

## Understanding Breast MRI



The American Cancer Society (ACS) now recommends that women with a 20-25 percent or greater lifetime risk of breast cancer have an annual screening using MRI in addition to a mammogram. In addition to the new ACS guidelines, a study published in the *New England Journal of Medicine* suggests that women with cancer found in one breast should have an MRI scan of the other breast.

In light of this new information, HVRA presents answers to frequently asked questions about Breast MRI.

### What is MRI?

MRI, or Magnetic Resonance Imaging, is an imaging technique that uses magnetic fields and radio waves to make computer images of internal body organs. No radiation or X-rays are used.

### What is Breast MRI?

Breast MRI uses MRI technology to look specifically at the breast to produce three-dimensional images. It is a non-invasive procedure that doctors can use to determine what the inside of the breast looks like without having to do surgery or flatten the breast, as in a mammogram. Each exam produces hundreds of images of the breast, cross-sectional in all three directions, which are then read by the radiologist. No radioactivity is involved, and the technique is believed to have no health hazards in general. Such non-invasive studies help to identify the location and size of any tumors, if present, which in turn helps your physician in the selection of the best treatment option.



HVRA's new MRI suite offers patients a comfortable, secure setting.

### Does the Breast MRI replace the mammogram?

Absolutely not. Breast MRI is an evolving technology and should not replace standard screening and diagnostic procedures—such as clinical and self exams, mammograms, fine needle aspirations or biopsies. Breast MRI is usually used as a diagnostic rather than a screening tool.

### How is Breast MRI different from mammography?

Mammograms use X-rays to generate images of the breast tissue to search for cancer. MRI, on the other hand, uses no X-rays. Also, Breast MRI provides a three-dimensional image, as opposed to the mammogram's two-dimensional picture.

The ability to identify a mass in the breast requires that the mass has a different appearance (or contrast) from normal tissue. With MRI, this contrast is 10 to 100 times greater than that obtained with the mammogram X-ray. This is why MRI is used more often than CT or "cat" scans, which also use X-rays, for detecting various types of tumors. Also, Breast MRI does not detect



HVRA uses the most advanced MRI technology in Western Connecticut to provide revolutionary image quality. Patients enjoy the comfort of a more open design and "whisper gradients," making the MRI experience 97% quieter.



certain types of very small calcifications, which on a mammogram can be an early indication of cancer. Instead, Breast MRI uses different cancer markers, including the blood flow of the tumor, as well as the size and appearance of the tumor.

### **Who should have a Breast MRI? Should I have one?**

Breast MRI is not appropriate for everyone, so risks and benefits must be assessed individually. The best candidates for Breast MRI are women who

- have had a suspicious lump or mammogram
- already have had a diagnosis of cancer and will have surgery or chemotherapy followed by surgery
- have dense breasts, implants, or scar tissue from previous breast surgery
- women who are at high risk for breast cancer due to a previous cancer diagnosis, strong family history for breast cancer, or a positive test result for one of the breast cancer genes

### **How is Breast MRI performed?**

Individual body parts need to be imaged by a specific coil to obtain the best pictures possible. For example, a head MRI requires the head to be surrounded by a head coil. Even though the breast may be imaged using a general body coil, the images will be of much higher quality when a dedicated breast coil is used.

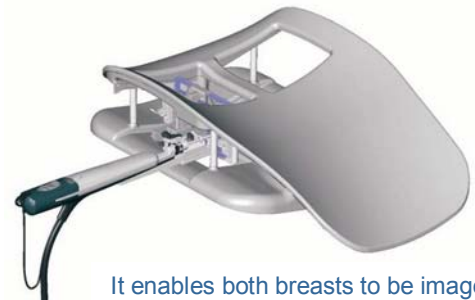
HVRA uses a 7-channel breast coil, the most advanced available, which enables both breasts to be imaged at the same time from all possible angles (medial and lateral) without any repositioning. This means a faster exam for the patient without a great deal of fuss—while getting the highest quality 3D images.

