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## Rabies

Rabies is a preventable viral disease most often transmitted through the bite of a rabid animal. The rabies virus attacks the central nervous system, causing encephalitis. It is always fatal once symptoms appear. Rabies can be prevented in persons who have come into contact or have been bitten by animals through prompt administration of anti-rabies vaccine and rabies immune globulin. Hundreds of rabies prophylactic treatments are initiated annually in Arizona to prevent rabies from developing after a possible exposure. Every year, approximately 30 people are actually exposed to rabid animals in Arizona. People who are exposed **must** receive the vaccine and anti-rabies serum treatment to prevent infection.

In Arizona, the principal rabies hosts are bats, skunks, and foxes. These animals carry their own distinct rabies virus variants or "strains". Rabies can "spillover" into other mammal species, such as bobcats, coyotes, javelina, cats, dogs, horses, cows, etc.



@Bat Conservation International

### Important Steps to Protect your Pets and Family:

1. Visit your veterinarian with your pets 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. Be cautious around stray animals in your neighborhood since these animals may be unvaccinated or ill.

In Arizona, bats present the most common source of rabies exposures to humans because rabid bats often fall to the ground where they are easily accessible to people and pets. Bats are generally not aggressive. Exposure to rabid bats usually occurs when people pick up or handle a sick or dead bat. Other rabies exposures occur when people try to approach or feed wild animals, or in some cases, are attacked by rabid animals such as foxes, bobcats, and skunks. Most rabies exposures can be avoided by simply leaving bats and other wild animals alone. The last documented human rabies death in Arizona was in 1981.

All bite, scratch or contact exposures should be reported immediately to local [animal control](#) and [health officials](#).

Reports of suspected rabies infection in livestock and the quarantine of livestock that bite humans should be handled by the [Arizona State Veterinarian's office](#) in Phoenix: (602) 542-4293.

## Transmission & Symptoms

**Human Transmission** People can get rabies from animal bites or from infected saliva getting into their eyes, nose, mouth or an open wound. Brain tissue can also be infectious and should not be handled e.g. when skinning an animal. Sometimes, rabid animals do not show any signs of illness before death from rabies. Thus, contact with wild animals should always be avoided. If a wild animal does not run away when you approach it, it may be sick or injured. Do not try to help it. If an animal is acting strangely, stay away from the animal and call your local rabies animal control office.

**Human Symptoms** 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.

**Animal Symptoms** The first sign of rabies is usually a change in the animal's behavior. Animals may act more aggressive or more tame than usual. Nocturnal animals like skunks, foxes and bats may be out during the day. Rabid animals may stagger, tremble, or seem weak. Bats may be found on the ground, unable to fly. Rabid animals may appear agitated and excited or paralyzed and frightened.

**All too regularly child exposures occur due to a person collecting a grounded bat (or other wild animal) and passing it around as a curiosity. Please let your students and children know to NEVER EVER touch a bat.**



Arizona Rabies Control & Bite Management Manual  
<http://www.azdhs.gov/phs/oids/vector/rabies/pdf/AZRabiesManual.pdf>

2014 Rabies Data and Maps in Arizona 1/1/14 thru 6/26/14  
<http://www.azdhs.gov/phs/oids/vector/rabies/pdf/rabies-2014.pdf>

Bats are amazing creatures; Arizona is home to more than 28 species of bats, which is more than most states. Bats are true flying mammals and use echolocation to locate solid objects. Worldwide, they are primary predators of vast numbers of insect pests, saving farmers and foresters billions of dollars annually and helping to control insect-spread human diseases. Many eat insects in flight and can eat more than 1,000 insects in an hour, including pesky mosquitoes.



## Prevention

The Arizona Department of Health Services recommends the following precautions to avoid exposure to rabies:

- Keep people and pets away from wild animals.
- Never leave pet food in your yard because it will attract wild animals. Fallen bird seed attracts foraging skunks to your yard.
- Do not pick up, touch, or feed wild or unfamiliar animals, especially sick or wounded ones.
- If you have been bitten or scratched, or had contact with an animal, wash the wound or area well with soap and water, and report it immediately to [animal control](#) and [health officials](#).
- Do not "rescue" abandoned young wild animals.
- Vaccinate all dogs and cats against rabies.
- Take precautions when camping, hunting or fishing. Avoid sleeping on the open ground without the protection of a closed tent or camper.
- Keep pets on a leash or in a fenced yard.
- Wear impermeable gloves when skinning carcasses.
- Do not disturb roosting bats.
- If you find a bat on the ground, **don't touch it**. Place a box over the bat to contain it. Try to preserve the bat so it is intact for testing at a laboratory. Report the bat and its location to [animal control](#) or [health officials](#).

- Teach children not to handle or touch sick or injured animals including bats.
- Report all animal bites to [animal control](#) and [health officials](#).

### **What should I do if an animal bites me?**

- Immediately wash the bite wound with soap and water.
- If the wound requires medical treatment, call your family doctor.
- Try to capture the animal without damaging its head or risking further exposure.
- Notify [animal control](#) or [health officials](#).
  - If the animal is a dog, cat, or livestock animal, they will place it under 10-14 day observation. If it remains healthy for that period, no risk of rabies transmission exists.
  - If a bat, skunk, fox, coyote, or other wild animal bites you, the animal should be presumed rabid until laboratory testing is complete.
  - If the animal is not captured, you will need to consult your doctor, and the local health department about whether you need to start anti-rabies preventative treatment.

