

# Rabies: A Discussion for Kids

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## What is Rabies?

Rabies is a disease that affects wild animals, domestic animals (like pets and livestock), and humans. It is caused by a virus. Only mammals (warm-blooded animals with fur) can get rabies.

The word "rabies" comes from a Latin word that means "to rage." Rabies got its name because animals with rabies sometimes act as if they are angry. Rabies attacks the brain and spinal cord. It kills you if not prevented. The best way to prevent rabies is to make sure your pets get their rabies shots and to avoid contact with wild or stray animals.

## History of Rabies

People have known about rabies for a long time, as animal cases were reported in early Babylonian, Greek, and Roman records. Rabies was likely brought to the Americas when settlers first came from Europe, bringing rabid animals with them.

A 9-year-old boy was the first person to have received an effective shot for rabies. In 1885, Louis Pasteur thought that if he injected a weak form of virus from one rabid animal into another, the second animal might be able to fight off the disease. He tried this hypothesis out on the boy, he survived and lived a long life. That was how people started giving shots for rabies.

After this success, other rabies vaccines were made. In the 1950s, people who had been bitten by a rabid animal got 23 shots along the abdomen. Today, the shots are more effective and less painful. They consist of a series of 6 shots given in the arm over a 1 month period. One shot is given around the bite and the rest are given in the arm.

## How Do You Get Rabies?

You get rabies from the saliva of a rabid animal, usually from a bite. The rabies virus is spread through saliva. It is *not* spread through contact with urine, feces, or blood of an infected animal. You cannot get rabies by petting an animal. You may get rabies from a scratch if the animal, such as a cat, was licking its paw before it scratched you. (Remember that the rabies virus is found in the saliva of an animal).

### **What Does The Virus Do?**

The targets of the rabies virus are nerve cells. The rabies virus infects the body usually through a bite from a rabid animal. Once inside the body, the virus travels along the peripheral nerves (the nerves that run throughout the body). Its main target is the central nervous system, which is made up of the brain and spinal cord.

Viruses cause disease by attacking the cells of the host. They enter the host cell. Once inside, the virus makes more viruses. The host cell may die. The virus leaves the host cell and moves on to other host cells where the process starts again.

### **What Kinds Of Animals Get Rabies?**

Only warm-blooded animals can get rabies. You cannot get rabies from birds, even though they are warm-blooded. Snakes and fish cannot have rabies because they are cold-blooded. In the United States, rabies is much more common in wild animals than in pets like cats or dogs. This is because most people who take good care of their pets make sure that their pets get the rabies vaccinations.

In the United States today, about 93 of every 100 reported cases of rabies are in wild animals. Most of the cases are found in raccoons, skunks, bats, and foxes. Raccoons are the most common wild animal with rabies today. Cats had the largest number of reported rabies cases in pets.

#### **Rabies cases in the United States (2006):**

All animal cases	6943
Domestic animals	547
Wild animals	6393
Human cases	3

#### **Domestic animals diagnosed with rabies-United States, 2006**

Dogs	79
Cats	318
Cattle	82
Horses/ mules	53
Sheep/goats	11
Swine	0
Other Domestic	4

#### **Wild animals diagnosed with rabies in the United States, 2006**

Skunks	1494
Foxes	427

Bats	1692
Raccoons	2615
Rodents/ rabbits	44
Other wild animals	121

### **Rabies In Animals**

Animals with rabies may act differently than healthy animals. Wild animals may move slowly or act tame. Also, some wild animals, like foxes, raccoons, and skunks, that normally avoid porcupines, may receive a face full of quills if they become rabid and try to bite these prickly rodents. A pet that is usually friendly may snap at you and try to bite.

There are two common types of rabies. One type is "furious" rabies. Animals with this type are hostile, may bite at objects, and have an increase in saliva. In the movies and in books, rabid animals foam at the mouth. In real life, rabid animals look like they have foam in their mouth because they have more saliva.

The second and more common form is known as paralytic or "dumb" rabies. An animal with "dumb" rabies is timid and shy. It often rejects food and has paralysis of the lower jaw and muscles.

#### **Signs of rabies in animals include:**

- changes in an animal's behavior
- general sickness
- problems swallowing
- an increase in drool or saliva
- wild animals that appear abnormally tame or sick
- animals that may bite at everything if excited
- difficulty moving or paralysis
- death

Animals in the early stage of rabies may not have any signs, although they can still infect you if they bite you. The incubation period is the time from the animal bite to when signs appear. In rabies, it is usually 1-3 months. But it can last as long as several years. Once the virus reaches the brain or spinal cord, signs of the disease appear.

### **Rabies In Humans**

In humans, signs and symptoms usually occur 30-90 days after the bite. Once people develop symptoms, they almost always die. This is why it is very important

to tell an adult and go to your doctor right away if you have been bitten by an animal that might be rabid.

Early symptoms of rabies include fever, headache, sore throat, and feeling tired. As the virus gets to the brain, the person may act nervous, confused, and upset.

Other symptoms of rabies in humans include:

- pain or tingling at the site of the bite
- hallucinations (for example, seeing things that are not really there)
- hydrophobia ("fear of water" due to spasms in the throat)
- paralysis (unable to move parts of the body)

As the disease advances, the person enters into a coma and dies.

