Round Table Session:
Noise Induced Occupational Hearing Loss

Music Induced Hearing Loss: Early Detection with Otoacoustic Emissions (OAEs)

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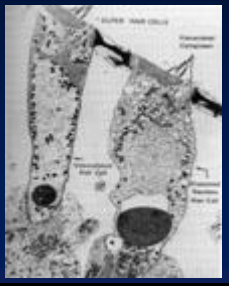
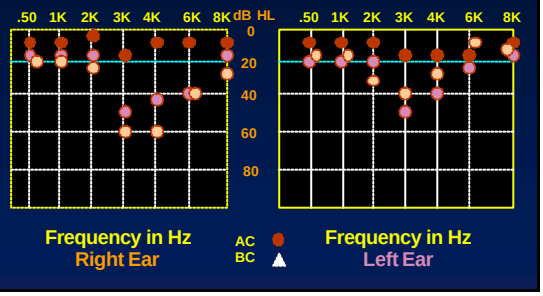
OAEs in Music Induced Hearing Loss:
"An Ounce of Prevention is Worth a Pound of Cure"



Excessive Music Exposure: People at Risk

- Musicians
  - rock/pop
  - symphony
- Audio engineers
- Music teachers
- Music venue employees, e.g.,
  - bartenders/waiters/waitresses
  - security personnel
- Children
  - school band members
  - concert attendees

Audiograms: 3 Audio Engineers



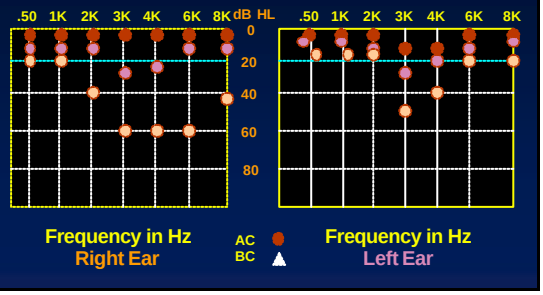
Noise/Music Induced Hearing Loss:
Walsh-Healy Noise Standard (US Dept. of Labor, 1969)

Duration/Day	Noise Level (slow response) *
8 hours	90 dBA
6 hours	92 dBA
4 hours	95 dBA
3 hours	97 dBA
2 hours	*100 dBA*
1.5 hours	*102 dBA*
1 hour	*105 dBA*
0.5 hour	*110 dBA*
< 0.25 hour	*115 dBA*

** all levels documented at concerts and in nightclubs*

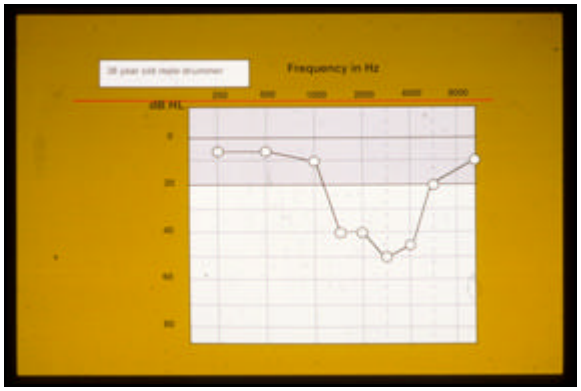
Preventing Music Induced Hearing Loss:
Relative Risk of Musicians

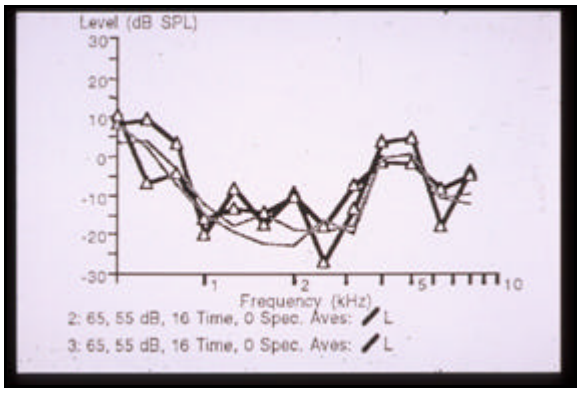
Audiograms:
3 Musicians (Professional Drummers)



