

Federal Trade Commission Workshop

“Adult Hearing Loss: Recent Data from the CDC”

April 18, 2017

John Eichwald, MA

On Detail to: Office of Science (OS)

National Center for Environmental Health (NCEH)

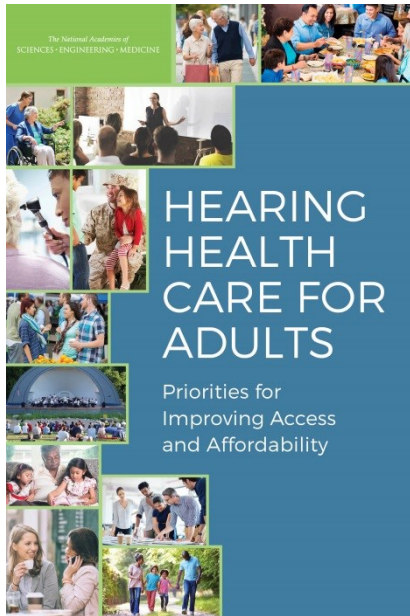
Office of Noncommunicable Diseases, Injury and Environmental Health (ONDIEH)

Centers for Disease Control and Prevention (CDC)

Hearing Health Care for Adults: Priorities for Improving Access and Affordability

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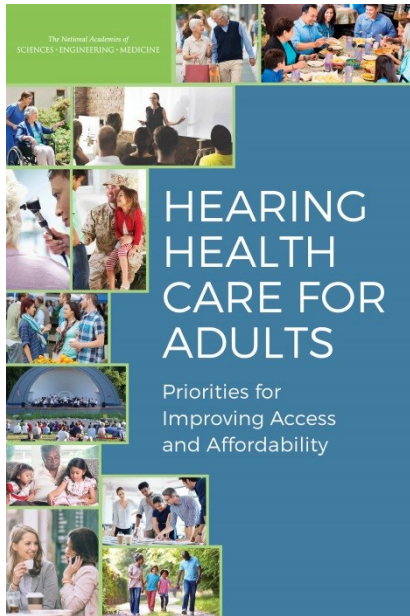
- Centers for Disease Control and Prevention
- Department of Defense
- Department of Veterans Affairs
- Food and Drug Administration
- Hearing Loss Association of America
- National Institute on Aging
- National Institute on Deafness and Other Communication Disorders



Hearing Health Care for Adults: Priorities for Improving Access and Affordability

Recommendations for CDC and others partners:

- *Improving population-based information on hearing loss and hearing healthcare*
- *Promoting hearing health care in wellness and medical visits*
- *Evaluating and implementing innovative models of hearing health care*
- *Improving publicly available information on hearing health*



Overview of Hearing Loss

- Hearing is vital to communications, health, and quality of life
- Hearing loss is complex and individual impact varies considerably
- Many potential causes of hearing loss over one's lifetime
- Most hearing loss is permanent and often progresses slowly over time
- Hearing loss can have significant social and psychological effects

