

EA1141 Clinical Trial Results Summary

Comparison of 3D Mammography to Abbreviated Breast MRI in Breast Cancer Screening in Women with Dense Breasts

What did this trial involve and who was it for?

A total of 1516 women participated in EA1141. Participants were women with extremely dense and partially dense (non-fatty) breasts who were scheduled to have digital breast tomosynthesis (DBT), also known as a 3D mammogram, as part of their routine annual breast cancer screening. It is more difficult for mammograms to detect breast cancer in women with dense breasts, so research is needed to improve breast cancer screening for these patients.

Regular MRIs are known to be more accurate at detecting breast cancer than mammograms, but they are also more expensive, take longer to perform, and are not usually covered by health insurance in patients who are not at high risk for breast cancer. However, abbreviated breast MRI (AB-MR), which is a shorter MRI performed in less than 10 minutes, may be a more affordable and easier method that still provides accurate results. The purpose of EA1141 was to compare the 3D mammogram to the AB-MR to see which may more accurately detect breast cancer.

Participants in the study underwent both types of imaging initially. If either imaging scan showed a suspicious result, participants received further imaging and testing to confirm a possible diagnosis of breast cancer. Otherwise, participants were asked to return for a one-year follow-up visit to complete both the 3D mammogram and AB-MR again, before returning to their usual breast cancer screening schedule.

What are the results?

EA1141's first round of results were published in February 2020:

- Of the 1516 women enrolled in the study, 1444 completed both the 3D mammogram and AB-MR. In the first round of screening, 23 patients were diagnosed with breast cancer.
 - The AB-MR detected 22 out of the 23 patients with cancer. The 3D mammogram detected only 9 of the 23 patients with cancer.
 - Of particular interest, the 3D mammogram failed to detect 10 of the patients with invasive breast cancer (the more deadly type of breast cancer).
 - Therefore, the study showed that the AB-MR more than doubled the breast cancer detection rate compared to 3D mammography.

More results from EA1141's follow-up data were published in May 2023:

- 1291 women returned for their one-year visit. Of these 1291 women, 9 were diagnosed with breast cancer (3 ductal carcinoma in situ [i.e., DCIS, which is non-invasive], 6 invasive).
 - The 3D mammogram detected all 3 incidences of DCIS, and 2 of the 6 invasive breast cancers.
 - While the AB-MR did not detect the 3 incidences of DCIS, it detected all 6 invasive breast cancers.

What do the results mean for patients?

- The results of EA1141 are striking: at both the initial and one-year follow-up time points, AB-MR was significantly more likely to detect invasive breast cancer than the 3D mammogram. However, the 3D mammogram was less likely to have false positive results.
- Further research is needed to better understand the relationship between breast cancer screening methods and patients' outcomes.

For more information, go to:

- United States National Institutes of Health (NIH) Library of Medicine:
<https://clinicaltrials.gov/study/NCT02933489>
- Abbreviated MRI outperforms 3D mammograms at finding cancer in dense breasts
<https://www.eurekalert.org/news-releases/882103>
- *Journal of the American Medical Association* (2020):
<https://jamanetwork.com/journals/jama/fullarticle/2761645>
- *Journal of Clinical Oncology* (2023):
https://ascopubs.org/doi/10.1200/JCO.2023.41.16_suppl.10502

About ECOG-ACRIN

This trial was led by the ECOG-ACRIN Cancer Research Group (ECOG-ACRIN). ECOG-ACRIN is a membership-based scientific organization that designs and conducts cancer research involving adults who have or are at risk of developing cancer. ECOG-ACRIN is a component of the National Cancer Institute's National Clinical Trials Network. Learn more at www.ecog-acrin.org.

To all the patients that participated in this trial, thank you. Without the involvement of patients like you, this research would not have been conducted.