

## Frequently Asked Questions:

### Q What's wrong with conventional earplugs?

A They muffle speech and music. Conventional earplugs reduce sound more in the high frequencies than in the low and mid frequencies, which makes music and voices *unclear* and unnatural. Deeply-inserted foam earplugs can provide 30-40 dB of sound reduction, but only a small amount is typically needed.

### Q How much protection do people need?

A Hearing loss is a function of exposure time, the average sound level, and the peak level of very loud sounds. Some persons are more susceptible to hearing loss from high-level sound than others. Most musicians do not need maximum protection, and many industrial workers can be adequately protected with as little as 10 dB of sound reduction. The majority of eight-hour-equivalent noise exposure in industry falls between 85 and 95 dB.

### Q Why are deep earmolds required for Musicians Earplugs?

A Earmolds need to seal deeply in the bony portion of the ear canal or the wearer will hear a hollow or boomy sound in their own voice when speaking, singing or playing a brass or wind instrument. This unpleasant or distracting sound is called the *occlusion effect*. Deep earmolds (past the second bend of the ear canal) will eliminate this problem.

### Q Is there a non-custom high fidelity earplug?

A Yes. ER-20 High Fidelity Earplugs are ready-fit earplugs that preserve sound quality while reducing sound levels approximately 20 dB at all frequencies. ER-20s reduce harmful sound without distorting speech and music. For more information visit [www.etymotic.com](http://www.etymotic.com).



### Q What does NRR mean?

A The EPA requires manufacturers to print a noise reduction rating (NRR) on all non-custom earplugs. The NRR for ER-20s is 12 dB, but actual clinical measurements of properly inserted ER-20s indicate that these earplugs provide almost equal sound reduction (20 dB) at all frequencies in real ears. The required formula used to determine NRR includes an adjustment for individual variability and for those persons who do not wear ear protection as instructed. Many investigators have found no consistent rank order correlation between the real-world NRRs and labeled NRRs. NRR is computed from laboratory data that are not representative of the values attained in the real world by actual users.

## What Musicians Say

(from the Chicago Symphony Orchestra)  
As quoted in the *Chicago Tribune* and the *Daily Herald*

### Bill Buchman *bassoonist*

*"I'm in front of the trumpets and trombones... The ER-15s let me hear myself playing and also the entire orchestra so I can correctly perceive my relation to the other instruments."*

### Lawrence Neuman *violinist*

*"These earplugs don't block out what I want to hear. They just tone it down and keep things equalized. I also wear mine on planes and the CTA, which is incredibly loud; I love them."*

### Lee Lane *violinist*

*"I'd tried everything... When these came along, I was absolutely delighted; they've been very successful for me."*

### Burl Lane *contrabassoonist*

*"ER-15s make this job fun again."*

## Who uses Musicians Earplugs?

- Musicians
- Marching bands
- Sound crews
- Recording engineers
- Band teachers
- Concert goers
- D.Js
- Airline personnel
- Athletic coaches
- NFL football players
- Referees and timekeepers
- Traders
- Wedding photographers
- Motorcyclists
- Dentists
- Construction workers
- Industrial workers
- Truck drivers



# Musicians Earplugs

ER-9 • ER-15 • ER-25



- High fidelity custom hearing protection
- Sound quality is clear and natural, not muffled
- Noise fatigue is reduced

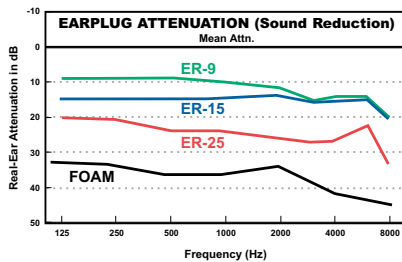
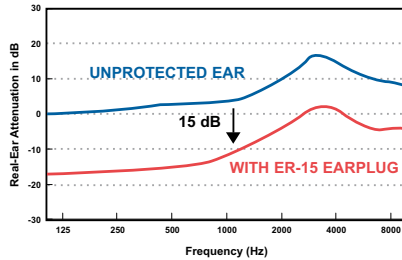
For more information on high fidelity hearing protection  
visit [www.etymotic.com](http://www.etymotic.com)

The ER family of earplugs is covered by U.S. patents  
#4,852,683 #5,113,967 #5,887,070.



