

Management of potential exposures to Rabies and Australian Bat Lyssavirus

The following guidelines provide a summary of national recommendations regarding management of potential exposures to rabies and Australian Bat Lyssavirus (ABL). Comprehensive and up-to-date information is found in the online versions of the following documents:

- Australian Immunisation Handbook (AIH) 10th Edition
<http://immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home>
- Rabies and Australian bat lyssavirus National guidelines for public health units
<http://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm>

Post-exposure prophylaxis (PEP)

PEP is recommended (and funded by Queensland Health) for any potential exposures sustained from a terrestrial animal in a rabies-zoonotic area, or any potential exposures sustained from a bat anywhere in the world. **Commence PEP as soon as possible, regardless of how much time has elapsed.**

PEP includes:

1. Wound care
2. Rabies vaccine
3. Human rabies immunoglobulin (HRIG)

1. Wound care

- Immediate and thorough washing (for at least 5 minutes) of all bite wounds and scratches with soap and water is an important measure for minimising transmission risk.
- A virucidal preparation such as povidone-iodine solution or alcohol should be applied.
- Assess tetanus vaccination status.
- Avoid primary suturing of the wound.

2. Rabies vaccine

- Rabies vaccine is administered as a **deep intramuscular injection into the deltoid muscle**.
- The vaccine should **not** be administered intradermally or in the gluteal region.
- Post-exposure rabies vaccination schedule is:
 - Four (4) rabies vaccines (**Days 0, 3, 7, 14**) for immunocompetent persons
 - Five (5) rabies vaccines (**Days 0, 3, 7, 14, and 28**) for immunocompromised persons
- For those previously immunised with three (3) doses pre-exposure, the recommendation is for two (2) further doses post-exposure (**Day 0, 3**).
- Routine serological testing following PEP is not usually necessary. However, immunocompromised persons should have VNAb titre levels checked 14-21 days following the 5th dose.
- Different rabies vaccines may be supplied by Queensland Health. **Rabipur®** requires reconstitution. **Merieux®** is indicated if a history of egg allergy is reported.

3. Human rabies immunoglobulin (HRIG)

- When HRIG is indicated, the dose is 20 IU per kilogram of body mass where the HRIG concentration is 150 IU/mL. Dose calculation is the same for infants, children and adults.

Formula for calculating HRIG dose: $\text{Weight in kg} \times 20 \div 150 = (\text{dose required}) \text{ mL}$

Alternate formula for calculating HRIG dose: $\text{Weight in kg} \div 7.5 = (\text{dose required}) \text{ mL}$

- A **single dose** of HRIG should be administered at the same time as the first dose (Day 0) of rabies vaccine.
- Do not administer HRIG if more than 7 days (or 168 hours) have elapsed since the first dose of rabies vaccine, or if there is a history of previous rabies vaccinations.
- **HRIG should be infiltrated in and around all existing or healed wounds using as much of the calculated dose as possible.** Any remaining HRIG is administered intramuscularly (IM) **at a site DISTANT to that where rabies vaccine is given** e.g. alternative deltoid, lateral thigh, or gluteal muscle, depending on volume. **It is NOT advised to administer rabies vaccine in the same limb as HRIG.**
- If the wounds are severe and the calculated volume of HRIG is inadequate for complete infiltration of all wounds, the HRIG should be diluted in saline to make up an adequate volume for the careful infiltration of all wounds. If the wound has healed, administer the HRIG in the vicinity of the healed wound (e.g. around a scar).
- Due to the extensive nerve supply to fingers and hands, it is particularly important to infiltrate HRIG. A 25 or 26-gauge needle should be used. Avoid compartment syndrome by infiltrating HRIG very gently. This should not cause adjacent tissue to go frankly pale or white. It may be necessary to give a ring-block using a local anaesthetic.
- Please refer to the HRIG administration video available at the Metro North Hospital and Health Service Public Health Unit website for a step-by-step guide in administering HRIG.
<https://metronorth.health.qld.gov.au/hospitals-services/public-health-unit>
- Different HRIG products may be supplied by Queensland Health.

Adverse events

Local reactions such as sore arm (15-25%), headache (5-8%), malaise, nausea or both (2-5%) and allergic oedema (0.1%) have been reported in adult and child recipients of rabies vaccine. Once initiated, rabies prophylaxis should not be interrupted or discontinued because of local reactions or mild systemic reactions. Such reactions can usually be managed with aspirin or paracetamol.

Anaphylactic reactions occur in approximately 1 per 10,000 vaccinations. Non life-threatening allergic reactions occur in about 6% of people receiving boosters of some vaccines: these typically occur 2-21 days after the booster dose and are characterised by generalised urticaria, sometimes with arthralgia, arthritis, oedema, nausea, vomiting, fever and malaise.

It is recommended that the patient remain for 20 minutes after the vaccination.

Supply of HRIG and rabies vaccine

During normal business hours, please contact:

- **Metro North Public Health Unit**
- **Ph: 3624 1111**

After hours, please contact:

- Public Health Physician (on-call)
- Royal Brisbane and Women's Hospital ph: 3646 1699.