

Salmon Poisoning Disease in Dogs

Our canine friends can become infected with a wide variety of infectious agents. We explored many of them, including [parvovirus](#) and [leptospirosis](#), in previous posts. This week I share information about another one - salmon poisoning disease. Happy reading!

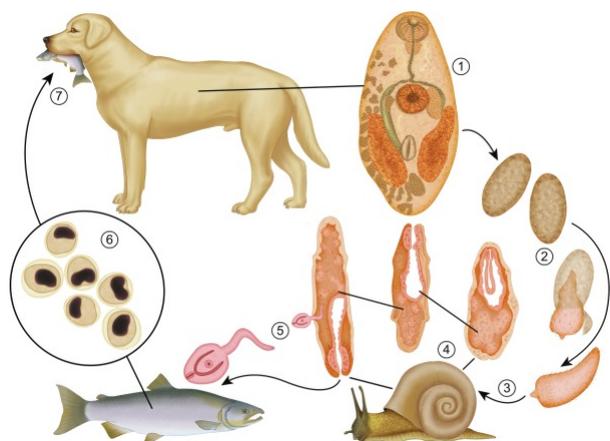


Salmon poisoning disease - What is it?

Salmon poisoning is caused by a rickettsial bacterial organism called *Neorickettsia helminthoeca*. A trematode called *Nanophyetus salmincola* harbors *N. helminthoeca* throughout all of its life stages (i.e.: from egg to adult). Three different hosts - snails, fish, and mammals or birds - are required for *N. salmincola* to complete its very complicated life cycle.

Eggs of *N. salmincola* are passed in dog feces. The eggs subsequently hatch and release a larval stage called miracidia that infects snails that live in brackish water in the northwestern United States. The *N. salmincola* miracidia mature in snails and ultimately leave as free-swimming cercariae (another larval form). The cercariae then infect fish species, particularly salmonid species, where they further mature into metacercariae. Dogs become infected by eating raw or inadequately cooked fish containing the metacercariae. In the dog, the

metacercariae grow to their adult form over 5-6 days.



Life cycle of *Neorickettsia helminthoeca*. Image Credit: [MS Thompson, DVM](#)

What does it look like?

Thankfully, salmon poisoning disease is rare. Sporting breeds - especially Labrador Retrievers - are over-represented in the northwestern United States and British Columbia, Canada. Common clinical signs are:

- Reduced (or loss of) appetite
- Weakness
- Vomiting
- Diarrhea (often bloody)
- Weight loss

Physical examination abnormalities often include abnormal breathing, abdominal discomfort, body temperature changes, nasal discharge, eye discharge, enlarged peripheral lymph nodes, and a variety of neurological changes (including seizures).

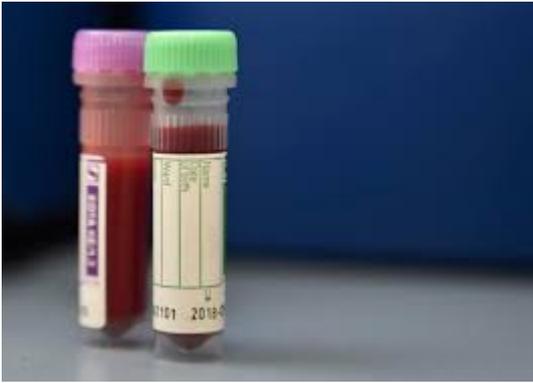


How is salmon poisoning disease diagnosed?

After reviewing a dog's complete medical history and performing a thorough physical examination, veterinarians will need to perform some non-invasive tests, potentially including:

- Complete blood count
- Biochemical profile
- Urinalysis
- Fecal examination
- Lymph node cytology
- Polymerase chain reaction (PCR) assay
- Biopsy

Pet owners may find it helpful to partner with a board-certified veterinary internal medicine specialist to develop a logical diagnostic plan.



How is it treated?

Most infected dogs require temporary hospitalization for appropriate supportive care, including intravenous fluid therapy. Affected pets should be treated for both *N. helmintheoca* and *N. salmincola*. The former is treated with an antibiotic, typically doxycycline. The latter is commonly treated with an anthelmintic drug called praziquantel. The prognosis with treatment is quite good with an overall mortality of 14%. However, without treatment, salmon poisoning disease is often fatal.



The take-away message about salmon poisoning disease in dogs...

Salmon poisoning disease caused by *N. helmintheoca* is an infectious disease of dogs in the Pacific Northwest of the United States. Dogs become infected by eating raw or under-cooked salmon. Although often fatal without treatment, prognosis is good with timely appropriate intervention.

To find a board-certified veterinary internal medicine specialist, please visit the [American College of Veterinary Internal Medicine](#).

Wishing you wet-nosed kisses,

CriticalCareDVM