

Rabies Prevention in Travelers

Rabies is a uniformly fatal viral infection of the brain that is transmitted by the bite or scratch of an infected mammal. Dogs are the source of 96% of human rabies cases. Semi-domesticated urban and rural dogs are the main reservoir for rabies in developing countries.

Rabies infection can be avoided by not getting bitten in the first place. Being very aware of dogs can keep you from accidentally wandering into their space, or not seeing a dog approaching you. If a dog is charging you, pick up a rock—or even pretend to pick up a rock—and the dog will likely turn around immediately and run away. When visiting temples in Asia that have monkeys nearby, avoid carrying any food with you.

If you are bitten by a potentially rabid animal, you will need to obtain human rabies immune globulin (HRIG), plus 5 doses of rabies vaccine over a period of one month. HRIG is virtually unavailable in most developing countries. This means you may have to fly to get the treatment that you need. One can avoid the need for HRIG by receiving 3 doses of rabies vaccine before you travel. If you have pre-exposure rabies immunization, you do not need HRIG after a bite. However, if you are bitten after a pre-exposure series, you still need 2 doses of rabies vaccine, 3 days apart as a booster. Good quality rabies vaccines are often available in developing countries, which means that you may be able to obtain the two booster doses without leaving the country.

If you are bitten by a mammal while traveling, you need to think WAR. WAR stands for:

Wound care

Rabies virus does not travel to the brain via the bloodstream. It stays in the area of the wound until it can enter a nerve ending. The virus can be washed out of the wound, or killed in the wound with betadine or another antiseptic. Wash the wound with soap and water as soon as possible, then pour betadine (povidone-iodine) straight in the wound. Irrigate thoroughly with water afterwards. If the wound is large, avoid suturing the wound initially. It can be closed after a few days, if cosmetically or functionally necessary.

Antibodies

If you have never had rabies vaccine, you must get human rabies immune globulin (HRIG) injected into and around the wound. The amount of HRIG needs to be carefully calculated, based on your weight, not on the size of the wound. If all of the HRIG cannot be injected around the wound, the remainder is given in the buttocks or deltoid muscle. If you have been pre-immunized against rabies, you do not need HRIG.

Rabies vaccine

There are three rabies vaccines in the world that are acceptable: human diploid cell vaccine, purified chick embryo cell vaccine, and purified vero cell vaccine. There are other versions of rabies vaccine in some developing countries, but these should be avoided. If you are pre-immunized against rabies, you just need two doses of rabies vaccine, 3 days apart. If you are not pre-immunized, then you must obtain HRIG as above, and start a series of 5 rabies vaccine injections on days 0, 3, 7, 14, and 28. Different brands of vaccines can safely be used in the same series.

Because HRIG is in short supply around the world, you may experience a delay between the bite and getting definitive treatment. Generally speaking it is safe to start the post-exposure treatment 4-5 days after the bite although earlier is, of course, better.