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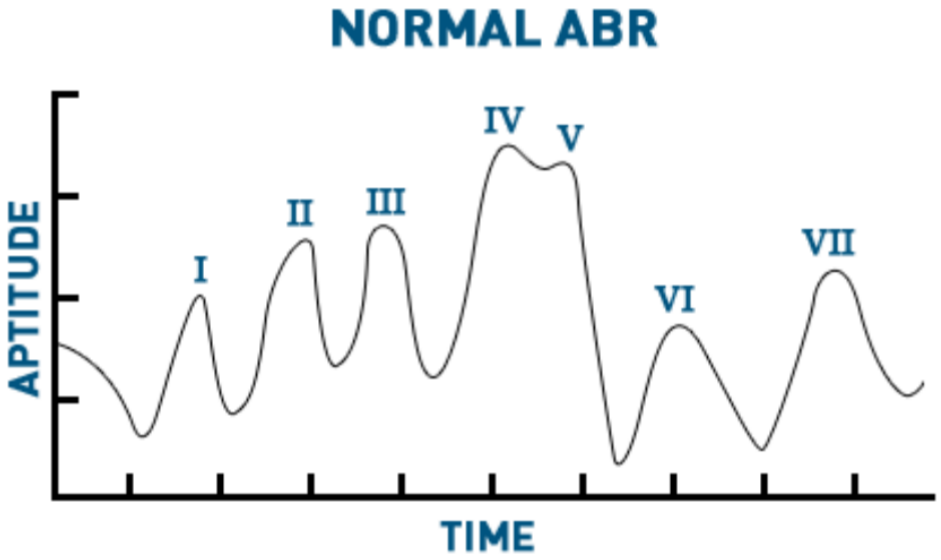
Hearing Tests to Expect As Your Child Grows

As children grow, different hearing tests will be used.

Birth to 6 Months of Age

Auditory brainstem response (ABR) testing is the only test available for newborns and infants up to 6 months of age. This test is similar to the screening that is used for newborn hearing screening in hospitals. ABR testing gives more information about the amount of hearing loss that is present at different pitches. This is also known as “Frequency-Specific ABR”.



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Under two months of age, ABR testing can be performed while a baby is sleeping naturally. When a baby is older than 2 months, a liquid medicine may be used to help them sleep.

During ABR testing, small band aid-style electrodes are placed behind each ear and on the baby’s head. Sounds are presented to the ears using small earphones. The electrodes pick up responses from the hearing nerve and a computer measures the responses. The test usually lasts about 2 hours.

Infants and Toddlers (6 mos. - 24 mos.)

Children older than 6 months can be tested using Visual Reinforcement Audiometry (VRA). With this test, sounds are presented either through earphones or a loudspeaker. The child learns to respond to sounds

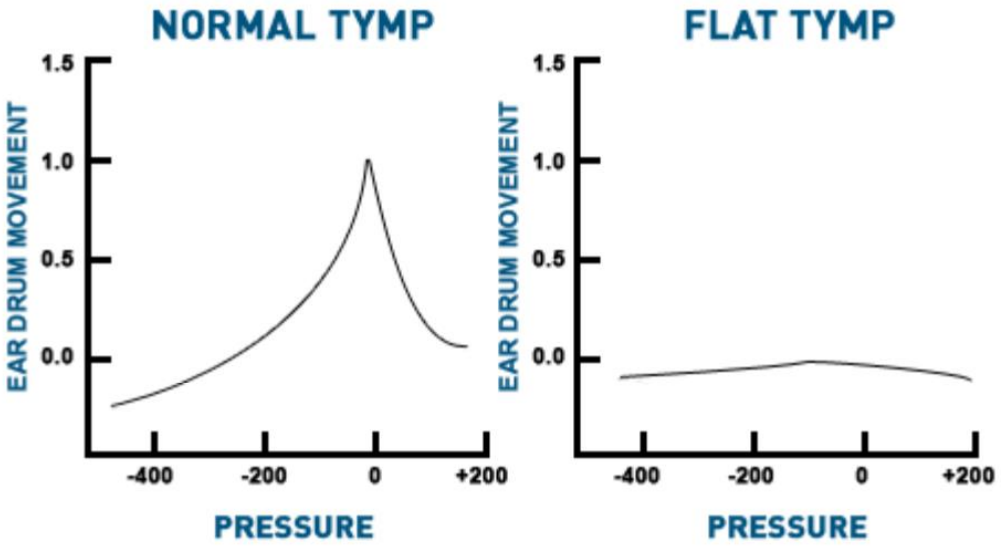
by looking at animated toys or videos that are paired with the sounds. Testing this way, it is possible to get information about the child's hearing across pitches in both ears. Test results are graphed on an audiogram.

Young Children and Preschoolers (24 months - 5 years)

Children in this age range are tested using Conditioned Play Audiometry (CPA). This uses a game activity every time a sound is heard. One example is having the child drop a block in a bucket when a sound is heard. Sounds are usually presented through earphones and results are graphed on an audiogram. As with VRA, it is possible to get information about the child's hearing across pitches in both ears.
Other tests may be used in addition to the tests already explained.

Tympanometry

Tympanometry tests how the eardrum and middle ear are working. This test is important because fluid or other problems in the middle ear can affect hearing. During a tympanogram test, a small earphone is placed in the ear canal and air pressure is gently changed. This test is helpful in showing if there is an ear infection or fluid in the middle ear.



A normal tympanogram shows a peak at normal pressure (0)

An ear with fluid will show a flat tympanogram

Other tympanogram patterns are found with different middle ear problems, including holes in the eardrum and Eustachian tube problems. If the tympanogram is not normal, babies may be referred to their doctor for medical treatment.

Tympanogram testing may be used to evaluate if pressure equalization, or tympanostomy, tubes are present and working correctly. The doctor and audiologist use both the tympanogram and ear examination results to see if a tube is open. The picture to the right shows an eardrum with a tube in place. A normal tympanogram shows a peak at normal pressure (0) An ear with fluid will show a flat tympanogram

Diagnostic Otoacoustic Emissions (OAEs)

Diagnostic otoacoustic emissions are usually used with ABR and hearing test results. A small earphone is placed in the ear and tones are presented. The microphone measures an echo response from the inner ear. This information helps define the type of hearing loss a child has.