Epworth Healthcare
Benign Breast Disease Symposium

Sat Nov 12th 2016

- Breast cancer is common
- Benign breast disease is commoner, and anxiety about breast disease commoner still
- Breast Care Campaign UK commissioned a poll to enquire into women's knowledge and attitudes about breast health
- 47 % of the sample admitted to anxiety about their breasts
- 62 % were anxious about developing cancer, including 40 % of women in the 16–39 age group, in whom cancer is rare.

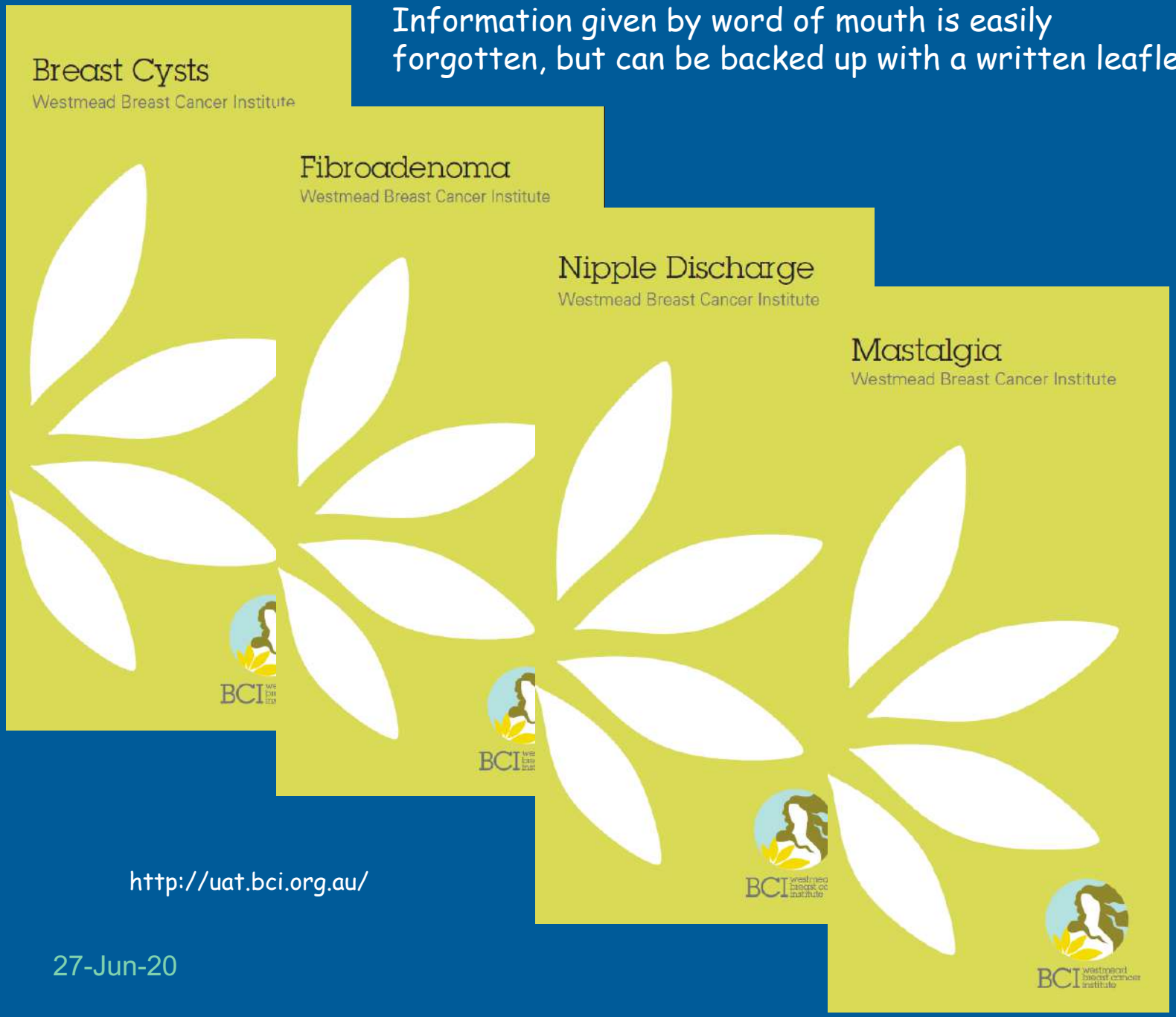
- Over 90 % of patients who develop breast symptoms or signs have normal breasts or benign breast disease

- An understanding of the causes of benign breast conditions, their symptoms and their management will ensure that patients who have benign disease are treated correctly and are happy with their consultation

- Benign breast disease continues to cause considerable morbidity and anxiety, and with increasing patient awareness and expectation, the number of patients seeking referral for benign breast conditions is increasing

- Effective treatment includes making an accurate diagnosis followed by an adequate explanation of the condition and provision of relevant information related to both the diagnosis and how the condition is best managed

Information given by word of mouth is easily forgotten, but can be backed up with a written leaflet



http://uat.bci.org.au/

When a patient presents with a breast problem the basic question for the general practitioner is,

"Is there a chance that cancer is present, and, if not, can I manage these symptoms myself?"

Investigation of ANY breast symptom requires the diagnosis or exclusion of Breast Cancer

Almost every patient with a breast symptom fears that breast cancer is the cause

Triple Assessment of Breast Symptoms

12 practices identified as appropriate or inappropriate for the provision of breast cancer care in Australia.

"Not appropriate to confirm or exclude a diagnosis of breast cancer without undertaking the triple test, which involves:

- taking a patient history and clinical breast examination;
- imaging tests (mammogram and/or ultrasound); and
- biopsy to remove cells or tissue for examination"

90% of breast symptoms are NOT due to CANCER

What do we know?

- >50% breast cancers found because of a breast change
- GP is the first port of call
- GP initiates the triple test by taking a history, performing a clinical examination and ordering appropriate imaging

NATIONAL BREAST CANCER CENTRE
Incorporating the Ovarian Cancer Program

This guide indicates steps to be taken in investigating symptoms that could be breast cancer. The individual patient history and circumstances (eg, a very strong family history or previous personal history of breast cancer) must be taken into account and may influence the investigative process for any particular woman. This is a guide to appropriate practice subject to the medical practitioner's judgment of each individual case.

The investigation of a new breast symptom

a guide for General Practitioners FEBRUARY 2006

Endorsed by

ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

INTRODUCTION

The National Breast Cancer Centre (NBCC) has developed this guide to maximise the effectiveness of investigation of women who present to their general practitioner with a new breast symptom. A review of the evidence forms the basis of the recommendations. Where the evidence is lacking, expert consensus opinion has been incorporated.

It is acknowledged that expertise and resource availability may vary across different practice settings.

THE TRIPLE TEST APPROACH TO DIAGNOSIS

The triple test refers to three diagnostic components:

- medical history and clinical breast examination
- imaging – mammography and/or ultrasound
- non-excision biopsy – fine needle aspiration (FNA) cytology and/or core biopsy.

The sensitivity of the 'triple test' is greater than any of the individual components alone. **The triple test is positive if any component is indeterminate, suspicious or malignant.**

The correct sequencing of tests is important to the overall interpretation of the results (refer to flow chart).

It is the responsibility of the managing clinician to correlate the cytological/histological results with the clinical and imaging findings.

Relative frequencies of presenting symptoms of breast cancer*

Lump	76%
Pain alone	10%
Nipple changes	8%
Breast asymmetry or skin dimpling	4%
Nipple discharge	2%

** Based on the presentation of symptomatic women to the Breast Unit of the Peter MacCallum Cancer Centre, Melbourne, in 2004. We acknowledge the assistance of the Unit and Henderson MA, Power AM and McPhail T for providing the information.*

PATIENT HISTORY AND CLINICAL EXAMINATION

A detailed history and thorough clinical examination provide important information on which to base further investigation, and should be accurately documented.

Patient history

Relevant history includes details of:

- current medications or recent changes in medication, especially exogenous hormones
- hormonal status /menstrual history
- parity /age at first full-term pregnancy
- previous breast problems, particularly previous breast investigations, biopsy results
- risk factors, particularly strong family history of breast / ovarian cancer. For further information see NBCC guide *Advice about familial aspects of breast cancer and ovarian cancer: a guide for health professionals*
- most recent imaging /date and results /screening or diagnostic.

History of presenting symptom

- site — constant or changing
- duration — when and how first noted
- any changes since first noted
- relationship to menstrual cycles or exogenous hormones
- associated symptoms.

NIPPLE CHANGES

Benign nipple changes include:

- slit-like retraction
- able to be everted.

Clinically abnormal or suspicious nipple changes:

- colour change
- fixed whole nipple inversion
- ulceration.

Clinical breast examination

Inspection should take place in a good light and with the patient:

1. with arms by her side
2. with arms raised above head
3. pressing on hips and leaning forward (contracting pectoral muscles).

Pay particular attention to:

- breast contours — skin changes such as erythema, dimpling or puckering, peau d'orange, visible lumps
- nipples — height, any inversion, erythema, eczema, nodules, ulcers.

The ability to identify breast cancers by palpation is influenced by the characteristics of the tumour, the surrounding breast tissue and the position of the lesion in the breast.

Palpation with the flat of the fingers:

patient seated or standing:

- palpate supraclavicular and axillary fossae
- palpate breasts, particularly upper quadrants and bimanual examination

patient lying flat with ipsilateral arm behind her head:

- palpate all quadrants and axillary tail and around and behind nipple
- the non-examining hand may be used to immobilise a large breast
- a pillow positioned under the shoulder may assist in examining the outer quadrants of a large breast.

Recording

Details of any lump — including size, shape, consistency, mobility, tenderness, fixation and exact position - should be recorded.

The source for the evidence used in this document is the NBCC report *Evidence relevant to guidelines for the investigation of breast symptoms. Second edition.* February 2006.

The investigation of a new breast symptom (other than nipple discharge)

HISTORY

CLINICAL EXAMINATION

- no lump / no discrete lesion
- thickening or nodularity consistent with hormonal change
- clinically benign mass or benign nipple change
- don't know
- suspicious or malignant breast or nipple change — *refer to surgeon, preferably with further test results*

- mammogram if due (follow screening guidelines)
- treat any pain
- review in 2—3 months (immediately after period) and
- **if problem persists, send for imaging (see below)**

IMAGING: MAMMOGRAPHY AND/OR ULTRASOUND (SEE NOTES)

- normal breast tissue or no discrete lesion (category 1)*
- benign (category 2)*
  - simple cyst *if symptomatic*
  - solid lesion or complex cyst
- indeterminate / equivocal (category 3)*
- suspicious or malignant (category 4 or 5)*

refer to surgeon irrespective of other test results

- **If consistent** with clinical findings:
  - reassure
  - advise re breast awareness
  - advise re future screening
- **If inconsistent with clinical findings non excisional biopsy required**

FINE NEEDLE ASPIRATION

- normal fluid (straw to dark green), and no lump remains
- bloody fluid (not traumatic) and no lump remains
- lump remains (whether normal or bloody fluid)

- **reassure**
  - advise review if refills
- **If persistent refilling** ***refer to surgeon***

send fluid to cytology

refer to surgeon irrespective of pathology

further views may be helpful

PATHOLOGY: FNA CYTOLOGY OR CORE BIOPSY (SEE NOTES)

- inadequate / insufficient (category 1)**
- adequate and representative specimen
  - benign (category 2)**
  - atypical / indeterminate (category 3)**
  - suspicious or malignant (category 4 or 5)**

if all previous results benign, repeat biopsy **otherwise** *refer to surgeon*

if consistent with clinical and imaging findings, reassure **If inconsistent** *refer to surgeon*

refer to surgeon

* **Standardised breast imaging classification system** – see NBCC's *Breast imaging: a guide for practice*

** **Standardised FNA cytology and core biopsy classification system** – see NBCC's *FNA cytology and core biopsy: a guide for practice*

TRIPLE ASSESSMENT

- **Clinical** (History/Examination)
- **Imaging** (Mammography/Ultrasound +/- MRI)
- **Biopsy** (Fine Needle Aspiration/Core Biopsy)

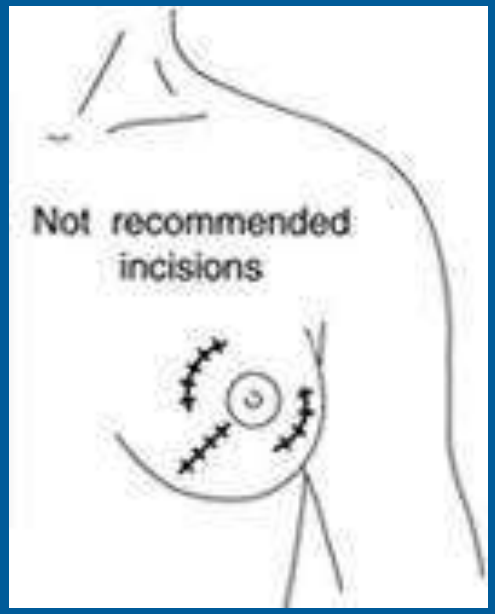
TRIPLE ASSESSMENT IS POSITIVE

IF ANY COMPONENT IS INDETERMINATE, SUSPICIOUS OR MALIGNANT

Aims of Triple Assessment

- Maximise diagnostic accuracy
- Maximise preoperative diagnosis in breast cancer
- Minimise excisional biopsies for diagnosis

Poor Incisions/ Poor Technique



Recommended Incisions

Poor Scarring

- ALL palpable lumps require full triple assessment, irrespective of the perceived risk category of the patient.

