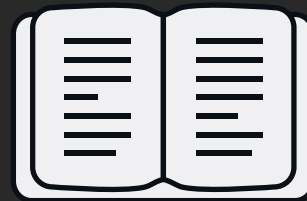


HEARING LOSS IN DANCE: OCCUPATIONAL HAZARD

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OCCUPATIONAL SAFETY

This article addresses a specific health concern in dance, related to **potential hearing loss**. There is considerable scientific data on the topic (some specific resources are given at the end), and OSHA (Occupational Safety and Health Administration), which governs safe noise levels, lists dance schools and events under the category of Industrial Group 7911, "Dance Studios, Schools, and Halls".

Dance and music are intertwined, in class / rehearsal / performance, always complementing each other. Different styles of music and lyrical content can specifically shape the form of a dance, whether it be ballet or ballroom, tap or tango, jazz or jive. Music and dance have various forms, styles and genres, and these various combinations can trigger highly creative inspirations and interpretations, which trigger strong emotional responses in the audience.



An element that is less understood intellectually but more so instinctively is the **human response to the volume of music**.

Specifically, the louder music is played, the stronger the response.

From parties to sporting events, loud music tends to create a positive response in our brains. Dance clubs and concerts are well-understood to push the upper limits of decibel tolerance. Anyone who's ever seen someone yell "turn it up!" understands that positive response!

Our brains have several reasons to respond to loud music this way:

- 1 Stress relief:** this occurs with low-frequency (bass) sound levels above 90 decibels.
- 2 Mood elevation:** Additionally, music triggers endorphin release, which are well-established as mood enhancers. Even the anticipation of hearing music can cause a flood of dopamine through the body
- 3 Music detail:** Music may have multiple layers of instrumentation and complexity that can be missed if the volume is lower. Subtle details may be elements essential to the choreography of a dance phrase or entire routine. Those details get easier to pick out when the volume of each detail is louder.

HEARING INJURY

Humans commonly experience gradual hearing loss as we age, and 50% of all people in the United States over age 65 suffer from this.



The problem with the positive response to music in general and its integrated role in dance is that hearing injury can easily occur at a young age, if not checked. Manufacturing, military and music industries have struggled with noise-induced hearing loss for years.

A 2014 study found a nearly fourfold increase in the rate of hearing loss in musicians compared to the general population. Similar rates are seen in construction and factory workers, so these industries now have guidelines designed to protect hearing.

HEARING INJURY IN DANCE

The average teen competitive dancer trains and rehearses 4-6 days a week in a studio environment, not counting the weekend competitions and conventions. Each studio day can go from 2-4 hours, while conventions can last most of an entire day. So each dancer may be exposed to **15-25 hours of music in a dance studio environment per week**. This exposure naturally affects the dance teachers and educators as well.

This means that continuous exposure to loud sound levels may cause permanent hearing loss. Table 1 shows the breakdown of levels of decibels and length of time for safe exposure in everyday situations:

TABLE 1:

When I once attended a national dance convention, I decided to measure the decibels in the back of the room and then next to the speakers in front of the stage, which is where all the dancers in the hip-hop class stood (in order to be seen by convention faculty). The reading in the **back** of the room was **107 decibels**.

The reading next to the stage...**119 decibels**. This is **safe exposure for less than 10 seconds**. The class was one hour long. The day had 8 classes total.

Decibels	Source of noise	Danger level	Time of exposure before injury
30	Whisper	Low	—
60	Usual conversation	Low	—
70	Washing machine	Low	—
85	City traffic	Moderate	8 hours
90	Lawnmower	Moderate	2 hours
103	Impact wrench	Moderate	7.5 minutes
105	Nightclub	Moderate	5 minutes
109	Live concert, chainsaw	Moderate	1.875 minutes
114	Hammer drill	High	30 seconds
121	Snowmobile	High	7 seconds
140	Jet engine	High	Unsafe
160	12-gauge shotgun	High	Unsafe

HELPING OUR DANCERS' HEARING

We tolerate these levels of sound in sporadic events like a rock concert because the average person attends those events a handful of times per year. But people involved in competitive dance (including judges) live in this sonic environment constantly. So like any industrial employee working for a company overseen by OSHA regulations, **dancers and dance professionals should take steps to reduce hearing injury in their workplaces.** The following are recommendations to help achieve this.

- 1 Be alert to signs.** Pay attention to signs that your studio environment may be too loud. These may include dancers or teachers hearing humming or buzzing after leaving the studio, shouting to be heard an arm's length away, or experiencing hearing loss.
- 2 Measure the sound in your studio or convention with a smartphone app.** If the decibels reach into the 100 dB range, let someone at the organization know. Several smartphone apps work as decimeters to accurately measure sound levels. Use this as a way to check track of sound exposure.
- 3 Turn the sound down during rehearsals and classes.** Based on evidence-based guidelines, reducing the decibels levels by 3 db will double the amount of time you can be safely exposed to that sound. So, 93 decibels is safe to listen to for one hour, but a small bump up to 99 decibels is only safe for 15 minutes. When you are dancing or teaching dance many hours a week in rehearsal, the extra decibel exposure will impact your hearing much more than the quality of dance.
- 4 Use hearing protection.** This may not be considered cool to do in the dance culture, but high-fidelity earplugs fit discretely in the external auditory canal, yet lower decibels levels by 15-20 db, all while allowing some higher frequencies to pass through so that you can hear the details of music or conversation. Some popular brands of high-fidelity earplugs include Hearos, Vibez, and Eargasm.
- 5 Rest your ears after loud noise exposure.** Like an injury to the ankle or leg, acute rest can benefit hearing recovery. Up to 18 hours of quiet after loud noise exposure can help your ears recover faster. This is really important in the studio life, as some dancers and teachers may be assaulted by loud music daily.
- 6 Get your hearing checked.** This is especially important for teachers or choreographers. If you suffer from hearing loss, you will be likely to play the music louder in a class or rehearsal, in order to hear at the levels you are accustomed. You are risking the hearing of those you are teaching or choreographing. Go to audiology.org to find an audiologist near you and see how your hearing is before you lose any more.

BOTTOM LINE

Hearing loss for young dancers is not something we usually think about, but it's a real thing and is a serious concern. I hope this article gives you some good information to use in your dance life, and to pass on to other dance colleagues!

RESOURCES:

<https://www.dancemagazine.com/dancers-hearing-loss-2485251272.html>

<https://knops.co/magazine/5-reasons-brain-loud-music/>

<https://www.pnas.org/content/115/32/8221>

<https://www.bbc.com/news/health-12135590>

https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html

<https://mecart.com/blog/2016/06/03/stop-noise-from-harming-your-employees-health-and-productivity/>

