

DIET RECOMMENDATIONS and SUPPLEMENTS FOR PETS WITH CANCER Little Creek Veterinary Clinic

Diet:

A non-processed diet is best, consisting of the following proportions:

- i) High levels of protein (meat)—50% in dogs and 70% in cats. Generally the meat is best raw, but in elderly or debilitated animals, it should be cooked at least to start with.
--there should be at least a couple of ounces of organ meats given daily (such as heart, liver or offal), again best given raw (organ meats contain fat and water soluble vitamins and minerals, and nourish the Blood, decreasing secondary Qi and Blood Stasis).
- ii) Low levels of carbohydrates—no more than 10%. If the pet has digestive upsets, then cooked squash or pumpkin are useful; these contain soluble fiber (“prebiotics”) which supports the lining of the digestive tract to heal, and help promote the production of useful intestinal bacteria. Carbohydrates have the effect of stressing the Spleen (digestive) system in carnivores, producing Damp in the body, which contributes to the development of many types of tumours.
- iii) Vegetables—pureed raw, especially cruciferous vegetables such as broccoli, kale, Brussels sprouts, arugula, bok choy, etc. (these contain some cancer-fighting nutrients; organosulfur compounds which are meant to enhance the transcription of tumour suppressor proteases), as well as carrots (high levels of beta-carotene and Vitamin A, have anti-oxidant activity), and parsley (contains chlorophyll and helps flush the kidneys and liver).
You can also add red peppers, other types of greens, and fresh or frozen berries, which contain high levels of antioxidants.
Veggies are best fed in the pureed raw form, since this breaks down the cell walls so that vitamins, minerals and antioxidants are highly bioavailable and easily absorbed (dogs and cats do not digest vegetables and fruits easily on their own).
- iii) Relatively high levels of fats, best given as oils. We wish to supply high levels of Omega-3 fatty acids; DHA and EPAs. These have been found to support the immune system, inhibit tumour growth and metastasis, inhibit cachexia, and they may increase the effectiveness of some chemotherapy drugs.
The best sources appear to be fish oils, such as sardine, krill oil, salmon oil; and canola oil. The dose should be a minimum of 1000 mg of fish oil per 10 pounds (5 kg) body weight (this should supply 180 mg EPA and 120 mg DHA). You may want to start with a lower dose and increase up to the level that your pet can tolerate (watch for soft stools or an oily coat developing; these are signs that you should cut back the dose a little).
- iv) If the meat portion of the diet does not contain ground bone and organ, you will need to supplement for calcium and trace minerals, to ensure that the pet is getting a full and balanced diet.

- v) Probiotics or fermented veggies. These will help support the digestive tract, which controls 70 - 80% of our immune system.

Supplements:

These are listed in the order of importance for most pets with cancer. You will probably be given suggestions by your veterinarian, as to which are best for your pet.

- 1) Vitamin A. Activity: anti-oxidant; protects cellular enzymes which attack cancer cells, has cytotoxic effects and may induce differentiation and apoptosis (self-destruction) of cancer cells. Dose: 5000 IU/lb/day to start, reducing the dose after 1 - 3 months depending on the pet's condition and response to treatment.
- 2) Vitamin D3. Inhibition of tumour growth, angiogenesis and metastasis. Dose: 750 IU/lb per day. Best given with Vitamin A (concentrated oral liquid available through the vet clinic is handy to administer).
- 3) Tumeric (active ingredient curcumin). Inhibits tumour growth and metastasis, enhances fibrinolysis (helps break down the proteins which protect cancer cells from the immune system), decreases side effects of chemotherapy and may increase the activity of some chemotherapy agents, as well as preventing cancer. Dose is 8-10 mg per kg; you can add a bit of your kitchen spice to your pet's food at a rate of $\frac{1}{8}$ - $\frac{1}{4}$ tsp per 10 lb (5 kg), or whatever your pet will eat.
- 4) Mushroom polysaccharides (or medicinal mushrooms). These include Reishi (*Ganoderma lucidum*), Shitake (*Lentinus edodes*), Turkey Tail (*Trumetes versicolor*), Maitake (*Grifola fondosa*), and other mushrooms. These have established immunostimulatory and anti-tumour activity. These are usually found as powders or capsules, and are dosed at 10 - 50 mg/kg per day.

