

In this lesson you will learn how to properly conduct the bone conduction portion of testing. With this test we are in essence by-passing the outer and middle ear and testing the cochlea directly. When we compare this to the air conduction portion of the test, we can see if there is a conductive component in the patients outer or middle ear that is impeding sound from entering the inner ear.

This test requires the use of a bone oscillator (pictured to the right). The placement of this is crucial, as doing this improperly can severely effect the results. Take a moment and feel behind your ear with your index finger. You will feel a bump that is hard. This bump is called the mastoid process bone. The bone oscillator must be placed on this protrusion. It CANNOT make contact with the ear in any way. It is also recommended that you have the patient remove any glasses or earrings before continuing. Once ready to place the oscillator, move the patients hair away from the mastoid and stretch the band around their head.



Because the oscillator can be tight around the patient's head, it is important to keep that in mind and complete the test with some haste making sure to get accurate results. When testing the respective ear, make sure to also remove the insert from the AC test from that ear. For instance, if we are testing bone conduction for the right ear, remove the bud from the right ear, and place the oscillator behind that ear. Once all frequency thresholds are recorded, re-insert the bud into that ear and move the oscillator to opposite ear while removing the bud from that test ear. To the left you can see proper placement of the oscillator.

As in the air conduction test, we will use the ascending/descending method to find the patient's threshold for bone conduction beginning the stimulus at 40 dB. There are two options for the order in which you test for BC:

1000 Hz, 2000 Hz, 4000 Hz, Validate 1000 HZ, 500 Hz, 250 Hz

Or the Carhart Method,

1000 Hz, 500 Hz, 250 Hz, Validate 1000 Hz, 2000 Hz, 4000 Hz

As in air conduction and every test we perform, start with the perceived better ear, or the right ear if the patient says they are about the same. The symbol for bone conduction on the audiogram is also universal. Pictured below are the symbols.

### Common audiogram symbols

**Red, RIGHT**      **Blue, LEFT**

Air Conduction

O

X

Bone Conduction

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As the thresholds are attained at each individual frequency take care to mark the audiogram carefully with the correct symbol at the tested dB using the ascending/descending method. Remember, the patient does not need to respond each and every time at that dB, but a minimum of 50 percent of the time.