18 October 2002

Feeding A Puppy

There are five topics to consider:

- Water
- 2. Quantity of food
- 3. Composition of food
- 4. Changing a puppy's diet
- 5. Food Allergies

Water

All dogs need water to be available all the time. When dogs exercise, or heat up for any reason, they salivate and pant. The panting forces water to evaporate from the saliva on their tongues, and the forced evaporation cools the tongue. If you put a bit of soapy water on your skin and blow over it, you will feel the cooling effect of forced evaporation – the wet skin feels cold compared to the dry skin around it. Refrigerators work by forcing liquid to evaporate. In a panting dog the tongue cools the blood flowing through it and that blood is circulated to cool the whole body. It's the same as our sweating (sweating into a thick fur coat would be silly, so dogs cool themselves with their tongues rather than their whole bodies). If you've ever seen how quickly a hot dog can mist up car windows you will realise that their evaporation machinery is very effective

If you take a puppy for a stroll you may not notice any heat stress yourself. If the puppy has been bouncing around like a loon or chasing throw-toys he may be hot and frantically pumping water out of his body. If he isn't near to water he could become dehydrated. As the NCDL struggle to make us grasp, dogs die in hot cars. So, if you're taking a puppy for a walk away from home, or some other place where dogs can drink, pack a bottle of water. The Doggie Shop (see Resources, below) sells light plastic drinking bowls with special collars so that you can use them in a car without soaking it

Quantity of food

If a puppy is grossly overfed or underfed he will have troubles.

Giving a puppy too little food will deprive him of the building materials he need for his growing body. His fat reserves will be depleted and he may suffer from cold. If some essential nutrient, say Calcium, is in short supply he may develop a deficiency disease, say weak bones (that doesn't give you a licence to stuff any amount of Calcium into your pup; they're more complicated than that).

If a puppy is overfed be may become too fat and heavy for his young skeleton, his skeleton's development may consequently be distorted, and his life may become a winter of painful joint disorders. Overfeeding is a greater risk with larger (over 30 Kg) breeds because the skeleton is struggling against a greater weight of soft tissue. Flab

isn't a problem for a stationary dog, but watch a young dog turn at full gallop and try to imagine the stresses on his bones and joints. If you're cringing the penny has dropped.

Conventional wisdom in dog circles states a feeding regime that makes puppies grow as fast as possible, in terms of weight gain per day, puts the dog at risk of skeletal disease.

We don't want to encourage neurosis about young dogs' skeletons, but they do merit serious consideration. Agility, the sport in which agile dogs run, jump, corner quickly, and generally have a ton of fun, is not recommended for young dogs. Respectable agility clubs will have a lower age limit, something like two years, to protect the young skeleton. Here is some opinion from a concerned dog breeder:

Common activities that can be detrimental to young dogs' development of include: running up and down stairs; jumping off high places; slipping and sliding about on polished floors or tiled surfaces; extended running in deep sand or similar; high doors with, say, a peephole, that encourages the dog to stand on its hind legs for hours. They can cause irreparable damage to young forming joints.

So, we don't want to underfeed or overfeed How do we find out what a given dog needs?

What we don't do is follow the guidelines for adult dogs. A puppy is not a small dog; he is a different creature with different nutritional needs. A puppy might need two or three times as much food as an adult dog of the same weight, because so much food is needed for growth. Compared to adults, puppies are little gluttons; don't try to change it.

To complicate your life further, each puppy goes through several overlapping stages Here is a table from Wellbeloved (see Resources, below) The jargon in the "Stage" column is explained in the "Development" column The first two stages normally only concern the breeder.

