Lunch and Learn: Healthy Hearing
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Today’s Topics

• Importance of preserving hearing
• Anatomy of the ear
• Types and causes of hearing loss
• Risks associated with loud noise
• Tips for protecting hearing
Importance of Preserving Hearing
Prevalence of Hearing Loss Increases with Age

Hearing and Quality of Life

• Emotional & mental health
• Physical health
• Relationships
• Self-esteem
• Work & school performance
Related Health Conditions

- Heart Disease
- Diabetes
- Dementia

Prevention and treatment of hearing loss can...

- Improve relationships with family and friends
- Better self-esteem
- Improve mental health
- Allow greater independence
- Reduce frustration in social situations
Anatomy of the Ear
Anatomy of the Ear

- Pinna
- Ear Canal
- Eardrum
- Auditory Nerve
- Cochlea
- 3 tiny bones
Types and Causes of Hearing Loss
Types of Hearing Loss

Conductive:
- Issue with ear canal, eardrum, or the 3 tiny bones in the middle ear
- Often medically treatable

Sensorineural:
- Issue with inner ear sensory cells and/or neural connections
- Typically permanent
- Hearing aids are often recommended as treatment
Check medication side effects

www.pdr.net
- Prescriber's Digital Reference

www.RXlist.com
- The Internet Drug Index
Risks Associated with Loud Noise
Effects of Loud Noise

- Temporary or permanent damage to inner ear sensory cells / neural synapses
- Tinnitus, hyperacusis, or misophonia

**NIHL is preventable in most cases**
Healthy Hair Cells

Dead Hair Cells disappear

Intact cochlea

Damaged cochlea
NOISE
Thermometer™

140 DECIBELS
Immediate danger to hearing
Jet engine at take-off, Gunshot

125 DECIBELS
Pain threshold
Fire alarm, Firecracker

120 DECIBELS
Hearing damage < 8 seconds
Rock concert, Ambulance siren

115 DECIBELS
Hearing damage in 30 seconds
Leafblower, Stadium football game

100 DECIBELS
Hearing damage in 15 minutes
MP3 players, Snowmobile

97 DECIBELS
Hearing damage in 30 minutes
Motorcycle

91 DECIBELS
Hearing damage in 2 hours
Hairdryer, Garbage disposal

94 DECIBELS
Hearing damage in 1 hour
Electric drill

88 DECIBELS
Hearing damage in 4 hours
Lawn mower, City traffic

85 DECIBELS
Beginning of OSHA regulations
Hearing damage in 8 hours

30 DECIBELS
Faint sound
Whisper

Decibel (dB) + Time = Potential for hearing loss
Reduce exposure time in half with each additional 3 dB(A)  (Source: NIOSH)

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http://www.betterhearing.org/hearingpedia/hearing-loss-prevention/noise-thermometer
Tips for Protecting Your Hearing
What Can We Do?

• Be proactive about hearing healthcare!!
• Prevent damage in the first place
• Routine hearing screenings/evaluations
• Treat hearing loss when it occurs AND prevent further damage
Earplug Recommendations

• Foam Ear Plugs
High-Fidelity Options

- ETY-Plugs
  - High-fidelity earplugs
  - 20 dB attenuation
- Custom Ear plugs
  - Custom made for ideal fit and comfort
  - Removable filters to change attenuation: 9 dB, 15 dB, and 25 dB
Noise Isolating Headphones

• Ideal for use on the treadmill or while commuting
• Reduces need to turn up volume
• Etymotic Research mc5 Earphones are $64.95

https://www.etymotic.com/consumer/earphones/mc5.html
Smart Phone Volume Options

- Volume Limit
- Sound Check

Free Apps: NIOSH SLM
Next Steps

• Free hearing screenings offered at NUCASLL open house February 15-16, 2018
• Free quarterly communication enhancement classes (registration required)
• Clinic Website: https://nucasll.northwestern.edu/
• Please call (847) 491-3165 for any clinic related questions to or schedule an appointment
Additional Resources

- https://www.cdc.gov/niosh/topics/noise/default.html
- https://www.coopersafety.com/earplugs-noise-reduction
- http://www.hearingloss.org/
- https://www.ata.org/
Questions?

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