

UNIVERSITY STUDENT HEALTH SERVICES • Fact Sheet

MONONUCLEOSIS (MONO)**WHAT IS IT?**

Mononucleosis (also known as “mono”) is a common infection caused by the Epstein-Barr virus (EBV). EBV infects and reproduces in the salivary glands. The classic symptoms of mono are fever, sore throat, swollen lymph nodes, and extreme fatigue. Mono can occur any time of the year but is more common in the fall and early spring.

HOW COMMON IS IT?

Mono can affect any person at any age. However, most documented cases occur in people between the ages of 15 and 30. It is estimated that 90% of adults ages 40 and over have been infected with EBV. Many cases are so mild that people are not aware that they have been infected, especially if infection occurred during childhood.

HOW IS IT TRANSMITTED?

Mono is transmitted through direct contact with infected saliva, usually through activities involving intimate person-to-person contact, such as kissing. Sharing contaminated food and drinks, eating utensils, and cups may also spread the virus, which probably survives on an object at least as long as the object remains moist. An infected person who never develops symptoms can still pass the virus on to others.

Contrary to popular belief, mono is not a particularly contagious disease. If there is no direct contact with infected saliva, the risk of infection is very small. Therefore, a person infected with mono does not generally need to be isolated. Studies also show that household members or roommates of infected individuals do not appear to be at higher risk for developing mono.

FOR HOW LONG IS IT CONTAGIOUS?

It is not certain how long the infectious period lasts. A person is infectious several days before symptoms begin and for at least a number of weeks afterwards. Studies show that the virus can be shed in the saliva for an average of 6 months after symptoms develop. However, in a minority of patients, EBV has been isolated in the saliva years later. This explains why only a small number of people diagnosed with mono remember being exposed to someone with mono.

WHAT ARE THE SYMPTOMS?

The time from mono exposure to symptom onset ranges from 4 to 6 weeks. The severity of symptoms can vary and is sometimes so mild that the person is not aware of the infection. Children and older adults often do not develop the classic symptoms described below. Most symptoms will resolve in 1 to 2 weeks; however, some symptoms (such as fatigue) can last several months.

- ❖ **Classic symptoms of mono** include fever, sore throat, and swollen lymph nodes. These are often preceded by a gradual onset of flu-like symptoms, such as fatigue, headache, loss of appetite, and puffy eyelids.
 - Fever usually lasts for a few days and sometimes continues on and off for a few weeks. Night sweats may also occur.
 - Sore throat is present in 85% of patients. White or grey-green patches on the tonsils are often visible.
 - Swollen lymph nodes, typically on both sides of the neck, occur in almost all patients. Tender enlarged nodes can also be found under the arm and in the groin. The swelling may take 2-3 weeks to resolve.
 - Fatigue can last for many weeks, especially in young female college students. About 10% of infected individuals experience persistent fatigue 6 months after symptom onset.
- ❖ **Less common symptoms** include:
 - A generalized rash, usually on the trunk. The rash is more likely to develop in someone taking amoxicillin during a mono infection. This is not considered to be a drug allergy and does not increase the risk of developing an allergy to amoxicillin.
 - Enlargement of the spleen (an abdominal organ located under the left rib cage), which occurs in about 50% of patients. Patients may report pain in the left upper abdomen and/or left shoulder.
 - Inflammation of the liver (located under the right rib cage), which may be accompanied by jaundice (yellowing of the eyes or skin).

HOW IS IT DIAGNOSED?

Symptoms and exam findings play important roles in the diagnosis of mono. Blood tests are commonly used to confirm the diagnosis:

- A monospot test can be performed in the clinic to detect antibodies to EBV in the blood. The results are available within a few minutes. Because it takes time for the body to develop antibodies against infections, this test may be falsely negative during the first week of illness.
- A different blood test measuring specific antibodies against EBV may be ordered if the monospot test is negative but a mono infection is still suspected. This test takes several days to come back.
- A blood count may show an increase in lymphocytes, a type of white blood cell that fights infection.
- An elevation in liver function tests occurs in most infected patients but is usually self-limited.

HOW IS IT TREATED?

More than 90% of mono cases are uncomplicated and self-limited, for which no specific therapy is necessary.

- Most symptoms will improve within a few weeks, but it may take some individuals 2-3 months to feel completely normal again. Fatigue can often linger.
 - Because mono is caused by a virus, antibiotics will not help unless a bacterial infection, such as strep throat, is also present.
 - Antiviral medications have not been shown to be effective in the treatment of mono symptoms.
- ❖ **Rest, hydration, and a well-balanced diet** are important components of treatment.
- The more rest you get, the faster you should recover. Returning to your usual activities too early can lead to a relapse of symptoms. However, complete bed rest is usually not necessary.
 - You may attend classes once you feel well enough to do so.
- ❖ **Pain control**
- Acetaminophen (Tylenol) or ibuprofen (Advil or Motrin) can be used for fever, headache, and muscle pains. Take ibuprofen with food to avoid an upset stomach. Avoid acetaminophen if your liver tests are elevated.
 - Salt-water gargles (1/2 tsp of salt in 8 oz of warm water every 3-4 hours) or throat lozenges may be helpful.
 - Oral corticosteroid medications, such as prednisone, are reserved for severely swollen tonsils that make swallowing or breathing difficult. Prednisone should be taken with food to avoid an upset stomach and early in the day to avoid insomnia.

WHAT ARE POSSIBLE COMPLICATIONS?

Mono can cause inflammation of the spleen and/or liver, which is usually self-limited:

- ❖ **Rupture of an enlarged spleen** is a rare but potentially life-threatening complication which causes severe abdominal pain. The risk of rupture is highest during the first 3 weeks of symptoms and typically occurs around day 14. In over half of cases, splenic rupture occurs spontaneously.
- Therefore, it is important to avoid lifting, straining, contact sports, and vigorous physical activity for at least 4 weeks after symptoms begin.
 - Training for non-contact sports may be gradually introduced 3 weeks after symptom onset.
 - Athletes should follow-up with a medical provider prior to resuming full sports participation.
- ❖ **Inflammation of the liver** may also occur, usually without obvious symptoms.
- If your liver tests are elevated, you will be asked to avoid acetaminophen (Tylenol) and to return to clinic for repeat liver tests.
 - It is also important to avoid drinking alcohol while you are recovering from mono.

CAN I GET MONO AGAIN?

Although EBV remains in the body indefinitely following infection, the disease rarely recurs in people with normal immune systems. If you have had mono before and think you are experiencing symptoms again, seek further medical evaluation. Many other conditions can mimic the symptoms of mono.

CONTACT YOUR HEALTHCARE PROVIDER IF YOU HAVE ANY OF THE FOLLOWING:

- Difficulty swallowing.
- Difficulty breathing, especially when lying down.
- Severe abdominal pain.
- Prolonged fever.
- Yellow coloring of the skin and/or eyes.

RECOMMENDED WEBSITES: www.cdc.gov, www.familydoctor.org, www.mayoclinic.org