

# Multiple Myeloma in Cats

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Multiple myeloma is a relatively rare [cancerous](#) process that occurs in cats. It occurs more commonly in people and [dogs](#). Also referred to as myeloma and plasma cell myeloma, this [disease](#) is not curable, but it can be successfully treated in some cats.

### What is multiple myeloma?

- **Starting in lymphocytes**—Multiple myeloma cells originate from lymphocytes, a normal type of white blood cell that resides in the bone marrow.
- **Some Lymphocytes become plasma cells**—These lymphocytes differentiate into a variety of different types of cells, one of which is the plasma cell, an important component of the body's immune system.
- **Sometimes, there are too many plasma cells**—In cases of multiple myeloma, plasma cells developing within the bone marrow undergo a "malignant" transformation, and way too many plasma cells are manufactured.
- **This means less room for other cells**—This results in a "crowding out" of the normal bone marrow production of infection-fighting, white blood cells; oxygen-carrying, red blood cells and platelets (the cells responsible for controlling bleeding in the body). Myeloma patients often have dangerously low numbers of these normal cells within their bloodstream.
- **The malignant cells spread**—Once released from the bone marrow, the malignant plasma cells often spread to other sites. Their favorite place to set up housekeeping is within bones where the damage caused by the cancer cells can create significant pain for the patient.
- **Too many plasma cells lead to thick blood**—Plasma cells produce proteins called immunoglobulins that are the foot soldiers of the immune system. An overabundance of plasma cells, as is the case with multiple

myeloma, translates into an overabundance of immunoglobulin found in the bloodstream. This immunoglobulin alters the normal thickness of the blood, transforming its normal water-like consistency to that of syrup. This change wreaks havoc within smaller blood vessels where the blood sludges and causes damage to the tissues. This is referred to as "hyperviscosity" syndrome and can be life threatening, particularly if the brain is affected.

### Cause of multiple myeloma in cats

[According to a study found on PubMed.gov](#), multiple myeloma in people has been associated with exposure to toxic chemicals present in tobacco smoke and emissions from petroleum refinery waste dumps and industrial operations.

The cause of multiple myeloma in companion animals is unknown, and there is no [breed](#) or sex predilection. Middle aged to older [dogs](#) and [cats](#) are most commonly affected.

### Symptoms of multiple myeloma in cats

The major symptoms associated with multiple myeloma are caused by the spread of cancer cells, hyperviscosity syndrome (thick blood), and the underproduction of normal cells within the bone marrow (see explanations above). Additionally, some dogs and cats with myeloma develop [hypercalcemia](#), a higher than normal level of calcium in the bloodstream. This hypercalcemia can produce a number of serious consequences over time, the most significant of which is kidney failure.

Because multiple myeloma cells can wreak havoc in so many ways, the symptoms associated with this disease vary from patient to patient. Most commonly reported symptoms include:

- [Lethargy](#)
- Weakness
- [Loss of appetite](#)
- Lameness and/or bone pain
- Unexplained bleeding
- Loss of vision
- Abrupt onset of neurological symptoms or seizures
- Increased thirst and urine output

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## Diagnosis of multiple myeloma in cats

The diagnosis of multiple myeloma is made when two or more of the following criteria are satisfied:

- Radiographs ([x-rays](#)) document characteristic bony changes caused by the spread of myeloma
- Bone marrow analysis reveals an overabundance of plasma cells
- An overabundance of strictly one type of immunoglobulins are shown circulating within the bloodstream (normal blood contains several types)
- The patient's urine contains Bence-Jones proteins, a characteristic type of immunoglobulin (protein) produced by many dogs and cats with multiple myeloma.

A battery of tests is typically performed to make the diagnosis as well as to evaluate the patient's overall health. In addition to a thorough physical examination, testing may include:

- A complete blood cell count, chemistry profile and urinalysis
- Full body radiographs
- Abdominal ultrasound
- Bone marrow collection and evaluation
- Protein electrophoresis (performed on blood sample)
- Screening for Bence-Jones proteins (performed on urine sample)

## Treatment of multiple myeloma in cats

The key to successful treatment of multiple myeloma is getting therapy started as soon as possible, so as to eliminate the excess plasma cells before they manage to cause a life-threatening problem such as a stroke, hemorrhage, infection or kidney failure. Your [veterinarian](#) may refer you to a veterinarian who [specializes in oncology or internal medicine](#). Such specialists have significantly more experience treating this relatively uncommon disease. **Treatment may include:**

- **Chemotherapy**—The mainstay of multiple myeloma treatment is chemotherapy.

Chemotherapy refers to [medication](#) that is absorbed by the body as a whole; therefore, it fights cancer cells throughout the body. The most commonly used medications to treat myeloma are administered orally, at home. They won't usually cause any problems, but your veterinarian may suggest frequent [checkups](#).

- **Radiation therapy**—Multiple myeloma cells are quite sensitive to radiation therapy. This mode of treatment can be used to rapidly diminish the pain associated with the spread of the cancer to bony sites. Radiation therapy is considered palliative (providing comfort), but does not replace chemotherapy in terms of fighting the disease.
- **Biphosphonates**—These are drugs that can be used to help manage bone pain caused by myeloma. They may also be helpful in reducing hypercalcemia (excess calcium in the bloodstream). They are not usually used with chemotherapy.
- **Antibiotics**—Reduced production of white blood cells caused by myeloma makes [infection](#) more of a risk. Antibiotic therapy may play a critical role in preventing this serious myeloma complication.
- **Pain management**—The [bone](#) abnormalities associated with myeloma can be profoundly painful. Pain reduction medications could be necessary in such situations.

## Prognosis of multiple myeloma in cats

Cats respond somewhat unpredictably to myeloma therapy. [According to sciencedirect.com](#), in one study, only five of eight cats experienced remission in response to therapy. At this time, there are no other reports involving more than one cat with myeloma

## Questions to ask your veterinarian

- Which diagnostic tests confirm that my pet has multiple myeloma?
- What issues/secondary complications (infection, elevated calcium level, spread of the cancer, hyperviscosity syndrome) does my pet have?
- How soon can treatment begin?

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- How can I schedule a consultation with a veterinary oncologist or internist?

*If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.*