AIM

Maximise diagnostic accuracy

Maximise preoperative diagnosis in breast cancer

Minimise excisional biopsies for diagnosis

PROBABILITY OF DEVELOPING BREAST CANCER

By age 25	1 in 11,571
By age30	1 in 2,082
By age 35	1 in 589
By age 40	1 in 228
By age 45	1 in 103
By age 50	1 in 54
By age 55	1 in 32
By age 60	1 in 22
By age 65	1 in 16
By age 70	1 in 13
By age 75	1 in 11
By age 80	1 in 9
By age 85	1 in 8

AGE

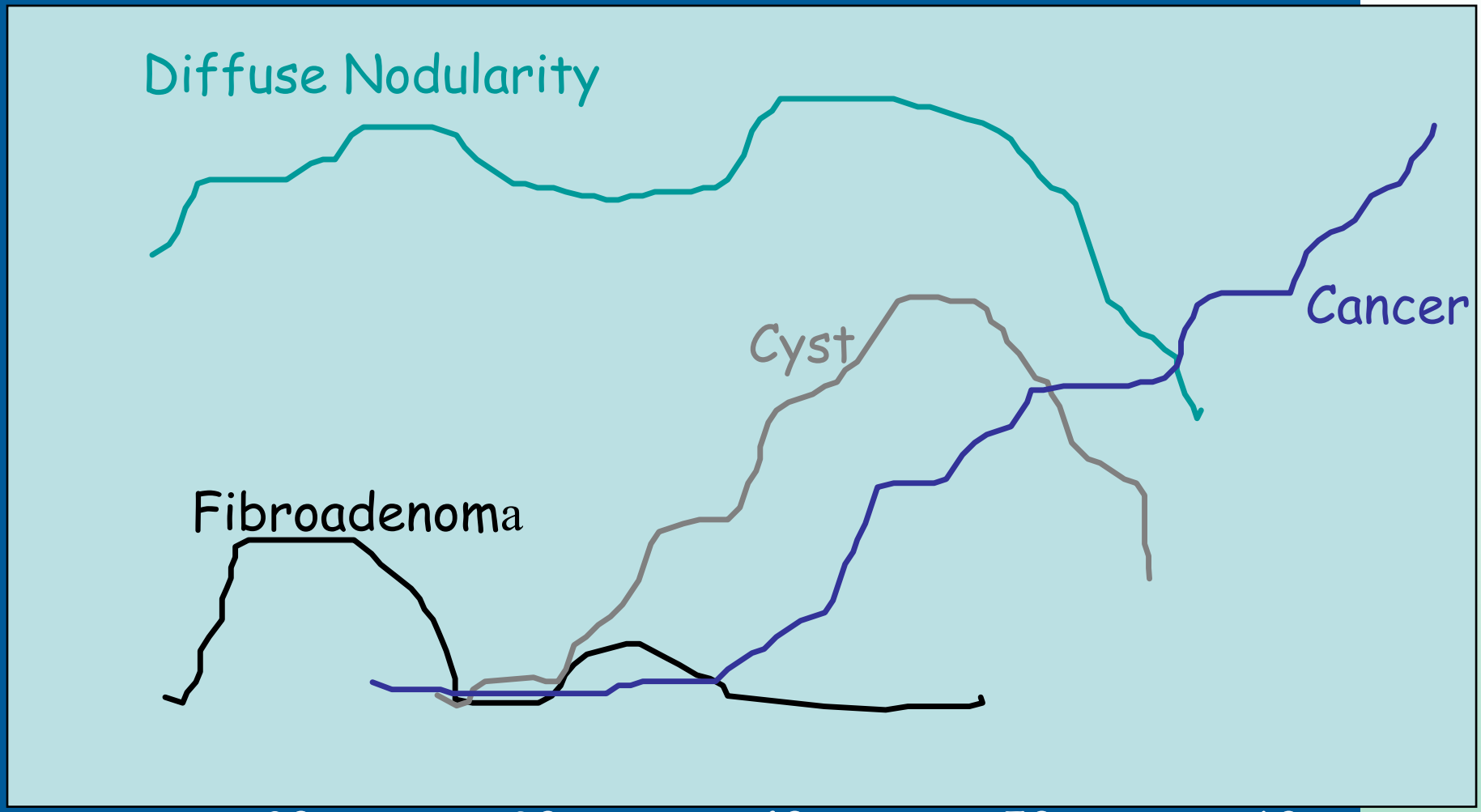
A woman has a 1 in 8 chance of being diagnosed with breast cancer by the age of 85

If a woman is now	Her risk in the next 10 years is 1 in
20	2532
30	242
40	67
50	36
60	29
70	32

Age	Number of new cases	% New cases
<40	674	6%
40-49	2140	18%
50-69	5802	49%
>70	3175	27%

75% breast cancers diagnosed in women over 50

Relative frequency of breast disorders



For a triple test to be negative

ALL three components:

- Clinical breast examination
- Medical Imaging
- Biopsy

Must be benign or normal

The Triple Test

Completion of the triple test is multidisciplinary:

- Clinician (GP/breast surgeon)
- Radiologist
- Pathologist

- The key is the review of all results and correlation with the presenting symptom

One clinician must take responsibility

THE TRIPLE TEST

The table below is presented to help clinicians interpret the probability of cancer based on diagnostic information from the triple test and its components.

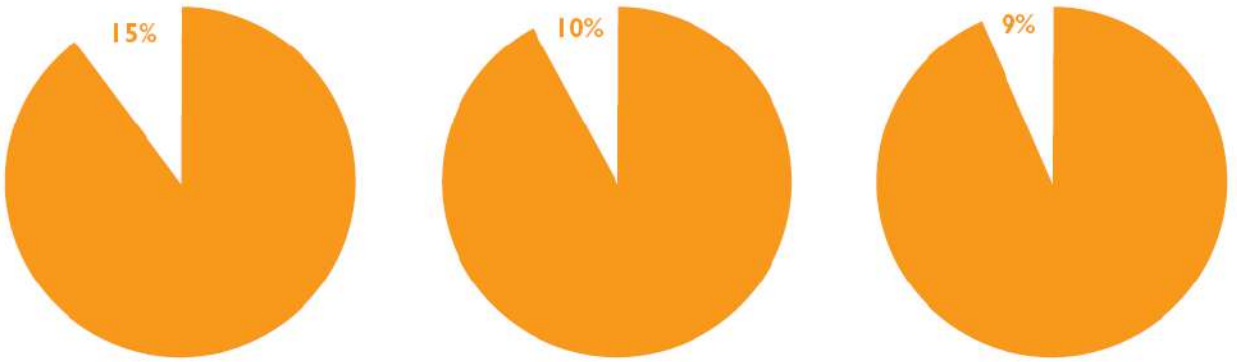
Accuracy of the triple test and each of its components

	Triple Test	Clinical Examination	Imaging (Mammography & Ultrasound)	Non-excision Biopsy (FNAC & Core Biopsy)
TPR, %	> 99.6	85	95	90
FPR, %	< 38	20	8	0.5
Specificity, %	> 62	90	92	99.5

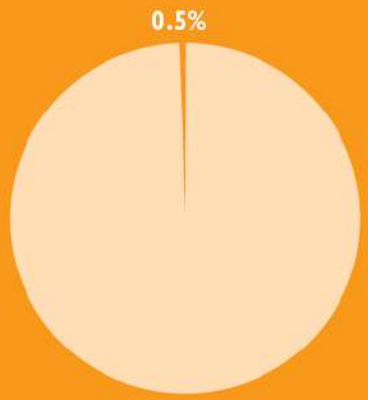
TPR = True Positive Rate (sensitivity) *FPR = False Positive Rate (1- specificity)*

- The sensitivity or true positive rate of the triple test is 99.6%. That means that in women who have breast cancer, the triple test will detect that cancer in 99.6% of cases.
- The specificity of the triple test is 62%. That means that in women who have no cancer, you will get a normal result in 62% of cases. This gives a false positive rate of 38%. That means that in women who have no cancer, the triple test will be positive in 38% of cases.
- This is because we include those classified as 'indeterminate/equivocal' in any one of the three components of the test as a positive outcome.
- For a test to be reliable in detecting an abnormality, you need a high sensitivity and thus the false positive rate will be high.

Frequency of cancers missed by each test



Frequency of cancers missed in women when all three tests have been performed



HISTORY

- Sex
- Age
- Family History
- Personal Breast History
- Reproductive History
- Hormonal Treatment
- Previous Breast Imaging

DOCUMENT ALL OF THE ABOVE

Breast Self Examination (BSE)

- Historically promoted by public health campaigns starting in the 1950s
- 2 large RCT early 1990s showed no reduction in mortality
- Rate of Ix 60% higher in BSE group

POSITION STATEMENT

Early detection of breast cancer

Cancer Council Australia

Epworth

June 2009

POSITION STATEMENT

August 2004

EARLY DETECTION OF BREAST CANCER

NATIONAL BREAST CANCER CENTRE

Incorporating the Ovarian Cancer Program

Updated Dec 2009

Research has not shown routine, systematic breast self examination to be effective in reducing deaths from breast cancer.

Women who choose to practice BSE should be informed that its efficacy is unproven and that it may increase their chances of having a benign breast biopsy.

CLINICAL BREAST EXAMINATION (CBE)

"Breast examination by a health professional"

- No direct high quality evidence for efficacy as a screening tool
- Was included in some of the mammographic screening trials
- Pooled data from studies give an overall estimate for the sensitivity of the CBE of 54%
  - i.e. 46% masses missed
- 4 percent of women with an abnormal CBE will be subsequently diagnosed with cancer.
- RACGP DOES NOT RECOMMEND CBE AS A ROUTINE SCREENING TEST

May be important for high risk groups and women who do not require regular mammography

Guidelines for preventive activities in general practice

9.3 Breast cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	>80

For women at average risk and aged 50–69 years, screening by mammogram every 2 years is recommended **(A)**. For women who are eligible and attending for regular mammographic screening, there is no evidence that clinical breast examination will provide additional benefit **(E)**. Mammographic screening is not recommended for women at average risk under 40 years of age. All women should be advised to be familiar with the normal look and feel of their breasts and to report any new or unusual changes to their GP without delay. No specific technique is promoted for breast self examination as there is no evidence of the effectiveness of any one approach. The breast awareness approach should be seen as a supplement to, not a substitute for, regular mammograms in women within the target age range for screening.[390]

Table 1. Advantages and disadvantages of clinical breast examinations

Advantages	Disadvantages
Early detection of disease	False reassurance
Allay anxiety	Cause anxiety
Facilitates discussion of personal details	False positives/negatives
Patient education	Over examination
Recognition of normality	Women do not like them
Avoid litigation	Invasive and uncomfortable
'Better than nothing'	Time
	Chaperone needed (male GPs)

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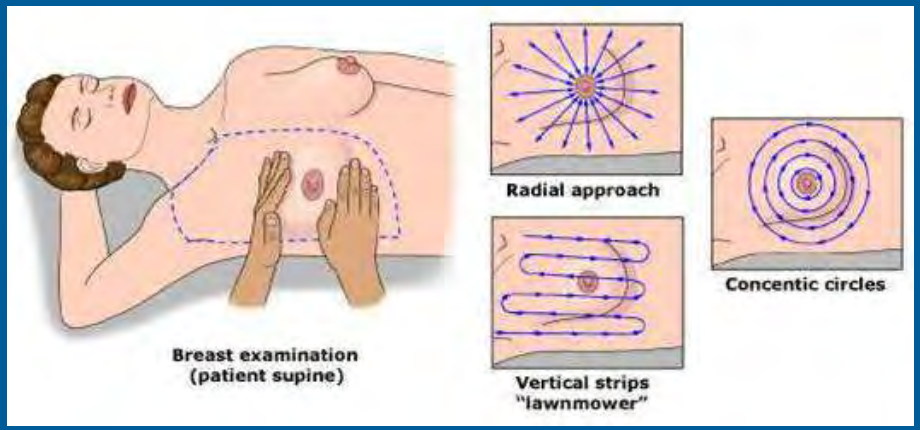
CLINICAL BREAST EXAMINATION (CBE)



- Adopt a consistent personal technique
- Always document findings
- Consider using standard 1-5 classification

Breast Imaging

Women with breast symptoms should be referred for

Diagnostic Imaging Assessment

NOT

to a

Breast Screening Service

Diagnostic vs Screening Mammography

Screening mammography

- Patient should be asymptomatic
- Generally, the radiologist does not see films until the patient has left the radiology department

