

Adenovirus Infection in Children



What is an adenovirus infection in children?

Adenoviruses are a group of viruses that cause a variety of infections, such as:

- Respiratory illness, such as a cold
- Infection of the eye (conjunctivitis, also called pink eye)
- Croup
- Bronchiolitis
- Pneumonia

In children, adenoviruses most often cause infections in the respiratory system, but they also cause infections of the digestive tract. Respiratory infections are most common in the late winter, spring, and early summer. But these infections can occur anytime throughout the year.

What causes adenovirus infections in a child?

Infection is caused by one of the group of adenoviruses. These are the most common ways the viruses are spread from child to child:

- **Respiratory infection.** Fluid from the nose, mouth, throat, and lungs (respiratory tract) can contain the virus. Respiratory infections are spread when someone with the virus coughs or sneezes on another person. It can also be spread by touching an object that is contaminated by the virus. The virus can live for many hours on things such as doorknobs, counters, and toys.
- **Digestive tract infection.** This form of the virus is spread by fecal-oral transmission. This is often because the child did not wash their hands correctly or often enough. It can also be caused by eating or drinking contaminated food or water.

Which children are at risk for adenovirus infections?

An adenovirus infection can occur in a child of any age. Children ages 6 months to 2 years who are in childcare are more likely to become ill with these viruses. Adenovirus infections of the digestive tract are more common in children under the age of 5. Most children have had at least 1 adenovirus infection by age 10.

What are the symptoms of adenovirus infections in a child?

Most adenovirus infections are mild with few symptoms. But symptoms can occur a bit differently in each child. The most common symptoms of adenovirus infections are listed below.

Symptoms of respiratory infections may start 2 to 14 days after exposure. They can include:

- Runny nose
- Sore throat
- Fever
- Severe cough
- Swollen lymph nodes
- Headache

- Pink eye

Symptoms of a digestive tract infection may start 3 to 10 days after exposure. Symptoms usually occur in children younger than 5 years and may last 1 to 2 weeks. They can include:

- Watery diarrhea that starts suddenly
- Fever
- Belly (abdominal) pain
- Vomiting

The symptoms of adenovirus infections can be like other health conditions. Make sure your child sees their healthcare provider for a diagnosis.

How are adenovirus infections diagnosed in a child?

The healthcare provider will ask about your child's symptoms and health history. They will give your child a physical exam. Tests for adenovirus are only needed for very ill children or those with another serious health problem. Tests may include:

- Blood tests
- Swabbing eye, nose, or throat for testing
- Stool sample testing
- Chest X-ray

How are adenovirus infections treated in a child?

Treatment will depend on your child's symptoms, age, and general health. It will also depend on how severe the condition is.

Treatment for adenovirus infections is done to help ease symptoms. Antibiotics are **not** used to treat adenoviruses.

Treatment for respiratory infection may include:

- **More fluids.** It's very important to make sure your child drinks plenty of fluids. If needed, your child will get an IV (intravenous) line to give fluids and electrolytes.
- **Bronchodilator medicines.** These may be used to open your child's airways. They are often given in an aerosol mist by a mask or through an inhaler.
- **Extra (supplemental) oxygen.** This is extra oxygen given through a mask, nasal prongs, or an oxygen tent.
- **Mechanical ventilation.** A child who is very ill may need to be put on a breathing machine (ventilator) to help with breathing.

Treatment for digestive infection may include:

- **Oral rehydration.** Oral rehydration with water, formula, breastmilk, or special electrolyte-containing fluids is important. The electrolyte fluids contain a careful balance of sugars and salts. Don't use soda, juices, or sports drinks to rehydrate very young children.
- **Solid foods as tolerated.** Ask the healthcare provider about which foods are best.

A child with severe water loss (dehydration) may need treatment in the hospital. This treatment may include:

- **IV fluids.** This is fluid given through a thin, flexible tube in a vein.

- **Tube feedings.** A small tube is placed through the nose into your child's stomach so that formula or fluids may be given.
- **Blood tests.** This is done to measure the levels of sugar, salt, and other chemicals (electrolytes) in your child's blood.

Talk with your child's healthcare provider about the risks, benefits, and possible side effects of all medicines.

What are possible complications of adenovirus infections in a child?

Possible complications include:

- **Chronic lung disease.** In very rare cases, a child who gets pneumonia from adenovirus may develop chronic lung disease.
- **Severe infection.** A child with a weak immune system is at risk for more severe infection from adenoviruses.
- **Intussusception.** This is when one part of the intestine slides over another section like a telescope. It causes intestinal blockage. It most often occurs in babies. This is a medical emergency. The symptoms can include bloody stool, vomiting, abdominal (belly) swelling, knees flexed to chest, loud cries from pain, weakness, and lack of energy.
- **Hepatitis.** Cases of severe liver inflammation (hepatitis) in children may be caused by adenovirus infections. The link between these cases and adenovirus infection is being explored.

How can I help prevent adenovirus infections in my child?

To help prevent the spread of adenoviruses to others:

- Wash your hands before and after caring for your child. Use soap and warm water and scrub for at least 20 seconds. Rinse well and air dry or use a clean towel.
- Make sure your child washes their hands often, especially before eating and after using the bathroom.
- Have your child cover their mouth and nose when sneezing or coughing.
- Help your child stay away from close contact with someone who is sick.
- Make sure your childcare center encourages handwashing.

If your child is in the hospital, healthcare workers may wear special isolation clothing when they enter your child's room. This may include hospital gowns, gloves, and masks.

When should I call my child's healthcare provider?

Call the healthcare provider if your child has:

- Symptoms that don't get better, or get worse
- New symptoms

Key points about adenovirus infections in children

- Adenoviruses are a group of viruses that cause a variety of illness. In children, adenoviruses most often cause infections in the respiratory system and digestive tract.
- An adenovirus infection can occur in a child of any age. Most children have had at least 1 adenovirus infection by age 10.
- Most adenovirus infections are mild with few symptoms. Symptoms can include runny nose, sore throat, fever, and cough. Or they can include watery diarrhea, fever, and belly pain.

- Treatment is done to help ease symptoms. Antibiotics are not used to treat adenoviruses.
- Handwashing is the best way to help prevent the spread of adenoviruses to others.

Next steps

Tips to help you get the most from a visit to your child's healthcare provider:

- Know the reason for the visit and what you want to happen.
- Before your visit, write down questions you want answered.
- At the visit, write down the name of a new diagnosis and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you for your child.
- Know why a new medicine or treatment is prescribed and how it will help your child. Also know what the side effects are.
- Ask if your child's condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if your child does not take the medicine or have the test or procedure.
- If your child has a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your child's provider after office hours. This is important if your child becomes ill and you have questions or need advice.

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