National Aeronautics and Space Administration
Goddard Space Flight Center Health Units

Monthly Medical Moment: March 2025

World Hearing Day – Raising Awareness for Hearing Loss and Promoting Ear and Hearing Care

WHAT AND WHO

- Hearing loss is the 3rd most common chronic physical health condition after high blood pressure and arthritis[1,2]
- 1 in 8 US workers have hearing difficulty, with work being the cause in 1 in 4 people[2]
- Hearing loss is also part of natural aging and is called "presbycusis" – it typically affects high frequency or high pitch noises, and is most noticeable by age 60, but begins well before then. You can lose 20-40% of certain types of hearing cells before noticing any hearing problems![3,4]
- Hearing loss caused by noise ("noise-induced hearing loss" or NIHL) is a medical condition and it is PREVENTABLE – also tends to affect high pitch noises first

HEARING LOSS IS ASSOCIATED WITH OTHER HEALTH PROBLEMS[2,5]

- Tinnitus, or ringing/buzzing in the ears (1 in 13 US workers have this!)
- Problems with the inner ear, which affects things like balance, posture, and spatial orientation
- Cognitive decline and dementia
- Heart problems and high blood pressure
- Poor mental health, and communication and relationship problems
- Safety concerns for self, and others at home AND at work (increased risk of accidents)

HOW TO RECOGNIZE HEARING LOSS[2]

- Having difficulty hearing, especially with background noise
- Thinking people are mumbling when they're talking to you
- Asking others to repeat themselves frequently
- Others tend to notice it before you do!

NOISE[1-7]

- Different types of noise at work and in everyday lives can cause injury, like continuous noises or impulse/blast noises
  - Machines, loud trucks, firearm use, gaming, boats, concerts, yard work, earbuds/earphones, fireworks, gyms, and more!
- Combined exposure to noise and certain chemicals can lead to hearing loss even if each individual factor might be within recommended exposure levels
  - Solvents (toluene, styrene, xylene, ethyl benzene, carbon disulfide, n-hexane, fuels), asphyxiants (carbon monoxide, hydrogen cyanide), metals (lead, mercury, tin), pesticides (organophosphates, paraquat), nitriles

HOW SOUND IS MEASURED[1]

Decibels (dB) relate to loudness and are on a logarithmic scale

Breathing	10 dB	Safe sound level
Ticking watch	20 dB	
Average room noise	30-50 dB	
Normal conversation/ backgroud music	60 dB	
Average office noise	70 dB	
Landscaping equipment (inside house)	75 dB	Repeated or prolonged exposure could lead to NIHL over time
Vacuum / inside an airplane	80 dB	
City traffic (inside a car) / noisy restaurant	85 dB	
Subway, shouted conversation	90-95 dB	
Pro sports events/ car horn at 16 ft	95-100 dB	
Motorcycle, stereo	100 dB	
Chainsaw, leafblower, snowmobile	106-115 dB	
Music concert, ambulance siren	120 dB	Can result in immediate and permanent hearing loss after a single close-range exposure
Jet engine taking off	140 dB	
Gun shot	140-60 dB	

