



North Carolina State Hearing Aid Dealers and Fitters Board

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Board Instructions for Simulator Portion of the Licensing Examination

General Instructions

1. Wait in the area at the examination site that is designated on your Simulator admission card. A proctor will notify you when it is time to enter the testing room. You will be escorted to the testing room where you will be assigned to a computer station.
2. A symbol key is not printed on the audiogram form provided to you at the examination. After the exam starts, you may use the blank scratch page provided in the exam to hand-write the symbol key and other notes. You may not bring notes of any kind into the testing site. Any cheating will result in automatic failure. The symbols used by you on the audiogram shall be those symbols listed in 21 NCAC 22I .0111.
3. All programmed simulator audiograms involve measurement of thresholds using supra-aural earphones and a 40dB value as the "minimal interaural attenuation," rather than insert earphones that are cited in the Sandlin text as having a 70 dB interaural attenuation.

Audiometric Threshold

The audiometric threshold is the weakest level a patient can hear any given signal at least 50% of the time if and only if 5dB above that level a patient hears the signal 100% of the time.

How to obtain Threshold

1. Start in the better ear.
2. If you don't know which ear is the better ear, start in the RIGHT ear.
3. Each time a tone is introduced, it should be presented for one to two seconds.
4. Start at 1000 Hz; present tone at 30dB HL; if no response, go to 50dB HL; if no response, up in 10dB steps until you get an "INITIAL" response.
5. When you do get the "INITIAL" response, go 5dB above it to verify the "INITIAL" response.
6. Then begin your bracketing technique by going down in 10dB steps every time a signal is heard and up in 5dB steps when it is not heard.
7. You must obtain a minimum of 3 positive responses to achieve a valid threshold result.
8. You will start at 1000 Hz. Go up in frequency to test at 2000 Hz, 3000 Hz, and 4000 Hz, then come back to retest at 1000 Hz, and then go down to 500Hz. If the re-tested threshold at 1000Hz is more than 5dB different, you must obtain a new threshold. If you have to obtain a new threshold at 1000Hz, you must now re-check all other obtained thresholds, i.e., 1000 Hz to 4000 Hz. The re-check procedure is required only for the initial ear, air conduction threshold.

9. HINT: On the exam, there may be false positives built into the program to simulate real-life testing situations. The threshold responses may vary from the programmed threshold in a random pattern and you may get a false positive up to 5% of the time. You will have to make a threshold decision within a range of responses simulating normal inconsistency or pathological conditions without recruitment.

Rules for Masking

Limits of the Audiogram Simulator: 110 dB Air Conduction testing
65 dB Bone Conduction Testing

Air Conduction

First: when there is a 40dB or more difference between the *Air Conduction* threshold of the test ear and the *Air Conduction* threshold of the non test ear.

Bone Conduction

Second: when there is a 15dB or more difference between the *Air Conduction* threshold of the test ear and the *Bone Conduction* threshold of the same ear.

Air Conduction

Third: when there is a 40dB or more difference between the *Air Conduction* threshold of the test ear and the *Bone conduction* threshold of the non test ear.

How to Mask For Air and Bone Conduction Testing

1. Select the initial amount of masking for the non test ear - threshold of the non-test ear by air conduction plus 10dB HL.
2. Re-establish threshold in the test ear with this initial amount of masking in the non-test ear.
3. Each time there is a response to the puretone signal presented to the test ear, increase the masking presented to the non-test ear by 5dB.
4. Each time the person does not respond to the tone presented to the test ear, increase the signal in 5dB HL steps until another response is observed.
5. Continue the procedure until the masking can be increased three (3) consecutive 5dB steps without producing a shift in the threshold level of the test ear. When this is accomplished, a "plateau" in threshold response has been reached.
6. At this point record the masked symbol on the audiogram.