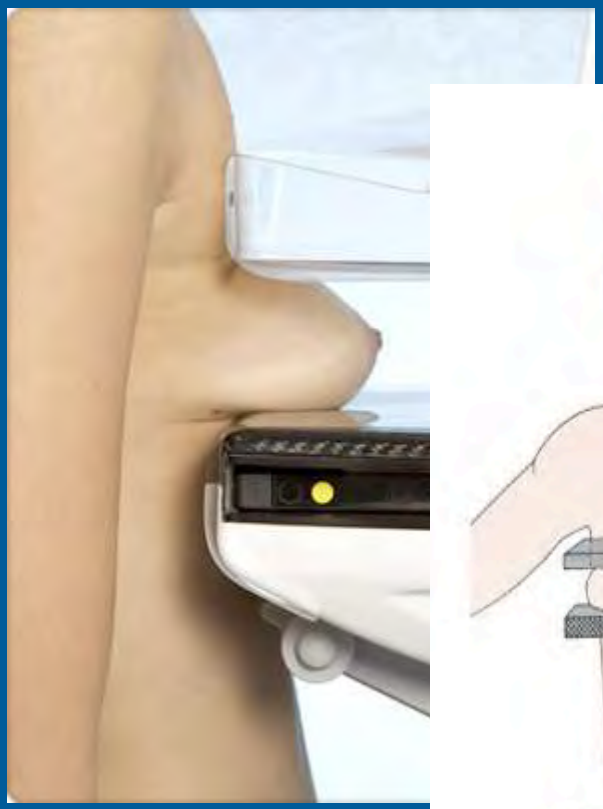
Diagnostic mammography

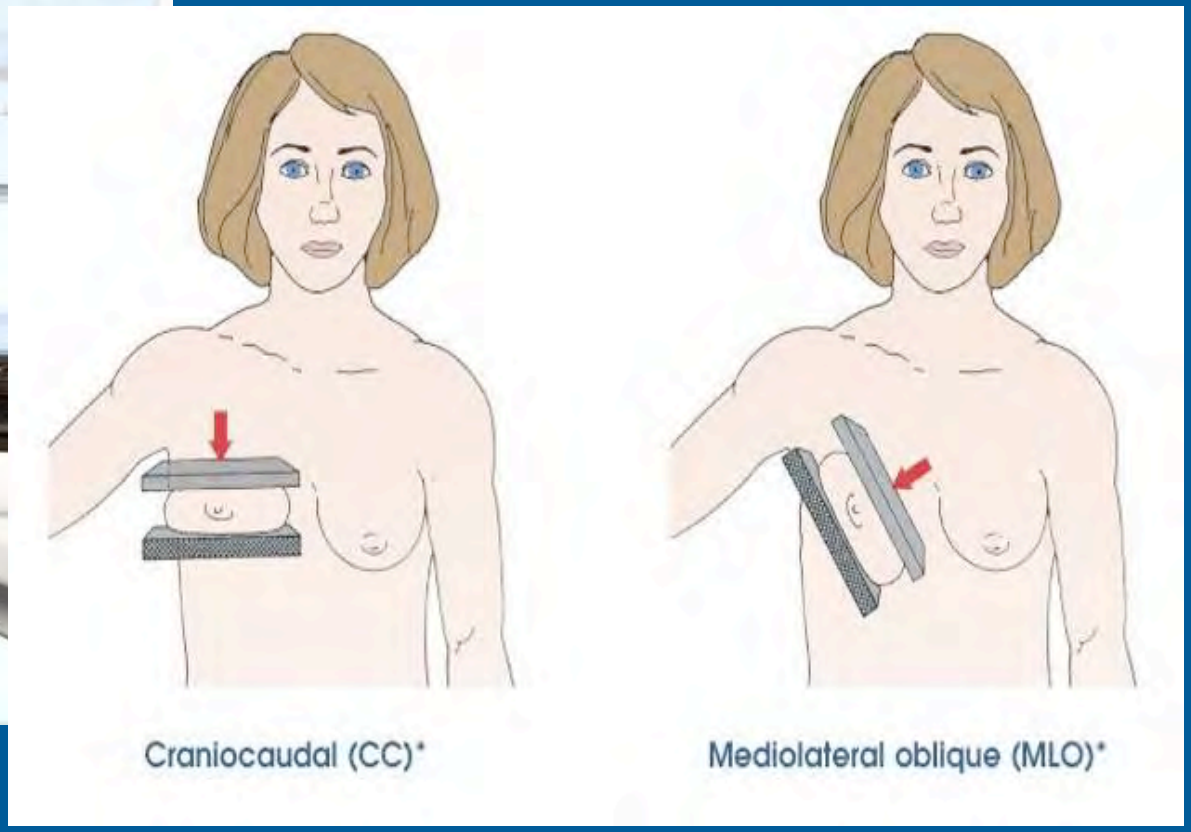
- Patients with breast signs or symptoms (palpable lump, pain, nipple discharge)
- Patients with abnormality detected on screening mammogram
- Performed under the supervision of a radiologist
- Additional specialized mammographic views +/-U/S

Routine Mammography

Consists of two images of each breast

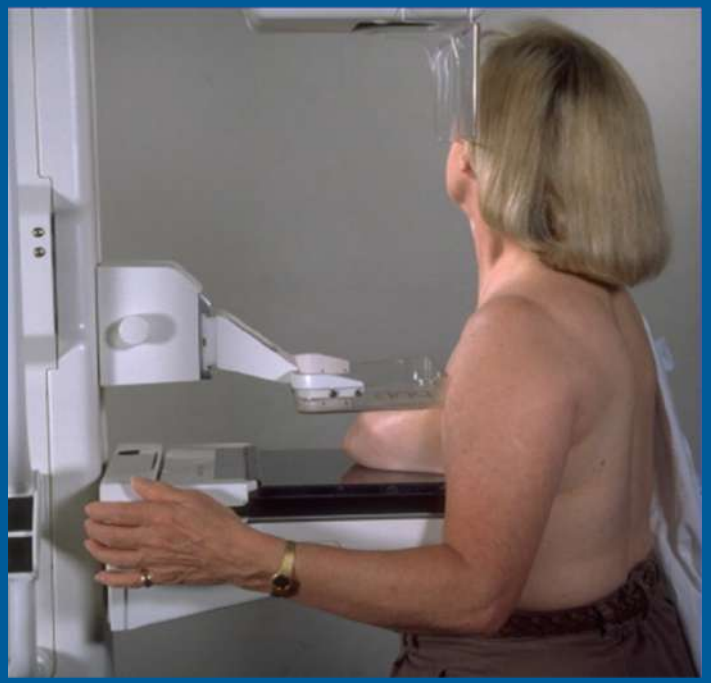
- Craniocaudal (CC)
- Medial-lateral-oblique (MLO)





- Breast is positioned on the support platform

- Compression is applied to;
  - Hold the breast still during exposure to reduce motion unsharpness
  - Reduce the thickness of tissue so lower exposure factors can be used (lower dose)
  - Spread the anatomy out to minimise overlaying structures (improve contrast)



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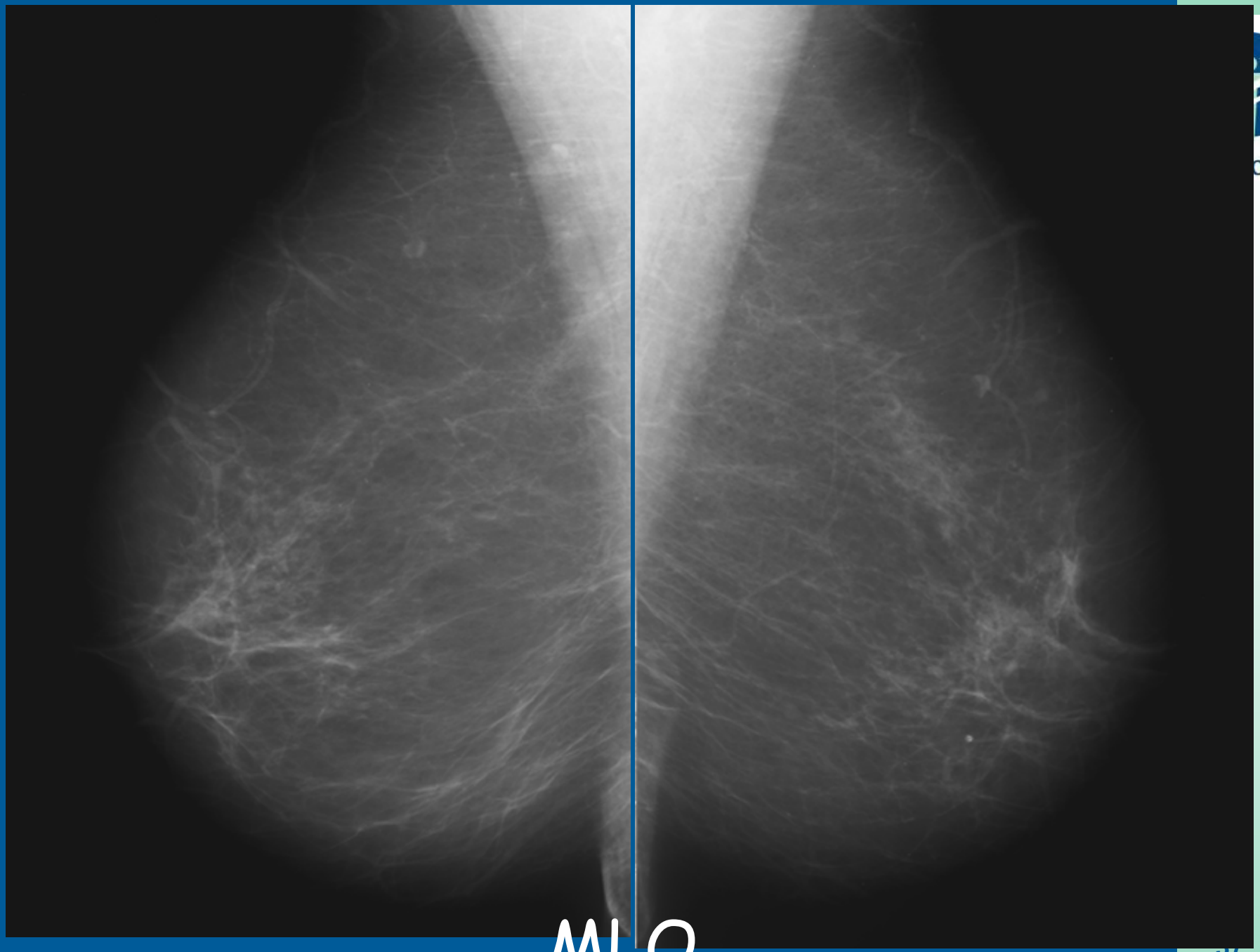
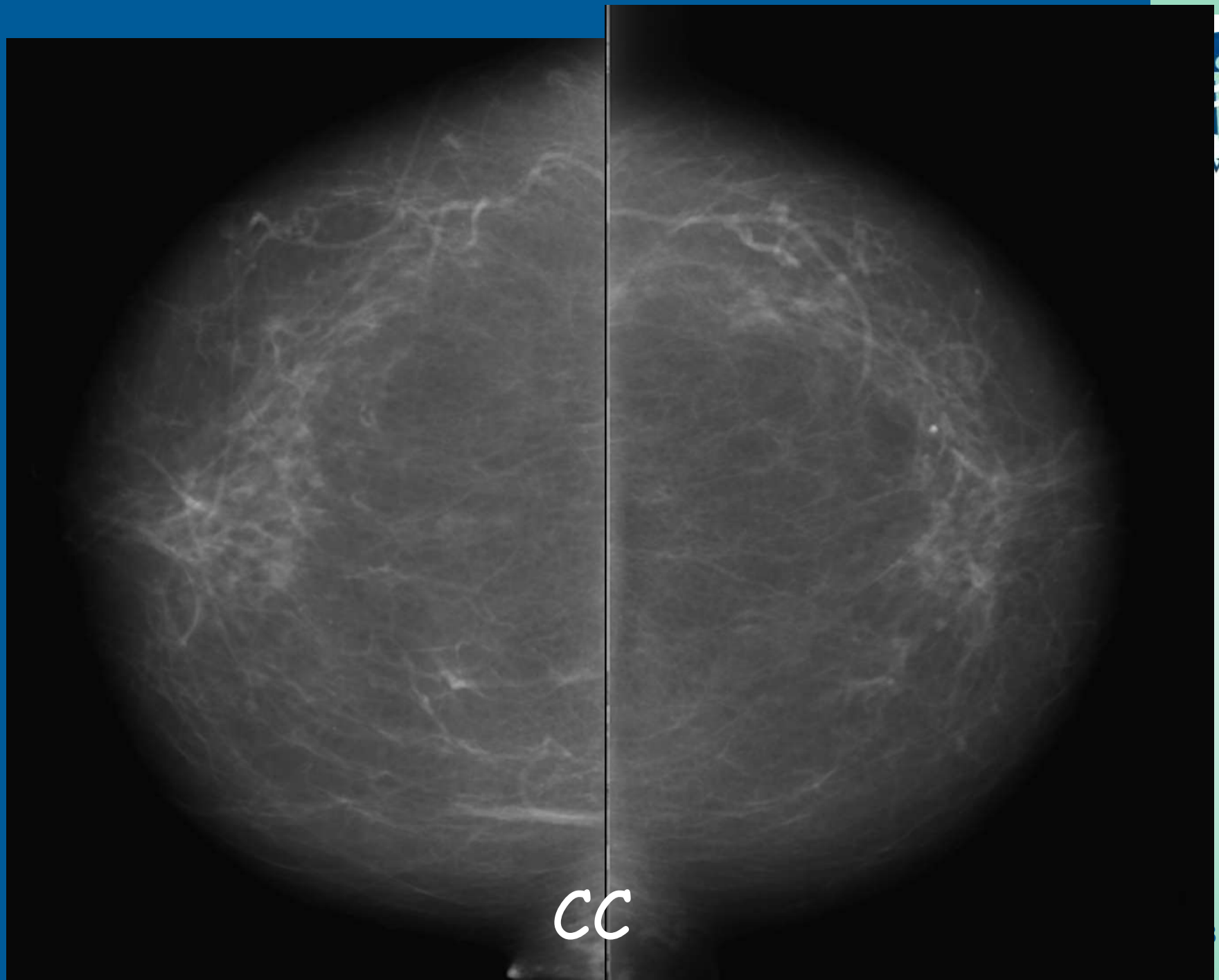
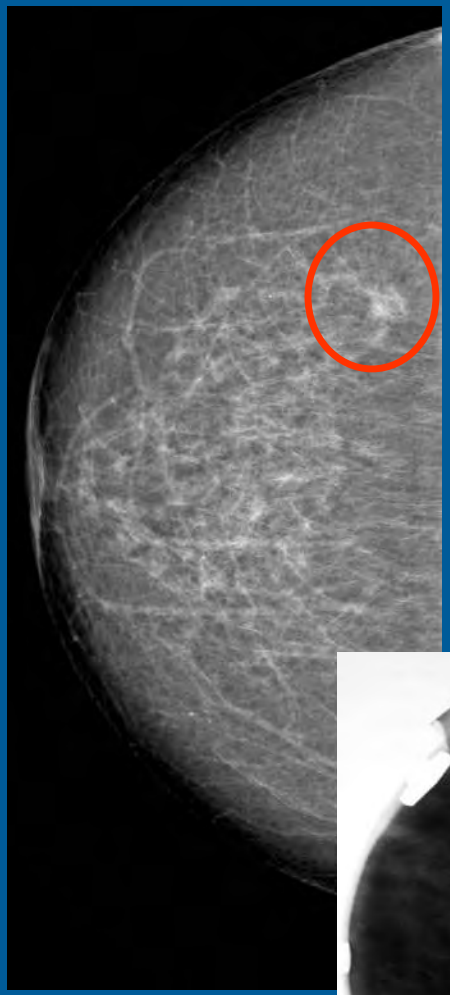
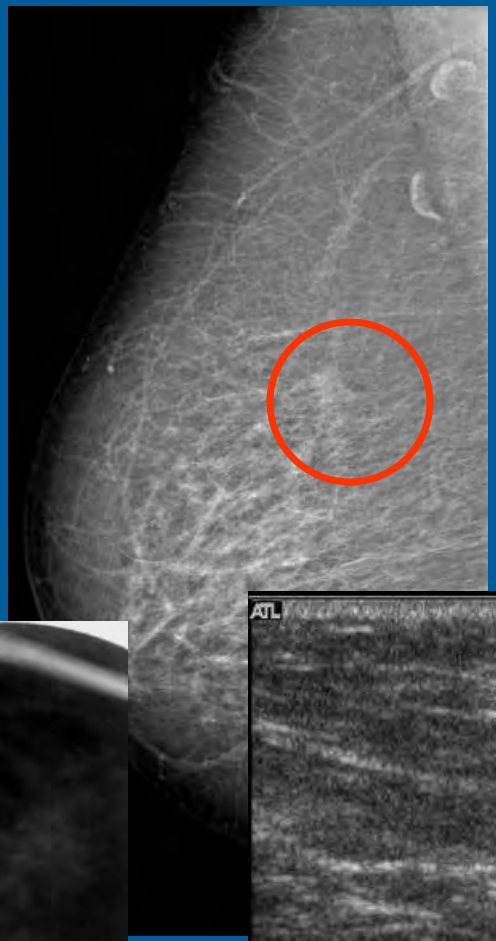


