

## Hearing Problems and Headphone Use in New York City

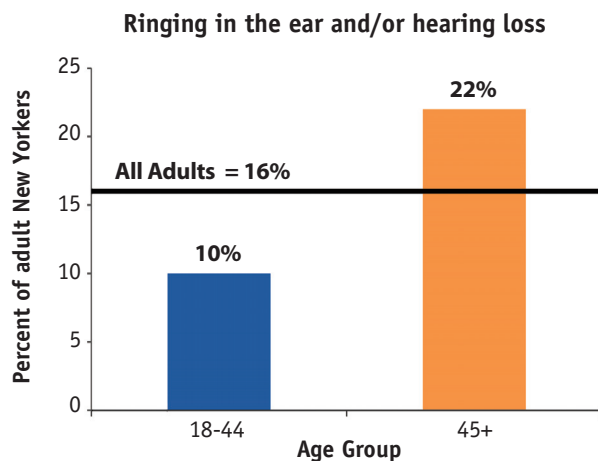
Hearing problems are increasing in the United States. The National Health Interview Survey found that hearing problems increased 17% among adults between 2000 and 2006.<sup>1</sup> Hearing loss is also rising among adolescents, increasing more than 30% between 1988 and 2006.<sup>2</sup>

Exposure to acute or prolonged loud sounds can cause irreversible damage to the inner ear, resulting in hearing loss, tinnitus, or both problems. Tinnitus, or ringing in the ear, is an important hearing problem and can be an early sign of hearing loss.<sup>3</sup> The effects of loud sounds are cumulative, and hearing problems may occur many years after the exposure begins.

Using headphones to listen to music is common in New York City, especially among young adults. Personal music players, such as smart phones, iPods® and MP3 players can produce very loud sounds. Listening at high volumes, even for short durations, can cause hearing problems.

This report examines headphone use with personal music players and its associations with hearing problems. Recommendations on page four describe ways to reduce unsafe use of headphones and prevent hearing problems among New Yorkers.

### Nearly one in six New Yorkers report a hearing problem

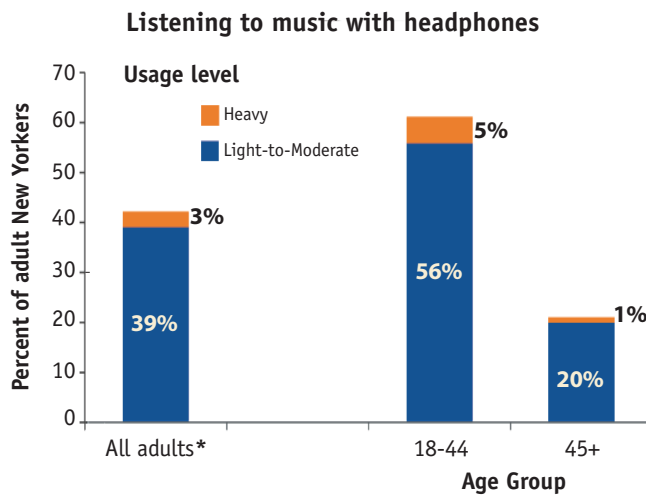


Source: NYC Community Health Survey 2011

- The overall prevalence of hearing problems – ringing in the ear and/or hearing loss – was nearly one in six (16%) among New York City adults aged 18 and older.
- Hearing problems were more prevalent among New Yorkers aged 45 and older than among younger adults aged 18 to 44 (22% vs. 10%).

Data in this report are from the New York City Community Health Survey (CHS), an annual telephone survey of approximately 9,000 adults aged 18 and older conducted by the New York City Department of Health and Mental Hygiene. The CHS has included adults with landline phones since 2002 and, starting in 2009, also has included adults who can be reached by cell phone. Data presented are from 2011, weighted to the New York City adult population per Census 2010. Results are based on self-reported responses and estimates are age-adjusted to the 2000 US Standard Population where noted. For more information about the CHS, visit [nyc.gov/health/survey](http://nyc.gov/health/survey).

## Younger adults listen to music with headphones more than other adults



- Forty-two percent of New Yorkers aged 18 and older reported listening to music with headphones during an average week.
- Younger adults aged 18 to 44 were about three times more likely to listen to music with headphones than adults aged 45 and older (61% vs. 21%).
- Five percent of younger New Yorkers (an estimated 150,000 adults) reported heavy use compared with 1% of adults aged 45 and older (an estimated 16,000 adults).

Source: NYC Community Health Survey 2011, \*age-adjusted

### Classifying usage levels of personal music players with headphones in this report:

Listening to music with headphones at more than half volume is defined as **loud**.

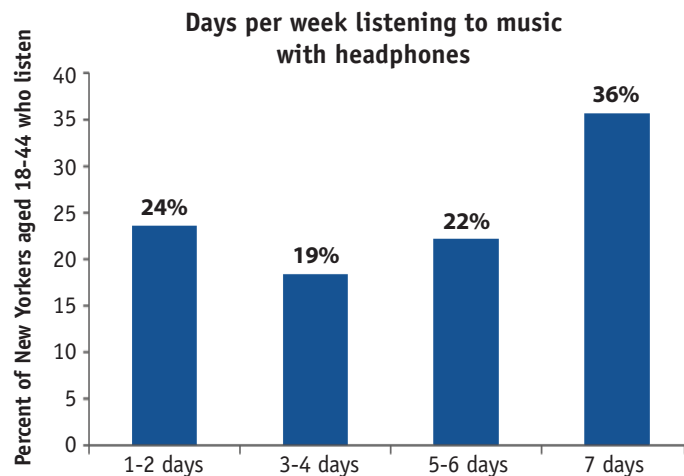
**Heavy** use is defined as loud use five to seven days per week for four or more hours per day on average.