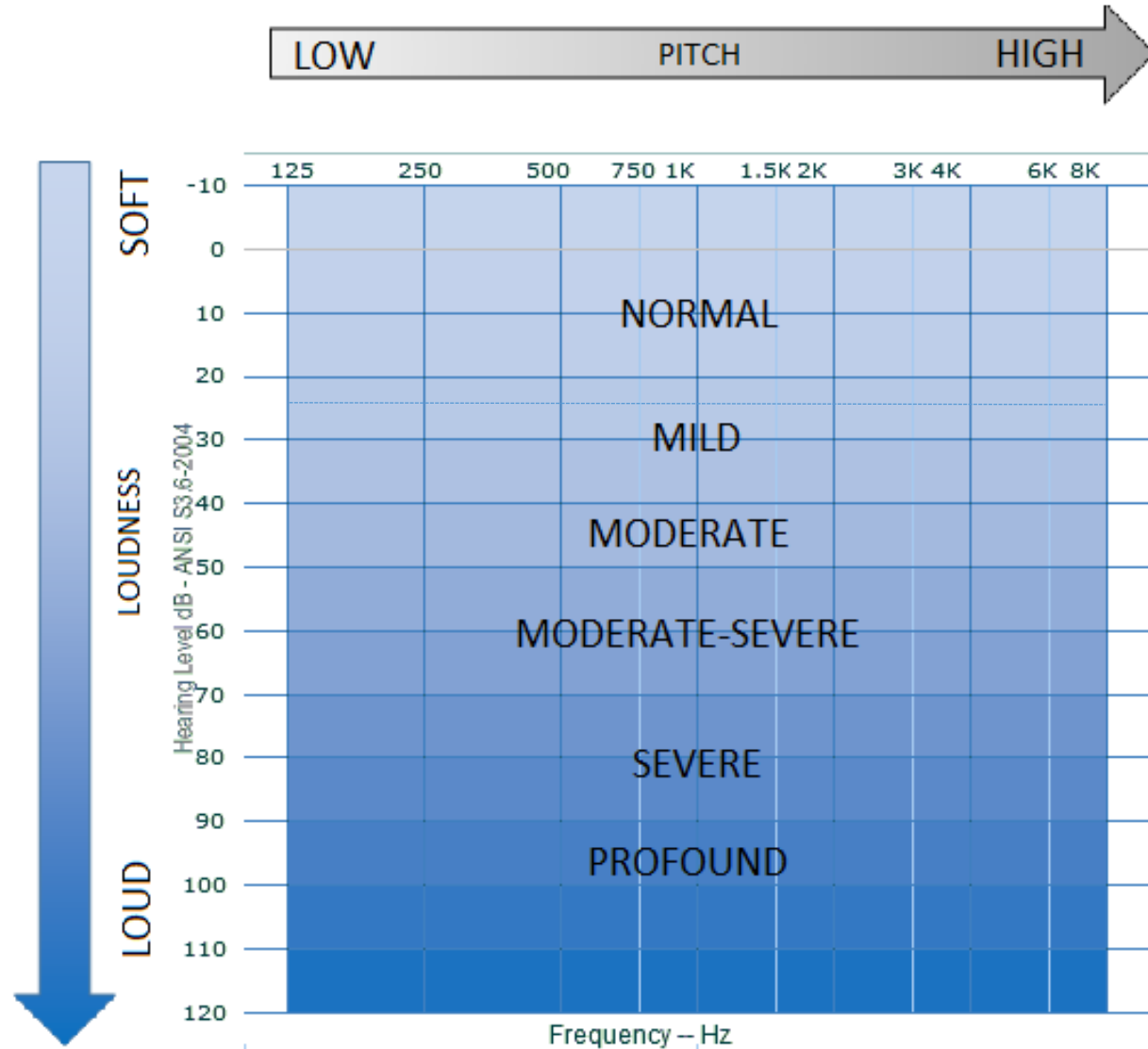
Hearing Loss: Economic Impact

- Hearing loss is associated with low employment rates, lost productivity and high health care costs
- 1st year treatment (65+ yrs) ≈ **\$8.2 billion** in 2002 to **\$51.4 billion** in 2030[†]
- Projected **\$123 billion** savings if 20% of noise induced hearing loss prevented[‡]

[†] Stucky, et al. (2010) Journal of the American Geriatrics Society

[‡] Neitzel, et al. (2017) Journal of Speech, Language, and Hearing Research

Audiometric Measurement of Hearing Loss



Definitions of Hearing Loss

Pure Tone Average (PTA)

- 500, 1K, & 2K Hz
- 500, 1K, 2K, & 4K Hz
- 1K, 2K, & 4K Hz
- 3K, 4K, & 6K Hz

Configuration

- Flat
- Sloping
- Notched or “Cookie Bite”

