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Rabies Prevention in Nepal

Rabies is a form of brain infection caused by a virus that is transmitted in the saliva of infected animals. Nepal and India are countries with a high risk of rabies due to the large population of stray dogs in the cities. Monkeys can also transmit rabies to humans, and most other animals are thought to be capable of transmitting rabies. Therefore, any contact with an animal in Nepal that results in a wound, a bite, a scratch or mucous membrane exposure should lead the person to seek a medical opinion as to whether rabies post-exposure prophylaxis is necessary. It is **never too late** to receive treatment no matter how much time has elapsed from a possible exposure.

In Nepal, most animal exposures to travelers occur in Kathmandu and monkey bites/scratches account for 43% of all exposures in tourists in a study done at CIWEC Clinic. Monkey bites are sustained most commonly at the monkey temple (Swyambu) and in the Pashupati temple area. Contrary to popular belief, trekking in Nepal does not pose any added risk to the traveler.

There is no way to kill the rabies virus with antibiotics. Treatment is based on immunizing a person who has been bitten, with a combination of borrowed antibodies from other humans (Human Rabies Immune Globulin or HRIG), and vaccines that stimulate the production of large amounts of antibodies that can kill the wild virus before it reaches the brain. It takes 7-10 days for antibody production after starting the vaccine series and HRIG is protective during this time. One can also prevent rabies by being immunized with three injections of rabies vaccine before bite or exposure occurs. These "pre-immunized" persons, if they are bitten, need only two shots of the vaccine, 3 days apart, as a booster. Persons who have not been pre-immunized require injections of HRIG into the wound and 5 injections of the vaccine over one month. Both strategies are effective at preventing rabies after an exposure. If it is more than 8 days since the vaccine was started (not since the bite occurred), then HRIG should no longer be given, as it may interfere with antibody production from the vaccine.

Summary approach to Rabies prevention:

Person has completed a pre-exposure rabies series	Exposed to a possibly rabid animal	Two shots as a booster, 3 days apart
Person has not had pre-exposure rabies injections	Exposed to a possibly rabid animal	Human Rabies Immune Globulin (HRIG) injected around the wound; 5 injections of rabies vaccine on days 0, 3, 7, 14, and 28

CIWEC Clinic has always made HRIG available to treat patients with animal bites in Nepal. Since HRIG is very expensive and there is world-wide shortage of HRIG lately, we recommend that most travelers to Nepal be pre-immunized. There are several acceptable rabies vaccines available around the world, and they can be used interchangeably during the same rabies treatment series, if necessary. The acceptable vaccines are all referred to as "Tissue Culture Vaccines," and include the following: Human Diploid Cell Vaccine (HDCV); Purified Verocell Rabies Vaccine (PVRV); Purified Chick Embryo Vaccine (PCEC).

To avoid animal bites: Do not pet or pick up puppies, do not take in stray dogs, do not carry food while visiting temples, do not get too close to baby monkeys, and do not enter houses or temples that are guarded by dogs without making sure that the animal cannot get to you.