

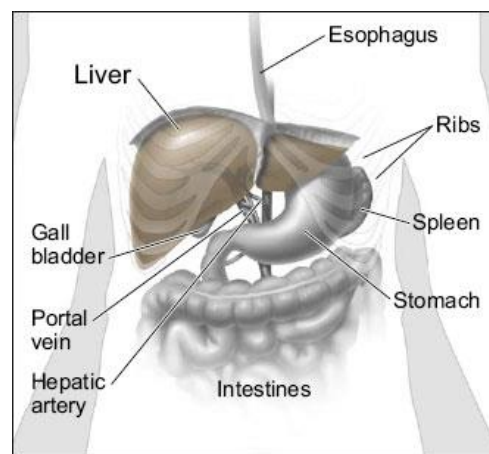
Preparing for SIRT

Why is the Liver Important?

The liver, located on your right side under your ribs, is the largest organ inside your body.

The liver is a vital organ and performs many functions that are necessary for good health such as:

- Changing what you eat and drink into the energy and nutrients your body needs
- Clearing most drugs and alcohol from your system (detoxification)
- Making bile, which helps break down fats and aids digestion
- Storing iron, vitamins (A, B, D, E, and K), and minerals
- Storing sugar and releasing it when your body needs energy
- Making new proteins and chemicals



What is SIRT?

SIRT, or *Selective Internal Radiation Therapy*, may be a treatment option for people who have liver tumors but who cannot have surgery or ablation.

Radiation therapies use high-energy (ionizing) waves or particles to damage and destroy cancer cells. Compared to external radiation, SIRT provides a more effective dose of radiation, over a longer period. The radiation is delivered in a targeted manner. Tiny beads (microspheres) filled with a radioactive substance Y-90 (yttrium-90) are placed into the blood vessels that bring blood to the tumor(s). Blocking the vessels means the tumor cannot get the oxygen and nutrients it needs.

SIRT treatment requires a team that includes specialists from a few departments. Before or on the day of the mapping angiogram, you will meet with the interventional radiologist. During that visit, your doctor can explain the benefits and risks of SIRT and you will have an opportunity to discuss your care.

The entire process requires planning: blood work, CT scan, and multiple angiograms. After the procedure, the microspheres will sit in the small blood vessels that supply the tumor(s). They will give off radiation for about 2 weeks. Most of the radiation (80%) is delivered in the first week. During the first 2 weeks, the radiation stays in the liver with little, if any, in the rest of the body. After 2 weeks, very little radiation remains at all.

Step 1 - Mapping Angiogram

- A long, thin tube is placed into an artery in your groin and guided up to arteries in your liver.
- Contrast is injected through the tube, and then x-rays are taken to look at the blood vessels.
- If needed, we will block off branches of the artery that go out of the liver (embolization). Blocking the arteries prevents radiation from leaving the liver.
- Near the end of the procedure, we inject a radioactive compound (Tc99m-MAA) into the arteries to your liver so we can do a liver perfusion scan. This scan checks the levels of radioactivity in your liver and looks for unwanted activity in other organs
- The mapping angiography takes about 1- 2 hours, but be prepared to spend the entire day at Roswell Park, as recovery can take up to 4 hours.
- After the procedure, you will need to lie flat for 2-4 hours for the artery to start to heal. Your kidneys will clean the dye from your blood and dispose of it in your urine, so it is important to stay hydrated. (Drink plenty of water to help your kidneys flush out the dye.)

Preparing for the Mapping Angiogram

1. Medications: Some prescription and over-the-counter medications can interfere with normal blood clotting and increase the risk of bleeding.

If you take medications to treat or prevent blood clots, talk to your doctor about when, or if, you should stop taking them before surgery. These medications include:

aspirin	lepirudin (Refludan®)
apixaban (Eliquis®)	prasugrel (Effient®)
cilostazol (Pletal®)	rivaroxaban (Xarelto®)
clopidogrel (Plavix)	ticagrelor (Brilinta®)
<i>dabigatran (Pradaza®)</i>	ticlopidine (Ticlid®)
dalteparin (Fragmin®)	tinzaparin(Innohep®)
eptifibatide(Integrilin®)	tirofiban (Aggrastat®)
enoxaparin (Lovenox)	warfarin (Coumadin®/ Jantoven®)
fondaparinux (Arixtra®)	

- Tell your doctor about all the medications, supplements, and vitamins that you take.
- If you have diabetes and take insulin, talk to your primary doctor about how to take your insulin on the day of the procedure.
- Medications for high blood pressure and chronic pain should be taken with a small sip of water on the morning of the procedure.

