

# West Nile Virus



Click on the links to right to learn more about animals commonly infected with the West Nile Virus. Below is a list of links to information sources and federal and state websites which address the problem of West Nile Virus.

## USU Resources

- [USU brochure on West Nile Virus](#)

## Links to Utah and U.S. websites

- [Utah Department of Health](#)
- [Utah Department of Agriculture and Food](#)
- [Utah Division of Wildlife Resources](#)
- [Utah Mosquito Abatement Association](#)
- [Center for Disease Control \(CDC\) - WNV](#)
- [U.S. Maps and Data](#)

## Numbers to call for questions or to report problems/concerns

- Utah Department of Agriculture and Food: [801.538.7161](tel:801.538.7161)
- Utah Department of Health: [801.538.6101](tel:801.538.6101)
- Utah Division of Wildlife Resources: [801.538.4700](tel:801.538.4700)

## General Info

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## Avian Deaths and Human Infection

### Early-Season Avian Deaths from West Nile Virus as Warnings of Human Infection

An analysis of 2001 and 2002 West Nile virus (WNV) surveillance data shows that counties that report WNV-infected dead birds early in the transmission season are more likely to report subsequent WNV disease cases in

humans than are counties that do not report early WNV-infected dead birds.

- Guptill SC , Julian KG, Campbell GL, Price SD , Marfin AA. Early-season avian deaths from West Nile virus as warnings of human infection. *Emerg Infect Dis* [serial online] 2003 Apr [ *date cited* ]. Available from: URL: <http://www.cdc.gov/ncidod/EID/vol9no4/02-0421.htm>
- West Nile Virus Is A Risk You Can Do Something About With A Few Simple Steps. (Human protection) <http://www.cdc.gov/ncidod/dvbid/westnile/brochure.htm>

## Birds

West Nile Virus has a wide range of effects in birds. Some have almost no signs of illness and in other species it causes severe mortality. Domestic chickens, turkeys and ducks have seemed to be quite resistant to WNV and do not usually have a high enough level of viremia to result in spread back to mosquitoes. However, many wild birds have died from WNV. A list of those affected can be found at: <http://www.cdc.gov/ncidod/dvbid/westnile/birdspecies.htm>

Pet birds should be protected from mosquitoes by keeping them in a house or other area that is well screened and managed so as to prevent entry of mosquitoes. (See bird links at Utah Division of Wildlife Resources under additional resources)

## Dogs and Cats

### Experimental Infection of Cats and Dogs with West Nile Virus (from CDC web site)

Domestic dogs and cats were infected by mosquito bite and evaluated as hosts for West Nile virus (WNV). Viremia of low magnitude and short duration developed in four dogs but they did not display signs of disease. Four cats became viremic, with peak titers ranging from 10<sup>3.0</sup> to 10<sup>4.0</sup> PFU/mL. Three of the cats showed mild, non-neurologic signs of disease. WNV was not isolated from saliva of either dogs or cats during the period of viremia. An additional group of four cats were exposed to WNV orally, through ingestion of infected mice. Two cats consumed an infected mouse on three consecutive days, and two cats ate a single infected mouse. Viremia developed in all of these cats with a magnitude and duration similar to that seen in cats infected by mosquito bite, but none of the four showed clinical signs. These

results suggest that dogs and cats are readily infected by WNV. The high efficiency of oral transmission observed with cats suggests that infected prey animals may serve as an important source of infection to carnivores. Neither species is likely to function as an epidemiologically important amplifying host, although the peak viremia observed in cats may be high enough to infect mosquitoes at low efficiency.

- Austgen LE, Bowen RA, Bunning ML, Davis BS, Mitchell CJ, Chang G-JJ. Experimental infection of cats and dogs with West Nile virus. *Emerg Infect Dis* [serial online] 2004 Jan [ *date cited* ]. Available from: URL: <http://www.cdc.gov/ncidod/EID/vol10no1/02-0616.htm>

## Equine

Horses, mules, (equids) are seriously affected with WNV. It does NOT spread from horses to mosquitoes and back to horses or man. Vaccination of equine animals is strongly encouraged. There are now three vaccines that can be used to provide protection. All are labeled as "sold through veterinarians only" and it is best if owners consult with their veterinarian about timing, use in pregnant mares, use in foals, etc.

The Fort Dodge (Invator) product has been used for several years (millions of doses) and has provided excellent protection (94%) if BOTH doses were given initially. The vaccine is also available in combinations with Western and Eastern Encephalitis, as well as tetanus.

The vaccine should be given prior to the mosquito season, if possible. The first year it takes two doses with 3-4 weeks between the two doses. It will also take another 2 weeks after the second dose before the animal has protective immunity. After the first year, it only takes one dose. If an area is experiencing a HEAVY outbreak of WNV in Aug/Sep (the peak season) then the horses could be given another booster dose to provide extra protection at that time.

In January 2004, Merial released a WNV vaccine called RecombiTEK. It also requires two doses the first year (4-6 weeks apart) and an annual booster.

In late summer 2006 the new WNV vaccine PreveNile was released by InterVet for horses. PreveNile requires only a single dose for the initial vaccination and is good for 12 months, providing a high level of immunity.

## Frequently Asked Questions

### Q. Can West Nile virus (WNV) cause illness in dogs or cats?

**A.** A relatively small number of WNV infected dogs (<40) and only 1 WNV infected cat have been reported to CDC during 2003. Experimentally infected dogs\* showed no symptoms after infection with WNV. Some infected cats exhibited mild, nonspecific symptoms during the first week after infection--for the most part only showing a slight fever and slight lethargy.

It is unlikely that most pet owners would notice any unusual symptoms or behavior in cats or dogs that become infected with WNV.

### Q. Does my dog/cat becoming infected pose a risk to the health of my family or other animals?

**A.** There is no documented evidence of dog or cat-to-person transmission of West Nile virus. The evidence suggests that dogs do not develop enough virus in their bloodstream to infect more mosquitoes. Cats develop slightly higher levels of virus in their bloodstream, but it is unclear if this would be enough to infect mosquitoes. It is very unlikely that cats would be important in furthering the spread of the virus.

\*If your animal becomes infected with WNV, this suggests that there are infected mosquitoes in your area. You should take measures to prevent mosquitoes from biting you (use repellent and wear protective clothing.)

Veterinarians should take normal infection control precautions when caring for any animal (Including birds) suspected to have this or any viral infection.

### Q. Can I use insect repellent on my pets?

**A.** DEET-based repellents, which are recommended for humans, are **not** approved for veterinary use (largely because animals tend to ingest them by licking.) Talk with your veterinarian for advice about the appropriate product for use on your pet.