

Ear Pain

An ear infection (or acute otitis media) describes an infection in the middle ear. The middle ear is the space behind the eardrum. It can become inflamed and infected by viruses or bacteria.

What Causes an Ear Infection?

The Eustachian tube connects the middle ear to the back of the throat. This tube helps to ventilate (air) and drain the middle ear. Colds cause more mucus and tissue swelling which can block the Eustachian tube. This blockage has 2 main results:

1. It prevents the tube from ventilating the middle ear. Air pressure changes can cause pain, similar to what occurs in an airplane during take-off/landing.
2. It causes build up of fluid behind the ear drum (an effusion) that can trap bacteria that are already there. This can lead to an infection and more pressure on the eardrum. The eardrum can bulge which is painful.

Who Gets Ear Infections?

Ear infections are most common in kids between 6 months and 2 years old, although they can happen throughout childhood. Most children will have at least one ear infection, but some children may have many of them.

In younger children the Eustachian tube is shorter and smaller. It is more likely to be blocked from swelling and mucous during colds, or nearby tissues such as enlarged adenoids.

As a child gets older, the ear structures change and they grow out of the tendency to have ear infections.



Seek Immediate Medical Attention if:

- Your child's neck becomes painful or stiff
- Your child has a new or worse fever
- Your child has redness or pain behind their ear or their ear is sticking out
- Your child becomes lethargic (sleepy) or very irritable (cranky)
- Your child is vomiting and not able to take any medicine by mouth

Key Points

- Ear infections are an infection behind the eardrum in the middle ear
- They are very common in children, especially between 6 months to 2 years old
- Ear infections usually happen during or after a cold and are caused by either viruses or bacteria
- Use pain and fever medicines as needed. Most ear infections do not need antibiotics
- If your child is older than 6 months and healthy, it is safe to wait 1 to 2 days before considering starting antibiotics
- You can prevent ear infections by frequent hand washing, avoiding contact with people who are sick and giving your children routine vaccinations
- Take your child to see their doctor if they are not feeling better after 2 to 3 days of antibiotics
- Take your child to the nearest emergency department if they have neck pain/stiffness, are lethargic or irritable
- Symptoms

Symptoms

Most ear infections develop during or after a child has an upper respiratory infection (eg: cold). The type of symptoms and how long they last is different for every child. Most children have ear pain from the pressure and fluid against the eardrum. Other common symptoms include:

- Fever
- Pulling or tugging at ears
- Poor sleep
- Crying or fussiness
- Vomiting
- Fluid draining from ears

Some children can get a small perforation (tear/hole) in their eardrum from the high pressure in the middle ear. You may notice cloudy or yellow fluid draining from the ear. These holes usually heal in about a week. If your child has repeated infections with perforations, there is a risk of scarring on their eardrum. This may affect their hearing and should be followed by your child's regular doctor.

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How are Ear Infections Diagnosed?

Your doctor will have to examine your child properly. They will use an otoscope (lighted magnifying glass) to look in your child's ears. They are looking for redness, fluid and bulging of the eardrum.

The only way to know for certain if the ear infection is a virus or bacteria is by using a needle to take a sample of the fluid behind the eardrum. This is only sometimes done by Ear, Nose & Throat specialists (ENT) for children with difficult to treat or multiple ear infections.

Treatment

Antibiotics are not always needed to treat an ear infection. In healthy children, it is safe to wait 1 to 2 days to see if the symptoms get better on their own. The most important thing is to keep your child comfortable.

1. Pain and Fever control:
 - You may give Acetaminophen (Tylenol® or Tempra®) or Ibuprofen (Advil® or Motrin®) to keep your child comfortable. Use as directed on the packaging or instructed by a health care provider
2. Antibiotics:
 - **Not all ear infections need antibiotics**
 - If your child is older than 6 months, it is safe to wait 1 to 2 days to see if the infection gets better on its own
 - Antibiotics may be prescribed for ear infections that haven't gotten better in a few days or if:
 - Your child is less than 6 months old with signs of an ear infection
 - Your child is having severe pain
 - Your child is having constant high fevers (>39°C (102.2°F))
 - If your child is given antibiotics, they should feel better in 2 to 3 days. It is important to finish all of the antibiotic even if they are feeling better
3. Daycare and School:
 - Your child can go back to daycare/school once their fever is gone and they are feeling better
 - The cold that caused the ear infection is contagious, but the ear infection itself is not passed on between children
4. Everyday activities:
 - Your child can play and do their regular activities
 - If there is a hole in your child's eardrum, they should avoid swimming for at least a week until it heals

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5. Flying:

- Flying while your child has an ear infection is not dangerous, but can make the ear pain worse
- There is a higher chance the eardrum will perforate (tear) because of the pressure difference in the airplane
- Keep pain medication with you on the plane. Encourage your child to suck on a soother, drink fluids or swallow often

How to Prevent Ear Infections:

1. Colds can lead to ear infections. Avoid getting sick by:
 - Washing your hands with soap and water often
 - Staying away from other people with colds
2. Vaccinate your children when they are due. Vaccinations like the flu shot for influenza and pneumococcal vaccine that is part of routine immunization schedules offer protection against ear infections
3. Protect your child from second hand smoke exposure
4. If possible, breastfeed your baby as there are many antibodies in breastmilk that can help protect babies against ear infections
5. If your baby is bottle fed, avoid propping the bottle. This makes your baby suck very hard and changes the pressure in the Eustachian tube

Know Your Options

It can be scary when your child is sick. But in most cases, you don't need to go to the emergency department. If you're unsure, [we're here to help](#).



Please Note

The content provided on these pages is not intended to replace medical advice. If you have concerns about the health of your child, contact your health care provider directly. If your child has an emergency, go to the nearest emergency department or call 911. Alberta Health Services and Project HEAL strive to ensure that all material is correct but will not be held liable for errors or incomplete information contained in these pages.