2. Transportation

Because sedation is used for your procedure, a responsible adult must come with you to drive you home or be available to pick you up when you are discharged. **If you do not have someone to drive you home, your procedure will be rescheduled.**

3. Eating and Drinking

DO NOT eat or drink for 4 hours before the procedure.

4. Allergies

If you have an allergy to CT scan contrast, please tell your doctor *before* the day of the procedure and we will give you medication before and after the angiogram to prevent an allergic reaction.

After the Mapping Angiography

- After your procedure, your nurse will give you written discharge instructions that will include any restrictions you may have. Your itinerary will be updated to reflect your treatment day.
- You may be given prescriptions that will need to be filled before your treatment.
- Please ask questions to make sure you fully understand what you can and cannot do after the procedure.
- If you normally take any medication containing metformin, do not take it for the first 48 hours after the procedure.

SIRT

Approximately 2 weeks after the mapping angiogram, we will perform SIRT to half your liver. The microspheres will be placed during an angiogram. The timing of the SIRT to the other half of your liver will be determined on an individual basis.

At the Hospital

- The preparation is the same as the mapping angiogram. You will need to have bloodwork drawn upon arrival to the hospital. You will come to 2 West and have an IV placed.
- The procedure to deliver the microspheres is typically shorter, but you will still have to lie flat for 2-4 hours after the procedure.
- Remember, you cannot drive because of the sedative medication. You must have a responsible adult to drive you home.

Special Precautions at Home

Due to the radioactivity of the Y-90 microspheres, you will need to make some minor lifestyle changes and follow special guidelines for 1 week after the SIRT placement.

Over a period of 3 weeks, the radioactivity will be broken down and eliminated from your body. Your urine may contain trace amounts of the radioisotope.

Precautions after SIRT

To reduce unnecessary exposure, please follow these guidelines. **The first day is the day you have SIRT.**

Precautions to take for the first 4 days

- When cleaning spilled urine or any other bodily fluid, be sure your skin does not come into contact with the fluid. Use tissues and then either flush them down the toilet or place them in a plastic bag and put them in the garbage.
- When using toilet/bathing facilities
 - Men should sit on the toilet while urinating to reduce the risk of contaminated urine splashing on the seat or surroundings.
 - Flush the toilet twice after using.
 - Wash your hands thoroughly after going to the toilet.
 - Use separate towels and washcloths.
 - Rinse the bathroom sink and tub thoroughly after you use them.

Precautions to take for the first 7 days

- Drink plenty of fluids. Do not share food or drink.
- You can sleep with your partner but keep a reasonable distance (1 foot) between you. (The easiest way to do this is to sleep on your partner's left side.)
- Avoid prolonged close contact with children or pregnant women. (Children should not sit on your lap.)
- Avoid sexual contact.
- After 1 week, you can resume normal contact with family members.

Common Side Effects

- low-grade fever
- mild abdominal discomfort or nausea
- fatigue

The fever and stomach problems usually go away in 3-5 days, but the fatigue typically lasts 2-3 weeks. If abdominal pain is severe or if you also have nausea or vomiting, contact your oncologist right away for further evaluation.

When to Call the Doctor

Call your doctor immediately if you have:

- swelling, redness, or drainage at the incision site (Some bruising is normal and will fade in a few days)
- numbness, coolness (to the touch), increased pain, or blue discoloration in the leg where the incision was made
- abdominal (stomach) pain that is getting worse
- bleeding at the incision site that does not stop after you have applied steady pressure for 10 minutes
- nausea or vomiting that is not controlled by prescribed medication; that is accompanied by chills; or that lasts more than 24 hours
- a fever of **100.4°F (38°C)** or higher, or fever with chills

The GI clinic is open Monday to Friday, 8 a.m. to 5 p.m. The phone number is **716-845-4010**. **If the clinic is closed, your call will be answered by a triage nurse.**

The phone number for Interventional Radiology is **716-845-5992**.

You can also reach Roswell 24/7 at **716-845-2300**.

What Else I Should I Know About SIRT?

At some border crossings, such as entering the U.S. from Canada, or similar security checkpoints, the radioactivity in your body may set off detection equipment. You may be asked some questions such as, “To what type of radiation therapy were you exposed?” (In this case, it is Y-90.)

During your pretreatment consultations with your doctors, they will provide you with all the information you will need to successfully answer these questions, and be allowed to continue on your way.

If you will be traveling into the U.S. from Canada or traveling through any airports, be sure to discuss any questions or concerns you may have with your doctors during your consultations.

If you have any questions or concerns, please talk to your doctor.