



The Nutritional Management of Cancer

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Although cancer is not typically defined as a nutritionally responsive disease, recent studies have indicated that good nutrition can be very beneficial to cats and dogs suffering from cancer. The provision of highly digestible and easily metabolised nutrients makes life easier for the gut and means that the immune system can concentrate on its own protective function without losing efficiency by having to get involved with food stuffs that it considers foreign. Taking good care of the digestive and immune systems may also have knock-on positive effects to the other bodily systems. This holistic approach may help the body to maintain normal function (despite the metabolic stress caused by disease conditions), and even improve quality of life.

There has been much recent research concerning the nutritional management of cancer cases, and some studies have shown that excess carbohydrate can "feed" tumours. Furthermore, dogs (although omnivorous) are more geared up for meat eating (as their dentition proves) and will thrive better on diets with good levels of protein and fat. Unlike in humans, there are no indications for fat restriction in dogs (unless of course the animal is obese or has a medical condition such as exocrine pancreatic insufficiency where fat intake must be limited). There are several different diet options available to the owner of the cancer patient, including prescription diets, home-prepared food or high quality commercial complete foods with lower levels of carbohydrate. Prescription diets have the disadvantage of being expensive, whilst it is difficult to assess the nutrient balance within home-prepared diets.

For many, a commercial complete food is a good option because it is cost-effective and convenient. Whilst pet food manufacturers are legally obliged to disclose the protein and fat percentages of a diet, carbohydrate content is not usually displayed. You can assess the proportion by looking at the levels of protein and fat. The higher these are, the lower the carbohydrate content will be. The analysis of a pet food shows the proportions of nutrients in relation to one another. To work out the actual amount of any nutrient or individual ingredient, the calorie content of the food and the daily volume need to be taken into account too. The best diet is always one which the dog finds acceptable and can digest well, and it is vital to bear in mind that every dog is an individual, and what suits one may be inappropriate for another.

It is essential to discuss any plans to change your dog's diet with your veterinary surgeon beforehand, since this may not be advisable during the crucial first stages of treatment in case it causes a digestive upset. When customers approach us at Arden Grange for advice in such cases, we will provide samples and full details of foods which may be suitable and advise that the owner take these into the surgery so that the animal's vet can assess the ingredients and analysis and decide whether or not the diet is appropriate for the individual patient. Appetite may be affected by treatment, so you may need to choose a higher or lower energy density feed depending upon your dog's response to any drug therapy. Steroids typically make dogs very hungry, whilst chemotherapy can suppress the appetite.

Illness will often manifest in anorexia in animals, and you will know yourself that when you feel unwell, a large plate of food is probably the last thing on your mind. Dogs with a suppressed appetite may benefit from an energy dense food such as the **Arden Grange Prestige** as the subsequently smaller feed portions are often more acceptable to dogs with a low appetite. The **Arden Grange Partners Chicken** canned food for dogs is also an excellent appetite stimulant and contains high volumes of meat.

The type of cancer may also influence the choice of food. Cats and dogs suffering from oral tumours for example may have difficulty with dry kibble and would find wet food or soaked kibble better digested. Some animals may have concurrent medical conditions necessitating special dietary management. Cats and dogs with cancer may thrive better on small frequent meals rather than one or two bigger ones. This means that the digestive system has less work to do at any one time, as well as helping to keep the digestive enzymes ticking over efficiently and promoting more stable blood sugar levels. Together, these benefits may improve the pet's metabolism.

The cancer patient will benefit from protein sources of the highest biological value (i.e. the most easily broken down into their component amino acids necessary for all the structural and functional demands of the body). Egg has the highest biological value (BV) of all the proteins. Chicken and fish are excellent protein sources for dogs and they too have a high BV and are much more digestible than meats such as pork and beef. Cereal proteins are less digestible by canines and felines, and ingredients such as wheat gluten or corn gluten meal are best avoided. Choose foods with named ingredients so that you can determine exactly what is in them. Lower quality pet foods often have meat and cereal derivatives listed, and there is no way of knowing exactly what comprises them.

Foods to avoid include beef and pork (as previously mentioned), foods containing wheat gluten (including many commercial dog treats/chews, pasta, bread), anything containing artificial additives (again, as found in many commercial dog treats) and chews such as pigs' ears and raw hide which are by and large made of very indigestible protein and will hinder the digestion.

There are a number of nutrients with benefits to canine cancer patients and several others where the benefits have been proven in humans, but are yet to be confirmed in dogs. Arden Grange incorporates a number of these ingredients into their recipes as they provide good protection against metabolic stress. These include:-

Beta Carotene – Beta carotene is a precursor to vitamin A, and is an antioxidant. It is one of the most stable and active vitamins found in food, and significant losses in efficiency only occur after long periods of boiling. Unused beta carotene is stored in the liver and is not associated with toxicity (unlike vitamin A where excess can cause hypervitaminosis A). Beta carotene is beneficial because it protects the cells against the damaging effects of free radicals (from which the cancer patient is more at risk) and may enhance immune function.

Omega-3 Fatty Acids – The Omega-3 fatty acids have been shown to have cancer fighting and preventative effects, and salmon oil (as used in the Arden Grange recipes) is thought to be the best source. Omega-3s also have natural anti-inflammatory properties. Very high levels of omega-3s are found in the **Arden Grange Adult Salmon & Rice** and **Arden Grange Sensitive** recipes.

