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## **When Good Critters Go Bad, and Bad Ones Spread Disease**

**By Melanie Reynolds**

It was a dark and stormy night. OK, maybe it wasn't stormy. But it was close to midnight in my creaky old house when I saw the creature lurking in my den: It was a bat, though not necessarily of the vampire variety.

I did not panic. Bats can be helpful creatures, fulfilling tasks that are vital to a healthy ecosystem. Some eat tons of insect pests, including mosquitoes. Others pollinate plants, ensuring the production of those oh-so-healthy fruits we need in our diet. And if that isn't enough, a new treatment for human stroke patients has been developed based on an enzyme found in vampire bat saliva. Bats can literally save our lives.

But like Dr. Jekyll, bats can have a dark side. This one was perilously close to the door of my sleeping son's bedroom. As a public health professional, I know bats can carry rabies, and I worried that my son might have been bitten, transmitting this serious disease to him.

Fortunately, the story has a happy ending. We were able to capture the bat in a net, confine it to a plastic container (without touching it), and call the good folks at the city animal control office. They sent the creature to a laboratory in Bozeman, which determined that it was rabies-free.

Bats aren't the only critters of summer that can carry infectious diseases. Deer mice, mosquitoes, and ticks also are what we in public health call disease "vectors." Now that we're all spending more time outdoors working and playing among the wildlife, it's a good idea to refresh ourselves about the potential risks to our health so we can take the appropriate precautions.

### **Rabies**

All species of mammals can become infected with rabies, but only a few are important as reservoirs for the disease. These include bats, raccoons, skunks, foxes, and coyotes. If any of these animals bites a human, they should be euthanized and tested for rabies as soon as possible.

Transmission of rabies virus usually begins when the infected saliva of a host is passed to an uninfected animal, usually through a bite or scratch.

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A bat bite, I learned, can be tiny and practically painless, so it's not always easy to know when you have one. That's why it's important to err on the side of caution and rule out exposure to rabies if you find a bat in the room of a sleeping person. The Centers for Disease Control and Prevention (CDC) recommends that any direct contact between a human and bat should be evaluated.

If you know you've been bitten, wash the wound thoroughly and immediately with soap and water. Then seek medical treatment right away. Your health-care provider can advise you on whether you need a series of rabies shots. According to the CDC, current vaccines are relatively painless and are given in your arm, like a flu or tetanus shot.

Learn more about rabies: [www.cdc.gov/rabies](http://www.cdc.gov/rabies)

## **Hantavirus**

Deer mice, with their big eyes and ears, are cute little critters. They can even be beneficial, providing an essential food source for predatory birds and eating weeds and insects. But they also can carry hantavirus, which can cause a severe, sometimes fatal, respiratory disease in humans.

Anyone who comes into contact with deer mice risks getting hantavirus pulmonary syndrome. Tragically, a Gallatin County resident recently died of the disease.

Deer mice shed hantavirus in their urine, droppings, and saliva. The virus is mainly transmitted to people when they breathe air that becomes contaminated when droppings or nests are disturbed.

Keep this in mind when you're cleaning out garages, sheds, cabins and barns – potentially stirring up fresh mouse urine, droppings, and nesting materials.

The best way to prevent hantavirus when cleaning rodent-infested areas is to wear disposable gloves. Don't stir up dust by sweeping or vacuuming. Thoroughly wet the contaminated area with a household disinfectant (like bleach), and remove contaminants with a damp towel. Then disinfect your gloves before removing and disposing of them. Wash your hands thoroughly.

Severe mice infestations may require more precautions. Contact the health department for more information at [healthinfo@lccountymt.gov](mailto:healthinfo@lccountymt.gov).

Learn more about hantavirus: [www.cdc.gov/hantavirus](http://www.cdc.gov/hantavirus)

## **West Nile Virus**

It's hard to think of an upside to mosquitoes. Even scientists think the world would be better off without them, according to an article in *Nature, The International Weekly Journal of Science*.

“Malaria infects some 247 million people worldwide each year, and kills nearly one million,” the author wrote. “Mosquitoes cause a huge further medical and financial burden by spreading yellow fever, dengue fever, Japanese encephalitis, Rift Valley fever, Chikungunya virus and West Nile virus.... It's difficult to see what the downside would be to removal....”

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Of the diseases spread by mosquitoes, West Nile virus is the most likely to occur in Montana, though even it's fairly uncommon. In the past five years, there have been 17 cases in the state, resulting in one death, according to the CDC. But the disease tends to ebb and flow from one region to another. There's no way to know if this will be a good or bad year.

The most effective way to avoid West Nile virus disease is to prevent mosquito bites:

- Use insect repellents when you go outdoors. Repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection. (You can find more information about insect repellents at <http://cfpub.epa.gov/oppref/insect/>.)
- Wear long sleeves, long pants, and socks when outdoors, as weather permits. Mosquitoes may bite through thin clothing, so spraying clothes with repellent will give you extra protection. Don't spray repellent on the skin under your clothing.
- Take extra care during peak mosquito biting hours (dusk and dawn). Use repellent and protective clothing or consider avoiding outdoor activities during these times.
- Install or repair screens on windows and doors to keep mosquitoes outside.
- Empty standing water regularly from flowerpots, gutters, buckets, pool covers, pet water dishes, discarded tires, and birdbaths, to reduce the mosquito population.

Learn more about West Nile virus: [www.cdc.gov/westnile](http://www.cdc.gov/westnile)

## **Tickborne Diseases**

Ticks can carry many diseases. These vary by geographic region. You can prevent illness by preventing bites.

If you are bitten – and if you experience fever, abdominal pains, aches and/or a rash – you should see your health-care provider.

The best defense is to reduce your exposure to ticks, especially during warm months when they're most active.

- Avoid wooded and bushy areas with high grass and leaf litter.
- Walk in the center of trails.
- Use repellents that contain 20 percent or more DEET.
- Bathe or shower as soon as possible after coming indoors (preferably within two hours) to wash off and more easily find ticks that are crawling on you.
- Conduct a full-body tick check using a hand-held or full-length mirror to see all parts of your body upon return from tick-infested areas.
- Examine gear and pets. Ticks can ride into the home on clothing and pets, then attach to a person later. Tumble clothes in a dryer on high heat for an hour to kill remaining ticks.

Learn more about tickborne diseases: [www.cdc.gov/ticks](http://www.cdc.gov/ticks)

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Life is full of risks, but they shouldn't keep us from enjoying the wonderful outdoor opportunities that Montana has to offer. Just take a few precautions to help keep your experience with the critters of summer from going bad.

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