Rabies

Rabies is caused by a virus that attacks the nervous system, and it is always fatal unless the victim has been protected by immunization or receives proper treatment. Only a few countries isolated by water or mountains are completely free of the disease. In the United States, rabies occurs in all states except Hawaii.

Rabies may affect all mammals, including livestock and pets, but is most often found in raccoons, skunks, foxes, and bats. The virus is found in the animal's saliva, and infection is usually caused by a bite from a rabid animal. However, rabies can also be contracted by saliva coming into contact with small cuts in the skin or mucous membranes, such as eyes and mouth.

Once the virus enters the body, it attacks the central nervous system by traveling along neural pathways to the brain. After reaching the central nervous system, the virus is transmitted through nerves to salivary glands and other tissues in the body. In most animals, the time from infection with the virus to the onset of symptoms is usually two to twelve weeks, but it may be longer. The incubation period in humans can exceed one year. This variability is due to many factors, including differences in susceptibility among species, the amount of virus deposited when bitten, and the location of the bite.

Rabid animals can appear to be either "furious" or "dumb." In the furious stage, the animal is aggressive and excited, snapping and biting at anything, and there may be foaming at the mouth. In the dumb stage, the animal often seems docile, almost tame. The dumb stage is especially dangerous because the infected animal is easily approached by unsuspecting humans, particularly children.

Indications that an animal may be sick or diseased include the following: loss of coordination where the animal may stumble or appear disoriented; increased aggressiveness or increased passivity where the animal may appear tame; drooling, foaming, or frothing at the mouth; watery discharge from the eyes or nose; and activity at unusual times, such as nocturnal animals wandering around during the day. In most animals, death occurs less than ten days after the onset of clinical signs.

However, signs of rabies in wild animals are unreliable. Occasionally, animals may be infected with rabies while still appearing to be in very good physical condition. Therefore, any wild animal that bites or scratches a person should be tested for rabies. Pets that suddenly appear aggressive or unnaturally shy do not necessarily have rabies. Other diseases, such as distemper, can cause behavioral changes. However, a pet whose personality abruptly changes should be examined by a veterinarian.

Control of rabies

Since 1977, at least 11 states and the District of Columbia have been involved in the Mid-Atlantic raccoon rabies epidemic. This strain of rabies is apparently a southern strain of raccoon rabies that began to spread northward in 1977 with the translocation of southern raccoons into the Mid-Atlantic region. A number of these relocated raccoons were apparently rabid and quickly transmitted the disease to raccoons and other wildlife in the region. The virus is now spreading northward at a rate of 25 to 75 miles per year.

The initial wave of the Mid-Atlantic epidemic reached its peak in Pennsylvania in 1989, when 702 cases of rabies were verified, 488 of them involving raccoons. It is likely that this strain of rabies will now remain in Pennsylvania at lower levels punctuated by periodic local outbreaks.

Techniques available to control wildlife rabies are limited at this time. Population reduction of the involved species by trapping, hunting, and poisoning has not been effective in preventing the spread of rabies. However, legal furbearer trapping may keep populations in balance with their environment and possibly reduce the chances of a rabies outbreak. A method of immunizing wildlife against the disease—with a dose of vaccine hidden in bait—is currently being used to limit the spread of rabies into isolated geographic areas, such as peninsulas, but it is too labor-intensive and expensive for use in most areas.

Public health officials generally rely on educating the public about the risk of handling wild animals and the importance of immunizing pets as the most effective means of preventing human rabies. In Pennsylvania, house cats and all dogs more than three months of age are required by law to be vaccinated against rabies. This is because many pets have much more contact with wild animals than their owners realize. In fact, for most of the past 10 years, more cats were diagnosed with rabies than either bats or foxes! Furthermore, failure to have a pet vaccinated jeopardizes its life by leaving it vulnerable to exposure to rabid animals. If an unvaccinated animal is bitten by a rabies-positive animal, it must either be quarantined for six months or destroyed. Also, if an unvaccinated pet acquires rabies, it could pass the disease along to you, your family, or neighbors. The treatment to prevent rabies from developing in humans is costly, and once rabies develops it is nearly always fatal, so immunization of pets is a must. This is one case where an ounce of prevention is definitely worth a pound of cure!

What to do if bitten by any animal

If you have been bitten or scratched by an animal that might be rabid, do the following:

- Act promptly, but do not panic. It takes time for the rabies virus to react in the body.
- Capture and kill the suspect animal, if possible, without destroying the head. Follow the guidelines given below for submitting a suspect animal for testing.
- Wash the wound immediately and thoroughly with generous amounts of soap and water. Then apply rubbing alcohol or a strong solution of water and iodine to the exposed areas (except for the eyes, of course).

- Contact a physician immediately after this first-aid treatment. Rabies vaccine and antiserum will then be administered as required.

