

# Rabies and Animal Bites/Exposures: Quick Reference Guide for Health Professionals

## 5 Ws Approach to Risk Assessment for Animal Bites/Exposure

WHERE did the exposure occur?	WHAT type of animal was involved?	WHY did the exposure occur?	WHO is the animal's owner?
<p>Ontario has reduced the number of wildlife rabies cases in the province by more than 99% since rabies control programs began.</p> <p>Ontario was declared to be free of raccoon strain rabies in 2005. However, raccoons in Southern Ontario were confirmed to have rabies in 2015/16.</p> <p>The last rabid terrestrial mammal reported from Toronto was in 1997.</p> <p>Rabid bats are still found in Ontario, including the Greater Toronto Area.</p> <p>There is a higher risk of exposure to animals with rabies in WHO's countries or areas at risk.</p>	<p>Only mammals can be infected with rabies.</p> <p>Typically in Canada, wild animals (e.g., raccoons, skunks, foxes, bats) can act as a reservoir of infection for domestic animals (e.g., dogs, cats, ferrets). Small rodents (e.g., rats, mice, squirrels) usually do not carry the rabies virus.</p> <p>In Asia and Africa, dogs are the main carriers of rabies.</p> <p>Refer to the Canadian Immunization Guide summary table by animal (available at <a href="http://www.phac-aspc.gc.ca">www.phac-aspc.gc.ca</a>).</p>	<p>An unprovoked attack is more likely to indicate that the animal is rabid.</p> <p>Abnormal behaviour in a domestic pet may indicate that the animal is rabid.</p> <p>Generally, it is not possible to assess animal behaviour in wild animals. However, being bitten by a wild animal while feeding or petting a wild animal would usually be considered a provoked attack.</p>	<p>For exposures involving domestic animals, this is important information so public health inspectors can track down the location of the animal for observation purposes.</p> <p>If a domestic animal can be observed then rabies PEP is not needed except in unusual circumstances.</p>

## WOUND evaluation and care

- Bites are the most common mode of transmission of rabies virus.
- Transmission rarely occurs from non-bite exposures (e.g., scratches), unless there is salivary contact on broken skin or mucous membrane. Petting a rabid animal or handling its blood, urine or feces are not considered exposures.
- Bites on the face, neck or hand are considered higher-risk exposures due to the density of nerve endings in these areas and shorter distance to the central nervous system. Consideration should be given to starting rabies PEP for bites to the face and neck when awaiting results on an animal sent for rabies testing or under observation.
- More severe or multiple bites provide more opportunity for transmission.
- Immediate and thorough cleaning and flushing of the wound with soap and water for approximately 15 minutes is probably the most effective procedure in the prevention of rabies.
- Avoid suturing the wound if possible.
- Tetanus prophylaxis and antibiotics should be given as appropriate.

## POST-EXPOSURE PROPHYLAXIS (PEP)

If indicated based on the risk assessment, initiate PEP as soon as possible, regardless of how long ago the exposure occurred. PEP is very effective in preventing infection in people who may have been exposed to an animal with rabies.

PEP for persons not previously immunized against rabies		PEP for persons who previously completed a full course of rabies immunization
Day 0	<p>1) Rabies vaccine (Imovax® Rabies, RabAvert®)</p> <ul style="list-style-type: none"> <li>• Administer one dose (1 mL) IM in the deltoid.</li> <li>• In infants &lt;12 months, vaccine should be given IM in the anterolateral thigh.</li> </ul> <p>2) Rabies immune globulin, Rablg (Imogam® Rabies, Hyperrab®)</p> <ul style="list-style-type: none"> <li>• Administer 20 IU/kg body weight for all age groups.</li> <li>• Using a different syringe and needle than for the vaccine, infiltrate as much Rablg as possible into and around the wound(s), similar to freezing a wound.</li> <li>• Any remaining volume of Rablg should be injected IM, using a new needle, at one or more site(s) distant from the site of vaccine administration (e.g., gluteal area, anterolateral thigh).</li> <li>• If there are multiple or extensive wounds present, Rablg can be diluted 2-fold to 3-fold in normal saline (0.9% sodium chloride) to allow thorough infiltration of all the wounds.</li> </ul>	<p>Rabies vaccine (Imovax® Rabies, RabAvert®)</p> <ul style="list-style-type: none"> <li>• Administer one dose (1 mL) IM in the deltoid.</li> <li>• In infants &lt;12 months, vaccine should be given IM in the anterolateral thigh.</li> </ul> <p>Rabies immune globulin <b>should not</b> be given to persons who have previously received appropriate rabies vaccinations.</p>
Day 3	Administer one dose of rabies vaccine IM in the deltoid.	Administer one dose of rabies vaccine IM in the deltoid.
Day 7	Administer one dose of rabies vaccine IM in the deltoid.	No further doses are required for persons who previously completed a full course of rabies immunization.
Day 14	Administer one dose of rabies vaccine IM in the deltoid.	
Day 28	Administer a fifth dose of rabies vaccine IM in the deltoid, only if the patient is immunocompromised or taking immunosuppressants or antimalarial medication. Antibody serology 7 to 14 days after completion of the vaccine series is recommended for people whose immune response may be reduced by illness or medication.	

## Reporting to Toronto Public Health:

Physicians have a duty to report animal-to-human exposures that in their opinion may result in rabies under Regulation 557, Section 2(1), of the *Health Promotion and Protection Act* (available at [www.ontario.ca/laws](http://www.ontario.ca/laws)). Public health units assist physicians with risk assessments, manage potentially rabid animals, and provide post-exposure prophylaxis to requesting physicians.

- Fax the mandatory *Rabies Prevention and Control – Animal Exposure Report* for animal bites/exposures (available at [www.toronto.ca/health/professionals](http://www.toronto.ca/health/professionals)) to 416-696-4297, or call 416-338-7600 during business hours. If the exposure occurs outside regular business hours, call 311 or 416-392-CITY (2489).

## For further information:

Toronto Public Health, Health Professionals Website, Rabies and Animal Bites/Exposures: <http://www.toronto.ca/health/professionals>  
 Canadian Immunization Guide, Rabies Vaccine: <http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-rabi-rage-eng.php>

October 2016