Other supplements to consider:

- 5) Garlic. This has antioxidants, immune-enhancing, eicosanoid-mediated mechanisms in the treatment of cancer. Garlic must be used with a little caution due to the possibility of the production of anemia in some pets, but if used with other anti-oxidants, it is generally very safe. The dose is approximately 1 clove per 15 - 25 kg/day for dogs, and $\frac{1}{8}$ - $\frac{1}{4}$ clove per day for cats. You can also use Kyolic extract at 5 - 15 mg/kg/day.
- 6) Vitamin E. Antioxidant, immune enhancing and may inhibit tumour growth. Dose is 5 - 10 IU/kg daily.
- 7) Vitamin C. Anti-oxidant, may inhibit cancer cell proliferation by suppressing free radicals. Best given in combination with other anti-oxidants. Dose is up to 15 mg/kg daily.
- 8) Selenium. This mineral has cytotoxic effects on some cancer cells, also has a preventative role in cancer development. The dose is 1 - 2.5 mg/kg per day.
- 9) Green Tea (*Camilla sinensis*). This may inhibit tumour growth, angiogenesis and metastasis in addition to preventing cancer. Also may modulate and increase the efficacy of some chemotherapeutic drugs. Dried green tea extract can be mixed with

food at the highest dose the pet will tolerate. Standardized Green Tea extract contains a constant amount of epigallocatechin gallate, which can be administered at 2.5 mg/kg/day.

- 10) Inositol Hexaphosphate (IP-6, phytate). This may alter signal transduction pathways, cell cycle regulating genes, differentiation genes, oncogenes and tumour suppressor genes. It has been found to be especially useful in cases of carcinomas and leukemias. The dose is 5 - 25 mg/kg/day.
- 11) Melatonin. Has cytotoxic effects against cancer cells, is antioxidant, and increases the effects of certain chemotherapy drugs. The dose is 0.1 mg/kg/day.
- 12) Ginseng (Panax Ginseng). Appears to decrease cancer growth and metastasis and enhance immune function and survival times.
- 13) Cat's Claw (*Uncaria tomentosa*). This herb is advocated for the treatment of many cancer types, but no studies are available.
- 14) Pau D'arco (Tahebo tree extract). Antibacterial and antifungal activity, modulates the immune system and has some potential benefit in affecting metastatic disease.
- 15) Essiac or Floressence Tea or liquid. Contains a combination of herbs with evidence of biological activity, including anti-tumour, antioxidant, anti-estrogenic and immunostimulant actions, but no studies have been published.
- 16) Hoxsey Formula. Contains a combination of Western herbs that have cytotoxic and immunostimulatory activity. No controlled trials available, but a case series following 39 patients with advanced cancers over 48 months reported that 6 were still alive. Also there are many case reports from veterinarians in recent years indicating remissions and extended survival times in animal patients with cancer.
- 17) Pectin (such as citrus pectin). Has been shown to have anti-tumour activity.
- 18) Astragalus. Immunostimulant, anti-tumour activity and inhibits platelet aggregation.
- 19) Amino acids
 - i) Arginine (with Omega 3 fatty acids). Enhances immune function and may inhibit the growth of some tumours. Also improves clinical signs, quality of life and survival time in dogs and cats treated for cancer. Dose 500 - 3000 mg daily; however, pets on a high protein, natural source diet should be receiving good levels of this.
 - ii) Glutamine. Inhibits tumour growth and cachexia, and is useful for inhibiting the adverse effects of chemo. Dose 0.5 mg/kg daily; however, pets on a high protein, natural source diet should be receiving good levels of this.