



Patient information:



# About the procedure

## Before treatment

### CT scan

You will need a CT scan before treatment to show the location and size of the liver tumours. CT scans you have had recently may be sufficient for measuring the liver tumour, but sometimes they have to be repeated.

### Work-up procedure

You will need to attend a pre-treatment day when you will need to have some tests to help prepare you for treatment (called the 'work-up' procedure). You will then be invited back usually one-to-two weeks later, for treatment using SIRT procedure. To assess your suitability for the treatment, the following tests will be performed during the work-up:

1. Liver angiogram
2. Lung-shunting scan

After these tests, you can usually go home on the same day. Occasionally, these tests reveal that treatment using SIRT is not achievable because the microspheres cannot be safely delivered to liver tumours without damaging other sensitive tissue.

Based on the results of these tests, it will be decided whether you can have SIRT and the dose will be ordered so that it is ready for the day of your treatment.

### 1) Liver angiogram

The liver angiogram provides a detailed picture of the blood supply to the liver, which can vary between people. The aim of this procedure is to look at the blood supply to the tumour and to block off ('embolise') tiny blood vessels that lead to healthy organs of the body, such as the lungs or the stomach. This will stop the microspheres from damaging healthy tissue when they are administered to you on the treatment day, ensuring that they are only delivered to the tumour.

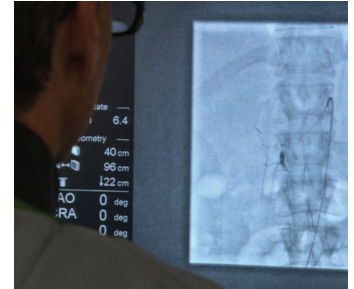
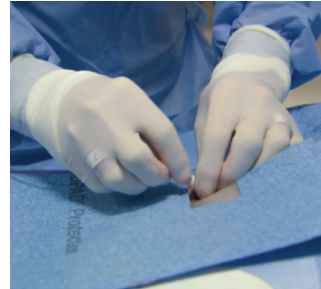
The blood vessels in the liver are a bit like a tree with lots of branches. With this in mind, you can think about this procedure as your doctor 'pruning' back some of the branches of the tree to ensure that the treatment goes directly to where it's needed.

Before the angiogram, the groin area is numbed with a local anaesthetic and a small cut is made. Some sedation may also be used to make you feel comfortable. A soft, flexible tube (catheter) is inserted through the cut and guided through a blood vessel (femoral artery) into the liver using x-ray pictures.

A dye, called a contrast medium, will be injected through the catheter to show up the blood vessels in the liver. The doctor then blocks off the vessels that lead to healthy parts of the body.

The procedure usually takes about 60-90 minutes but may take longer in some cases.

It usually involves little discomfort and you may have a feeling of warmth or a slight burning sensation when the contrast material is injected. The most difficult part may be lying flat for the procedure. After the procedure, you can resume a normal diet and all normal activities within eight to ten hours.



*A catheter is inserted in the groin and guided up to the liver using x-ray pictures in the work-up procedure.*

There is no risk associated with blocking off these tiny blood vessels, but it can sometimes cause mild pain for a few hours after the procedure, so you will be monitored in the hospital for at least four hours before you can go home.

On the same day, this procedure will include a scan of your liver to calculate the correct dose of treatment that will be required on your treatment day.

Sometimes the information given in the liver angiogram is not sufficient. Your doctor might decide to do an additional test called a CT scan. A dye called a contrast medium is injected through a catheter in your groin, while the scan is performed to show the blood vessels in the liver.

### 2) Lung-shunting scan

This test is also known as a scintigraphy (sin-tig-raf-ee) or a MAA scan. It involves injecting a radioactive dye into the catheter that has already been inserted during the liver angiogram procedure. The dye mimics what the microspheres will do on the day of treatment and allows your doctor to predict where they will lodge themselves on the day of treatment.

Sometimes some of the dye will pass through the liver into the lung. Your doctor needs to know how much passes through to determine a safe dose of microspheres for you. You will need to remain still for the brief periods of time during this procedure while scans are taken.





