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THE FINEST FOOD - NATURALLY!

FACT SHEET

Persistent Digestive And Skin Problems

The problems of food allergy are far more prevalent today than they were 40 years ago. The past four decades have seen an enormous change in many directions on our planet.

A growth in the use of chemicals, the advent of multiple live vaccines and highly processed and refined foods have all exerted an influence on the natural ecological balance of our environment. It is no surprise that this challenge has produced many new diseases, and many new problems.

This article addresses the problem of food allergy and identifies the influencing and causative factors.

Definition

Food allergy usually manifests as an acute or chronic, non-seasonal cutaneous (skin) and/or gastrointestinal disease, which affects pets of all ages.

The condition is characterised by any number of adverse reactions to foodstuffs. Diagnosis is normally made after a period of feeding and withdrawing certain items of food, particularly those known to cause allergic reactions, and those suspected of being an allergen in an individual.

In a normal immune reaction antibodies are released in response to an antigen – an antigen is a foreign protein, which the body views as a threat.

The definition of an allergic reaction is a sudden hypersensitivity to a normally tolerated substance. Thus, in the case of food allergy, it is a sudden untoward reaction to foods that are normally tolerated by the animal.

Food allergies are estimated to cause 1% of all skin problems in dogs. Other allergic skin problems, for example allergy to flea bites, are more commonly seen. The incidence of gut upsets, such as vomiting or diarrhoea that is caused by food allergies is not known, but is thought to be greater than 1%. Animals that have both itching and gastrointestinal problems are more likely to have food allergies.

The exact mechanism by which a protein in the diet causes the signs of food allergy is not known. It is thought that abnormal amounts or types of protein particles from food are absorbed into the bloodstream from the digestive tract, this causes antibodies and inflammatory chemicals to be released from cells of the digestive tract and skin (Hypersensitivity).

The skin and digestive tract may then become sensitive to food containing that particular protein ingredient.

These hypersensitivity reactions, such as itching, vomiting or diarrhoea, may occur within minutes to hours, or even several days later. The offending dietary ingredient need not be a new one in the diet. Allergies can develop to foods that have been fed for years but the allergy may develop with a sudden onset. Once an allergy has developed, the sensitivity to the ingredient may last a lifetime, so foods containing that ingredient will need to be left out of the diet permanently.

The allergic reaction is an attempt by the body to eliminate the allergen. Hence the eliminative channels of the body are the main sites of the reaction, i.e. the digestive system, and the skin.

Digestive symptoms

Occasionally an animal may react as soon as the food item is taken into the mouth, but this is unusual. More often the reaction does not occur until the food has been partially broken down by the hydrochloric acid in the stomach. At this stage, large protein molecules are released, and these are identified by cells of the immune system present around the membrane of the stomach. Initial reaction is triggered off at this stage, and the animal may vomit.

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A sudden change in diet can provoke the same problem and needs to be considered as a potential differential diagnosis. More often the food has passed through into the small intestine before it is sufficiently broken down to be identified as an allergen. At this stage a rapid onset of watery diarrhoea is a common finding. The body attempts to be rid of the aggravating substance as quickly as it can. Vomiting and diarrhoea, raised temperature and distinct discomfort may be in evidence.

If the substance is not re-introduced, the symptoms will quieten down over a 24-48 hour period. If however, the allergen continues to be ingested, the symptoms will get worse, and give rise to severe colitis with or without haemorrhagic diarrhoea. Various factors, such as the sensitivity of the animal, the amount of allergen ingested, and the type of allergen will determine how severely the animal reacts.

Skin symptoms

Skin symptoms are usually secondary to digestive symptoms, but as the two sets of symptoms occur separately they often are not identified as having a similar cause.

Skin symptoms come on after digestive symptoms simply because the allergen will need to have been taken into the blood stream from the digestive system before the body can attempt to eliminate it at skin level. The skin is an organ of excretion, and in the dog the skin is the primary site of mast cell distribution.

Mast cells release histamine in response to tissue damage, such as is caused by toxins or chemicals brought to the tissue from the circulating blood. Histamine is part of the body's defence mechanism, and it attempts to localise the problem, and prevent the toxin from moving to other tissue. Its release causes tissue swelling, irritation, pain and inflammation.

Hence the most often seen symptoms in the dog are itchy skin, redness, localised swelling, scaliness and hair loss. If the allergen continues to be ingested, and the dog continues to scratch and bite at itself, the skin can show severely infected lesions.

The inherent predisposition or susceptibility of the animal will determine whether it tends towards digestive or skin problems, but in the main the more sensitive an animal is, the more rapidly it will recognise and react to an allergen.
A very sensitive animal will be more likely to react with immediate vomiting that may mean the substance never gets further into the body to cause other symptoms. Digestive symptoms could be classified as "localised", whereas skin symptoms are "systemic".

The normal medical treatment for food sensitivity/allergy is aimed at removal of specific antigens, and usually accompanied by desensitising regimes, and various anti-inflammatory drugs and antibiotics.
The problem here is that this method of treatment treats the effects of the problem, but fails to address, or attempt to identify the cause. Identification of the underlying cause offers the only real chance of realistic prognosis, prevention and cure. To understand food allergy we need to understand the workings of the immune system.