| Age | Stage | Development | What to do |
|---------------|---------------------------------|--|---|
| 0 - 2 weeks | Newborn | Sleeps and suckles Sensitive to touch, pain, temperature and taste | Gentle handling |
| 2 - 4 weeks | Transitional | Eye lids open, ears open, teeth appear, tail wagging starts Brain is stimulated by sights and sounds | Gentle handling |
| 4 - 16 weeks | Socialisation | Play develops, co-ordination improves, pecking order develops | Optimum time to be socialised with other dogs, people, new environments |
| 8 - II weeks | First fear impact stage | Traumatic events can have lasting effects | Introduce to new things in a positive manner |
| 12 - 16 weeks | Seniority classification period | Pup starts to test who is boss | Maintain reasonable control |
| 12 - 20 weeks | Juvenile | Improvement in skills, strength and activity | Needs continued socialisation to become well adjusted |

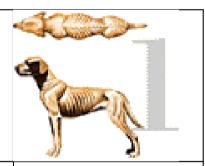
| 4 – 8 months | Flight instinct | Tends to go off on his own, turns a deaf ear | Careful control to prevent future |
|---------------|--------------------------|---|--------------------------------------|
| | | | problems |
| 5 – 14 months | Second fear impact stage | May sometimes be afraid of familiar objects May be afraid to approach | Be reassuring |
| | | something new | - |
| 1 - 3+ years | Maturity | Testing of leadership of the pack | Careful guidance to maintain control |

The point is that, although the changes aren't as obvious as tadpole to frog transformations, your puppy does go through a number of stages and it's quite normal for his nutritional wants to alter. Don't worry about it; nobody tries to keep you on ten tiny portions of rusk a day.

Because all dogs are different and each dog changes during development, we can't lay down what you should put into a particular dog's mouth with the sort of precision a car manufacturer can specify how much oil should be put in a particular vehicle. Instead, you watch the puppy and give him more food if he is underweight and less food if he is overweight. Below is a table from www.www.uninacom, as site with plenty to say about dogs and nutrition. Try to keep the puppy in class 5 or 6. However, the chart below shows adult dogs. Puppies, being smaller, have no part of their body very far from the cold, outside world. They therefore protect themselves with more fat than the healthy adult – its like lagging a hot water cylinder. There is nothing wrong with a puppy's insulating himself against the cold, so err towards obesity rather than emaciation.

1 EMACIATED

Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.



2 VERY THIN

Ribs, lumbar vertebrae, pelvic bones and all bony prominences easily visible. No palpable fat Minimal loss of muscle mass.

3 THIN Ribs easily palpitated and may be visible with prominent Obvious waist and abdominal tuck. 4 UNDERWEIGHT

Ribs easily palpitated and may be visible with no palpable fat Tops of lumbar vertebrae visible Pelvic bones becoming

Ribs easily palpable, with minimal fat covering Waist easily noted, viewed from above Abdomen tucked up when viewed from the side.



5 IDEAL

Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdominal tuck evident.

6 OVERWEIGHT

Ribs palpable with slight excess fat covering Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.



7 HEAVY

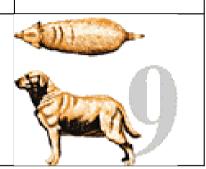
Ribs palpable with difficulty, heavy fat cover Noticeable fat deposits over lumbar area and base of tail Waist absent or barely visible. Abdominal tuck may be absent.

8 OBESE

Ribs not palpable under very heavy fat cover, or palpable only with significant pressure.. Heavy fat deposits over lumbar area and base of tail. Waist absent. No abdominal tuck. Obvious abdominal distension may be present.

9 GROSSLY OBESE

Massive fat deposits over thorax, spine and base of tail Waist and abdominal tuck absent. Fat deposits on neck and limbs Obvious abdominal distension.



Here's the Labrador breeder again:

For puppies from 6 to 12 weeks

| Time | Meal |
|-----------------|---|
| 7:00 - 8:00 am | "Pedigree Advance" Puppy Wholefood |
| 12:00 - 1:00 pm | ditto |
| 5:00 - 6:00 pm | ditto |
| Evening | Creamed rice pudding with warm water ¹ |

The "pre-soaking" time shortens as the puppy gets older - from "finish one meal, wash the bowl and pre-soak the next" - at 8 weeks, to "cover with home-made lamb / chicken or turkey stock and serve" - at 12 weeks. The amount served should be as much as the puppy will eat heartily, and put on weight. Obviously, this amount increases as the puppy grows.

