Rabies vaccine and rabies immune globulin (RIG) fact sheet

Post-exposure prophylaxis of previously unimmunized individuals

The following two active rabies vaccines are currently available in Canada for active immunization of humans and have been approved for intramuscular (IM) use. Active immunization results in the production of neutralizing antibodies that begin to develop seven to 10 days after the initial rabies vaccine dose and persist for at least two years after a complete series.

Imovax® Rabies, Sanofi Pasteur Ltd.
Imovax® is prepared from rabies virus grown in human diploid cell culture (HDVC).

RabAvert®, Merck Frosst (distributor)
RabAvert® is prepared from rabies virus grown in primary cultures of chicken fibroblasts. For both vaccines, sterile diluent is supplied for reconstitution into a single 1.0 mL dose.

Schedule for the administration of 1.0 mL of either Imovax® or RabAvert®:

Dose number	When to administer	Vaccine dose	Administration site
1	First dose	1.0 mL	Intramuscular deltoid
2	3 days after first dose	1.0 mL	Intramuscular deltoid
3	7 days after first dose	1.0 mL	Intramuscular deltoid
4	14 days after first dose	1.0 mL	Intramuscular deltoid
Only given if person is Immunocompromised or on anti-malarial drugs or taking chloroquine			
5	28 days after first dose	1.0 mL	Intramuscular deltoid

Rabies vaccine administration site
Administer the rabies vaccine intramuscularly. For adults and children, the vaccine should always be administered in the deltoid area. In infants and small children, the anterolateral aspect of the thigh is also acceptable. The gluteal area should never be used for injections because administration of rabies vaccine in this area results in lower neutralizing antibody titres.

Missed doses
Every attempt should be made to adhere to the recommended vaccination schedule. Doses should not be given sooner than the minimum time interval as lower neutralizing antibody titres may result. While delays between doses mean delayed increases in titres, with minor delays the final titres would not be lower provided the subsequent doses have the same minimum intervals between doses as in the original schedule. For example, if a patient misses the day seven dose and presents for vaccination on day 10, the day seven dose should be administered that day and the day 14 dose would be given 7 days later, thereby maintaining the same interval between doses. In this example, the remaining two doses would be administered 17 days after the first dose and 31 days after the first dose.

Previously vaccinated persons
Post-exposure prophylaxis for people who have previously received rabies vaccine differs according to which preparation of vaccine was received.

Pregnancy
Due to the potential consequences of inadequately managed rabies exposure, pregnancy is not considered a contraindication to post-exposure prophylaxis.

Rabies vaccine interchangeability
When possible, an immunization series should be completed with the same product. However, if this is not feasible, RabAvert® and Imovax® vaccine are considered interchangeable in terms of indications for use, immunogenicity, efficacy and safety. Other types of tissue culture and avian culture vaccines are available in other countries and are considered interchangeable.

Rabies vaccine and RIG storage, handling, and Administration
- Rabies vaccine and RIG must be protected from light and stored in temperatures between 2 and 8 ºC.
- DO NOT mix rabies vaccine in the same syringe as RIG.
- DO NOT administer RIG and rabies vaccine in the same anatomical site. However, subsequent doses of vaccine in the 5-dose series can be administered at the RIG site if this is the preferable site for vaccine administration (i.e., deltoid for adults or anterolateral thigh for infants and small children).

Rabies immune globulin administration
RIG should be administered as soon as possible after exposure, typically on the same day as the first dose of rabies vaccine. Since vaccine-induced antibodies begin to appear within one week, there is no value in administering RIG greater than seven days after initiating an approved vaccine course. The dose of RIG is based on body weight. Excessive RIG can interfere with the active production of antibody from the rabies vaccine; the recommended dose should not be exceeded.

After wound irrigation and cleansing, as much as possible of the calculated dose of RIG should be injected close around and deep to the wound, taking care that it does not escape from the wound. Any remaining volume should be injected intramuscularly at a site distant from the vaccine administration site. When more than one wound exists, each area should be locally infiltrated with a portion of the RIG using a separate needle and syringe. If the original concentration provides an insufficient volume for all the wounds, the RIG may be diluted two- to three-fold in a solution of 0.9% sodium chloride. If the site of the wound is unknown, the entire dose should be administered intramuscularly.

The recommended dose of RIG is 20 IU/kg of body weight. RIG is supplied in 2 mL vials at 150 IU/mL. Use the following formula to calculate the dose required and use the table to determine how many vials to order. This formula is applicable to all age groups, including children.

- 20 IU/kg x (client weight in kg) divided by 150 IU/mL = dose in mL
- 9.09 IU/lb x (client weight in lbs) divided by 150 IU/mL = dose in mL

RIG is supplies in 2 mL vials at 150 IU/mL		
Client's body weight		**Number of RIG vials to order**
kg	**lbs**	
Up to 15	Up to 33	1
16 – 30	34 – 66	2
31 – 45	67 – 99	3
46 – 60	100 – 132	4
61 – 75	133 – 165	5
76 – 90	166 – 198	6
91 – 105	199 – 231	7
106 – 120	232 – 264	8
121 – 135	265 – 297	9
136 - 150	298 - 330	10

Multiple injections in same muscle
When administering a large volume of RIG, if it is necessary to use the same muscle to administer more than one injection, the distance separating two injections should be between 2.5 to 5 cm (one to two inches).

Drug interactions
After receiving RIG, measles- or varicella-containing vaccine administration should be deferred for four months. RIG can interfere with vaccine effectiveness when given within 14 days after receiving the varicella, MMR, or any of the individual components of the MMR vaccine. Under these circumstances, varicella or MMR immunization should be repeated four months after receiving RIG, or a serologic test should be performed four months after receiving RIG to confirm immunity. If RIG is administered more than 14 days after vaccination with the above named vaccines, immunization does not have to be repeated. Studies have found no evidence that RIG interferes with the response to inactivated vaccines, toxoids, or the live vaccines for yellow fever or polio.

Refer to the Canadian Immunization Guidelines (Rabies) for further details regarding exposure criteria and vaccine/RIG details.

Health Unit Contact Info – www.healthunit.com
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