

Stereotactic Radiosurgery for the Lung

Your doctor has recommended a procedure called stereotactic (steh-ree-oh-TAK-tik) radiosurgery.

Stereotactic radiosurgery is used to treat tumors in the lung without having to make an opening in the skin (incision). This procedure is generally used for people who cannot have surgery because of age, lung disease, or heart disease.

The treatment machine directs beams of high-dose radiation directly to the area in the lung that needs to be treated. The radiation beams are silent and invisible. You will not be able to feel them as they pass through your body.

Preparing for radiosurgery

The cardiothoracic surgeon, radiation oncologist, and nurse will talk with you about the procedure. Before your procedure can be done, you will need to have certain tests. These tests may include blood work, urine testing, a CT scan (sometimes called a CAT scan), or a PET scan.

You may also need to undergo placement of gold or other type of metal markers. Your team will talk with you about the treatment and whether or not you will need the placement of markers. Be sure to ask any questions you have. You will then be asked to sign the consent form for your treatment.

Placing the markers (fiducials) if needed

A fiducial (fih-DOO-shul) is a small piece of metal sometimes referred to as a seed or marker. It is about the size of a grain of rice. The fiducial(s) marks the tumor. It can be seen on an x-ray and acts as a tracking device for the treatment machine to follow. The cardiothoracic surgeon will place the fiducial(s) in your lung.

You will have local anesthesia so you will not feel anything. The surgeon uses a needle to place the markers. X-rays are used to guide it to the right place(s). You can have from 1 to 4 fiducials placed. You cannot feel them. They are not magnetic or radioactive and cannot be removed.

Fiducials will be placed 1 to 3 weeks before your radiosurgery treatment. You will need to stop any blood-thinning medicine such as Coumadin® and Plavix®, aspirin, and aspirin products at least 5 days before the fiducial placement. You will be told not to eat or drink anything after midnight the night before the fiducials are placed. You will need to have someone drive you home after the procedure.

There is a 1 in 4 chance that during the insertion of the fiducial(s) you may have a collapsed lung (called a pneumothorax, pronounced noo-moh-THOR-ax). If this happens, a small tube will be placed into your chest between the ribs to help the lung re-expand. You will not have pain if this occurs. You may have shortness of breath. Your doctor will be checking you, and you will have oxygen if you need it. You will need to stay overnight in the hospital if a lung collapses.

Treatment planning

About 1 week after your consultation and/or placement of the fiducial markers, you will return to the radiation oncology department for a treatment-planning CT scan. At this appointment, a custom-molded “cradle” is made for you to lie on during treatment. The cradle will help you stay in the right position. If needed, you may also be fitted to wear a vest that tracks your breathing pattern.

The CT scan is done with you in the cradle and/or vest. The CT images are sent to the planning computer. Once the CT scan is complete, the radiation oncologist and thoracic surgeon develop a custom plan according to information in the computer regarding your tumor. Planning your treatment may take 1 to 2 weeks.

Scheduling your radiosurgery treatment

After a plan has been made, you will be contacted by phone to schedule a date and time for treatment(s). You may receive 1 to 4 treatments over a 2-week period.

The day of your treatment

You should wear loose-fitting, comfortable clothing for the treatment. Please do not wear any jewelry. Do not use moisturizers within 2 hours before your treatment.

You can take all of your regular medicines before your treatment. If you think that you will be uncomfortable lying on the treatment table, please take pain medicine before you arrive that day. The day of your treatment tell your nurse if you are having pain. We can give you medicine before starting treatment.

It is not necessary to avoid eating before the treatment or restrict any normal activities.

You are welcome to bring a family member or friend with you on the day of your treatment, but it is not required. He or she will wait in the waiting area while you are receiving your treatment.

During the treatment

The therapist will position you on the treatment table in your vest and/or cradle. After that, the therapist will leave the room.

You will be alone in the room during your treatment. The staff will watch you closely on a monitor. There is a microphone so that they can talk with you throughout the treatment. The treatment can take up to 1½ hours. After the treatment is finished, you will be helped off the table. If more than 1 treatment is planned, the therapist will confirm your next treatment date.

What to expect after treatment

Once all your treatments have been completed, the radiation oncologist will speak with you and your family member.

You will return for a follow-up visit 1 month after your treatment. Three months after treatment, you will see the doctors and have a PET/CT scan to check the response of the tumor to the treatment.

Side effects

There have been minimal side effects associated with stereotactic radiosurgery treatment for lung cancer. The most common side effect is fatigue. Follow these tips to deal with side effects you may have.

Fatigue

- Take frequent rest periods and pace your activities.
- Save time for activities you enjoy. Plan them as part of your day.
- Plan a short period of activity, such as a walk each day. Inactivity may actually make you more tired. Tell your nurse or doctor if you become extremely tired.

Dry Cough

A dry cough can result from irritation of your airway. It usually goes away within 1 month after the last treatment.

- Unless there is a health reason to limit your fluids, drink plenty of fluids, especially water, throughout the day.
- Suck on sugarless hard candy or lozenges to keep your throat moist.

Temporary Skin Changes

You may have temporary changes to your skin on your chest in the area that was treated. These changes may include redness, dryness, scaling, and itchiness of the treated area. These skin changes usually occur 1 to 2 days after your treatment and lasts 1 to 2 weeks after your treatment.

You may use moisturizers such as _____ on the treated area. Do not use moisturizers within 2 hours before your treatment.

Permanent Skin Changes

- If the area being treated is exposed to the sun, apply sunscreen routinely to the treated area whenever you are outdoors for more than 10 minutes, all year round.
- Use a sunscreen that does not contain PABA. It should have an SPF (sun protection factor) of 30 or more. Since the area being treated will be more sensitive than the rest of your skin, continue to protect the area from sun exposure after your treatment ends.
- Some people have increased sensitivity to hot and cold temperatures.

Things to report immediately

Call immediately if you have any of the following symptoms:

- Sudden sharp pains in your chest
- Sudden increase in shortness of breath or difficulty breathing
- Changes in the color of your mucus when coughing (for instance, streaks of blood)
- Temperature of 100.5 F (38 C) or above
- Chills

Things to report to your nurse or doctor

- Skin redness, tenderness, itchiness, or rash
- Any new or unusual symptoms

To report these symptoms, or if you have any questions or concerns, please call the UPMC Hillman Cancer Center at _____.