

# Rabies and Australian Bat Lyssavirus Infection

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.

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## What are rabies and Australian bat lyssavirus?

Rabies virus and Australian bat lyssavirus (ABLV) belong to a group of viruses called lyssaviruses. These viruses are usually transmitted via a bite from an infected (“rabid”) animal. They all cause a similar illness known as rabies, which 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 virus does not currently occur in land dwelling animals in Australia. However, ABLV, which is closely related but not identical to rabies virus, does occur in Australia, and can be transmitted from bats to humans. Only 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 or scratched by bats.

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## 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).

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## 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. Apart from two horses, no wild or domestic animals in Australia have ever been found to be infected with ABLV.

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## 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.

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## How is it prevented?

The best protection against being exposed to rabies or other lyssaviruses (including ABLV) is to avoid handling any bat in Australia or overseas, or any wild or domestic land dwelling mammal in a country where there is a rabies virus risk. This includes bats and wild or domestic dogs, cats and monkeys. Only people who have been vaccinated against rabies and who have been trained in handling bats should ever handle bats or flying foxes.

When a bat is injured or in distress, do not try to rescue it. Contact the experts at your local wildlife rescue group, which has trained staff who can deal with bats safely. Contact details can be found at [NSW Wildlife Council](#) or download the IFAW Wildlife Rescue App from your app store. 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 before a potential exposure. 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. Rabies vaccination may also be recommended for people who travel to a rabies endemic country, depending on the circumstances (see below for specific advice for travellers).

Rabies infection may also be prevented following an exposure through proper wound care, and depending on the outcome a risk-assessment by a series of treatments known as post-exposure prophylaxis (PEP) or postexposure treatment (PET) - see below for advice on what to do if potentially exposed.

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## Is there any advice for travellers?

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

Rabies risks vary depending on where you are travelling and activities planned while abroad. The World Health Organisation (WHO) maintains maps of rabies-endemic countries. Visit NSW Health [Rabies information for travellers](#) and [Staying safe and healthy overseas](#) for information on reducing your risk of contracting diseases whilst overseas.

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## What should I do if bitten, scratched or exposed to a potentially rabid animal?

Even if previously vaccinated, if you are bitten or scratched by a bat anywhere or by a land dwelling mammal overseas, you should:

- immediately wash the wound thoroughly with soap and water for at least fifteen 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, you may require treatment consisting of a combination of rabies immunoglobulin and rabies vaccine. If you 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. If you have had a full vaccination course, you will require two further doses of vaccine. In NSW, Public Health Units will work with your doctor to assess your risk and where indicated, will arrange for rabies vaccines and immunoglobulin to be delivered to your GP or hospital.

[Rabies information for travellers](#) outlines what to do if you may be exposed to rabies whilst abroad and what to do upon returning to Australia.

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## 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.

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## How is it treated?

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

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## 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.

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## Further information

For further information please call your local Public Health Unit on **1300 066 055** or visit [HealthDirect](#).

For information regarding domestic animals that have been exposed to sick bats, please visit the NSW Department of Primary Industries' [Australian bat lyssavirus](#) website.

Translated information on rabies and ABLV is available at [Multicultural Health Communication Service](#).