

Frequently Asked Questions about Bats and Rabies for Health Care Providers

Why does exposure to bats raise such concern about rabies?

Between 1980 and 2002, 29 (91%) of the 32 cases of domestically acquired human rabies in the United States involved variants of rabies virus associated with bats. Many of these cases had a history of exposure to bats, however, only 3 cases reported an actual bat bite. This finding suggests that even limited contact with bats has the potential of transmission of rabies.

The teeth and claws of bats are so small that a bite or scratch may leave only a very small mark and the wound may not bleed or hurt. Thus, a person may not realize that an exposure has occurred or may not take the exposure seriously enough to feel that it warrants attention, and they may fail to report the exposure.

When should a person exposed to a bat get rabies postexposure prophylaxis (PEP)?

If a bat was physically present and you cannot rule out that a person was bitten, scratched, or had a mucous membrane exposure to the bat (e.g., a sleeping person awakes to find a bat in the room, or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person), the Wyoming Department of Health, Preventive Health and Safety Division recommends testing the bat for rabies. This is especially important when young children are involved as they may be unable to describe their exposure. If the bat is found to be positive for rabies or the bat is unavailable for testing, postexposure prophylaxis (PEP) should be provided.

What is the appropriate method of PEP for a person exposed to a bat?

If the physician determines that a bat exposure warranting PEP has occurred, the patient should be given one dose of human rabies immune globulin (HRIG) on day 0 and five doses of rabies vaccine on each of days 0, 3, 7, 14, and 28. The HRIG should be given as 20 IU per kg body weight. As much of the HRIG as possible should be infiltrated into and around the wound(s), and the remainder injected intramuscularly at an anatomical site (usually the gluteus muscle) distant from the vaccination site. The deltoid is the preferred site for rabies vaccine administration for adults and older children. For younger children, vaccine may be administered in the outer aspect of the thigh. The rabies vaccine should never be administered in the gluteal area. To ensure complete protection from rabies, the patient must get BOTH the HRIG and the vaccine.*

* The ONLY exceptions to this are: (1) a patient with prior pre- or postexposure prophylaxis given in the United States since 1980 (these patients should be given only 2 doses of vaccine [days 0 and 3] and no HRIG); or (2) a patient who has already begun PEP with vaccine only, for whom no HRIG was given, and who received the first dose of vaccine 7 or more days prior to this evaluation (HRIG given 7 or more days following initiation of vaccination will interfere with the development of active immunity).

Questions about any deviations from the schedule should be directed to the vaccine manufacturer.

To obtain the human rabies immune globulin (HRIG) and the human rabies vaccine contact your local pharmacy.

Don't forget that rabies post exposure events and animal bites are reportable to the Wyoming Department of Health. If you have questions please call 307-777-7172 or 1-877-996-9000.

Rabies Pre exposure Vaccination Information for Health Care Providers

Wyoming Department of Health Recommendations for Rabies

Pre exposure vaccination should be offered to all persons whose activities place them at increased risk for being exposed to the rabies virus or to potentially rabid animals (such as Wyoming veterinarians and their staff, veterinary students, animal control personnel, people who work with wildlife, workers who have frequent and close contact with bats, laboratory workers doing rabies diagnostic tests. In addition, pre-exposure vaccination is recommended for persons who plan to spend time in countries where dog rabies is common. See <http://www.cdc.gov/travel/yb/index.htm> for country specific information.

Pre exposure vaccination does not eliminate the need for additional therapy after a rabies exposure, it simplifies therapy by eliminating the need for human rabies immune globulin (HRIG) and decreases the number of doses needed. Second, it may protect persons whose post exposure therapy might be delayed. Finally, it may provide partial protection to persons with unapparent exposures to rabies.

Checking a Titer:

Persons living in areas where rabies is endemic (i.e. Wyoming) and who work in the above mentioned occupations should have their rabies titers checked every two years unless they work in a laboratory where rabies testing is done. These people should have rabies titers checked every six months. Samples can be sent to Kansas State University (785-532-4483).

Preexposure Vaccination: Rabies pre exposure prophylaxis can be obtained directly from your local pharmacy. The cost to a hospital for three 1-mL doses of i.m. vaccine is about \$400.

It is given as a series of three injections -- one each on days 0, 7, and 21 or 28. It should only be given intramuscularly (IM).

Details about the [human vaccines](http://healthlinks.washington.edu/nwcphp/rabies/humanvaccine.html) currently licensed in the U.S. are available at <http://healthlinks.washington.edu/nwcphp/rabies/humanvaccine.html>.

If you have additional questions about rabies pre-exposure prophylaxis or any other questions about rabies please contact the Wyoming Department of Health Preventive Health and Safety Division at 1-877-996-9000.

