

RADIATION THERAPY FOR BRAIN METASTASES

WHAT ARE BRAIN METASTASES?

- Brain metastases are clusters of malignant or cancerous cells that have spread from another part of the body to the brain.
- About 170,000 people will be diagnosed with brain metastases this year making it more common than many primary cancers, such as primary brain tumors (42,000 cases), lymphoma (75,000) or colon cancer (106,000).
- It is common to say a person has “brain cancer” when the cancer has spread to the brain from another part of the body. However, in most cases brain metastases represent spread of the original cancer through the blood stream to the brain. So instead of having both brain cancer and breast cancer, for example, a person has breast cancer that has spread to the brain.
- The most common cancers that spread to the brain are lung cancer, breast cancer and melanoma. However, just about any cancer can spread to the brain.
- Cancer treatments have become much better in recent years, allowing many patients to live longer with the disease than ever before. Unfortunately, brain metastases still occur in many patients sometimes months or even years after their original cancer treatment. There are many treatment options available for patients with brain metastases.

SYMPTOMS AND SIGNS OF BRAIN METASTASES

- Sometimes you have no obvious symptoms or signs that the cancer has spread to the brain. Rather, you may come in for a routine follow-up visit and the cancer is found during exams or on imaging scans.
- Possible common symptoms include headaches, dizziness, blurred or double vision, memory and/or personality changes, speech changes, or nausea.
- Sometimes changes in nerve function causing numbness, weakness of part of your body or problems with balance can also occur.
- If you begin to have these symptoms, call your doctor. These symptoms can also indicate other health issues that may need quick medical attention.

TREATING BRAIN METASTASES

- Treatment for brain metastases can control symptoms and improve quality of life. In some cases these treatments can also help you live longer with your cancer.
- Surgery for brain metastases can sometimes help by managing symptoms, such as relieving pressure in the brain. Surgery also helps doctors confirm that the tumors in the brain are really brain metastases. Surgery is often considered if you have a single brain metastasis.
- Chemotherapy is when doctors give medication to kill the cancer cells. Traditionally, chemotherapy has a limited role in treating brain metastases due to the “blood-brain barrier,” which restricts what can travel from the blood into the brain. This protective barrier prevents many chemotherapy drugs from entering the brain. However, newer drugs may be able to pass through this blood brain barrier to help control the brain metastases.
- Radiation therapy (also called radiotherapy) is effective for treating some brain metastases. Unlike chemotherapy, radiation therapy’s effec-



tiveness is not limited by the blood brain barrier and can penetrate the brain to kill cancer cells.

- In most cases, patients with metastases will not be “cured” of their cancer. However, modern treatments including radiation therapy allow doctors to control the brain metastases, allowing many patients with cancer that has spread to live months to years longer with their cancer. This time will depend on where the original cancer came from, where else it has spread and how well it responds to treatments rather than on the actual number of brain metastases.
- You may be prescribed a medication called a steroid to lessen or prevent symptoms. This is sometimes given before treatment starts.

WHAT IS RADIATION THERAPY?

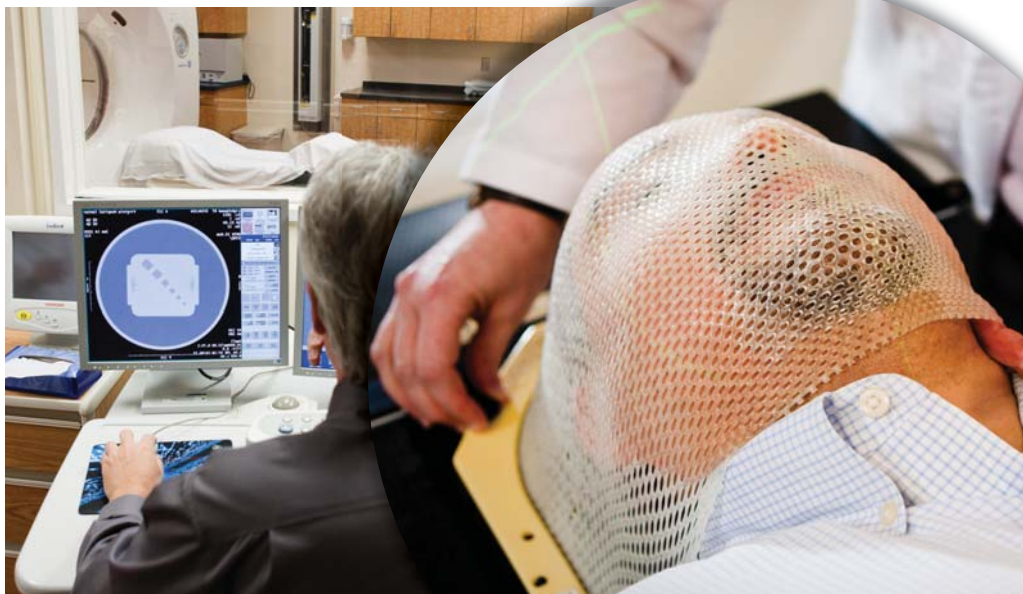
- Radiation therapy is the use of various types of radiation to safely and effectively treat cancer and other diseases.
- Doctors called radiation oncologists use radiation therapy to kill tumors, to control tumor growth and to relieve symptoms.
- Radiation therapy works by damaging the genetic material or other critical components of cancer cells. This limits their ability to reproduce. Radiation can sometimes stop the blood supply to cancers, which also kills the cancer cells. When these cancer cells die, the body naturally eliminates them.
- Normal cells are also affected by radiation, but they are better able to repair the damage caused by radiation therapy than can most cancer cells.
- Treatments are noninvasive and painless, much like receiving an X-ray. You should be able to go home after treatment and will not need to stay in the clinic.

