

Middle East Respiratory Syndrome (MERS)



What is MERS?

Middle East respiratory syndrome (MERS) is a viral infection that affects your respiratory system. It was first reported in 2012 and has been mostly found in countries in the Middle East, such as Saudi Arabia, Jordan, and Yemen. Some cases have also been found in Europe, and in people who have traveled to the Middle East. Only a few cases have been reported in the U.S.

In addition to infecting people, the virus has also been found in camels.

What causes MERS?

MERS is caused by a common type of virus called coronavirus. These viruses cause mild to moderate respiratory illness. But, in some cases, the symptoms are severe and can lead to death. The coronavirus (MERS-CoV) that causes MERS is related to the one that causes COVID-19.

Who is at risk for MERS?

If you've been to a place where people have been sick with MERS, you may be at risk for infection. You are at risk if you:

- Recently traveled in or near the Arabian Peninsula
- Had contact with a sick person who recently traveled to the Arabian Peninsula
- Had contact with camels, or their milk, urine, or meat
- Had contact with a person who was diagnosed with MERS
- Had contact with a healthcare worker who has been in contact with people with MERS

What are the symptoms of MERS?

In some cases, MERS may not cause symptoms. But, in most cases, symptoms of MERS can start within 1 to 2 weeks after being infected by the virus. They often start about 5 days after being exposed to the virus.

These are common symptoms:

- Fever
- Chills
- Coughing
- Shortness of breath
- Sore throat
- Runny nose
- Trouble breathing
- Muscle aches

Less common symptoms include:

- Bloody coughing

- Nausea and vomiting
- Diarrhea

How is MERS diagnosed?

The healthcare providers will ask about your health history. They will also ask about when you were exposed to MERS. They may ask about your recent travel and contact with sick people. They may also ask about recent contact with camels.

You will have tests to check for the cause of your symptoms. The symptoms of MERS can also be caused by other illnesses. You may have tests, such as:

- **Chest X-ray.** X-rays use a small amount of radiation to make images of the inside of your body. A chest X-ray is done to check for problems in your lungs.
- **Blood tests.** Blood is taken from a vein in your arm or hand. This is done to check for certain chemicals that can show if you have the MERS virus or other illness.
- **Nasal or throat swab.** A stick with a small piece of cotton at the tip is wiped inside your nose or throat. This is done to check for viruses in your nasal mucus.
- **Stool culture.** A small sample of stool is collected from your rectum or from a bowel movement. The sample is checked for the virus.
- **Sputum culture.** A small sample of mucus coughed from your lungs is collected. It is checked for the virus.

How is MERS treated?

Currently there is no cure for MERS. In some severe cases, the healthcare provider may use experimental therapies such as convalescent plasma. This is an antibody treatment from the blood of people who have recovered from the illness. Or the provider may use monoclonal antibodies as a treatment. More usual is treatment to help support your body while it fights the disease. This is known as supportive care. Supportive care may include:

- **Pain medicines.** These include acetaminophen and ibuprofen. They are used to help ease pain and reduce fever.
- **Bed rest.** This helps your body fight the illness.

Care during severe illness may include:

- **IV (intravenous) fluids.** These are given through a vein to help keep your body hydrated.
- **Oxygen.** Supplemental oxygen or assisted ventilation may be given. This is done to keep enough oxygen in your body.
- **Vasopressor medicine.** These help to raise blood pressure that is too low from shock.

What are the possible complications of MERS?

In some cases, MERS can cause severe problems. These are more of a risk for older adults. They are also a risk for people who have a weak immune system or a long-term (chronic) illness, such as diabetes, cancer, or lung disease. The problems can include:

- Lung infection (pneumonia)
- Breathing (respiratory) failure and need for a breathing machine (ventilator)
- Failure of the kidneys and other organs
- Widespread infection and low blood pressure (septic shock)

These severe complications are more likely to lead to death from MERS.

Can MERS be prevented?

MERS is transmitted from infected camels, camel products, or people. There is currently no vaccine for MERS. Prevention is done by not having contact with the virus, and taking special care around the virus. If you are in an area with MERS:

- Wash your hands often. Or use an alcohol-based hand sanitizer often.
- Only touch your eyes, nose, or mouth with clean hands.
- Wash your hands after touching animals. Stay away from sick animals.
- Don't have contact with camels.
- Don't drink raw (unpasteurized) camel milk or camel urine.
- Don't eat undercooked camel meat.
- Try to have less contact with people who are sick.
- Don't share eating or drinking tools with sick people.
- Don't kiss someone who is sick.
- Clean surfaces regularly with disinfectant.

The World Health Organization advises that some people should strongly consider their risk of developing a severe case of MERS before traveling to Umrah or Hajj. This includes:

- Adults age 65 years or older
- Children age 12 or younger

You should also consider staying away from that area if you:

- Are pregnant
- Have a long-term (chronic) health condition, such as heart disease, asthma, or diabetes
- Have an immune deficiency disorder
- Have cancer
- Have a terminal illness

When should I call my healthcare provider?

If you have had close contact with someone who has been diagnosed with MERS:

- Call your healthcare provider. They can talk with local health staff to see what action may be needed.
- Follow all instructions from your healthcare provider. This may include having blood tests.
- Take your temperature every morning and evening for at least 14 days. This is to check for fever.
- Keep watch for symptoms of MERS. Tell your healthcare provider if you have symptoms.

If you have a fever or other MERS symptoms:

- Don't panic. Keep in mind that other illnesses can cause similar symptoms.

- Stay away from work, school, and public places. This is to help prevent the virus from spreading.
- Call the nearest hospital emergency room. Explain that you have been exposed to MERS and have symptoms. Do this before going to the hospital. This will help the hospital staff get ready for your arrival.
- Keep in mind that hospital staff may wear protective equipment, such as masks, gowns, gloves, and eye protection. This is to prevent the possible virus from spreading.
- Tell the staff about recent travel, including local travel on public transport. Staff may need to find other people you have been in contact with.
- Follow all instructions the hospital staff gives you.

To learn more about MERS, visit the CDC [website](#).

Key points about Middle East Respiratory Syndrome (MERS)

- Middle East respiratory syndrome (MERS) is an illness that affects your respiratory system.
- It has been mostly found in countries in the Middle East. Some cases have also been found in Europe and the U.S.
- In addition to infecting people, the virus has also been found in camels. The virus causing MERS is related to the one that causes COVID-19.
- If you've been to a place where people have been sick with MERS, you may be at risk for infection.
- In some cases, MERS can cause severe problems. These include pneumonia, respiratory failure, failure of the kidneys and other organs, and septic shock.
- Currently there is no cure for MERS. But sometimes experimental treatments are offered. Treatment is mostly aimed at helping support your body while it fights the disease. This includes bed rest, pain medicines, oxygen, and IV fluids.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of a new diagnosis, and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed, and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your healthcare provider if you have questions, especially after office hours or on weekends and holidays.

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