



**Interventional radiologists** are board-certified experts who deliver minimally invasive treatments with less risk, less pain and less recovery time than traditional surgery. Most interventional radiology (IR) procedures are delivered via catheters through a tiny nick in the skin and use different types of radiology imaging guidance, including x-ray, CT scanning and ultrasound, to deliver precise treatment. For many of the therapies, patients receive medicine in their veins through an IV that helps them relax (sedation) or, in some cases, patients receive anesthesia. Many treatments are performed on an outpatient basis or with a short overnight stay. Learn more or find an interventional radiologist near you at [sirweb.org](http://sirweb.org).

### Follow-up

After treatment for liver cancer, you will follow up routinely with your oncologist and interventional radiologist. These follow-up appointments may include blood tests and scans.

Blood tests will be ordered to see how well your liver is working after the treatment. Additional blood tests will determine if there are leftover or new tumor cells and will assess your overall health.

Imaging in the form of CT or MRI will be performed at regular intervals based on what type of treatment you received to see how the tumor has responded to therapy.

Additional treatments may be necessary based on these results.

Copyright © 2017 by the Society of Interventional Radiology. All rights reserved. No part of this publication covered by the copyright herein may be reproduced or copied in any form or by any means without written permission of the publishers.

For more information on how interventional radiology can help you, the Society of Interventional Radiology's website, [sirweb.org](http://sirweb.org), provides easy-to-use tools to find a local interventional radiologist. He or she will be able to answer any additional questions you may have.

FIND US ON  
[sirweb.org](http://sirweb.org)



Liver cancer  
and how interventional  
radiologists can help

**Society of Interventional Radiology**  
3975 Fair Ridge Drive, Suite 400 North  
Fairfax, VA 22033  
Phone: (703) 691-1805 / Fax: (703) 691-1855



## Types of liver cancer

The liver can be affected by two main types of cancer: primary liver cancer, which starts in the liver, and secondary liver cancer, which spreads to the liver from another part of the body.

There are several different types of primary liver cancer including:

- Hepatocellular carcinoma (HCC), the most common form, which accounts for approximately 75 percent of all primary liver cancers
- Cholangiocarcinoma, a cancer that originates in the bile ducts, the pipe-like structures in the liver that carry bile to the intestines

Secondary liver cancer, also known as liver metastasis, is the most common type of liver cancer.

## Risk factors

The risk factors for HCC include hepatitis, infection or inflammation of the liver, and long-term alcohol use. Eventually these lead to scarring of the liver, called cirrhosis.

There are multiple risk factors for secondary liver cancers, depending upon where the cancer started.

## Symptoms

Symptoms of liver cancer may vary greatly and unfortunately, no symptoms are specific to liver cancer. If symptoms are present, they may include:

- Fevers, chills and night sweats
- Nausea and vomiting
- Decrease in appetite and weight loss not associated with changes in diet
- Upper abdominal pain
- Jaundice (yellowing of the skin and eyes)
- Itching

## Diagnosis

Your doctor will decide, based on your risk factors, whether you should have a blood test, an imaging test and/or a biopsy.

Types of imaging tests:

- An ultrasound is a good starting point to look for liver cancers. It uses sound waves to see inside the liver.
- CT scans use x-rays with contrast injected in your veins to identify the liver cancer. The contrast makes it easier to view organs during scans. In addition to looking at your liver, a diagnostic radiologist will look for any evidence of cancer outside of your liver, which may change the choice of treatment.
- Magnetic resonance imaging (MRI) scans are performed with a powerful magnet, use no radiation and are performed with a different type of IV contrast. Frequently, these take longer to perform than an ultrasound or CT scan. They can help make the diagnosis, but not all patients are suited for MRI. For example, an MRI may not be appropriate for individuals who are pregnant or have metal implants. Speak to your doctor to determine if you are able to have an MRI.

Biopsy

- In a biopsy, clinicians obtain samples of the possible tumor for diagnosis of the suspected liver cancer, whether primary or metastatic. The procedure itself is performed with only a needle, via a small nick in the skin, using IV medications to make you comfortable. An interventional radiologist will use ultrasound and/or CT scan to help guide the needle through your body and into the tumor to take the biopsy.

## Interventional radiology treatments

Interventional radiologists are skilled in minimally invasive treatments, using the vascular system to deliver targeted treatments with catheters through a small nick in the skin. In treating cancer patients, IRs can deliver targeted treatments to the tumor without medicating or affecting other parts of the body.

**Embolization** uses small particles that are injected into the blood vessels leading directly to the tumor. During this treatment, an interventional radiologist will make a small nick in the area over your hip and use x-ray guidance and a catheter to find these blood vessels supplying the tumor(s). This is generally performed with IV medication for sedation and pain control. Your interventional radiologist works together with a team of physicians, including your oncologist, to determine which therapy is best for you.

**Ablation** destroys liver cancer using extreme temperatures. Using image guidance, the interventional radiologist will place special needles through your skin and into your liver tumor while you are under anesthesia. Once the needle is in place, the tumor can be destroyed in a short period of time, often in minutes. Your clinical care team, which includes your interventional radiologist, will determine which procedure is best for you.

These treatments and/or others may be used alone or together. Which therapy is best for you depends on many factors. A group of specialists that includes your oncologist, your interventional radiologist, a cancer surgeon and others will work with you to determine your best treatment option.

