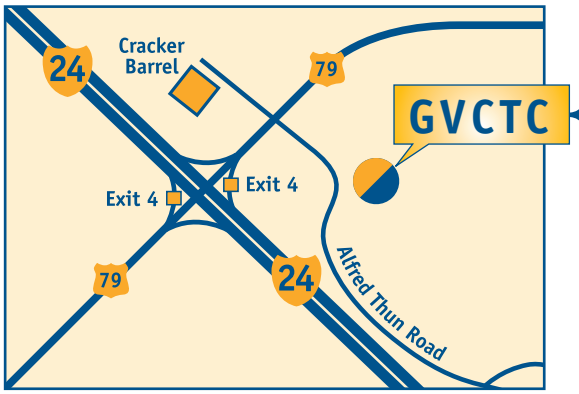
radiation oncologists

Steven Goertz, MD, Director of Regional Radiation Oncology Networks, joined the Vanderbilt team and Gateway's medical staff in December of 2001. He trained at the Medical College of Virginia and Vanderbilt University. Dr. Goertz brings 20 years of radiation oncology experience to Gateway-Vanderbilt Cancer Treatment Center. He is also one of two founding members of the Gamma Knife Program at Health South Hospital in Birmingham, Alabama.

Corbin Johnson, MD, Medical Director of Radiation Oncology for Vanderbilt University Medical Center, joined the Vanderbilt team and Gateway's medical staff in 2006. He trained at Washington University School of Medicine in St. Louis, Rush-Presbyterian-St. Lukes Medical Center in Chicago, and Mallinckrodt Institute of Radiology in St. Louis. Dr. Johnson has 15 years experience in radiation oncology and has given numerous presentations on specific cancer sites and related topics.

location



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CANCER TREATMENT CENTER

patient information

Joining forces to fight cancer.

radiation therapy

Radiation therapy uses radiation to destroy cancer cells within your body. There are several forms of radiation available. We use both x-ray and electron radiation. The type of radiation used will be selected by the radiation oncologist and be the best choice for your specific type of cancer, the extent of your disease and its location. With careful planning, radiation can be sculpted so it is directed to the cancer and away from healthy tissue.

It has been estimated that 50 to 60 percent of all cancer patients will benefit from radiation therapy in their lifetime. Radiation therapy may also be useful in treating some non-cancerous diseases.

consultation

During your consultation, you (and anyone you wish to bring) will meet with the radiation oncologist to determine if radiation therapy will be recommended to treat your disease.

First, the registered nurse will go over some information forms with you. (You may receive a phone call from the nurse prior to your consultation and be given the option of reviewing your forms over the phone.) If you have brought any records or films from another facility, the nurse will collect them at this time for the radiation oncologist to review. The radiation oncologist will answer all of your questions and discuss the benefits and risks that may be associated with the radiation therapy. The radiation oncologist will also explain the simulation and treatment process to you.

Once you consent to radiation therapy, you will be given a packet of materials pertaining to your treatment including information on your specific disease, nutrition, skin care and general guidelines. The nurse will go over each portion of the packet with you to answer any questions you may have. When you are ready to proceed, the nurse will schedule an appointment for your simulation.

simulation

The radiation oncologist works with a radiation therapist and a dosimetrist to obtain a three-dimensional view of the area to be treated. Using a computed tomography (CT) simulator, the area on your body is marked for reference.

Generally, simulations are scheduled for one hour, but may take more or less time depending on the complexity of the treatment setup. You may be asked to drink a liquid contrast prior to the scan or be given an intravenous (IV) contrast during the scan. The contrast will aid the radiation oncologist in pinpointing the target on your scan.

There are several steps that occur during the simulation:

- **Patient Positioning** -The radiation therapist will find the most comfortable position to allow the treatment to be performed daily. This process may include making patient-specific body molds that help the patient maintain the same position for daily treatment and improve the accuracy of the radiation delivery.

