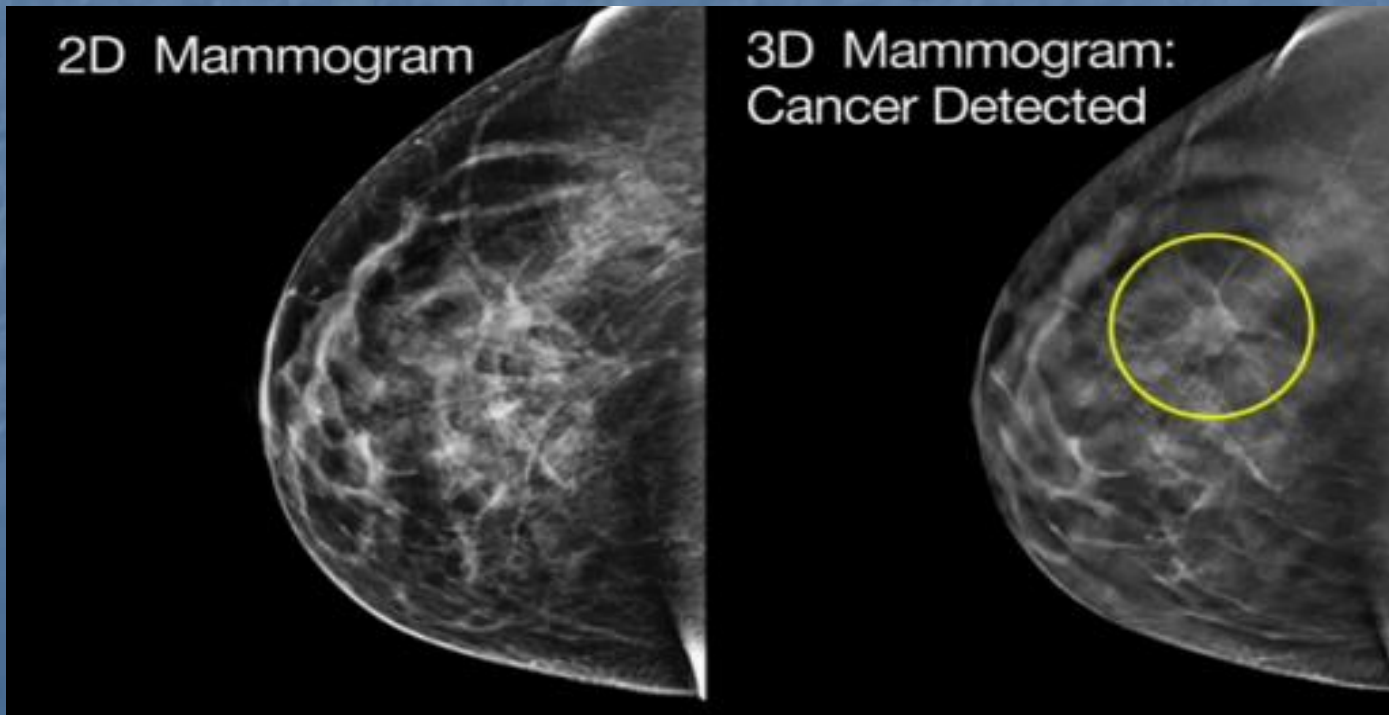


ADVANCED BREAST IMAGING



SITUATION

- “Getting a high-quality screening mammogram and having a clinical breast exam on a regular basis are the most effective ways to detect breast cancer early”, National Cancer Institute, March 2014 (pg. 2).
- We did 2549 mammograms in FYE 2016 using 2D digital mammography assisted by diagnostic ultrasound.

SITUATION

- Due to glandular or dense breast tissue, detecting breast cancer can be difficult. We are mandated by the FDA to notify patients that have dense breasts and they may wish to pursue other imaging modalities. According to Susan G. Komen (2016), it states, "Overall, the sensitivity of mammography is about 84%". This means mammography correctly identifies about 84% of the women who truly have breast cancer" (para. 2).