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## During treatment

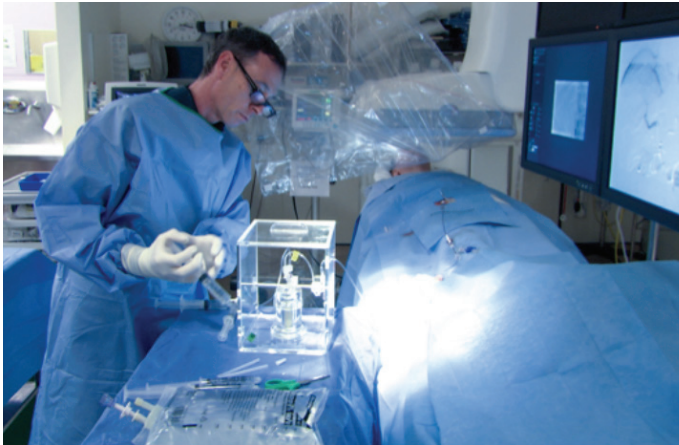
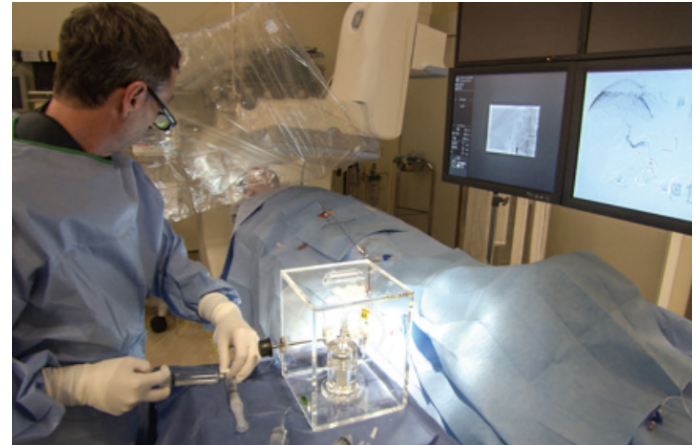


Image of SIR-Spheres microspheres being administered to a patient



Microspheres are injected through a catheter and into the liver

Microspheres will only be administered by doctors who are experienced in the treatment of liver tumours using SIRT.

Approximately one week after the liver angiogram, you will have a very similar procedure, during which microspheres are injected into the blood vessels around tumours.

The SIRT procedure is conducted by a medical team that includes a specialist known as an interventional radiologist, together with other specialists trained to work with radiation.

The procedure can typically take around one hour from beginning to end. Usually, you can have SIRT as an outpatient or you may need to stay in hospital overnight.

The doctor will give you an injection to numb the area around your groin and give you a sedative to help you relax. Pain relief and anti-sickness medication may be provided if you need it. As in the work-up procedure, a small cut is made in the groin through which a soft, flexible tube (catheter) is inserted and guided into the liver up a blood vessel (femoral artery) using x-ray pictures. The microspheres can be given through the catheter.

After the SIRT procedure, the catheter is removed. You will have a small dressing placed over the cut in the groin and pressure will be applied to the site for 10-15 minutes. You will be asked to lie still for about four hours to prevent bleeding.

A lung-shunting scan may be performed immediately after your treatment which takes around 20 minutes.

After the procedure, you will be monitored for a few hours and most people are discharged within 24 hours.



## After treatment

### Special precautions

Very little of the radiation will leave your body, but as a safety measure you will be given a yellow card from the hospital telling you some precautions you must take when you leave hospital. During the first 24 hours following the SIRT procedure it is important that you:

- Thoroughly wash your hands after using the toilet as some of the radiation may be present in your urine or stools
- Clean up any spills of body fluids such as blood, urine or stools and dispose of them in the toilet

Prolonged, close physical contact should be avoided, such as, sitting/sleeping next to children or pregnant women for seven days. It is also important to drink plenty of fluids for six to eight weeks after this procedure. All radiation will have been disappeared from your body within four weeks.

### CT Scan

A scan will be required around three months after treatment to look at the size of the tumours and to see if they have shrunk in size.