

The ACR Breast MRI Accreditation Program (BMRAP) was launched in May 2010. The program enables facilities with dedicated breast MRI systems, whole body MRI systems with tabletop breast coils or detachable tables with integrated breast coils to become ACR accredited.

Pursuit of BMRAP accreditation is a team effort involving breast imaging radiologists, MRI technologists, and medical physicists or MRI scientists. There are minimum initial and ongoing qualifications for these personnel in their education, experience, and continuing education in order to participate in the program. The medical physicist plays an important role on the accreditation team by evaluating MRI system and RF coil performance and providing oversight of the quality control program. In addition, the physicist can provide technical expertise to assist the radiologist with protocol optimization and determining whether the breast MRI protocols meet BMRAP spatial and temporal resolution requirements.

To achieve accreditation, one clinical case with enhancing, biopsy-proven carcinoma must be submitted for each scanner. Cases are reviewed by ACR radiologists to assess whether image quality is acceptable. Image quality issues commonly encountered include signal non-uniformity, uneven fat saturation, low SNR, and artifacts. Clinical breast MR image quality is influenced by several factors, such as the design and performance of the breast coil, the breast MRI protocol parameters, and proper shimming, fat saturation and positioning of the breast tissue inside the coil.

Educational objectives:

1. Provide an overview of the ACR Breast MRI Accreditation Program including personnel qualifications, equipment requirements, the quality control program and clinical image quality requirements.
2. Discuss the role of the medical physicist/MRI scientist in the BMRAP application process.
3. Provide clinical examples illustrating common breast MRI artifacts and image quality issues.