

Infectious Diseases

Adenovirus Infections (Nov 2007)

What are adenoviruses?

Adenoviruses are a group of viruses that typically cause respiratory illnesses such as a **common cold**, conjunctivitis (an infection in the eye), croup, bronchitis, or pneumonia. In children, adenoviruses usually cause infections in the respiratory tract and intestinal tract. Consider the following facts about adenoviruses:

- Infection in children may occur at any age.
- Adenoviral respiratory infections are most common in the late winter, spring, and early summer. Intestinal tract infections can occur anytime throughout the year.
- Digestive tract infections are more common in children under the age of 4.
- Most children have had one form of the infection by age 10.

How are adenoviruses transmitted?

The following are the most common ways adenoviruses are transmitted:

- **respiratory infections**
Respiratory infections occur by coming in contact with infectious material from another individual or inanimate object. The secretions from the respiratory tract may contain the virus. The virus can also survive for many hours on inanimate objects such as doorknobs, hard surfaces, and toys.
- **intestinal tract infections**
Transmission of the digestive strain of the virus usually occurs by fecal-oral contact. Usually this occurs from poor hand washing or from ingestion of contaminated food or water.

What are the symptoms of adenovirus infections?

Most adenovirus infections are mild with few symptoms. The following chart describes the most common symptoms of adenovirus infections. However, each child may experience symptoms differently. Symptoms may include:

Respiratory infections (symptoms may develop 2 to 14 days after exposure)	Intestinal tract infections (symptoms may develop 3 to 10 days after exposure); symptoms usually occur in children younger than 4 years and may last 1 to 2 weeks.
symptoms of a	abrupt onset of watery diarrhea

common cold - runny nose	
sore throat	fever
fever	abdominal tenderness
severe cough	vomiting
swollen lymph nodes	
headache	
feeling of uneasiness	
non-productive "croupy" cough	

The symptoms of adenoviruses may resemble other medical conditions or problems. Always consult your child's physician for a diagnosis.

How is an adenovirus infection diagnosed?

In addition to a complete medical history and physical examination, diagnostic tests for adenoviruses may include:

- **blood work**
- **culture of respiratory secretions by nasal swab**
- **stool culture**
- **chest x-ray** - a diagnostic test which uses invisible electromagnetic energy beams to produce images of internal tissues, bones, and organs onto film.

Treatment for adenovirus infections:

There is **no cure for adenovirus infections**. If a child is infected, treatment is supportive and is focused on relieving the symptoms associated with the infection. Because the infection is caused by a virus, antibiotics are not effective. Specific treatment for adenovirus infections will be determined by your child's physician based on:

- your child's age, overall health, and medical history
- extent of the condition
- your child's tolerance for specific medications, procedures, or therapies
- expectations for the course of the condition
- your opinion or preference

Treatment for respiratory infection may include:

- **increased fluid intake**
Keeping your child well hydrated by encouraging fluids by mouth is important. If necessary, an intravenous (IV) line may be started to give your child fluids and essential electrolytes.

- **bronchodilator medications**
Bronchodilator medications may be used to open your child's airways. These medications are often administered in an aerosol mist by a mask or through an inhaler.
- **supplemental oxygen through a mask, nasal prongs, or an oxygen tent**
- **mechanical ventilation**
A child who becomes very ill with adenovirus may require mechanical ventilation or a respirator to assist with breathing for a period of time.

Treatment for intestinal infection may include:

- **oral re-hydration**
Oral re-hydration with water, formula, breast milk and/or special electrolyte-containing fluids (fluids containing sugars and salts) such as Pedialyte® is important. Very young children should NOT be re-hydrated with soda, juices, or sports drinks.

Continue feeding your child solid foods if they are able to tolerate them. Some children may develop severe enough dehydration to require hospitalization. For these children, treatment may include:

- **administration of intravenous (IV) fluids**
- **nasogastric (NG) tube feedings** - a small tube is placed into your child's stomach through their nose so that formula or fluids may be administered.
- **blood work** (to measure your child's electrolyte levels - sugar, salt, and other chemicals in the blood)

Prevention of adenoviruses:

Strict hand washing is important to prevent the spread of adenoviruses to other infants, children, and adults. If your child is in the hospital, healthcare workers will wear special isolation apparel, such as gowns and gloves, when they enter your child's room.

Complications of adenovirus:

Consider the following complications that may develop from an adenovirus infection. Consult your child's physician for more information.

- Children who develop pneumonia from adenovirus may develop chronic lung disease. However, this is very rare.
- Children with weakened immune systems are at risk for developing a more severe infection from adenoviruses.
- A severe complication of intestinal adenovirus is intussusception (an intestinal blockage that occurs when one part of the intestine slides over another section like a telescope.) This is a medical emergency and most often occurs in babies. The symptoms of intussusception may include bloody stool, vomiting, abdominal swelling, knees flexed to chest, loud cries from pain, weakness, and lethargy.