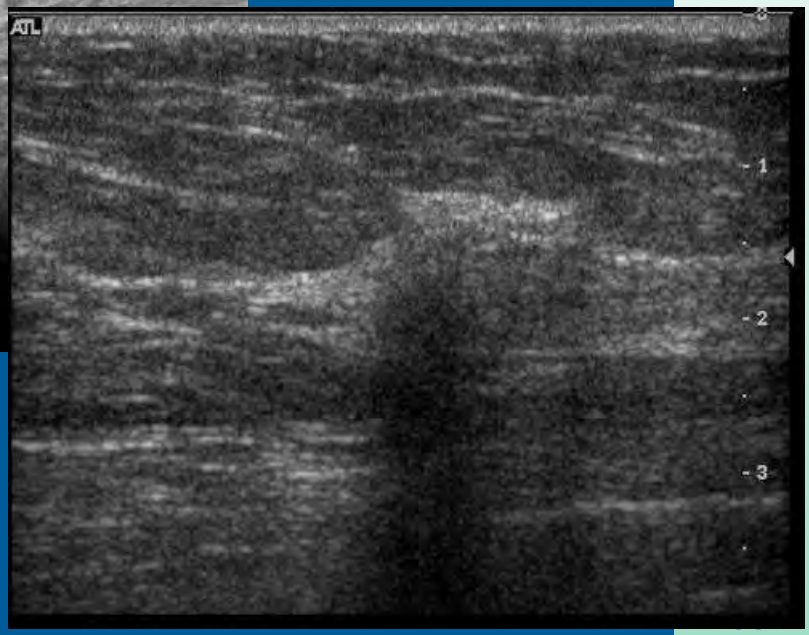
MLO

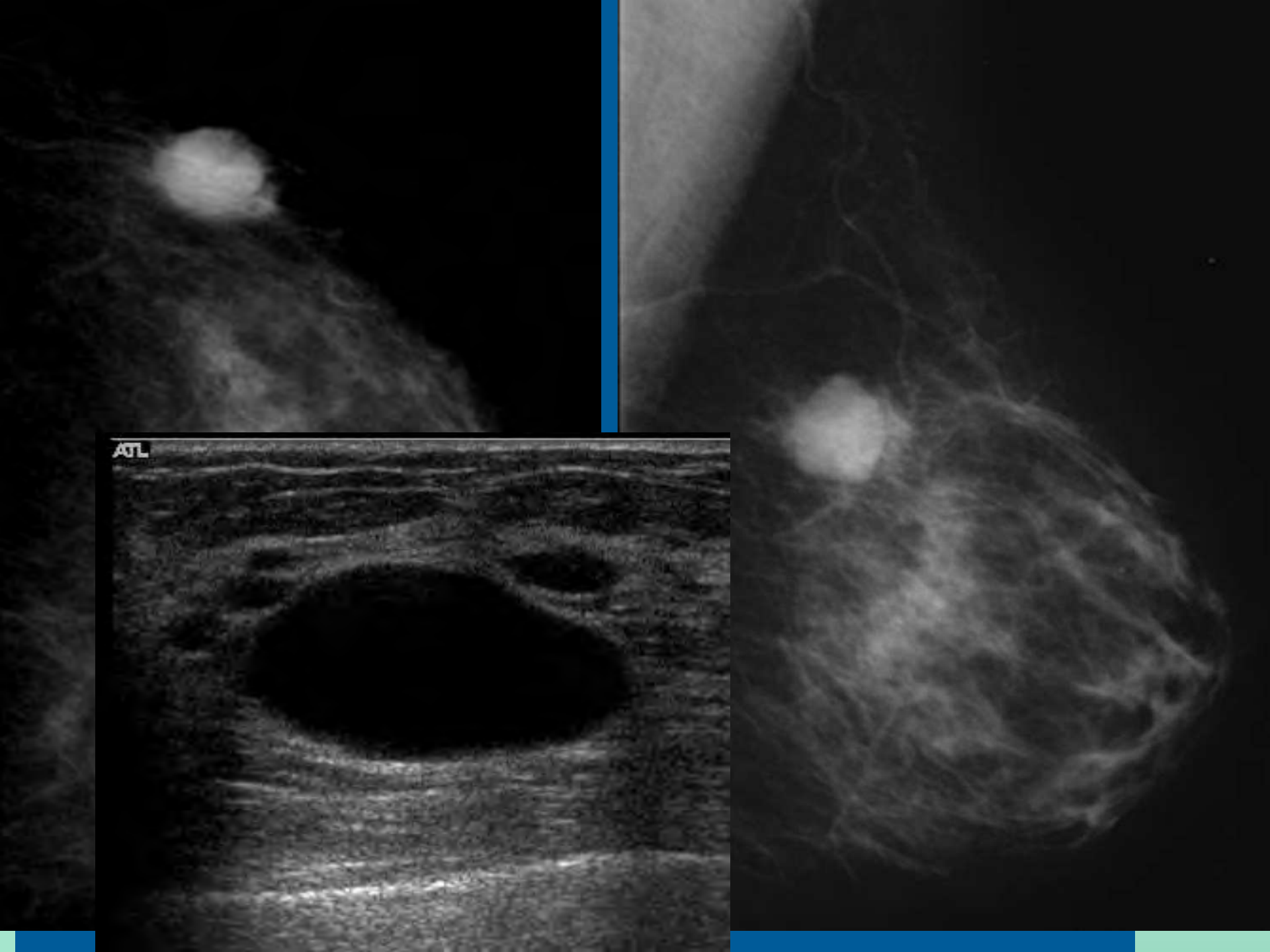

CC

Diagnostic Imaging Workup





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Diagnostic Breast Imaging

First imaging modality is ultrasound if:

- pt < age 35 years
- pregnancy and lactation

(Add mammography if the lesion is suspicious on clinical or ultrasound examination)

- 35 – >50 years: mammography and targeted ultrasound are complementary

Breast Density

- Cannot be predicted based on physical exam
  - Unrelated to breast size or consistency
- More common in younger women, during breast feeding, women using hormone replacement therapy
- 60% of women under 50
- 40% of women in their 50s
- 25% of women in their 60s
- have radiographically dense breasts

