

# When the bang is too loud

## Protecting hearing during fireworks



There are many reasons to love the Fourth of July. Summer is in full swing and Americans are ready to celebrate and proudly reminisce on the journey to American independence. The holiday calls for barbecues and backyard celebrations, culminating in a brilliant display of fireworks in the night sky. Amidst all the celebratory excitement, it can be easy to forget how the loud boom of a firework can impact hearing.

Fireworks produce a sound output that is in the 150 to 175 decibel range, whereas a lawn mower registers at 90 decibels. The World Health Organization (WHO) recommends that older adults not be exposed to anything louder than 140 decibels for an extended period of time. As such, the vibrations from the firework blast wave have the potential to cause permanent damage to the delicate hair cells that line the inner ear.

While fireworks might exceed recommended levels, there are certain measures you can take to safely enjoy the display while maintaining your ear health.

### **Keep your distance**

Similar to the ripple effect of a stone thrown into a lake, sound travels in waves. The farther you are away from the source of the sound, the less likely you are to develop hearing loss, given the sound weakens as it travels. American Hearing and Audiology recommends spectators stay as least twenty-five yards from the blast site.

### **Wear protective equipment**

Protective ear equipment such as earplugs or headphones offer another way to ensure ear health. The highest noise reduction rating currently offered for earplugs is around 33 decibels. This means that the noise entering your ears will be reduced by about 33 decibels. Headphones sit over the top of the ear and tend to be a little more protective. There are various models of headphones that range from passive noise cancelling to active noise cancelling.

### **Listen to your ears**

Lastly, know your limits. If you are experiencing ringing in your ears or any other ear discomfort, leave.

Outside of fireworks, here are other ways to protect your hearing at home:

- Take breaks to reduce your exposure to loud music
- Pay attention to signs warning of possible loud noises
- Reduce equipment noise by replacing worn, loose, or unbalanced machine parts

Being proactive about protection will pay off in the long run and won't prevent anyone from having enjoying a festive holiday.



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