### **How Do I Keep My Pet From Getting Rabies?**

The best way to prevent rabies is to make sure your pets get and stay vaccinated against rabies!!

### **Other Ways To Prevent Rabies In Your Pets:**

- Walk your dog on a leash.
- Never let them roam freely where wildlife may be present.
- Consider keeping your pets indoors.
- Call animal control to take wild or stray animals away, especially if you see an animal acting strangely.
- If an animal bites your pet, handle your pet carefully so you do not get bitten.
- Get a rabies booster vaccination for them. Even if they have had the rabies vaccination, a booster shot will help them fight off the disease better.
- Get your pets spayed or neutered. Pets that are fixed are less likely to leave home, become strays, and make more stray animals.

### **How Do I Keep From Getting Rabies?**

- Never touch unfamiliar or wild animals. Enjoy wild animals from afar.
- Avoid direct contact with stray animals. Stray cats and dogs may not have been vaccinated against rabies.
- Never adopt wild animals or bring them into your home.
- Do not try to nurse sick animals to health. It is common to want to rescue and nurse a hurt wild animal, but that animal may have rabies. Call an animal control person or animal rescue group if you find a sick animal.
- Make sure that your trash cans and pet foods are secured so that they do not attract wild animals.

### **What Do I Do If I Am Bitten By An Animal?**

- If you are bitten by an animal, tell an adult immediately! Have the adult wash the wound well with soap and water for at least five minutes. You should then see a doctor as soon as possible for additional evaluation of the wound.
- Have an adult contact your local animal control officer. If the animal that bit you is a pet (dog, cat, or ferret), the animal may be watched for signs of rabies for about 10 days. If it is a wild animal, the animal control people may need to euthanize the animal to test its brain for rabies.
- Bites from bats are the main source of rabies in humans in the United States today. It is possible, but rare, that someone might be bitten by the bat and not know it. If you discover a bat in the house, especially in the room of a sleeping person or child, treat this situation as though an actual bite has occurred. This is especially true if the bat is acting strangely (unusually tame).
- Contact your local or state health department for more information.

### **Other prevention activities: Oral vaccine program**

Today, many states are vaccinating animals in the wild to prevent the spread of rabies. This is done by putting oral vaccines in a special bait. The baits are then dropped from airplanes or placed in areas where wildlife are likely to be. The wild animals then eat the food with the vaccine in it. This keeps them from getting rabies if they are bitten by a rabid animal. This method has worked well in both Europe and Canada.

The idea behind oral rabies vaccination programs is that if enough animals in an area without rabies become vaccinated against the disease, they will create a barrier. Those animals vaccinated against the disease will defend their territory against animals with rabies. This will slow or stop the rabies outbreak.

### **Humans And Rabies**

Most of the human deaths in this country since 1980 were caused by a strain of rabies associated with bats. The number of deaths is small because people who are bitten by animals often get the anti-rabies shots.

As many as 40,000 people each year in the United States are exposed to animals that might have rabies, and these people receive the shots to prevent the disease. The number of human rabies deaths is low in the United States compared with the rest of the world. Each year, about 30,000 to 50,000 people in the world die of rabies. These deaths occur because people did not get vaccinations after being

bitten by a rabid animal. Many occur in Asia, Africa, and Latin America. Millions of people around the world get the anti-rabies shots after an animal bite. Dogs are the biggest source of animal bites leading to rabies shots worldwide

### **Rabies in Animals**

In the United States, rabies in domestic animals (like dogs, cats, and cattle) has declined dramatically since the 1950s. This decrease is mainly due to rabies vaccination programs. Today, pet ferrets can also be vaccinated against the disease. However, overall rabies cases in the United States have been increasing since the 1970s. This is mainly because of outbreaks of rabies among wildlife.

If your dog or cat would happen to bite someone a bite report would need to be filled out by the police. You would then have to take your pet to the veterinarian for a process called "Rabies Observation." Your veterinarian would examine your pet for any evidence of the external signs of rabies, as described above, which is typically looking for problems with the nervous system. A special form is then filled out which is sent to the County Rabies Control Office.

If your pet is currently vaccinated against rabies and is up-to-date then you can take your pet home for "home confinement" and are required to return in ten days for a follow-up examination. You must strictly follow the guidelines for the confinement as it is the law and someone's health is at stake. The reason for the ten day period is because an animal that is in the furious form of rabies (mad dog that is attacking), will show symptoms of nervous system problems within ten days. Your veterinarian checks for these nervous system changes on the ten day follow-up exam. If your pet shows no symptoms, they are released from the confinement and a release form is sent to the Rabies Control Office.

If your pet is NOT up-to-date on the vaccinations because the yearly boosters (which are required by law) were not given then your pet must be impounded for the ten day period in a veterinary hospital or animal control facility with veterinary supervision. That is why you DO NOT want to let those vaccinations lapse.

### **Conclusion**

If you are bit by a dog or wild animal **let your parents know**. Rabies is a dangerous disease and it can be easily treated soon after exposure. If not treated properly, serious and possibly fatal disease can develop. Always exercise caution around strange dogs, aggressive dogs and wild animals. And be certain that your pets are

up-to-date on their rabies vaccinations. It protects them against rabies, but if<sup>7</sup>  
they would happen to bite someone they will not be impounded.

Based on notes from Educational Seminar given by Dr. Sakas.