



Canine Nutrition

should be adapted to size and need

Metabolic Rates

The smaller the breed, the higher the metabolic rate, this is related to surface area (think of mice and elephants!). Very small breeds need more frequent feeding and a higher digestibility in the diet. This becomes particularly important when there are demand situations such as rapid growth (puppyhood), pregnancy and lactation.

Very small puppies of toy breeds are particularly susceptible to "sugar drop", a lack of available digestible sugars. This can cause them to collapse and "fit" from lack of sugars. Highly digestible and highly concentrated diets are needed in these situations, with increased frequency of feeding. There may be the requirement to have food available at all times during periods of acute need (very rapid growth, lactation).

The corollary to the above statement is that larger breeds and older inactive dogs have much lower metabolic rates. Desexed dogs have lower metabolic rates. This is why so many dogs are overweight, as like ourselves, we continue to feed at the higher rates of growth phases, rather than cutting down with age, and again after desexing.

Age

Puppies, especially under 12-16 weeks of age are growing very rapidly. By 16 weeks the majority of breeds have reached the 50% mark of their end adult weight, giant breeds take a little longer. The smaller the breed, (as mentioned above) the higher the protein and fat requirements will be during this stage.

Medium to large breed puppies however, are often placed on puppy diets that while they are very good up to 8-12 weeks, are often too rich to send puppies home on. The average new owner tends to over feed puppies, which forces the growth and can result in a group of rapid growth associated disorders such as "bone soreness", OCD (osteochondritis), and panoestitis, to name a few of the more commonly seen outcomes.

Puppies in this midsize up group should be fed a diet that suits their end stage desired weight and size. A medium range dry food of 22-24% protein and 12-14% fat can grow



puppies steadily without excessive weight gain. Having a weight for age chart of where dogs and bitches should be, at each stage of their growth for your breed is an invaluable tool to send home with puppies and new owners.

Older Dogs

As dogs age, their requirements change. Generally lower protein levels and lower fat levels are the most common changes. Decreased amounts of food across the board are usually the best idea.

Pancreatitis is very common in older, obese dogs. Here low fat levels are essential for the dog's continued existence. These dogs may be so fat sensitive that they cannot tolerate even some of the low fat dry foods. Safest diet for these dogs is cooked chicken with the fat removed combined with either cooked pumpkin or cooked rice.

"Desexing and age, as previously mentioned, lowers the metabolic rate and therefore the amount of food needed to maintain a good body weight is less. In this area, fat and protein levels can be considerably lowered."

Activity levels and Temperature

Heavy work/high activity – here the opposite applies, the higher the level of activity, generally the higher the need for protein and fats, and the lower the need for carbohydrates. Sledging diets aim for very high digestibility and high frequency of feeding.



Cold weather and dogs in thin coats also require higher energy levels in the diet during periods of cold weather. Some dry foods are sprayed with higher levels of fat in the winter months. Low activity/ hot weather – requirements for energy in the diet drop. Lower fat and protein levels are required in hot conditions. Over weight dogs requirements similarly drop in hot conditions.

Types of food

Most breeds can eat nearly every type of protein and fats that are readily available. Certain breeds (including German Shepherds) can be more sensitive to various types of proteins and carbohydrates and can develop allergies, the most common being to beef and wheat gluten. A few breeds are less tolerant of high levels of carbohydrates in the diet – this is more commonly seen in the arctic breeds (Alaskan Malamutes, Siberians Huskies).

Some of these breeds can have higher requirements for certain types of vitamins and minerals, the most common here would be for added zinc and for various amino acids. Some of these needs may be related to inherited deficiencies in various breeds.

Add electrolytes to diets during hot weather. Electrolytes are technically mineral salts and like in humans, electrolytes are lost during periods of heavy work and stress, particularly in the heat. Extra electrolytes in the diets can help many dogs cope much better with the heat. This is particularly valuable to those dogs that get stressed in the hot weather.

Feeding the wrong food

Dogs can develop allergies to many foods over their life time. Allergies are uncommon under 10-12 months of age, as like in humans, allergies generally require time and exposure to develop. As mentioned above, the most common allergies are to beef and wheat, but can occur to almost every type of protein. Dietary allergies can result in several major clinical conditions the most common being general pruritis or itchy

skin (all over!) and occasionally, chronic diarrhoeas. Hypoallergenic diets are available and can be very useful with the very reactive dog. Alternatively one can try elimination diets which usually involve feeding one type of protein (commonly chicken or fish) together with one type of cereal (often rice) for 6 weeks. If the dog goes very well, one can add one extra type of protein after 6 weeks and again see how the dog reacts over 6 weeks. The problem here can be that the initial protein may already be a problem. Few dogs are allergic to chicken and chicken proteins but they do occur. Fish or rabbit can be good starting proteins.

Chronic gastritis can be as a result of dietary problems. Sudden changes in diet can result in diarrhoea, but this usually settles down within a few days. Others can develop into intractable gastritis. These dogs can have poor absorption of fats and proteins, and/or bacterial overgrowths due to the chronic nature of the problem.

Getting these dogs onto very bland diets (cooked chicken or lamb and rice) can help. Add cornflour (the very fine particles help line the gut), it cooks as it goes through and helps to thicken the faeces. Also needed are replacement of gut bacteria which are lost with the chronic diarrhoea. Acidophilus bacteria or 'Protexin' are very good gut bacteria replacers. Some dogs may require short or long term treatment with antibiotics in order to stabilise the condition.

Once the motions are stable, the diet can be slowly returned to a more normal mix of dry food and meat. Some dogs may require staying on a very bland diet for long periods of time.

Conclusion

Dog diets and dietary needs vary throughout their lives. They change very rapidly from very high levels of proteins and fats as very young puppies that are frequently fed to medium levels of proteins and fats that are fed less frequently while growing to maturity. Once 75% of adult weight has been achieved, the amount of food being fed drops off significantly. Dogs during high demand periods such as heavy work, pregnancy and lactation have much higher demands for energy and minerals. Dogs that are sitting around (and/or are desexed) in back yards have much lower energy requirements and often need to be on low fat diets.

Metabolic rates can determine much of the energy requirements of a breed. The smaller the breed, the higher the metabolic rate and the energy requirements. Weather and coat cover can affect energy requirements, especially in cold conditions.

Owners and breeders should look at their dogs and feed according to need and desired end weight ranges. Activity levels of individual dogs can increase and decrease over time.

Over weight dogs, like humans, are very common. Like humans, being over weight creates a whole new set of problems. One should aim to keep your dogs, no matter their age, within a reasonable weight range in order to give your dog the best chance of a healthy, long life.

Allergies, chronic skin conditions, chronic gastritis are all quite common as well. These conditions need considerable care, careful feeding and time in order to be sorted out correctly.

