

Hearing

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What are we preventing?

- Up to 74% incidence rate of Music-Induced Hearing Disorders
 - Tinnitus (ringing or sounds in the ears)
 - Diplacusis (pitch perception issues)
 - Hyperacusis (extreme sensitivity)
 - Dysacusis (distortion)

Social Distancing \neq Hearing Conservation

- In an era of social distancing, a hearing test might be difficult. Here are 4 pertinent topics for current hearing care:
 - Practicing
 - Earbud/headphone use
 - Accessibility of wellness care
 - Hearing protection

Practicing

- Many musicians are at risk from own instrument
- One example: 70% of the hearing tests for violinists in the CSO showed injury from sound in the left ear (Royster 1996)
- Measurements taken in the left ear canal of a violinist showed a range of 84-102 dB
 - Now stack on hours of practicing and performing
 - DANGER ZONE!



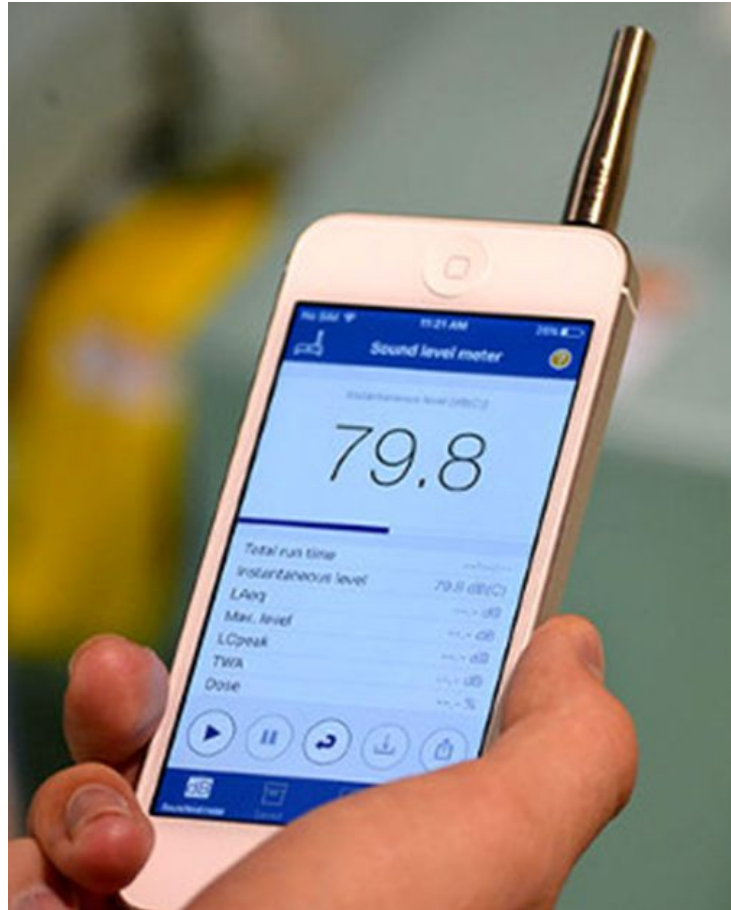
Risk

- Based on 2 factors
 - Sound level (decibel level)
 - Exposure length

Sound level measurement



Using an app (most are not accurate)



NIOSH Sound Level Meter App for iOS

Caveats

- Ear canal resonance
 - All ear canals amplify sound between 2000-7000 Hz, some by as much as 30 dB
- User error
 - Sound level measurements should be in A weighting, slow response time, and an average should be taken over time

- Piano 92-95 dBA
- Violin 84-102 dBA
- Cello 82-92 dBA
- Oboe 90-94 dBA
- Flute 85-111 dBA
- Piccolo 95-112 dBA
- Clarinet 92-103 dBA
- French Horn 90-106 dBA
- Trombone 85-114 dBA
- Timpani and bass drums rolls 106 dBA
- Orchestra peaks 120-137 dBA



SAFE EXPOSURE TIME

Level, dBA	85	88	90	91	94	95	97	100	105	110	115
NIOSH	8 hr	4 hr		2 hr	1 hr		0:30	0:15			
OSHA	16 hr		8 hr			4 hr	3 hr	2 hr	1 hr	0:30	0:15

