

SUMMARY AND FINDINGS FROM THE EPIDEMIOLOGY OF HEARING LOSS STUDY (EHLS)

As people age, changes in the ear and brain can make it harder to hear sounds or to understand words. Communication problems due to poorer hearing may be more evident in noisy settings, when multiple people are talking at once, or when talking with young children. Age-related hearing loss is a term used when these aging changes are noticeable and warrant clinical evaluations and treatments. In this study, we followed a group of people from the general population to understand how often hearing, olfaction, and cognitive changes occurred and to identify why some people develop these impairments and others do not. People who lived in Beaver Dam, WI in 1987-88 when they were 47-84 years of age were asked to have examinations every five years beginning in 1993 and ending in 2017 so we could measure their hearing, sense of smell, cognitive function, blood pressure and other tests over time. We asked them lots of questions about their lifestyles, habits, hobbies, work, and medical conditions, and we drew blood for various tests. More than 3700 people participated.

We found that:

The risk of developing a hearing impairment is high. Among people in their 50s, about 12 people in 100 develop a hearing loss in five years and among people in their 70s about half develop hearing loss in five years. Most people did not have their hearing tested regularly and very few had hearing aids.

Men were more likely to develop hearing problems than women. Smoking, poorly controlled diabetes, and obesity increased the risk of developing hearing problems while people with more than a high school education were less likely to develop hearing losses. Blood markers of chronic inflammation and kidney problems were also associated with increased risk of developing hearing losses.

Changes in the sense of smell and changes in cognitive function also increased with age. As with hearing, cardiovascular risk factors, inflammation and diabetes were associated with increased risks of developing problems.

Although people with hearing, vision or olfactory impairments were more likely to develop cognitive impairment than people with normal sensory function, the risk was low as 85% of participants with hearing impairment, 81% with visual impairment, and 76% with olfactory impairment did not develop cognitive impairment during a ten-year period.

The results of this study suggest that factors long recognized as important for heart health (e.g., smoking cessation, exercise and weight loss) may also be important for slowing the loss of hearing, olfactory and cognitive function in aging adults.