Breast MRI sometimes requires the intravenous injection of a “contrast agent,” which helps to highlight blood flow within the breast and distinguish benign (non-cancerous) from malignant (cancerous) abnormalities. Evaluating breast implants does not require intravenous contrast.

Breast MRI provides a more comfortable experience for the patient, as the breasts are free-hanging during the exam rather than compressed as with a mammogram. Because HVRA uses the latest MRI technology featuring a more open, short-bore design and reduced noise levels, patients experience less claustrophobia and anxiety.

For your comfort, our staff RN is available to attend to the patient during the procedure. Headphones with a variety of music choices are also available, and you can experience 2-way communication with the MRI technologist throughout the procedure.

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It enables both breasts to be imaged at the same time from all possible angles—without any repositioning.



The breast MRI patient is resting on the breast coil and will glide head-first into the MRI. A bilateral breast MRI will normally take up to 30 minutes.



## What are the benefits of Breast MRI?

- MRI is a noninvasive imaging technique that does not involve exposure to radiation.
- MRI has proven valuable in diagnosing a broad range of conditions, including detecting and staging breast cancer, particularly when other imaging studies (mammography, ultrasound, etc.) fail to provide adequate information.
- MRI enables the detection of abnormalities that might be obscured by bone with other imaging methods.
- The contrast material used in MRI exams is less likely to produce an allergic reaction than the iodine-based materials used for conventional x-rays and CT scanning.
- MRI is growing in popularity as an alternative to traditional x-ray mammography in the early diagnosis of breast cancer.
- MRI has been shown to detect small breast lesions that are sometimes missed by mammography.
- MRI can successfully image the dense breast common in younger women, as well as breast implants, both of which are difficult to image using traditional mammography.
- Because MR imaging does not involve radiation, the procedure could be used to screen women younger than 40 and to increase the number of screenings per year for women at high risk for breast cancer.
- If a suspicious lesion is seen with MRI only, MRI can provide guidance for biopsy.



Our state-of-the-art systems allow the technologist to provide a safe, high-quality experience from beginning to end.

## What are the current limitations of Breast MRI?

Reports show that malignant lesions are visible with the contrast agent injection. While contrast MRI is highly sensitive, there is "variable specificity," which makes it difficult to accurately distinguish benign from malignant tissue. Some benign breast tissues can also become visible after contrast injection, which can cause a false positive result. Multiple institutions are conducting clinical studies to advance the use of MRI technology in the area of breast cancer diagnosis and treatment.

## What are the standard precautions for MRI?

Because the MRI magnet attracts certain metals, it can exert a strong force on some metallic objects brought within the scan room, which may be harmful for the patient. In order to prevent such an event, patients are required to fill out and sign a metal screening questionnaire before going into the MRI room.

Persons with cardiac pacemakers, metal prostheses (an artificial device replacing a body part), magnetic clips from previous surgery, or metallic particles in their eyes will not qualify for Breast MRI. However, most surgical staples and clips will not be affected by the magnet, nor will normal dental work or fillings. In addition, all metals (jewelry, pens, watches, pagers etc.) are removed before entering the room.



HVRA's MRI suite provides patients with private locking changing rooms.



For more information on HVRA's services or Breast MRI, call HVRA at **(203) 797-1770** or visit us online at **www.HVradiology.net**.



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### Directions to HVRA's Main Office and MRI Suite in Danbury

From I-84 East and West.  
Take I-84 to Exit 7.  
Proceed .8 of a mile down Route 7 to Exit 11 - Federal Road.  
At the end of exit ramp, turn right at the traffic light onto the access road.  
Proceed .8 of a mile to the end of the access road, where you'll come to a traffic light.  
Turn left at this light onto Federal Road, and move into the right lane.  
Proceed under bridge, and take immediate right after bridge onto Starr Road (you will see a sign that says "Germantown").  
Bear right onto Sand Pit Road at the stop sign and fork in the road.  
Proceed .25 of a mile to "Medical Center of Western Connecticut" on your left.  
67 Sand Pit Road is the first building on your right.



HVRA-Danbury is also conveniently located on the HART transportation line.