

ASTOUND study

(Adjunct screening with tomosynthesis or ultrasound in mammography-negative dense breasts)

ASTOUND is the first published prospective multicenter trial to directly compare cancer detection and “false positive” (*false alarm*) rates of ultrasound (*sonogram*) and tomosynthesis (*a form of 3D mammography*) in women with dense breasts after a standard (*2D*) mammogram. In over 3,000 women with dense breasts in Italy, it was found that adding tomosynthesis or physician-performed ultrasound detected an additional 24 cancers (*23 invasive*), though not at the same rate.

The additional screening tests found a total of 24 breast cancers missed by 2D mammography:

- 1 was detected only by 3-D mammogram
- 11 were detected only by ultrasound
- 12 were detected by both 3-D mammogram and ultrasound

Based on the number of women screened, tomosynthesis detected an additional four breast cancers per 1,000 women screened and ultrasound detected significantly more, an additional seven breast cancers per 1,000 women screened.

The study publication and accompanying [editorial](#) by Dr. Wendie A. Berg were featured in the *Journal of Clinical Oncology*, March 9, 2016. Dr. Berg addresses how the acceptably low and comparable false-positive rates found in the ASTOUND study (*107 false-positive recalls, 53 for 3-D mammograms, 65 for ultrasound, with a total of 38 false positive biopsies, 22 for 3-D mammograms and 24 for ultrasound*) have implications for new screening protocols.