

## FACT SHEET

### Nutrition

As we become aware of the increasing number of additives, preservatives, flavourings and colourings being used within our own foods, perhaps we should take a closer look at what we are feeding our pets.

It is important for humans to eat a balanced daily diet providing all essential nutrients, and our diet is usually varied. This means the nutrients we might be lacking in one meal, we will probably make up for in the next.

For our pets, it is far more important for each meal to be nutritionally balanced as it is often the case that our pets are only fed one type of food from which they have to obtain all their nutritional requirements. A diet that contains high quality natural ingredients and is free from all unnecessary chemical additives such as preservatives, flavourings and colouring agents will improve your pet's health and well being, and reduce the risk of allergies and other additive related complaints.

#### Protein

Proteins are used by the body for growth and repair of tissues and are therefore one of the most important nutrients in the diet. Proteins are compounds of carbon, hydrogen, oxygen, nitrogen, and sometimes sulphur and are made up of smaller sub units, or building blocks called amino acids. Some of the amino acids are essential to the body and others less essential if the body is able to produce them itself. All proteins have a biological value that depends upon the composition of its amino acids with each protein usually containing around 20 amino acids.

The digestibility of a protein is the extent to which it is able to be absorbed for use within the body. As certain foodstuffs are easier to digest than others it follows that different types of food provide better protein quality due to the amino acid composition, allowing digestion and therefore absorption to occur with greater ease.

#### Essential and non essential amino acids

A food that contains all essential amino acids is said to be a food with high biological value. One amino acid worth mentioning at this point is Taurine; this is only present in meat.

A food containing poor quality protein with a less essential amino acid profile is said to be of low biological value. The types of proteins used within some pet foods come from animal or plant derivatives and can include ingredients such as poultry feathers, dried blood, connective tissues and sometimes even faecal waste. These will increase the food's total protein content, but are of little biological value, therefore your dog gains little nourishment from these low quality protein sources. This means that your pet must eat more food to obtain his overall protein requirement than would be necessary from a protein source of high biological value.

It is also worth noting that some manufacturing processes such as dry food extrusion result in the ingredients being subjected to extremely high temperatures, causing the denaturing of the proteins.

Naturediet uses only natural meats of high biological value that are easy to digest; therefore your pet does not have to consume large quantities of Naturediet to receive his total protein requirements.

#### Carbohydrates

Carbohydrates are principally a form of both sugar and starch. All members of this group contain the compounds carbon, hydrogen and oxygen. Carbohydrate is the main source of energy in most dry diets and provides bulk to the diet. If unused by the body, carbohydrates can also be converted into body fat and stored within the body.

Naturediet products contain carbohydrate in the form of high quality brown rice, noted for its non-allergic properties. This is an excellent source of carbohydrate with the added advantage of being easily digestible and palatable, with the husk supplying natural oils and vitamins. Naturediet contains an average of 6.5% carbohydrate.

#### Fibre

Fibre is a form of complex carbohydrate which all dogs require a certain amount of in their diet. It provides the roughage or bulk in the diet, which is needed to help with the passage of food through the intestinal tract.

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The level of fibre within the diet will determine the speed in which digested food (chyme) passes through the intestine; the type of fibre together with the correct level will reduce the likelihood of constipation or diarrhoea. Its inclusion in the diet promotes the correct bacterial activity in the intestine, which in turn aids absorption of nutrients used within the body and results in improved intestinal health and faecal consistency.

The fibre source chosen and used within Naturediet is a high quality natural fibre.

## Fats and oils

Fats, as with carbohydrates are compounds of carbon, hydrogen and oxygen. They consist of a combination of three fatty acids joined by a unit of glycerol. The difference between one type of fat and another is the fatty acid contained within each.

Some specific Fatty acids must be obtained solely from the diet (like some amino acids) these are essential for producing hormones and to help with the skin and coat condition and are known as the essential fatty acids (EFAs).

Fats provide the most concentrated source of energy, capable of releasing approximately double the energy per gram of either carbohydrate or protein. Fats can be stored in the body for warmth and are involved in the transport and storage of fat soluble vitamins, A, D, E and K. Fats help with the palatability of most pet foods as the odours from fats will readily attract the dog, making them more appealing and giving the product an acceptable texture.