Degree

- Normal hearing (0-25 dB)
- Mild (26-40 dB)
- Moderate (41-55 dB)
- Moderate-Severe (56-70 dB)
- Severe (71-90 dB)
- Profound (>90 dB)

Laterality

- Better Ear or Worse Ear

Hearing Loss: CDC Data Sources - NHIS

- National Health Interview Survey (NHIS) data is collected through in-person household interviews of about 87,500 individuals of all ages conducted by CDC's National Center for Health Statistics partnering with U.S. Census Bureau interviewers as the data collection agents.
- Hearing questions sponsored by the National Institute on Deafness and Other Communication Disorders (NIDCD) at NIH
 - *“Is your hearing excellent, good, [do you have] a little trouble hearing, moderate trouble, a lot of trouble, or are you deaf?”*

Hearing Loss: CDC Data Sources - NHIS

In 2014

- 15.8% reported hearing trouble* - 40 million adults in US
- One out of five males (19.4%)
- One out of eight females (12.7%)
- Third most commonly reported condition
- About as much as the prevalence reported for both diabetes (8.5%) and cancer (7.9%) combined

* *"a little trouble hearing," "moderate trouble," "a lot of trouble," and "deaf" combined*

Hearing Loss: CDC Data Sources - NHANES

- National Health and Nutrition Examination Survey (NHANES) is conducted by CDC's National Center for Health Statistics combines interviews and physical examinations of about 5,000 persons each year across the country



www.cdc.gov/nchs/nhanes

Hearing Loss: CDC Data Sources - NHANES

2011-2012 NHANES: adults 20-69 yrs

- Hearing loss in speech frequencies (500, 1K, 2K, & 4K Hz)
 - 14.1% (27.7 million) unilateral or bilateral loss
 - Unilateral 6.6%
 - Bilateral 7.5%
- High-frequency hearing loss (3K, 4K, & 6K Hz)
 - 31.1% (61.1 million)
 - Unilateral 11.9%
 - Bilateral 19.1%

Hoffman, et al. 2016 JAMA Otolaryngology–Head & Neck Surgery

National Health and Nutrition Examination Survey (NHANES)

