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## CALCIUM SUPPLEMENTS

### ***What are calcium supplements?***

Various forms of calcium are available for supplementation. Calcium bound to lactate, citrate, ascorbate, and other organic acids appears more easily and completely absorbed than inorganic calcium supplements, such as calcium carbonate.



Calcium requirement is often higher during late pregnancy and nursing mothers.

Practitioners condoning as close to a natural diet as possible often recommend bone meal, in part because it contains an ideal ratio of calcium to phosphorus. Studies in humans demonstrate that bone meal does not appear to have a significantly different net impact on calcium and phosphorus metabolism than calcium carbonate. Bone meal supplements can, however, contain undesirable heavy metal contaminants such as lead.

Coral calcium is often advocated as a supplement by its manufacturers, but research supporting any benefits from coral calcium over more traditional forms is lacking. Coral calcium supplements are often prohibitively expensive and may have adverse consequences on marine ecosystems; they are not recommended.

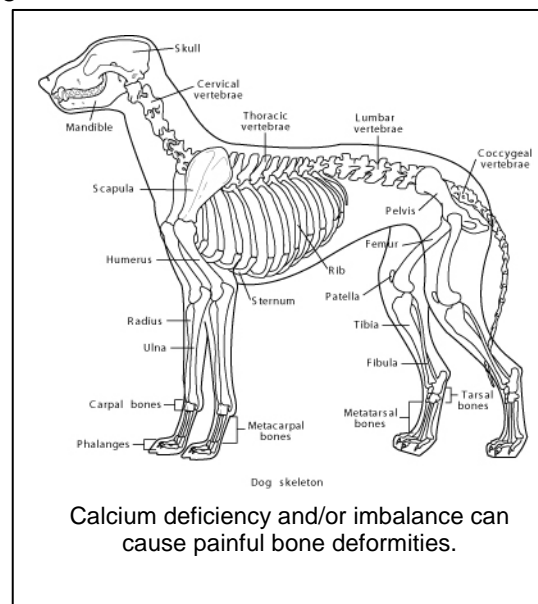
### ***Why recommend administration of calcium supplements to my pet?***

Most pets do not require extra calcium, since calcium is added to most commercially prepared diets. Calcium requirements may be higher for animals in the last trimester of pregnancy, or for a pet with kittens or puppies that are a few weeks old

Calcium supplements are also often required to be added to home-prepared diets to ensure proper calcium balance. Without adequate calcium, painful bone deformities may arise. Signs of calcium deficiency in nursing animals also include weakness, tremors, and seizures.

### ***How much experience is there with the use of calcium supplements in pets?***

Experience is extensive in using calcium supplements to treat calcium deficiency in pets. Intravenous calcium is commonly used to treat seizures resulting from calcium deficiency. This



Calcium deficiency and/or imbalance can cause painful bone deformities.

condition is most commonly seen in dogs whose blood calcium levels fall shortly before or after giving birth to a litter of puppies.

### **What species of animals are being treated regularly with calcium supplements?**

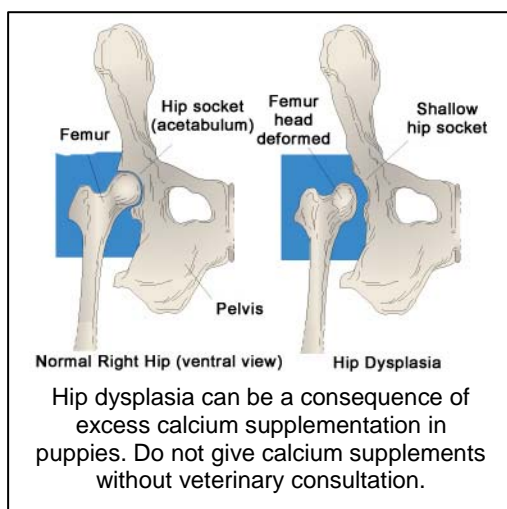
All animal species, including humans, require adequate calcium. Diseases arising in companion animals from inadequate calcium intake are most common in dogs, cats, and many reptiles. Reptile calcium imbalances often arise from inadequate or inappropriate use of vitamin D. Dogs and cats are the species that usually require calcium supplementation, especially when being fed a homemade diet.

### **How much research has been conducted on this supplement?**

Widespread research demonstrates the benefits of supplementation in pets with calcium deficiency. Calcium is a required mineral in the diets of dogs and cats; calcium deficiency results in debilitating bone diseases and may even be fatal if not treated properly. Prevention is clearly preferred by feeding a diet that includes the necessary amount of calcium.

### **How safe are calcium supplements?**

They are safe when used correctly. However, normal pets not needing supplementation can have problems if given too much calcium. Any time pets are given excessive amounts of supplements, including calcium, the balance among nutrients is disturbed. For example, calcium competes with other minerals such as magnesium for absorption in the intestine. If



excessive amounts of calcium are provided, other minerals such as magnesium and zinc may become depleted. In addition, excessive calcium supplementation has been linked to the development of canine hip dysplasia. **Avoid giving excess calcium to large rapidly growing puppies.**

Calcium supplementation may increase the risk of calcium oxalate stone development in the urinary tract. Several studies in humans suggest that the use of calcium citrate supplements inhibits the formation of calcium oxalate stones. Citric acid maintains urine calcium in soluble form.

Increased absorption of dietary aluminum has been noted in humans with the use of calcium citrate supplements, but it is not known whether this poses any health risks to dogs and cats.

### **Where do I get calcium supplements and do I need a prescription?**

Your veterinarian may have referred supplements that he or she will recommend. A prescription is not needed for calcium supplements.