Noise

INCIDENT

In 2008, Jeff Ammon, 55, began noticing a feeling of pressure in his ears every day after work.

Over the next months, when his symptoms progressed into a slight loss of hearing and sensitivity to noise, he became worried. Ammon, a construction worker for 32 years, eventually started wearing ear protection hoping this would address these complaints – but it was too late.

From that point on, sounds ranging from the hum of a lawnmower to normal tones of conversation caused a piercing, jabbing pain in his inner ear. He stopped working in 2011, when the pain became unbearable. He also hears ringing in his ears and experiences dizziness, both side effects of the auditory damage.

“It’s debilitating … completely,” he said.

Ammon spent almost all of his working life surrounded by the loud noises of jackhammers, saws and air compressors.

Ammon worked for several small construction companies building houses. He said he was never told to wear ear protection. His colleagues didn’t wear it either. No one talked about it and, even when he worked with loud equipment, he wasn’t aware of the need for ear protection.

NEED TO KNOW

It is recognized now, that Hearing Loss has a dramatic impact in our economy bourne out by statistics.

The steps to eliminate the negative effects of hearing loss, economically and personally, is done through **Disclosure of Hearing Loss, Workplace Accommodations and Managing Hearing Loss in the Workplace.**

BUSINESS / REGULATIONS

The Centers for Disease Control and Prevention, said hearing loss is the most common work-related injury with approximately 22 million workers exposed annually to hazardous levels of occupational noise. An estimated $242 million is

spent on worker's compensation annually for hearing loss disability, according to the Department of Labor.

The Labor Department launched a challenge called "Hear and Now," in which it is soliciting pitches for innovative ideas and technology to better alert workers of hazardous noise levels.

But critics say that while these efforts might help, technology to reduce hearing injuries already exists. They contend that the maximum level of noise exposure allowed before employers are required to provide sound-protection equipment is too low, and the regulations developed by the Occupational Safety and Health Administration are outdated. For example, those regulations use sound level limits that don't factor in the noise exposures that occur beyond the workplace – at restaurants, concerts and sporting venues, for instance – that can add to workers' cumulative risks of harm.

According to OSHA officials, the agency will issue a request for information about current regulations at construction sites to figure out if more stringent protections are needed and how companies are complying.

The review may lead to an update to these rules, most of which date back to the 1970s. A similar call for information was issued in 2002, but no changes resulted from the action.

Employers may also have to shoulder the responsibility of instilling more awareness and education among their workers. For example, workers sometimes choose not to wear hearing protection at work sites because they are not aware of their risks – especially when they are not operating loud equipment.

Mark Cullen, a professor at Stanford University who explores workplace hazards, found in a study that "at very high noise exposures, people very faithfully wear hearing protection and at low noise situations, people don't.

For general industry workers who are exposed to noise for eight hours a day at or above a time-weighted average of 85 decibels, OSHA requires employers to provide notification, audiometric testing and free hearing protectors. Employers also have to offer training programs for affected workers. The limit is 90 decibels for an eight-hour exposure for construction industry workers.

Cullen said employers could build noise barriers or eliminate noisy equipment, but old factories often choose to just offer hearing protection gear.

"But the problem with hearing protections is it is way too easy, unsupervised, to take it off," he said. "What would really make a difference is to train employers."

He said there is also existing technology that will measure noise exposure in real time in each worker's hearing protection gear, with lights that will flash when the level becomes hazardous. The data can be downloaded each day to monitor daily exposures.

Some of the steps taken by the federal government to move toward tightening regulations and increasing awareness suggest this might be changing. But in the meantime, people like Ammon, who feel disabled by their condition, might face difficulties in getting recognition for their symptoms and financial support.

He applied for Social Security disability benefits but was rejected because his condition was not on the Social Security Administration's list of medical diseases considered disabling. When he first experienced his symptoms, he visited dozens of audiologists who only told him he had slight hearing loss. Research linking hyperacusis – unusual tolerance toward ordinary sounds – and pain was only at its infancy. Specific treatments still are not available for people with this type of hearing damage.

These days, he experiments with new medications or therapies, hoping for more awareness about the illness – and about protecting hearing at the workplace. He is waiting for the third appeal for Social Security disability benefits.

"I'm hearing a little more about it, but not nearly enough," he said. "And it needs to start at the workplace."

Now, he avoids going outdoors, choosing instead to stay in his soundproof basement in Lebanon, Pa., and communicate with his doctor mostly through an online patient portal.

