

Upper Respiratory Infection (URI)

What is an upper respiratory infection?

An upper respiratory tract infection is an infectious process that includes the sinuses, nasal passages, pharynx, and larynx. Although upper respiratory infections can happen at any time, they are most common in the fall and winter months, from September until March.

Is an upper respiratory infection contagious?

Majority of upper respiratory infections are due to self-limited viral infections of the upper respiratory tract. Occasionally, bacterial infections may cause upper respiratory infections. Most often, upper respiratory infection is contagious and can spread from person to person by inhaling respiratory droplets from coughing or sneezing. The transmission can also occur by touching the nose or mouth by hand or other object exposed to the virus.

What are the causes of upper respiratory infection?

Upper respiratory infection is generally caused by the direct invasion of the inner lining (mucosa or mucus membrane) of the upper airway by the culprit virus or bacteria.

What are the symptoms of upper respiratory infection?

Nasal congestion, runny nose (rhinorrhea), nasal discharge (may change from clear to white to green), nasal breathing, sneezing, sore or scratchy throat, painful swallowing (odynophagia), cough (from

laryngeal swelling and post nasal drip), malaise, and fever (more common in children).

What is the treatment for upper respiratory infection?

As described above, most cases of upper respiratory infection are caused by viruses and therefore, require no specific treatment and are self-limited. People with upper respiratory infections typically diagnose themselves and treat their symptoms at home without requiring doctor's visit or prescription medications.

Rest is an important step in treating upper respiratory infections. Usual activities, such as, working and light exercising may be continued as much as tolerated.

Increased intake of oral fluids are also generally advised to keep up with the fluid loss from runny nose, fevers, and poor appetite associated with upper respiratory infections.

Treatment of the symptoms of upper respiratory infection are usually continued until the infection has resolved.

Some of the most common upper respiratory infection or cold medications used to treat these symptoms are the following:

Acetaminophen (Tylenol) can be used to reduce fever and body aches.

Nonsteroidal antiinflammatory drugs such as ibuprofen (Motrin, Advil) can be used for body aches and fever.

Antihistamines such as [diphenhydramine](#) (Benadryl) are helpful in decreasing nasal secretions and congestions.

Nasal ipratropium (topical) can be used to diminish nasal secretions.

Cough medications (antitussives) can be used to reduce cough. Many cough medications are commercially available such as dextromethorphan, [guaifenesin](#), robitussin and codiene have shown benefits in reducing cough in upper respiratory infections.

Honey can be used in reducing cough (Infants 12 months and older) Only due to botulism risk in younger infants.

Steroids such as (dexamethasone (Decadron)and [prednisone](#) orally (and nasally) are sometimes used reduce inflammation of the airway passage and decrease swelling and congestion.

Decongestants such as pseudophedrine (Sudafed) Actifed oral, phenylephrine (Neo-synephrine nasal) can be used to reduce nasal congestion (generally not recommended in children less than 2 years of age and not recommended for individuals with high blood pressure.

Oxymetazoline (Afrin) nasal solution is a decongestant, but should only be used for short-term.

Combination medications containing many of these components are also widely available over the counter.

Some cough and cold medicines can cause excessive drowsiness need to be used with caution in children younger than 4 years of age and the elderly.

Antibiotics are sometimes used to treat upper respiratory infections if a bacterial infection is suspected or diagnosed. These conditions may include strep throat, bacterial sinusitis, or epiglottitis. Antivirals may occasionally be recommended by doctors in patients who are immunocompromised (poor immune system). The treating doctor can determine which antibiotic would be the best option for a particular infection.

Because antibiotics are associated with many side effects and can promote bacterial resistance and secondary infections, they need to be used very cautiously and only under the direction of a treating physician.

What are some of the home remedies for upper respiratory infection?

There are several methods that can simply be applied at home for relief of symptoms of upper respiratory infection.

Moist warm air can help soothe the oral and nasal passages that become more irritated with dry air. This can make breathing easier and nasal secretions looser and easier to discharge. Some simple ways to do this are:

- making steam in shower by turning on the hot water (without going under it) and breathing the steamed air;

- drinking warm beverages (hot tea, hot chocolate, warm milk);

- using a vaporizer to create humidity in the room; and

- avoid cold, dry air if possible.

Nasal saline (salt water) can help with symptoms of nasal congestion.

There are over the counter saline spray solutions available that can be used for this purpose. Simpler and more cost effective home made salt water solution may also be considered. A fourth of a teaspoon of salt can be added to 8 oz cup of room temperature water and stirred to dissolve. Using a bulb syringe or a small spray bottle, the solution may be applied in one nostril at time with slow inhalation and expelled with exhalation several times a day as needed.

Applying a warm pack (a warm well towel or wash cloth) to the face may also be used to treat symptoms of nasal congestion. This can be repeated every few hours as needed to relieve to the symptoms.

Salt water gurgles and lozenges may reduce throat irritation and dryness and can alleviate the symptoms of throat symptoms.