Naturediet contains the appropriate level of fats required by a dog's body for optimal maintenance of the body, coat and skin and provides a valuable natural energy source and fat-soluble vitamins. The type of fat however, is reliant on the meat used within the recipe as we do not add any additional fat or oil to the recipes: there is therefore natural variance in the type of fat within each recipe and some meats may be more suitable to an individual's requirement than others.

## Moisture

It is worth realising that moisture is an important part of any diet, all components of a dog's diet contain some moisture, natural meats contain up to 75%. Without this moisture your pet and for that matter all animals, are unable to survive. This is because water fulfils many roles within the body.

- Water is the principal constituent of blood, which provides the vital transport medium for oxygen and nutrients to the tissues, and waste products such as carbon dioxide out of the body
- Water contributes to the body's temperature regulation via the blood and by evaporation through the skin
- Water is also involved in digestion through a process called hydrolysis, this being the chemical breakdown of food within the body. Hydrolysis splits up the chemical compounds of other nutrients and allows them to be used by the body

All dogs have a limited capacity to store water and it is therefore essential that dogs always have free access to fresh water. All dog food will contain some moisture content; a dry food will only contain about 10%, whilst moist foods vary. Naturediet contains 75% moisture, sourced largely from the natural ingredients.

When you are feeding a dry food, almost all the animal's moisture requirements must be obtained from the drinking water so they need to drink a lot more, which can be unnatural: normally, at least 50% of the body's water requirement will be supplied within the cells of the food being eaten, this moisture will be easily assimilated and utilised alongside the food nutrients and readily used in metabolic process. Very few animals will double their water intake when fed a dry food and may therefore be in a permanent state of mild dehydration, which ultimately applies burden to the kidneys and reduces toxin disposal.

Failure to take on sufficient water will cause a breakdown in the digestive hydrolysis process and can cause further digestive problems.

## Energy

Dogs will eat in order to meet their energy requirements, the amount of energy is therefore determined by the total amount of proteins, fats and carbohydrates present within the food. Appetite determines energy intake with excess eating leading to obesity. Enzymes in the gut perform complex chemical reactions, which convert food into energy during digestion; these enzymes need vitamins and minerals to be present in the diet for this process to function effectively.

Energy is measured in calories (Kcal) or joules (J). 1 kcal is equivalent to approximately 4.2 kilojoules of energy.

The total useable energy present within the food will depend very much on the quality and digestibility of the food. For example insoluble fibre and poor quality ingredients will pass out of the body in the faeces and therefore will provide very little energy.

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## Pet food labels

All pet food labels contain information about the product's nutrition and ingredients, though the way in which they are written will vary. Ingredients are normally listed in descending order by weight.

Some manufactures label their ingredients using category names with terms such as 'meat and animal derivatives'. These terms can include different mixed meat sources including chicken, lamb, beef, together with the livers, hearts, kidneys and often poorer quality sources such as connective tissue, blood and sometimes even poultry feathers.

The vegetable or cereal content within the diet is sometimes categorised as 'vegetable derivatives' or 'derivatives of vegetable origin'. These may include a variety of different ingredients including wheat, maize, barley, vegetables or added fibre. Some of these are high quality sources and others very poor quality, such as waste from the baking industry.

The categorisation of pet food ingredients makes it very difficult to establish exactly what we are feeding our pets. This is particularly a problem if you are trying to identify an ingredient or additive that your pet may have an allergy to, for this reason Naturediet lists all the ingredients present in the product.

If a particular ingredient requires a preservative or antioxidant, it should be listed with that ingredient. Some products however, will contain materials that have been preserved with an additive yet will not show on the label, this is because the additive has not been added by the manufacturer but by their supplier; an example of this is meat meals used in dry foods preserved with BHT or Ethoxyquin.

Apart from listing ingredients, all pet foods are required to show a typical nutritional analysis which will show the percentage of protein, oil or fat, fibre, moisture, and ash (the mineral content) present within the diet.

## Price

Of course the price of a product can be an influencing factor when buying a pet food, but it is important to be aware of what you are actually feeding. Many diets will appear the same on the label analysis, though flavour enhancers and poorer quality protein sources may influence a difference in price. If a price is extremely low then there will usually be a reason for it, though high priced diets do not necessarily denote top quality ingredients and processing either.

