

# Two new studies on the use of breast MRI

November 18 2013

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The overall use of breast magnetic resonance imaging has increased, with the procedure most commonly used for diagnostic evaluations and screenings, according to a study published by *JAMA Internal Medicine*.

While breast MRI is being used increasingly, its sensitivity leads to higher false-positive rates and it is also more expensive. Guidelines from the American Cancer Society (ACS) indicate that breast MRI should be used to screen asymptomatic women at high-risk for breast cancer if they are known carriers of the BRCA gene mutation; first-degree relatives of a known BRCA gene mutation carrier who are themselves untested; or a women with more than a 20 percent lifetime risk of breast cancer, according to the study background.

Karen J. Wernli, Ph.D., of the Group Health Research Institute, Seattle, and colleagues examined the patterns of breast MRI in U.S. community practice from 2005 through 2009 with data collected from five national Breast Cancer Surveillance Consortium registries.

Study results show the overall rate of breast MRI nearly tripled from 4.2 to 11.5 examinations per 1,000 women from 2005 through 2009. The procedure was most commonly used for diagnostic evaluation (40.3 percent), followed by screening (31.7 percent). Women who underwent screening breast MRI were more likely to be younger than 50 years old, white, nulliparous (never had a baby), have a personal history of breast cancer, a family history of breast cancer and extremely dense breast tissue.

Study findings also indicate that the proportion of women screened with breast MRI at high lifetime risk for breast cancer increased from 9 percent in 2005 to 29 percent in 2009. The researchers also note that during the study period, the most common use of breast MRI was for diagnostic evaluation of a non-MRI finding.

"Our findings suggest that there have been improvements in appropriate use of breast MRI, with a smaller proportion of examinations performed for further evaluation of abnormal mammogram results and symptomatic patients, and more breast MRI performed for screening of women at high risk," the authors conclude.

The use of breast [magnetic resonance imaging](#) (MRI) increased in the decade after 2001 before eventually stabilizing, especially for screening and surveillance of women with a family or personal history of breast cancer, according to a study by Natasha K. Stout, Ph.D., of the Harvard Medical School and the Harvard Pilgrim Health Care Institute, Boston, and colleagues.

Although breast MRI is more sensitive than mammography in detecting breast cancer, cost and little evidence regarding the mortality benefits have limited recommendations for its use, the study background notes.

Between 2000 and 2001, researchers studied 10,518 women (ages 20 and older) who were enrolled in a health plan for at least one year and had at least one breast MRI at a multispecialty group medical practice in New England. Breast MRI counts and [breast cancer risk](#) status, as well as the reason for testing (screening, [diagnostic evaluation](#), staging or treatment, or surveillance) were obtained.

According to study results, breast MRI increased from 2000 (6.5 examinations per 10,000 women) to 2009 (130.7 exams per 10,000 women), with the greatest increase in use for screening and surveillance.

By 2011, use declined then stabilized (104.8 exams per 10,000 women). Screening and surveillance accounted for 57.6 percent of MRI use by 2011. Of the women, 30.1 percent had a claims-document [personal history](#), 51.7 percent a family history of [breast cancer](#), and 3.5 percent of women had a documented genetic mutation.

Researchers noted that in a subset of women with electronic medical records who received screening or surveillance MRIs, only 21 percent had evidence of meeting American Cancer Society criteria for breast MRI. Only 48.4 percent of women with documented genetic mutations received breast MRI screening.

"Understanding who is receiving breast MRI and the downstream consequences of this use should be a high research priority to ensure that the limited health care funds available are used to wisely maximize population health," the authors conclude.

In a related commentary, E. Shelley Hwang, M.D., M.P.H., of the Duke University Medical Center, Durham, N.C., and Isabelle Bedrosian, M.D., of the MD Anderson Cancer Center, Houston, write: "In an era of ever-increasing focus on cost containment in health care, the value of MRI is clearly an issue of concern."

"What is striking in both studies by Wernli et al and Stout et al was that breast MRI was both overused in [women](#) not meeting guideline criteria and underused in those who could derive greatest benefit," they continue.

"As a medical community, we bear a collective responsibility to ensure that breast MRI provides sufficient clinical benefit to warrant the additional biopsies, increased patient anxiety and cost that accrue with its use," they conclude.

**More information:** *JAMA Intern Med.* Published online November 18, 2013. [DOI: 10.1001/jamainternmed.2013.11963](https://doi.org/10.1001/jamainternmed.2013.11963)

*JAMA Intern Med.* Published online November 18, 2013. [DOI: 10.1001/jamainternmed.2013.11958](https://doi.org/10.1001/jamainternmed.2013.11958)

*JAMA Intern Med.* Published online November 18, 2013. [DOI: 10.1001/jamainternmed.2013.10502](https://doi.org/10.1001/jamainternmed.2013.10502)

Provided by The JAMA Network Journals

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