

Australian bat lyssavirus and handling bats

Australian bat lyssavirus (ABLV) is a virus that can be transmitted from bats to humans. It causes a rabies-like illness that is invariably fatal.

All bats in Australia have the potential to be infected with ABLV. The behaviour or appearance of a bat is not an accurate guide as to whether it is infected with the virus.

Transmission of infection

ABLV is found in the saliva and neural tissues (brain and spinal cord) of infected bats. Human infection occurs when a person is bitten or scratched by an infected bat. Infection may also occur if the saliva or neural tissues of an infected bat come into contact with a person's broken skin or mucous membranes, that is, the eyes, nose and mouth.

Contact with bat faeces, urine and blood is not considered to be a risk for ABLV exposure. However contact with bat fluids should be avoided.

ABLV is unlikely to survive on the external surface of a dead bat for more than a few hours. However care should be taken when handling dead bats by using a shovel or suitable gloves to minimise the risk of accidental scratches from sharp claws. ABLV may persist in the neural tissues of a dead bat, which should be handled with caution until safely disposed of.

At-risk workers

Workers who are at risk of exposure to ABLV include veterinarians and their staff, zoo workers, wildlife officers, bat rescue and

rehabilitation carers, fauna surveyors, bat scientists, electrical workers who remove bats from powerlines, laboratory personnel who handle bat tissues or live lyssaviruses, and any other person who has occupational contact with bats.

A person will not be exposed to ABLV risks merely by working near a bat colony.

Managing ABLV risks

The *Work Health and Safety Act 2011* places a duty on persons conducting a business or undertaking (PCBU) to ensure, so far as is reasonably practicable, the health and safety of themselves and their workers while at work, and to ensure that the health and safety of other people is not put at risk from work carried out as part of the business or undertaking.

The PCBU also has a duty to provide and maintain, so far as is reasonably practicable, a safe system of work to manage ABLV risks. For example:

- ensure that only people who have current rabies vaccination have contact with bats
- provide any information, training, instruction or supervision that is necessary to protect people from ABLV risks
- provide suitable personal protective equipment (PPE) and ensure that PPE is worn by at-risk workers
- develop a protocol for managing potential ABLV exposures, and provide appropriate first aid equipment and training.

Rabies vaccination

Workers at occupational risk of exposure to ABLV require a course of three doses of rabies vaccine – called ‘pre-exposure prophylaxis’.

Workers who work with live lyssavirus in laboratories should have a blood test every six months to measure their rabies antibody titre (a measure of protection against ABLV). If the titre (concentration) is reported as inadequate (<0.5 IU/mL), they should have a booster dose of rabies vaccine.

Other workers who have ongoing contact with bats should have rabies antibody titres measured every two years. If the titre is reported as inadequate (<0.5 IU/mL) they should receive a booster dose of rabies vaccine. Alternatively, a booster dose can be offered every two years without determining the antibody titre.

The PCBU should ensure that at-risk workers have current rabies vaccination and that vaccination records are maintained.

PPE

PPE should be provided and worn to minimise the risk of exposure to ABLV. PPE should be selected based upon the assessed level of risk, the task and the bat species. PPE may include:

- puncture resistant gloves that meet relevant Australian Standards (e.g. AS 2161.3 *Occupational protective gloves. Protection against mechanical risks*)
- long sleeved clothing and long pants
- puncture resistant gauntlets to protect the forearms
- safety eyewear or a face shield to protect the face and mucous membranes from bat bites and scratches and from contact with bat saliva and neural tissues.

The PCBU has a duty to provide workers with information, training and instruction on the proper use and wearing of PPE, and to ensure that it is used or worn by workers, so far as is reasonably practicable.

Hand hygiene should be performed after contact with bats and removing PPE, and cuts should be covered with a water-resistant dressing.

Post-exposure protocols

If a person sustains a bat bite or scratch, or if bat saliva or neural tissue comes into contact with a person’s broken skin, the affected area should be washed thoroughly with soap and

water for at least five minutes. A virucidal antiseptic such as povidone-iodine, iodine tincture, aqueous iodine solution or alcohol (ethanol) should be applied to the area after washing.

If the exposure involves the person’s mucous membranes (eyes, nose or mouth), the area should be flushed thoroughly with water.

Immediate medical advice should be sought as booster doses of rabies vaccine are likely to be necessary – called ‘post exposure prophylaxis’. This is important regardless of previous rabies vaccination, the severity of the wound, the bat species involved or whether or not the bat appears sick.

People who have received pre-exposure prophylaxis require a further two doses of rabies vaccine following a potential exposure.

People who have not received pre-exposure prophylaxis require rabies immunoglobulin and a course of four doses of rabies vaccine following a potential exposure. Any person who has an immunocompromising illness or who is on immunosuppressant medication will require a further (fifth) dose of vaccine and follow up blood tests to confirm their immunity.

The bat can be collected for laboratory examination to test for ABLV infection if this can be done without placing other people at risk of exposure. Only a vaccinated person who is trained in bat handling and has suitable PPE should collect the bat. Contact the local [Public Health Unit](#) to arrange for bat collection.

People at occupational risk of exposure to ABLV should not forego pre-exposure prophylaxis on the basis that rabies immunoglobulin and a course of rabies vaccination can be given following a potential exposure. This is because inapparent exposure may occur when there is regular contact with bats, with potentially fatal consequences.

Additional industry-specific control measures

Additional industry-specific control measures may be needed to eliminate or minimise the risk of exposure to ABLV. For example:

- **Veterinarians:** Follow the guidance in Biosecurity Queensland’s [Guidelines for veterinarians handling potential Australian bat lyssavirus infection in animals](#).

- **Fruit growers:** Use small aperture safe netting to minimise wildlife entanglements.
- **Tourism operators:** Inform wildlife tourist groups about ABLV risks and take steps to avoid placing tourists in close contact with bats, such as positioning groups away from the direct flight path of bats emerging from caves.
- **Bat exhibitors:** Do not allow members of the public to touch bats, and keep bats within suitable enclosures to prevent public access.
- **Wildlife rescue and care:** Use a thick towel to cover bats during rescue, isolate bats with neurological signs of illness from other bats in care and seek veterinary advice, use calming methods for pups such as teats, and minimise non-essential contact with bats.
- **Fauna surveyors:** Do not place unprotected hands into tree hollows, crevices or other areas where bats may be roosting, and consider using an inspection camera to look for wildlife inside areas that can't be readily viewed.
- **Electrical workers:** Use a no-touch technique to remove bats from powerlines, and arrange for a wildlife carer to receive rescued live bats and orphaned pups.

Sick, injured and orphaned bats

Anyone who finds a sick, injured or orphaned bat should not touch it. Contact a local wildlife care organisation or the RSPCA (1300 ANIMAL) to find a licensed and vaccinated wildlife rescuer who is trained to handle and care for wildlife.

Bats are a protected species and it is unlawful under the *Nature Conservation Act 1992* to interfere with a bat colony.

Further information

For more information on work health and safety, visit www.worksafe.qld.gov.au or contact WHS Infoline on 1300 369 915.

For more information on ABLV or animal health, visit Biosecurity Queensland's website at www.daff.qld.gov.au or phone 13 25 23.

For more information on ABLV and human health, visit Queensland Health at www.health.qld.gov.au or phone 13HEALTH (13 43 25 84).

For more information about bats and environmental issues, including safe netting and damage mitigation permits, visit the Department of Environment and Heritage Protection at <http://www.ehp.qld.gov.au/> or phone 13QGOV (13 74 68).