SITUATION

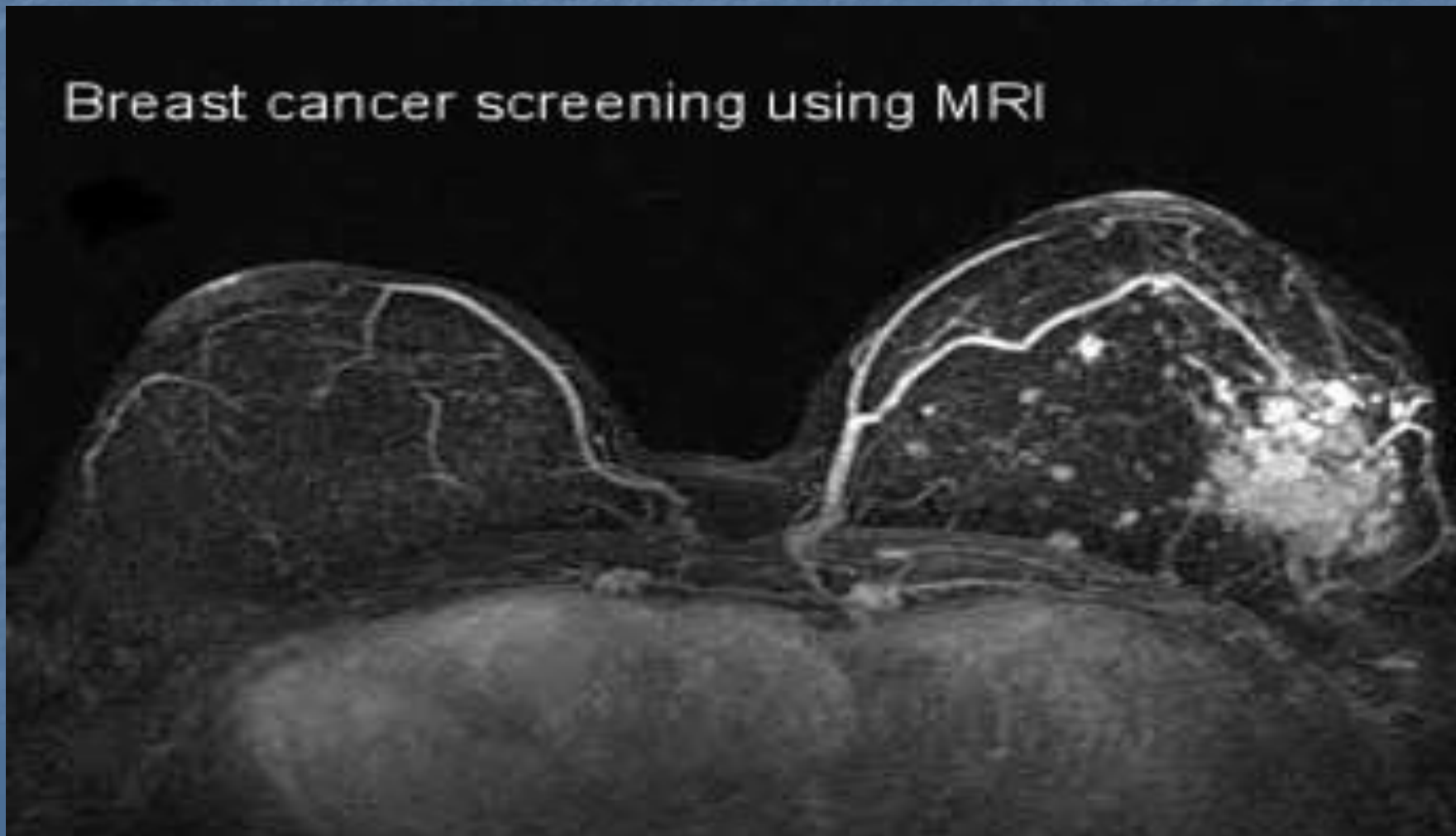
June 24, 2014 — Data from a new study of more than 170,000 examinations using 3-D mammography (breast tomosynthesis) screening technology finds significantly more invasive cancers than a traditional 2-D mammogram. The researchers also found that 3-D mammography reduces the number of women called back for unnecessary testing due to false alarms. The study was published in the June 25, 2014 issue of the *Journal of the American Medical Association (JAMA)*.

SITUATION

- Imaging modalities which are available as an adjunct to mammography are:
 - 1) Breast MRI
 - 2) Diagnostic Ultrasound
 - 3) 3D mammography (tomosynthesis)
 - 4) Molecular imaging.

