

# ADENOVIRUS HEMORRHAGIC DISEASE IN DEER

## A NEW DISEASE OF DEER IN B.C.

Adenovirus Hemorrhagic Disease (AHD) is an acute, infectious, usually fatal viral disease of deer species. Since early September, coastal blacktailed deer on several British Columbia (BC) Gulf Islands (confirmed on Galiano, Mayne, Pender and Salt Spring) and southern Vancouver Island (near Duncan and Nanaimo) have died from this disease. The information below is important for the public and hunters to learn more about this new disease and its implication on deer populations, hunters and public health.



## WHAT IS AHD?

AHD is caused by a virus in the Adenoviridae family. There are a variety of adenoviruses that can infect animals – both wild and domestic species. AHD of deer is caused by *Odocoileus adenovirus* (OdAdV) and was first discovered in black-tailed deer in California in 1993. Cervids (mule deer, white-tailed deer, elk, moose and perhaps caribou) are all susceptible to the disease, however, members of the blacktailed deer family (including mule deer) appear to be most severely affected. AHD is similar to other viral hemorrhagic diseases in cervids including Bluetongue and Epizootic Hemorrhagic Disease.

## WHAT ARE THE SIGNS OF AHD IN DEER?

AHD has both acute and chronic forms. Acute signs include difficulty breathing, foaming or drooling from the mouth, diarrhea (sometimes bloody), and seizures. The disease course is usually rapid and fatal as the virus damages small blood vessels in the lungs and intestines. Chronic signs include ulcers and abscesses in the mouth/throat, likely the cause of drooling, that can lead to weight loss and death. Fawns/juveniles are more susceptible to AHD and experience much higher death rates than adults. Affected animals are often found dead and in good body condition with no signs of trauma or other cause of death.

## HOW IS IT SPREAD?

Adenovirus can be spread through direct contact between deer and contact with fluids (saliva, feces, urine), particularly when animals are at high density such as if artificially fed. Transmission through airborne routes, contaminated feed and water, and contaminated equipment may also occur. Adenoviruses rarely are transmitted by insects but this has not yet been confirmed for AHD.

## CAN IT BE TRANSMITTED TO HUMANS, LIVESTOCK OR PETS?

There is no evidence that this deer adenovirus can be transmitted to humans and research supports that it is not transmitted to livestock or pets. Although there is no known human health risk from the virus, hunters are advised not to consume meat from animals found dead, obviously ill or acting abnormally prior to death.

## HOW CAN IT AFFECT CERVIDS IN BRITISH COLUMBIA?

Since its initial discovery, cases have occurred in several US states in most years with outbreaks in some locations. With improved diagnostic tools, wildlife health experts recognize the disease more often, however BC had not previously documented the disease. A serological survey of archived elk serum did confirm exposure in SW BC a decade ago. In 2020, outbreaks are underway in California and Oregon. AHD can lead to localized and short term deer population reductions where it occurs; however, this disease is still poorly understood and further research is needed, including more serum surveys.

## WHAT CAN BE DONE TO MANAGE AHD?

There is no treatment or vaccine for AHD. Actions to help prevent the spread of AHD include disposing of carcasses by deep burial, not moving infected, dead or live deer to new areas, and preventing aggregations of deer at artificial feeding or water sources. Additionally, individuals handling deer should take precautions to limit potential for disease spread (wear gloves, clean equipment between deer).

## WHAT TO DO IF YOU SEE AN ANIMAL WITH SIGNS OF AHD?

To help further our understanding of this disease, we request that the public report deer displaying any of the clinical signs of AHD to the B.C. Wildlife Veterinarian at [Caeley.Thacker@gov.bc.ca](mailto:Caeley.Thacker@gov.bc.ca) or the Wildlife Health Laboratory at 250-751-7246. For additional information on AHD or any other wildlife disease, please contact our staff at the Laboratory or refer to our website at [www.gov.bc.ca/wildlifehealth](http://www.gov.bc.ca/wildlifehealth)

## ADDITIONAL INFORMATION/REFERENCES

Woods LW et al. 1996. Systemic Adenovirus Infection Associated with High Mortality in Mule Deer (*Odocoileus hemionus*) in California. *VetPath* (33)2: 125-132. DOI: 10.1177/030098589603300201

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