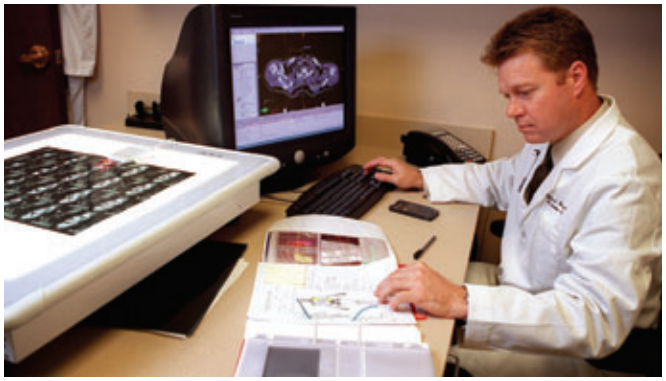
- **CT Scan** - This scan is very similar to a diagnostic CT scan; however, once the scan is performed, special software is used to help the radiation oncologist

determine the "target volume." The target volume is the area of the tumor plus a defined volume around it that may be involved. It may also include surrounding structures next to the target volume or lymph nodes that may be at risk.

- **Defining the Isocenter** - The simulation software determines the center of the target volume called the "isocenter." All further treatment planning is based on this reference point. The CT simulator has special positioning lasers that allow the radiation therapist to mark on your body once the isocenter has been determined. These lasers correlate to lasers located in the treatment room.

- **Marking the Treatment Field** - Marks will be made on your body to assist the therapist in your treatment setup. They consist of isocenter marks as well as positioning marks and may be located in several places on your body. You will be asked to keep the marks on during the duration of your treatments. Special clear tape, called Tegaderm, will be placed over the marks to help you maintain them. These marks will be used by the therapists each day during your treatment to assist in pinpointing the target volume. If they should fade during the treatment, the therapist will replace them during your treatment session. If a patient positioning device is used, marks will be made on it as well to ensure proper alignment. The positioning devices will also be used during your daily treatment.

- **Documentation of the Treatment Setup** - Once the marks are made, the therapist will take photos of your treatment setup marks and positioning setup to assist in your daily treatment setup. They are considered a part of your treatment record and are confidential.



treatment planning

Following the simulation process, the treatment planning begins. During this phase, the information from the simulation is transferred to a treatment planning system. This system allows the radiation oncologist to work with a dosimetrist and physicist to plan the precise angles and parameters of your treatment. Radiation doses to the target volume are calculated and critical structures that may be near the target volume will be accommodated. Different organs and tissues in the body have different tolerances to radiation. If there are organs included in the treatment field, their doses will be calculated and tracked as well. This process may take from several hours to several days depending on the complexity of the treatment plan. Each patient's treatment plan is designed specifically for his diagnosis and status.

During treatment planning, the radiation oncologist is able to shape and sculpt the radiation beams to increase the accuracy of the treatment and to decrease side effects. The radiation oncologist is able to see what the dose results will be to all designated areas for the full course of the radiation treatment.

treatment

Your daily treatments will be performed by a registered radiation therapist using a Linear Accelerator or "linac." Most patients are required to come daily for treatment; however, treatment is customized to meet each patient's needs. Your radiation oncologist will visit with you weekly to evaluate your progress and to answer questions.

Treatments are scheduled every fifteen minutes; however, depending on the complexity of your treatment plan, your treatment may be scheduled longer. The radiation therapist will work with you to find a treatment time to fit your schedule.

During your treatment, the overhead lights may be turned off to help the therapist position you correctly and view the positioning lasers on your body. You may see a light field coming from a portion of the linac called the gantry. This light field correlates to the actual treatment field. A special device called a multi-leaf collimator (MLC) helps shape the radiation field. You may see the light field change shapes and sizes as each treatment field is customized for your treatment.

Once you have been positioned correctly, the actual treatment will take place. The radiation therapists are required to leave the room during the treatment but will be viewing you on two camera monitors and have voice contact with you at all times. It is important during the setup and treatment that you remain still and breathe normally. The therapists may come into the treatment room during different phases of your treatment to adjust equipment. You should continue to remain still during this process. The therapists will communicate to you every time they leave the treatment room.

Prior to the start of your treatment, you may hear the linac make some clicking and hissing noises. This is the therapist programming it for your treatment. If you are being treated by more than one field of radiation, the gantry may move around you - but it will not touch you. Once the linac has been programmed, the therapist will begin the treatment. The linac makes a buzzing noise during this process. You will not feel the radiation while it is being delivered. The length of the radiation time may vary for each field and may vary day-to-day, as your treatment is dose-dependent and not time-dependent.

If at any time you have a question, please ask the therapist, who will be glad to assist you.

completion of radiation therapy

You will be scheduled for follow-up appointments so that the radiation oncologist can assess your progress. Your radiation oncologist will then refer you to your primary physician. You may call our clinic at any time if you have additional questions or concerns about your radiation therapy.