



# Huntsville Center *Safety Gram* *Engineering the Edge for Safety Excellence*

27 September 2011

## RABIES EXPOSURE AND TREATMENT



Animals can be infected with rabies while still appearing healthy. Once the signs and symptoms of rabies develop, the disease is almost always fatal. It is important to report and seek evaluation for all animal exposures regardless of how the animal was behaving.

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention (CDC) each year occur in wild animals like raccoons, skunks, bats, and foxes.

The rabies virus infects the central nervous system, ultimately causing disease in the brain and death. The early symptoms of rabies in people are similar to that of many other illnesses, including fever, headache, and general weakness or discomfort. As the disease progresses, more specific symptoms appear and may include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation (increase in saliva), difficulty swallowing, and hydrophobia (fear of water). Death usually occurs within days of the onset of these symptoms.

### Information for Travelers to HNC Worksites

There is a potential exposure to rabies for our employees while performing demolitions on projects. When in a travel status, do not touch, pet, pick up, or feed any domestic or wild animals. If you see any animal that is acting strangely, contact the police department.

### Deployment

The U.S. Army Medical Command reported that a Fort Drum, N.Y. Soldier, who recently returned from Afghanistan, died from rabies after contracting the disease from a feral dog while deployed. The Army has initiated an investigation to ensure that other service members who may have been exposed to rabies are identified and receive preventive treatment, if needed. All previously deployed Service Members, since March 2010 (Active or Reserve Component, as well as those recently discharged from military service); DOD civilians and contractors who have had contact with a feral/stray animal while deployed should be immediately evaluated by medical personnel. Army Medicine and the DOD are committed to ensuring that anyone who believes they may have been exposed while deployed is provided with appropriate medical evaluation and care. Call the Wounded Warrior & Family Hotline at 1-800-984-8523 (Stateside DSN: 421-3700 or Overseas DSN: 312-421-3700) for information on obtaining a medical evaluation and, if necessary, treatment. Treatments for rabies are available at Medical Treatment Facilities in Theater and in Fixed Medical Treatment Facilities WorldWide.

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## Rabies Prevention (People)

Rabies in humans is 100% preventable through prompt appropriate medical care. Yet, more than 55,000 people, mostly in Africa and Asia, die from rabies every year - a rate of one person every ten minutes.

The most important global source of rabies in humans is from uncontrolled rabies in dogs. Children are often at greatest risk from rabies. They are more likely to be bitten by dogs, and are also more likely to be severely exposed through multiple bites in high-risk sites on the body. Severe exposures make it more difficult to prevent rabies unless access to good medical care is immediately available.

## Human rabies surveillance

In this century, the number of human deaths in the United States attributed to rabies has declined from 100 or more each year to an average of 2 or 3 each year. Two programs have been responsible for this decline. First, animal control and vaccination programs begun in the 1940's and oral rabies vaccination programs in the 2000's have eliminated domestic dogs as reservoirs of rabies in the United States. Second, effective human rabies vaccines and immunoglobulins have been developed.

## What are the signs and symptoms of rabies?

The first symptoms of rabies may be very similar to those of the flu including general weakness or discomfort, fever, or headache. These symptoms may last for days.

There may be also discomfort or a prickling or itching sensation at the site of bite, progressing within days to symptoms of cerebral dysfunction, anxiety, confusion, agitation. As the disease progresses, the person may experience delirium, abnormal behavior, hallucinations, and insomnia.

The acute period of disease typically ends after 2 to 10 days. Once clinical signs of rabies appear, the disease is nearly always fatal, and treatment is typically supportive.

Disease prevention includes administration of both passive antibody, through an injection of human immune globulin and a round of injections with rabies vaccine.

Once a person begins to exhibit signs of the disease, survival is rare. To date less than 10 documented cases of human survival from clinical rabies have been reported and only two have not had a history of pre- or postexposure prophylaxis.

## How is rabies transmitted?

All species of mammals are susceptible to rabies virus infection, but only a few species are important as reservoirs for the disease. In the United States, distinct strains of rabies virus have been identified in raccoons, skunks, foxes, and coyotes. Several species of insectivorous bats are also reservoirs for strains of the rabies virus.

Transmission of rabies virus usually begins when infected saliva of a host is passed to an uninfected animal. The most common mode of rabies virus transmission is through the bite and virus-containing saliva of an infected host. Though transmission has been rarely documented via other routes such as contamination of mucous membranes (i.e., eyes, nose, mouth), aerosol transmission, and corneal and organ transplantations.

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## Rabies Exposure: When should I seek medical attention?

The rabies virus is transmitted through saliva or brain/nervous system tissue. You can only get rabies by coming in contact with these specific bodily excretions and tissues.

It's important to remember that rabies is a medical urgency but not an emergency. Decisions should not be delayed.

Wash any wounds immediately. One of the most effective ways to decrease the chance for infection is to wash the wound thoroughly with soap and water.

See your doctor for attention for any trauma due to an animal attack before considering the need for rabies vaccination.

Your doctor, possibly in consultation with your state or local health department, will decide if you need a rabies vaccination. Decisions to start vaccination, known as postexposure prophylaxis (PEP), will be based on your type of exposure and the animal you were exposed to, as well as laboratory and surveillance information for the geographic area where the exposure occurred.

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

## What care will I receive? Wound Care

Regardless of the risk of rabies, bite wounds can cause serious injury such as nerve or tendon laceration and local and system infection. Your doctor will determine the best way to care for your wound, and will also consider how to treat the wound for the best possible cosmetic results.