Centers for Disease Control and Prevention

MMWR

Morbidity and Mortality Weekly Report

Early Release / Vol. 66

February 7, 2017

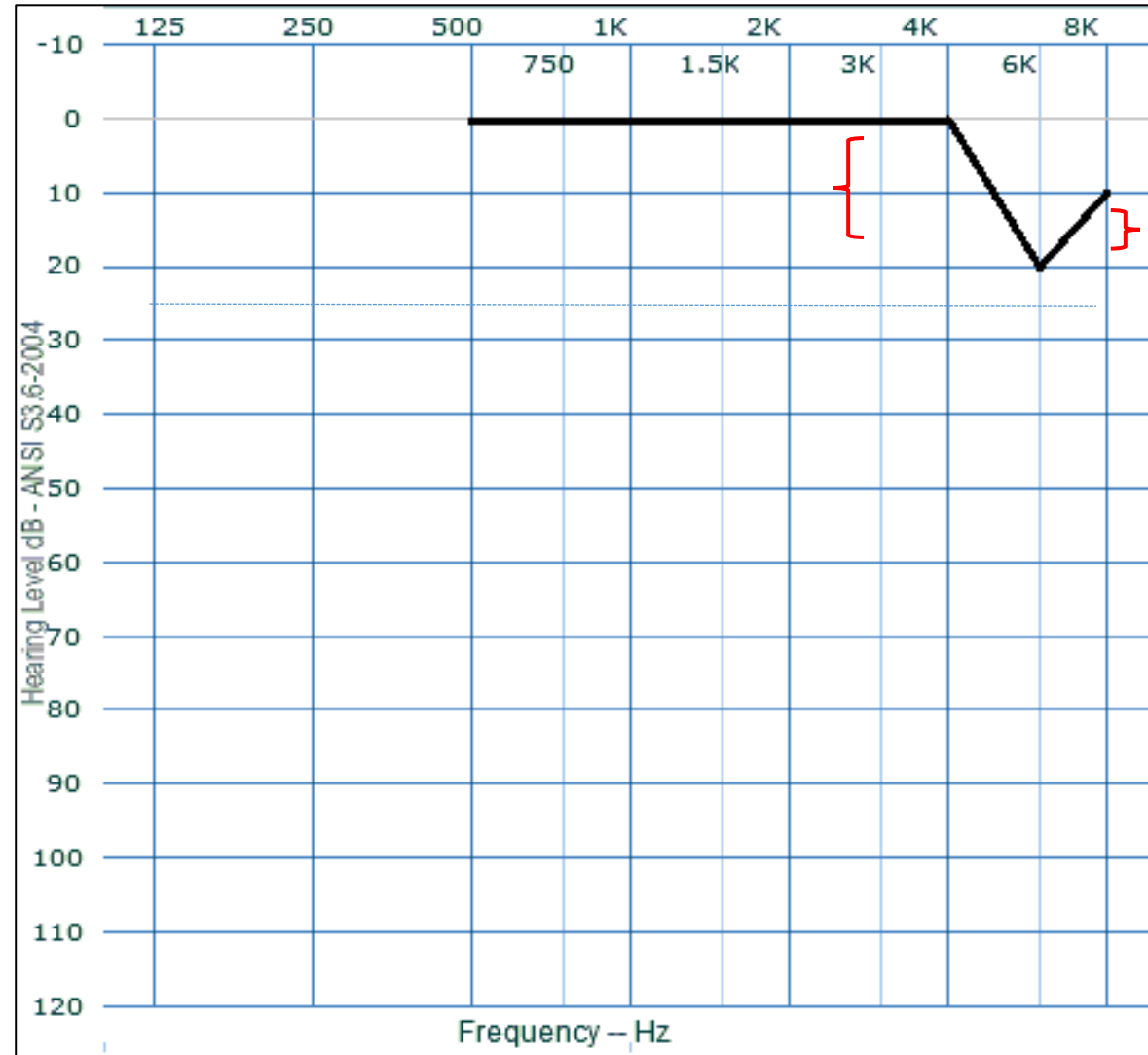
Vital Signs: Noise-Induced Hearing Loss Among Adults — United States 2011–2012

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Marilyn S. Radke, MD⁵; Christa L. Themann, MA⁶; Patrick Breyse, PhD⁴