...

¹ There is a respectable view that rice pudding is unnecessary for a dog on a good diet anyway and, due to its cow's milk and sugar content, is not a healthy food for a dog.

We've no hard and fast rule about when to start cutting out meals.

By about 16 weeks - provided the puppy is looking well rounded and happy, we will have cut down to 3 meals per day - whilst increasing the amount per meal.

By 6 months - we're down to 2 meals per day - having cut out the rice pudding.

We don't cut down to 1 meal per day - we prefer to give the same daily amount split 25% / 75% - breakfast and supper.

"Feeding Time" is an excellent reminder to empty, rinse and refill the water bowl. With any prepacked or "dry" food, all dogs need a very ample supply of fresh clean water.

At about 6 months, the choice widens considerably: "Pedigree Advance" Junior or "Denes" mixed with 2 - 3 tablespoons of fresh, raw mincemeat / minced raw chicken / turkey / lamb / rabbit / oily fish / cheese or pasta, topped off with freshly juiced vegetables and a spoon full of vegetable oil.

And here's another pundit:

The following general rules-of-thumb have been quite helpful in preventing overconsumption and promoting an ideal growth rate:

- 1. 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)!
- 2. 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.
- 3. If your puppy continues to gain weight BUT appears to [fit description "4" in the chart above] 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.

If you give him decent food, watch the chart, and use a feeding schedule similar to those above, everything should turn out fine.

Composition of food

Because a puppy is not, biologically, the same as an adult it makes sense to give him food of a composition that matches his biological needs rather than adult dog food. For example, because his skeleton will increase in weight many times over, there is cause to increase the Calcium concentration of his food *judiciously*. Most dog food makers have products aimed at puppies. They will assure you that their brand contains everything the pup needs, but not everybody agrees. Here's a comment from a vet in the USA (talking specifically about large breeds):

You should 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 you veterinarian.

Give minimal credence to marketing claims on the front of the bag!

That makes sense: when you take your puppy to meet the vet ask about diet for this particular dog. If you need food before you see the vet, I suggest The Doggie Shop (see Resources, below); they will sell you what they believe to be best for the puppy. Supermarkets will sell you whatever best fits their commercial schemes.

For commercial food, then, buy a puppy food rather than a dog food and ask your vet to advise on a brand he thinks will suit your puppy. But consider the Labrador breeder's views:

Many pet food companies claim their "whole food" is indeed complete with all that a dog needs for healthy growth and general well-being.

We beg to differ. It's difficult to imagine that any child reared solely on pre-packaged convenience food is going to grow to be as healthy as a child reared on a varied diet of differing fresh meat, fish, pasta, eggs, fruit and vegetables.

Apart from the "physical aspects" - how about "mental well-being"? We worry about the sort of effects that result from an animal being given the same meal 14 times a week - 52 weeks a year. Dogs are fond of "routine" - but this is ridiculous!

On balance, we believe that no more than 50% of a dog's diet should be made up of pre packaged wholefood, to which is added any one - or a selection of - fresh, raw lamb, chicken, turkey, rabbit, tripe, offal, marrow bones, "spice free" table scraps, cooked brown rice and pasta, tuna, cheese, whole-meal biscuits and toasted whole-meal bread, vegetable oil, raw green vegetables, lettuce and ripe fruit - all forming part of a healthy and interesting diet. It's simply a case of using your imagination.

If you're preparing green vegetables for yourself - "juice" some - raw - for your dog.

Buying meat for yourselves? - How about some liver / lamb chop / turkey / rabbit / chicken / tripe / kidneys / heart / marrowbone for the dog?

If you're cooking brown rice or pasta - cook some extra - for the dog.

Don't throw away the greens cooking water - cool it - and pour over the dog's supper.

Cheese - or plain, live yoghurt in the fridge looking a bit tired? - you guessed it!

Fruit bowl need refreshing? - apples / oranges / bananas / pears - even kiwi - all are tasty and contain valuable vitamins and nutrients for your dog.