For many types of bite wounds, immediate gentle irrigation with water or a dilute water povidone-iodine solution has been shown to markedly decrease the risk of bacterial infection.

Wound cleansing is especially important in rabies prevention since, in animal studies, thorough wound cleansing alone without other postexposure prophylaxis has been shown to markedly reduce the likelihood of rabies.

You should receive a tetanus shot if you have not been immunized in ten years. Decisions regarding the use of antibiotics, and primary wound closure should be decided together with your doctor.

## How is rabies diagnosed?

In animals, rabies is diagnosed using the direct fluorescent antibody (DFA) test, which looks for the presence of rabies virus antigens in brain tissue. In humans, several tests are required.

Rapid and accurate laboratory diagnosis of rabies in humans and other animals is essential for timely administration of postexposure prophylaxis. Within a few hours, a diagnostic laboratory can determine whether or not an animal is rabid and inform the responsible medical personnel. The laboratory results may save a patient from unnecessary physical and psychological trauma, and financial burdens, if the animal is not rabid.

In addition, laboratory identification of positive rabies cases may aid in defining current epidemiologic patterns of disease and provide appropriate information for the development of rabies control programs.

The nature of rabies disease dictates that laboratory tests be standardized, rapid, sensitive, specific, economical, and reliable.

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### What is the risk for my pet?

Any animal bitten or scratched by either a wild, carnivorous mammal or a bat that is not available for testing should be regarded as having been exposed to rabies.

Unvaccinated dogs, cats, and ferrets exposed to a rabid animal should be euthanized immediately. If the owner is unwilling to have this done, the animal should be placed in strict isolation for 6 months and vaccinated 1 month before being released.

Animals with expired vaccinations need to be evaluated on a case-by-case basis. Dogs and cats that are currently vaccinated are kept under observation for 45 days.

Small mammals such as squirrels, rats, mice, hamsters, guinea pigs, gerbils, chipmunks, rabbits, and hares are almost never found to be infected with rabies and have not been known to cause rabies among humans in the United States. Bites by these animals are usually not considered a risk of rabies unless the animal was sick or behaving in any unusual manner and rabies is widespread in your area.

However, from 1985 through 1994, woodchucks accounted for 86% of the 368 cases of rabies among rodents reported to CDC. Woodchucks or groundhogs (*Marmota monax*) are the only rodents that may be frequently submitted to state health department because of a suspicion of rabies. In all cases involving rodents, the state or local health department should be consulted before a decision is made to initiate postexposure prophylaxis (PEP).

### Rabies Prevention (Animals)

1. Visit your veterinarian with your pet on a regular basis and keep rabies vaccinations up-to-date for all cats, ferrets, and dogs.
2. Maintain control of your pets by keeping cats and ferrets indoors and keeping dogs under direct supervision.
3. Spay or neuter your pets to help reduce the number of unwanted pets that may not be properly cared for or vaccinated regularly.
4. Call animal control to remove all stray animals from your neighborhood since these animals may be unvaccinated or ill.

### Is the animal available for testing?

A healthy domestic dog, cat, or ferret that bites a person should be confined and observed for 10 days. Any illness in the animal during the confinement period or before release should be evaluated by a veterinarian and reported immediately to the local public health department.

If signs suggestive of rabies develop, postexposure prophylaxis should be initiated. The animal should be euthanized and its head removed and shipped, under refrigeration, for examination by a qualified laboratory.

If the biting animal is stray or unwanted, it should either be confined and observed for 10 days or be euthanized immediately and submitted for rabies examination.

Skunks, raccoons, foxes and bats that bite humans should be euthanized and tested as soon as possible. The length of time between rabies virus appearing in the saliva and onset of symptoms is unknown for these animals and holding them for observation is not acceptable.

After exposure to wildlife in which rabies is suspected, prophylaxis is warranted in most circumstances. Because the period of rabies virus shedding in wild animal hybrids is unknown, these animals should be euthanized and tested rather than confined and observed when they bite humans.

Vaccination should be discontinued if tests of the involved animal are negative for rabies infection.

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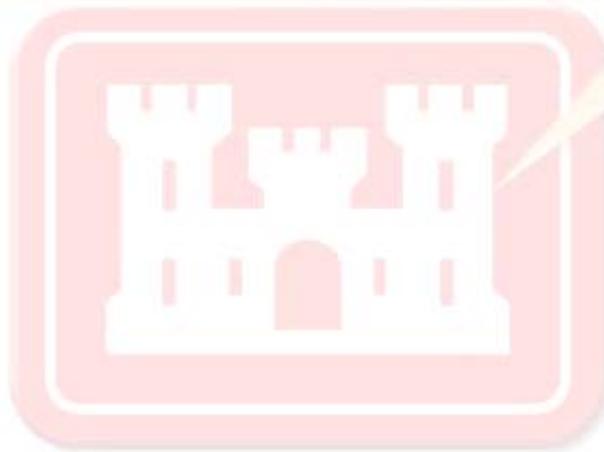
The information above is an excerpt from the website ([www.cdc.gov](http://www.cdc.gov)) for Centers for Disease Control (CDC) and Prevention and the U.S. Army Medical Command.

For additional information on this topic, go to:

< <http://www.cdc.gov/rabies/> >

< [http://www.army.mil/article/65762/Third\\_Army\\_stresses\\_importance\\_of\\_rabies\\_prevention/](http://www.army.mil/article/65762/Third_Army_stresses_importance_of_rabies_prevention/) >

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