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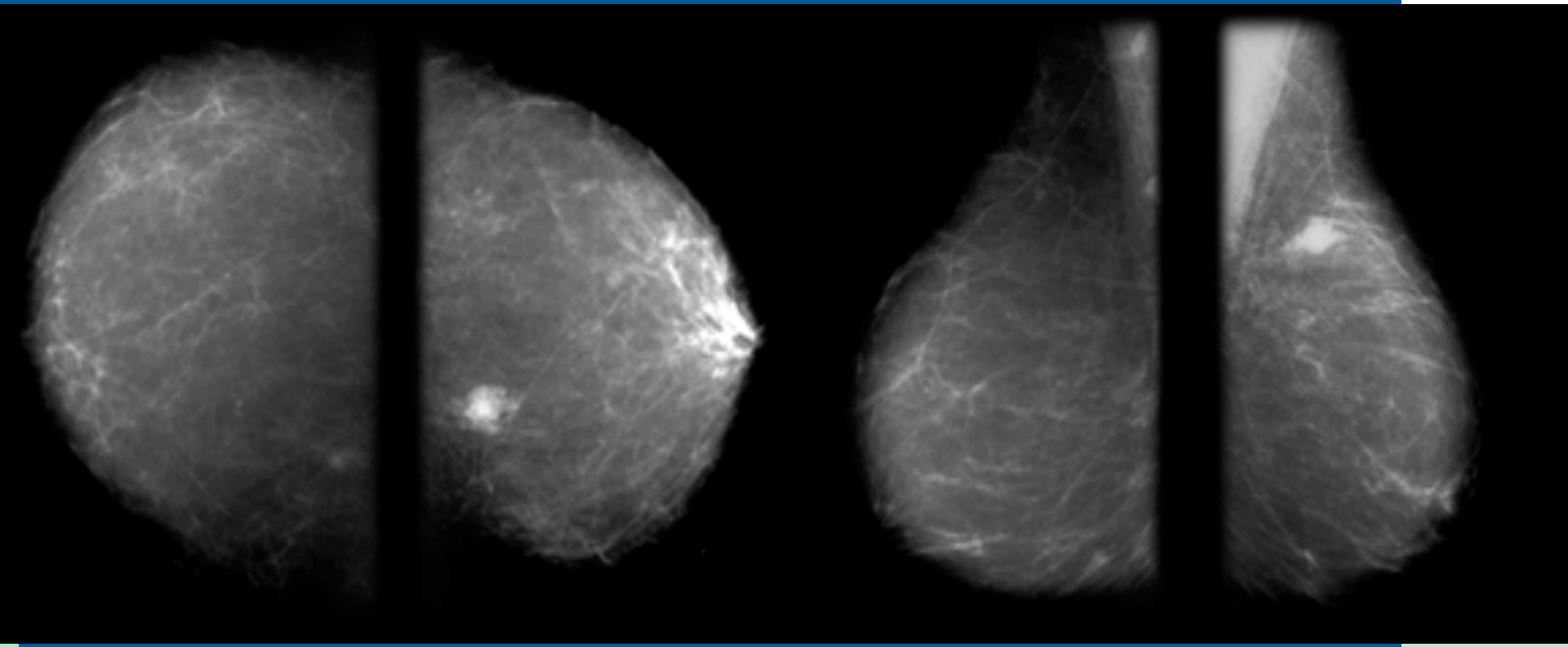
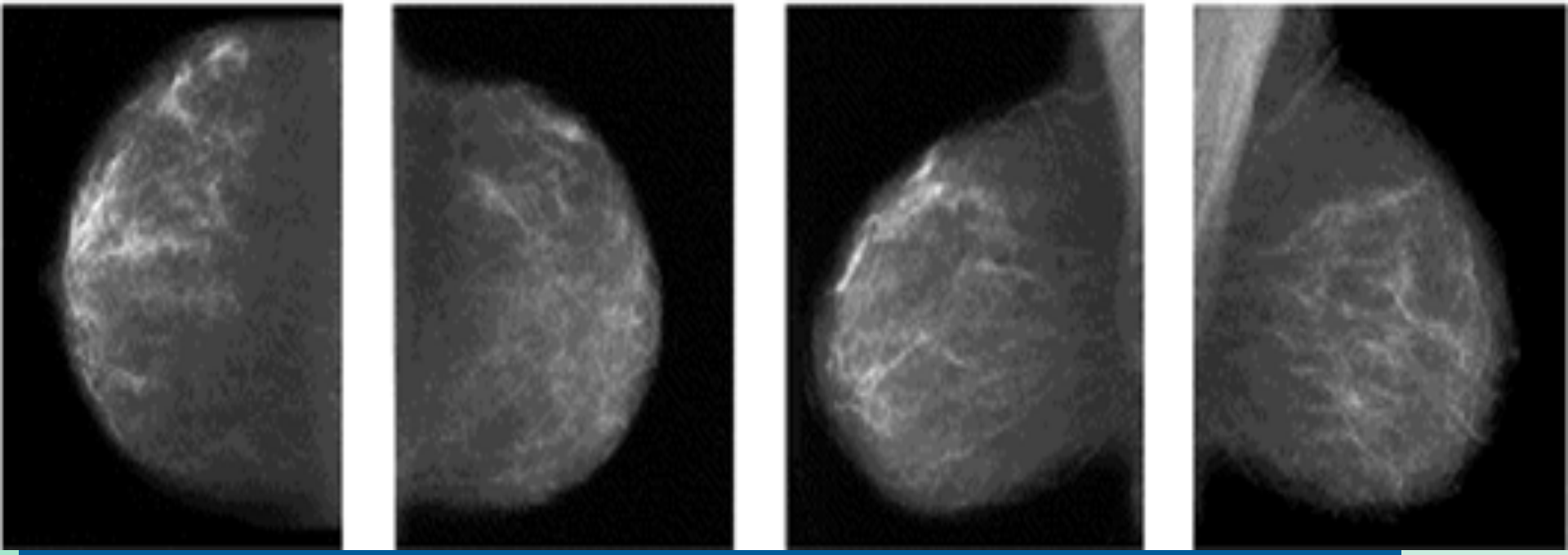
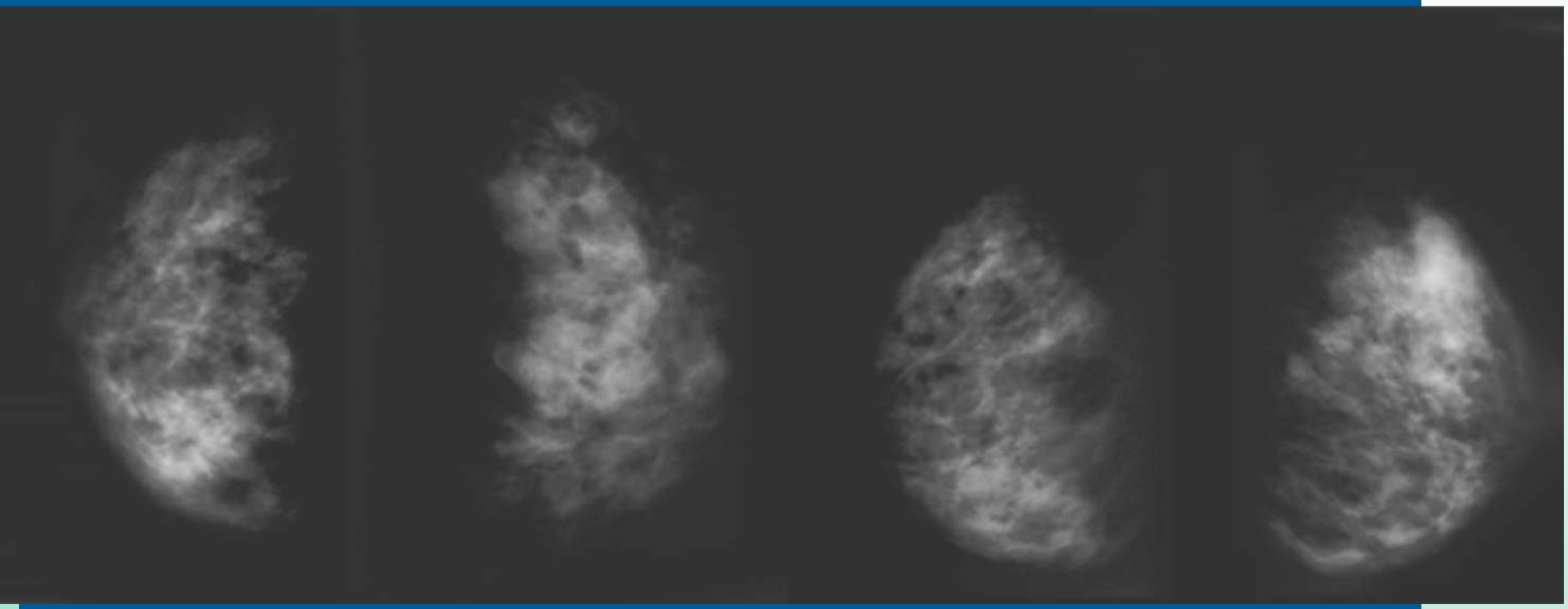
Almost Entirely Fat