Breast MRI

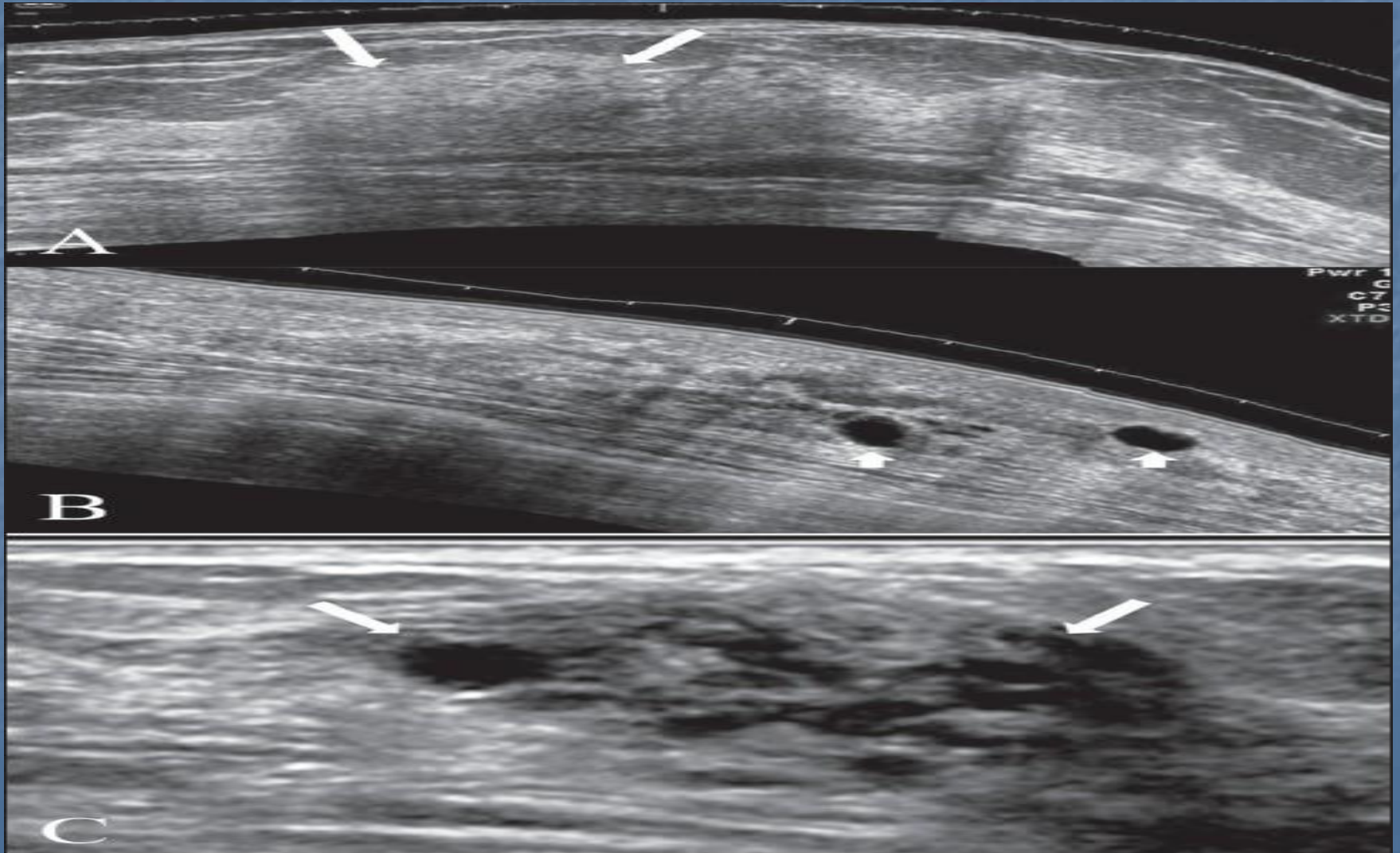
Breast cancer screening using MRI



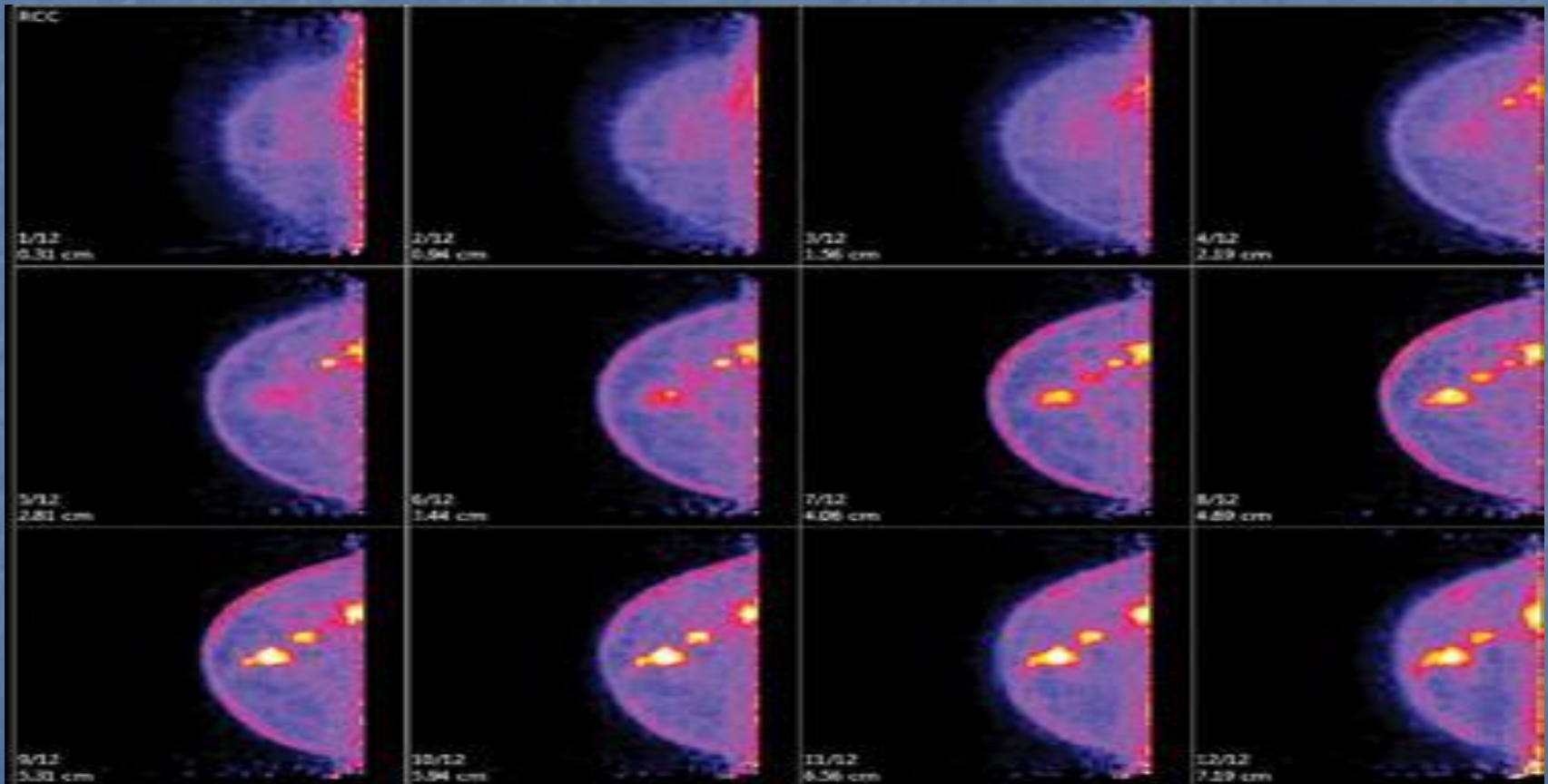
Breast Ultrasound



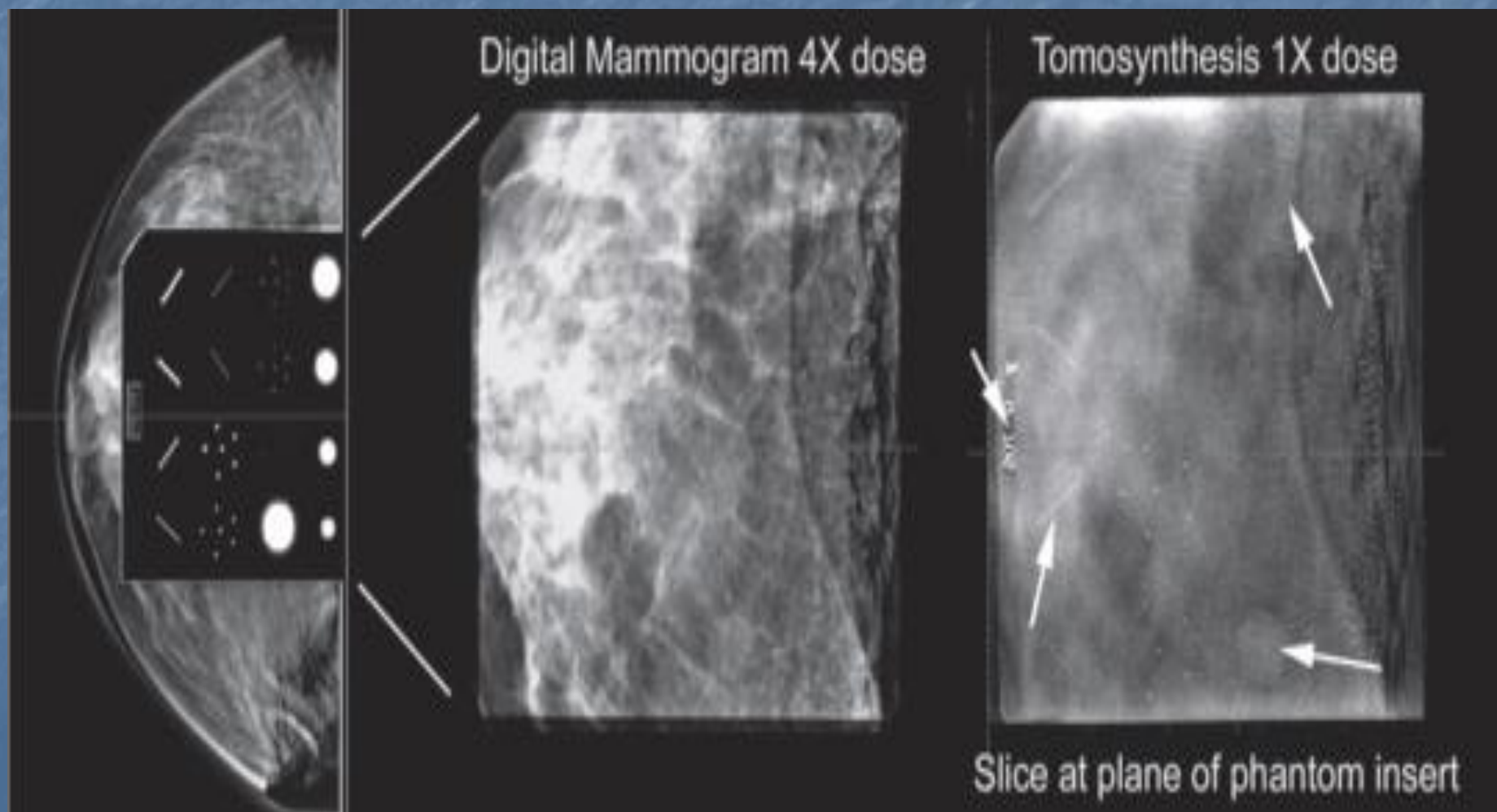
Ultrasound Solid Breast Mass



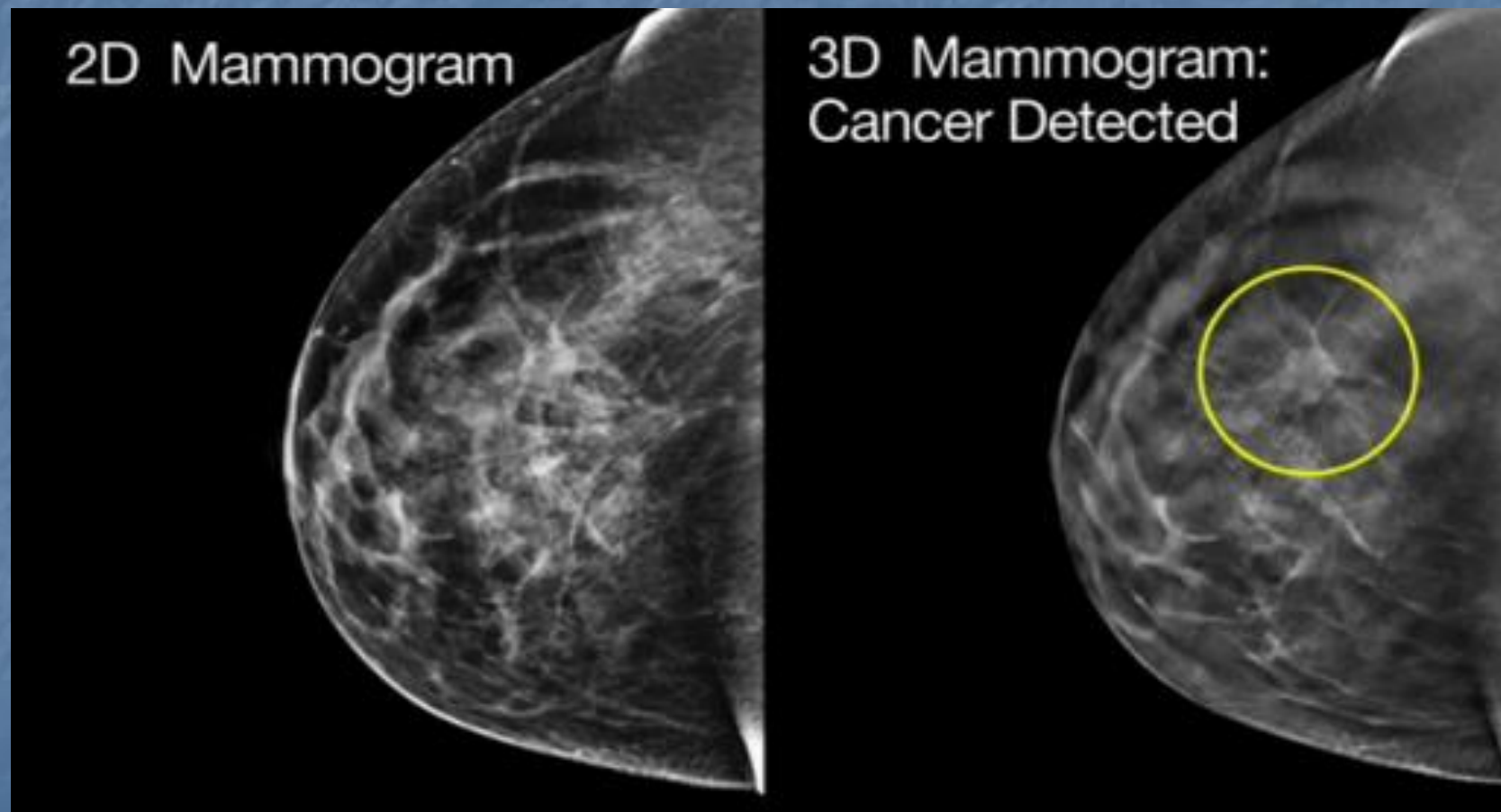
Molecular Breast Imaging



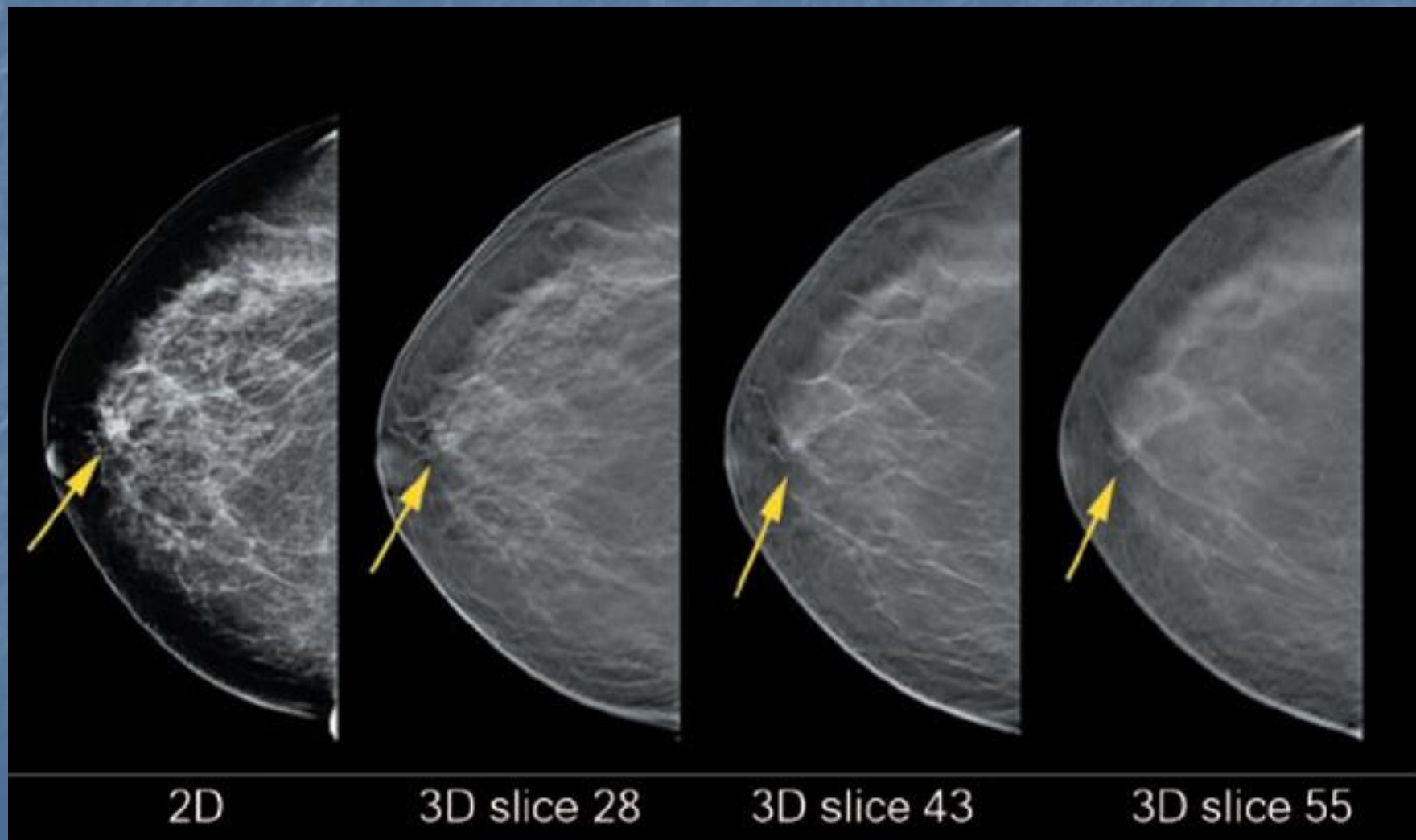
3D Breast with ACR Phantom



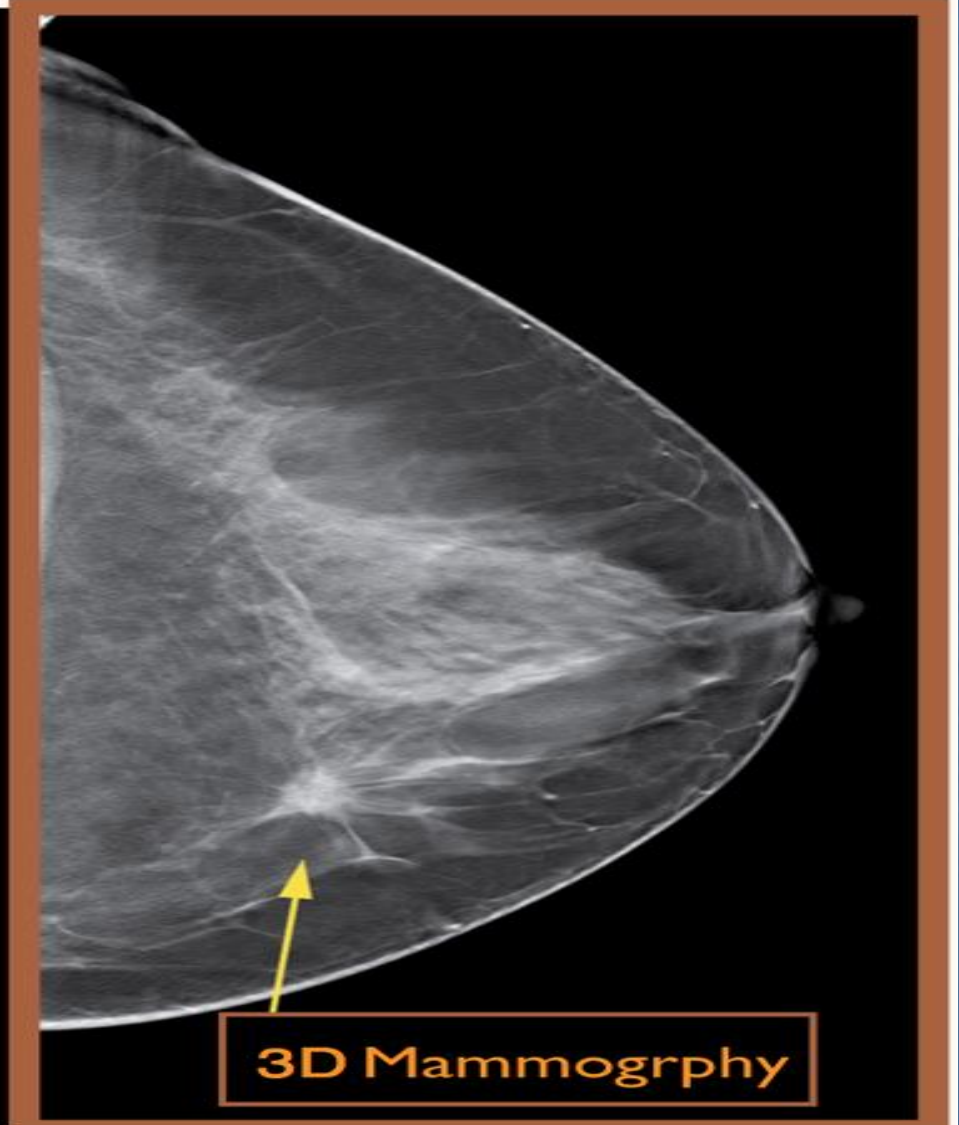
Tomosynthesis/3D Mammogram



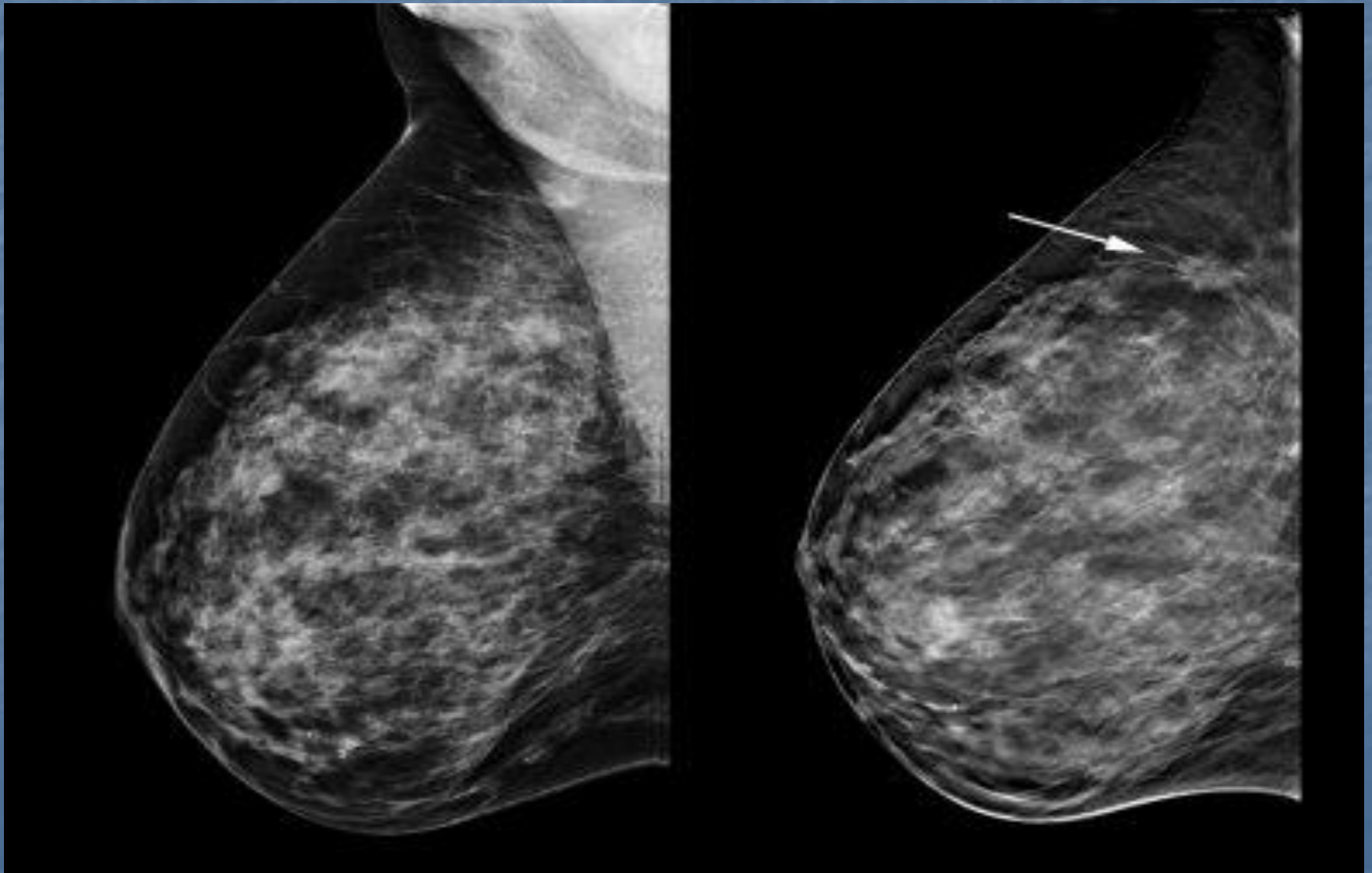
Tomosynthesis/3D Mammogram



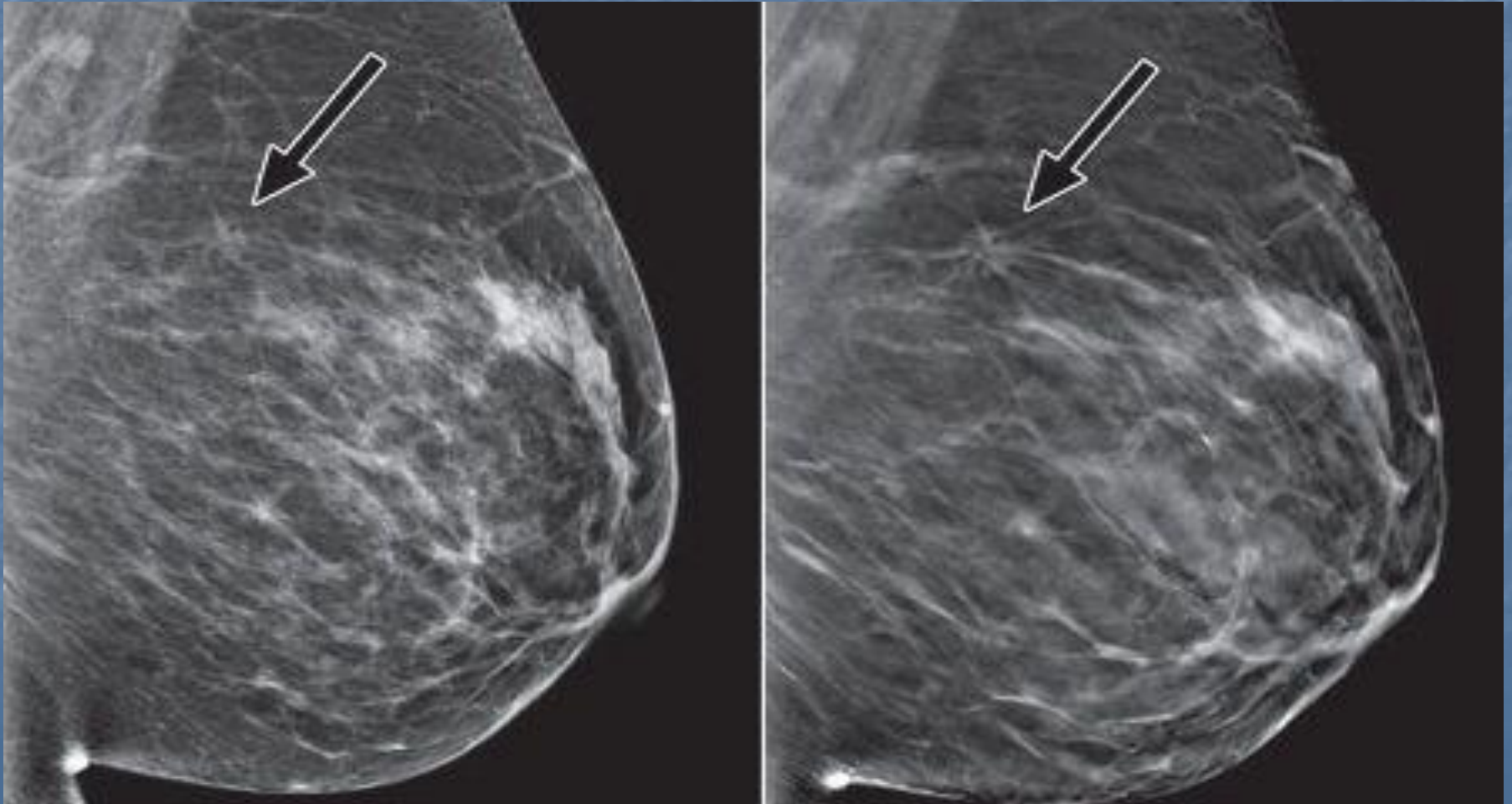
Tomosynthesis/3D Mammogram



Tomosynthesis/3D Mammogram



Tomosynthesis/3D Mammogram



DATA

MODALITY	EQUIPMENT COST
