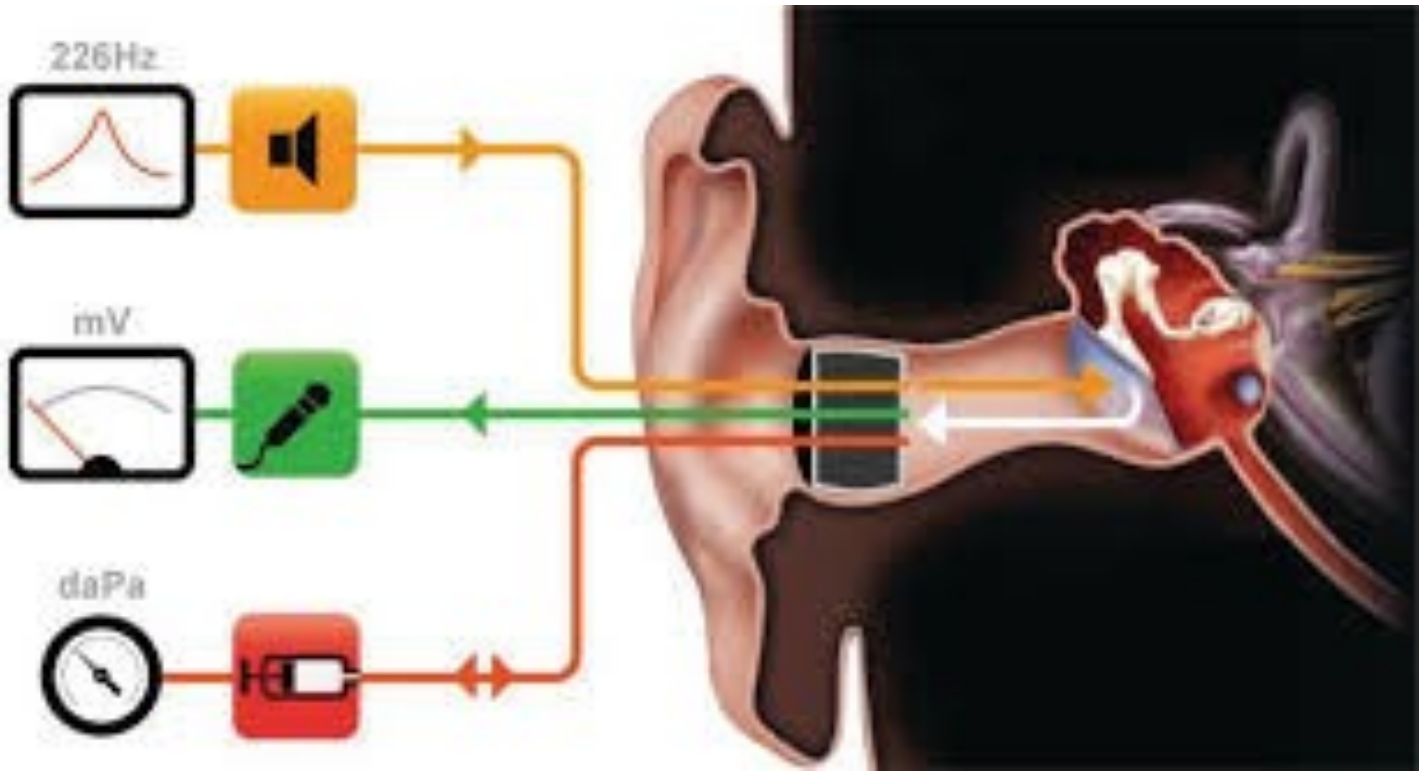
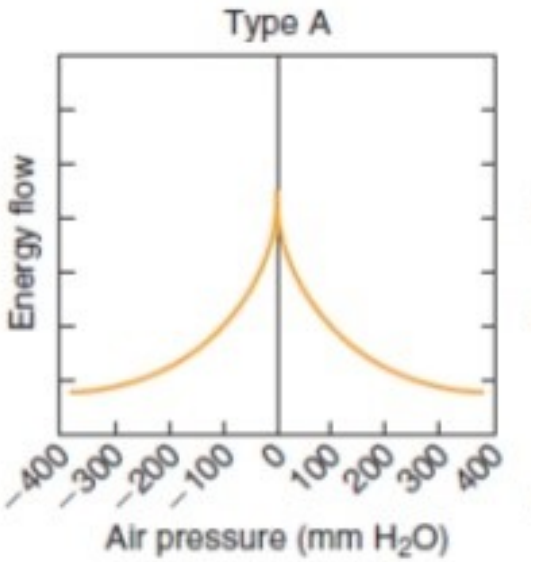
Tympanometry (also known as impedance testing) can tell us much about the functionality of the outer and middle ear. While we do not perform this test on patients at our offices, it is important to know how to read the results. This lesson will teach you how to effectively recognize types of tympanometry readings and what disorders could relate with each.



