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Perspective

Tympanometry: An Audiometric Evaluation in Young Children

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DESCRIPTION

Tympanometry is a diagnostic technique used to assess the function of middle ear with intact tympanic membrane. The tympanic membrane, sometimes referred to as the eardrum, is located in front of the middle ear. The purpose of the test is to determine how the tympanic membrane is functioning and moving in response to pressure variations. The exam aids medical professionals in locating and tracking any middle ear issues. Following the examination, the doctor logs the findings in a chart called a tympanogram.

Functions of tympanometry

Tympanometry is useful for identifying ear issues that can cause hearing loss, typically in young children. Doctor can use the test to determine middle ear issues:

- Otitis media, often known as a middle ear infection
- Middle ear swelling
- A tonic membrane that has been torn.
- Problems with the Eustachian tube, which connects the middle ear to the upper neck and nose.

For a few months, the test can be run every few weeks to gauge how much fluid accumulates in the middle ear over time. Adults often do the test as part of a routine hearing evaluation to rule out any middle ear issues. A tympanogram offers a visual picture of how the eardrum responds to variations in ear canal air pressure.

A portion of the sound is absorbed and sent to the middle ear when sound waves cause the eardrum to contract. Reflection occurs on the opposing side of the sound. The doctor can examine the middle ear functions, particularly the Eustachian tube function, using this information from the tympanogram.

Normal readings

The line takes on a "mountain" appearance around the 0 daPA as the eardrum reacts to the stimulation if the measurements are within the normal range. Normal outcomes show that:

- Normal eardrum movement.
- The middle ear is dry and free of fluid.
- The middle ear's ossicles, which are small bones that help with hearing, move normally.

For both toddlers and adults, the normal middle ear pressure lies between +50 and -50 daPA.

Abnormal readings

The line may go above or below the 0 daPa mark if the data are irregular. Be aware that daPa, short for decapascals, is a unit of air pressure measurement. The line will be flat if the eardrum is not responsive, which is most often the result of a perforation or fluid. Diagnosis using tympanometry reveals the following factors:

- Ear infections can cause the eardrum to become scarred.
- Middle ear pressure that is more than normal.
- The middle ear's growths.
- Immobility and other problems affecting the middle ear's ossicles.
- An eardrum blocked by earwax.

Hearing aids might not restore your hearing if moisture or earwax is blocking the eardrum. The best course of action should be discussed with medical practitioner.

CONCLUSION

Tympanometry is a test that exclusively looks for indications of middle ear issues. Fluid in the middle ear is typically the cause of abnormal outcomes. The diagnosis of further ear diseases could also require additional tests. You might need extra testing if the results are consistently abnormal and the issue isn't only fluid behind the eardrum. There are often no negative consequences associated with tympanometry, making it a safe test. Even so, some children might not understand what is going on throughout the test. It's a good idea to get them ready in advance. You might explain what will happen or show it to a doll depending on your child's age.

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