"The medication to address pain has not been very successful at all. … I'm also on some medication for stress, anxiety and depression," he said. "It has isolated me from society."

STATISTICS

Occupational Hearing Loss

- The National Institute for Occupational Safety and Health (NIOSH) recommends that workers are not exposed to noise at a level that amounts to more than 85 decibels (dBA) over 8 continuous hours.
- NIOSH estimates that 30 million U.S. workers are exposed to noise levels high enough to cause irreversible hearing loss.
- According to the S. Bureau of Labor Statistics, more than 20,000 workplace hearing loss cases occur annually, many resulting in permanent hearing loss.
- An estimated 24% of hearing loss in the United States has been attributed to workplace exposure, according to the Centers for Disease Control

Employment and Economic Costs

- 48% of people who have hearing loss were employed in 2014, but about the same amount (47%) are not in the labor force.
- Adults with hearing loss are more likely to have lower education, lower income, and be unemployment or underemployment, compared with their typical-hearing peers.
- Individuals with hearing loss also experience greater difficulties in employment transition and career development, compared with those with typical hearing.
- Untreated hearing loss can decrease one's annual income by as much as $30,000. The yearly cost to society is estimated to be as high as $26 billion in unrealized federal taxes; and an estimated aggregate yearly income loss of $176 billion due to underemployment.
- For those who did collect an income, individuals with hearing loss made about 25% less; their mean wage was $23,481, compared with $31,272 for typical-hearing peers.

- Hearing aids were shown to reduce the risk of income loss by 90 to 100% for those with milder hearing loss, and from 65 to 77% for those with moderate to severe hearing loss.

Untreated hearing loss shows a higher rate of unemployment:

- Those with severe hearing loss had an unemployment rate (15.6%) double that of the typical-hearing population (7.8%), and nearly double that of their peers (8.3%) who use hearing aids. (BHI)

PREVENTION

1. **The essential parts of a Hearing Loss Prevention Program are as follows:**

- Identify and assess areas and activities where employees may be exposed to:
  - high noise levels that may exceed 85 decibels (dBA) averaged over an eight-hour period,
  - extreme noise levels of 115 dBA at any time (greater than one second)
  - extreme impact noise levels of 140 dBC (less than one second)
  - Reduce or control noise using engineering and administrative controls, where feasible.
  - Post signs at noisy areas and require hearing protectors.
  - Identify employees who need hearing protection.
  - Provide hearing protectors to employees and train them in their use.
  - Provide baseline and annual audiometric hearing exams to employees.

1. **Responsibilities of Managers, Supervisors and Investigators**

- Identify areas of excessive noise and affected employees.
- Coordinate sound level surveys and personnel monitoring for noise exposure, conducted by EH&S, to provide a quantitative assessment of noise hazards in your workplace.
- If employees are exposed to noise above 90 dBA averaged over the work shift, implement engineering or administrative controls. See the L&I Hearing Loss Prevention (Noise) webpage and Reducing Hazards from Noise (OSHA).
- Ensure individuals exposed to noise levels at or above 85 dBA averaged over an 8-hour work shift are enrolled in the Hearing Loss Prevention Program, receive training and medical surveillance.
- Ensure employees are provided with baseline and annual audiometric exams at the UW Speech and Hearing Clinic, or equivalent, through EH&S.
- Ensure staff has taken the Hearing Conservation training.
- Provide at least two types of hearing protectors to employees if controls cannot be implemented, and for all employees exposed to noise levels at or over 85 dBA averaged over an 8-hour work shift, greater than 115 dBA any time and 140 dBC impact noise any time.
- Ensure hearing protectors are worn properly.
- Post caution signs where noise may exceed 85 dBA averaged over an 8-hour work shift.
- Post danger signs where noise may exceed 115 dBA, even intermittently.
- Ensure that reports of high noise are investigated.
- Maintain records as required.

1. **Responsibilities of Employees**

- Report elevated noise levels, noisy equipment and hearing protector

problems to supervisor.
- Take training on Hearing Conservation.
- Choose the most comfortable, effective hearing protection devices that fit well. Remember that the BEST protector is one you’ll wear. Earplugs are available in different sizes and shapes to fit different ear canals; earmuffs are easy to put on and take off for short-term loud noise exposure. A combination of earmuffs and earplugs may be needed.
- Wear hearing protectors in posted noise areas.
- Keep hearing protectors clean and replace when necessary.
- Take baseline and annual audiogram tests.