# What Makes Musicians Earplugs High Fidelity?

Musicians Earplugs replicate the natural response of the ear canal so that sound heard with these earplugs has the same quality as the original, just quieter.



# Recommended Earplugs for Musicians

Musicians practice and perform in a variety of different settings and they are exposed to high levels of sound, sometimes for long periods. They require different amounts of protection depending on the sound levels they encounter during rehearsals and performances.



ER-9 Musicians Earplugs  
ER-15 Musicians Earplugs  
ER-25 Musicians Earplugs  
ER-20 Ready-Fit Earplugs

Harmful Sound Comes From:

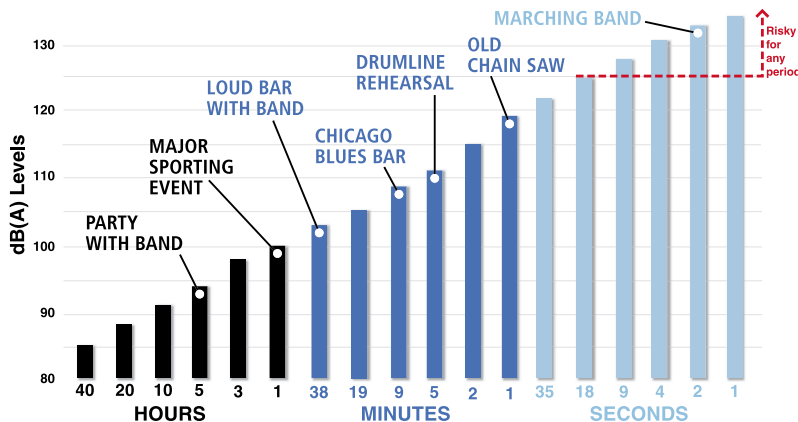
Small strings	● ● ●	Own instrument, other strings
Large strings	● ● ●	Brass
Woodwinds	● ● ●	Brass, percussion
Brass	● ● ●	Own instrument, other brass
Flutes	● ● ●	Percussion
Percussion	● ● ●	Own instruments, other percussion
Vocalists	● ● ●	Own voice, speakers, monitors
Acoustic guitar	● ● ●	Drums, speakers, monitors
Amplified instruments	● ● ●	Speakers, monitors
Marching bands	● ● ●	Multiple sources
Music teachers	● ● ●	Multiple sources
Recording engineers	● ● ●	Speakers, monitors
Sound crews	● ● ●	Speakers, monitors

**fidelity**  
/fidélitee/ n.  
1. faithfulness; loyalty. 2. strict conformity to truth or fact. 3. exact correspondence to the original. 4. precision in reproduction of sound or video

# Quick Reference Guide

	ER-9 Musicians Earplug	ER-15 Musicians Earplug	ER-25 Musicians Earplug
<b>Description</b>	Flat 9 dB sound reduction through the mid range. Same high frequency protection as the ER-15	Provides uniform 15 dB sound reduction across all frequencies	Provides 25 dB of relatively flat sound reduction across all frequencies
<b>Button Colors</b>	Clear	Beige	Brown
<b>Interchangability</b>	Identical dimensions. Change buttons for different listening conditions.		
<b>Earmold styles</b>	Standard	Partially countersunk	Countersunk
<b>Insertion</b>	Moisten the mold for ease of insertion. Pull the ear outward and upward while easing the mold into the ear canal.		
<b>Cleaning</b>	Remove button from mold. Use water and mild soap on the mold only. Dry mold thoroughly before replacing button.		
<b>Replacement</b>	Discoloration, shrinkage, cracking, hardening of earmold material, deterioration in performance.		

# Allowable Weekly Sound Exposure To Be Safe



Hearing loss is a function of exposure time, the average noise level and the peak level of very loud sounds.

Musicians Earplugs require custom earmolds. Deep impressions past the second bend of the ear canal must be taken to ensure the effectiveness of these earplugs and to reduce the occlusion effect.