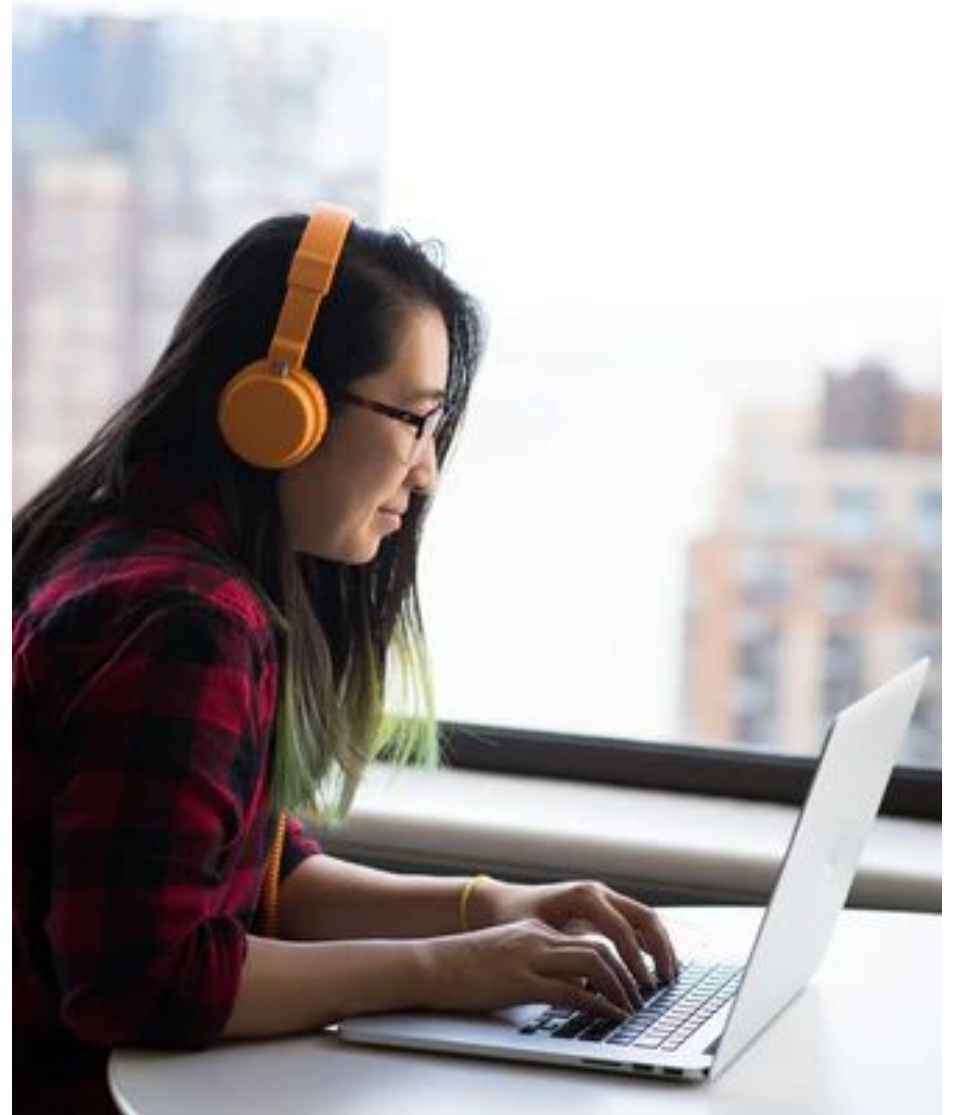
Day to day listening

- 80/90 rule for earbuds and personal music player



Day to day listening

- Consider isolation of earpieces



Accessibility of wellness care

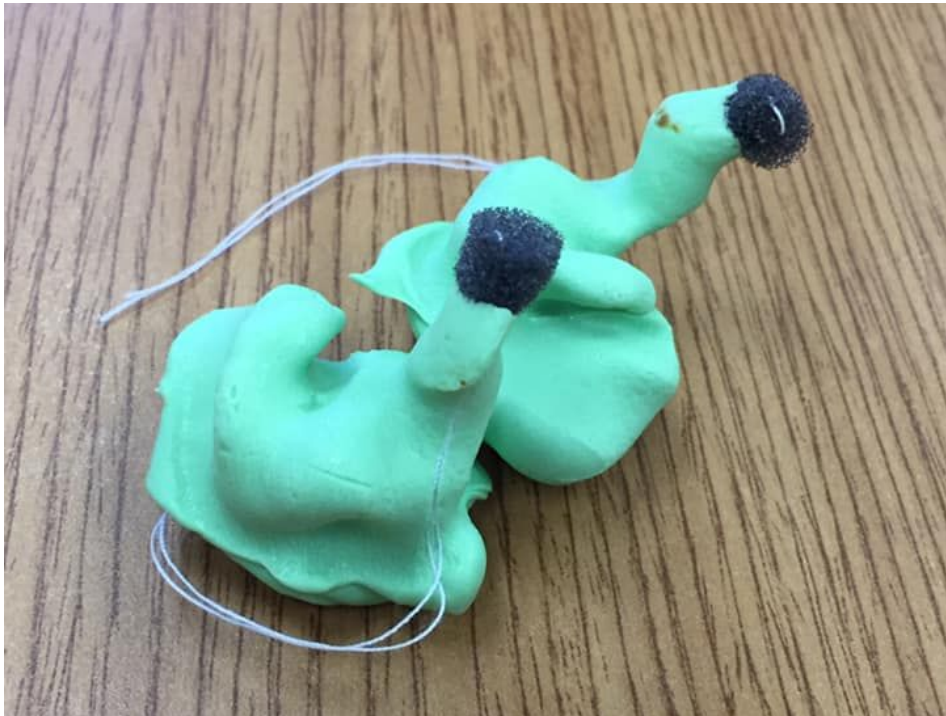
- Very few music audiologists in the country

Considerations for current life:

- Availability of audiology clinics or hearing wellness programs
- Apps
 - Not accurate yet
 - Many variables
- Remote visits
 - heather@soundcheckaudiology.com

