Respiratory syncytial virus (RSV) is a common respiratory virus that can affect people of all ages. Most people (including infants) usually develop only mild disease similar to that of a common cold, with congestion, runny nose, and cough. But for some, it can be severe and even life-threatening.

Learn About RSV

Respiratory syncytial virus (RSV) is a common respiratory virus that can affect people of all ages. In older children and adults, it causes mostly upper respiratory symptoms (colds), but it can cause a serious infection in the lungs (bronchiolitis or pneumonia) among infants and adults with serious underlying medical problems.

Key Facts

- RSV will infect almost all children during the first 2 years of age, although most cases will have only minor symptoms.
- RSV-related infections in children younger than 5 years of age account for more than 2 million visits to the doctor or to the emergency department each year.
- It is a leading cause for hospitalization for infants younger than 1 year of age.

What Is RSV?

RSV is a virus transmitted only between humans. There are two different strains (A and B) that may cause differences in the severity of the illness. RSV is spread through infected droplets from secretions of the mouth or nose. RSV can survive for at least 30 minutes on hands and for several hours on infected surfaces. Every year, RSV causes epidemics. These usually occur during the winter and early spring. However, the actual timing and the duration vary between regions.

How RSV Affects Your Body

RSV can affect any part of the respiratory tract causing intense inflammation.

- The infection is most serious when it affects the small breathing tubes (bronchioles) causing bronchiolitis.
- It can also cause infection in the rest of the lungs (pneumonia).

How Serious Is RSV?

Most people (including infants) usually develop only mild disease similar to that of a common cold, with congestion, runny nose, and cough. About 25% to 40% percent of the affected infants and children will develop symptoms of bronchiolitis or pneumonia, and 5% to 20% percent will require hospitalization. Children with RSV who require hospitalization, and especially those who need admission to the pediatric intensive care unit (PICU), are usually younger than 6 months of age. The elderly and adults with chronic heart or lung disease or with weakened immune systems are at high risk for developing severe RSV disease if they are reinfected. Because people do not form long-lasting immunity to RSV, they can become infected repeatedly over their lifetime.

RSV Symptoms, Causes, and Risk Factors

RSV causes a wide variety of symptoms, ranging from very mild to life-threatening. The type and severity of symptoms depend on multiple factors, including the particular strain of the virus and whether the patient has other underlying medical problems.
What Are the Symptoms of RSV?
- Nasal congestion, runny nose, mild cough, and low-grade fever are typical initial symptoms of both mild and more severe forms of the disease
- Barking cough, which can be a sign of significant swelling in and around the vocal cords
- Fever, either low grade (less than 101°F) or high (more than 103°F)
- Difficulty breathing with one or more of the following:
  a. Abnormally fast breathing (tachypnea)
  b. “Caving-in” of the chest in between the ribs and under the ribs (chest wall retractions)
  c. “Spreading-out” of the nostrils with every breath (nasal flaring)
- Wheezing (a high-pitched whistling sound as the patient breathes out)
- Difficulty drinking
- Lethargy or irritability
- Bluish color around the mouth, lips, and fingernails (cyanosis)
- Apnea (stopping breathing) is a common symptom of RSV bronchiolitis among very young infants, especially those born prematurely

What Causes RSV?
RSV is caused by a virus and spreads when an infected person coughs or sneezes. The virus enters the body through the nose or mouth or very often through the eyes (when people rub their eyes with a hand that has touched infected secretions).

What Are Risk Factors?
- Crowded places with people who may be infected
- Exposure to other children (e.g., in daycare) or to older siblings attending school
- Infants younger than 6 months of age
- Young children, especially those under 1 year of age, who were born prematurely or who have an underlying condition, such as congenital heart or lung disease
- Children with weakened immune systems
- Adults with asthma, congestive heart failure, or chronic obstructive pulmonary disease (COPD)
- People with immunodeficiency, including those with certain transplanted organs, leukemia, or HIV/AIDS

When to See Your Doctor
You should call your doctor if you or your child is having trouble breathing, has a poor appetite or decreased activity level, cold symptoms that become severe, or a shallow cough that continues throughout the day and night.

Diagnosing and Treating RSV

How RSV Is Diagnosed
Mild RSV infections usually affect the upper respiratory tract (nose, throat). The symptoms of a mild RSV infection are the same as the symptoms of a common cold, and testing usually isn’t required to diagnose the infection.