The immune system

The immune system has one purpose, to protect the healthy body from invasion by viral toxins, foreign proteins, bacteria and chemicals. Every healthy body cell carries a genetic fingerprint which identifies it to the immune system as belonging to "self". The main responsibility of the immune system is to differentiate between "self" and "non-self" molecules, and to destroy the latter. When a "non-self" or "foreign" substance enters the body, such as a viral toxin, or unrecognised protein this is what happens:

The immune system recognises an invader and the body is immediately stimulated to produce:

- Interferon: a substance, which prevents the virus from replicating
- B-lymphocytes and T Killer cells: which set out to identify and destroy the invader

Once this has been achieved;

- T Memory cells store the memory of the invader in order to vanquish it even more rapidly should it return
- T-Suppresser cells are the final part of the immune response, and as their name suggests their duty is to "call off the troops", and suppress the reaction

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You might wonder how food proteins are tolerated by the body if they do not carry the "self" fingerprint. Over years of evolution the immune system has adapted to have "specific tolerance" to the protein molecules found in natural foods.
This is an inherent law of survival. This is also fundamental to the problem of food allergy.

Sensitising components of food are usually glyco-proteins, which are large molecules. A single ingredient such as wheat may contain over 20 different proteins. Additionally on each protein the area of recognition, called the epitope, is a small fragile region on the molecule which can often easily be changed through various chemical and physical forces, and which is dramatically changed by many of the food processing methods widely used today.

Food sensitivity can arise as a result of one of the following causes:

- An over-reaction of the immune resources to a normally tolerated substance
- As a result of the body ingesting substances, which are effectively foreign to the species

Over reaction of the immune system

Some animals are naturally more sensitive than others. Reactivity/sensitivity is initially genetically determined, but thereafter can be modified by many environmental factors. Normal sensitivity is a necessary state, which alerts the body to threat (in the same way as a fuse in a plug protects a far wider circuit).

Over sensitivity is abnormal and a sign that the immune system is in "over-drive". However it is also a warning of threat, and should not be ignored. This state normally arises from the continued presence of foreign substances in the body, such as toxins, or chemicals. Initially the reaction is beneficial because the reactivity produced by the body attempts to be rid of the burden, by means of discharge, raised temperature, or some other acute means.

The most common cause of continued stimulation of the immune system is a build-up of toxic waste in the body. This can occur as a result of a bacterial infection, such as from a deep-seated abscess, a liver or kidney problem, a viral infection, from exposure to chemicals, or more commonly from long continued use of poor quality or inappropriate diets containing low quality protein sources and chemical additives.

Chemical additives

These are an obvious challenge to the immune system. Chemicals are toxins and need to be detoxified by the liver and excreted by the kidneys. The liver is an organ with many functions, but it contains much "reticulo-endothelial" tissue, which means that it is a key player in the workings of the immune system. Continued ingestion of chemicals over-works this vital organ, which is one of the reasons we see so much more liver disease today. If the liver becomes under functional, the body rapidly becomes toxic.

There are over 100 permitted chemicals, approved for inclusion in pet foods by the EC. The most commonly used are the antioxidants Ethoxyquin, BHT and BHA. All have been found to be damaging to health, and Ethoxyquin has been found to be particularly toxic to the liver of dogs, with cumulative effects. It is often contained in meat meals and oils before these reach the pet food manufacturer, and may not be declared on the bag or tin, as the manufacturer is only legally bound to declare the chemicals added during the manufacturing process.

The other main problems with Ethoxyquin, BHT and BHA are that they bind the availability of the fat-soluble vitamins A and E. These vitamins are essential for the correct functioning of the immune system, and also the natural anti-inflammatory response that would normally help to self-limit an allergic response.

Low quality protein

We need to understand why low quality protein sources also present a challenge.
Dogs are designed to digest high quality proteins such as those from meat, and their digestive systems have evolved over aeons to be able to fully assimilate the protein molecules from fresh organ meat.

Unfortunately there are many highly processed ingredients used in pet food manufacture today, which the dog would not normally eat in

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the wild. Hydrolised feather meal is just one example. These items are not well digested when they appear in pet food. The undigested portion has to be broken down by the liver, and excreted by the kidneys (more work for these vital organs, and an insight as to why we are seeing so many more kidney problems today too).

Protein that is badly de-natured or damaged by extreme processing (such as rendering and then extrusion, the process used to make most dry foods), is also treated by the body as low quality protein, if indeed it is recognised as protein at all. But this is further discussed in the paragraph on foreign protein substances.
Proteins that are not assimilated are broken down to a toxic waste product called "urea". The build-up of toxic waste products can come from poor quality foodstuffs and the circulating urea is the most common cause of skin irritation.

As long as the threat remains, or in the case of toxins in food, continues to be ingested, the immune system remains "charged-up and looking for trouble."
Even at this time it is unlikely that the body would react adversely to "self" or to molecules of "specific tolerance", but it will react more acutely and more dramatically to anything which is not within these categories.

