

# Overnutrition of Large-Breed Dogs

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## BASIC INFORMATION

### Description

Overnutrition of large- and giant-breed puppies during their rapid growth phase can result in developmental orthopedic disease (DOD).

### Causes

The rate of growth, certain nutrients, food consumption, and feeding methods all affect the development of orthopedic disease. Excess energy intake results in rapid growth and obesity, which are associated with DOD, so it is important to maintain optimal body condition during growth. Excessive intake of calcium (greater than 3% of the dry matter of the diet) also increases the risk of DOD. Excessive intake can occur when supplemental calcium is given to large- and giant-breed dogs to promote skeletal growth. Free-choice feeding (compared with limited-meal feeding) has also been shown to increase the risk of DOD.

### Clinical Signs

DOD can manifest as hip dysplasia, osteochondrosis dissecans, joint laxity, ligament laxity, or hyperextended joints. A common clinical sign of these diseases is often lameness of the affected leg or legs. For other signs, see the handouts on these individual diseases.

### Diagnostic Tests

A history of high energy intake and/or calcium supplementation in a large- or giant-breed puppy with lameness often allows a suspicion of DOD. Various diagnostic tests are available for the

diseases involved in DOD, but x-rays of the affected leg are often recommended.

## TREATMENT AND FOLLOW-UP

### Treatment Options

Treatment of DOD depends on the specific orthopedic problem present. Treatment options may involve medications or surgery. Physical therapy and changing the dog to an appropriate diet are also required. Diets formulated for large- and giant-breed dogs during growth are available that may help prevent DOD. These diets are typically lower in calories, fat, and calcium but contain similar protein content when compared with standard growth diets. Although calcium intake alone is important, the dietary calcium-to-phosphorus ratio is even more important. This ratio in the food should be between 1.1:1.0 and 1.5:1.0. Large- and giant-breed growth diets are usually fed until the dog is 1½ to 2 years of age.

### Follow-up Care

Periodic physical examinations are often performed to monitor body weight and condition. Additional follow-up testing and monitoring depend on the specific disease present and the treatments chosen for that condition.

### Prognosis

Prognosis depends on the severity and location of the DOD problem. Even with treatment, degenerative arthritis may develop at a later date in affected joints.