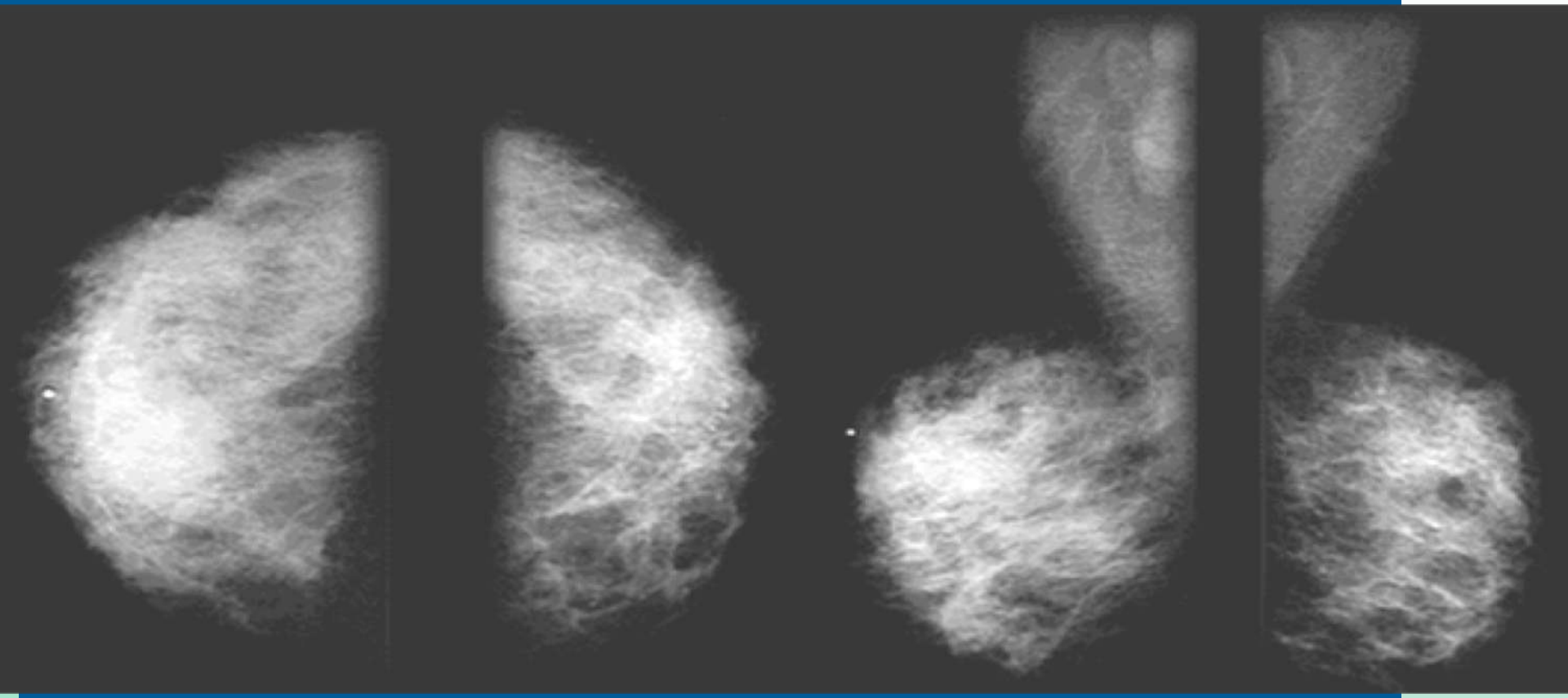
Scattered Fibroglandular Densities



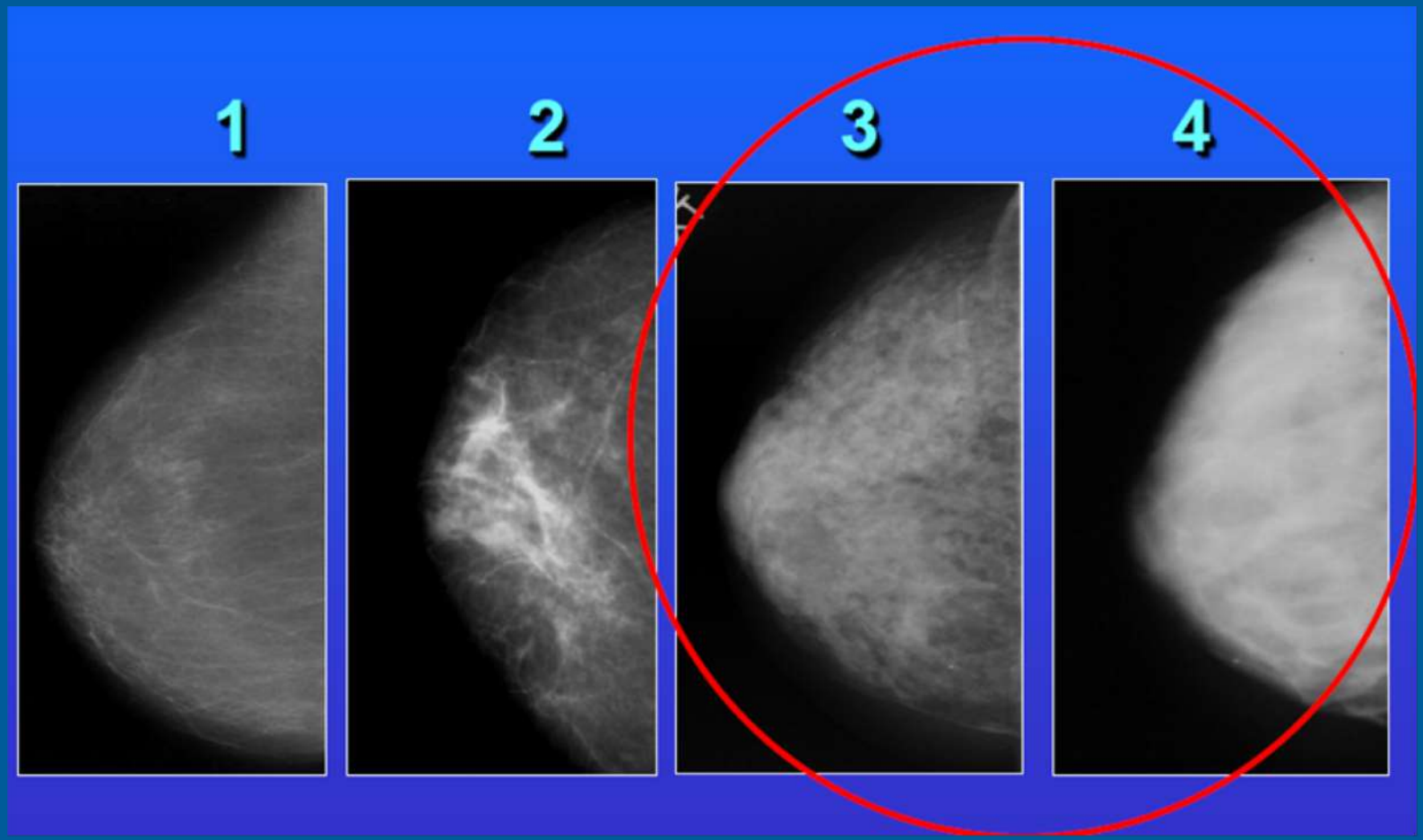
Heterogeneously Dense



Extremely Dense



Breast Density



BIRADS Classification

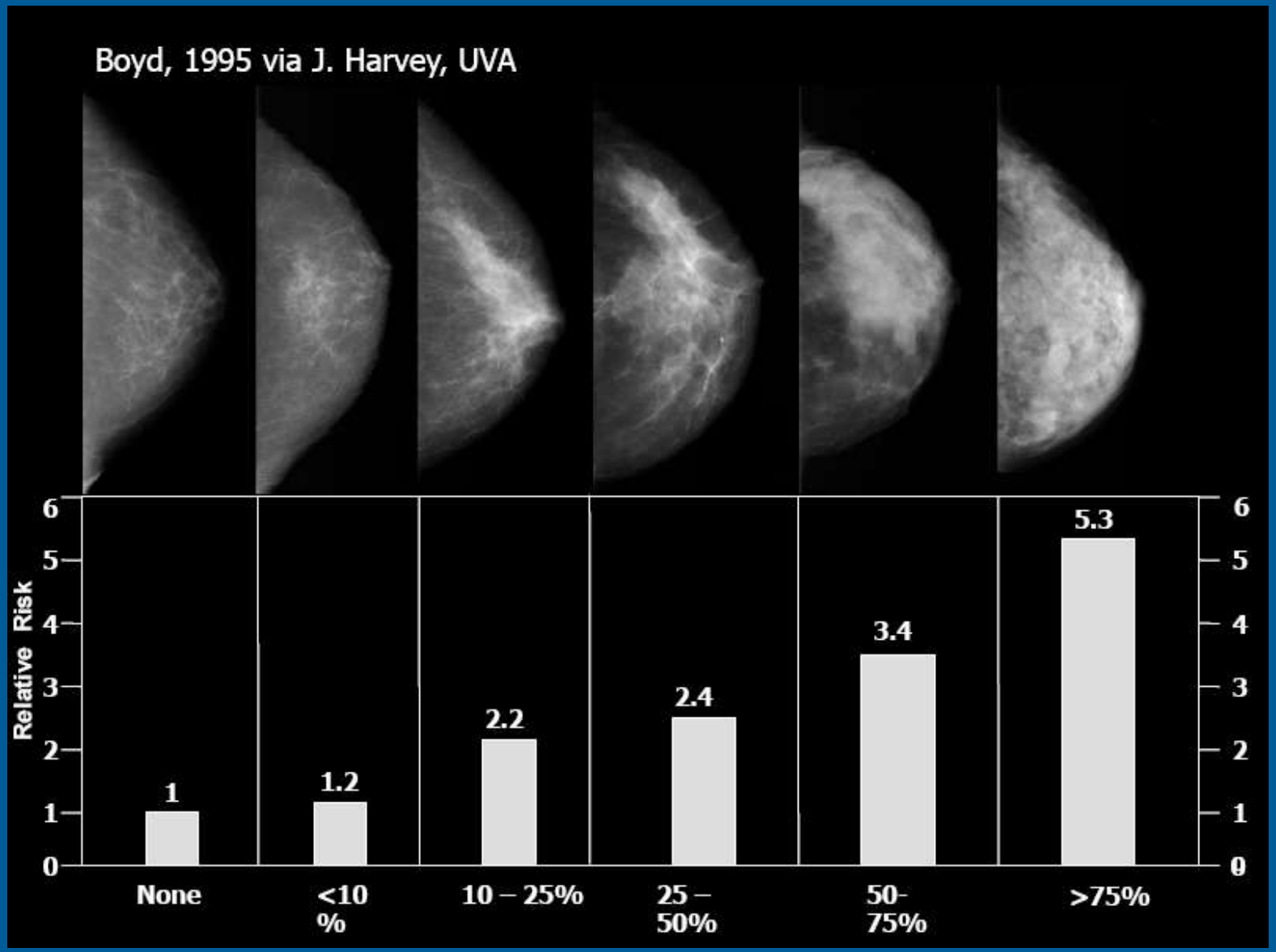
Mammographic Sensitivity

- 98% in women ≥ 50 with fatty breasts
- 30-69% sensitivity in women with dense breasts, particularly low if < 50 or at increased risk

Kerlikowske et al JAMA 1996;276:33-38
Kolb et al Radiology 2002;225:165-175
Mandelson et al JNCI 2000;92:1081-1087

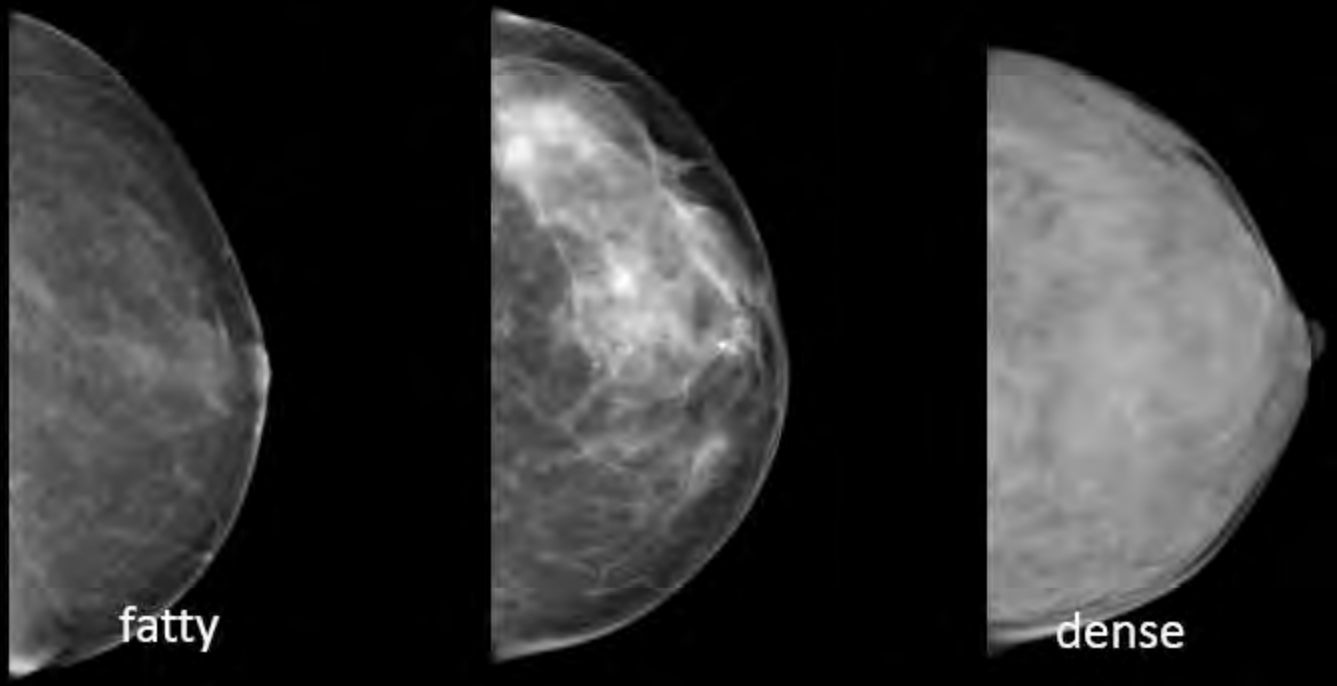
Breast Density

- Sensitivity and specificity reduced
  - Sensitivity 33 to 81%
  - False positives increased
- Breast density is a significant independent risk factor for breast cancer
  - 4-5x relative risk


Boyd, 1995 via J. Harvey, UVA
Relative Risk
0
1
2
3
4
5
6
1
1.2
2.2
2.4
3.4
5.3
None
<10 %
10 – 25%
25 – 50%
50-75%
>75%

Mammography

false negative up to 50% in young women



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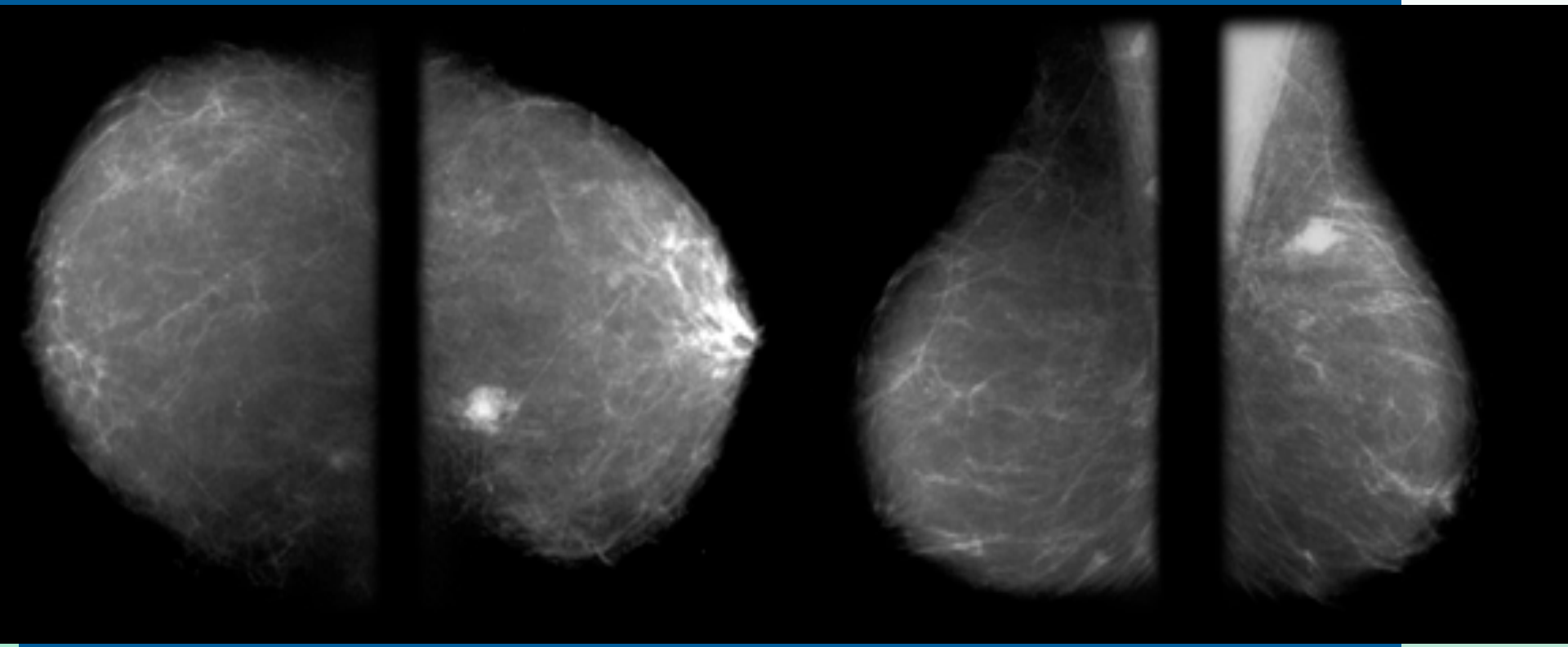
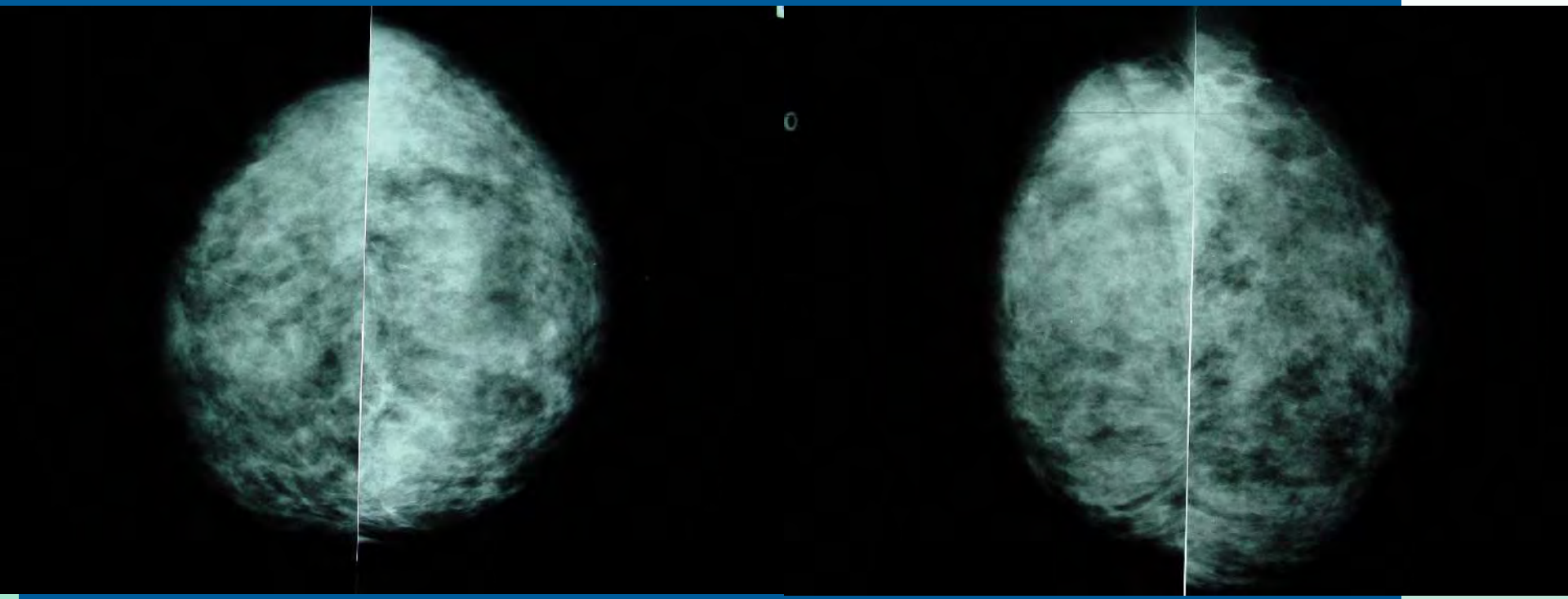
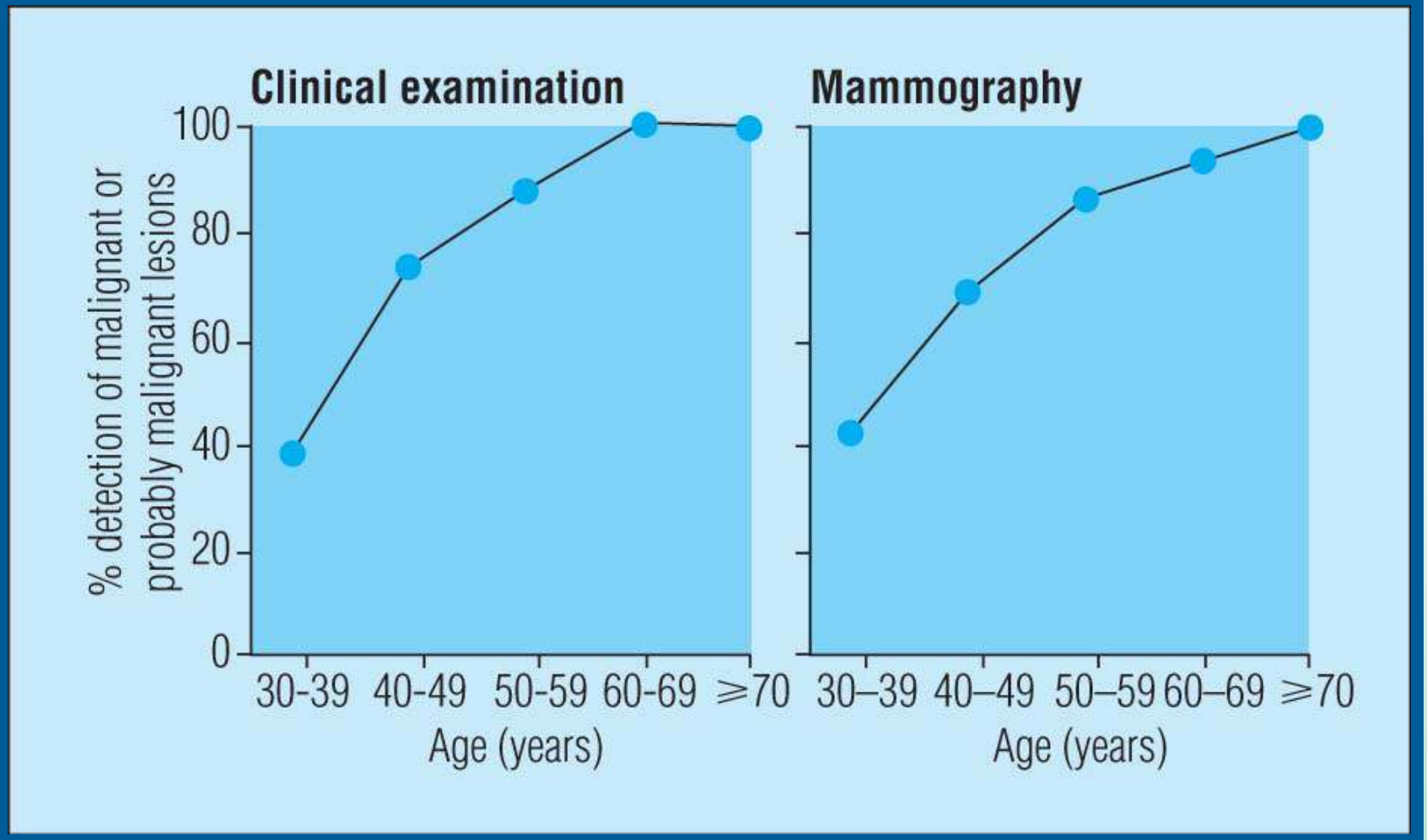
Cancer in Fatty Breasts



