

CANINE HEALTH

Cancer in Golden Retrievers

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They are called man's best friend for a reason, and many would argue (I think quite justifiably!) that Golden Retrievers are among the best of the best. Loyal, intelligent, friendly, and beautiful, it's no wonder they are consistently among the most popular dog breeds in America. But their good looks and endearing qualities do not spare them from serious health concerns, including cancer.

Cancer is a leading disease-related cause of death in dogs, and more than six million new cancer diagnoses are made each year. We believe the increased incidence in cancer among dogs is largely related to improvements in healthcare, which allow dogs to live longer, and in the diagnosis and recognition of cancer. While cancer can affect any breed of dog, some breeds, including Golden Retrievers, are particularly susceptible.

So what cancers are more common in Golden Retrievers, what are the symptoms, and how are these cancers treated?

Lymphoma (immune cell cancer):

Overview: Lymphoma is a cancer of white blood cells (lymphocytes) of the immune system. This cancer primarily affects lymph nodes and solid organs such as the liver and spleen.

Symptoms: Most dogs are asymptomatic (feeling well) when diagnosed and present for "lumps" (enlarged lymph nodes) all over the body. Lymph nodes are normally found under the jaw, in front of the shoulders, in the armpits and groin, and behind the knees. Therefore, "lumps" that appear suddenly in any of these areas would be concerning for swollen lymph nodes.

Treatment: Examination by a veterinarian will confirm the lumps to be lymph nodes and allow needle sampling of an enlarged lymph node to confirm the diagnosis. Additional testing, including lab work, imaging, and specialized testing on lymph node samples is performed to evaluate all body systems, screen for internal involvement and better classify the form of lymphoma. The "standard of care" treatment for most canine lymphomas is combination chemotherapy, often referred to as CHOP chemotherapy. This protocol consists of weekly to biweekly visits to the hospital for a physical examination, blood work, and chemotherapy.

Prognosis: For most dogs, side effects of chemotherapy are mild to absent and quality of life during treatment is excellent. The majority of dogs (90%+) will respond to treatment and 50% of dogs will live one year or longer.

Hemangiosarcoma (blood vessel cancer):

Overview: Hemangiosarcoma is a cancer of cells that form blood vessels (endothelial cells). This cancer has the potential to affect any tissue in the body but most commonly affects the spleen.

Symptoms: Dogs with this form of cancer may present with non-specific signs like intermittent lethargy and poor appetite from small, repeated episodes of bleeding from the tumor. More commonly, sudden onset weakness or collapse occurs secondary to tumor rupture and significant internal bleeding. These patients will often have pale gums and increases in heart and breathing rates. Sometimes a mass is felt during veterinary examination.

Treatment: Bloodwork and imaging (X-rays of the lungs and abdominal ultrasound/sonogram) are performed to assess overall health and determine whether the cancer has spread. Treatment often involves surgery to remove the tumor, prevent/control life-threatening bleeding and chemotherapy to delay onset of cancer spread and increase survival. Most commonly, five doses of an intravenous drug is given once every two to three weeks. Low-dose oral chemotherapy, an approach called "metronomic chemotherapy" can be used as an alternative strategy or in conjunction with IV chemotherapy. In addition, complementary and alternative therapies including the use of medicinal mushroom extract and Chinese herbal supplements are used to further control the cancer and prevent serious bleeding events from areas of spread.

Prognosis: With a combination of surgery and chemotherapy, average survival is six to nine months. While no studies specifically evaluate this multimodality approach (surgery, IV chemotherapy, metronomic chemotherapy, + alternative therapies), our hope is to prolong survival beyond what is expected with surgery and IV chemotherapy alone.

Osteosarcoma (bone cancer):

Overview: Osteosarcoma is the most common bone tumor diagnosed in dogs and typically



affects the bones of the limbs.

Symptoms: Affected dogs are middle-aged to older and have a history of limping that is non-responsive to anti-inflammatory pain medications and rest.

Treatment: On examination, swelling is often noted along the affected limb. Upon diagnosis/suspicion of a bone tumor, patients will undergo a series of tests including routine lab work and imaging (lung and bone X-rays). X-rays of the limb often show destruction of bone, formation of new bone, or a combination of both. In 95% of dogs, the X-rays of the lungs are normal at diagnosis, indicating no obvious signs of spread (metastasis). In over 90% of dogs, metastasis is likely present at the time of diagnosis but is too small to be visualized with X-rays. For most dogs with osteosarcoma, treatment involves tumor removal via amputation followed by chemotherapy. Amputation provides immediate relief of pain and lameness (the biggest impact on quality of life). Intravenous chemotherapy (four doses given once every three weeks) is recommended following surgery to prevent/slow development of cancer spread.

Prognosis: With this strategy, studies show >50% of dogs will live one year or longer.

We hope to find effective strategies for preventing and curing cancer, not just managing it. This is the goal of the Morris Animal Foundation's Golden Retriever Lifetime Study, the largest and longest observational study ever undertaken in the U.S. The study will observe and collect medical data from more than 3,000 Golden Retrievers over the course of their lifetimes. Ultimately, this information will be analyzed to determine what genetic, nutritional, environmental, behavior, and lifestyle influences increase risk of major health problems, particularly cancer. Identifying and understanding these risks is the first step toward better prevention and treatment and will allow us to keep man's best friend around a great deal longer.