www.cdc.gov/mmwr

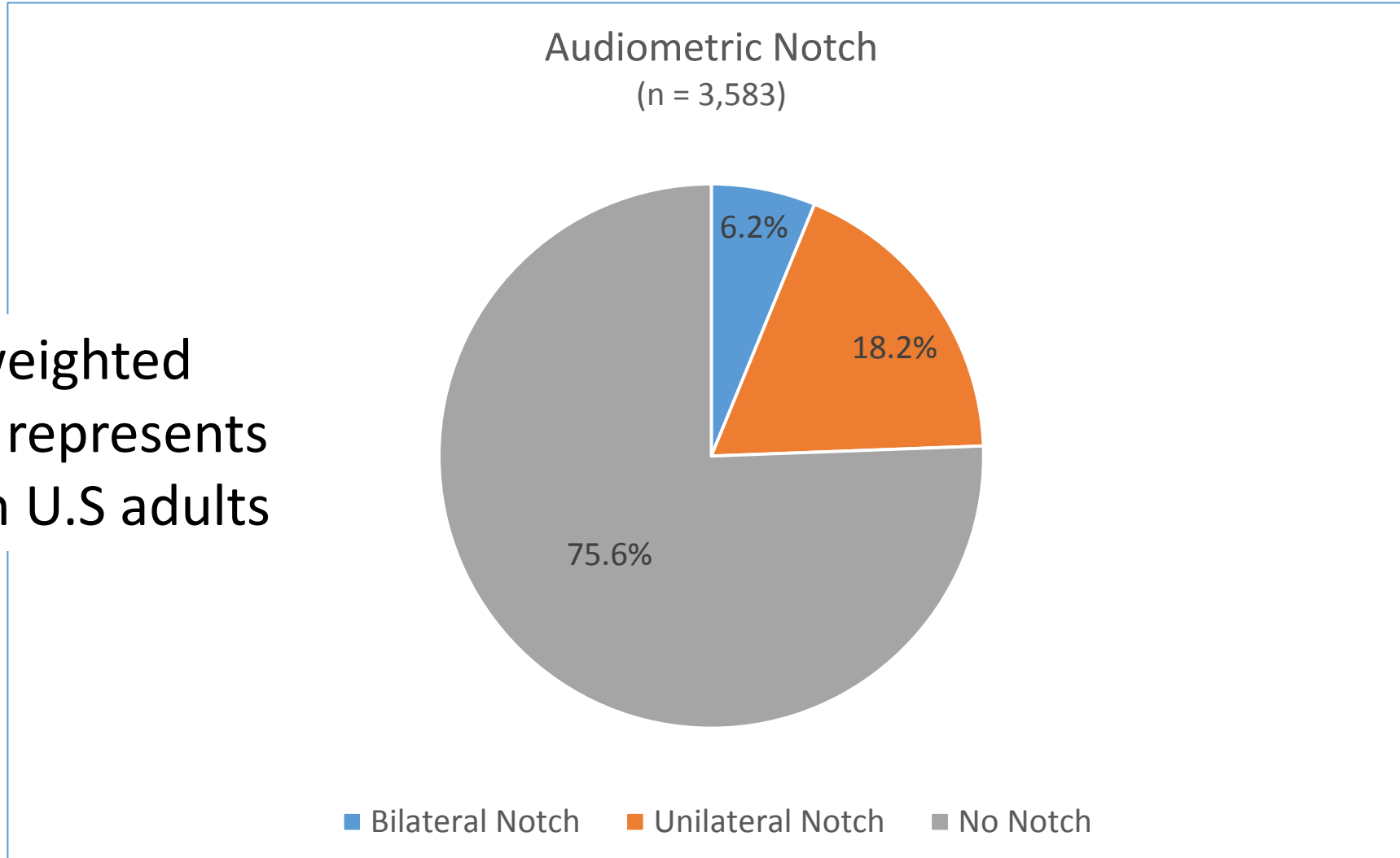
Study Definition: High-frequency Audiometric Notch

any threshold at **3, 4, or 6 kHz** exceeds the average threshold in the frequencies, **500 and 1 kHz** by **15 dB HL** and the threshold at **8 kHz** is at least **5 dB HL better** (lower) than the maximum threshold at **3, 4, or 6 kHz**.