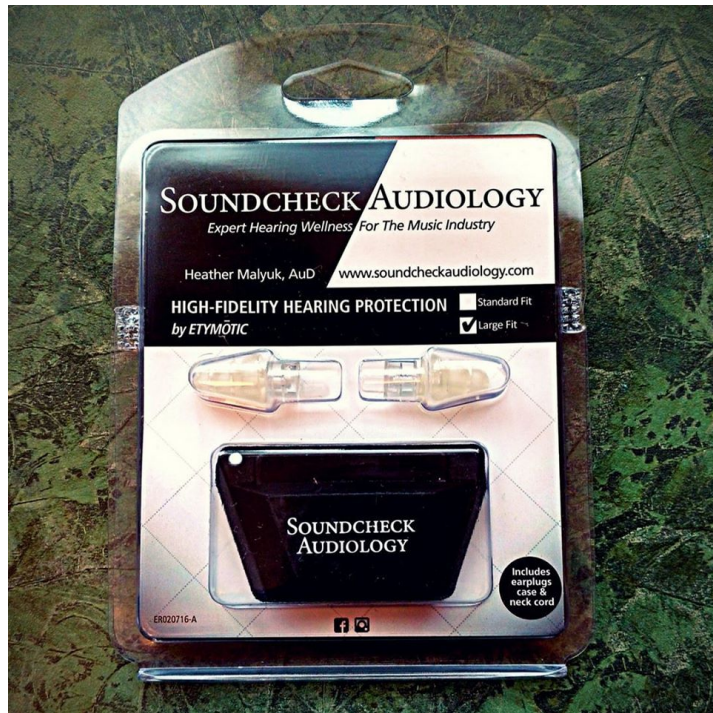
Hearing protection

- Typically made custom from ear impressions

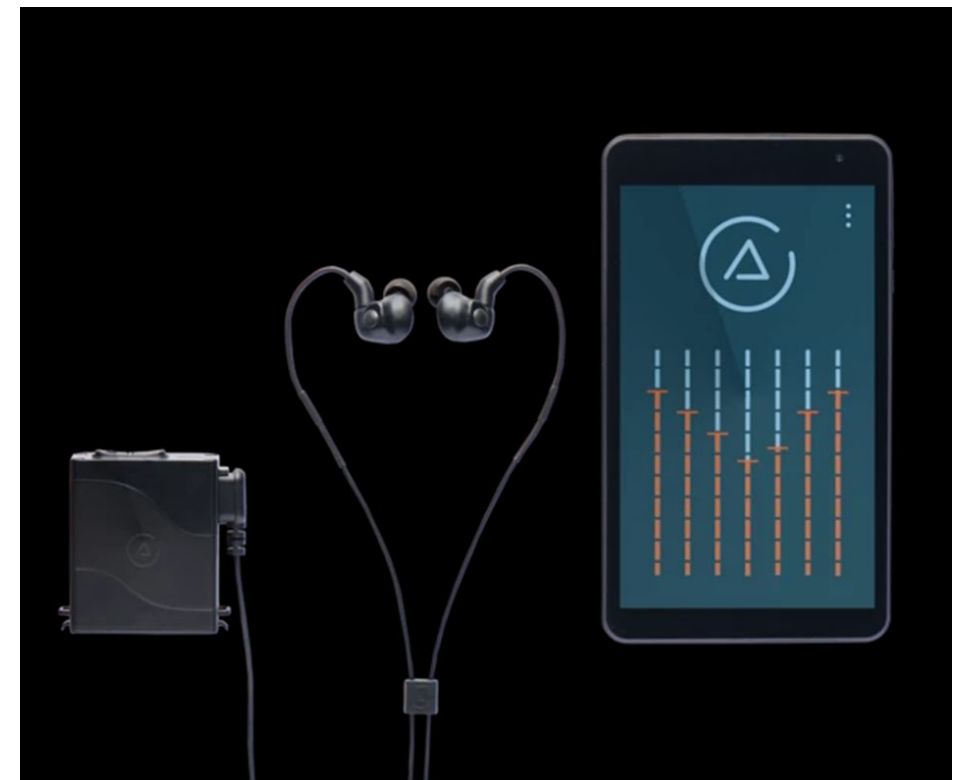
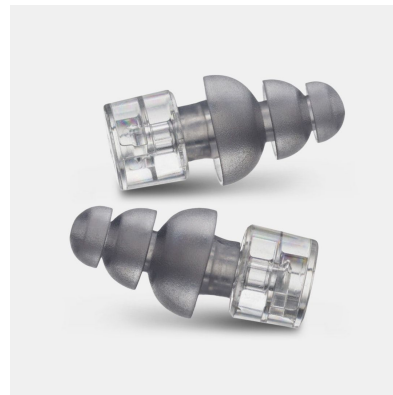


In this era...

- Right now is really an ideal time to work on ear training
- Custom might not be an option, but universal fit is!



ER20s



3DME

Final thoughts

- Most important aspect of wellness: An annual hearing evaluation
- Do what you can for now.

• Send questions to:
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