

## **My Patient Has An Open Vent In Their Earmold and I Plan To Measure Their Earmold RECD and Then Fit the Hearing Aid In the Test Box. Should I Leave The Vent Open?**

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Probably not. Remember that vents do two things: they let sound in and out. When you put the earmold on for the RECD, the sound will be entering the ear through the earmold tubing. Some will leak out through the vent, but no test signal will come in. That means the RECD only captures one of the two vent paths. It can't really help us to estimate venting effects fully. The same thing happens if you use the earmold during audiometry with insert phones. So, its best to block the vent for both of these procedures. So what should you do when fitting the hearing aid to targets? Here's three choices in order of theoretical accuracy, with some thoughts on the pros and cons of each. First choice: verify on ear if you can. When there are large vents in a mold or highly open fittings, verifying on ear allows both vent paths (in and out) to be active during verification and fit to targets. This is a good thing, and it's a good idea to remember that you are seeing both effects of the vent, and the effects of the hearing aid gain, all at once. If you want to break it down so that you know which part is coming in through the vent, simply mute the aid and run the test that way: this shows you the vent-transmitted sound... it can sometimes include a residual real ear unaided response if the fitting is really open. All of this gives a nice full picture of the coupling to the ear and the hearing aid gain with the aid worn as it will be in daily life. It requires a patient who will sit for real ear measurement, so on to our next choice. Second Choice: Use test box verification with venting corrections. Some test boxes will use computer software to model both the ingoing and outgoing vent effects and use that closed RECD. This is a nice option to have, and it makes the test box fitting more accurate in the low to mid-frequency range. It does, however, use average venting and REURs, so the First Choice is the first choice. Third choice: Use test box verification without venting corrections. Many test boxes use only the closed RECD, so we must remember that the sealed coupler's low-frequency response will change when we put it on the ear. The more open the fitting, the bigger the difference. If you need to roll off the low-frequency gain because the patient has normal low-frequency hearing, you may need to consider your fit to targets being "under" for example. The opposite may be true for fittings with a bit of venting but also some low-frequency gain. These are tough to correct, so this option is best for closed fittings.