Watch for cheap offers of tuna fish / meat / veg / fruit / cheese - remember the dog.

You possibly take a vitamin supplement. "Denes" do an "All-in one" multivitamin, with a recommended dose of 5 per day. Our dogs have two per day - in winter - as a "back-up".

Sunday - we give our dog's digestive system a rest from commercially prepared whole-food / canned food. For supper we serve brown rice or pasta - with fresh raw meat / cheese / liver / turkey / fish / offal - topped off with freshly juiced raw green vegetables - and warm "Marmite" gravy.

For dogs - and puppies over 12 weeks

Preparation: (Saturday evening)

Scramble an egg² - or two - per dog - cover, and allow to stand - not in the fridge.

Very lightly toast 2 thick slices of wholemeal bread and leave in the toaster - ready.

To Serve:

Very lightly toast the bread again - so that it's warm - "really crisp and crunchy".

Break the toast into biscuit sized pieces and break up the cold scrambled egg with a fork.

Serve on the warm toast - with added wholemeal biscuits and a little olive oil.

.... and it's back to bed for an hour with the newspapers!

One might want a simpler diet for a puppy than a dog, but the principle of giving them varied and interesting meals is sound.

Here are some comments from Purina (who would like you to feed your puppy nothing but their wares):

- 1. Milk is a food and not a substitute for water. As a food, milk is incomplete and does not provide a balanced diet. It can be useful as a treat for some dogs, however, large quantities of milk may not be well tolerated. Milk contains lactose, which requires the enzyme lactase for breakdown in the intestinal tract. If the intestinal tract does not contain sufficient lactase, consumption of a high level of lactose can cause diarrhoea in some pets.
- 2. Repeatedly adding raw eggs to a dog's diet can cause a deficiency of the vitamin biotin. Raw egg whites contain avidin, an enzyme³ that ties up biotin (makes it unavailable for absorption into the body). Symptoms of biotin deficiency include dermatitis (inflammation of the skin), loss of hair, and poor growth.
- 3. Some raw fish can cause a deficiency of the vitamin thiamine. Symptoms of a thiamine deficiency include anorexia (complete loss of appetite), abnormal posture, weakness, seizures, and even death. Repeatedly adding raw fish to the diet of a cat is not recommended.

² Feeding eggs to dogs is considered irresponsible in other circles.

³ Avidin is not an enzyme. When one reads also of the imaginary condition "hip dysphasia" one can't help wondering if dog food salesmen might like to fling technical terms around in the hope of sounding authoritative. Be sceptical also of foods that are only sold through vets; it's nothing but a marketing ploy.

- 4. Table scraps will not provide the balanced diet which dogs require. Ideally, table scraps should not be fed. Owners who do offer them should never feed more than 10 percent of the animal's daily food intake.
- 5. Although dogs may enjoy meat, it is not a balanced diet. Raw meats may contain parasites, and cooked meats can be high in fat and do not contain a proper balance of nutrients.
- 6. Raw liver, fed daily in large quantities, can cause vitamin A toxicity in dogs. This is particularly true if it is fed along with a complete and balanced diet already containing ample vitamin A.
- 7. Small soft bones (such as pork chop or chicken bones) should never be given to dogs, as they may splinter and lodge in its mouth or throat.
- 8. Supplements are rarely necessary when a normal, healthy dog is being fed a complete and balanced food. However, factors like feeding table scraps, inconsistent exercise, or stressful changes in routine can leave dogs with special nutritional needs.

Purina also provide the following useful overview of the dog food market:

Types Of Pet Foods

The three main types of pet foods are dry, soft-moist and canned products. These vary in a number of characteristics including moisture, cost, palatability and amount of nutrition delivered per pound of food. Evaluating a pet food diet should include consideration of all these factors. In spite of these variations, with today's advanced technology, all types of pet food products can be formulated to provide complete and balanced nutrition for dogs.

Which Products Are Best?