3D Tomosynthesis	\$122,900
Molecular Imaging	\$300,000 - \$500,000
Breast MRI	\$180,700

CONCERN

- Our current armamentarium for breast imaging consists of digital mammography and diagnostic ultrasound.
- The public is becoming aware and I've experienced several patients asking me about breast MRI and 3D mammography.
- Our competitors, Munson Medical Center and Spectrum Health, Ludington are both getting 3D mammography this year. Munson already has breast MRI.

ALTERNATIVES

- Molecular Imaging

ADV-Higher sensitivity than 3D (Debatable)

DIS-radiation dose excessive

- requires dedicated machine and additional room/very expensive
- Not payable by B/C yet

ALTERNATIVES

- Breast MRI

ADV-Most sensitive option

- Already have trained radiologists
- Experienced technologist
- Only equipment needed is coil & SW
- Useful aid to surgeons for pre operative planning and follow up
- Payable by B/C
- Positive ROI 68% over 5 years (Based on current charges)

DIS-Provides more false positives than other options.

-Very difficult to get commercial insurance companies to approve payment.

ALTERNATIVES

- 3D Tomosynthesis

ADV-Least expensive option

- Positive ROI (117% over 5 years) at our payer mix Medicare/Commercial rates.
- Very popular with public, i.e. 3D
- Adds diagnostic value to our screening program

DIS-Takes more PACS space

