

# Prevention and Control

## Rabies vaccine and immune globulin

There is no treatment for rabies after symptoms of the disease appear. However, two decades ago scientists developed an extremely effective new rabies vaccine regimen that provides immunity to rabies when administered after an exposure (postexposure prophylaxis) or for protection before an exposure occurs (preexposure prophylaxis). Although rabies among humans is rare in the United States, every year an estimated 18,000 people receive rabies preexposure prophylaxis and an additional 40,000 receive postexposure prophylaxis.

### Preexposure prophylaxis

Preexposure vaccination is recommended for persons in high-risk groups, such as veterinarians, animal handlers, and certain laboratory workers. Other persons whose activities bring them into frequent contact with rabies virus or potentially rabid bats, raccoons, skunks, cats, dogs, or other species at risk of having rabies should also be considered for preexposure prophylaxis. In addition, international travelers likely to come in contact with animals in areas of enzootic dog rabies which lack immediate access to appropriate medical care, including biologics, should be considered for preexposure prophylaxis. (For more information about preexposure prophylaxis, see [Human Rabies Prevention - United States, 1999 Recommendations of the Immunization Practices Advisory Committee \(ACIP\).](#))



People who work with live rabies virus in research laboratories or vaccine production facilities are at the highest risk of inapparent exposures. Such persons should have a serum (blood) sample tested for antibody every 6 months and receive booster vaccine, when necessary. Routine preexposure prophylaxis for other situations may generally not be indicated.

### Purpose of preexposure prophylaxis

Preexposure prophylaxis is given for several reasons. First, although preexposure vaccination does not eliminate the need for additional medical attention after a rabies exposure, it simplifies therapy by eliminating the need for human rabies immune globulin (HRIG) and decreasing the number of vaccine doses needed – a point of particular importance for persons at high risk of being exposed to rabies in areas where immunizing products may not be available, and it minimizes adverse reactions to multiple doses of vaccine. Second, it may enhance immunity in persons whose postexposure therapy might be delayed. Finally, it may provide protection to persons with inapparent exposures to rabies.

### Preexposure prophylaxis regimen

Preexposure prophylaxis consists of three doses of rabies vaccine given on days 0, 7, and 21 or 28.

### **Postexposure prophylaxis**

Postexposure prophylaxis (PEP) is indicated for persons possibly exposed to a rabid animal. Possible exposures include animal bites, or mucous membrane contamination with infectious tissue, such as saliva. {For more information on types of exposures, see [Human Rabies Prevention - United States, 1999 Recommendations of the Immunization Practices Advisory Committee \(ACIP\)](#).} PEP should begin as soon as possible after an exposure. There have been no vaccine failures in the United States (i.e. someone developed rabies) when PEP was given promptly and appropriately after an exposure.

Administration of rabies PEP is a medical urgency, not a medical emergency. Physicians should evaluate each possible exposure to rabies and as necessary consult with local or state public health officials regarding the need for rabies prophylaxis.

#### **Postexposure prophylaxis regimen**

In the United States, PEP consists of a regimen of one dose of immune globulin and five doses of rabies vaccine over a 28-day period. Rabies immune globulin and the first dose of rabies vaccine should be given as soon as possible after exposure. Additional doses of rabies vaccine should be given on days 3, 7, 14, and 28 after the first vaccination. Current vaccines are relatively painless and are given in your arm, like a flu or tetanus vaccine.

### **What to do after a possible exposure**

If you are exposed to a potentially rabid animal, wash the wound thoroughly with soap and water, and seek medical attention immediately. A health care provider will care for the wound and will assess the risk for rabies exposure. The following information will help your health care provider assess your risk:

- the geographic location of the incident
- the type of animal that was involved
- how the exposure occurred (provoked or unprovoked)
- the vaccination status of animal
- whether the animal can be safely captured and tested for rabies

Steps taken by the health care practitioner will depend on the circumstances of the bite. Your health care practitioner should consult state or local health departments, veterinarians, or animal control officers to make an informed assessment of the incident and to request assistance. The important factor is that you seek care promptly after you are bitten by any animal.

### **What you can do to help prevent the spread of rabies**

Be a responsible pet owner:

- Keep vaccinations up-to-date for all dogs, cats and ferrets. This requirement is important not only to keep your pets from getting rabies, but also to provide a barrier of protection to you, if your animal is bitten by a rabid wild animal.

- Keep your pets under direct supervision so they do not come in contact with wild animals. If your pet is bitten by a wild animal, seek veterinary assistance for the animal immediately.
- Call your local animal control agency to remove any stray animals from your neighborhood. They may be unvaccinated and could be infected by the disease.
- Spay or neuter your pets to help reduce the number of unwanted pets that may not be properly cared for or regularly vaccinated.

Avoid direct contact with unfamiliar animals:

- Enjoy wild animals (raccoons, skunks, foxes) from afar. **Do not** handle, feed, or unintentionally attract wild animals with open garbage cans or litter.
- **Never** adopt wild animals or bring them into your home. **Do not** try to nurse sick animals to health. Call animal control or an animal rescue agency for assistance.
- Teach children **never** to handle unfamiliar animals, wild or domestic, even if they appear friendly. "Love your own, leave other animals alone" is a good principle for children to learn.
- Prevent bats from entering living quarters or occupied spaces in homes, churches, schools, and other similar areas, where they might come in contact with people and pets.
- When traveling abroad, avoid direct contact with wild animals and be especially careful around dogs in developing countries.

Rabies is common in developing countries in Asia, Africa, and Latin America where dogs are the major reservoir of rabies. Tens of thousands of people die of rabies each year in these countries. Before traveling abroad, consult with a health care provider, travel clinic, or your health department about the risk of exposure to rabies, preexposure prophylaxis, and how you should handle an exposure, should it arise.