**Light-to-moderate** use is defined as any use not defined as heavy use (one to four days for any duration or five to seven days for less than four hours per day).

The term **headphones** is used in this report to mean earphones, ear buds, over-the-ear headphones, or in-ear headphones.

## Many younger adults listen to music with headphones every day

- More than one-third (36%) of younger adults aged 18 to 44 who reported listening to music with headphones listened every day.
- The majority of younger adults who reported listening to music with headphones listen five to seven days per week (58%).
- Of the younger adults who listen to music with headphones every day, 16% reported heavy use.



Source: NYC Community Health Survey 2011

## Listening to music with headphones is common among younger adults regardless of sex, race/ethnicity, or income

- Among adults aged 18 to 44, there was no meaningful difference in listening to music with headphones between men and women.
- Listening to music with headphones did not vary by race/ethnicity among adults aged 18 to 44.
- Among adults aged 18 to 44, data suggest that those living in wealthier households were slightly more likely to listen than those living in poorer households.

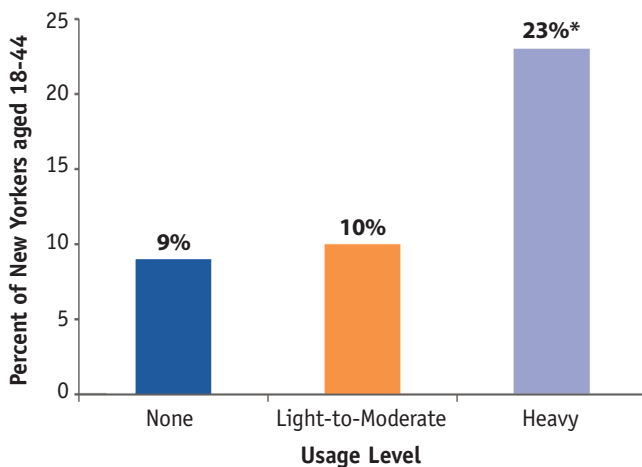
Listening to music with headphones among adults aged 18 to 44

	%	Estimated number
<b>Sex</b>		
Male	63	994,000
Female	59	1,001,000
<b>Race/ethnicity</b>		
White	60	592,000
Black	63	474,000
Hispanic	60	594,000
Other	59	335,000
<b>Household poverty (% of federal poverty level)</b>		
High poverty/poorest (<200%)	58	779,000
Medium poverty (200-399%)	58	272,000
Low poverty/wealthiest (≥400%)	65	630,000

Source: NYC Community Health Survey 2011. Household poverty is based on total people per household and their combined income compared with the federal poverty level.

## Younger adults who report heavy use also report more hearing problems

Hearing problems among adults aged 18 to 44



- Younger adults who report heavy use were over two times more likely to report hearing problems – ringing in the ear and/or hearing loss – than those with no use (23%\* vs. 9%) and those with light-to-moderate use (23%\* vs. 10%).
- Hearing problems reported among those who report light-to-moderate use were similar to those with no use (10% vs. 9%).

\* Estimate should be interpreted with caution due to small sample size. See page 2 for usage level definitions.

Source: NYC Community Health Survey 2011

**Loud sounds and hearing damage.** Exposure to very loud sounds for long periods of time presents the highest risk of hearing damage. But, even exposure to moderately loud sounds over a long time – or extremely loud sounds for a brief period – can cause hearing damage. Sound is measured in units called decibels (dB). Occupational guidelines recommend limiting routine exposure to noise at 85 dB to no more than eight hours per day due to increased risk of permanent hearing damage. Individuals routinely exposed to higher decibels, such as 100 dB and above, risk hearing damage after a few minutes.

# Recommendations

## All New Yorkers should:

- Reduce the volume, limit listening time, take regular breaks and never listen at maximum volume when using headphones.
- Stay alert to surroundings and refrain from using headphones while biking, driving or crossing the street.
- Talk to your doctors about a hearing test if you have trouble hearing conversation, need to turn up the volumes on TV, radio and personal music players to hear well, or experience ringing in the ear.

## Health care providers should:

- Ask patients about headphone use and exposure to loud sounds, as well as any symptoms of hearing loss.
- Recommend patients limit listening time and reduce volume.

## Manufacturers of personal music players should:

- Provide device features or settings that inform users about their volume-related usage patterns.
- Incorporate active warnings to alert users to unsafe listening.

## REFERENCES

1. Schoenborn CA, Heyman K. Health Disparities among Adults with Hearing Loss: United States, 2000-2006. National Center for Health Statistics. May 2008. Available from: [cdc.gov/nchs/data/hestat/hearing00-06/hearing00-06.pdf](http://cdc.gov/nchs/data/hestat/hearing00-06/hearing00-06.pdf)
2. Shargorodsky J, Curhan SG, Curhan GC, Eavey R. Change in Prevalence of Hearing Loss in US Adolescents. JAMA. 2010;304(7):772-778.
3. National Institute on Deafness and other Communication Disorders. 2005. Noise-induced Hearing Loss. Available at [nidcd.nih.gov/health/hearing/pages/noise.aspx](http://nidcd.nih.gov/health/hearing/pages/noise.aspx). Accessed on January 22, 2013.

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