

# Rabies and Australian Bat Lyssavirus Infection

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*Lyssaviruses are a group of viruses that includes rabies and bat lyssavirus. Lyssavirus is carried by bats in Australia. Rabies is carried by mammals in many overseas countries. Both are spread by bites and scratches. These diseases can be prevented by rapid and thorough cleaning of the wound and by vaccination. There is no cure.*

## What are rabies and Australian bat lyssavirus?

Rabies virus and Australian bat lyssavirus (ABLV) belong to a group of viruses called lyssaviruses. Rabies is usually transmitted via a bite from an infected ("rabid") animal. It affects the central nervous system and is usually fatal. The World Health Organization estimates that more than 55,000 people die from rabies worldwide each year. Rabies does not currently occur in animals in Australia. However, ABLV, which is closely related but not identical to rabies, does occur in Australia, and is transmitted from bats to humans. Three cases of human infection with ABLV have been recorded since the virus was first identified in 1996. All three cases were in Queensland and all died as a result of ABLV infection after being bitten by bats.

## What are the symptoms?

Rabies and ABLV infection are thought to cause similar symptoms. The early symptoms are flu-like, including headache, fever and fatigue. The illness progresses rapidly to paralysis, delirium, convulsions and death, usually within a week or two. Rabies cases and the three known human cases of ABLV infection have shown a wide variability in the time it takes for symptoms to appear following exposure to an infected animal (from several days to several years).

## How are they spread?

Both rabies and ABLV are spread from infected animals to people through bites or scratches, or by being exposed to infected animals' saliva through the eyes, nose or mouth. Only mammals can be infected. Overseas, dogs are the main transmitter of rabies. Other animals that transmit rabies overseas include bats, monkeys, foxes, cats, raccoons, skunks, jackals and mongooses.

In Australia, evidence of ABLV infection has been found in species of flying foxes/fruit bats and insect-eating microbats. **It is assumed that any bat in Australia could potentially carry ABLV.** The behaviour or appearance of a bat is not an accurate guide as to whether it is carrying the virus. The rabies and ABLV viruses are unlikely to survive outside the bat or animal for more than a few hours, especially in dry environments that are exposed to sunlight. Contact or exposures to bat faeces, urine or blood do not pose a risk of exposure to ABLV, nor do living, playing or walking near bat roosting areas, as long as bats are not handled.

Horses, dogs and other animals are occasionally exposed to ABLV through contact with sick bats. In May 2013 ABLV infection was confirmed in two horses in Queensland.

## Who is at risk?

People who handle bats in Australia are at risk of ABLV infection. People who come into contact with wild or domestic mammals in a rabies endemic country are at increased risk of rabies infection.

## How is it prevented?

The best protection against being exposed to rabies or ABLV is to avoid handling any bat in Australia, or any wild or domestic mammal in a rabies endemic country. This includes bats and wild or domestic dogs, cats, and monkeys. Only people who have been vaccinated against rabies/ABLV and who have been trained in handling bats should ever handle bats or flying foxes. Anyone who comes across an injured bat should contact the local Wildlife Information Rescue and Education Service (WIRES) network on 1300 094 737 or visit their website [www.wires.org.au](http://www.wires.org.au). WIRES have trained staff who can deal with bats safely. A private veterinarian may also be able to offer assistance and advice. Do not touch the bat and avoid direct contact with any bat saliva.

Rabies vaccine is used to protect against rabies and ABLV infection. A course of three injections, given over one month, is recommended for people whose job or other activities place them at increased risk of being bitten or scratched by bats in Australia, or mammals in rabies endemic countries. Periodic booster doses of vaccine may also be required. If you intend to work in or travel to a rabies endemic country for an extended period you should discuss with your doctor whether you should be vaccinated.

If you are bitten or scratched by a bat in Australia or by a wild mammal overseas, you should:

- immediately wash the wound thoroughly with soap and water for at least five minutes - proper cleansing of the wound reduces the risk of infection
- apply an antiseptic with anti-virus action such as povidone-iodine, iodine tincture, aqueous iodine solution or alcohol (ethanol) after washing
- seek medical attention as soon as possible to care for the wound and to assess whether you are at risk of infection

If you are at risk of infection and have not been vaccinated previously, you will require an injection of rabies immunoglobulin as soon as possible and a series of either four or five rabies vaccine injections over one month. Even if you have been vaccinated before, you will require two further doses of vaccine. The relevant Australian state or territory health department will fund these vaccines and arrange for them to be delivered to your GP or hospital in Australia. Rabies immunoglobulin is often difficult to obtain in overseas countries but vaccine is usually available.

If the animal or bat can be tested without placing other people at risk of exposure, vaccination may be delayed for up to 48 hours while the animal or bat is tested for lyssavirus infection. In Australia, testing of bats can be arranged by the local public health unit. If the bat does not have ABLV, the course of vaccinations will not be required, or can be ceased.

## How is it diagnosed?

Diagnosis of rabies and ABLV can be difficult and confirmation requires laboratory tests for the presence of the virus in skin, blood, spinal fluid and nervous tissue.

## How is it treated?

There is no available treatment for rabies or ABLV once symptoms have started.

## What is the public health response?

Doctors should contact their local public health unit for advice on people bitten or scratched by animals or bats that could transmit rabies or ABLV. Public health unit staff will help arrange vaccination following exposure and rabies immunoglobulin where required.

Hospitals and laboratories will notify cases of rabies and ABLV infection to the local public health unit. Public health unit staff will investigate the likely source and determine whether others may be at risk of infection.

## Further information

For further information please call your local Public Health Unit on 1300 066 055 or visit the New South Wales Health website [www.health.nsw.gov.au](http://www.health.nsw.gov.au)

For information regarding domestic animals that have been exposed to sick bats please visit the New South Wales Department of Primary Industries website [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au)