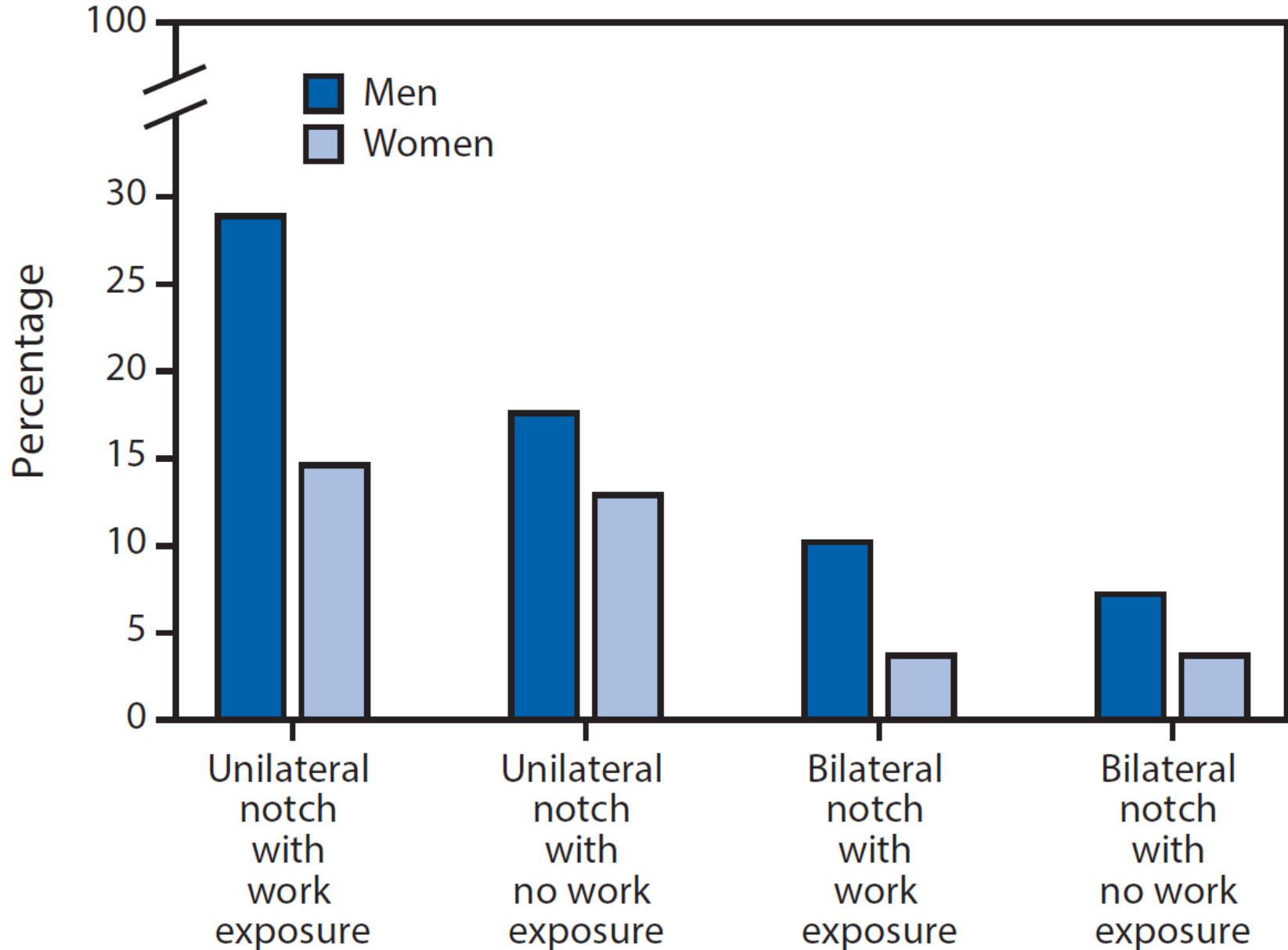


NHANES 2011- 2012

24.4% weighted prevalence represents 39.4 million U.S adults



NHANES 2011-2012

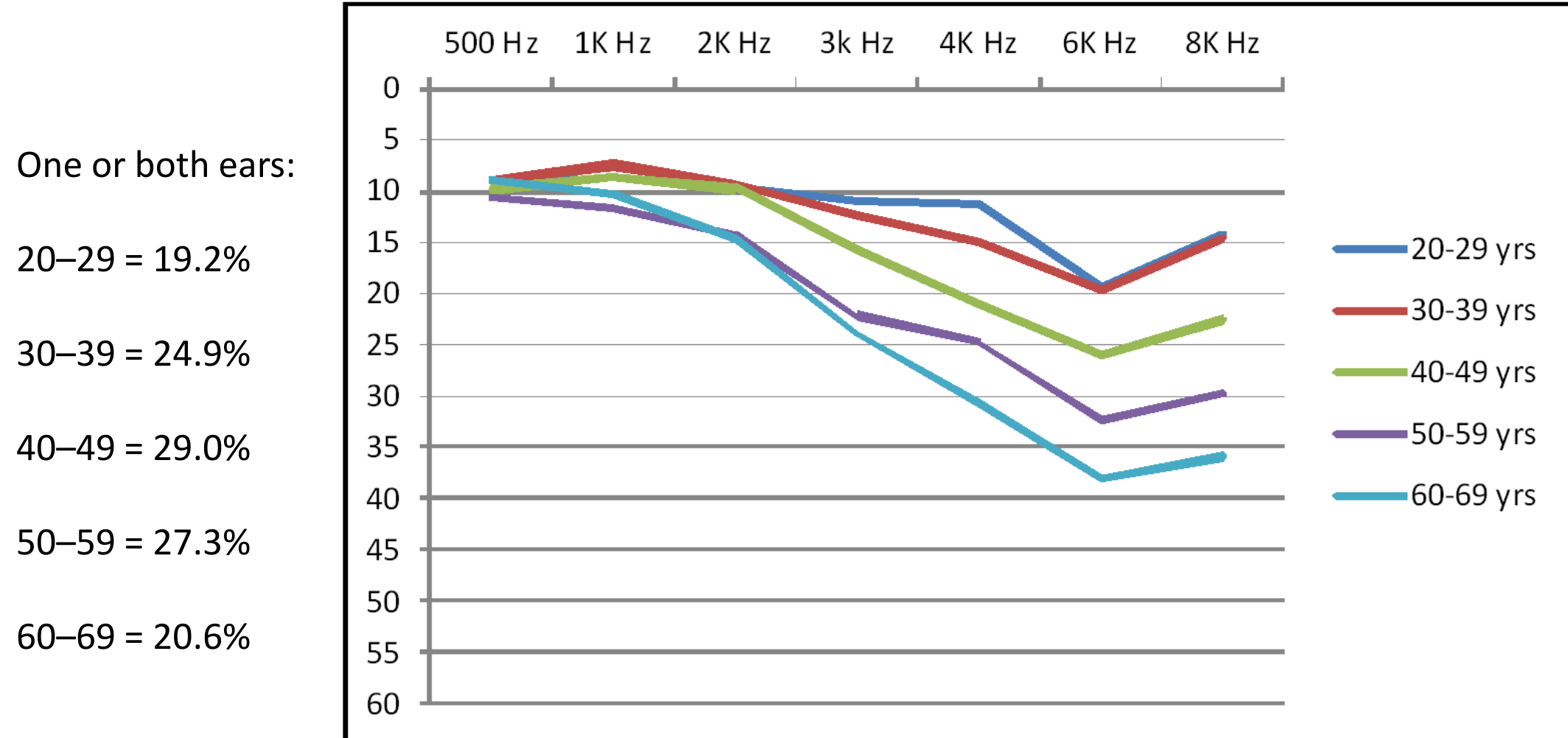


One or both ears:

Reported work exposure to noise = 32.6%

No reported work exposure to noise overall = 19.9%
(males = 24.7%)
(females = 16.6%)

Unilateral Notch / Both Male & Female (Left Ear)



Persons with auditory damage caused by noise frequently do not recognize it; one in four U.S. adults who reported excellent or good hearing had an audiometric notch.

Prevention of Hearing Loss

70% of adults exposed to loud noise in the past 12 months never or seldom wore hearing protection*



- Move away or shorten the exposure time
 - Turn the volume down
 - Wear hearing protection
-
- Healthcare providers:
 - ask about hearing, noise exposures and examine hearing during regular medical and wellness visits
 - refer for hearing evaluation and treatment



*Carroll YI, Eichwald J, Scinicariello F, et al. Vital Signs: Noise-Induced Hearing Loss Among Adults — United States 2011–2012. MMWR Morb Mortal Wkly Rep 2017;66:139–144.

Thank you!
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Visit our webpage at:
www.cdc.gov/nceh/hearing_loss



For more information, contact NCEH
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov
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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

