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Healthy Lifestyle Linked to Lower Hearing Impairment Risk by 14%, Metabolism Is Key Driver

Analysis by Dr. Joseph Mercola | November 18, 2026

STORY AT-A-GLANCE

- People with the healthiest overall lifestyles had a 14% lower risk of hearing impairment, suggesting that everyday habits play an important role in protecting your hearing as you age
- Metabolic health was a stronger link between lifestyle and hearing than inflammation, highlighting the importance of supporting insulin sensitivity, healthy blood fats and body composition
- Smoking showed the largest estimated protective association among the lifestyle factors studied, while spending less time sitting ranked second, giving you two practical areas to target
- Nearly half of the women in a separate study experienced measurable high-frequency hearing decline over about three years, showing that subtle hearing changes develop even before severe hearing loss becomes apparent
- Healthier eating patterns rich in fruits, vegetables, whole grains and legumes were associated with better preservation of certain hearing frequencies, while good circulation and lower oxidative stress help protect the energy-demanding cells of your inner ear

Many people think of hearing loss as inevitable — either a normal part of aging or the accumulated toll of years of noise exposure. Two prospective studies challenge that assumption by linking hearing outcomes to factors that have nothing to do with your ears directly — your metabolic health, your daily habits and the quality of your diet.

The larger of the two, published in ENT Discovery, followed 441,844 UK Biobank participants and scored them on seven modifiable lifestyle behaviors.[1] The second, published in the American Journal of Epidemiology, tracked measured hearing changes in 3,135 women across roughly three years.

Together, they build a case that the same metabolic and vascular factors behind so many chronic diseases also control whether the delicate structures of your inner ear get the blood flow and energy they need to function.

What stood out wasn't just that healthier habits were associated with better hearing; it was how the connection appeared to work. The biological pathways pointed more strongly to metabolic function than to inflammation, which shifts the conversation about hearing protection toward territory that's already familiar if you've been paying attention to insulin sensitivity, blood lipids and body composition.

Metabolic Health Appears to Drive Hearing Protection

Research published in ENT Discovery found a clear step-by-step relationship between healthier habits and **hearing impairment**.[2] Even participants in the intermediate lifestyle group had a 7% lower risk than those in the poorest lifestyle group. The researchers also found that risk continued to decline in a nearly straight line as lifestyle scores rose.

That pattern matters because it suggests your choices don't have to be perfect before they count. Moving from a poorer lifestyle toward a better one was already associated with lower risk. The researchers estimated that adherence to an ideal lifestyle accounted for about 10.06% of hearing impairment cases that theoretically could be avoided at the population level, although this estimate doesn't prove that changing habits will prevent that exact percentage of cases.

- **Smoking and prolonged sitting stood out among individual behaviors —** When researchers compared the seven lifestyle factors, not smoking showed the largest estimated protective association. They estimated that about 10.89% of hearing

impairment cases were linked to smoking. Low sedentary time ranked second at 4.63%.[3]

The results put two familiar habits near the top of the list: avoiding tobacco and spending less of your day seated. The study specifically expanded beyond conventional hearing-risk research by examining sedentary time alongside more familiar factors such as smoking and physical activity.

- **Poorer metabolic health consistently tracked with greater hearing risk —** Each standard increase in the researchers' metabolic score for insulin resistance was associated with an 8% higher risk of hearing impairment. Participants with scores above 2.48 had a 17% higher risk than those with scores below 2.25. Individual markers told a similar story.

  Higher triglycerides were associated with a 5% higher risk, higher glucose with a 13% higher risk and higher body mass index with a 16% higher risk. By contrast, higher HDL cholesterol was associated with a 9% reduction in risk. These differences help explain why the researchers identified metabolism as such an important part of the lifestyle-hearing connection.

- **Inflammation mattered, but the metabolic signal was stronger —** Participants in the highest third for the study's inflammation score had a 17% greater hearing impairment risk than those in the lowest third after the researchers accounted for other factors. That score combined white blood cell count with high-sensitivity C-reactive protein, two markers that reflect immune activity and low-grade inflammation.

  Yet the metabolic markers explained more of the association between lifestyle and hearing. BMI alone accounted for 16.52% of the relationship, while HDL cholesterol accounted for 14%. White blood cell count explained less than 6%.

- **Different habits appeared to reach the ears through different biological routes —** For people who never smoked, both inflammation and metabolism were involved, with white blood cell count and triglycerides among the strongest links. For physical

activity, less sitting and optimal sleep, the pathway centered more heavily on BMI and HDL cholesterol.

The proposed explanation involves the cochlea, the sound-processing structure of your inner ear. Better metabolic function supports insulin sensitivity, healthier blood fats and lower excess body fat. In turn, those changes reduce metabolic stress and damage to the tiny blood vessels that supply the cochlea. Poor circulation in these delicate vessels leaves hearing structures more vulnerable to damage.

