CONDITION

Yellow fever

Yellow fever is a mosquito-borne viral infection that can cause fever, jaundice, bleeding, and organ failure.

WHAT IT IS
Acute mosquito-borne viral infection

BODY SYSTEM
Liver, kidneys, blood, and circulation

MAIN SYMPTOMS
Fever, headache, muscle pain, nausea

WHAT CAUSES IT
Infection with yellow fever virus

HOW IT IS DIAGNOSED
Blood PCR and antibody testing

MAIN TREATMENT
Supportive care for symptoms and organ function

CAN IT BE CURED?
No - no specific antiviral treatment exists

IS IT AN EMERGENCY?
Sometimes - with jaundice, bleeding, confusion, or shock

LONG-TERM OUTLOOK
Most mild cases recover; severe illness can be fatal

Overview

Yellow fever is an infection caused by the yellow fever virus. It spreads through the bites of infected mosquitoes. It does not normally spread directly from one person to another.

The condition occurs in tropical and subtropical parts of Africa and South America. It is not known to spread locally in Asia, although mosquitoes capable of carrying the virus live there. Your risk is affected by where you travel, the season, local outbreaks, mosquito exposure, and whether you have been vaccinated.

Many infected people have no symptoms. Others develop a sudden fever and flu-like illness. A minority become seriously unwell, sometimes after appearing to improve. Severe yellow fever can damage the liver, kidneys, blood vessels, and circulation.

The name comes from jaundice, which is a yellow colour in the skin or whites of the eyes caused by liver injury. Not everyone with yellow fever develops jaundice.

Vaccination and protection from mosquito bites can prevent most cases. Yellow fever still matters because severe illness can progress quickly, and there is no antiviral medicine that specifically cures the infection.

Symptoms

Symptoms usually begin about 3 to 6 days after the bite of an infected mosquito. Some people never feel unwell.

Early symptoms can include:

These symptoms can resemble malaria, dengue, influenza, viral hepatitis, and several other infections. Symptoms alone cannot confirm yellow fever.

Many people start to recover after several days. In more severe cases, fever and other symptoms return after a brief improvement. This is sometimes called the toxic phase.

Signs of severe yellow fever include jaundice, severe abdominal pain, repeated vomiting, bleeding, confusion, very little urine, low blood pressure, or collapse. Blood may appear in vomit or stool, and bleeding can occur from the nose, mouth, or injection sites.

Severe symptoms need emergency medical assessment. Do not wait for jaundice to become obvious if you are getting rapidly worse after travel in an area where yellow fever occurs.

- Sudden fever
- Severe headache
- Muscle pain, often affecting the back
- Chills
- Nausea or vomiting
- Tiredness and weakness
- Reduced appetite
- Sensitivity to light

Causes and risk factors

Yellow fever is caused by a flavivirus, a group of viruses that also includes dengue, Zika, and

West Nile viruses.

Mosquitoes become infected after feeding on a person or non-human primate carrying the virus. They can then pass the virus on through later bites. In forest areas, the infection may circulate between mosquitoes and monkeys. In towns and cities, mosquitoes can spread it between people.

Yellow fever is not spread by coughing, touching, sharing food, or being in the same room as someone who has it. However, mosquitoes may pick up the virus from an infected person during the first days of illness.

Risk is higher if you:

Anyone exposed to an infected mosquito can become infected. Severe illness can occur at any age. Older adults and people with certain health conditions may have a higher risk of complications, but serious illness is also possible in previously healthy people.

- Live in or travel to a part of Africa or South America with yellow fever transmission
- Are not vaccinated when vaccination is recommended
- Spend time outdoors or in forested areas
- Have limited access to mosquito protection
- Travel during an outbreak

Diagnosis

A clinician will ask about your symptoms, recent travel, mosquito exposure, and yellow fever vaccination history. The exact places and dates of travel are important because several tropical infections cause similar symptoms.

Yellow fever is confirmed with blood testing. During the first few days of illness, a polymerase chain reaction, or PCR, test may detect the virus's genetic material. Later, blood tests can look for antibodies made by the immune system in response to the virus.

Antibody results can be difficult to interpret. Vaccination or a previous infection with a related virus may produce a positive result. A specialised confirmation test may therefore be needed.

Other blood tests help assess how the condition is affecting you. These may check blood cell counts, liver and kidney function, blood clotting, and blood sugar. They show how severe the illness is but do not confirm yellow fever by themselves.

Testing for malaria, dengue, viral hepatitis, leptospirosis, and other infections may also be necessary. Some of these conditions need different treatment and can occur in the same

regions.

Because yellow fever is a public health concern, testing may be arranged through a specialist or public health laboratory. Suspected cases are generally reported to public health authorities so that possible transmission can be investigated.

Treatment and management

There is no specific antiviral treatment proven to cure yellow fever. Care focuses on supporting the body while the immune system clears the infection.

People with suspected yellow fever may need hospital assessment and monitoring. Treatment can include fluids, oxygen, support for blood pressure, and management of nausea, fever, or low blood sugar. Blood products may be needed if serious bleeding or clotting problems occur.

Severe liver or kidney injury may require intensive care. Dialysis, which filters waste and extra fluid from the blood, may be used if the kidneys stop working adequately. Breathing or circulation support may also be needed.

Aspirin and non-steroidal anti-inflammatory medicines, such as ibuprofen, can increase bleeding risk and are generally avoided when yellow fever or another bleeding-related viral infection is possible. A clinician or pharmacist can advise which fever or pain medicine is appropriate.

