

Australian Bat Lyssavirus – information for the public

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Animal Biosecurity, NSW DPI

History of Lyssaviruses

In 1996 a new virus was identified in bats in Australia. It was named Australian bat lyssavirus (ABLV) and it belongs to the lyssavirus family. There are currently sixteen species of lyssavirus which are found around the world. Fourteen of these are known to exist in bats but only ABLV has been detected in Australia. The best known member of the lyssavirus family is classical rabies which does not occur in Australia but is present in many countries globally.

Types of bats affected by ABLV

ABLV has been found in both fruit bats (flying foxes) and in small insect eating bats (microbats). All bat species in Australia are regarded as being potentially infectious.

Signs of infection in bats

ABLV affects the nervous system of bats resulting in changes in behaviour and mobility. Affected bats are often paralysed or weak and cannot fly and die after a few days. Some are aggressive and have changes in the way they vocalise. This results in an impaired ability to fly and evade predators and ABLV infected bats are more likely to be found on the ground, on fences or on low branches in trees. Infected bats may develop clinical signs and die; some however do not develop any clinical signs and recover.

How common is ABLV in bats in Australia?

Research indicates that ABLV is a rare infection, estimated to be present in less than 1% of wild bats. However the prevalence in bats submitted to laboratories for ABLV testing (sick,

injured or recently dead bats), is higher. A recent study by Field (2018)¹ indicated the prevalence of current ABLV infection in bats submitted for ABLV testing in Queensland and NSW was 6.8%.

1. Field HE. Evidence of Australian bat lyssavirus infection in diverse Australian bat taxa. *Zoonoses Public Health*. 2018;00:1–7. <https://doi.org/10.1111/zph.12480>

ABLV infection in other animals

In May 2013 ABLV infection was confirmed in two yearling horses in Queensland that had been grazing together. Both horses developed signs of ABLV infection around four days apart, suggesting close contact with the same infected bat. Both horses had severe nervous signs such as seizures, swallowing problems and movement abnormalities and had to be euthanased.

In an experimental study on dogs and cats at the CSIRO Australian Animal Health Laboratory (AAHL) researchers were not able to produce clinical disease in dogs and cats artificially infected with the virus.

Overseas, other lyssaviruses naturally infect and cause rabies-like disease in a broad range of domestic and wild mammal species. Natural infection with European bat lyssavirus type 1, which is very closely related to ABLV, has been demonstrated in cats and sheep suffering from neurological disorders suggesting that occasional transmission of ABLV to mammalian species other than horses is possible even if not confirmed to date.

Human infection with ABLV

There have been three cases of human infection due to ABLV and all were fatal. The three people had a history of being scratched or bitten by bats. None of the affected people had been vaccinated against rabies. The cases occurred in 1996, 1998 and 2013 and were all in Queensland.

Spread

The virus is present in the saliva of infected bats but not in the urine, blood or faeces. Infection occurs when virus in saliva enters the body through breaks in the skin such as bites, scratches, existing cuts or trauma. The virus then migrates to the brain via the nerve endings. The virus could also enter the body if infected saliva got into the mouth, nose or eyes. The incubation period (time from exposure to ABLV until the first clinical signs develop) can be as short as a few days or as long as several years. This varies according to the dose of virus, site of entry and the animal's immune status.

Environmental survival

ABLV is rapidly inactivated by heat, direct sunlight, soap and most disinfectants. It lasts up to 24 hours in saliva but much less when unprotected and exposed to the elements.

Finding injured or sick bats

Only trained, vaccinated bat handlers should attempt to handle bats. Considering an apparently healthy bat may be infected with ABLV all bats should be treated as potentially infectious. **Members of the public should not handle live bats.** If you find a sick or injured bat contact your local wildlife care group (e.g. [Wildlife Information Rescue and Education Service \(WIRES\)](#) 1300 094 737) as they have trained staff who can deal with live bats safely. A private veterinarian may also be able to offer assistance and advice.

Reporting suspected ABLV infection in Animals

Australian bat lyssavirus and other lyssaviruses are notifiable diseases in animals. However, there is no requirement to notify an authorised officer of an interaction of a bat with another animal, such as a cat or a dog in cases when ABLV infection in the bat is not suspected - refer to [Managing animals that contact bats](#) for more information. Any human exposure to bats should be reported by the person involved to NSW Health on 1300 066 055 - refer to [Human exposure](#) for more information.

Notification of exotic lyssavirus in any animal or clinical ABLV in animals (except bats)

Immediate verbal notification of suspected infection to an authorised officer is only required where you suspect, or are aware, that:

- an animal (other than a bat) has clinical ABLV,
- an animal has an exotic lyssavirus, such as rabies.

In these circumstances call the Emergency Animal Disease Watch Hotline on 1800 675 888.

