



SoundNEWS

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Hearing & Health: It's All CONNECTED

As one of the most chronic public health challenges, hearing loss can affect every aspect of life from relationships and social engagement to physical health, self-image, and more. It's also associated with some common conditions and behaviors, or comorbidities, that can signal the need for hearing care.

Research has shown that proper hearing care and technology can prevent or improve each of these risks.

DID YOU KNOW?

- **FALLS** — Research shows a greater risk of falls among people with hearing impairment. In a study published in the *Archives of Internal Medicine* in 2012 and featuring 2,017 adults ages 40 to 69, those with mild hearing loss were nearly three times as likely to have reported a fall.
- **BRAIN HEALTH** — Untreated hearing problems can make the brain reorganize its connections that respond to sound. Per the Better Hearing Institute (BHI), research has also suggested an association between poorer hearing and reduced gray matter in the area of the brain crucial to speech comprehension. With early treatment, hearing aids and other strategies can help the brain retain normal connections.
- **DEPRESSION** — Multiple studies support a link between hearing loss and depression, according to the BHI. Older adults with hearing loss, for example, have a 57 percent greater risk of experiencing deep depression than those without it, per Johns Hopkins research. Adults treated with hearing aids, however, report improved mental health and other benefits, per the National Council on Aging.

- **SMOKING** — Studies such as “Effect of Smoking on Hearing Loss” suggest that smokers are at greater risk for hearing impairment than their nonsmoking counterparts. Quitting the tobacco habit, however, could help keep hearing and other aspects of health in better shape.
- **MORTALITY** — Hearing impairment increases mortality risks among older men, per a study supported in part by the National Institutes of Health and summarized by the BHI. The use of hearing aids among older men and women, however, was found to lower mortality risk compared to those with untreated hearing problems.

Catching hearing problems early can make a difference in your long-term quality of life. If you notice a change in your hearing, have a condition that may increase your risk of hearing impairment, or haven't had a hearing checkup in at least a year, call us today to schedule an evaluation.

Call us to schedule an evaluation.
707.832.4744

Office NEWS

Dr. Ostermeier holds her doctoral degree in audiology from Central Michigan University and is a fellow of the American Academy of Audiology. She has worked as an audiologist in a variety of clinical settings, most recently in a large multi-specialty clinic. Dr. Ostermeier enjoys working with a wide variety of patients and has a special interest in the assessment and treatment of hearing loss.

Dr. Ostermeier grew up in Kingman, AZ, and comes from a family ranching background. She received her bachelor's degree in speech and hearing sciences from the University of Arizona. She has lived and worked in Santa Rosa, CA, and most recently in Seattle, WA. She is now excited to call the beautiful north coast her home. When she is not practicing audiology, she can be found spending time with her family, baking, gardening, and enjoying the many outdoor offerings of Humboldt County.



Surrounded BY Sound



Take a moment and listen. What do you hear? Often we are too busy in our lives to notice all of the sounds around us, let alone realize how they are affecting us.

Have you ever thought about why you love the sound of rain while your friend can't stand it? Ever notice how your heart races when you hear a siren? These physiological, cognitive, psychological, and behavioral responses can be summarized as the psychology of sound.¹

Physiologically

Sound can affect our hormone secretions, breathing, heart rate, and brain waves. Our response to sound depends on its characteristics — intensity, frequency, predictability, complexity, and length of exposure, as well as our interpretation of the meaning of the noise. Noise is different than sound. Noise pollution, as defined by the United States Environmental Protection Agency (EPA), is “unwanted or disturbing sound” and can diminish quality of life.

According to the Canadian Centre for Occupational Health and Safety (CCOHS), the nonauditory effects of noise are:²

- Increased stress
- Sleeping problems
- Cardiovascular function (hypertension, changes to blood pressure and/or heart rate)
- Annoyance
- Mental health concerns

Cognitively

Our ability to process sound is actually pretty low, which makes it hard to hear in background noise or while two people are talking at once. For example, sound consultant Julian Treasure claims that open-plan office spaces can reduce productivity by 66 percent.

In a study published in the *British Journal of Psychology* in 1998, researchers found that employers were incredibly distracted when they could hear others talking around them, and they were less able to perform their duties. Noise in the office is also associated with increased stress hormone levels and a lower willingness to participate with others.³

The Centers for Disease Control and Prevention (CDC) reports occupational hearing loss is one of the most common work-related illnesses in the United States. Twenty-two million workers are exposed to potentially damaging noise each year. Many people don't realize they have a hearing loss until it's too late. Even then, you might not realize your hearing has gotten worse because you no longer have a reference point for understanding what healthy hearing is.⁴

Psychologically

Music has the strongest emotional impact of any type of sound for two reasons: It's easily recognizable and easy to associate. However, it's not the only kind of sound that affects emotional state. Birds chirping is an example: In our primitive days, birdsong was generally a reassuring sound. When the forest became quiet, that's when it was time to worry.

About 48 million people in the United States alone have significant hearing loss. Those who seek treatment often see improvement in their overall health.⁵



New hearing aid users experience less anxiety after starting hearing aid use.



Hearing aid users experience a reduction in depression, as measured by a geriatric depression scale.



Hearing aid use is shown to improve generic and hearing-related quality of life.

Behaviorally

Sounds — whether they are pleasant, intense, or annoying — can change our behavior. A fire alarm gets your attention and makes you want to get away from the sound. Contrast that with what you do when you hear your favorite singer live in concert (hopefully you're dancing!).

Ever wondered why some people have a strong reaction to sounds? It's called misophonia. This condition is defined as the hatred of sound; however, “a person with misophonia does not simply hate all sound. People with misophonia have specific symptoms and triggers and are sensitive only to certain sounds (and occasionally to visual triggers). Any sound can become a problem to a person with misophonia, but most [often the troubling sounds] are some kind of background noise.”

These sounds can trigger people to have an instant, emotional response. When someone's trigger set (the sounds that set them off) is heard, the person can have a wide variety of reactions from annoyance to panic or anger. This kind of response is like a siren or an alarm to the person with misophonia, and they may urgently try to distance themselves or become agitated.⁶

“If you're listening consciously, you can take control of the sound around you. It's good for your health [and] for your productivity,” says Treasure. Visit us today to take control of the sound around you.

DID YOU KNOW?

- Ocean waves have the frequency of roughly 12 cycles per minute, which is soothing to most people. This is probably because that is roughly the frequency of the breathing of a sleeping person; there is a deep resonance with being at rest. We also associate it with being stress free and on holiday.
- When the London Underground started playing classical music at a crime-heavy station, robberies fell by 33% while assaults on staff dropped 25%, says *The Independent*.⁷

1. https://www.ted.com/talks/julian_treasure_the_4_ways_sound_affects_us/transcript?language=en#t-191572

2. https://www.ccohs.ca/oshanswers/phys_agents/non_auditory.html

3. <http://blog.ted.com/9-ways-that-sound-affects-our-health-wellbeing-and-productivity/>

4. <http://www.cdc.gov/niosh/topics/noise/stats.html>

5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3393360/>

6. <http://www.misophonia.com/symptoms-triggers/>

7. <http://blog.ted.com/9-ways-that-sound-affects-our-health-wellbeing-and-productivity/>