About Ear Infections and Vents

There are 3 parts to the ear:

- The external (outer) ear is the part you see.
- The inner ear converts the sound waves into messages it can send to the brain.
- The middle ear is the area behind the eardrum. This fact sheet is about middle ear infections. Infection or inflammation in the middle ear is also called “otitis media.”

How the middle ear works

- Three small bones in the middle ear pick up vibrations of sound waves on the eardrum. In order for the bones to vibrate properly, the middle ear must be filled with air.
- The air in the middle ear comes through the eustachian tube. This tube opens in the back of the nose.
- When the middle ear needs more air, the eustachian tube opens to allow air in. You may be able to hear your own eustachian tube open when you yawn or swallow.

Middle ear infection

- When an infection occurs in the back of the nose (sinuses, adenoids), the germs may get into the ear through the eustachian tube.
- The infection results in a build-up of fluid in the middle ear. The eustachian tube becomes swollen and is no longer able to open. The swelling can last up to 3 months.
- Infections are more common in children because the eustachian tubes are less developed and adenoids are larger in children than adults.
- Infection in the back of the nose can be cleared with medication. But the swelling of the eustachian tube may persist.

- If swelling in the eustachian tube persists, thick, mucus-like liquid may be trapped in the middle ear. Fluid in the middle ear decreases hearing 10% to 40%. If the fluid becomes severely infected, ear pain may occur. The bones of the ear or ear drum may be damaged if the fluid remains in the ear for a long time. The inner ear can also be permanently damaged if the infection spreads.

Treatment for persistent middle ear fluid

- First, medication is given to treat infection and decrease fluid.
- If this does not work, the fluid is removed through a tiny incision (cut) in the eardrum. Since the swelling of the eustachian tube continues after this time, the fluid can build up again.
- A small ventilation tube (“vent”) is put into the eardrum to keep a small channel open so that air can get into the middle ear. The tube stays in for 6 to 12 months while the eustachian tube heals.
- Normal hearing returns once the fluid is removed and the air is restored, unless there has been permanent damage.
The vent and incision in the eardrum
- The vent will work its way out of the eardrum and into the ear canal. It will either be caught in the earwax, fall out or be removed by the doctor.
- The eardrum heals itself within one or two days after the vent comes out.

Ear care while the vents are in place
- Ask your doctor if you can get your ears wet and if there are water restrictions. Some doctors allow you to get your ears wet, and some do not.

Ear infections with tubes in place
- Germs may pass up the eustachian tube and can cause another ear infection while the tube is in place. Often this will cause drainage of infected fluid from the ear. The drainage can cause the vent to be pushed out of the eardrum too early. Call your doctor if your child’s ear is draining.
- Antibiotic drops are used to treat these infections because the bacteria is usually resistant to oral antibiotics.
- Your child’s ears need to be checked every 4 to 6 months to make sure a “silent” ear infection has not occurred. No further office visits are needed after the vents come out unless there are other signs of ear disease. Some children may need vents placed more than once.