Linseed – Linseed is also known as flax. Flax seeds themselves contain lignans, a class of phytoestrogens considered to have antioxidant and cancer preventing properties.

Bioflavonoids – Bioflavonoids are a group of phytonutrients which aid the immune system by protecting the cells of the body. Grape seed extract, green tea extract and quercetin are all included in the **Arden Grange Performance** recipe.

Grape Seed Extract – Grape seed extract is a potent antioxidant. It contains a polyphenol called resveratrol which may interfere with cancer cell growth and proliferation.

Note: Whilst grapes in a large volume may be toxic to dogs, grape seed extract is included at a safe level and will not have any harmful side effects.

Green Tea Extract – Green tea has natural antioxidant properties and is thought to have several anti-carcinogenic properties.

Quercetin – Quercetin too is an antioxidant, and is thought to be beneficial in cases of stomach cancer.

Inositol – Inositol is an unofficial B-vitamin which is converted to lecithin in the body. It may have some cancer fighting properties such as the reduction of blood supply to tumours.

Selenium – Selenium is a trace mineral which is thought to be helpful in prevention and treatment of cancer.

Chelated Zinc – Zinc may increase the production of white blood cells that fight infection and helps them to fight more aggressively. It may also increase the cancer fighting cells and help increase the production of antibodies.

Note: Chelated means "firmly attached", usually to an amino acid or other organic component so that the two do not disassociate in the digestive system. Chelated zinc is more bioavailable to the animal and thus better absorbed by the body.

MSM – The methyl-sulphonyl-methane (MSM) contained within Arden Grange diets is an all natural, ultra-pure MSM derived from pine bark. MSM is a naturally occurring form of organic sulphur. Its beneficial properties include the relief of pain and inflammation. It is also thought that MSM may improve mental alertness and relieve stress. MSM is included in all of the Arden Grange canine and feline recipes, but can be found at the highest level in the **Arden Grange Senior** and **Adult Large Breed**.

Nucleotides – These natural short-chain proteins are able to enhance metabolic function and have particular benefits to the digestive and immune systems. Nucleotides allow optimum levels of nutrients to be absorbed by the body, as well as facilitating a more rapid cell replication in response to an outside challenge.

Some general suggestions that may help the canine cancer patient include:

1) **Feeding 3 or 4 smaller meals per day** - this gives the gut less work to do at any one time, keeps the digestive enzymes ticking over nicely and ensures that maximum benefit is derived from the nutrients in the food.

2) **Lightly soak any dried food with a little warm water for about 15 minutes before feeding** - wet foods are more easily dealt with initially by the digestive enzymes because they are softer. It is also important to ensure sufficient water intake.

3) **Ensure that the pet is kept at a healthy weight** to avoid additional pressures on the vital organs and joints.

4) **Avoid foods containing largely indigestible** proteins (e.g. ones with unspecified cereal ingredients or poor quality meat/derivatives). They give the gut and immune system a lot of work for very little nutritional value.

5) **Avoid any foods/treats containing wheat gluten** - cereal proteins are not as well digested as good quality proteins from white meat, fish and egg.

6) **Avoid foods/treats containing artificial additives** - the immune system doesn't like them. Be very careful when reading pet food labels, as some are cleverly marketed as being "natural" and "free from artificial colourings and flavourings" yet are artificially preserved. With every Arden Grange recipe you can be assured that NO artificial colourings, flavourings or preservatives are included.

7) **Ensure that any protein in the diet is of a very high biological value** which is far more easily broken down into the constituent amino acids for use by the body. We would advise avoiding red meat.

8) **Avoid dairy products** including yogurt as dairy is one of the top 4 dietary allergens. Furthermore, when kittens and puppies grow up to be adult cats and dogs, they lose the ability to digest lactose (milk sugar). If you wanted to add a probiotic, a non-dairy alternative would be the best option.

When a much-loved family pet is diagnosed with cancer, it is devastating. Emotions naturally run high, and it is normal to feel scared and helpless even though a good vet will take the time to discuss the condition, the treatment options and prognosis. Not all cancers are treatable, but many respond well to therapy, which could

comprise surgical excision, chemotherapy, radiotherapy or a combination approach depending upon the type of cancer, the suitability of the individual pet for treatment and the owner's wishes. There are cases (for example in animals at high anaesthetic risk) when invasive surgery would not be advised. Some owners also have personal, religious or financial reasons for opting for palliative care, whereby the focus is to improve quality of life by alleviating the severity of the disease symptoms rather than striving to delay or reverse the progression of the disease or to provide a cure. Regardless of the type of cancer or treatment route, the provision of optimal nutrition has benefits to the pet, and helps provide a positive focus for the owner.

IMPORTANT NOTE

As a responsible and ethical company, Arden Grange fully appreciates the caution that must be taken when discussing the potential benefits of nutritional supplements. It is against the law to make medical claims. Whilst these ingredients are safe and natural, and may be beneficial to some of the cats and dogs fed on Arden Grange, we must highlight that their inclusion is not a substitute for veterinary intervention in the case of a sick animal.

If you would like assistance in choosing the most suitable diet for your pet from the Arden Grange range, we are always happy to help.

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