

Oncology  
for Veterinary Technicians  
and Nurses

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# Section 1

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Basics of Oncology



# Introduction to Clinical Veterinary Oncology



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## What Is Cancer?

Cancer is the process where normal cells in the body become transformed to undergo excessive or unrestrained growth. Cancer can occur in any bodily organ and can travel from one part of the body to another distant part by the blood or lymph system. There are more than 100 different types of cancer that can be grouped into one of several major categories.

**Sarcomas** are cancers that begin in tissue that connects, supports, or surrounds other tissues and organs (such as muscle, bone, and fibrous tissue). Examples include fibrosarcoma (malignant tumor of fibrocytes), hemangiosarcoma (malignant tumor of blood vessels), and osteosarcoma (malignant tumor of bone).

**Carcinomas** are cancers that originate in tissues that cover a body surface, line a body cavity or make up an organ. Carcinomas that derive from glandular tissue are prefixed with *adeno*. Examples include mammary adenocarcinoma (tumor of mammary glands) and transitional cell carcinoma (malignant tumor of bladder or urethra lining).

**Sarcomas and carcinomas** together are sometimes referred to as *solid tumors*.

**Lymphomas** are cancers that occur in cells that make up an important component of the immune system and protect the body's cells. Lymphomas are characterized by the *type of lymphocytes* forming the cancer (B-cell or T-cell) and by the *grade of the lymphoma* (low-grade vs. intermediate- to high-grade lymphoma).

**Leukemias** are cancers that occur in the blood-forming tissues and blood cells. Leukemias can be *acute* (high-grade and rapidly progressive), or *chronic* (low-grade and often slow to progress if treated).

**Leukemias and lymphomas** both belong to the “hematopoietic tumors” or “hematopoietic neoplasias.”

## Communicating with Owners of Pets with Cancer

Veterinary clients often find veterinary technicians and nurses more approachable and easier to communicate with than the veterinarian, and you will find clients asking you questions that you may not be sure how to handle. First, it is important to clarify, with the veterinarian with whom you are working, how much direct communication you should undertake and whether there are any topics or advice that you should specifically seek to cover or avoid. Some veterinarians are happy to have technicians and nurses take on as much client communications as possible, whereas others prefer to handle communications themselves. It is important to keep this key working relationship harmonious, so be sure that you are in agreement with the person you are working with as to who will handle which part of communications.

Veterinary technicians and nurses are often in a position to discuss the fears and doubts that an owner has, even before cancer is diagnosed and characterized (usually by biopsy). Try as they might, when pet owners hear the word “malignant,” it’s hard to focus on anything but what it may mean for their pet. Common questions are: What are the treatment options? What will work? How will having cancer affect my pet’s quality of life?

First, it is important to explain that the answers to most of these questions hinge on the specific diagnosis. Most cancers require more than one form of treatment to effectively fight the disease. This can mean using as many as four different cancer therapies, including surgery (surgical oncology), chemotherapy (medical oncology), radiation therapy (radiation oncology), and biologic response modifiers including immunotherapy. This requires a multidisciplinary cancer care team that develops, coordinates, and monitors all aspects of an individual pet’s treatment plan. You, as a veterinary technician (or more realistically in this setting, nurse) are critical to the successful functioning of this team.

**Suggest that owners collate their pet’s medical history.** Particularly if owners are seeing a specialist veterinarian for the first time, it’s important for them to give a complete picture of the health status of their pet. If the pet has several health problems or a long history with one, it can help the owner if you collate a history of events, recurrences, treatments, medications, and outcomes associated with the condition that you have on file; then suggest that the owner add to that record with his or her own recollections of the pet’s medical history. If you are working in a referral hospital, collect as much data as possible from the owner, including the contact information from any veterinarian that may have information on file. A written list can save time and ensure completeness.

**Make sure all members of the cancer care team are informed.** If a patient develops a condition that requires one or more specialists or needs surgery, it’s important that all members of that pet’s veterinary medical team have complete and consistent information. Encourage owners to share the names and contact numbers of any others involved with the pet’s care and bring all records with them.

**Tell the owners when and how they will receive test results.** Often owners are confused and impatient after tests have been ordered. Giving owners realistic timelines for them to be notified of test results and letting them know how they will receive them will allay a lot of this concern. Remember to tell them that if results do not arrive when they expect them, they should contact their veterinarian and inquire. A dedicated oncology technician may take on the role of contacting owners when test results are in and scheduling time for them to discuss the results with their veterinarian.

