

Athletes and the Arts Coalition

Musicians and Noise-Induced Hearing Loss



ISSUE

Musical sounds can exceed daily exposure limits, and musical activities are widely acknowledged by hearing scientists as potentially dangerous to hearing. Sound levels both in the public domain and in music school programs at all levels are entirely unrestricted and unrestrained due to the lack of regulatory policies in the USA. In response, the Division of Adolescent and Student Health of the CDC is now calling for policies designed to protect musicians from excessive exposure to musical sounds produced during band, choir, and orchestra classes because:

- 50% of musicians may have problems with hearing loss.
- Risk of injury is based on a combination of sound intensity and duration.
- Listening to music, live or recorded, in performance or rehearsal, can result in significant exposure to high sound levels.
- Hearing loss is cumulative: all sources (24/7) of elevated sound levels contribute.
- Permanent noise-induced hearing loss is irreversible.
- Temporary noise-induced hearing loss is reversible with adequate rest and recovery.

SAFE LEVELS

Experts recommend a daily exposure limit to sound that is no greater than the equivalent to 85 decibels (dB) over an 8-hour period with a 3 dB time/intensity exchange rate. This means for every 3 dB increase over 85 dB, the time exposure is halved to prevent Noise Induced Hearing Loss (NIHL)—88 dB for 4 hours max per day, 91 dB for 2 hours max per day or 94 dB for 1 hour max per day.

80 dB = alarm clock or busy street, 90 dB = lawn mower, 100 dB = snowmobile

GUIDELINES

The Athlete and the Arts Coalition recommends:

- All musicians, teachers and music schools should be informed/educated about hearing health and the above recommended daily exposure sound levels.
- Sound levels should be monitored by teachers and musicians with the use of dosimeters.
- Rehearsal and performance habits should incorporate the recommended daily exposure sound levels; use ear plugs if necessary.
- A musician should alert any health care professionals of his/her profession during any routine exam and report any NIHL.
- Health care professionals should pay particular attention to hearing when examining musicians and other performing artists.

MORE INFORMATION

1. Zhao F, Vinaya, Manchaiah, French D, Price S: Music exposure and hearing disorders: An overview *International Journal of Audiology*, 2010 Volume 49 Number 1 <http://informahealthcare.com/doi/pdf/10.3109/14992020903202520>
2. Owens DT: Hearing loss: A primer for the performing arts. *Med Probl Perform Art* 2008; 23(4):147-154
3. Chesky K. 2010. Measurement and Prediction of Sound Exposure Levels by University Wind Bands. *Medical Problems of Performing Artists*: 25(1). 29-34.
4. National Center for Chronic Disease Prevention and Health Promotion-CDC. Noise induced hearing loss - Promoting hearing health among youth. Internet; accessed 1 June 2010. <http://www.cdc.gov/HealthyYouth/noise/index.htm>



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ATHLETES AND THE ARTS - Integrating the science of sport and the performing arts for the mutual benefit of both.

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