Antibiotics like amoxicillin or doxycycline do not treat yellow fever because antibiotics work against bacteria, not viruses. They may be used only if there is also a suspected bacterial infection.

Rest and fluids may be enough for a mild illness, but medical advice is still important after possible exposure. A person who seems to be improving can occasionally become more unwell over a short period.

Complications

Most symptomatic people recover without severe organ damage. When yellow fever becomes severe, complications may include:

Severe yellow fever can be fatal. The risk is concentrated among people who enter the toxic phase rather than those with a mild initial illness.

People who recover may remain weak or tired for several weeks. Follow-up blood tests may be needed after liver or kidney injury. Persistent jaundice, reduced urination, swelling, unusual

bleeding, or worsening fatigue should be reviewed rather than assumed to be part of recovery.

- Liver failure and jaundice
- Kidney failure
- Internal or external bleeding
- Abnormal blood clotting
- Inflammation affecting the brain
- Confusion, seizures, or coma
- Low blood pressure and shock
- Failure of several organs

Prevention

Yellow fever can often be prevented through vaccination and mosquito-bite protection.

The yellow fever vaccine is a live vaccine, meaning it contains a weakened form of the virus. One dose provides long-lasting protection for most people. Some travellers may need further assessment based on their destination, previous vaccination, health, age, or national entry rules.

Because it is a live vaccine, it is not suitable for everyone. Young infants, people with certain immune system problems, and people with particular vaccine allergies may be unable to receive it. Pregnancy, breastfeeding, older age, and some medical conditions require an individual risk assessment.

Yellow fever vaccination is usually provided at an authorised vaccination centre. Some countries require an International Certificate of Vaccination or Prophylaxis as proof of vaccination. Entry rules are not always the same as medical recommendations, so check official advice for every country on your itinerary well before travel.

Even after vaccination, reduce mosquito bites by:

Mosquitoes that spread yellow fever often bite during the day, so protection is needed outside nighttime hours.

- Using an effective insect repellent as directed
- Wearing long sleeves, long trousers, and socks
- Staying in screened or air-conditioned rooms when possible

- Using a mosquito net where rooms are not adequately screened
- Treating clothing or equipment with an appropriate insecticide product

Living with it and what to expect

Yellow fever is an acute infection, not a long-term condition. The main illness develops over days rather than months or years.

Many people have no symptoms or recover after a short feverish illness. Tiredness and reduced stamina may continue for several weeks. Return to work, exercise, or travel may need to be gradual, especially after hospital treatment.

Severe yellow fever follows a less predictable course. Liver, kidney, bleeding, and circulation problems can develop quickly. Survivors usually clear the virus and may gain long-lasting immunity, but recovery from organ injury can take longer.

After a severe infection, follow-up may include blood tests and checks of kidney function, liver function, blood pressure, nutrition, and physical strength. Some people need rehabilitation after a long hospital or intensive care stay.

Yellow fever does not usually become chronic or remain dormant and return later. Ongoing symptoms after recovery should be assessed for organ damage, effects of critical illness, or another cause.

When to get medical help

Seek prompt medical advice if you develop fever, severe headache, muscle pain, nausea, or vomiting during travel in a yellow fever risk area or soon after returning. Tell the healthcare service exactly where you travelled, when you returned, and whether you were vaccinated.

Do not rely on vaccination history to rule out every possibility. Vaccination is highly effective, but no vaccine prevents every case, and another travel-related infection may be causing the symptoms.

Get emergency medical help for:

Routine follow-up is appropriate after recovery if you were advised to repeat liver or kidney tests, or if tiredness is slowly improving without new warning signs. Seek earlier review if symptoms worsen, jaundice persists, or your urine output falls.

- Yellow skin or yellowing of the eyes

- Vomiting blood or passing black or bloody stool
- Bleeding that is difficult to stop
- Confusion, unusual drowsiness, seizures, or collapse
- Severe abdominal pain or repeated vomiting
- Very little urine
- Trouble breathing
- Cold, clammy skin, fainting, or other signs of shock

Common questions

Is yellow fever contagious from person to person?

Not through ordinary contact. You cannot usually catch it by touching, kissing, coughing, or sharing food. The virus is mainly passed when a mosquito bites an infected person or primate and later bites someone else.

Can I still get yellow fever after vaccination?

Vaccination gives strong, long-lasting protection for most people, but no vaccine is completely effective. Seek medical advice for a fever after possible exposure, even if you were vaccinated, because yellow fever and other serious infections can cause similar symptoms.

How long does yellow fever last?

A mild illness often improves within several days, although weakness may last longer. Severe illness can worsen after a short period of improvement and may require hospital or intensive care treatment.

Why does yellow fever turn the skin yellow?

The virus can injure the liver. A damaged liver may not process bilirubin, a yellow waste substance, normally. Bilirubin then builds up in the blood and causes jaundice.

Do I need a yellow fever vaccine to travel?

That depends on your destination, route, health, and the entry rules of each country. Some countries require proof of vaccination, while others recommend it because of local infection risk. Check official travel advice and arrange a travel health assessment early.

Can you get yellow fever twice?

Recovery is thought to provide long-lasting immunity, so a second infection is unlikely. If similar symptoms occur later, another infection or medical condition may be responsible and

should be assessed.

Sources

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- World Health Organization. Vaccines and vaccination against yellow fever: WHO position paper, June 2013