

## Rabies Reference for Travelers

Rabies is spread by infected mammals. It can be prevented, but once the virus is in the nervous system, rabies is essentially 100% fatal. Therefore, you should follow the recommended actions if you are potentially exposed to rabies!

### Prevention:

Watch out for animals to prevent bites. Avoid eating or carrying food near animals or wildlife.

Consider completing **pre-exposure immunization** before departure.

- 3 doses of rabies vaccine on days 0, 7, and 21 or 28 (day 28 gives a higher antibody response) simplifies treatment if exposure occurs.
- Immunity is considered long lasting, avoiding the need for Human Rabies Immune Globulin (HRIG) at any time after completion of either a pre- or post-exposure series of modern rabies vaccine.
- Persons vaccinated with an incomplete series are treated as if they are unvaccinated. Persons vaccinated with vaccine of unknown potency or nerve tissue derived vaccine without documentation of a positive rabies antibody titer are also treated as unvaccinated.

Purchase Betadine (povidone iodine) swabs or Hibiclens (chlorhexidine) 4% solution and a large syringe to flush wounds, available at the Campus Health Healthy Heels Shoppe.

**After potential rabies exposure:** Take action if bitten, scratched, or licked on broken skin or mucous membranes or finding a bat in the room with a sleeping person/unattended child who may be unaware that a bite or direct contact occurred:

### Begin immediate, appropriate wound care! This is essential even if previously vaccinated!

- WASH and FLUSH wound(s) with soap and water thoroughly and copiously for 15 minutes to physically remove virus. Mix a small amount of Hibiclens or swirl a Betadine Swab in water to make the solution for washing and flushing wounds.
- Apply full strength antiseptic into the wound(s). Betadine is the preferred agent, but Hibiclens 4% can be used if allergic to iodine.
- Side note: Inform health care provider if exposure involved monkeys. Rarely, macaque monkeys infected with Herpes B virus can infect humans. Antiviral meds are used in certain situations to prevent infection. (See: [CDC Herpes B Virus Home Page](#) for more information.)
- Avoid suturing wound(s) if possible. If HRIG is needed, infiltrate wound(s) before any suturing.

**If Pre- Immunized:** ♦ Obtain 2 doses of modern rabies vaccine on days 0 and 3. You may need to travel to obtain appropriate vaccine.

♦ HRIG is not needed if 3 doses of modern rabies vaccine completed before departure.

**Note:** Contact information for clinics that offer appropriate post-exposure rabies vaccine and/or HRIG nearest to your destination will be included with your travel clinic materials if available. The information was compiled by the International Society of Travel Medicine (ISTM) and posted in 2014 and is subject to change. It is possible closer facilities that did not respond to ISTM's survey may be available, especially if only vaccine is needed. No information is available for any Central American clinics, therefore returning to the U.S. is most likely your best option.

### Post-exposure immunization if not previously immunized:

- As soon as can be arranged, travel to nearest medical facility with modern rabies vaccine and HRIG. HRIG is NOT available in most developing countries and:
  - ♦ Developing countries may still use older vaccines derived from animal spinal cord or brain tissue. These products are not as effective and have caused severe paralytic reactions. They are typically given daily for 14 to 21 days. You should not accept this type of vaccine, but travel to where acceptable products are available.
  - ♦ **Modern rabies vaccines** are all given intramuscularly (IM) in the deltoid region in adults and include:
    - √ Human diploid cell vaccine (HDCV)
    - √ Purified chick embryo cell vaccine (PCECV)
    - √ Purified vero cell rabies vaccine (PVRV)
    - √ Purified duck embryo vaccine (PDEV)
  - ♦ The WHO recognizes different post-exposure vaccine schedules and alternative routes of administration due to the lack of availability of appropriate products in much of the world. WHO's allowance of intradermal use of vaccine and omitting HRIG in "minor" exposures works "**most**" of the time. However, "**most**" of the time may not be acceptable when dealing with a disease that is essentially 100% fatal. The recommendations presented here are those of the U.S. Center for Disease Control (CDC).
- HRIG will be needed to immediately neutralize or bind rabies virus. Equine rabies immune globulin (ERIG) may be the only product available in some developing countries and is preferable to no RIG. Purified ERIG has been used effectively when travel to obtain HRIG is not an option. FaviRab™ and Equirab™ are brand names of purified ERIG. Unpurified anti-rabies serum of equine origin is associated with higher rates of serious adverse reactions, including anaphylaxis.
- Amount of HRIG needed is based on weight. Giving more HRIG than needed can interfere with immune response to the vaccine.
- Wound(s) are infiltrated with as much HRIG as anatomically feasible. If large or multiple wounds, HRIG can be diluted with normal saline to provide adequate volume. If any of the HRIG dose remains, it is given IM in the deltoid opposite the arm the 1<sup>st</sup> vaccine dose was given.
- In addition to HRIG, 4 rabies vaccine doses will be needed days 0, 3, 7, and 14. A fifth dose is recommended on day 28 if you are considered immunosuppressed.
- If HRIG is not given on the same day as the 1<sup>st</sup> vaccine dose, it can be administered up to and including the 7th day after the 1<sup>st</sup> dose of vaccine. Rabies has occurred when RIG was omitted and only vaccine was given.
- If treatment for rabies exposure is received abroad, record the name of products used. Ask for the box or take a picture so that treatment can be evaluated once back in the U.S.
- Incubation periods for rabies can vary considerably (from < 7 days to > 1 year). You need to seek treatment promptly, but if you had a possible rabies exposure that you did not seek treatment for, post-exposure treatment can still be effective if given before symptoms begin (at first nonspecific/vague symptoms, then slight or partial paralysis, signs of encephalitis). HRIG is still infiltrated into wound area and the modern rabies vaccine series started.