- **The findings held up across several different groups and analyses —** The relationship remained consistent when researchers separated participants by age, sex, use of drugs known to damage hearing and exposure to noise. After they excluded participants who already had metabolic diseases, most of the metabolic and inflammatory markers still helped explain the lifestyle-hearing relationship.

  One finding deserves caution. Supplement use was independently associated with hearing impairment, but the researchers said this counterintuitive result could reflect other differences among supplement users, such as greater health care use and therefore more opportunities to detect hearing problems.

  Moderate social engagement was also the only lifestyle factor where metabolism and inflammation didn't appear to act as go-betweens, suggesting its relationship with hearing follows a different pathway.

  Because this was an observational study and hearing impairment was identified through medical diagnostic codes rather than direct hearing tests, the results establish associations, not proof of cause and effect.

Diet Quality Was Linked to Slower Hearing Decline

If metabolic health is the strongest pathway between lifestyle and hearing, then what you eat should matter, and a second study suggests it does. A prospective study published in the American Journal of Epidemiology examined women from the Nurses'

Health Study II who participated in the Conservation of Hearing Study.[4]

Researchers specifically recruited women who initially described their hearing as excellent, very good or having only a little trouble, which allowed the team to look for early deterioration rather than focus only on established hearing loss.

Licensed audiologists tested participants at 19 locations across the U.S. Hearing was measured in soundproof booths at baseline and again a median of 3.1 years later. Rather than rely on whether women noticed that their hearing had worsened, researchers measured the quietest sounds they could actually detect. A decline meant hearing thresholds worsened by at least 5 decibels.

- **High-frequency hearing deteriorated most often over just three years —** The amount of measurable decline was striking for such a short follow-up. At least a 5-decibel loss occurred in 19% of women at low frequencies, 38% at middle frequencies, and 49% — nearly half — at high frequencies.

  That distinction matters to you because hearing doesn't decline uniformly. High-frequency sounds include many of the finer details that make speech easier to distinguish. The researchers also noted that even changes classified as "mild" or within a clinically normal hearing range still interfere with speech comprehension, especially in noisy environments, increase listening effort and contribute to fatigue and social withdrawal.

- **The strongest dietary association appeared in the middle hearing frequencies —** Researchers compared three eating patterns: DASH, the Alternate Mediterranean diet and the Alternate Healthy Eating Index 2010. While the details differed, these patterns generally emphasized foods such as fruits, vegetables, whole grains and legumes while limiting processed meats and other less healthy foods.

  Women who followed all three dietary patterns more closely had significantly lower odds of deterioration in the middle-frequency range. The results differed at other frequencies. None of the three patterns was significantly associated with low-

frequency decline, while DASH was the only one significantly associated with less high-frequency decline.

- **The diet-hearing relationship persisted after researchers accounted for numerous competing factors —** Their statistical models accounted for age, race, body mass index, smoking, tinnitus, calorie intake, noise exposure and baseline hearing. Adding waist size, physical activity, high blood pressure, diabetes and use of aspirin, acetaminophen and ibuprofen didn't meaningfully change the results.

  Researchers also tested whether age or past noise exposure altered the association. Neither did. In other words, the relationship between diet quality and hearing decline wasn't confined to a particular age group within this population or simply explained by differences in exposure to loud sounds.

- **Your inner ear requires a steady blood supply to process sound —** The researchers described several biological routes that could explain their findings. The cochlea contains highly active cells that require substantial energy to convert sound vibrations into electrical signals your brain understands. If blood flow drops, these cells receive less oxygen and become more vulnerable to damage.

  Reduced circulation also interferes with the cochlea's electrical balance — a carefully maintained chemical gradient between fluid compartments that the ear needs to generate nerve signals — as well as sensory hair cells and the cochlea's ability to amplify sound.

  The paper explains that healthier dietary patterns are associated with better blood lipid profiles, healthier blood vessel function, lower blood pressure and less inflammation, all factors that help preserve blood flow to this energy-hungry tissue.

- **Oxidative damage offers another explanation for the hearing differences —** The cells involved in hearing have high energy demands, including sensory hair cells, cells that maintain the inner ear's chemical environment and neurons that carry

auditory information toward your brain. That workload also makes them vulnerable to oxidative stress, meaning damage caused when highly reactive molecules overwhelm the cells' protective systems.

Excess oxidative stress disrupts the conversion of sound into nerve signals and contributes to cell death. The researchers noted that healthier dietary patterns provide combinations of compounds involved in antioxidant defenses and have been associated with lower markers of oxidative stress. Protecting these energy-intensive cells offers one biological explanation for why overall diet quality tracked with better preservation of hearing over time.

Support Your Metabolism to Help Protect Your Hearing

The research points to metabolism as one of the strongest pathways that connects your daily habits with hearing health. That gives you several areas to work on at once. Rather than focus only on your ears, address the conditions that help supply your cochlea with energy and blood flow while reducing metabolic stress, inflammation and oxidative damage.

