

# Lymphoma (Lymphosarcoma)

- Lymphoma, or lymphosarcoma, is a cancer of the lymphocytes, which are a type of white blood cell associated with the immune system.
- The exact cause of lymphoma is unknown.
- Cats that are positive for feline leukemia virus (FeLV) are more likely to develop lymphoma than cats that test negative for the virus.
- Boxers, golden retrievers, and basset hounds are at higher risk for the disease.
- Signs vary, depending on the part of the body affected, and may include enlarged lymph nodes, loss of appetite, weight loss, lethargy, coughing, difficulty breathing, vomiting, and diarrhea.
- Diagnosis usually requires a sample of the affected tissue.
- Treatment is usually not curative, but it may cause the cancer to temporarily go into remission.
- Chemotherapy is usually the treatment of choice for lymphoma.

### What Is Lymphoma?

Lymphocytes are white blood cells that normally work to protect the body as part of the immune system. Occasionally, a change occurs within the cells that causes them to become destructive and reproduce uncontrollably. This is a type of malignancy, or cancer, called *lymphoma* or *lymphosarcoma*.

Dogs and cats may be diagnosed with lymphoma. Boxers, golden retrievers, and basset hounds are dog breeds that are at a higher risk for developing this type of cancer.

### What Causes Lymphoma?

The exact cause of lymphoma is not known. However, cats that are positive for the feline leukemia virus (FeLV) are much more likely to develop lymphoma than cats that test negative for FeLV.

### What Are the Signs of Lymphoma?

The signs of lymphoma can vary, depending on the part of the body affected. With generalized lymphoma,

the pet may have enlarged lymph nodes, which can appear as swellings in the neck at back of the jaw, behind the knees, and other locations. The pet may seem relatively healthy or experience lethargy (tiredness), loss of appetite, and weight loss.

Mediastinal lymphoma occurs inside the chest. Pets with this kind of lymphoma may experience coughing and difficulty breathing. When lymphoma is in the gastrointestinal tract, cats and dogs may show signs of vomiting, diarrhea, and blood in the stool.

Lymphoma can also affect the spinal cord, kidneys, eyes, nose, and skin. Signs are associated with the affected organ, such as impaired movement with spinal lymphoma, increased drinking and urinating with kidney lymphoma, and raised growths on the skin with skin lymphoma.

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### How Is Lymphoma Diagnosed?

Your veterinarian will most likely recommend blood work, including an FeLV test for cats. Radiographs (x-rays) of the abdomen and/or chest can also be important to help identify affected regions of the body. An ultrasound exam of the chest or abdomen may help your veterinarian identify tissue abnormalities and affected lymph nodes.

A biopsy sample from the affected tissue is the best way to diagnose lymphoma. In some cases, lymphoma in dogs can be diagnosed from a lymph node aspirate sample, which involves placing a needle in the lymph node and extracting cells for examination under the microscope. However, a biopsy is the best way to determine the exact type of cell involved, as well as the aggressiveness of the tumor, if treatment will be pursued.

## Common Conditions

### How Is Lymphoma Treated?

In many cases, treatment of lymphoma can cause the disease to go into remission, meaning that the signs of cancer resolve. This is usually temporary, and the lymphoma eventually returns.

If you wish to pursue treatment, your veterinarian may refer you to a veterinary oncologist, who specializes in cancer treatment. Additional tests may be needed to stage the disease or to determine how much of the body is involved.

In cases where the lymphoma is limited to one location, such as the nose, radiation therapy may be an option, but most treatment involves chemotherapy. Animals typically tolerate chemotherapy better than humans, but treatment may require several office visits and additional blood tests, which can become expensive.

If you choose not to pursue chemotherapy, treatment with steroids may help reduce the signs of lymphoma and make your pet more comfortable for a time.

### Can Lymphoma Be Prevented?

There is no known way to prevent lymphoma, but early diagnosis and intervention can improve quality of life for pets with the disease. Early testing for FeLV can identify cats at greater risk for developing lymphoma. Cats that test positive for FeLV should be kept indoors to minimize exposure to other cats.

Cats that test negative for FeLV are less likely to develop lymphoma. If your cat is negative for FeLV and must go outdoors, make sure he or she is vaccinated against FeLV. Keeping your cat indoors can help prevent exposure to FeLV-positive cats and reduce the need for FeLV vaccination.