The immense number of choices pet owners have when purchasing pet food sometimes makes it difficult to pinpoint exactly what type of product to buy. The important criteria to consider in choosing the type of product are the place the consumer shops, how much money the pet owner would like to spend and the level of convenience, palatability and digestibility desired. As long as the product offers 100% complete and balanced nutrition, the form of the food and the category are simply a matter of the pet owner's preferences.

Canned Diets

Canned dog foods contain between 8% and 15% protein and between 2% and 15% fat, depending on the type(s) of animal tissue used in the diet. The moisture content for canned pet foods is approximately 75% (less than 78%). Canned dog foods deliver 375 to 950 metabolisable kilocalories per pound. Total food consumption is high because of the low caloric content. The nutrient balance is dictated a great deal by the type of animal tissue used in the diet. These diets offer the highest palatability

and the highest cost per serving when compared to the dry and soft-moist products. In addition, canned products are less convenient to serve than other product types. Once a can is opened, unused food should be stored in the refrigerator.

Dry Diets

Most dry dog foods contain 18% to 27% protein, 7% to 15% fat, less than 12% moisture and 35% to 50% carbohydrate (also expressed as N.F.E. or nitrogen-free extract). These diets deliver between 1,400 and 2,000 metabolisable kilocalories per pound of product. Dry cat foods contain 28% or more protein, 8% to 24% fat, less than 12% moisture and have 1,400 to 2,000 metabolisable kilocalories per pound of diet.

Commercial dry dog foods were introduced in the United States during the late 1890s in the form of baked biscuits made with blended grains, vegetables and meat. Many of the early pet foods were collectively labelled "dog and cat food diets" and little was known about the individual nutrient requirements of dogs and cats. However, as animal nutritionists began to study the nutritional needs of dogs and cats, certain unique nutrient requirements were established for each species.

Soft-Moist Diets

Soft-moist dog and cat foods contain approximately 16% to 25% protein, 5% to 10% fat, about 25% to 35% carbohydrate and 30% water (moisture levels sometimes go as high as 50%). High-quality soft-moist diets contain approximately 1200 to 1350 metabolisable kilocalories per pound of product. Soft-moist dog and cat foods generally offer higher palatability as compared to dry diets, are convenient to serve and store easily. They are more expensive to feed than dry diets.

Categories of Pet Foods

In addition to distinguishing pet foods based on their form, products are also distinguished more generally based on the criteria of cost, place of purchase, nutrient density (number of calories per pound) and, to a lesser degree, palatability and digestibility. Super premium, premium and non-premium products can all offer 100% complete and balanced nutrition. No official definitions exist for these categories of pet foods and the characteristics of products vary from one manufacturer to another. In general, super premium products tend to be at the high end of the spectrum for the distinguishing characteristics, premium products fall in the mid-range and non-premium products tend toward the lower end of the spectrum for cost and nutrient density. Super premium foods are generally sold in pet speciality stores and veterinary offices, carry big price tags and are usually energy dense, or have more calories per pound of food. Premium foods are traditionally sold at grocery stores but are also available in pet speciality outlets. These types of products are moderately priced. Feed stores often carry non-premium pet foods that are very inexpensive.

Some pet foods are designed with palatability as their distinguishing feature. These products often have kibbles with different sizes and shapes and carry various flavour claims. They appeal to pet owners interested in indulging their pet and providing great variety.

Store-brand products are those pet foods sold under the store's name as opposed to a national brand name. These foods are designed to offer similar guarantees, ingredients and performance to the nationally advertised brands at a lower price.

Comparing Label Guarantees

The difference in moisture content among the various types of pet food impacts the nutrient density of the products or the amount of nutrients per pound of food. As the water content of the diet increases, the amount of protein, fat and other essential nutrients decreases. That means the animal must consume a larger portion of the high moisture products to receive the nutrition they need.

