

Supportive Care for Cancer Patients:

Dietary Recommendations:

Most dogs and cats do very well on their normal diet. However, if you are interested in changing diets you can slowly transition to something new over about 1-2 weeks by mixing in the new food with the old food. When patients are switched to a new diet, it can be hard to tell if an appetite change or stomach upset are related to the new food or a more significant issue like cancer induced illness or chemotherapy side effects. **You should only alter the diet if there are no medical contraindications (kidney disease, pancreatitis, atopic dermatitis, etc).** Basic diet recommendations are included below for your review. If you are interested in researching more about diets, we recommend looking at the **Tufts petfoodology** website or the **WSAVMA nutrition guidelines** for cats and dogs.

Prescription Diets:

- Onco Care is a veterinary diet designed by Hills to support cancer patients during treatments like surgery, radiation therapy, and chemotherapy
- Highly palatable, highly digestible, high calorie, and contains additional supplementation with omega 3 fatty acids and L-carnitine to help maintain a normal muscle mass and body weight

Commercial Diets:

- Feed a high protein + moderate fat diet
 - Diets formulated for growth/reproduction (puppy or kitten food)
 - Diets formulated for all life stages
 - Diets should be **AAFCO** (Association of American Feed Control Officials) certified to ensure they provide all needed vitamins and minerals
- Maintain a stable body weight by adjusting portion sizes
 - Gaining or losing weight can impact chemotherapy dosing
 - Supplement with washed or cooked vegetables to increase food volume without increasing calorie content. Do NOT use garlic or onion.
 - Put the food in a puzzle toy to slow down consumption

Home Cooked Diets:

- Use the BalanceIT website
 - Designed by the veterinary nutrition department at the UC Davis School of Veterinary Medicine
 - Allows you to select your preferred ingredients and accommodate for food allergies
 - Pick the requirements for “growth” to achieve a high protein moderate fat diet
- Home cooked diets are more prone to error
- You can combine $\frac{3}{4}$ commercially available food with $\frac{1}{4}$ home cooked food to make it tasty and nutritionally complete

Unsafe Foods:

- Do not feed raw foods
 - Cancer patients are immune suppressed and vulnerable to bacteria and parasites in raw food. Fully cook all meat and either cook or clean all vegetables
- Do not feed grain free diets to dogs unless medically indicated
 - Linked to development of dilated cardiomyopathy (a cause of heart failure)
 - Not recommended until we know how to make them heart safe
- Do not feed “ketogenic” diets (high protein + high fat) to dogs
 - High risk of pancreatitis and diarrhea due to extreme fat content
 - Dogs turn the amino acids in protein into sugar. If there is enough sugar in the blood stream to feed the brain tissue, there is enough to feed the tumor.

Supplements:

We do not know for sure if any supplements will help dogs and cats with cancer. If you choose to use additional supplements, I recommend choosing ones that are third party certified to ensure that there are no contaminants and that they contain the label ingredients in the correct amounts. Some supplements have the potential to be safe for cancer patients when used alone or combined with treatment. Others have unknown effects or are dangerous.

Mushroom Supplements:

- Theoretically activates an animal's innate immune system against the tumor, it is unclear if they are effective. The supplements below have been evaluated in veterinary research.
- "K9 Immunity" is safe for dogs when used alone or in combination with chemotherapy for lymphoma and osteosarcoma
- "I'm Yunity" is safe for dogs when used alone or in combination with chemotherapy for hemangiosarcoma

Fish Oil Supplementation:

- Use products that have been 3rd party certified for mercury levels
 - Welactin by NutraMax & OmegaPet by Nordic Naturals
- Recommended in dogs with cancer unless they are actively receiving following treatments:
 - Radiation therapy
 - Doxorubicin chemotherapy
- Use with caution in cats during active chemotherapy treatment
 - Can alter blood clotting - administer at the **low end of the dosage range** to maintain safety

Avmaquin / Sulforaphane:

- NutraMax supplement using biologically active compounds from broccoli and mushrooms to help reduce inflammation. Primarily helps with inflammation in the bladder.
- Designed to use **preventatively** against bladder / urinary cancer in high risk breeds.
- Can use during chemotherapy or by itself to reduce tumor related inflammation and discomfort.
- Actual anti-cancer impact is unclear.

