

*If you have
any questions
or concerns,
please ask your
physician or
nurse.*

Yttrium-90 Treatment

Yttrium-90 (Y-90) or radioembolization uses radioactive beads to treat liver cancer. The physician puts tiny beads (microspheres) into the tumor. The beads release high radiation directly to the tumor to shrink it.

A specially trained radiologist does this outpatient treatment in the Interventional Radiology (IR) Department. The treatment will take several visits, including:

- **Planning session:** You will have an angiogram. This will take 6 to 8 hours. This will confirm if Y-90 is a treatment option.
- **1 to 2 weeks after planning session:** Y-90 treatment angiogram to 1 lobe of the liver. This will take 4 to 6 hours.
- **2 weeks after treatment:** A follow-up phone call.
- **4 weeks after treatment:** Blood tests and any repeat imaging scans (if needed) such as computed tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET).
- **1 month after treatment:** Return office visit with the interventional radiologist.

During an angiogram, the physician puts a thin, flexible tube (catheter) into the femoral artery in the groin. The physician uses an X-ray as a guide to thread the catheter through the artery into the liver. The physician will do an angiogram to map out the blood supply to the tumor and plan the bead placement. They will also do an angiogram during the actual treatment to place the radioactive beads inside the tumor.

Benefits and risks

Direct treatment into the cancer site limits radiation to other parts of the body. This lessens the side effects. The most frequently reported side effect of Y-90 is fatigue (extreme tiredness). Some patients also have had mild abdominal pain, nausea and fever. Vomiting is rare. Y-90 is active in the body for about 10 days. All side effects should lessen within 2 to 3 weeks.

Your physician may prescribe medication to help fatigue and protect the stomach, as needed.

There is some risk with every medical procedure. The physician will discuss in detail the benefits and risks related to Y-90 treatment.

Planning session

Your care team will use the planning session to do an angiogram. This will confirm if Y-90 is the right treatment option for you.

Before the planning procedure

Do not eat solid food for at least 6 hours before the procedure. You may have clear liquids early in the morning on the day of the test. You may take your medications as instructed by your physician with sips of water.

Be sure to bring your:

- List of allergies
- List of all your current medications (prescription, over-the-counter and herbal)
- Photo ID
- Medical insurance information and card

Please leave all valuables such as jewelry, credit cards and money at home.

Parking

Go to the IR Department on the 4th floor of Feinberg Pavilion at 251 East Huron Street 1 1/2 hours before your procedure.

Patients and visitors can park in the garage at 222 East Huron Street, across from Feinberg and Galter pavilions. For a discounted rate, please bring your parking ticket with you. You can validate your ticket at the Customer Services Desks on the 1st and 2nd floor of Feinberg and Galter pavilions and the 1st floor of Prentice Women's Hospital.

Visitors

Your care team will give you medication during the procedure that will make you sleepy. You will not be able to drive safely, so it is important to have a responsible adult take you home. Your friends and family can wait for you in the hospital or return later to pick you up. We will ask for a cell phone or a contact phone number in case we need to reach them.

Check-in

After you check in with the receptionist on the 4th floor, you and 1 other person (this can be a family member or close friend) will meet with staff. Together you will review your health history and medications. The physician will do a short physical exam. After reviewing the procedure and answering any questions you may have, they will ask you to sign a consent form.

Once you change into a hospital gown, the care team will put an IV (into the vein) line in your arm or hand. They will give you fluids and medication through the IV. If you need it, the care team will put a tube in your bladder to drain urine. They will remove it before you go home.

During the planning procedure

In the Radiology Department, the nurse will help you onto a procedure table. They will connect you to heart and blood pressure monitors. The nurse will give you medication through an IV to relax you. They will shave an area of your groin, wash it with a special soap and cover it with sterile sheets.

Then, they will inject numbing medication into the area. You will feel some burning when they give you the medication, but once it takes effect, the area will be numb. The physician will put a small needle into the groin. They will thread a small catheter through the needle into the femoral artery and pass it to the liver. You may feel pressure, but you should not feel any pain.

Once the catheter is in place, the physician will inject a contrast dye through the catheter. This will help them see the arteries. You may feel a sudden flushing or warmth. This lasts only a few seconds.

We will be doing 2 important steps during the angiogram:

- **The physician will map your liver anatomy.** This lets us identify any arteries that may be feeding your tumor.
- **The physician will inject macro aggregate albumin (MAA) beads into your liver.** These beads are the same size as the Y-90 spheres, and they have a radioactive tracer so we know where they go. This is important because we want to be sure the beads stay in your liver, and do not go to other organs and cause any problems. The MAA beads are harmless proteins that break down on their own. You will pass them out of your body through your stool and urine within 24 hours.

