

Hemorrhagic disease (HD) is a general term for illness caused by the two viruses: Epizootic Hemorrhagic Disease virus (EHDV) and bluetongue virus (BTV). HD primarily affects white-tailed deer, often resulting in notable mortality rates. HD also affects mule deer and pronghorn antelope, and domestic ruminants (cows, goats, sheep). While cows typically remain asymptomatic, BTV infection can lead to severe illness and death in sheep.

Clinical Signs

Clinical signs of HD can vary depending on the serotype of EHDV or BTV that the animal is infected with, and whether the deer has developed immunity. Common signs include:

- Lethargy, weakness, lameness
- Reduced appetite
- Lesions or sores on the mouth
- Excessive salivation
- Hoof pain and abnormalities
- Dental pad erosion
- Ulcers in tongue or stomach
- Fever
- Swollen head, neck, tongue, or eyelids



Keep in mind!

Some deer infected with EHDV or BTV are found dead with few or no visible clinical signs

Transmission

HD viruses are transmitted when a female *Culicoides* biting midge (no-see-um) picks up the virus from the blood of an infected animal and then transmits the virus to another animal.



EHDV vectors: *Culicoides sonorensis* is the main vector of EHDV in the US, but they are rarely found in southeastern US. *Culicoides stellifer* and *Culicoides venustus* are the common vectors of EHDV in the southeastern US.

BTV vectors: *Culicoides insignis* is the main vector of BTV in the southeastern US.

What to do if you think a deer is infected with HD?

- Promptly contacting your veterinarian is crucial if you notice any signs of illness in your deer.
- A proper diagnosis can be made through clinical assessment and virus testing on tissue and blood samples, enhancing the likelihood of your deer recovery with timely treatment.
- In the unfortunate event of a deer's death, CHeRI offers complimentary field necropsy and HD testing services in Florida. Additionally, blood samples can be sent to the CHeRI lab at no cost.

Call 352-562-DEER

Public Health

- EHD and BT viruses do not infect humans. Humans are not at risk of infection when handling infected deer, eating venison from infected deer, or being bitten by no-see-ums. However, consuming meat from animals with generalized disease is not recommended.

Additional resources

Visit wec.ifas.ufl.edu/cheri for information about HD cases in Florida, EHDV vaccine trials, and vector educational resources to learn more about no-see-ums and vector control strategies.

Scan the QR code with your camera to complete a 3-min survey



HD Prevention & Vector Control

Medgene's vaccine, proven effective in field trials, is available as an experimental product to protect deer against two EHDV serotypes (2 and 6). Contact Medgene to order directly. Unfortunately, no BTV vaccines are approved for deer. For best results, vaccinate does and bucks in March/April and fawns in August/September. Initial vaccination requires two doses, 21 days apart, with yearly revaccination

HD cases may be reduced by killing the insects that transmit it. No-see-ums are typically controlled with **insecticide applications** in and/or around pens.

- The number of no-see-ums can be reduced by modifying the habitats where these insects develop, including changing the location and depth of watering holes, like ponds. Try to keep captive deer as far away from midge breeding sites as possible (muddy areas, ponds, creeks)
- Researchers at CHeRI are working to develop an integrated pest management program to control no-see-ums in deer farms.

Would you like more information? Contact us, and stay connected



wec.ifas.ufl.edu/cheri



vilma.montenegro@ufl.edu

Authors: Vilma Montenegro, M.S., Samantha Wisely, Ph.D., Juan Campos, Ph.D., and Nathan Burkett-Cadena, Ph.D. University of Florida.