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Auditory Neuropathy

**Read this page if your child's hearing loss is confusing.
Or if your doctor has said she might have auditory neuropathy.**

Auditory neuropathy (AN) (AW-dih-tor-ee new-RAH-puh-thee) is a type of hearing loss that can look very confusing.

- Your child might seem to hear sometimes and not hear at other times.
- She may hear when it's quiet, but not hear when there is other noise.
- She may pass certain types of hearing tests but fail others.

What is auditory neuropathy?

Auditory neuropathy is a type of hearing loss where the [cochlea](#) seems to work. But there is something wrong with how the [auditory nerve](#) works.

Children with AN have different amounts of hearing loss.

- It can range from mild to profound.
- It is usually in both ears, but the amount of hearing loss might be different in each ear. Sometimes, the hearing loss is in just 1 ear. This is called a [unilateral hearing loss](#) (<http://www.raisingdeafkids.org/information/hearingloss/types/unilateral.jsp>).
- It can stay the same.
- It can get worse over time. This is called [progressive hearing loss](#) (<http://www.raisingdeafkids.org/information/hearingloss/types/progressive.jsp>).
- It can be worse some days than others. This is called [fluctuating hearing loss](#). (<http://www.raisingdeafkids.org/information/hearingloss/types/fluctuating.jsp>).
- Sometimes the hearing loss gets better. If your child's hearing loss is going to get better, it will usually happen before she turns 2.

I just want to know what it's like for him.

“ I have read that people with AN can hear in a number of ways. Some hear sound, but not clearly enough to distinguish speech. Some have moments of clarity and moments of dysynchrony. And I've even heard of someone whose child could hear relatively clearly for months at a time and then lose that clarity again. That is part of what is so frustrating to me as a new AN mom — there isn't any definitive answer to what my child is hearing.”

— Aidan's mom

[Read our Parent Talk page on deafness and other special needs](http://www.raisingdeafkids.org/connections/parenttalk/deafplus.jsp) for more of this mom's story. (<http://www.raisingdeafkids.org/connections/parenttalk/deafplus.jsp>)

Auditory neuropathy may also be called **Auditory Dys-synchrony (dis-SINK-runny)**. So sometimes it will be called AN/AD.

How to find out if your child has auditory neuropathy

If your child has trouble hearing, take her to the doctor or audiologist to get her hearing tested. Try to find someone who knows about AN, and has worked with other children with it. The doctor or audiologist may need to do many tests to find out if your child has AN. This is because one test may show that your child has normal hearing. But another test may show that your child is deaf.

Two of the tests that are usually done test different parts of your child's hearing system.

- [ABR \(auditory brainstem response\)](#) tests the auditory nerve. This nerve sends sounds to the brain. If your child has AN she will probably have a poor ABR.
- [OAE \(otoacoustic emissions\)](#) test whether the cochlea is working. Children with AN usually have normal OAEs. But sometimes they lose their OAEs over time.

Neither the ABR nor the OAE test hearing itself. They are only looking at different parts of the hearing system to see if they are working. It's like checking different parts of your car, but not really testing to see if it drives!

Your audiologist may want to do other tests to find out what the problem is. The tests will show more about where there might be a problem.

- [Tympanometry](#) tests whether the eardrum is working.
- Middle ear muscle reflexes test how well the sound is passing through the outer ear to the middle ear. These are usually absent in people with AN.
- Pure tone audiometry tests how well your child responds to different tones. This test sometimes looks normal even if your child has AN. This is because the test is done with single tones and in a quiet room. Children with AN can sometimes hear when it's quiet, but can't hear when there is other noise.

- Speech audiometry tests how well your child hears speech sounds. Children with AN usually have more trouble understanding speech than you would expect from the other hearing tests. But since speech audiometry is done in a quiet room, it can still look like your child hears better than she does in a noisier place.

What causes auditory neuropathy?

Doctors do not know what causes auditory neuropathy. There is probably more than just 1 cause. Some of the things that may increase the chance of having auditory neuropathy are:

- Problems at birth or premature birth. These babies may not get enough oxygen in their brains. Or they may have jaundice, where the baby's skin is yellow. Some doctors think these problems may cause auditory neuropathy.
- Having a sister or brother with auditory neuropathy. Sometimes it runs in families. So if you have one child with auditory neuropathy, have the doctor test your other children, too.

This page was last edited on August 22, 2003.

You can find this page online at:

<http://www.raisingdeafkids.org/information/hearingloss/types/an/>