



# Growth Associated Bone Problems

NOT ALL LAMENESS'S IN YOUNG DOGS INVOLVES JOINTS...

## Panosteitis

Affects any of the long bones with a shifting lameness pattern, with one or more legs being affected at any one time. This is a growth associated problem with unknown triggering factor(s). Affected breeds: most commonly seen in the Dobermann, less commonly in the German Shepherd Dog (in Australia), but can occur in many larger, heavier-boned breeds.

**Age:** affected is 5-8 months. Males more commonly affected.

### Symptoms

Shifting lameness in young dogs, no swelling of growth plates. Affects long bones of any leg with a shifting lameness pattern, usually only one leg affected at any one time. Pain exhibited when pressure applied across the shaft of the affected long bone. Most commonly affected bones are the humerus and femur. X-rays show increased intra-medullary density in the affected long bone.

### Treatment

Responds well to rest, the use of low grade anti-inflammatories and antibiotic therapy. May be required to treat for a minimum of 3-6 weeks.

### Diet

Ideally, ease off concentrated high protein foods in maintenance level (22-24% protein, 10-14% fat) in order to slow down the rate of weight gain. Recovery is generally excellent. There is no known hereditary component, and affected animals can be used for breeding.

## HOD - Hypertrophic Osteodystrophy

Inflammatory disease affecting the ends of the long bones in fast growing puppies of large, heavy, rapidly growing breeds.

**Age:** between 3-6 months. Great Danes and Mastiffs are the most commonly affected breeds. Incidence in the German Shepherd Dog is low. Males are affected more than females.

### Causes

Causes are not fully known, possibly immune system related (inappropriate response to vaccines in some breeds). Equally it can be related to over nutrition, or more likely, infectious, depending on timing of exposure to the infective agent. Usually only affects one or two puppies in a litter.

### Symptoms

High temperatures, episodic lameness, forelegs more commonly affected - usually bilaterally affected, painful swollen growth plates, wrists most commonly affected. Affected puppies are depressed, reluctant to move and often spike high temperatures. X-rays show a very distinctive increased density around the growth plates to the lower limbs.

### Treatment

Responds well to rest, aspirin and antibiotic therapy. Restricted energy intake until recovering and then steady but not rapid weight gain. Recovery is generally good, depending on the initial severity of symptoms. Not necessarily considered to have hereditary components, possibly some immune deficiencies within the affected individual may be associated.

## Secondary Nutritional Hyperparathyroidism ("Rickets")

This is a condition that results from a complete imbalance or in-availability of calcium in the diet.

**Age:** usually affects the whole litter in varying degrees of severity. Seen from 6 weeks onwards in severely affected litters, with average around 7-8 weeks.

### Symptoms

Associated with a reluctance to stand or walk, may drag hindquarters. Extreme pain exhibited when handled, often have pathological fractures due to lack of available calcium and have generally poor body condition.

### Diagnosis

X-rays of affected puppies show characteristic "ghostly" outlines of poorly mineralised bones.

### Contributing factors

Bitch not feeding puppies and early weaning onto inappropriate diets; little to no added calcium to homemade diets, high cereal content depressing absorption of any added supplements, poor absorption of additives supplied in diets.

### Treatment

Complete rest and confinement, usually for a minimum of 3 weeks, but may require longer in severely affected individuals, as the animal is basically trying to repair micro (and occasionally major) fractures. Allow outside access, to get exposure to direct sunlight for 30 minutes per day (minimum), to allow natural Vitamin D conversion. Correct dietary imbalances, add extra Calcium (ideally chelated as very high absorption rates).

### Outcome

Generally very good, provided correct mineral and dietary factors are corrected and care is taken in the first few weeks. Minimal handling of severely affected puppies is recommended for the first 7-10 days, as they are generally in severe pain until the problem starts to rectify.

Rarely seen these days with good commercial diets, as dry (and wet) foods have added calcium and other minerals.