## Is the meal complete?

It is important when buying any pet food to know whether it is a complete food or one that requires an additional supplement such as mixer. The whole of the Naturediet product range are complete and balanced meals, thus nothing needs to be added for your dog to obtain all the required nutrients, unless advised by your vet. We do however recommend chewing and gnawing items to aid in tooth and gum hygiene.

## Taste test

Some people say that dogs will eat anything, though that is not always the case. Many dogs can be finicky, and as a result, finding a diet that they not only like but that agrees with them can be a difficult task. Dogs were designed to eat meat; therefore Naturediet has produced a natural appetising real meat based diet, which all dogs want to eat. Try the taste test! Our office staff have!

## Additives

Naturediet does not use additives. Instead we use high quality natural ingredients to supply your pet's nutritional needs. Additives are artificial ingredients, often chemically derived, to enhance the palatability, appearance, taste and texture of food. They are often a cheap and profitable alternative to using good quality natural ingredients, and are often used to mask poor quality foodstuffs.

Unfortunately the law does not require all the additives to be listed, for this reason you have no idea of the chemicals substances your pet is eating. Many manufactures of pet foods, and for that matter, human foods, use additives solely to maintain a competitive price or to produce a product with a visual advantage to increase profits margins. The following list shows commonly used additives and the possible side effects, health problems and allergies they cause.

**Ethoxyquin** is used within many pet foods to prevent the oxidation of fats. It has also been used by fruit farmers as a pesticide and as a stabiliser in building roads. It has been reported to cause liver cancer in dogs and can cause problems with newborn puppies, with increased mortality and malformations. It is also implicated in skin allergies and some immune related diseases.

**Caramel E150** is used within many pet foods to portray a brown meaty colour to the food. Side effects to this colouring can include many gastrointestinal symptoms leading to soft stools and diarrhoea.

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**Titanium Dioxide E71** is used as a colouring agent which artificially lightens the colour of foods. It is often used in white meat based food such as chicken and fish. Titanium is a dangerous heavy metal.

**Sugar** when added to the diet can act as a preservative; however, it has been known to cause behavioural problems, diabetes and hypoglycaemia, (low blood sugar). An excessive amount of sugar in a dog's diet has also been linked to obesity, dental decay, arthritis and allergies.

**Propylene Glycol** is used as a food preservative, and is also known as antifreeze, used in cars engines. It can be toxic and lead to kidney failure. The levels present in some pet foods have caused certain blood disorders in cats and skin problems in dogs.

**Salt.** Sodium Chloride is used in diets as a preservative and flavour enhancer. Excess salt can cause a number of problems. It can irritate the stomach lining, cause increased thirst and aggravate heart and kidney problems by causing fluid retention and increasing blood pressure.

**Artificial flavouring and taste enhancers** of which there are many and varied are added to diets in order to supposedly increase the palatability. However, they have been known to cause behavioural problems in cats and dogs, such as anxiety and hostility.

### Vitamins and their characteristics

Vitamins are types of nutrients, which are vital for good health, and help to regulate body processes. They fall into two main categories:

- Fat soluble vitamins, which are transported through the digestive system by fat within food and can be stored within body fat.

Water soluble vitamins, which can be transported by water in the dog's food but cannot be stored and must therefore be supplied by the diet on a daily basis.

Examples of these are shown below:

FAT SOLUBLE VITAMINS	MAIN FUNCTIONS	DEFICIENCY
<b>A</b>	Has a profound effect upon the development and well-being of the bones, teeth and gums, skin and hair. It is also involved with the eyes and vision.	Reduced resistance to disease, skin becomes dry and lesions can occur. Night blindness, nerve degeneration, reproductive failure, muscular in-co-ordination, convulsive seizures, lack of weight gain and deafness can also occur.
<b>D</b>	Involved in the absorption of calcium and phosphorus ratios, therefore is crucial for the growth and development of bone.	Rickets or abnormal bone formation.
<b>E</b>	Prevents foetal reabsorbtion. It improves the immune system, muscle power and stamina. It boosts the efficiency of the heart and circulatory system and makes other vitamins and minerals work more efficiently.	Can cause skeletal muscular dystrophy. Affects reproduction; in the female the embryo dies and in the male the sperm die.
<b>K</b>	Used within the body to help with blood clotting	Haemorrhages

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