UNDERSTANDING EXTERNAL BEAM RADIATION THERAPY FOR BRAIN METASTASES

- External beam radiation therapy may involve a series of outpatient treatments to accurately deliver radiation therapy to the whole brain.
- Sometimes the whole brain is given radiation, sometimes only a limited area. When the whole brain needs radiation treatments for brain metastases, treatments are usually given daily Monday through Friday for two to three weeks.
- In some cases, a single high dose radiation treatment called stereotactic radiosurgery can be used so treatment is completed in one day. With stereotactic radiosurgery doctors only target a small part of the brain. Sometimes combining both stereotactic radiosurgery with whole brain radiation therapy can be helpful.
- Before starting radiation, you will undergo a radiation “planning” session where the radiation treatment team creates a way to set your treatments up accurately on a day-to-day basis, generally with a custom fit mesh mask. However, sometimes other devices are used to help with accuracy of daily set up. You then undergo imaging in the treatment position, typically with a CT scan or fluoroscopy. The radiation oncologist then works with his or her treatment team to “prescribe” the radiation treatment.
- Tailoring each of the radiation beams allows doctors to target more of the cancer cells while sparing nearby organs, such as the eyes.

POSSIBLE SIDE EFFECTS

- If you notice a funny whole body skin tingling or rash, contact your doctor right away. This may be a sign of an allergic reaction to medications given before radiation therapy for brain tumors.



- Fatigue is the most common side effect. Feeling tired often starts in the middle of the treatment and may last several weeks after your last radiation session.
- Radiation therapy to the brain can cause scalp irritation and muffled hearing.
- It is normal for you to lose the hair on their head where the radiation beams were aimed. It will probably grow back, but it may not be exactly as it was before treatment.
- Radiation may cause some short-term memory loss. Ask your radiation oncologist about what you can expect and what the risks and benefits of each treatment are.
- Side effects are different for everyone. The radiation oncologist and nurse will follow you closely during treatment and ask you and your family members about any symptoms. Medications may be prescribed to make you more comfortable.
- Please do not delay in talking to a radiation oncologist or oncology nurse about any side effects or concerns about treatments. They want to help you and your caregivers be as comfortable as possible.

PATIENT CARE DURING TREATMENT

- You should try to get as much rest as possible.
- Coping with cancer may be easier with good support from family and friends. You may want to consider asking your doctor or nurse about support groups in your area that may also help.
- It is important to follow the doctor's orders and ask a lot of questions. There are no silly questions; often the treatment team has heard similar questions.
- You and your family should ask the doctor if it's safe for you to drive.
- It is important to tell your doctor about any medications or vitamins you are taking to make sure they are safe to use during radiation therapy.
- Try to eat a balanced diet. The doctor, nurse or dietician can help suggest foods if you are having trouble eating or if food tastes funny.

The area exposed to radiation must be treated with special care. This includes staying out of the sun, avoiding hot and cold packs, cleaning the area with warm water and mild shampoo (such as baby shampoo), and using lotions and ointments only after checking with your doctor or nurse.

TO LEARN MORE

ASTRO's patient Web site, www.rtanswers.org, has more information on radiation therapy, including:

- Questions to ask the radiation oncologist about treatment and safety protocols.
- What to expect before, during and after radiation therapy.
- Information on clinical trials.
- Understanding the members of the radiation therapy treatment team.
- Dictionary of common terms.
- Contact information for cancer support organizations. These groups offer services ranging from support groups to insurance co-pay assistance.

ABOUT THE RADIATION ONCOLOGY TREATMENT TEAM

Radiation oncologists are the doctors who lead the care of each person undergoing radiation treatment. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each of these professionals does or to locate a radiation oncologist near you, visit www.rtanswers.org.

ABOUT ASTRO

The American Society for Radiation Oncology is the largest radiation oncology society in the world with more than 10,000 members who specialize in treating cancer with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy.

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