A common question from owners is “how is my pet likely to respond to treatment for cancer?” For cancer in dogs and cats, expected remission times and life span, or *prognosis*, is highly variable and depends on a number of factors, the most important of which is the *type* of cancer as diagnosed by biopsy. Untreated pets with malignant cancer often live 2 months or less, but this varies greatly depending on the type of tumor. With therapy, most dogs with lymphoma or osteosarcoma (two common cancers in dogs) will live 9 months to 1 year. Therefore, a reasonable goal is a 1-year survival. Occasionally the pet will live much longer, up to 2.5 years or more, and some will live out their normal lifespan. Some animals are truly cured of cancer, but this depends greatly on the tumor type. Other factors that will influence an individual pet’s prognosis include

1. The stage (or extent) of the disease, which reflects the number, location, and size of major populations of tumor cells in the body.
2. Whether the pet is feeling sick or not. In general, pets that are not feeling sick and are diagnosed early in the course of tumor growth have a better chance of remission with treatment. Loss of appetite is an important symptom for all cancers, particularly if accompanied by unplanned, significant (>15%) weight loss.
3. Histologic grading: the specific appearance of tumor cells and their pattern of infiltration in various tissues (what the pathologists reports from a biopsy specimen).
4. The presence of paraneoplastic syndromes (tumor-associated conditions), such as high blood calcium (hypercalcemia).
5. The treatment chosen and the care given by the owner and veterinary cancer treatment team.
6. The pet’s response to therapy. It is never possible to accurately predict the future for a given individual pet. Although it may be possible to predict the likelihood of achieving remission or long-term survival, ultimately the only remission that will matter to pet owners will be their own pet’s—whether it fits in with the expected statistics or not. In many situations the only way to know whether a particular patient will benefit from treatment is to make an attempt.

## Specialist Veterinary Care

Although a primary care veterinarian is an integral part of the cancer care for any pet, pets with cancer may need to visit an expert in a specific area of veterinary medicine. These veterinarians have undertaken further training and have achieved certification by various veterinary Colleges. They are often called *specialists*.

Medical oncology is the general study and treatment of cancer. Medical oncologists are trained in the prevention, detection, and medical treatment of all forms of cancer. In the U.S. such specialists are certified by the American College of Veterinary Internal Medicine (ACVIM) subspecialty of Oncology; in Europe, by the European College of Veterinary Internal Medicine (ECVIM) subspecialty of Oncology; and in Australia by the Australian College of Veterinary Scientists (ACVSc).

Surgical oncology is the specialty concerned with the physical removal of cancerous tissue. Sometimes, surgery is augmented with other forms of care, such as chemotherapy or radiation therapy. Surgical oncologists have specialty experience in treating distinct types of cancer—from breast, bone, and lung cancer to cancers that occur within the

abdomen, as well as skin cancer. Surgical specialists in the U.S. are certified by the American College of Veterinary Surgery (ACVS). Some of these specialists continue with Fellowships specifically in surgical oncology; there is no formal qualification for such specially trained individuals, but they are obviously the most highly trained surgeons performing cancer surgery.

Radiation oncology is the specialty concerned with prescribing radiation therapy in all its forms. In the U.S., radiation oncologists are certified by the American College of Veterinary Radiology (ACVR), subspecialty of Radiation Oncology.

Internal medicine deals with the function of the internal organs, such as the liver, kidney, and lungs, plus the diagnosis and treatment of associated problems. Internists often provide the first contact for an unspecified internal illness or problem. They may diagnose and treat the problem themselves or work in conjunction with another specialist (such as a medical oncologist) for more focused diagnosis and treatment. In the U.S. such specialists are certified by the American College of Veterinary Internal Medicine (ACVIM).

Emergency and critical care medicine is the specialty that deals with critical health and accident cases, where immediate treatment can sometimes mean the difference between life and death. In the U.S., such specialists are certified by the American College of Veterinary Emergency and Critical Care (ACVECC).

Veterinary technicians and nurses can achieve specialty qualifications also. The Academy of Internal Medicine for Veterinary Technicians promotes interest and advanced skills in the discipline of internal medicine. It is possible to become credentialed and recognized in the discipline of Veterinary Oncology. Candidates fulfill 3 years of experience, continuing education, and complete an examination. This qualification is available in the U.S.A., but it is possible for candidates from other countries to apply and qualify. <http://aimvt.com/>