

## Summary of “STORM” study.

1. Screening with Tomosynthesis or Mammography (STORM) trial was a prospective non-randomized trial which compared conventional screening digital mammography (4 views) to combined digital mammography and tomosynthesis (8 views).
2. 7292 women participated based on invitation to screen in Trento and Verona Italy.
3. Outcomes examined were number of cancers detected, number of cancers detected per 1000 screened women, number and proportion of false positives, and the incremental cancer detection due to combined 2D+tomosynthesis exam.
4. Results showed 59 breast cancers detected in 57 women. 52 were invasive with mean size of 13 mm for both groups (2D alone and 2D+tomosynthesis)
5. Cancer detection rates were 5.3 cancers/1000 screened for 2D alone vs. 8.1 cancers/1000 screened for 2D+tomosynthesis
6. Incremental cancer detection rate for 2D+tomosynthesis was 2.7 cancers detected/1000 screened.
7. 395 false positives (5.5%). Conditional recall (positive integrated 2D and tomosynthesis findings) could have reduced false positive recalls by 17.2% without missing any of the cancers detected in the study population.

## Talking Points

1. Technology is very promising as other recent studies have shown similar results (Oslo study)
2. Questions remain- is this for women of all ages, every time they are screened?
3. Is there a subpopulation of women who might benefit more? e.g. younger women with denser breasts (but not the densest)
4. Studies with a new technology that has increased sensitivity for detecting breast cancer will have a prevalence bias- new technology will find more cancers in the first screening round

5. Will the increased cancer detection rate persist in subsequent screening rounds? Should tomosynthesis be done every screening round?
6. Authors note the need for randomized control trials.
7. Critics of screening might attribute additional cancers to overdiagnosis; however the data show that overdiagnosis does not occur with invasive carcinomas; it occurs with DCIS and is at most 10% and more likely around 3%. Our job as breast imagers is to find early invasive breast cancers. Since we currently cannot predict which subtypes of DCIS will progress to invasive carcinoma it is appropriate to diagnose and treat these lesions. The issue for DCIS is overtreatment, not overdiagnosis.
8. Cancer detection rates are high due to biennial and not annual screening; interval cancer rate would also be higher if biennial screening, not annual screening was done.