

The **decibel** (abbreviated **dB**) is the unit used to measure the intensity of a sound. The decibel scale is a little odd because the [human ear](#) is incredibly sensitive. Your ears can hear everything from your fingertip brushing lightly over your skin to a loud [jet engine](#). In terms of power, the sound of the jet engine is about 1,000,000,000,000 times more powerful than the smallest audible sound. That's a big difference!

On the **decibel scale**, the smallest audible sound (near total silence) is 0 dB. A sound 10 times more powerful is 10 dB. A sound 100 times more powerful than near total silence is 20 dB. A sound 1,000 times more powerful than near total silence is 30 dB. Here are some common sounds and their decibel ratings:

- Near total silence - 0 dB
- A whisper - 15 dB
- Normal conversation - 60 dB
- A lawnmower - 90 dB
- A car horn - 110 dB
- A rock concert or a jet engine - 120 dB
- A gunshot or firecracker - 140 dB

You know from your own experience that distance affects the intensity of sound -- if you are far away, the power is greatly diminished. All of the ratings above are taken while standing near the sound.

Any sound above 85 dB can cause **hearing loss**, and the loss is related both to the power of the sound as well as the length of exposure. You know that you are listening to an 85-dB sound if you have to raise your voice to be heard by somebody else. Eight hours of 90-dB sound can cause damage to your ears; any exposure to 140-dB sound causes immediate damage (and causes actual pain). See [this page](#) for an exposure "ruler."

**Decibel (dB):** A logarithmic measurement unit that describes a sound's relative loudness, though it can also be used to describe the relative difference between two power levels. A decibel is one tenth of a Bel. In sound, decibels generally measure a scale from 0 (the threshold of hearing) to 120-140 dB (the threshold of pain). A 3dB difference equates to a doubling of power. A 10dB difference is required to double the subjective volume. A 1dB difference over a broad frequency range is noticeable to most people, while a 0.2dB difference can affect the subjective impression of a sound.

**Decibel (dB) –** Named after *Alexander Graham Bell*. We perceive differences in volume level in a logarithmic manner. Our ears become less sensitive to sound as its intensity increases. Decibels are a logarithmic scale of relative loudness. A difference of about 1 dB is the minimum perceptible change in volume, 3 dB is a moderate change in volume, and about 10 dB is an apparent doubling of volume. 0 dB is the threshold of hearing and 130 dB is the threshold of pain.

Threshold of hearing	0 dB	Motorcycle (30 feet)	88 dB
Rustling leaves	20 dB	Foodblender (3 feet)	90 dB
Quiet whisper (3 feet)	30 dB	Subway (inside)	94 dB
Quiet home	40 dB	Diesel truck (30 feet)	100 dB
Quiet street	50 dB	Power mower (3 feet)	107 dB
Normal conversation	60 dB	Pneumatic riveter (3 feet)	115 dB
Inside car	70 dB	Chainsaw (3 feet)	117 dB
Loud singing (3 feet)	75 dB	Amplified Rock and Roll (6 feet)	120 dB
Automobile (25 feet)	80 dB	Jet plane (100 feet)	130 dB

**Know which noises can cause damage.**

**Wear ear plugs when you are involved in a loud activity.**

### **110 Decibels**

Regular exposure of more than 1 minute risks permanent hearing loss.

### **100 Decibels**

No more than 15 minutes unprotected exposure recommended.

### **90 Decibels**

Prolonged exposure to any noise above 90 decibels can cause gradual hearing loss.