- Takes longer to read
- Not payable by B/C yet.



RECOMMENDATION

CONCLUSION. Mammographic screening has dramatically reduced breast cancer deaths, but it does not depict all cancer early enough to result in a cure. In addition, because of the recall rates associated with mammography, efforts are underway to reduce access to screening. Use of DBT improves sensitivity and specificity, and there is no longer a need to obtain full-exposure 2D mammograms. **DBT will replace standard 2D mammography for breast cancer screening.**

(AJR FEB 2014, VOL 202 NUMBER 2)

Read More: <http://www.ajronline.org/doi/abs/10.2214/AJR.13.11520>

RECOMMENDATION

The best option is to buy tomosynthesis (3D mammography) now and wait on breast MRI until we can be assured of a positive ROI.

BUDGETED FYE 2017

7040 Radiology MRI Breast Coil and SW
subject to business plan (\$255,000) –

7040 Radiology Ultrasound machine
subject to business plan (165,000) -

Annual Volume / Revenue by Payer Mix

Annual Reimbursement Breast Tomosynthesis (3D Mammography)

2594 procedures /year

CARRIER		ANNUAL TESTS	PAYMENT	REIMBURSSMENT
Medicare	52%	1348	\$25.42	\$34,266
Blue Cross	18%	467	-0-	-0-
Medicaid	17%	441	\$25.42	\$11,210
Others	13%	337	\$75.00	\$25,275
Total Annual Revenue				\$70,751 (Incremental Income)

Assumes a \$100/exam charge and paid 75% from commercial (others). CPT 77063 (Screening digital breast tomosynthesis) in addition to G0202 (Direct digital screening mammogram) or CPT G0279 (Diagnostic digital breast tomosynthesis, unilateral or bilateral (List separately in addition to G0204 and G0206)).

ROI Tomosynthesis/3D

(Gain – Cost) /Cost

Total Years	Total Revenue	ROI
5 Years	\$353,755	117%
4 Years	\$283,004	85%
3 Years	\$212,253	48%
2 Years	\$141,502	6.5%
1 Year	\$70,751	-42%

IMPLEMENTATION

- Hardware and software installation by Siemens x 2 days.
- Training provided by Siemens.
- Dr. Fleszar has read 3D breast in Florida.
Dr. Raymond won't require training in tomosynthesis.