

Large Breed Puppies:...What is an appropriate Diet?.....

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There is considerable controversy regarding the role of nutrition during the developmental and growth periods of puppyhood, and its possible effects on the musculoskeletal system in later life, especially in our larger (greater than 60 lb) breeds. Certain problems are believed to be at least modulated by over supplementation of various nutrients, in the mistaken belief that rapid growth is desirable. Included in the list of medical problems that are believed, in part, attributable to over supplementation are: Hypertrophic Osteodystrophy, Osteochondrosis, Hip Dysplasia².

I. Fundamental Considerations

The most significant problems appear to be related to the following, in order of decreasing importance: **1. Calcium, 2. Energy, and 3. Protein** .

1. Calcium: The ideal calcium content, on a dry weight basis is 0.7%-1.2%-. AAFCO recommendation is 1%-2.5% which is generally acceptable though not ideal; however, for giant breeds, such as the Great Dane, the lower end of this range is especially recommended. It is believed that calcium in excess of 3% on a dry weight basis can predispose to significant skeletal abnormalities, such as those mentioned above. Keep in mind, also, that adding of excessive levels). **BE AWARE MANY DOG TREATS CONTAIN CALCIUM**

2. Energy: If too many calories are supplied and consumed on a daily basis, too rapid growth results and the excess mass that must be supported on an immature skeleton can result in microscopic damage to skeletal tissue, with subsequent malformation and/or malarticulation of joints, degenerative changes and potentially chronic pain. For most practical purposes, energy levels in food can be extrapolated principally from dietary fat, which should be no less than 9% (AAFCO recommendation) to maximum of 12% on a dry weight basis. Total kcal/kg of food should remain in the 3200 to 3800 range

3. PROTEIN: As a percent of diet on a dry weight basis should range between 15%- 27% (AAFCO recommends minimum of 22%). The ideal protein concentration is difficult to specify, since it is, in part dependent upon biological value of the protein source; (i.e. if of high biological value, then less is needed {more is assimilated} and the lower end of the range is desired). Protein markedly above the upper limit described here will be converted to energy, rather than incorporated into protein tissue. This will, therefore, add to the energy burden, and potentiate the problems associated with excess energy consumption, as described above

II. Feeding Method

Even though you have painstakingly found the diet that meets the recommended calcium, energy (fat) and protein levels for your puppy, it is equally important to control the amount of this diet which is consumed. Otherwise, the puppy may overeat, and still obtain the nutritional excesses we wish to avoid. The following general rules-of-thumb have been quite helpful in preventing overconsumption and promoting an ideal growth rate:

If your puppy is under 6 months old, feed three times daily and allow him to ingest as much as he wants but for a limited time (e.g. only ten minutes)!

If your puppy is between 6 months and maturity, feed only two times daily, and allow him to ingest as much as he wants, but again, for only a limited time..

If your puppy continues to gain weight BUT appears to be "illthrift" (e.g. a body condition score of 2/5) then he is probably growing at the desired rate. When he reaches the age of physical maturity, you can modify the diet to obtain appropriate weight gain and to improve the skin and body condition

III. Choosing a Commercial Diet

You should also know that the labels on many so-called commercial "puppy diet" or "growth diet" packages can be misleading, as there are just a few diets suitable for large breed puppies that are marketed as a puppy food. In fact, many that are marketed for puppies contain excess levels of some or all of the nutrients previously mentioned as of concern in promoting skeletal/joint problems. This includes the premium commercial diets. Very few (as of this publication) offer ideal levels of protein, fat and calcium for our large breeds! Recent interest in this issue has resulted in some large-breed-specific commercial formulations, which should make this problem less troubling in the near future. Alternatively, you can consider offering certain "light" or "maintenance" diets; however, keep in mind that not all "light" nor many "maintenance" diets are suitable for growing large breed puppies. If you are not sure whether the diet you have chosen is appropriate, it is recommended that you discuss your concerns and questions with your veterinarian.

With this background in mind, the following is suggested for choosing your large breed puppy's diet:

1. Give minimal credence to marketing claims which appear on the front of the bag!
2. Look for the desired nutrient levels on the back of the bag

or

3. Look for the a statement that the food is an AAFCO- feeding-trial approved diet for puppy growth.

Dog Vitamins and Supplements: Get the Facts

"Most people are doing it because they want to, not because it's necessary," says C.A. Tony Buffington, DVM, PhD, professor of veterinary clinical sciences at The Ohio State University Veterinary Teaching Hospital.

WebMD talked with experts for answers to frequently asked questions about dog vitamins and supplements

1. Does my dog need vitamins?

Most dogs receive a complete and balanced diet - including necessary vitamins and minerals - from commercially processed dog food, according to the FDA. Dogs fed a homemade diet may need supplements. "It's absolutely critical, but it should be done to match the diet," Wynn says. "You can't just create a meal and give your dog a vitamin." Check with a veterinarian or nutritionist for help in determining what, if anything, is needed.

2. Is there any danger in giving my dog vitamins?

Possibly. If an animal already eats a balanced diet and receives excess portions of some vitamins and minerals, they could be harmful, according to the FDA and veterinarians.

Too much CALCIUM can cause skeletal problems, especially in LARGE breed puppies; too much vitamin A can harm blood vessels and cause dehydration and joint pain. Excess vitamin D can prompt a dog to stop eating, harm bones, and cause muscles to atrophy.

What causes bone disorders?