Probiotics & Prebiotics:

- May help prevent and can help treat GI upset, especially diarrhea, that can develop during chemotherapy. Consistent use during chemotherapy is well tolerated.
- AnimalBiome, Proviabile, and Fortiflora are recommended products

B12/Folate:

- Helpful supportive care for dogs and cats with certain GI tumors
- Safe for other patients, efficacy is unclear

Acupuncture:

- Safe, efficacy is unclear

CBD Oil Products:

- **Hemp derived CBC products** have minimal THC contamination and are much safer for pets
- ElleVet Sciences produces a hemp based product that was found to be safe in dogs and cats. It has third party testing to ensure potency and lack of contaminants.
 - Improves mobility in dogs with osteoarthritis
 - No research has been done with patients that have cancer or receive chemotherapy
- Canna-Pet produces hemp based products in a variety of forms that have third party testing to ensure potency and lack of contaminants
- Approximately 20% of the cannabis derived CBD oil on the market has THC contamination (neurotoxic for pets), and are not recommended

Cold Laser Treatments:

- Not recommended at the site of the tumor but safe for other locations
- Locally enhances growth and tissue repair, which can also promote tumor growth

Anti-Parasitic Medications:

- Fenbendazole and ivermectin are deworming medications that have been evaluated for their anti-cancer impact in vitro (in Petri dishes in the lab) but not in dogs and cats with cancer.
- Dosing during chemotherapy is not recommended due to the potential for causing liver inflammation and for worsening stomach upset.
- Long term treatment has been evaluated for some parasitic infections. Therefore, treatment can be considered after chemotherapy IF DESIRED as long as liver values are monitored monthly.

Potentially Unsafe Supplements:

- Do not give garlic and onion – destroys red blood cells and causes anemia
- Do not give Vitamin D3 unless instructed – risk of overdose associated kidney failure
- Do not give antioxidant therapies (high dose vitamin C or E, beta-carotene, selenium, manganese, glutathione, co-Q10, flavonoids, phenols, polyphenols, or phytoestrogens) during treatment unless directed – can decrease the effect of chemotherapy and radiation and can increase oxidative damage and therefore treatment side effects under certain conditions
- Do not use turmeric paste / curcumin supplements during treatment – can decrease the effect of chemotherapy and radiation
- Do not use antler velvet – increases the risk of bleeding and contains growth factors that can support growth of certain tumor types
- Do not use ginkgo, ginseng, green tea, saw palmetto, or St John's wort during chemotherapy treatment – decreases ability to clot blood and therefore increases risk of bleeding
- Do not use slippery elm during treatment – increases risk of vomiting and diarrhea from chemotherapy
- Do not use laser therapy at the tumor site – speeds up cellular growth including tumor growth
- Do not use hyperbaric oxygen therapy or stem cell therapy – can speed up cellular growth, including tumor growth

Vaccines and Flea/Tick/Heartworm Medications:

Dogs and cats with cancer should continue to be protected against infectious diseases and parasites as their tumor associated immunosuppression makes them more vulnerable. However, there are some specific guidelines discussed below:

- Routine vaccinations may not work as well during active chemotherapy
 - Delay routine vaccination until after the completion of chemotherapy
 - If chemotherapy is continued indefinitely, vaccinate according to routine guidelines
- Dogs and cats with tumors arising from the immune system (lymphoma, leukemia, multiple myeloma, plasma cell tumors) should not have vaccines unless they are necessary.
 - Intranasal or intraoral Bordetella is safe and recommended.
 - Perform titers to see if boosters are needed, perform vaccines as needed.
 - Leptospirosis should be continued if there is a lifestyle risk for exposure (exposure to standing water or rodents).
- Rabies vaccines are a legal requirement in the state of Missouri.
 - Any unvaccinated pet that bites a person will undergo a 10 day quarantine for observation regardless of medical exemption and/or the rabies titer results.
 - If a rabies titer is adequate, it is up to you if you want to skip treatment given the risk that a quarantine may be required.
 - If a pet has an inadequate rabies titer, they should ALWAYS be vaccinated.
- Always give heartworm, flea, and tick medications year round