17(4), 1201. <https://doi.org/10.3390/ijerph17041201>

Lin, B. M., Wang, M., Stankovic, K. M., Eavey, R., McKenna, M. J., Curhan, G. C., & Curhan, S. G. (2020). Cigarette Smoking, Smoking Cessation, and Risk of Hearing Loss in Women. *The American journal of medicine*, 133(10), 1180-1186.