

Rabies

Rabies is a disease of the nervous system caused by the rabies virus. Rabies infects domestic and wild mammals, and is spread to people through close contact with infected saliva (usually from bites or scratches, but potentially from licks to the eyes or mouth). Rabies in humans is almost always fatal once symptoms develop. The World Health Organization estimates that about 60 000 people die from rabies each year.

Rabies virus is not found in animals in Australia or New Zealand, but there is the potential for the virus to be introduced into Australia from neighbouring countries through the illegal importation of unvaccinated animals. A close relative of the classical rabies virus, Australian bat lyssavirus, can be found in bats in Australia.

Signs and Symptoms:

After being exposed to the saliva of an infected animal, the first symptoms of rabies usually appear in 3 - 8 weeks, but can appear anywhere from within a few days to a few years after exposure. The actual time from exposure until a person gets sick can depend on many factors such as the amount of virus introduced into the body, the size of the wound, or how close the wound is to the brain.

The first symptoms of rabies include loss of appetite, cough, fever, headache, muscle aches, nausea, sore throat, vomiting and fatigue. Many people have pain and tingling (sometimes itching) or numbness at the wound site. They may complain of feeling anxious. Difficulty swallowing and a fear of water, air and/or bright light may follow. Some people with rabies then become delirious and start fitting. Others become paralysed. Coma and death usually occur within 1-2 weeks.

Treatment:

Rabies vaccine that is given after exposure to the virus, but before a person becomes unwell, will prevent the disease. However once a person develops symptoms, there is no specific treatment available for rabies. In all potential exposures to rabies (bites, scratches, mucous membrane exposures), seek medical advice immediately, even if you have been vaccinated.

Proper cleaning of the wound reduces the risk of infection. If bitten or scratched, immediately wash the wound thoroughly with soap and water for at least five minutes. If available, an antiseptic with anti-virus action such as povidone-iodine, or alcohol (ethanol) should be applied after washing. If animal saliva contacts the eyes, nose or mouth, flush the area thoroughly with water.

Seek medical advice about the need for rabies vaccination as soon as possible, preferably on the same day or early in the day after the exposure.

A tetanus injection may also be necessary.

Transmission:

People are most often infected with rabies by the bite or scratch of an infected animal. The virus in the animal's saliva enters the person's body through the broken skin. Virus present in animal saliva could also enter the person's body through mucous membranes (the eyes, inside of the nose, or mouth) if an infected animal licks these areas.

The rabies virus is currently found in mammals in Asia, Africa, North and South America and parts of Europe. Dogs are the most common source in developing countries. Other animals known to carry the virus are cats, monkeys, foxes, coyotes, wolves and jackals, skunks, raccoons, mongooses and other mammals. Bats both overseas and in Australia can carry a virus similar to rabies, and so should also be avoided.

Prevention:

1. Avoid contact with domestic or wild mammals in any country where rabies is known to occur.

This includes domestic dogs and cats, zoo or pet animals, particularly monkeys who are used to being fed by humans, e.g. tourist attraction venues. Monkeys are unpredictable in their behaviour and frequently bite people for no reason. Avoid going near them, especially with food. Do not touch or feed any wild animal, particularly if it appears to be ill or would not normally be found in an inhabited area or be active during the day.

2. Immunisation

There are two types of immunisation against rabies:

- **Rabies Vaccine** stimulates a person's immune system to develop antibodies that will recognise and kill the virus before it has time to cause illness.
- **Human Rabies Immunoglobulin (HRIG)** is made from blood donated by people who have been vaccinated against rabies. It is a concentrated form of antibodies against rabies virus, and may be recommended for immediate protection for people who are exposed to rabies but who have never had rabies vaccination before. As much as possible of the HRIG dose is injected around the exposure site, with any remainder given as an injection into a muscle such as the buttock or thigh.

Pre-exposure vaccination

If you are intending to travel, live or work in a country where rabies is known to be a risk, speak to your doctor about being vaccinated against rabies before you leave. The rabies vaccine course should be commenced at least six weeks prior to departure if possible.

Post-exposure immunisation

A course of rabies vaccine, given after potential exposure to the virus will prevent development of the disease. The rabies vaccinations should be started as soon as possible after the exposure in order to be effective, and should be given even to people who have had rabies vaccination before.

In addition to the vaccine, people who have not previously been vaccinated against rabies may also require a human rabies immunoglobulin (HRIG) injection on the day they get the first vaccine dose, or within 7 days. HRIG is important because it provides immediate protection within the first week until the rabies vaccines start to work.

HRIG is often difficult to obtain in many overseas countries, and if this is the case, it is important that the traveller returns to Australia to obtain HRIG as soon as possible.

Because the disease caused by rabies is nearly always lethal, all people who are exposed to rabies should have these post-exposure vaccinations. This includes where there is a possibility of allergic reactions, or during pregnancy, or for women who are breastfeeding. If problems are encountered during the vaccination course, specialist advice is sought about the risks of the reactions compared with the risks of developing the disease.

Help and assistance:

For further information contact your local doctor or nearest public health unit or the 13HEALTH information line (13 432584).

Related Content

- [Australian bat lyssavirus fact sheet \(/HealthConditions/2/Infections-Parasites/41/Viral-Infections/37/Australian-Bat-Lyssavirus\)](#)
- [Rabies vaccine and human rabies immunoglobulin \(HRIG\) fact sheet \(/HealthConditions/2/Infections-Parasites/192/Immunisation-Vaccination/516/Rabies-vaccine-human-rabies-immunoglobulin\)](#)

Footnotes

WHO. 2010. Rabies vaccines WHO position paper. Weekly epidemiological record No 32, 85: 309-320.

The [Australian Immunisation Handbook](https://immunisationhandbook.health.gov.au/about-the-handbook) (<https://immunisationhandbook.health.gov.au/about-the-handbook>)