

## WHAT IS A MRI OF THE BREAST?

MRI of the breast offers valuable information about many breast conditions that cannot be obtained by other imaging modalities, such as mammography or ultrasound. A breast MRI is a noninvasive test that helps physicians diagnose and treat medical conditions of the breast. MRI uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed breast images.

MRI of the breast is not a replacement for mammography or ultrasound imaging but rather a supplemental tool that has many important uses, including:

- **Screening in women at high risk for breast cancer.** For women at high risk for breast cancer, typically because of a strong family history, MRI may be an appropriate tool to screen for breast cancer.
- **Determining the extent of cancer after a new diagnosis of breast cancer.** After being diagnosed with breast cancer, a breast MRI may be performed to determine:
  - o how large the cancer is and whether it involves the underlying muscle
  - o if there are other cancers in the same breast and whether there is an unsuspected cancer in the opposite breast
  - o if there are any abnormally large lymph nodes in the armpit, which can be a sign the cancer has spread to that site
- **Further evaluating hard-to-assess abnormalities seen on mammography.**
- **Evaluating lumpectomy sites in the years following breast cancer treatment.** Scarring and recurrent cancer can look identical on mammography and ultrasound. If there is a change in a lumpectomy scar by either mammography or on a physical exam.
- **MRI can help determine whether the change is normal maturation of the scar or a recurrence of the cancer.**
- **Evaluating breast implants.** MRI is the best test for determining whether implants have ruptured.

## HOW IT WORKS

Your physician may order the MRI with or without a contrast agent depending on your diagnosis. If contrast material is used, it will be injected through an intravenous line (IV). The contrast material most commonly used for an MRI exam is called gadolinium. Because gadolinium does not contain iodine, it can be used safely in patients with contrast allergies.

**Please be advised of the following information before receiving any contrast agent.** If you are diabetic please consult your physician as to any special instructions concerning your diabetes prior to the test. If you are age 40 or older or a diabetic; you will need labs drawn prior to your contrasted exam. Please consult your physician in regards to these labs. Please inform the technologist if you are pregnant as contrasted exams are not performed during pregnancy.

## WHAT TO EXPECT

For this exam, you will be asked to lie face down on the scanning table with arms above your head. Coils (special devices to improve image quality) will be placed under the region of your body being scanned. The scanning table will slide your whole body into the magnet. During the scan you will not feel anything, but will hear intermittent humming, thumping, clicking and knocking sounds. Earplugs or headphones will be provided to help mask the noise. You must be still during the exam, because movement causes blurred images.

The scan takes approximately 45 minutes to one hour. The technologist will give you discharge instructions after the completion of the test.

## HOW TO PREPARE

Follow these guidelines:

- You may follow your regular daily routine and take food and medications as usual.
- Your procedure must be scheduled on days 7-10 of your menstrual cycle.
- Please remember to bring any previous studies that pertain to your test.

- Please bring your current home medications or a list of your medications with you the day of the test.
- You may be asked to remove some or all of your clothes and to change into a hospital gown.
- You will be required to remove all objects that are not compatible with the MRI scanner.

Patients who might have metal objects in certain parts of their bodies may also require an x-ray prior to an MRI. You should notify the technologist or radiologist of any shrapnel, bullets, or other pieces of metal which may be present in your body due to accidents. Foreign bodies near the eyes are particularly important. Plain film x-ray clearance will be done for any question of metal foreign bodies to your eyes.

If you have claustrophobia (fear of enclosed spaces) or anxiety you can be sedated for your exam. Please remember that you must have a driver with you at your appointment time in order to receive sedation. All of our medications for sedation are given by mouth. We are only staffed to sedate until 3:00 p.m. Monday thru Friday. If your appointment is scheduled after 3:00 p.m. you will need to ask your physician for a prescription for a mild sedative. All sedation requires a driver.

## RESULTS

A radiologist will review your images and send a report to your doctor who ordered the test in 48 hours. You'll get a call from your doctor's office to discuss the results and next steps. To check your results in our secure, online patient portal, My UNC Chart, visit [www.myuncchart.org](http://www.myuncchart.org).

## WHAT IS A MRI-GUIDED BREAST BIOPSY?

A breast biopsy is performed to remove some cells—either surgically or through a less invasive procedure involving a hollow needle—from a suspicious area in the breast and examine them under a microscope to determine a diagnosis. In MRI-guided breast biopsy, magnetic resonance imaging is used to help guide the radiologist's instruments to the site of the abnormal growth.

An MRI-guided breast biopsy is most helpful when MR imaging shows a breast abnormality such as:

- a suspicious mass not identified by other imaging techniques
- an area of distortion
- an area of abnormal tissue change

## HOW IT WORKS

All MRI-guided breast biopsy exams use a contrast agent that will be injected through an intravenous line (IV). The contrast material most commonly used for this exam is called gadolinium. Because gadolinium does not contain iodine, it can be used safely in patients with contrast allergies.

**Please be advised of the following information before receiving any contrast agent.** If you are diabetic please consult your physician as to any special instructions concerning your diabetes prior to the test. If you are age 40 or older or a diabetic; you will need labs drawn prior to your contrasted exam. Please consult your physician in regards to these labs. Please inform the technologist if you are pregnant as many imaging exams are not performed during pregnancy.

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Multiple sets of breast images will be obtained during the test. Images will be taken with and without the contrast agent prior to the biopsy itself. Image-guided, minimally invasive procedures such as MRI-guided breast biopsy are most often performed by a specially trained radiologist. A local anesthetic will be injected into the breast to numb it. A very small nick is made in the skin at the site where the biopsy needle is to be inserted. A vacuum-assisted device (VAD) which uses a vacuum powered instrument to collect multiple tissue samples during one needle insertion will be used.

After the sampling, the needle will be removed and a small marker will be placed at the site so that it can be located in the future if necessary. Once the biopsy is complete, pressure will be applied to stop any bleeding and the opening in the skin is covered with a dressing. No sutures are needed. This procedure is usually completed within 2 hours. The technologist will give you discharge instructions after the completion of the test.

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## HOW TO PREPARE

Follow these guidelines:

- You may have clear liquids **only** after midnight the day of your test.
- Please bring your current home medications or a list of your medications with you the day of the test.
- **Do not take any blood thinners for 5 days prior to the exam.**
- You may be asked to remove some or all of your clothes and to change into a hospital gown.
- You will be required to remove all objects that are not compatible with the MRI scanner.

Patients who might have metal objects in certain parts of their bodies may also require an x-ray prior to an MRI. You should notify the technologist or radiologist of any shrapnel, bullets, or other pieces of metal which may be present in your body due to accidents. Foreign bodies near the eyes are particularly important. Plain film x-ray clearance will be done for any question of metal foreign bodies to your eyes.

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