

# Panosteitis in Young Dogs

Drs. Foster & Smith Educational Staff

What is panosteitis?

Panosteitis is a bone disease of dogs that is characterized by bone proliferation and remodeling. It is often painful and can last as long as 18 months, though more commonly it lasts from 2 to 5 months. It is characterized by lameness that often comes and goes and changes from leg to leg. It is a common problem in several large breeds and the cause is currently unknown. The treatment is symptomatic but the outcome is usually very good.

Who gets panosteitis?

Panosteitis is most common in large breed dogs between 6 and 18 months of age. Occasionally, middle-aged German Shepherds will have a bout of panosteitis. It affects dogs worldwide and has been recognized and studied since the 1950's. Male dogs are much more likely to get panosteitis than females. There is a higher incidence in several breeds including German Shepherds, Great Danes, Doberman Pinschers, Golden Retrievers, Labrador Retrievers, Rottweilers, and Basset Hounds.

Panosteitis is most common in large breed dogs between 6 and 18 months of age.

What causes panosteitis?

The cause of panosteitis is currently unknown. There have been many theories as to the cause of this disease. Originally, it was suspected that the disease was caused by a bacterial infection. However, several investigational studies failed to isolate any bacteria. In addition, the disease responds poorly to antibiotics, further suggesting a cause other than bacterial.

Other studies showed that if bone marrow from affected dogs was injected into the bones of healthy dogs, the healthy dogs would contract the disease. It has therefore been speculated that a virus may cause the disease. The high fever, tonsillitis, and altered white blood cell count would also go along with the viral theory. Another interesting twist to the viral theory is that panosteitis was first identified as a problem at the same time that modified live [distemper](#) vaccines became widely available on the market. Since wild distemper virus can be isolated from bone tissue, some researchers feel that there might be a link between distemper virus vaccine and panosteitis, however, more research in this area will need to be done before any serious speculations can be made.

Another theory is that panosteitis might have a genetic link. Because of the greatly increased incidence in certain breeds and families of dogs, it is very likely that there is a genetic component involved in this disease.

Lately, there have been some claims that nutrition, particularly [protein](#) and [fat](#) concentrations in the diet, may have an impact on the incidence of the disease. But here again, more research needs to be done to substantiate these claims. Most likely this is a multifactorial disease that has several different causes including viral, genetic, and possibly nutritional.

What are the symptoms?

Presenting symptoms include a history of acute sudden lameness not associated with any trauma. It is usually a large breed male dog between the ages of 6 to 18 months. There are periods of lameness lasting from 2 to 3 weeks and it may shift from leg to leg. The most commonly affected bones are the radius, ulna, humerus, femur, and tibia, though the foot and pelvic bones may also be involved. The dog may show a reluctance to walk or exercise. When the affected bones are squeezed, the dog reacts painfully. Occasionally, affected dogs will have a fever, tonsillitis, or an elevated [white blood cell count](#).

How is panosteitis diagnosed?

Panosteitis is often diagnosed based on a combination of presenting signs and radiographs (x-rays). The presenting symptoms are listed above. If a dog is suspected of having panosteitis, then radiographs are indicated to confirm the diagnosis. Individual radiographs of each affected limb should be taken. Often, radiographs of the unaffected limbs are also taken to compare the bone changes. In early forms of the disease, a subtle increase in bone density is observed in the center part of the affected bones. During the middle part of the disease, the bone becomes more patchy or mottled in appearance and the outer surface of the bone may appear roughened. In the late phase, the bone is still slightly mottled, but is beginning to return to a more normal appearance.

How is panosteitis treated?

There is no specific treatment for the disease. Since this condition is often very painful, painkillers such as buffered aspirin or carprofen (Rimadyl) are recommended. (Do NOT give your cat aspirin unless prescribed by your veterinarian.) These products are used as needed to help control the pain. Antibiotics are not routinely used unless there are indications of concurrent infections. In severe cases, steroids are used, but because of the potential long-term side effects of these drugs, painkillers are often tried first. This disease is self-limiting and after it runs its course, there are very few long-term side effects or need for further treatment. As mentioned earlier, the disease usually lasts for two to five months, but can last much longer. There are several conditions with similar symptoms, so if a dog continues to have symptoms after the normal period of time or is not responding to treatment, she should be reevaluated.

How is panosteitis prevented?

There is currently no way to prevent the disease. However, because of the potential genetic link, breeding animals should be screened to ensure that they are not potential carriers of the disease. Despite the numerous [puppy foods](#) catering to large breed dogs, there is no current evidence that confirms that these foods will lower the incidence of the disease when compared to standard commercial puppy food. If an animal shows symptoms of the disease, they should be promptly diagnosed and treated and exercise and activity should be reduced until the symptoms have gone away.