<https://www.nytimes.com/2011/01/09/magazine/09FOB-medium-t.html>

A Claim About Headphones

Headphones have become increasingly popular during the last decade, especially among teenagers. This particular New York Times article deals with the relationship between teenagers listening to earphones and a particular type of hearing loss. The causal claim made by the article requires certain assumptions to be met, so the effect of loud music on earphones on hearing loss may have been overestimated. A controlled experiment would answer the question of whether the causal claim is supported.

This article makes a causal claim that hearing sound through earphones is making teenagers today experience a certain kind of hearing loss more frequently. The users used data from a study by the AMA, which shows that teenagers today are experiencing a particular type of hearing loss more frequently ([1](https://jamanetwork.com/journals/jama/fullarticle/186427)) and a study from Europe that connected listening to loud music on the radio to permanent hearing loss([2](http://ec.europa.eu/health/scientific_committees/opinions_layman/en/hearing-loss-personal-music-player-mp3/index.htm)). This study studied hearing loss among teenagers who listened to loud music on earphones more than an hour a day to those who do not. It concluded that those who listened to loud music an hour a day or more were more likely to have permanent hearing loss after five years.

The purported effect could be overestimated for the following reason. If teenagers who blast MP3 players are also the ones who like to listen to loud genres of music, as that is their taste in music, the loud music they listen to outside of earphones, at concerts for instance, could have contributed to their hearing loss. This would mean that the effect of loud music through earphones on their hearing loss could have been overestimated, as there is another potential factor which could have caused their hearing loss to worsen.

The assumptions that must be assumed for the conclusion to hold is that teenagers in the two groups, the one that listened to loud music on earphones and the one that did not started with the same hearing ability. One must also assume that the only difference in the volume of sound heard by the two groups was the louder music on the earphones. One alternative explanation for the results observed in the study could have been that people who listen to music on headphones, particularly those who listen to loud music, may also attend concerts put on by such bands, which are also likely to feature loud music. This may lead to hearing loss as well. Also, we must assume that the environment(city vs quiet suburb or town), initial ear condition, and all other aspects of the two groups of people(those who listened to loud music and those who did not) are the same. Finally, one must also assume that the two groups received the same medical care of the ear during the duration of the experiment.

An experiment to test this claim would be to randomly select individuals of the same hearing ability into two groups and make one group listen to loud music on earphones and monitor the hearing ability of both groups over time. This experiment could be done with proper consent from the individuals, however, there would be a few ethical considerations. One group of individuals would be put into the experimental group, and they would be provided loud music through headphones for an hour a day. The second group would be the control group. The individuals would receive a hearing checkup every two months to monitor their hearing progress over a few years. This would be a feasible experiment, as there is no direct grave harm to the individual. A consent form would need to be signed by the individuals in the study to ensure ethical considerations regarding the participant’s right to choose are not violated. Also, there would be ethical considerations regarding the Hippocratic Oath(do no harm).

References

1. Shargorodsky J, Curhan SG, Curhan GC, Eavey R. Change in Prevalence of Hearing Loss in US Adolescents. JAMA. 2010;304(7):772–778. doi:10.1001/jama.2010.1124
2. Retrieved May 22, 2019, from http://ec.europa.eu/health/scientific\_committees/opinions\_layman/en/hearing-loss-personal-music-player-mp3/index.htm