

<p><b>IN THIS ISSUE:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Reminder: Rabies Serology Testing</b></li> </ul>	<p><b>FROM:</b> Nicholas Brandon, MD MSc CCFP(EM) FRCPC Associate Medical Officer of Health</p>
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**Key Messages:**

- All rabies transmittable animal exposures/bites must be reported to the patient’s public health unit.
- Attending physicians in consultation with their patients, decide to administer rabies post-exposure prophylaxis (PEP). Contact Peel Public Health to request PEP.
- Adhere to the PEP vaccination schedule as closely as possible completing the vaccination series.
- Avoid delays in reporting by following rabies serology testing and submission instructions.

Rabies is a viral infection that causes inflammation of the brain and spinal cord, which is almost always fatal. This HPU is to share a reminder from the Public Health Ontario Laboratory (PHOL) on submitting samples for rabies serology correctly. All animal exposures or bites that could potentially transmit rabies must be reported to the patient’s local public health unit based on where they reside.

**Reminder: Rabies Serology Testing**

The Canadian national rabies reference laboratory for serology is the PHOL which considers an acceptable antibody response to be a titre of at least 0.5 IU/mL by the rapid fluorescent-focus inhibition test.

Neutralizing antibodies begin to develop within seven days after starting the immunization series and persist for at least two years. Protective antibodies are present immediately after passive vaccination with Rabies Immunoglobulin (Rablg) and have a half-life of approximately 21 days.

Rabies vaccine elicits an excellent immune response, and for healthy people immunized with an appropriate regiment they do not require a routine

antibody determination. In some situations, determining an acceptable antibody response to rabies PEP may be required. Situations may include when a patient:

- is immunocompromised,
- has previously received rabies PEP,
- has deviated from the recommended PEP schedule or
- has received different brands of vaccine from different countries and their compatibility is uncertain.

**Serology Testing Requirements**

PHOL is reminding physicians to submit samples for rabies serology correctly to avoid delays in reporting. PHOL performs serology testing for immunity purposes only in those who have been previously vaccinated. For additional information: <https://www.publichealthontario.ca/en/Laboratory-Services/Test-information-index/Rabies-Serology>

**Specimen Requirements**

Test Requested	Required Requisition(s)	Specimen Type	Minimum Volume	Collection Kit
Rabies immunity, rabies pre/post vaccination, Rabies post exposure immune status, or RFFIT	General Test Requisition	Whole blood or serum	5.0 ml whole blood or 1.0 ml serum	Serum separator tube (SST)

**Submission and Collection Notes**

1. Complete all fields of the requisition form, including:
  - Test(s) requested and indications for testing.

- Patient setting
  - Specimen type
  - Full clinical history including past vaccinations (number of shots and dates), details of exposure/source of bite, RIG administered, travel, symptoms, etc.
2. Label the specimen container(s) with the patient's first and last name, date of collection, and one other unique identifier such as the patient's date of birth or Health Card Number. For additional information see:  
<http://www.publichealthontario.ca/en/Laboratory-Services/About-Laboratory-Services/Specimen-Acceptance-Criteria>. Failure to provide this information may result in rejection or testing delay.
3. For **priority testing of time-sensitive specimens** for RIG administration decision or determination of post-exposure prophylaxis dosage:
- a) **Contact PHO laboratory's Customer Service Centre at 416-235-6556/1-877-604-4567 prior to submitting a serum sample for testing** to notify them of the priority request and to provide patient information.
  - b) Clearly mark packaging with "Priority for WRA-Immuno Laboratory" for easier identification and retrieval.
  - c) Ship priority specimens separately from routine specimens in accordance with the Transportation of Dangerous Goods Regulations.
  - d) Ship priority specimens directly to PHO's laboratory Toronto site to the shipping and receiving dock at 661 University Ave., Toronto, Ontario.
  - e) Failure to follow the submission instructions above may result in testing delays.

### Test Frequency and Turnaround Time (TAT)

- Rabies serology test is performed twice per week on Tuesdays and Thursdays. The test takes 2 days to complete, and results are reported on Wednesday and Friday afternoons.

- Turnaround time is up to 7 business days from receipt at PHO's laboratory.
- Specimens that are requested for priority testing must be received at PHO by 4 pm the day before the testing days, otherwise the specimens will be tested on the next available run.

### Reminder: Interpretation

Rabies Rapid Fluorescent Focus Inhibition Test (RFFIT) serology result interpretation as per PHO's rabies serology webpage:

<https://www.publichealthontario.ca/en/Laboratory-Services/Test-information-index/Rabies-Serology>

- IU/mL Non-Reactive: No rabies antibody detected; Rabies vaccination is recommended.
- >0.0 IU/mL-<0.5 IU/mL Non-Reactive: Inadequate response to vaccination; antibody requirement below minimum requirement. An adequate response after vaccination is  $\geq 0.5$  IU/mL as recommended by WHO.
- $\geq 0.5$  IU/mL to  $\leq 1.0$  IU/mL Reactive: This is a low-level antibody response. If there is continued potential exposure, a follow-up in 6 months is recommended. An adequate response after vaccination is  $\geq 0.5$  IU/mL as recommended by WHO.
- >1.0 IU/mL Reactive: Positive antibody level and/or adequate response to vaccination. An adequate response after vaccination is  $\geq 0.5$  IU/mL as recommended by WHO.

More information on the management of potential rabies exposure is available at:

<https://files.ontario.ca/moh-rabies-prevention-control-protocol-en-2023.pdf> and

<https://www.publichealthontario.ca/en/Diseases-and-Conditions/Infectious-Diseases/Vector-Borne-Zoonotic-Diseases/Rabies>

Contact Peel Public Health at 905-799-7700 for more information about rabies, reporting requirements and prophylaxis.