1. **Find out where your metabolic health stands —** If you're concerned about insulin resistance, I recommend looking beyond a single glucose measurement. Use HOMA-IR (Homeostatic Model Assessment of Insulin Resistance), which combines fasting glucose and fasting insulin to give you a clearer picture of how effectively your body responds to insulin.

   In practical terms, it measures how hard your body has to work to keep blood sugar under control; a higher score means your cells are resisting insulin's signal and your pancreas is compensating by producing more.

   This matters because the hearing study found that a higher metabolic score for insulin resistance tracked with greater hearing impairment risk.[5] Anything below 1.0 is considered a healthy HOMA-IR score. If you're above that, you're considered insulin resistant.

The higher your values, the greater your insulin resistance. Conversely the lower your HOMA-IR score, the less insulin resistance you have, assuming you are not a Type 1 diabetic who makes no insulin. Think of this as your starting score. Once you know where you stand, you have something concrete to improve rather than guessing based on body weight alone. Talk to your healthcare provider about whether this testing is appropriate for you.

2. **Break up long periods of sitting and move every day —** If you spend much of your day at a desk, make frequent movement part of your routine. Stand up regularly, take brief walks and gradually work toward 60 minutes of walking per day. Add strength training about twice per week to round out your fitness routine.

   Regular movement supports insulin sensitivity, circulation and cellular energy production, while the hearing research specifically identified lower sedentary time and regular physical activity as favorable lifestyle factors.[6] Your inner ear depends on tiny blood vessels to deliver oxygen and nutrients, so better circulation supports the environment those hearing structures need.[7]

3. **Build your diet around metabolic health —** Most adults need roughly 250 grams of healthy carbohydrates per day, with greater needs if you're highly active. Your cells rely on glucose for efficient energy production, and carbohydrate restriction works against that goal.

   If your gut is compromised, increase carbohydrates according to your tolerance instead of forcing large amounts of fiber. Start with easier-to-digest choices such as whole fruit and white rice before you introduce more complex starches.

4. **Cut back on fats that interfere with metabolic function —** Remove seed oils, like soybean, canola, sunflower, and safflower oils, from your diet as much as possible. Linoleic acid (LA) from these oils accumulates in your tissues over time, fuels oxidative stress and interferes with mitochondrial energy production, the very process your cochlea depends on. Choose fats such as tallow, ghee or grass fed butter instead.

The American Journal of Epidemiology study identified oxidative stress and mitochondrial dysfunction among the biological processes that damage the energy-intensive cells involved in hearing.[8] Your goal isn't merely to follow a diet label. It's to create a metabolic environment that supports cellular energy and limits oxidative damage.

5. **Treat sleep, smoking and alcohol as metabolic issues too —** If your sleep schedule is inconsistent, make regular, sufficient sleep a priority rather than treating it as optional. If you smoke, stopping deserves particular attention because smoking showed the largest estimated protective association among the lifestyle factors evaluated in the hearing study.[9]

   I also recommend avoiding alcohol, which the lifestyle study included as part of its ideal profile. Alcohol disrupts mitochondrial function and works against the metabolic environment your hearing depends on. Taken together, these habits give you a practical target: improve the everyday environment your cells operate in, and you also support the delicate circulation and energy demands of your auditory system.

FAQs About Healthy Lifestyle and Hearing Loss

Q: What lifestyle habits were associated with a lower risk of hearing impairment?

A: The research linked better hearing outcomes with a combination of healthy habits, including not smoking, regular physical activity, adequate sleep and less time spent sitting. Smoking stood out as the lifestyle factor with the largest estimated protective association.

Q: Why does metabolic health matter for my hearing?

A: Your inner ear depends on tiny blood vessels and energy-demanding cells to process sound. Poor metabolic health was strongly associated with hearing impairment, while metabolic factors explained more of the lifestyle-hearing relationship than inflammation did.

Q: Does sitting for long periods affect hearing health?

A: It appears to play a role. Lower sedentary time was one of the favorable lifestyle factors identified in the research, and it ranked second only to not smoking smoking in estimated protective association. Regular movement also supports circulation and metabolic health.

Q: What type of diet was associated with better hearing?

A: Women who more closely followed DASH, the Alternate Mediterranean diet or the Alternate Healthy Eating Index 2010 had less deterioration in middle-frequency hearing. These eating patterns generally emphasized fruits, vegetables, whole grains and legumes while limiting processed meats and other less healthy foods.

Q: What steps help support hearing as I age?

A: Focus on the underlying metabolic environment that supports your inner ear. Improve insulin sensitivity, move throughout the day, get sufficient sleep, avoid smoking and alcohol, and choose foods that support cellular energy while limiting oxidative stress.

This article is for informational purposes only and does not constitute medical advice. Consult a qualified healthcare provider before making changes to your health regimen.

Sources and References

- [1, 2, 3, 5, 6, 9] ENT Discovery 2026, Vol. 2, Issue 2: 88-99
- [4, 7, 8] American Journal of Epidemiology March 2020, Volume 189, Issue 3, Pages 204-214