What are the steps involved in treatment?

The process of TomoTherapy treatment is as follows:

You and your pet visit the VMTH for a consultation

- Together we will help you determine the best course of action for your loved one

Often on the day of the initial consultation, a CT scan for radiation planning, or further diagnostic tests if needed, can be performed or scheduled for another convenient time.

- Your pet is positioned on the diagnostic CT scan table in the position in which they will be treated with TomoTherapy. Positioning devices such as vacuum lockable body mattresses, bite blocks with dental mold impressions and thermoplastic molds are used to ensure repeatable positioning.

- Occasionally, other advanced imaging such as MRI scans, Positron Emission Tomography (PET) CT or four-dimensional CT will be performed to obtain further information about the tumor location and/or motion.

- Alternatively, for selected cases (most commonly palliative therapies), the TomoTherapy unit can be used directly to obtain a direct CT scan of the patient.

- The CT scan images are then examined and the tumor targets and normal organs are delineated (drawn in, slice by slice) on contouring computer software. Depending on the complexity of the tumor and its location, the planning process may take from 30 minutes to several days.
For each treatment, the patient is positioned on the TomoTherapy couch using the devices (mouth molds and mattresses) specifically created for your pet at the time of his/her diagnostic CT scan. A CT scan is then obtained by the TomoTherapy unit with a small radiation dosage, which is similar to diagnostic CT scanning.

The TomoTherapy CT images are then aligned to the planning CT and automatically used to move the couch of the TomoTherapy unit (thus, moving the patient to the exact position we want them in)

The patient is then advanced through the gantry allowing the linear accelerator to deliver the radiation shaped by the multiple leaf collimator.

The treatment time with TomoTherapy is slightly longer than with a conventional linear accelerator because the tumor treated in thin slices. The benefit of a slightly longer treatment time is the extreme accuracy of the radiation delivery.

Patients are typically anesthetized for approximately 30 minutes.

Finally, if variation occurs in tumor or patient anatomy during the course of treatment, adaptation (altering) of the treatment plan can be performed based on the TomoTherapy CT images. This ensures that the tumor is always receiving the intended dose of radiation and that the normal tissues are not over treated.

After treatment, patients are monitored for several hours while they recover from anesthesia and may then be discharged. Alternatively, many patients choose to stay (board) with us during therapy, or go home for weekends. Boarding is available for those patients traveling long distances. The patients that board with us become part of our family and get lots of TLC!