Anything, which presents a continual challenge to the immune system, can effectively cause over sensitivity. Multiple vaccination can be a factor in this equation, and that is discussed separately in our leaflet on vaccination.

In order to provide your pet with a high quality protein and a food with non-allergenic properties we recommend the use of Naturediet Chicken, Naturediet Fish, Naturediet Lamb or more specifically Naturediet Sensitive specially formulated to aid dogs with allergies.

Failure of suppressor cells

Another cause for the state of continual immune activity can arise from failure of suppresser cells. Earlier on we acknowledged that suppresser cells are those lymphocytes, which provide the braking system for an immune response, once the threat has been overcome.

Why should they fail?

The body is provided at birth with a finite number of T-Suppresser cells. They cannot be regenerated or manufactured later on in life. The immune system has evolved over the millennia to give adequate protection for a normal body against normal threat. Evolution is a slow gradual process, and unfortunately the new challenges of the past 40 years have arrived suddenly, and adaptation is not designed to respond that quickly. Our bodies and those of our pets have not yet adapted to cope with the constant challenges from toxic overload or chemicals. Hence, a constantly challenged body rapidly uses up its finite supply of suppresser cells, as every reaction initiated by the immune system requires a counter reaction from these cells.

Once the supply has been depleted, normal immune reactions, (inflammation etc) will run on unchecked, causing the most extreme state of over-sensitivity possible. Anything and everything presents a threat, because the reaction has no modifying force. Sometimes this is classified as Total Allergy Syndrome. But we need to appreciate the gravity of this, because the next step is AUTO-IMMUNITY - the situation when the immune system fails to recognise "self".

(Three eminent Immunologists writing in the Fundamental Principles of Immunology –Strelkausas et al 1978, Imai et al, 1980 and Quimby et al 1982- all independently concluded that "Lack of suppresser cells will result in a breakdown of self-tolerance…")

There can only be one lesson here: 'Prevention', because no cure exists.

Removal of the factors that create over stimulation is a primary requisite, namely poor quality, chemical-laden foodstuffs!

Ingestion of foreign protein substances

You may glance at this heading and think that this could never be your dog's problem. However if you feed dry or tinned food please read on...

It is one thing to start with good ingredients, and another to retain good nutrition after processing. Modern pet food manufacturing uses milling, extruding, pelleting and drying processes, all of which have the potential to destroy, damage or de-nature nutrients.

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Food is a fragile substance and the very high temperatures and pressures under which it is processed effectively torture it. This denaturing changes the protein in such a way that the body does not recognise it as natural or within its "specific tolerance".
A typical example of this is a dry "complete" food that uses meat meal as its protein source. This meat meal, a commonly used low quality ingredient, will have undergone a very high temperature rendering process to reduce it to a dry meal. This in itself will have the effect of de-naturing the protein. The material will then be subjected to a further heat and pressure process during the manufacture of the dry food (extrusion). The net result of which is the protein molecules are significantly changed to present the animal's immune system with a challenge of recognition, with a resulting immune response.
This has two subsequent effects:

- The undigested food is treated as a non-food product and is detoxified and broken down by the liver in the same way as for poor quality ingredients.

- Some of the molecules are absorbed into the blood stream from the primary digestive process, which takes place in the mouth and stomach, and once in the blood stream the immune system is alerted that these are foreign proteins.

This starts an immediate allergic response. This is well documented in 'The Fundamental Principles of Immunology', by Anthony Schwartz, who cites experiments that were carried out in dogs to test acquired tolerance. Dogs were given a natural protein, and all demonstrated tolerance to this. However, when they were given a denatured form of the same protein, all showed severe allergic reactions.
There is no doubt that many of the ingredients used in pet food, and the extreme processing methods used, may pose a major risk to the health and well-being of our pets.

We have to recognise that the pet food industry is profit-motivated, and health is a secondary issue. Shelf life is more important than your pet's life!

We and our pets are all part of a massive food experiment, the results of which only future generations will know. But if you appreciate the areas of danger and experiment, and avoid all unnatural influences, you stand a good chance of avoiding the problems so caused.

It is reasonable to conclude that food allergies can arise as a result of anything that over-stimulates the immune system, or depletes its modifying forces, and can equally arise from ingestion of unnatural protein sources, and chemical additives. The best advice is to avoid all chemical influences and unnatural protein sources wherever possible, question the necessity of annual booster vaccinations which might be an unnecessary drain on immune resources, and use only wholesome, natural food which is either fresh or minimally processed.

We have good reason to believe that Naturediet is the only British Manufacturer using the ingredients that you would want to feed to your pet.

We use only fresh, wholesome, natural, high quality ingredients from human grade food sources. Our range of foods are only subjected to a very quick steam sterilisation technique: this minimal processing optimises the bio-availability of the ingredients and retains all the nutrient goodness. Quality of ingredients and health benefits come first.

Most importantly we do not use: Preservatives, colourings, fillers, binders, fat emulsifiers, meat meals, Soya products, chemicals, any beef products or anything which we believe may be detrimental to your pets' health!

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