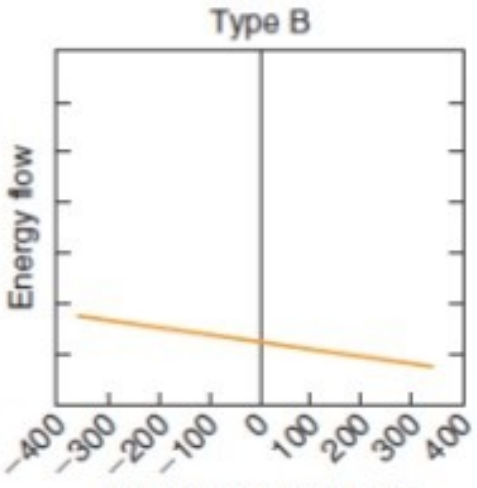
This test is performed by sealing the canal with an electroacoustic immittance meter. Once the canal is sealed air pressure is exerted through the canal and the meter reads the compliance and impedance exerted on the eardrum and ossicular chain from –300 mmH2O to +200 mmH2O. This simply tells us if the eardrum is responding properly and if the ossicular chain is moving properly. It is important to not that the patient need not respond to do this test. The patient can be awake or asleep and the result would come back the same. This is not a hearing test.

There are five possible types of tympanograms: **A, B, C, As, Ad**. Each has a specific graph and tells a different story about possible disorders the patient could have. Below are the possible outcomes.

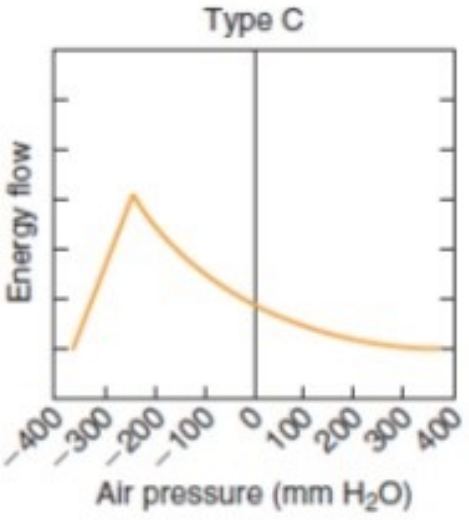
Type A- Type A requires the eardrum be in great condition and intact. The bones, muscles, ligaments, and tendons of the middle ear are all functioning properly and the eustachian tube is maintaining the air balance. In essence the outer and middle ear are showing no signs of disorder. There is either normal hearing, or it is a sensorineural hearing loss.



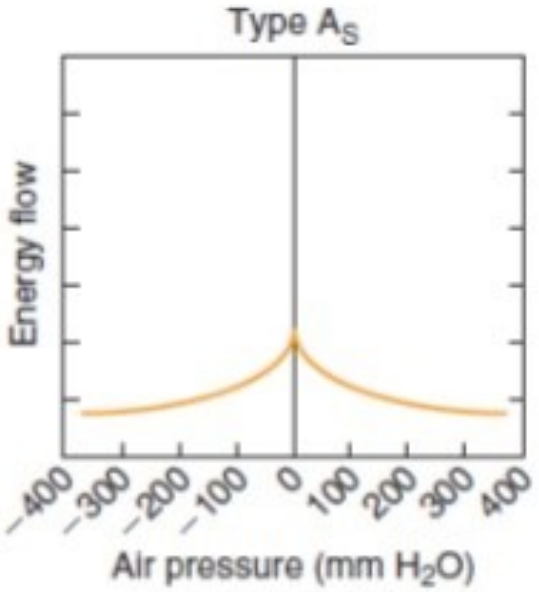
Type B- Type B can indicate many different conductive disorders. These include, but are not limited to: a perforation in the eardrum, fluid in the middle ear (otitis media), or a cholesteatoma that is inhibiting the movement of the tympanic membrane. This could however, be simply a misapplication of the probe tube where the canal is not sealed properly for the test.



Type C- Type C indicated an "ear in transition." This can mean multiple things, but it typically refers to a eustachian tube that is malfunctioning for one reason or another. It could also be an outcome of an ear that has had a recent surgery and the middle ear ligaments or muscles are weakened and still rebuilding. If not monitored, it could easily become a type B in a small amount of time.



Type As- Type As is indicative of a conductive disorder in which there is a stiffening of the eardrum or ossicular chain. There is no hole in eardrum and the middle ear ossicles, ligaments and muscles are in place. However, there is ossicular fixation in which transfer through the system is being hindered. Examples of this would be tympanosclerosis, Paget's disease, otosclerosis, or scar tissue on the eardrum.



Type Ad- Type Ad has an intact eardrum, but there is a resistance to flow of energy through the system. That means there is a problem with the ossicular chain and the ossicles are no longer fitting together properly. This could be caused by an auto accident or a slap to the head in which the bones are jarred out of place.