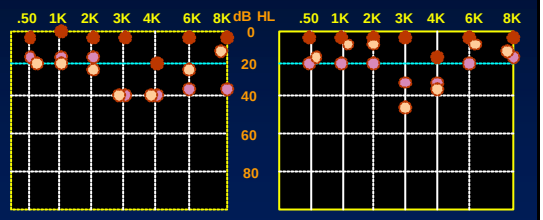
CASE REPORT: Music exposure

- 38 year old male
- Drummer in well-known country-rock band
- No history of otologic pathology
- No prior hearing protection
- Infant daughter just learning to talk





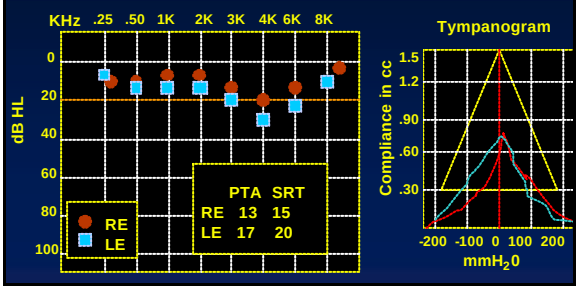
Audiograms:
3 Musicians (Professional Guitarists)

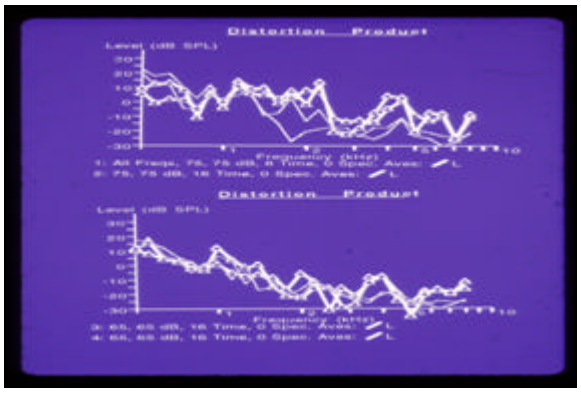


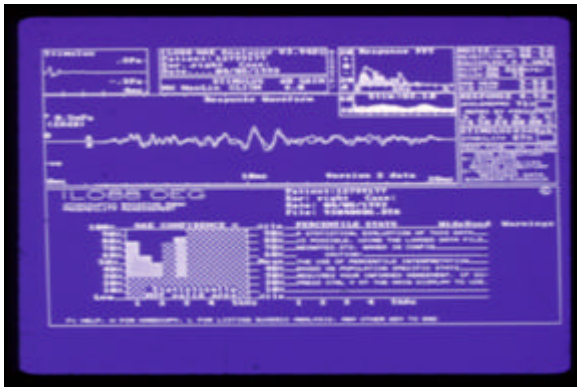
CASE REPORT: Sound (music) exposure

- 49 year old male
- Song-writer
- Church choir leader
- Vocalist, keyboardist, and leader of rock-blues band
- CC: neck pain and concern about hearing