Infection or suspected infection of bats with ABLV

You must notify an authorised officer within one working day if you suspect, or are aware, that a bat is infected with Australian Bat Lyssavirus.

In these circumstances, you can notify by emailing animal.biosecurity@dpi.nsw.gov.au with details of the case and your contact information. Where the bat is being submitted for ABLV testing, please attach a copy of your submission form.

Defining potential exposure

A potential ABLV exposure occurs where:

- a human or animal is bitten or scratched by a bat, or
- has mucous membrane or broken skin contact with saliva or neural tissue from a bat.

Submission of suspect bats for testing

Where a human or animal has potentially been exposed to ABLV infection as detailed above or where a bat is found showing nervous signs it should be submitted for laboratory testing provided this can be done without further risk to humans. NSW Department of Primary Industries (DPI) will cover the cost of this testing. Even if only parts of the bat are available, testing for ABLV infection may still be possible. A veterinarian can contact Elizabeth Macarthur Agricultural Institute on 1800 675 623 during business hours to arrange submission.

Human exposure

If potential ABLV exposure with a suspect bat has occurred, immediately contact a general practitioner or the local [Public Health Unit](#) of NSW Health for advice (phone 1300 066 055). While waiting on medical assistance the following first aid advice is recommended:

- Wash any wounds thoroughly with soap and water for at least 5 minutes.
- Apply an antiseptic with virucidal action, such as povidine-iodine, iodine tincture, or aqueous iodine solution, after washing.
- If saliva enters the eyes, nose or mouth the area should be flushed thoroughly with water for five minutes.
- If available isolate the bat for testing to determine if it is infected but do not handle live bats and use gloves when handling dead bats.

Managing animals that contact bats

It is quite common for domestic animals, particularly dogs and cats, to come in direct contact with bats. Bats with ABLV infection are often found on the ground or low down on trees and can be easily caught by inquisitive animals. If the bat was infected with ABLV it is possible that an animal could be exposed to the virus while interacting with the bat.

To date clinical cases have only been reported in bats, humans and recently horses but it is possible that other species such as dogs and cats are also susceptible to ABLV infection and could show clinical signs. If that did occur in-contact people, including children, would then be at risk of ABLV exposure from the animal.

Owners who have animals which are known or suspected of being potentially exposed to ABLV infection should:

1. Phone their veterinarian as soon as possible for advice on management of the animal.
2. Get the bat tested for ABLV infection. Advice on handling injured or sick bats is given above ([Finding injured or sick bats](#)). Veterinarians arrange laboratory testing for ABLV infection. NSW DPI covers the cost of the testing of bats for ABLV.

Management of exposed animals where the bat tests positive

It is strongly recommended that an animal potentially exposed to a confirmed ABLV positive bat is vaccinated with rabies vaccine by your private veterinarian. Rabies vaccine provides cross protection against ABLV infection. Vaccine should be administered as soon as possible after any suspect exposure. The animal should be kept confined until immunity develops which is estimated to be approximately 21-28 days. NSW DPI provides information on post exposure rabies vaccination for ABLV in the [ABLV guidelines for veterinarians](#).

Any costs associated with managing potential ABLV exposure in clinically normal animals are the responsibility of the pet owner.

Monitoring an exposed animal for signs of ABLV infection does not lessen the risk; animals need to be monitored for at least two years. If monitored animals develop nervous signs or show any behaviour change seek veterinary advice immediately.

Management of exposed animals where the bat is unavailable for testing

In cases where a suspect bat is not available for testing, vaccination is still strongly recommended particularly where there is a history of nervous signs in the bat and exposure of the animal is probable e.g. bite/scratch.

Management of exposed animals where the bat tests negative

No further action is needed.

Horses showing nervous signs

ABLV infection is just one possible cause of nervous illness in horses. [Hendra virus infection](#) is another. There are also many other causes of nervous disorders and horse owners should seek veterinary advice for any horse showing nervous signs such as seizures, swallowing difficulties or being unsteady on its feet.

It is important if either ABLV or Hendra virus infection are considered possibilities that the horse is isolated and contact with humans or other animals is avoided. If horses have to be handled to be isolated or examined then personal protective equipment (PPE) should be worn. The minimum standard is overalls, boots, gloves, respirator mask and eye protection.

Where human contamination by secretions such as saliva, blood or nasal discharges has occurred wash the area thoroughly with soap and water and seek immediate medical review.

Advice on post-exposure rabies vaccination should be sought from the local [Public Health Unit](#) (phone: 1300 066 055).

More information

- [Australian bat lyssavirus: guideline for veterinarians](#)
- [Bats and Health risks Primefact 1069](#)
- [Australian Immunisation handbook](#)
- [NSW Factsheet: Rabies and other Lyssavirus infection](#)
- General biosecurity inquiries: phone 1800 680 244 or email animal.biosecurity@dpi.nsw.gov.au

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