
Rabies

Frequently Asked Questions

What is rabies?

Rabies is a zoonotic, vaccine-preventable viral disease that causes damage to the brain and spinal cord in infected animals and humans. A zoonotic disease is a disease that can be transmitted between animals and humans. Rabies is virtually 100% fatal once symptoms appear.

How is rabies transmitted?

The rabies virus is spread to humans and other animals through contact with the saliva of infected animals. Bites or scratches and licks to wounds, grazes, broken skin, or the lining of the mouth and nose are examples of unsafe contact. Human-to-human transmission is not common apart from rare cases associated with organ transplantation. Most human rabies cases in South Africa are linked to rabid domestic dogs.

Who can get rabies?

Rabies virus is transmitted through the infected saliva of a rabid animal, as described above. In South Africa and globally, domestic dogs are the main cause of human rabies. Other by no means exhaustive list of animals may also be a source of infection of the rabies virus to humans, including cats, domestic livestock (such as cattle and sheep), wildlife (such as jackal), and rarely, marine mammals such as seals. Rabies is not typically reported from small rodents such as mice and rats. It is also not reported from birds or reptiles. The rabies virus has not been reported in bats in South Africa. However, "rabies-like" viruses are reported rarely in some species of bats and have been linked to two human rabies cases in South Africa in the past 40 years.

Human rabies is rare but still reported in South Africa. Typically, 5 – 10 cases of human rabies are laboratory-confirmed per year.

Where does rabies occur in South Africa?

In the past ten years, most rabies cases have been recorded in domestic dogs from areas within KwaZulu-Natal, Eastern Cape and Limpopo provinces. It is, however, important to note that outbreaks of rabies in domestic animals can occur in any area of South Africa where unvaccinated domestic animals are present. Rabies has also been reported in mongoose, black-backed jackal, and bat-eared foxes in other areas of South Africa. Sporadic cases involving other domestic and wildlife species are also reported from time-to-time. In 2024, an outbreak of rabies was reported in seals in Western Cape Province.

Human rabies cases are usually reported from areas where domestic dog rabies is found.

How does rabies affect animals?

Rabies in animals may present as the furious (hyperactive/agitated) or paralytic (dumb) forms. The furious form includes strange and aggressive behaviour and a generally unwell appearance. The animals can hallucinate and may, for example, snap or bite at imaginary objects. Hypersalivation is a common finding, and hydrophobia (fear of water) may be noted in some. With the dumb form, the animals experience muscle paralysis. Wild animals may lose fear of humans and become unusually tame. Livestock (including cows and sheep) may appear to have something “stuck” in their throat and produce unusual vocalisation. Rabies is a fatal infection in animals.

What are the signs and symptoms of rabies in humans?

As in animals, rabies in humans can present in the furious (hyperactive/agitated) or paralytic (dumb) forms. The common signs and symptoms of rabies include discomfort or pain at the site of the (previous) wound, fever, headache nausea and vomiting. This rapidly progress to signs of neurological dysfunction, which may include change in behaviour, anxiety, confusion, and agitation. People with rabies can also display hypersalivation, aerophobia (fear of air) and hydrophobia. Some people may have localised weakness and paralytic syndromes, which eventually progress to coma and death. Rabies is a fatal infection in humans and only exceptionally rare cases of survival have been reported to date.

When a person is exposed to an infected animal, how long does it take for symptoms to appear?

If no post-exposure prophylaxis is given, an infected person may start experiencing symptoms 1 to 3 months after exposure. In rare cases, symptoms can develop after a week or up to a year following exposure. Very short incubation periods have been recorded in cases that sustained facial wounds or wounds in other highly innervated areas of the body.

When an animal is exposed to another infected animal, how long does it take for symptoms to appear?

The incubation period varies, but in most cases the incubation period in animals is the same as in humans (see above).

How can rabies be controlled and prevented?

Rabies can be controlled by vaccinating dogs (and cats), thereby protecting those animals and decreasing the risk of human exposure to the virus. All domestic dogs and cats should be vaccinated against rabies from 12 weeks of age, again 12 months later, and then every 1-3 years. Once human exposure has occurred, rabies infection in can be prevented by prompt administration of rabies post-exposure prophylaxis (PEP) following exposure to rabid or suspected rabies-infected animals.

What should a person do if they have been exposed to a suspected rabid animal?

Wound washing is an effective first-aid treatment against rabies. Wash all wounds and scratches immediately with soap or detergent and flush them thoroughly for about 5-10 minutes with water. Seek immediate medical treatment for post-exposure prophylaxis, which will be given in accordance with the category of exposure. Immediately contact veterinary services or your animal health technician to assess the suspected rabid animal. Do not attempt to approach or capture the animal yourself.

How is rabies diagnosed?

Rabies disease in humans is diagnosed using PCR on saliva, cerebrospinal fluid and/or skin samples ante-mortem. Post-mortem investigations involve antigen testing of brain samples.

More information on submission of samples and available tests are available from the NICD website (www.nicd.ac.za.) These tests are reserved for patients with suspected rabies disease.

There are no tests available to test for rabies in humans to determine if exposure has occurred. If a person was possibly exposed to rabies, post-exposure prophylaxis should be provided.

How is rabies treated?

Once symptoms appear, there is currently no treatment available for human or animal rabies disease.

Where can I find out more information?

- For Medical/clinical related queries: contact NICD Hotline number 0800 212 552 (for use by healthcare professionals only)
- Laboratory test related queries: Dr Naazneen Moolla (naazneenm@nicd.ac.za); Dr Jacqueline Weyer (+27 11 386 6376, jacquelinew@nicd.ac.za)