

## **Marburg virus disease**

Marburg virus disease manifests as a febrile illness, often accompanied by haemorrhage and involvement of various organ systems. It occurs in Africa. This disease is not present in Europe, but it can be introduced into the European area by travellers who become infected while travelling or staying in African countries and become ill after arriving in Europe. The last imported case in Europe was in 2008, after which no new confirmed cases have been reported in the EU/EEA.

### **The cause**

Marburg virus disease is caused by Marburg virus of the Filovirus family.

### **Reservoir**

The main reservoir of the disease is the Egyptian bat (*Rousettus aegyptii*). The virus is found in bat saliva, urine and faeces. During the first Marburg virus disease outbreak, African green monkeys (*Cercopithecus aethiops*) were the source of infection.

### **Transmission**

The disease is transmitted to humans by infected Egyptian bats.

The disease can also be transmitted between people through close contact with an infected person, through infected blood, seminal fluid, other body fluids and secretions, and through contact with infected objects such as clothing, bedding, needles and other equipment.

### **Susceptibility to infection**

People of all ages are susceptible to infection. The duration of immunity after recovering from the disease is unknown.

The highest risk of infection is among people who are in contact with Egyptian bats or their secretions; people who care for Marburg virus-infected individuals without using appropriate protective equipment; and people who are in contact with infected primates.

### **Incubation period**

The time from infection to disease onset (incubation period) is 2–21 days.

### **Symptoms and signs**

The illness starts suddenly with fever, severe headache and malaise. Muscle pain is also common. On the third day of illness, severe watery diarrhoea, abdominal pain and cramps, nausea and vomiting may occur.

In the European Marburg virus disease outbreak of 1967, a rash was observed in most patients between 2 and 7 days after the onset of symptoms.

Patients with severe illness have subcutaneous bleeding and bleeding from body orifices (nosebleeds, bleeding gums, bloody stools, bloody urine, vomiting bloody contents) or bleeding into internal organs. Involvement of the central nervous system can cause confusion, irritability and aggression.

In the late phase of the disease, 15 days after the onset of symptoms, orchitis (inflammation of one or both testicles) is occasionally reported.

Severely ill persons may show signs of shock, kidney and liver failure and nervous system dysfunction. Death most often occurs between days 8 and 9 after the onset of symptoms.

### **Mortality rate**

Marburg virus disease has a very high mortality rate (25%–88%). The average mortality rate is around 50%.

### **Diagnosis**

The diagnosis is confirmed by a laboratory blood test, which proves the presence of the virus or antibodies.

In Slovenia, the diagnostic activity is carried out at the Institute of Microbiology and Immunology. More information is available at their [website](#).

### **Differential diagnosis**

Some other diseases, such as malaria, typhoid fever, shigellosis, meningitis and other viral haemorrhagic fevers, have a similar clinical picture.

### **Infectiousness**

A person is infectious at the onset of symptoms, as long as viruses are present in the blood and body fluids and secretions. Marburg virus is present in seminal fluid for up to seven weeks after the disease is over. Post-mortem remains are also infectious.

### **Treatment**

Treatment is supportive (supporting functioning of vital organ systems) and symptomatic (relieving symptoms).

### **Infection prevention**

There is currently no safe and effective vaccine against Marburg virus disease. Infection prevention therefore relies on measures to reduce the chances of disease transmission.

Protective measures are aimed at avoiding contact with infected animals. Measures include rodent extermination and measures to prevent rodents from entering homes and workplaces and to safely dispose of their nests and droppings. It is also important to maintain cleanliness and to dispose of food waste in special bins or containers that are inaccessible to rodents.

To prevent human-to-human transmission, it is advisable to avoid close contact with sick and infected people. Special care should be taken when caring for the sick, including contact isolation, use of gloves, protective clothing, masks and goggles, and proper hygiene.

We advise:

- Avoid contact with the blood and body fluids of infected people;
- Avoid contact with seminal fluid from a person who has had the disease for a period of seven weeks after the disease has been treated;
- Do not touch objects that could come into contact with the body fluids of an infected person;
- Avoid contact with Egyptian bats and primates in areas where the disease is present.

**More on the disease:**

WHO: <https://www.who.int/news-room/fact-sheets/detail/marburg-virus-disease>

ECDC: <https://www.ecdc.europa.eu/en/infectious-disease-topics/ebola-virus-disease/facts/factsheet-about-marburg-virus-disease>

CDC: [https://www.cdc.gov/marburg/about/index.html#cdc\\_disease\\_basics\\_testing\\_screening-diagnosis](https://www.cdc.gov/marburg/about/index.html#cdc_disease_basics_testing_screening-diagnosis)