There is no single factor that has been identified in causing any of the various bone diseases, rather, certain "risk factors" are attributed to increased occurrence of these disorders in dogs. Size is widely considered a predisposing risk factor. Dogs of large and giant breeds undergo a more rapid growth phase during their first year of development putting them at greater risk for

skeletal abnormalities. Excessive calcium supplementation and rapid weight gain are also considered risk factors, however, evidence supporting a role of other nutritional factors such as high protein or carbohydrate diets is not as strong. Additionally, clinical data suggests that the role of nutrition in the development of the various skeletal diseases is more of a modulating effect. In other words, controlling for nutrition alone will not prevent these diseases, rather nutritional management may lessen the severity of disease in those dogs predisposed by other factors such as size, genetics, trauma or as of yet unknown causes.

Exercising Large & Giant Dogs

If you have a large or giant breed puppy, it's important to take it easy with the exercise and rough-housing for at least the first 6 - 10 months.

The rapid development that your puppy is experiencing means he is at risk of injuring himself if he is exercised too strenuously.

In extra large breed dogs, hip dysplasia and other joint/bone problems can occur more easily than you might think.

To protect your pup's joints and ligaments, avoid these things.....

Jogging, or running on hard surfaces such as concrete

Jumping from any significant height - ie pick up bed, SUV, bed etc.

Playing on slippery or slick surfaces such as tile, wet ground etc.

Roughhousing or wrestling

Of course, your puppy still needs exercise in order to develop the strong muscles he needs to support his big heavy bones!

A short walk several times a day, moderate games (eg fetch) outside and inside, and lots of socialization are needed. Enrolling him in a Puppy Obedience Class as soon as he's fully vaccinated is a great idea.

Puppies are just like babies, and your little guy will play for a while and then need a nice long nap... then he'll wake up and start all over again.

As adults, giant dog breeds are often on the lower end of the activity scale, and an adult Lg breed dog can live quite happily in an apartment, as long as he gets his daily walks.

However, if you ARE an apartment-dweller there's something you need to think about before you make the decision to add one of these big dogs to your family!

Early Spay and Neuter Considerations

Social pressure deems that if we are to be "responsible" pet owners that we are to alter our pets to prevent unwanted litters. Spay and neuter procedures, especially before the animal is mature, brings with it a host of long term health consequences. Great Pyrennes are also known to have low tolerance to anaesthesia at a young age. There are some benefits to be gained from the procedure and the owner should weigh all manner of evidence prior to electing to engage in the surgery. Because of the negative impact early spay and neuter can have on the growth and development of your dog, **anyone who acquires a Great Pyrenees from Prospect Pyrenees is encouraged & recommended to leave their dog intact until it is at least 1 year old or health guarantee will be null & void.**

Males:

On the positive side, neutering male dogs

- eliminates the small risk (probably <1%) of dying from testicular cancer
- reduces the risk of non-cancerous prostate disorders
- reduces the risk of perianal fistulas

On the negative side, neutering male dogs

- if done before 1 year of age, significantly increases the risk of osteosarcoma (bone cancer); this is a common cancer in medium/large and larger breeds with a poor prognosis.
- increases the risk of cardiac hemangiosarcoma by a factor of 1.6
- triples the risk of hypothyroidism
- increases the risk of progressive geriatric cognitive impairment
- triples the risk of obesity, a common health problem in dogs with many associated health problems
- quadruples the risk of prostate cancer
- doubles the risk of urinary tract cancers
- increases the risk of orthopedic disorders
- increases the risk of adverse reactions to vaccinations

Females:

On the positive side, spaying female dogs

- if done before 2.5 years of age, greatly reduces the risk of mammary tumors, the most common

malignant tumors in female dogs

- nearly eliminates the risk of pyometra, which otherwise would affect about 23% of intact female

dogs; pyometra kills about 1% of intact female dogs

- reduces the risk of perianal fistulas
- removes the very small risk (0.5%) from uterine, cervical, and ovarian tumors

On the negative side, spaying female dogs

- if done before 1 year of age, significantly increases the risk of osteosarcoma (bone cancer); this is a

common cancer in larger breeds with a poor prognosis

- increases the risk of splenic hemangiosarcoma by a factor of 2.2 and cardiac hemangiosarcoma by

a factor of >5; this is a common cancer and major cause of death in some breeds

- triples the risk of hypothyroidism
- increases the risk of obesity by a factor of 1.6-2, a common health problem in dogs with many associated health problems
- causes urinary “spay incontinence” in 4-20% of female dogs
- increases the risk of persistent or recurring urinary tract infections by a factor of 3-4
- increases the risk of recessed vulva, vaginal dermatitis, and vaginitis, especially for female dogs

spayed before puberty

- doubles the small risk (<1%) of urinary tract tumors
- increases the risk of orthopedic disorders

- increases the risk of adverse reactions to vaccinations

Orthopedic Disorders

Because the gonadal hormones play a role in growth plate dynamics, spay/neuter of immature dogs delays the closure of the growth plates in bones that are still growing, causing those bones to end up significantly longer than in intact dogs or those spay/neutered after maturity. Since the growth plates in various bones close at different times, spay/neuter that is done after some growth plates have closed but before other growth plates have closed might result in a dog with unnatural proportions, possibly impacting performance and long term durability of the joints.

Spay/neuter is associated with a two fold increased risk of cranial cruciate ligament rupture.

Spay/neuter before 5 ½ months of age is associated with a 70% increased risk of hip

dysplasia compared to dogs spayed/neutered after 5 ½ months of age, though there were some indications

that the former may have had a lower severity manifestation of the disease. The researchers suggest “it

is possible that the increase in bone length that results from early-age gonadectomy results in changes in

joint conformation, which could lead to a diagnosis of hip dysplasia.”

The above information is not intended to be a comprehensive dialogue on the negative impact of early spay and neuter.