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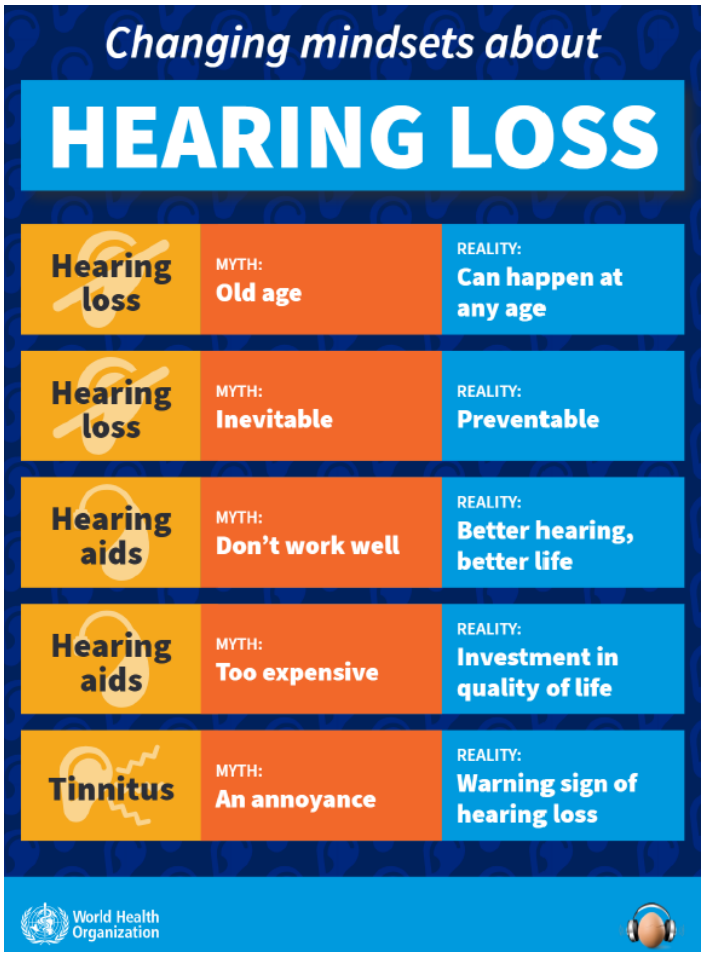
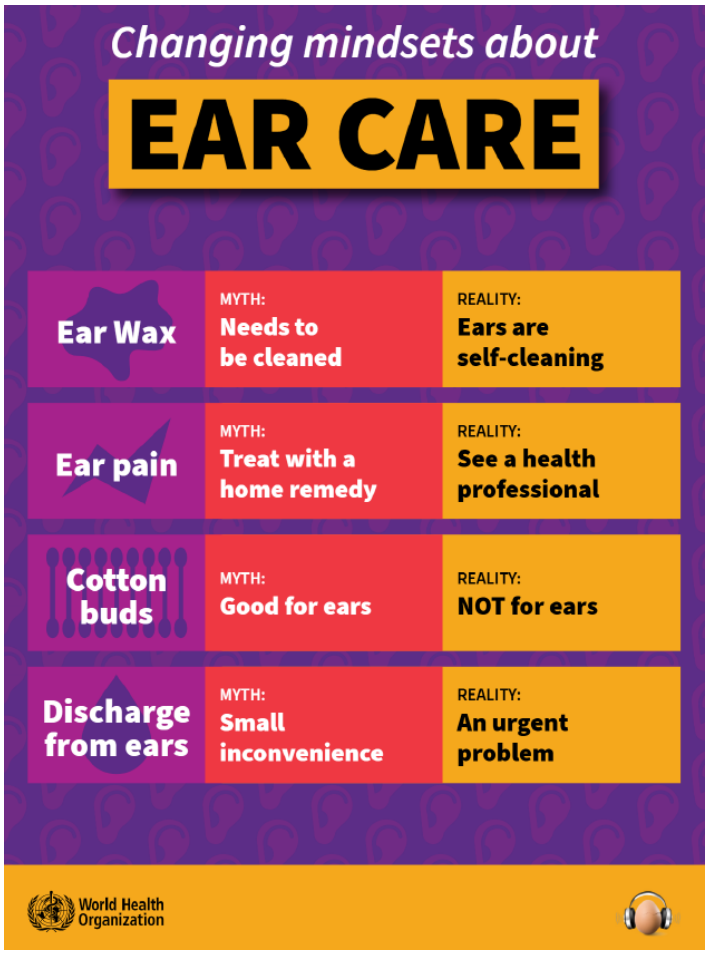
WHAT TO DO ABOUT IT

- There is no cure and no approved pharmacological treatment for NIHL or aging[1,3,6] – research is ongoing! Hearing loss is managed with PREVENTION, hearing aids/cochlear implants, assistive listening devices, and counseling/behavioral therapies
- Hearing protective devices
    - Fit is critical: eyeglasses, hats, hoods, movements like recoil forces, etc. that interfere with seals can decrease noise attenuation by 5-15 dB. Ear plugs (that cover the ear canal circumference) or earmuffs can reduce noise by 10-30 dB. Double hearing protection (ear plugs + earmuffs) may reduce noise by an additional 15-20 dB[8,9]
- **Stay on top of other conditions associated with hearing loss, like hypertension, diabetes, obesity, heart and kidney disease, and cigarette smoking!**





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Please contact the Health Unit with any questions or concerns.
For emergencies, please call 9-1-1.

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