Cough can be suppressed by limiting exposure to irritants, such as, cold weather, cigarette smoke, dust, and pollution. Sleeping in a semi-upright position may be helpful at time to reduce cough. A study has suggested that honey may be superior to dextromethorphan in reducing cough in children with upper respiratory infection. (Honey should not be given to infant less than 12 months.)

Adequate hydration with water, juices, and non-caffeinated drinks can thin nasal secretions and replace the fluid losses.

What are some data on alternative therapies in treating upper respiratory infections?

Many alternative and cultural remedies are used in treating upper respiratory infections.

Herbal teas including elm bark and [licorice root](#) are thought to relieve sore throat and some studies have suggested benefits compared to placebo. Long-term use of these remedies has not been evaluated; however, prolonged use of licorice may cause elevation of blood pressure.

As noted above, honey (infants 12 months and older only) has been shown to be beneficial in suppressing cough in children with upper respiratory infection and its use in hot water or tea with lemon juice is not uncommon. Ingestion of honey in infants, however, is not recommended as they are not able to properly digest the spores in honey which can result in infections.

[Echinacea](#) is another herbal remedy commonly used in treating upper respiratory infection. Research data failed to prove any significant benefit in altering the duration and severity of upper respiratory infection symptoms when Echinacea was used in children between 2-11 years of age as compared to placebo.

[Oral zinc supplementation](#) has been used in recent years to shorten the duration and reduce the severity of symptoms of upper respiratory infection and common cold. This therapy has been studied in children with upper respiratory infection and the results are mixed. The FDA has not approved the use of oral zinc to treat the common cold or upper respiratory infections. There are reports of nausea and unpleasant taste caused by oral zinc.

Topical nasal zinc products (Zicam nasal gel) has been also used to attenuate the symptoms of upper respiratory infection. Some studies suggest loss of the sense of smell (anosmia) associated with the use of this over the counter product. Therefore, the FDA recommended

discontinuation of the use of intranasal zinc products in 2009.

The use of oral vitamin C is thought to shorten the duration of upper respiratory infection symptoms, but research data are inconclusive regarding the benefits of vitamin C.

What are the complications of an upper respiratory infection?

Some of the common complications of upper respiratory infections are the following:

respiratory compromise from epiglottitis;

secondary infection by bacteria (viral infection can cause impairment of the physical barrier in the respiratory airways making it easier for bacteria to invade) resulting in bacterial sinusitis, bronchitis, pneumonia;

formation of abscesses in the tonsils;

[rheumatic fever](#) from strep throat;

spread of infection from sinuses to the brain ([meningitis](#));

involvement of the ears resulting in middle ear infections ([otitis media](#));

worsening of underlying chronic lung disease (asthma, COPD);

spread of infection to the heart ([pericarditis](#), [myocarditis](#));

spread of the infection to the brain or the fluid around the brain causing [encephalitis](#) or meningitis; and

muscular pain and rib fractures from forceful coughing.

Can an upper respiratory infection be prevented?

There are several measures that can reduce the risk of infections in general. Smoking cessation, [reducing stress](#), adequate and balanced diet, and [regular exercise](#) are all measures that can improve the immune system and reduce the overall risk of infections.

[Breastfeeding](#) also helps strengthen the immune system of infants by transferring the protective antibodies from the mother's milk to the baby.

Other preventive measures to diminish the risk of spread of upper respiratory infections are:

hand washing is especially encouraged during the cold seasons (fall and winter) or handling others with the infection;

reducing contact with people who may have the infection (people may carry and spread the virus a few days before they have symptoms and a few days after their symptoms have resolved);

proper cleaning of common objects (fomites) that are touched by individuals who may be infectious such as, telephones, refrigerator door, computers, stair railings, door handles, etc.;

covering mouth and nose when coughing or sneezing; and

vaccination with [flu vaccine](#) as recommended for certain people (elderly, people with chronic medical conditions, health care workers, etc.).

What is the outlook for a patient suffering from an upper respiratory infection?

In general, the outcome of upper respiratory infection is good. The majority of these cases are due to viral infections which are self-limited. Bacterial infections, people with weak immune systems, and those with complications of upper respiratory infections (listed above) may have less favorable prognosis.

Upper Respiratory Infection At A Glance

Upper respiratory infections are one of the most common reasons of doctor visits.

Upper respiratory infections are the most common illness resulting in missed work or school.

Upper respiratory infections can happen at any time, but are most common in the fall and winter.

Vast majority of upper respiratory infections are caused by viruses and are self limited.

Antibiotics are rarely needed to treat upper respiratory infections and generally should be avoided, unless the doctor suspects a bacterial infection.

Simple techniques, such as, proper hand washing and covering

face while coughing or sneezing, may reduce the spread of upper respiratory infections.

General outlook for upper respiratory infections is favorable, although, sometimes complication can occur.

**Modified from material provided by familydoctor.org