



Dawson Creek Veterinary Clinic

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Heartworm

Heartworm (scientific name: *Dirofilaria immitis*) is a parasitic roundworm infection that is transmitted from dog to dog by mosquitos. It is not endemic in the Peace Region; however we do have a lot of clients and their dogs that travel to areas where it is common. It has been identified in 50 of the states in the USA, and is prevalent in Ontario. It has also been reported in Southern British Columbia (the Okanagan).

The domestic dog and some wild canines are the normal hosts for heartworms, but cats and ferrets are able to become infected as well. The mature heartworms live in the chambers and large vessels of the heart and eventually interfere with heart function, leading to congestive heart failure and its associated symptoms (coughing, lethargy, difficulty breathing, and eventually death). The mature heartworms within the heart produce offspring called microfilariae, which circulate in the bloodstream. Transmission from dog to dog occurs when a mosquito bites an infected dog with microfilariae circulating in its bloodstream. The microfilariae are picked up when the mosquito is biting the dog and then go on to live and develop within the mosquito for about 10-14 days. The microfilariae will only develop into infective larvae (larvae that can be passed on to another dog) when the ambient temperature is above 27°C and there is 80% relative humidity during these 10-14 days. Any colder temperature means that development either does not occur, or is delayed. This is one of the reasons why heartworm is not a problem in the Peace Region, as ambient temperatures do not exceed 27°C for extended periods of time. When a dog becomes infected with the larvae from a mosquito bite, the larvae makes its way to the great vessels of the heart and begins to mature. When the worms have reached full maturity, they start reproducing (making microfilariae) and therefore microfilariae can be detected in the bloodstream. This whole process from the time the mosquito bites/infects the dog, until there is circulating microfilariae in the bloodstream, takes about 6-9 months.

Preventing infection is how we target this problem in our dogs, as treating dogs infected with adult worms is very costly and poses a significant risk of death. We use medications as prophylactic therapy which kills the larvae that infect the dog (when bitten by mosquitoes) BEFORE it becomes an adult worm. The products we use are labeled for a 30-day dosing intervals, and we therefore administer them once a month either as an oral tablet or a topical liquid (on the back of the neck). In places like the Southern United States, it is recommended that dogs receive year round, monthly preventative. Here in the Peace Region, we recommended medicating during any travel to areas where infection is a risk. Administration of the medication should begin within one month of the anticipated start of transmission and should continue for at least 3 months after transmission ceases.

Testing your dog for heartworm involves a blood test. The test we have available detect the antigen (protein) made by female adult worms as they produce microfilariae and therefore it can only detect infection as early as 6 months after exposure. Therefore if your dog travels with you to Arizona in December, the earliest we could detect an infection would be in June (6 months later) because we need to allow for the maturation of the worms.

We recommend testing your dog if it has had a history of travelling to a high risk area, especially if it has not been on preventative medication. Annual testing for exposed dogs is recommended but a testing protocol can be discussed and tailored to you and your pet's individual needs.

If you are planning a trip South with your four legged companion, please make sure they are protected from this potentially life threatening parasite!

If you have any questions or concerns, please do not hesitate to contact the Dawson Creek Veterinary Clinic at 250 782 5616.