Music Exposure:
49 year old singer/songwriter





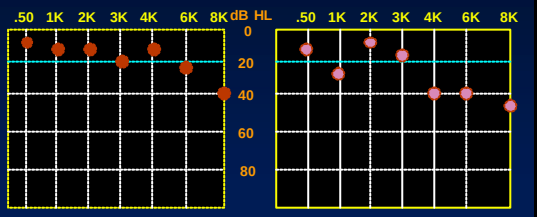


Preventing Music Induced Hearing Loss: Relative Risk of Musicians

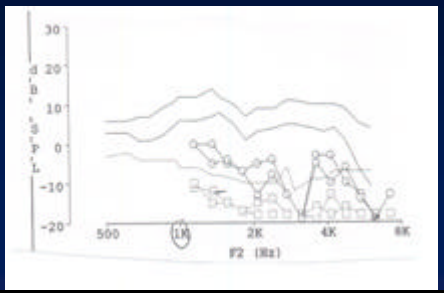
CASE REPORT: Music exposure

- 62 year old female
- Professional violinist and violin teacher
- Bothersome tinnitus bilaterally, left > right ear
- Hyperacusis (LDLs = 70 to 80 dB HL)
- Sound level measurements when playing violin
  - Right ear = 81- 86 dBA SPL
  - Left ear = 91 - 97 dBA SPL (peak > 100 dB SPL)

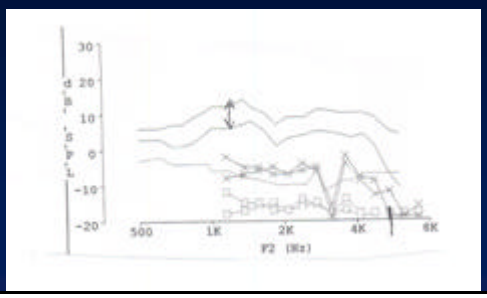
Case Report: 62 year old female violinist



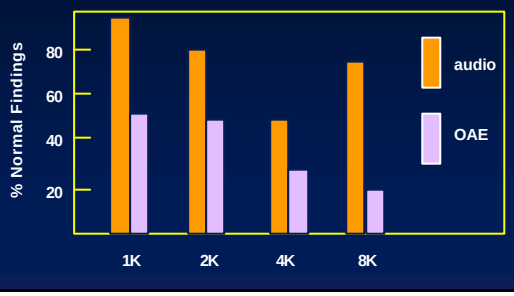
Music Induced Hearing Loss and OAEs:
62 year old violinist and violin teacher (right ear)



Music Induced Hearing Loss and OAEs:
62 year old violinist and violin teacher (left ear)



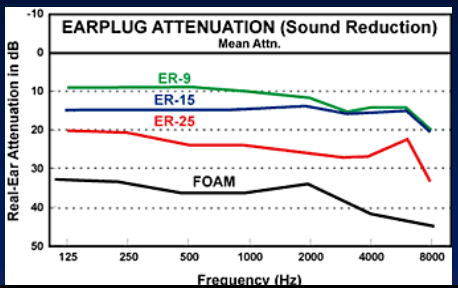
Music Induced Auditory Dysfunction:
Audiogram versus DPOAE
(N = 37 Professional Musicians)



Music Induced Hearing Loss:
Early Detection with Otoacoustic Emissions (OAEs)

Preventing Music Induced Hearing Loss: Etymotic Research (ER) Musician 's Earplugs (ER-9, ER-15, ER-25 dB)

Preventing Music Induced Hearing Loss: Attenuation Musician 's Earplugs (ER-9, ER-15, ER-25 dB)



Preventing Music Induced Hearing Loss: ER-20 (20 dB attenuation) Earplugs

Preventing Music Induced Hearing Loss: Ear-Level Monitors

Early Detection of Music Induced Hearing Loss with Otoacoustic Emissions (OAEs): *Main Points*

- The cure for music induced hearing loss is prevention
- OAEs can detect music induced cochlear auditory dysfunction before the audiogram
- OAEs are valuable in:
  - monitoring cochlear integrity in persons at risk for music induced hearing loss
  - early detection of cochlear dysfunction
  - counseling patients about proper hearing conservation
- OAEs are an essential component of the audiologic test battery in the assessment of persons at risk for music induced hearing loss

Auditory Processing Disorders (APD) in Children : Diagnosis & Management

My complete lecture can be printed from the following website:

www.phhp.ufl.edu/cd

(faculty presentations … James Hall)