



An Excerpt From:

## Hearing Protection Roundup: The Best Earplugs for Musicians and Audio Engineers

by [Kallie Marie](#)

### How Much Hearing Protection Do You Need?

As discussed in our interview with audiologist Dr. Julie Glick for [part one of this series](#), noise-induced hearing loss is a major and insidious threat to the hearing (and livelihoods) of musicians and audio professionals.

How do you know when you're at risk? In short, it all boils down to decibel levels over time: The louder the level, the less time you can safely be exposed to it. There are two scales that are often used to calculate these safety levels—the OSHA and NIOSH scales. These two rating systems differ, and audiologists tend to prefer the conservative NIOSH guidelines. When you make your living with your ears, it's a good idea to do the same.

Looking at these graphs, you can start to test what a safe exposure time would be for each of the decibel ranges. The tricky part is knowing what decibel level you are being exposed to, and then calculating how long the exposure time is (or is going to be).

This is easier now than ever before, so we really don't have an excuse for not knowing what kind of levels we're exposed to in our work (and play). With a smartphone, you can download an SPL meter like [logSPL](#) or [Decibel Ultra](#), both of which I used to test my own sonic environments for this roundup.

I came to find that if you take these kinds of measurements often, you will soon start to become more aware of how loud certain environments are, and gradually develop a gut instinct for the general level of loudness you are being exposed to. In turn, you'll develop a pretty good idea of just how much hearing protection you might need to bring in a given situation.

For instance, if I know I am attending a rock concert with 4 acts, and the show is going to be about 5 hours long, I need to calculate a safe decibel level for the 5-hour exposure time. (Although the acts may not be playing the full 5 hours, it's also important to consider if there will be music playing loudly through the PA between sets.)



NIOSH Standard		OSHA Standard	
Sound level (dBA)	Duration (Hours: Minutes: Seconds)	Sound level (dBA)	Duration (Hours: Minutes: Seconds)
82	16:00:00	85	16:00:00
85	8:00:00	90	8:00:00
88	4:00:00	95	4:00:00
91	2:00:00	100	2:00:00
94	1:00:00	105	1:00:00
97	0:30:00	110	0:30:00
100	0:15:00	115	0:15:00
103	0:07:30	120	0:07:30
106	0:03:45	125	0:03:45
109	0:01:53	130	0:01:53
112	0:00:56	135	0:00:56
115	0:00:28	140	0:00:28
118	0:00:14	145	0:00:14
121	0:00:07	150	0:00:07
124	0:00:03	155	0:00:03
127	0:00:01	160	0:00:01

Recommended durations of exposure to decibel levels as outlined by the NIOSH and OSHA Scales.

In general, a rock concert might reach 100-115dB, with the loudest concerts sustaining those kinds of punishing levels for much of their duration.

If I bring earplugs with a 15dB reduction rating into an environment where I know I am likely to be exposed to 105dB levels for a prolonged period, I am only safe to do so for around 2.5 hours, give or take, without putting myself at risk for some degree of permanent hearing loss.

The rule to remember is that for every 3dB over 85dB, your safe exposure time is reduced by half!

At 85dB—the traditional target level for average loudness in a movie theater—you should be safe for up to 8 hours. Increase that to 88dB and your safe exposure time is cut down to just 4 hours, and at 91dB, the safe exposure time drops to just 2 hours, and so on.

Remember, just because you have no immediate symptoms (such as ringing in your ears) doesn't mean that you aren't causing permanent damage to your hearing!

**Earasers** have created a comfortable and innovative solution for musicians who are looking for comfortable fitting plugs for practice, gigging, and recording. (Hi drummers!)

One of the more comfortable sets of earplugs I have worn, these hardly felt like I was wearing earplugs at all, owing largely in part to their novel shape and design.

I tested the **Earasers** Musicians HiFi Plugs in environments of 103dB and 98dB and found them to be very transparent, clear, and balanced overall. The fit has a good seal and in a unique and welcome turn, their starter kit (which comes with a pair of plugs) gives you the option of custom-sizing your plugs yourself!

**Earasers** come in a variety of sizes, allowing for a more customized fit at a generic price point. This is really a clever design feature, and helps make sure that you can get the best fit possible from a pair of "generic" earplugs.

**Earaser** have really thought ahead about features you might need from filtered generic-fit hearing protection. I would recommend these in most instances for musicians or audio engineers who are going to be working for long periods of time, who really need more nuanced filters and a lot of transparency. These would be an excellent choice for musicians to practice and gig with in most instances.