



Title	Effectiveness of Magnetic Resonance Imaging (MRI) Screening for Women at High Risk of Breast Cancer
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Aim

To determine the clinical and cost effectiveness of MRI screening compared to film mammography in women with a high risk of breast cancer. A secondary aim is to determine the strength of evidence used to support the American Cancer Society's guidelines regarding MRI screening for woman at high risk of breast cancer.

Conclusions and results

Cost-effectiveness studies suggest that MRI for breast cancer screening could be cost effective, depending on the willingness to pay and the value attributed to one QALY. Overall, MRI has a higher sensitivity for breast cancer screening compared to mammography. In addition, the number of cancers detected by MRI alone was higher than that detected by mammography alone, although MRI also missed some cancers. These results indicate that some breast cancers would have been missed with mammography screening alone, and the addition of MRI resulted in more cancers being detected. High-risk women, eg, those with BRCA1/2 mutations, those having a first-degree relative with a mutation, or those with a strong family history of breast cancer, seem to benefit most from adding MRI to the screening modality.

The rigor of development of the American Cancer Society's guidelines was found to be low, because the inclusion and exclusion criteria, the external review process, and the process for updating the guidelines were not reported. Editorial independence from the funding body and conflicts of interest were not reported, making the editorial independence score zero. The clarity and presentation were well done, because the recommendations were specific and easily identifiable.

Methods

Published literature was obtained by cross-searching online databases. Health technology assessments, meta-analysis, systematic reviews, clinical studies, clinical guidelines, observational studies, and economic

studies were retrieved. The websites of regulatory agencies, health technology assessment agencies, and related agencies were searched, as were specialized databases.

Using the AGREE instrument (Appraisal of Guidelines Research and Evaluation), two independent reviewers assessed the quality of the American Cancer Society's guidelines.

Further research/reviews required

There is a lack of high-level evidence regarding the effectiveness of MRI screening for breast cancer detection. Randomized controlled trials would aid in the evaluation of MRI screening and would provide better evidence for clinical and cost effectiveness.