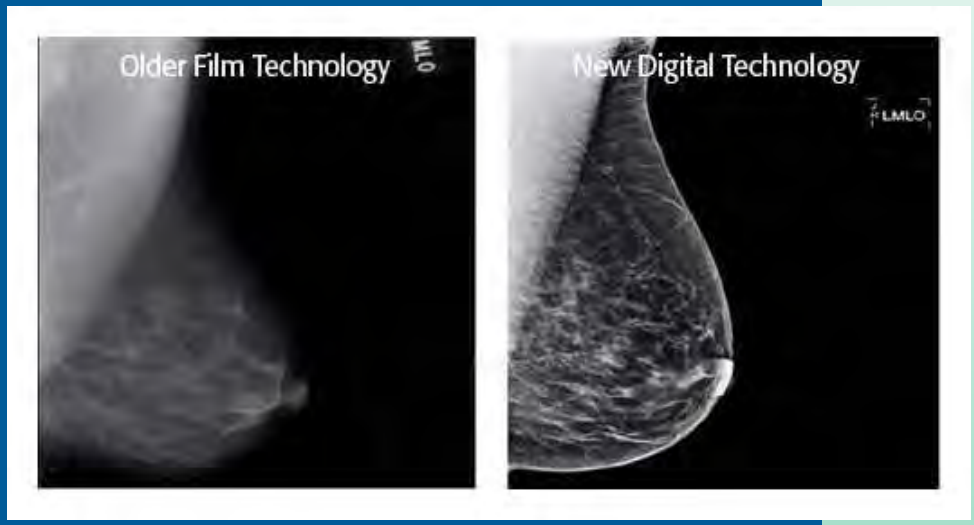
Cancer in Dense Breasts

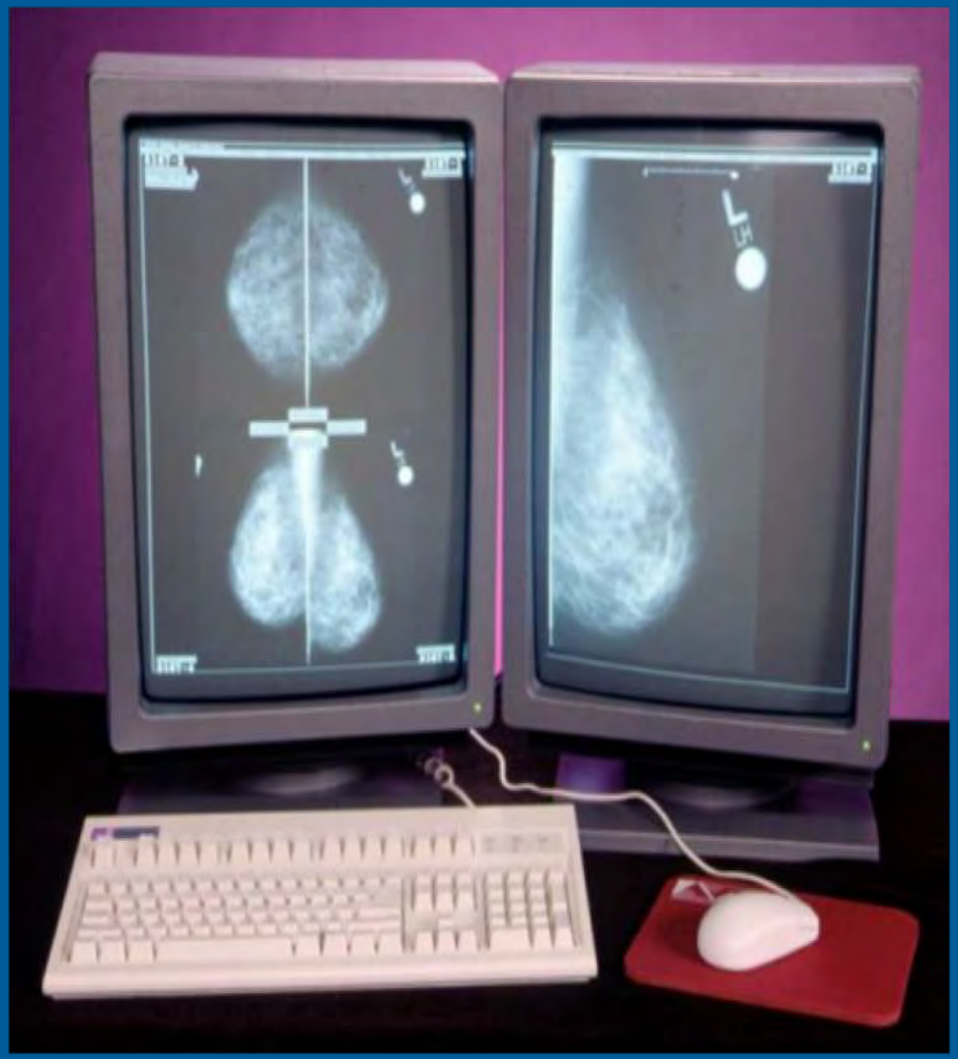


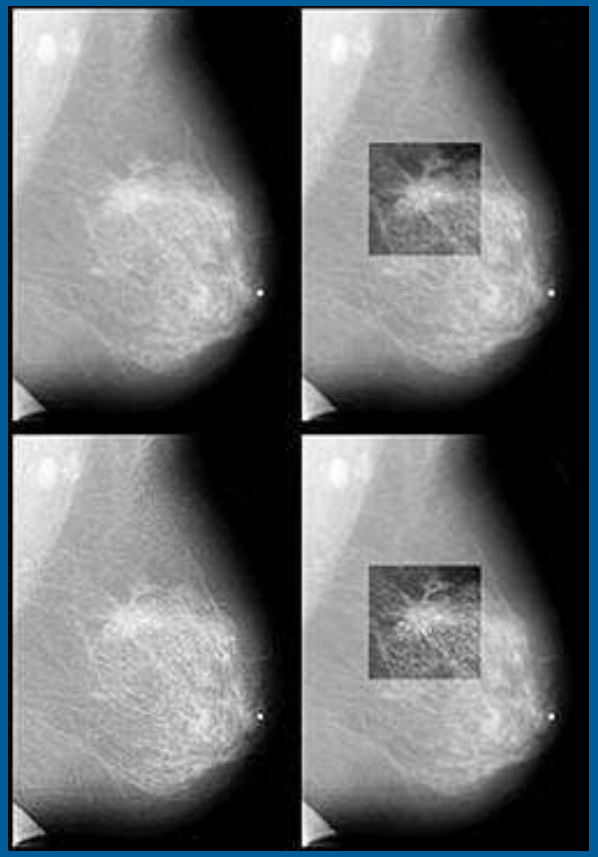

Clinical examination
Mammography
% detection of malignant or probably malignant lesions
100
80
60
40
20
0
30-39
40-49
50-59
60-69
⩾70
Age (years)
30–39
40–49
50–59
60–69
⩾70
Age (years)

Digital Mammography

- Images captured electronically and stored digitally
- Digital images are viewed directly on a computer and radiologist can alter contrast / brightness / magnify without additional x-rays







Digital Mammography

Digital mammography has been shown to be more accurate than film screen mammography in those:

- < 50 years of age
- Perimenopausal or premenopausal
- Dense breast tissue

Pisano E et al.
N Engl J Med 2005

Digital Mammography Advantages

- Greater contrast resolution
- Storage issues
- Post processing image enhancement
  - Alter contrast
  - Alter brightness
  - Magnify
- Reduced recall rate
- Slightly lower average dose
- More speed of image acquisition, display, retrieval
- Added applications: PACS, teleradiology, CAD

Digital Breast Tomosynthesis

- A major factor contributing to the limited performance of mammography is the tissue superimposition that is created by the overlap of normal breast structures in a two-dimensional mammographic projection.

- These overlapping structures can obscure a lesion making it more difficult to perceive or rendering it completely mammographically occult.