Rabies pre-exposure prophylaxis guide – United States, 1999

Risk category	Nature of risk	Typical populations	Pre-exposure recommendations
Continuous	Virus present continuously, often in high concentrations. Specific exposures likely to go unrecognized. Bite, non-bite or aerosol exposure.	Rabies research laboratory workers;* rabies biologics production workers.	Primary course. Serologic testing every 6 months; booster vaccination if antibody titer is below acceptable level. +
Frequent	Exposure usually episodic with source recognized, but exposure also might be unrecognized. Bite, non bite or aerosol exposure.	Rabies diagnostic lab workers,*spelunkers, veterinarians and staff, and animal- control and wildlife workers in rabies-enzootic areas.	Primary course. Serologic testing every 2 years; booster if antibody titer is below acceptable level.+
Infrequent (greater than population at large)	Exposure nearly always episodic with source recognized. Bite or non-bite exposure	Veterinarians and animal-control and wildlife workers in areas with low rabies rates. Veterinary students. Travelers visiting areas where rabies is enzootic and immediate access to appropriate medical care including biologics is limited.	Primary course. No serologic testing or booster vaccination.
Rare (population at large)	Exposure always episodic with source recognized. Bite or non-bite exposure.	U.S. population at large, including persons in rabies- epizootic areas.	No vaccination necessary.

* Judgment of relative risk and extra monitoring of vaccination status of laboratory workers is the responsibility of the laboratory supervisor (43).

+ Minimum acceptable antibody level is complete virus neutralization at a 1:5 serum dilution by the rapid fluorescent focus inhibition test. A booster dose should be administered if the titer falls below this level.

RABIES ANTIBODY TESTING BY THE RFFIT METHOD

Specimen Requirements:	Collect serum in a red top tube or gel separator tube. ***Cerebral Spinal Fluid (CSF) testing is also available. Please call for details.
Reference Range:	In humans, a titer of 1:5 or greater is considered acceptable. ¹ (MMWR, 48:1-22, 1999) A titer of 0.5 I.U./mL is required for animals exported to most rabies-free areas. <i>Please note there is not an established "protective" titer in animals.</i> Individual interpretation is the responsibility of the submitting veterinarian.
Volume of sample:	2 mls of serum, minimum amount 500 microliters of serum
Which Test to request:	
<u>Screen</u> (Humans Only):	Qualitative results. For those who want to know if they need a booster of rabies vaccine. Cost: \$25.00 (1-9 samples); \$20.00 (10+ samples).
<u>Endpoint</u> (Humans or Animals):	Quantitative results. For those who want to know their exact titer and animals being exported to some rabies free areas. Cost: Humans and animals not for export: \$30.00 (1-9 samples), \$27.00 (10+samples); Animals for export: \$35.00 (as of 5/1/03 \$40.00). (microchip number and country of destination must be included at the time of submission) Note: Contact individual countries for import requirements.
Laboratory Schedule:	All RFFITs are initiated at 8:00 am on Mondays (must receive sample by 5:00 pm Friday) and Thursdays (must receive sample by 5:00 pm Wednesday).
Routine turnaround:	Results will be mailed within 7-10 days of the set up date. Results will be faxed or phoned upon request. Any additional faxes will incur an additional \$5.00 charge.
Shipping Information:	Serum should be removed from the clot and packed in a leak proof container with absorbent material. This package should be placed inside of a second container with gel packs or dry ice. Overnight service is recommended. Shipping charges are the responsibility of the shipper.
Payment:	Individuals responsible for payment should include a check, money order, or credit card form.
Send Samples to:	Rabies Laboratory/RFFIT Mosier Hall Kansas State University 1800 Denison Avenue Manhattan KS 66506-5600
Rejection Criteria:	Gross hemolysis (serum is dark red in color) Gross lipemia (serum is milky in appearance) Not a serum sample (i.e., plasma) QNS (quantity not sufficient) Bacterial contamination Tube unlabeled

Specimen Labeling Instructions:

ALL specimen tubes must be labeled with the Patient's Name/identification number. Specimens not properly labeled are not accepted by the laboratory. All samples must have an accompanying KSU RFFIT submission form. All animals for export must have a microchip number or tattoo included. If these requirements are not met the test may be cancelled or delayed.

Laboratories Licenses:

CLIA	17D0648239	Florida	L800005564
New York	817020A0	California	17D0648239
Pennsylvania	028519	AAVLD	

Quality Assurance Letter is available upon request.

CPT code: 86382

If you have additional questions, please call the Rabies Lab at (785) 532-4483 or email rabies@vet.k-state.edu
Forms and information are also available on the web at <http://www.vet.k-state.edu/rabies>.