HEARING LOSS PREVENTION & HEARING AID TECHNOLOGY

Wendy Shiau, Ph.D., CCC–A
301–838–0085; hearingclinic@yahoo.com
WS Audiology Services, Inc.
966 Hungerford Dr. Suite 8A, Rockville, MD
Every One Needs to Hear Well!

Whether It’s for Safety Reasons, Relationships or to Do Your Best at Work or School.

Good Hearing is Essential.
What is Audiology?

- A branch of Science and Medicine Concerned with sense of hearing
- Education System
- Practice Scope
- Working Settings
- Target population
Causes of Hearing Loss

- Diseases
- Genetic
- Aging
- Noise
What are the Do’s and Don’ts

- To Protection Yourself from “NOISE”
  - OSHA CFR 1910.95
  - Daily life and car mode setting
  - What are the effects of iPod, or listening to loud music
  - Personal protection device

- To Avoid Damage from Objects
  - Why you should not put Q-tips into your ears?
  - Avoid unclean water to wash
What are the effects of iPod?

- Don’t listen so loud – <70% of it maximum
- Use volume control
- Limit your listening
- Use of 60/60 rule
- Do not use earbuds
- Use noise damping of cancelling headphones
- Never max. it out
Tinnitus

- What is tinnitus?
  - Is the ringing in my ears normal?
  - What causes tinnitus?

- How to management it?
  - Masking techniques, medications, hearing aids, tinnitus maskers

- Recommendations
  - Avoid loud noise and avoid silence
  - Take care of your general health, attend to your medical conditions, and keep yourself well-hydrated
  - Avoid excessive use of alcohol, caffeine, and salt
  - Stop worrying
Tips/Advice to Parents Regarding Their Children

- Ear infection
- Breastfeeding
- No second hand smoking
- Feed baby sitting up
- Don’t take a bottle to bed
- Avoid common cold
- Appropriate management of recurrent ear infection
Public Misconceptions on Healthy Hearing

- Hearing is not essential to good health – prioritize aspects of health
- Ear (hearing) is separate from the rest of the body
- Hearing loss does not impact anything but the ears
- Hearing is relegated to the ears and does not impact the entire social, emotional, and physical wellbeing of a person
Public Misconceptions on Healthy Hearing – continue

- Loud sound is not dangerous
- Hearing loss after sound exposure is temporary
- If you have a hearing loss already, you don’t have to protect your hearing anymore
- Hearing loss is mostly caused by aging
- Hearing loss can be repaired by medicine, surgery, or hearing aid
- Loud sound only damages your hearing
Research and Statistics Findings

- Untreated Hearing loss led to 3 times greater of accidental falls.
- Hearing stimulation affects the health of auditory regions of the brain and the level of brain activation.
- Sensory input from ears helps to keep brain young and functioning better.
- Hearing loss creates psychological solitary confinement, which led to problems in social connection and emotional disturbance.
Typical Noise Levels (dBHL)

- Normal conversation: 60–65
- A busy street: 75–85
- Lawn mower/heavy traffic: 85
- Forklift truck: 90
- Hand drill: 98
- Heavy lorry about seven meters away: 95–100
- Motorbikes: 100
- Cinema: 100 during big action scenes
- Disco/nightclub/car horn: 110
- MP3 player on loud: 112
- Chainsaw: 115–120
- Rock concert/ambulance siren: 120
Tips for safer Listening

- Use earplugs/wear ear protectors
- Turn down the music
- Use the 60:60 rule
- Wear headphones
- Turn down the dial
- Don’t put up with work noise
- Be careful in the car
- Have a hearing detox (noise diet)
Hearing Aid

- What is hearing aid?
- How a hearing aid works?
  - Microphone
  - Processing chip
  - Amplifier
  - Loudspeaker
  - Transmitted acoustic energy to inner ear
  - Brain processed picked impulses
Difference Between Analog vs. Digital Process Chip

- Synchronize
- Use of short communication tech.
  - Bluetooth, radio frequency, near field tech.
- Advance compressor
- Multiple channels
- Automatic
- Able to manipulate sound energy
- Multiple microphones and zoom control
Hearing Aid Usage

- Early intervention
- Appropriate expectation
- Consistent in usage
- Progress takes time
  -Detection
  - Discrimination
  - Understanding
  - comprehensive