



Radiation Therapy for Nasal Cancer

Does my pet have nasal cancer?

- Nasal cancer is a common cause of nasal discharge, bleeding, excessive sneezing, and several other symptoms in middle-aged to older dogs, and occasionally in cats.
- The diagnosis is often confirmed using a series of tests, including a CT scan (also called a CAT scan), rhinoscopy and biopsy.

What is the prognosis?

Nasal tumors are rarely curable. Without treatment, pets rarely survive more than a couple of months. The best reported prognosis is associated with radiation therapy. Prognosis is influenced by several factors, including:

- How extensive the tumor is within the nasal cavity, and whether it extends outside of the nasal cavity.
- If it has spread to distant parts of the body. Common sites of spread include nearby lymph nodes and the lungs.
- Type of nasal cancer, which is determined when a pathologist reviews the biopsy samples.
- Type of treatment.

What are the treatment options?

- Surgery can cause short term improvement of symptoms, but rarely improves survival over no treatment.
- Use of chemotherapy for treatment of nasal cancer in pets has not been well studied. Newer, more targeted therapies like Palladia™ can also be considered. These types of treatment can be effective in some cases of nasal cancer, but are not great options in other cases.
- Radiation therapy is the most effective treatment that veterinarians have for managing nasal cancer in pets.

Facts about radiation therapy

Performed on an outpatient basis. Patients typically arrive at the hospital in the morning. Families are called and come pick their pet up after they have received that day's treatment. This is often in the afternoon.

Radiation therapy is similar to getting an X-ray. The type of radiation therapy most commonly used for treating nasal cancer is called external beam radiation therapy. It involves delivering large amount of focused energy to the tumor. The energy is strong enough to destroy the tumor, and focused enough to avoid bad side effects.

Painless. Pets are anesthetized for each radiation treatment. Anesthesia is not used to prevent pain. Instead, it is used to make sure the patient remains perfectly still while being treated. This ensures that the highly focused radiation beams hit and destroy the tumor, rather than adjacent tissues.

Side effects are usually mild, temporary and manageable. New radiation technologies and techniques have revolutionized treatment of nasal cancers, allowing for effective cancer treatment with few short term side effects.

a non-invasive approach to treatment of lung cancer, using an approach that has few, if any, short term side effects, and has the promise of being highly effective.

- Some of the side effects of radiation therapy can cause temporary discomfort, but this is relatively uncommon with nasal cancer, and the doctors and nursing staff will work with you to make sure your pet is as comfortable as possible during and after treatment.
- More severe and long-lasting side effects are possible, but uncommon. Your radiation oncologist will talk more about these risks during consultation.

Radiation therapy is safe for families. The types of radiation therapy used for treating nasal tumors do not make your pet radioactive. There is no danger for you or your family to interact with your pet after they have received radiation therapy for nasal cancer.

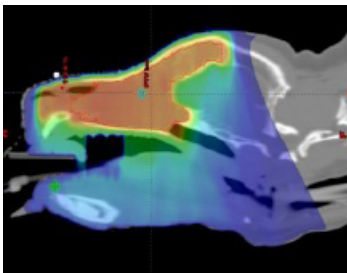


Image from a radiation therapy plan, showing that the brain, skin roof of the mouth and eyes are spared from high doses of radiation (shown in orange and red).

Types of radiation therapy

There are several types of radiation therapy available at NC State for treating nasal cancer:

IMRT: We deliver full-course radiation therapy using a relatively new technique called IMRT (intensity-modulated radiation therapy). 5 treatments per week are given for about 4 weeks, with fewer side effects than possible using more conventional techniques. Such full-course radiation therapy has been well-studied, and is currently considered the best possible treatment in most cases of nasal cancer.

SRT: Stereotactic radiation therapy is the newest form of treatment available for nasal cancer. It is the most convenient form of radiation therapy. It's not as well studied as IMRT, but our team of doctors have a lot of experience with both IMRT and SRT and feel that SRT can, in many cases, be just as effective as IMRT. Not all pets with nasal cancer are eligible for SRT, so if you're interested, be sure to ask your radiation oncologist.

pRT: Palliative-intent radiation therapy can be a good option for pet owners who would like to pursue a treatment that will make their pet feel better, but cannot afford IMRT or SRT.

Navigating the options

	IMRT	SRT	pRT
<i>Schedule</i>	18 - 22 treatments, given once daily, 5 days a week (M-F)	3 treatments, given on consecutive days	4 - 6 treatments, given either daily or once weekly
<i>Cost*</i>	\$4,500	\$4,500	\$1, 500
<i>Side effects</i>	Mild	Minimal	Moderate
<i>Prognosis</i>	Offers best possible prognosis. Goal is to improve quality of life and prolong life as long as possible.	Offers best possible prognosis. Similar to IMRT, but less well tested.	Focuses on improving quality of life, but does not control the tumor's growth for as long as either IMRT or SRT.

**Cost estimates include a radiation oncology consultation, radiation therapy planning, quality assurance testing, anesthesia and radiation treatments. If a CT scan needs to be performed, that generally adds about \$950.*

About us and getting started

Board-Certified Radiation Oncologists: Veterinarians on faculty at NC State College of Veterinary Medicine who have extensive training in cancer diagnosis/management, and radiation therapy. The radiation oncologists directly oversee all activities relating to your pet's cancer care.

Radiation Oncology Residents: Veterinarians who are training to become radiation oncologists.

Medical Physicists: Physicists who assure the safe and effective delivery of radiation to patients.

Radiation Therapists: Allied health professionals who operate radiation therapy equipment and deliver treatments.

Nursing Staff: Licensed veterinary technicians assist the radiation oncologists and therapists in almost aspects of your pets cancer care, and are a vital part of the team.

Anesthesiology Staff: Our anesthetists are licensed veterinary technicians who work with board-certified veterinary anesthesiologists to make sure your pet is as safe as possible while anesthetized for radiation therapy.

Hours: 7:30am to 4:30pm, Monday through Friday

Consultations: Call (919.513.6690) or visit our reception desk to make an appointment.

Scheduling: Your radiation oncology team will work with you to develop a plan, but we generally ask that

- Dropped off between 7:30 and 8:30am
(except Wednesdays, when it is 7:30am - 8:05am, or 9:15am - 9:45am)
- Picked up by 4:30pm