**Do not wait to seek medical help. If your family doctor cannot see you immediately, go to Urgent Care or Hospital facility.**

Human Rabies Prevention – United States, 2008

<http://www.azdhs.gov/phs/oids/vector/rabies/pdf/HumanRabiesPrevention2008.pdf>

## **Bats and Rabies at Schools**

### **Information for School Administrators**

Every year in Arizona, children find rabid bats on schools grounds and bring rabid bats to school for show-and-tell. Several of these incidents result in children having to be vaccinated for rabies each year, which entails a month-long series of vaccinations. Since rabies is fatal, such an exposure that goes unreported to adults could lead to the tragic loss of a child's life.

The Arizona Department of Health Services (ADHS) believes that prevention of contact between bats and children is extremely important and includes three key components:

1. Educating children to not touch bats or other wildlife and to immediately report a bat found on the ground to an adult
2. Informing school staff on what to do if a bat is found on the ground
3. Decreasing the chance of bats being found on school grounds by:
  - a. informing school officials on the importance of discouraging bats from roosting in or on school buildings
  - b. implementing training for county environmental health sanitarians to inspect schools to identify the presence of roosting bats, and
  - c. providing resources to schools for what to do if a bat colony is on school grounds

## Teaching Children about Bats

Children need to be shown what a real bat looks like, since most people have only seen bats either in cartoons or flying in the air from a distance at dusk. When a bat is on the ground, it is difficult for both children and adults to recognize it as a bat, because the wings may be folded inward. Children should be taught to not touch a bat and to immediately tell an adult. Adults must learn the safe way of capturing a bat.



*Antrozous, pallidus*, pallid bat. A pallid bat is perched on a rock.  
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Please consider showing your children the ADHS videos:

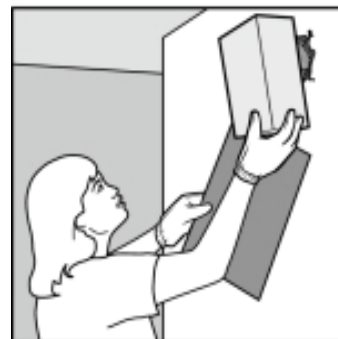
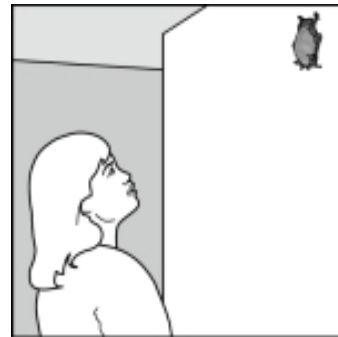
- [Bats and Rabies at Schools \(English\)](#)
- [Murciélagos y Rabia en las Escuelas \(Español\)](#)



Please also consider posting the ADHS [children's educational poster on rabies](#) in your local school

### Bat on the Ground: Now what?

If a bat is found on the ground, cover it with a small box or other solid container. Gently slip a piece of cardboard between the ground and box and slide the bat into the box. Use leather gloves to prevent accidental contact between hands and the bat. Make sure that all seams are tightly sealed, because bats can fit through small crevices. Call your local animal control agency. Ensure that the bat is not within a child's or pet's reach.



Capturing a bat indoors can be as simple as "boxing a bat".  
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## Schools with Bat Colonies

If your school has a colony of bats roosting on school grounds, ADHS recommends calling the [regional Arizona Game & Fish Department \(AGFD\) office](#) to find a local AGFD Wildlife Service Licensee with expertise in bat exclusion. Bats around school grounds is a wonderful thing to see, but the buildings should be well sealed so that bats don't inadvertently end up in classrooms or hallways.

### **Every student on campus should know what to do if a grounded bat is found.**

The University of Arizona Cooperative Extension Office has created "Batty about Bats," an educational document on the biology of bats, integrated pest management (IPM) for bats, and rabies prevention. The IPM portion of this document includes steps that schools can implement to discourage bats from roosting on the outside of buildings. However, removal and/or exclusion of bats from the interior of a building or structure should be conducted by an AGFD Wildlife Service Licensee.

For more information about IPM related to bats, please view "[Batty about Bats](http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1456.pdf)" <http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1456.pdf>

For more information on rabies, please view Arizona Department of Health Services: <http://www.azdhs.gov/phs/oids/vector/rabies/index.htm>

Bat photos courtesy [DesertUSA.Com](http://DesertUSA.Com).

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## IPM and Health Inspections Video



Northwest Center for Alternatives to Pesticides (NCAP) with support from the Western IPM Center created a training video "Integrated Pest Management and Health Inspections". This video provides a look into how the principles of Integrated Pest Management (IPM) overlap with key points of Environmental Health Inspections. The video may be found online by selecting the video "Integrated Pest Management and Health Inspections" on the NCAP Youtube channel at <https://www.youtube.com/user/NCAPVids>. Or, see the NCAP website at [www.pesticide.org](http://www.pesticide.org) and click on the YouTube icon. For more information, contact Megan Dunn at [mdunn@pesticide.org](mailto:mdunn@pesticide.org).

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## Upcoming Webinars and Events

Attend Free Sessions of the [Green Strides Webinar Series](#). View archived webinars [here](#).

The [Green Strides Webinar Series](#) provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental literacy, including STEM, green careers, and civic engagement.

August 1, 2014, 2:00-3:00 p.m. Eastern / 11:00-12:00 p.m. Arizona: [All Bugs Good and Bad Webinar Series: Minimize Mosquito Problems \(eXtension\)](#)

For more information about the EPA Schools program, visit:

<http://www.epa.gov/schools/>

For more information about the Community IPM, visit:

<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:

<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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