The physician will remove the catheter after they inject the MAA beads. They may close the wound with a suture (stitch) that dissolves on its own in time. You will lie at a slight incline in bed for 1 to 2 hours.

If the physician does not use a suture to close the wound, they will hold hard pressure over the puncture site for 15 minutes. Then you will lie flat in bed with your leg extended for 6 hours. A nurse will check your wound until you leave the hospital.

Before you leave, a nurse will help you out of bed to walk. The nurse will also remove your IV.

After the planning procedure

You will go to the Nuclear Medicine Department. You will have a scan to trace the location of the MAA beads. During the scan you will lie on a firm table with your arms above your head. The scan will take about 1 hour.

The Interventional Oncology nurse will call you in 1 to 3 days to confirm your appointment for your Y-90 treatment.

At home

Diet

You may start your regular diet after discharge. You should drink at least 6 glasses of water (8 ounces each) over the next 24 hours. Water helps to clear the dye that your care team uses during the procedure.

Activity

On the day you leave the hospital, limit your activities. Do not do physical exercise or heavy lifting (greater than 10 pounds) for the next 3 days. Do not drive for 24 hours after the procedure. You may resume all other daily activities 24 hours after the test.

Wound site/bleeding

You may have a small bruise or even a marble-sized lump. If you notice any bleeding from the puncture wound, lie flat and put hard pressure just above the puncture site. Hold pressure for 15 minutes. If possible, have another person apply pressure. You should lie flat for about 1 hour before getting up and walking. Notify your physician if this happens. If bleeding continues for more than 15 minutes, go to the nearest emergency department for evaluation.

Call the IR Department right away at 312.926.5200 (TTY: 711) if you notice any of the following:

- Swelling or bleeding at the puncture site
- A temperature more than 101 degrees F
- Redness at the puncture site, or increasing tenderness or discharge at the puncture site

Y-90 microsphere treatment

On the day of the treatment, you will have an angiogram, but no scans. The total time in the hospital is about 4 to 6 hours. You will need to arrive 1 1/2 hours before your appointment.

Before the treatment

Do not eat solid food for at least 6 hours before the test. You may have clear liquids early in the morning of the test. Take your medications as instructed by your physician with sips of water.

Come to the IR Department on the 4th floor of Feinberg Pavilion 1 1/2 hours before your treatment.

Be sure to bring your:

- List of allergies
- List of all your current medications (prescription, over-the-counter and herbal)
- Photo ID
- Medical insurance information and card

Please leave all valuables such as jewelry, credit cards and money at home.

Have a responsible adult take you home. This person may leave the hospital and return later to pick you up. We will ask for a cell phone or a contact phone number if we need to reach them.

After you check in with the receptionist on the 4th floor, you and 1 other person (this can be a family member or close friend) will come to a holding room. The care team will check your health history and medications. The physician will do a short physical exam. After reviewing the procedure and answering your questions, the physician will ask you to sign a consent form.

You will change into a hospital gown. Then, the care team will put an IV line in your arm or hand for fluids and needed medication.

During the treatment

The care team will move you to the procedure room. A nurse will give you medication to relax you. We will do the angiogram just as we did at the planning session. Using the groin site, the physician will put a catheter in and put the Y-90 filled beads in the liver tumor. Then, they will remove the catheter and close the wound. This will take about 1 to 2 hours.

After the treatment

Following the procedure, you will return to the holding room to recover for about 1 to 2 hours.

Before you go home, the nurse will check your groin site and remove the IV. The nurse also will review your discharge instructions and give you emergency phone numbers.

At home

Follow the same diet, activity and wound care guidelines outlined on pages 3 and 4. Take your prescribed medications as directed. For some this may include:

- Medication to help protect stomach upset
- An antibiotic

Be sure to call the IR Department at 312.926.5200 right away if you notice any of the following:

- Swelling or bleeding at the puncture site
- A temperature more than 101 degrees F
- Redness at the puncture site, or increasing tenderness or discharge at the puncture site

Follow-up care

- 2 weeks after the procedure: An IR staff member will call to see how you are feeling.
- 4 weeks after the procedure: All patients have blood tests and repeat CT or MRI scans at Northwestern Memorial Hospital.
- 1 month after the procedure: You will have an office visit with the radiologist to review your scans and blood work. They will decide if you need if a second Y-90 treatment. To give you safe care, we are able to treat only 1 lobe of the liver at a time with Y-90. If you have tumors in both lobes of your liver, you may need a second treatment.

Contact information

If you have any questions or concerns, please contact the IR Department at 312.695.1791 (TTY: 711).