

A lower respiratory tract infection (RTI) occurs when there is an infection of the lungs, specifically in the lower airways. This infection is usually caused by a virus, but it can also be caused by bacteria or other less common organisms.

Common lower RTIs in infants and young children include:

- **Flu.** The flu (influenza) is a common viral infection that occurs most often during the winter months. It can be more dangerous to your health if you are very young or elderly.
- **Viral Bronchiolitis.** Bronchiolitis is an inflammation of the lining of the bronchioles (the very small passages through which air flows to and from the lungs). This condition is very common in infants and caused by several viruses, including respiratory syncytial virus (RSV).
- **Pneumonia.** Pneumonia is an infection that causes inflammation of the air sacs in one or both of the lungs. Its symptoms can range from mild to severe enough to require hospitalization.

The main symptom of a lower RTI is cough, which can be severe. Your child may have a dry cough or a wet cough. Even if it is a wet cough, he or she may not be able to cough up phlegm/mucus.

Other symptoms of a lower RTI include:

- Fever
- Tightness in the chest or chest pain
- Breathing quickly or in an irregular pattern
- Difficulty catching your breath
- Wheezing
- Overall change in well-being (decreased energy, appetite and fluid intake)

Diagnosis of Lower Respiratory Tract Infection

Doctors at Riley at IU Health may use one or more of the following exams and tests to diagnose a lower RTI:

- **Medical history and physical exam.** The doctor will review your child's medical history and conduct a complete physical exam to check for the various signs, symptoms and physical findings of a lower RTI.

- **Nose swab.** The doctor may swab your child's nose to check for the flu or other viruses. Remember that if your child has a viral infection, antibiotics will not be helpful.
- **X-ray.** If your child's doctor suspects pneumonia, he or she might order an X-ray of the chest to check for this condition.
- **Blood test.** The doctor may use a blood test to check for signs of inflammation or signs that your child's body is fighting an infection.
- **Bronchoscopy.** If your child has a chronic health condition or has had repeated cases of pneumonia, the doctor may plan for a procedure called flexible bronchoscopy. Your child will be sedated and a thin, flexible scope (tube) will be passed through the nose into the lower airway to evaluate the major lung branches and obtain a mucus sample. This sample will help identify the cause of the pneumonia or respiratory tract infection.

Treatments

If your child has a lower RTI caused by a virus, the doctor will make the following recommendations:

- Drink plenty of clear fluids
- Get plenty of rest
- Control the fever with acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (as directed by your child's pediatrician based on age and medical history)

If your child has a lower RTI caused by bacteria, the doctor will likely prescribe antibiotics to fight the infection.

If your child's condition worsens, he or she may need to be hospitalized. Doctors may administer oxygen therapy or breathing treatments, which can help your child breathe easier.

