What is Breast MRI?
Magnetic resonance imaging (MRI) is a noninvasive, painless imaging exam that assists your physician in the diagnosis and treatment of specific medical conditions. MRI uses a strong magnetic field and radio waves to provide detailed images of soft tissues and body structures. MRI of the breast provides valuable information about breast conditions that cannot be obtained by other imaging modalities, such as mammography and ultrasound.

Is Breast MRI a better test than mammography?
MRI of the breast is not a replacement for mammography or ultrasound imaging but instead a supplemental tool for detecting and staging breast cancer and other breast abnormalities and for examination of dense breasts.

Breast tissue is primarily composed of glandular tissue, which is often referred to as “dense” tissue. As a woman ages, this glandular tissue is replaced with fatty tissue. Depending on the individual, some women’s breasts are denser than others. The “denser” the breast tissue, the more difficult x-ray mammography imaging becomes to evaluate for abnormal tissue changes.

The dense breast tissue of younger premenopausal women can obscure some of these tissue changes and make it very difficult for mammography to detect subtle abnormalities. Breast MRI is not hindered by this dense breast tissue.

However, Breast MRI cannot detect micro calcifications, which can be a sign of breast cancer. For this reason, MRI should not be considered a substitute for mammography.

What are the indications for Breast MRI?
MRI of the breast is performed for:

Problem Solving
To further evaluate certain indeterminate mammographic findings or palpable abnormalities.

Diagnosis in Cancer Patients
To determine the extent of disease, both preoperatively and following lumpectomy in certain cases.
To assess the effect of some types of chemotherapy.
To evaluate patients with positive axillary lymph nodes and unknown primary source of malignancy.

Screening of Women at High Risk
To identify early breast cancer not detected through other means, especially in women with dense breast tissue and those at high risk for the disease.

Evaluation of Silicone Implants
To determine the integrity of breast implants.
**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 has been shown to detect small breast lesions that are sometimes missed by mammography, particularly in patients with dense tissue.

**How is the Breast MRI done?**

There is little or no compression during the breast MRI scan. You will be asked to lie face down on a special breast MRI table which allows your breasts to hang freely into cushioned openings, called a “breast coil” which will allow the MRI to provide very detailed images of each breast. A simple IV line is established beforehand to allow injection of a special type of MRI contrast called gadolinium. It is this contrast that makes MRI more sensitive in cancer detection than mammography.

**Breast MRI Screening**

In March of 2007, the American Cancer Society published guidelines for the Breast MRI screening of women at risk for breast cancer. The new guideline recommends MRI screening in addition to mammograms for women who meet at least one of the following conditions:

*They have a BRCA1 or BRCA2 mutation. Certain inherited DNA changes can cause an increased risk for developing cancer and are responsible for the cancers that run in some families. For example, the BRCA genes (BRCA1 and BRCA2) are tumor suppressor genes. Mutations in these genes can be inherited from one’s parents. When they are mutated, they no longer function to suppress abnormal growth, and cancer is more likely to develop.*

*They have a first-degree relative (parent, sibling, child) with a BRCA1 or BRCA2 mutation, even if they have yet to be tested themselves.*

*Their lifetime risk of breast cancer has been scored at 20%-25% or greater, based on one of several accepted risk assessment tools* that look at family history and other factors.

*They had radiation to the chest between the ages of 10 and 30.*

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*For a link to one of the accepted risk assessment tools, please visit the Breast MRI section of our website: www.imaginghealthcare.com*