If you have any questions regarding the need for rabies treatment or the need to submit animals for rabies testing, call the Health Department hotline, 1-800-692-7254 from 7:30-5:00 Monday through Friday. During evenings, weekends, or holidays call 717-737-5349. Questions on submitting an animal for testing can also be directed to the Pennsylvania Department of Agriculture, Bureau of Animal Industry, 717-787-8808, from 8:00 to 4:00 weekdays.

Consultative services for evaluation, treatment, and other problems are available to attending physicians, nurses, and veterinarians from the Division of Acute Infectious Disease Epidemiology, Pennsylvania Department of Health, at 717-787-3350.

If a pet or livestock animal has been bitten by a known or suspected rabid animal, immediately wash the wound with generous amounts of soap and water and transport the bitten animal to the veterinarian for a rabies booster vaccine. Remember that rabies can be contracted through the saliva remaining on the wound, so wear rubber or plastic gloves when washing the wound and handling the animal. Capture the suspected rabid animal, if possible, following the procedure described below.

If livestock animals have been bitten by a known or suspected rabid animal, notify the Pennsylvania Department of Agriculture at 717-783-5301 or the Bureau of Animal Industry at 717-787-8808 from 8:00 to 4:00 weekdays. If there is strong reason to believe that the animal was rabid, representatives of the Bureau of Animal Industry will investigate the situation. A quarantine will be necessary for those animals exposed to the disease, and permits will be issued to move animals that have not been exposed. Signs of rabies in livestock include going off feed, erratic behavior, staggering, and excessive salivation.

What to do with a suspected rabid animal

If you suspect an animal might be rabid, do the following:

- Be extremely cautious around animals suspected of having rabies. Normally shy animals can lunge and bite even when apparently paralyzed. If you are not familiar with methods for handling wild animals, avoid the animal. Keep any pets in the house and contact the wildlife conservation officer in your region, wildlife pest control operator, or local police.
- An unvaccinated dog or cat that has bitten someone should be examined by a veterinarian and will be confined for 10 days. If it remains in good health, it may then be vaccinated and released.
- Suspected rabid wildlife should be killed to limit the spread of the disease. If possible, in killing the animal, do not damage the head because the brain is needed for diagnosis.
- Wear rubber or plastic gloves when touching the carcass to avoid contact between the animals and your skin, eyes, nose, or mouth. You can contract rabies by merely scratching yourself on the tooth of a recently killed rabid animal.
- If no human or animal contact has occurred, the carcass should be buried in a hole deep enough that it cannot be uncovered by another animal. Touch the carcass only with rubber or plastic gloves that can be buried and clothing that can be thoroughly washed.
- If human or animal contact has occurred or is suspected, place the carcass in a heavy-duty plastic bag and then place it inside a larger container, packed with ice packs. Keep the specimen cool but not frozen, and keep it away from children and pets.
- Call the number of the appropriate laboratory listed below or the Pennsylvania Department of Health, Bureau of Laboratories hotline to determine whether the animal should be submitted for rabies testing and for instructions on submitting an animal for testing.
- Some laboratories may require that the head of larger animals, such as livestock, cats, dogs, raccoons, skunks, groundhogs, or foxes, be removed by a veterinarian before submission. Smaller animals, such as bats, chipmunks, or squirrels, can be submitted in their entirety. The laboratory of the Pennsylvania Department of Agriculture in Summerdale will accept all carcasses and decapitation is not necessary.
- Specimens should be hand-delivered or shipped by an overnight delivery service to the appropriate laboratory listed below. (Specify "Saturday Delivery" when specimen is shipped on Friday.) Specimens can also be taken to one of the regional Department of Agriculture offices for shipment to the appropriate testing facility: Pennsylvania Department of Health, Bureau of Laboratories, 110 Pickering Way, Lionville, PA 19353; (610) 363-8500. Specimens are accepted seven days a week, 24 hours a day. Call to let them know the specimen is being submitted. *This is for human exposure specimens only.*

  Pennsylvania Department of Agriculture, Bureau of Animal Industry, First Street, Summerdale, PA, 17093; (717) 787-8808. Any specimen not meeting the definition of human exposure should be submitted to this laboratory. *This is for nonhuman exposure and livestock specimens.*

  Philadelphia Department of Health Laboratory, 500 South Broad Street, Philadelphia, PA 19107. Specimens originating within the city limits of Philadelphia should be dispatched to this laboratory. Call (215) 685-6740 or (215) 686-1776 to verify that the animal should be submitted for testing. *This is for human and nonhuman exposure specimens.*

  Allegheny County Department of Laboratories, 3441 Forbes Ave., Pittsburgh, PA 15213; (412) 578-8070. This laboratory provides rabies diagnostic services for Allegheny County. Call veterinarian Dr. Chaudry at (412) 578-8060 to verify that the animal should be submitted. *This is for human and nonhuman exposure specimens.*

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