Sometimes RSV affects the lower respiratory tract and causes bronchiolitis or pneumonia. The diagnosis is usually made on the basis of medical history and a physical examination.

Your doctor may suspect RSV-related bronchiolitis during periods when there are outbreaks of RSV in the community. Although the illness can occur at any time, it is much more likely during the cold months of the year. However, the exact timing of the RSV season differs between different regions of the country. RSV Census Regional Trends are tracked by the CDC.

In severe cases of RSV requiring hospitalization, specific testing to detect the virus is useful, so the patient can be properly isolated and the infection does not spread to others.
There are currently several testing methods that can give reliable results within a few hours. The testing is done on a small amount of secretions from the nose.

People who develop severe infection require additional tests to make sure that there are no other complications. These tests include:

- Chest X-ray to make sure that there are no signs of pneumonia that will require treatment with antibiotics
- Blood tests to check for signs of a bacterial infection and to make sure infants are properly hydrated
- Blood and urine cultures may be necessary when infants are very sick (in very young infants, RSV-related bronchiolitis can occur with a urinary tract infection)
- Tests to make sure that there is enough oxygen getting into the blood

**How RSV Is Treated**

Mild RSV infections require no specific treatment other than over-the-counter medications to help with symptoms and controlling fever with acetaminophen. Clearing the mucus from the nose with a bulb syringe may temporarily improve breathing in infants. It is often done just before feedings so infants can drink more easily.

Various treatments may be used in more severe illness. None of them treats the infection itself, but rather treats the symptoms and prevents complications. These may include:

- Hydration: Infants, especially very young ones, can become dehydrated very easily. At home, breast or bottle-feeding should continue but may need to be given in frequent, small amounts. If an infant is unable to drink, the child may need to go to the hospital for an IV (intravenous hydration) or feeding tube. Hydration may be recommended in adults as well.

- Oxygen: Hypoxemia (decreased oxygen levels) is one of the typical symptoms of RSV-related bronchiolitis. Oxygen given through small prongs through nostrils not only provides the necessary oxygen but also decreases the work that the patient has to do to breathe and prevents tiring of the respiratory muscles.

**Managing and Preventing RSV**

**Managing RSV**

RSV is an infection from which otherwise healthy patients are expected to fully recover. However, it can be severe, life-threatening, or even fatal among the sickest patients.

**What to Expect**

It takes between 2 and 8 days from the time of exposure to the time the person gets sick. Then the illness lasts about 3 to 7 days. The recovery time varies, depending on the severity of the illness and the overall health of the patient.

People are contagious for about 3 to 8 days. However, some people (such as those with weakened immune systems) may be contagious for several weeks.

**Long-term Effects**

RSV infection during the first 6 months (and especially the first 3 months) of life may lead to wheezing and asthma later in life. The exact reason why is not known, but there may be a genetic predisposition for it.

**Preventing RSV**

RSV is highly contagious. It is extremely important to prevent its spread to others. The most effective means of protection are some of the simplest, such as:

- Avoiding close contact (eg, kissing) with infected people;
- Avoiding sharing cups, bottles, or toys that may have been contaminated with the virus (it can live on surfaces for several hours); and
Thorough handwashing with soap and water for 20 seconds after coming into contact with an infected person.

High-risk patients can receive monthly injections with the drug palivizumab that prevents the development of severe RSV disease, but it has no effect after the disease has started.

Finding Support
The Lung Association recommends patients and caregivers join our Living with Lung Disease Support Community to connect with others facing this disease. You can also call the Lung Association’s Lung Helpline at 1-800-LUNGUSA to talk to a trained respiratory professional who can help answer your questions and connect you with additional support.

Learn more about RSV at:
- National Center for Immunization and Respiratory Diseases (NCIRD)
- KidsHealth.org

Questions to Ask Your Doctor About RSV
Making notes before your visit, as well as taking along a trusted family member or friend, can help you through the first appointment with your doctor.

- Am I/Is my baby at risk for severe RSV infection?
- Am I/Is my baby a candidate for palivizumab?
- When is the RSV season in our area?
- Do I/Does my baby need to take any medication?
- Am I/Is my baby contagious?
- Am I/Is my baby allowed to drink while they are sick?
- Can my other children get sick too?
- Should I allow my parents to hold or kiss the baby?
- My baby was diagnosed with RSV. Can we still go to family events?
- My baby has RSV but he is not very sick. Is it OK to take him to see sick relatives?
- My baby had RSV-related bronchiolitis when she was 6 months old. Is she going to have asthma as she grows older?