This difference in moisture content also prohibits a direct comparison of the nutrient content of one product type to another. For example, a consumer cannot compare the 12% protein content of a canned dog food to the 21% protein level of a dry dog food and conclude the dry food will supply more protein. The serving size for the canned food will be much larger due to the increased amount of water. Thus, the dog will actually consume similar amounts of protein with each product. The consumer can, however, make a fair comparison of the 21% protein content of one dry dog food to the 30% protein content of another dry dog food and conclude that the dog will receive more protein by eating the higher protein product. That is not to say, however, that the higher protein product is necessarily superior. That would depend on the life stage and lifestyle of the pet to whom the product is fed. It is generally accepted that dry pet foods are more economical to feed than the soft-moist and canned varieties and offer more convenience to pet owners. Dry products also have crunchy kibbles that help reduce the build-up of plaque and tartar on the pet's teeth.

Pet Foods To Meet Special Needs

Many pet foods are formulated to meet certain specific nutritional needs of dogs. For example, diets designed specifically for puppies usually contain higher levels of the nutrients pets need during their period of rapid growth and development.

Some dog foods are formulated to have higher levels of protein and calories to provide the extra energy dogs need when they are hunting or working. Other dog foods are formulated to be lower in calories and fat to help less active and older dogs maintain normal body weight.

So, it's mainly common-sense, but it helps to know that a wide variety of feeds is available, it does no harm to try several, and a vet who knows the local market and the dog is the best source of advice. If you feel your vet isn't taking your pup's diet seriously let us know and we'll introduce you to one who will.

Changing a puppy's diet

Anyone who has travelled further than the Watneys bars of Torremolinos will know how dramatically unfamiliar food can affect the gut. Puppies are sensitive to abrupt diet changes too. One would not bring a new puppy home and serve him a big vindaloo, but one might innocently produce a similar effect with a tin of dog food if the puppy is used to something else. When puppy first comes home, give him whatever he was eating previously. To change his diet, put increasing proportions of the new diet in his current diet, and allow something like a week to eliminate the original food. Slow down if he has the runs.

Purina have the following to say:

SWITCHING TO ADULT FOOD

Many veterinarians recommend changing from a growth food to an adult-type food at the time of spaying or neutering which is usually between 6 and 9 months of age. Neutering reduces the energy needs of puppies. A veterinarian may recommend feeding fewer calories, such as adult-type food, to help reduce the chance of pups from becoming obese. Other veterinarians recommend waiting until the puppy is at least 12 months old. Probably the two most important criteria to keep in mind are to choose a product which has a complete and balanced claim for the appropriate life stage and to closely monitor the animal's body condition as it matures. These two factors should always be considered when you are discussing when to change your pet's diet with your veterinarian.

Well, a "veterinarian" is a Yankee vet, but I'm not sure what a "complete and balanced claim" is. Never mind, it gives some idea of when to start blending adult food into meals.

Food Allergies

Most dogs do not have food allergies, and there is much that can be done to improve the life of a dog who does. If your puppy exhibits baldness, hot spots, hyperactivity, ear inflammations, diarrhoea and vomiting, low stamina or energy, moody and aggressive behaviour, weight problems and loss of appetite, or skin irritations (I think I have a food allergy) your vet will want to consider allergies. Diagnosis can be difficult, and knowing exactly what your dog has been eating and when can make the vet's life much easier. So, there is some sense in keeping the labels from the products that you feed to your puppy. No, not all of them.

Resources

The Doggie Shop 36a Maiden Street WEYMOUTH Dorset DT4 8BA 07976 970 969 Concerned about dogs, free delivery for about ten miles around Weymouth, will sell small or large quantities of dog food.

<u>http://www.ncdl.org.uk/</u> Plenty of reference material, free literature, email help service.

Many people have books out on raising a puppy, including the monks of Skete. Their book, The Art of Raising a Puppy, ISBN: 0316578398, has been praised highly.

James Wellbeloved & Co Ltd YEOVIL

TA20 2JB

Somerset

01935 410 600

Our local dog food maker. Obviously has a commercial interest, but also has a Customer Careline (dial the number on the left). They boast "plenty of people... they are all sympathetic, highly qualified animal lovers [NVQ in Animal Loving?] and pet owners themselves." They invite calls and have "nutritional advisers" on tap.

12