Esophageal Cancer: Radiation Therapy

What is radiation therapy?

Radiation therapy uses high-energy beams of X-rays or other particles to kill cancer cells or stop them from growing.

When might radiation therapy be used?

Radiation is often part of the treatment for esophageal cancer. It's often used along with chemotherapy (chemo). This is called chemoradiation.

Your healthcare provider may suggest this treatment for many reasons:

- **As part of the main treatment for esophageal cancer.** It might be used along with chemo when surgery can't be done or if you don't want to have surgery.
- **To try to shrink cancer before surgery.** Radiation plus chemo may help shrink a tumor and make it easier to remove. This is called neoadjuvant treatment.
- **To try to kill any cancer cells left after surgery.** Radiation can be used after surgery to kill any cancer cells that may have been left behind. This is called adjuvant treatment.
- **To ease symptoms.** Pain, bleeding, or swallowing problems can be caused by tumors that can't be treated with surgery or have spread to other organs. Radiation can ease these symptoms. This is called palliative therapy.

To plan your treatment, you'll meet with a team of cancer specialists. This might include a surgeon, radiation oncologist, and medical oncologist.

What happens during radiation therapy

A healthcare provider who specializes in treating cancer with radiation is called a radiation oncologist. This provider works with you to decide the kind of radiation you need, the dose, and how long you need treatment.

Before radiation starts, imaging scans are taken. These are used to clearly outline the size and shape of the tumor. The radiation beams are controlled and formed to fit this shape and focus on the tumor. This helps limit damage to nearby healthy tissue.

The most common type of radiation that is given nowadays for esophageal cancer is external radiation. Another type that is rarely given is called internal radiation.

External beam radiation

The most common way to get radiation for esophageal cancer is from a large machine that focuses beams of radiation at the cancer. This is called external beam radiation. Sometimes special types of external beam radiation, such as intensity-modulated radiation therapy (IMRT), are used. This is done to try to limit the amount of radiation that reaches and damages nearby normal cells.

You often get external beam radiation on an outpatient basis in a hospital or clinic. This means you go home the same day. External beam radiation treatment may last a few days to weeks depending on the reason the treatment is being given.

Getting ready for radiation

Before your first radiation treatment, you'll have an appointment called simulation. This is needed to find exactly where on your body the radiation beams need to be directed. It may take up to 2 hours. During this session, imaging tests such as CT or MRI scans may be done. These tests help your healthcare providers know the exact location of the tumor so they can aim the radiation right at it. Also at this session, you may have body molds made to put you in the exact same position and help keep you from moving during treatments.

Then, you'll lie still on a table while a radiation therapist uses a machine to define your treatment field. The field is the exact area on your body where the radiation will be aimed. Sometimes it's called your port. The therapist may mark your skin with tiny dots of semipermanent ink or tattoos. This is so the radiation will be aimed at the exact same place each time.

On the days you get radiation

On the days you get treatment, you'll lie on a table while the machine is placed over you. You may have to wear a hospital gown. It's a lot like getting an X-ray, but it takes longer, up to 15 to 30 minutes. You should plan on being there for about an hour total.

At the start of each treatment session, a radiation therapist helps you get into position and may use blocks or special shields to protect other parts of your body from exposure to radiation. The therapist then lines up lights on the machine with the marks on your skin so the radiation is directed to the right spot. When you're ready, the therapist leaves the room and turns the machine on. You may hear whirring or clicking noises as the machine moves during radiation. This may sound like a vacuum cleaner. The machine won't touch you.

During the session, you'll be able to talk to and hear the therapist over an intercom. You can't feel radiation, so the process will be painless. You will not be radioactive afterward.

Internal radiation (brachytherapy)

This type of radiation is not often used, but it may help relieve symptoms, especially in more advanced cancers. For instance, it might be done to shrink a tumor that's making it hard to swallow. To give internal radiation, a long, thin tube is passed down your throat to hold the radiation source right next to the cancer. The radiation travels only a short distance. So it affects only the cells close to it. But because the radiation travels only a short distance, it can't be used to treat large tumors.

Getting ready for radiation

To get ready for treatment, you'll need to have some imaging tests done. These may include a CT scan and esophageal ultrasound. This helps your healthcare provider see your esophagus and the nearby tissues so they can map out exactly where the radiation needs to be placed.

On the days you get radiation

You can get this treatment in either a hospital or outpatient setting. On the day of treatment, you may get local anesthetic (medicines used to numb the area), or you might get general anesthesia (medicines are used to put you into a deep sleep so you don't feel pain). While you lie on your back, your healthcare provider puts a tube down your throat and into your esophagus. The radiation source is then guided down the tube and put next to the cancer.

The treatment may be given over a few minutes and repeated for a few days. Or the radiation may be left in place for a day or so. In this case, you'll need to stay in the hospital.

What to expect after radiation therapy

Because radiation affects normal cells as well as cancer cells, you may have some side effects. The side effects from radiation are normally limited to the area being treated. Tell your healthcare provider right away about any side effects you have. It's important to treat them before they get worse.

If side effects are bad, your healthcare provider may change the dose of your radiation or how often you get treatment. Or treatment may be stopped until your side effects get better. In general, your healthcare provider will try to limit any treatment breaks for side effects that can be managed. Taking treatment breaks can reduce how effective the treatment is.

Possible side effects

Common side effects can include:

- Skin irritation, peeling, or blisters in the skin that the radiation goes through
- Fatigue
- Mouth or throat sores
- Burning, tightness, or pain when swallowing and eating
- Dry mouth and throat, or thick saliva
- Nausea or vomiting
- Trouble breathing
- Diarrhea

Your healthcare provider may treat some of these side effects by giving you anti-nausea medicine, antacids, and antidiarrheal medicine. It's important to bring these side effects up so your healthcare provider knows when to intervene.

Most side effects tend to go away over time after you stop treatment. But some less common side effects may become permanent. An example of this would be narrowing of the esophagus or lung damage, which would require more treatment. Still, if you have any of these side effects, talk with your healthcare provider about how to deal with them. Side effects are often worse if chemotherapy is given at the same time. You should also ask what side effects you might expect and what to do if they become serious. Make sure you know what number to call with questions or problems. Is there a different number for evenings, holidays, and weekends?

It may be helpful to keep a diary of your side effects. A written list will make it easier to remember your questions when you go to appointments. It will also make it easier for you to work with your healthcare team to make a plan to manage side effects.