- Tomosynthesis may improve cancer detection by mammography by enabling readers to detect lesions which are very difficult or impossible to visualize on conventional imaging due to overlying glandular tissue

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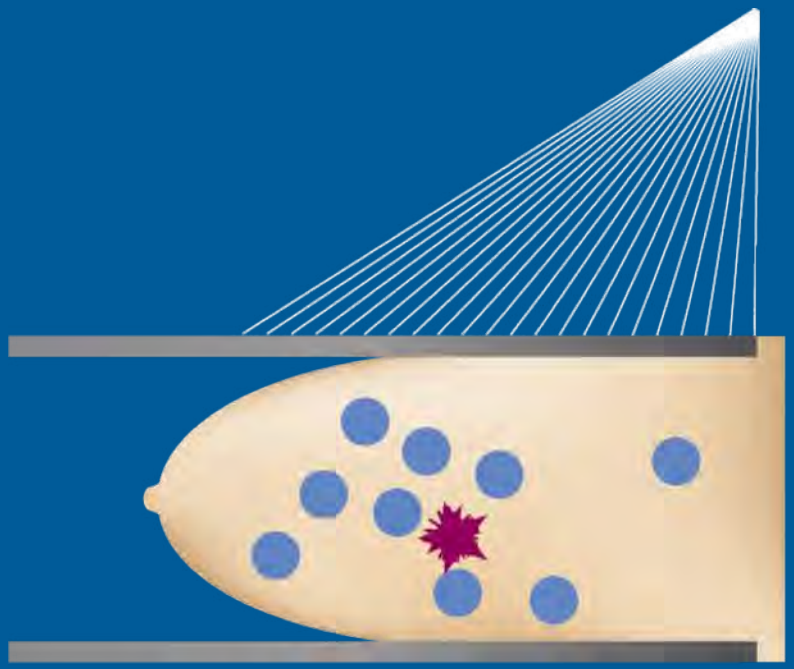
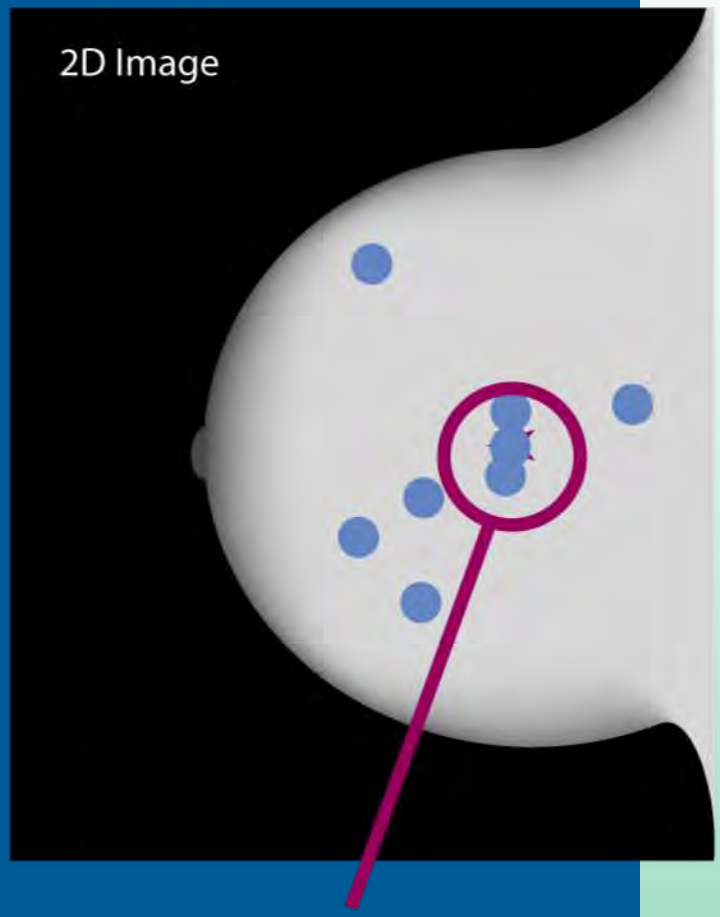
Digital Breast Tomosynthesis
2D Mammography
3D Tomosynthesis

- Tissue superimposition hides pathologies in 2D
- Tissue superimposition mimics pathologies in 2D

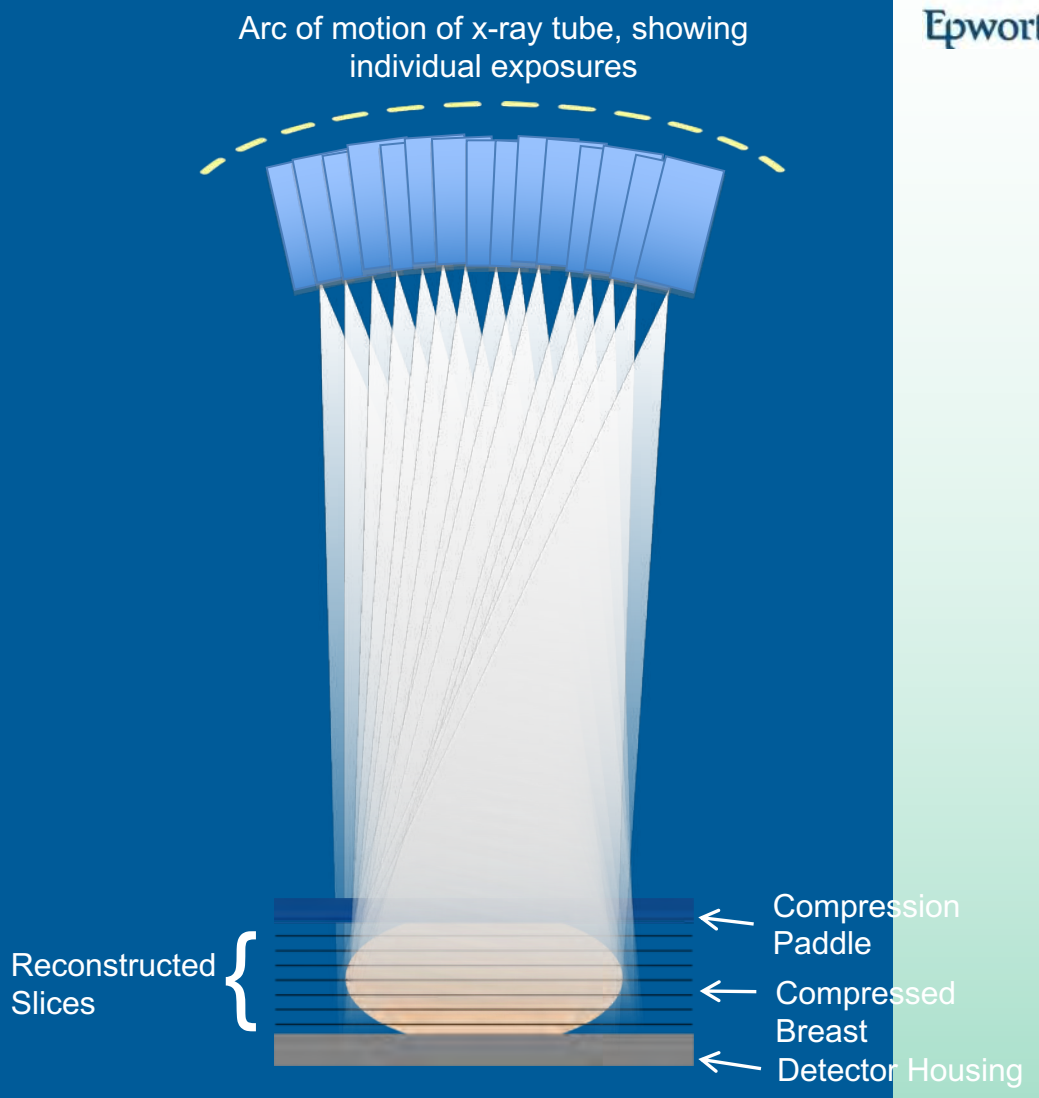




Lesion Superimposed in 2D

3D Principle of Operation

- X-ray tube moves in an arc across the breast
- A series of low dose images are acquired from different angles
- Total dose approximately the same as one 2D mammogram
- Projection images are reconstructed into 1 mm slices



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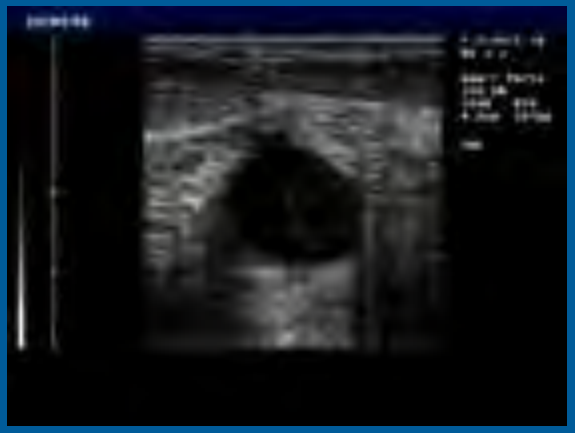
BREAST ULTRASOUND



Breast Ultrasound

- Useful for the evaluation of:
  - Palpable abnormality
  - Mammographic abnormality
  - "Second look" ultrasound very helpful for evaluating abnormal areas detected with MRI
  - Surveillence following breast cancer surgery
  - Ineffective in breast cancer screening

  (? even in those with dense breasts or high risk)

TAKE HOME MESSAGE

ALL palpable lumps require full triple assessment, irrespective of the perceived risk category of the patient.

Sensitivity (%) of Ultrasound and Mammography by age group in 975 cancers

Age group	Number of cases	Ultrasound	Mammography
20-34	27	59.3	70.4
35-39	58	70.7	56.9
40-44	107	79.4	64.5
45-49	132	75.8	65.9
50-54	105	80.0	70.5
55-59	94	80.9	83.0
60-64	124	84.7	79.8
65-69	90	80.0	88.9
70-74	88	84.1	92.1
>75	150	88.0	91.3

The Breast, 2002

Surgeon Performed Ultrasound

an Extension of the Clinical Examination
"sharpens your fingers"
-the "stethoscope" of the breast surgeon

- To confirm palpable lump corresponds to ultrasound abnormality (ie exclude dual pathology)
- Differentiate between solid and cystic lumps
- Management of breast abscesses
- Image assisted biopsies (FNA/core)

****NOT a substitute for a formal diagnostic quality, radiologist reported ultrasound**

Insist on Synoptic Imaging Reports

NATIONAL BREAST CANCER CENTRE
Incorporating the Ovarian Cancer Program

APRIL 2007

Synoptic breast imaging report

Including imaging classification (1–5)

This document is an update of Chapter 6 and Appendix G contained in the NBCC *Breast imaging: a guide for practice*, 2002.[1]

PURPOSE

The National Breast Cancer Centre (NBCC) *Synoptic breast imaging report* is a lesion-based synoptic report using a five-point classification system. It is recommended that the NBCC synoptic report be used for the reporting of all breast imaging.[1]

OVERVIEW

A synoptic report contains a summary of essential information in a checklist format with standard language, descriptions and classification system.[1] Synoptic reporting may improve the content and completeness of reports, reduce the risk of misinterpretation of findings, improve communication between referring clinicians and radiologists and facilitate the transfer of information to databases for quality improvement activities and audit.

The NBCC *Synoptic breast imaging report* aims to improve communication by ensuring the imaging report contains all essential descriptors of lesions, correlating imaging findings with clinical findings, providing an imaging diagnosis and utilising a classification system based on clinical management.

The NBCC *Synoptic breast imaging report* is lesion based, tracking individual lesions and considering mammography and ultrasound characteristics for each lesion in the same section rather than reporting the imaging findings separately – requiring the radiologist to offer one classification finding per lesion.

The NBCC *Synoptic breast imaging report* has been designed as a checklist to be added to a narrative report. Alternatively, lesions could be described in the imaging characteristics sections and the standardised format could be used as a stand-alone report.

Endorsed by:

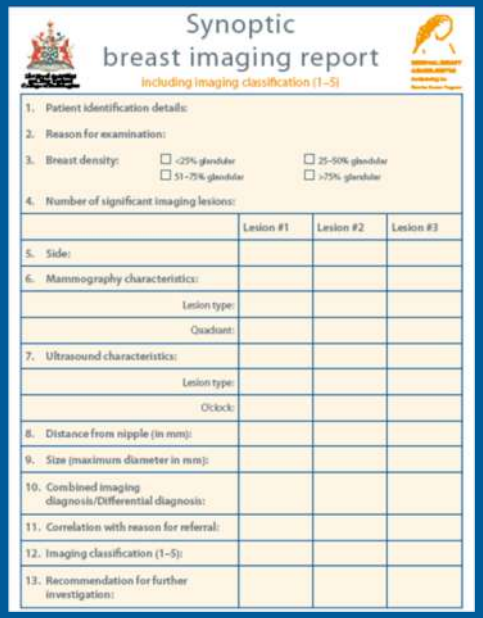
[1] National Breast Cancer Centre. *Breast imaging: a guide for practice*, 2002. National Breast Cancer Centre, Camperdown, NSW.

- Research indicates that synoptic reporting and more specifically the use of check lists is the most effective method of improving the content and completeness of reports.

Classification

1. No significant abnormality
2. Benign findings
3. Indeterminate / equivocal findings
4. Suspicious findings of malignancy
5. Malignant findings

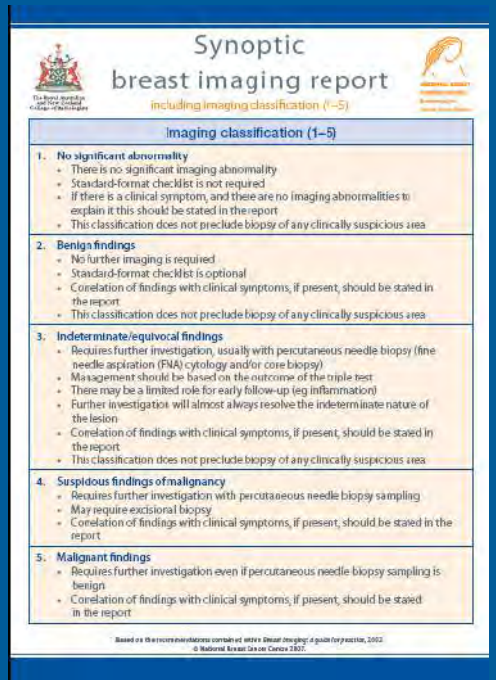
When reporting the classification, both the number and the description of the classification should be stated



Synoptic breast imaging report

Including imaging classification (1–5)

1. Patient identification details:			
2. Reason for examination:			
3. Breast density: ☐ <25% glandular ☐ 25–50% glandular ☐ 51–75% glandular ☐ >75% glandular			
4. Number of significant imaging lesions:			
	Lesion #1	Lesion #2	Lesion #3
5. Side:			
6. Mammography characteristics:			
Lesion type:			
Quadrant:			
7. Ultrasound characteristics:			
Lesion type:			
O'clock:			
8. Distance from nipple (in mm):			
9. Size (maximum diameter in mm):			
10. Combined imaging diagnosis/Differential diagnosis:			
11. Correlation with reason for referral:			
12. Imaging classification (1–5):			
13. Recommendation for further investigation:			



Synoptic breast imaging report

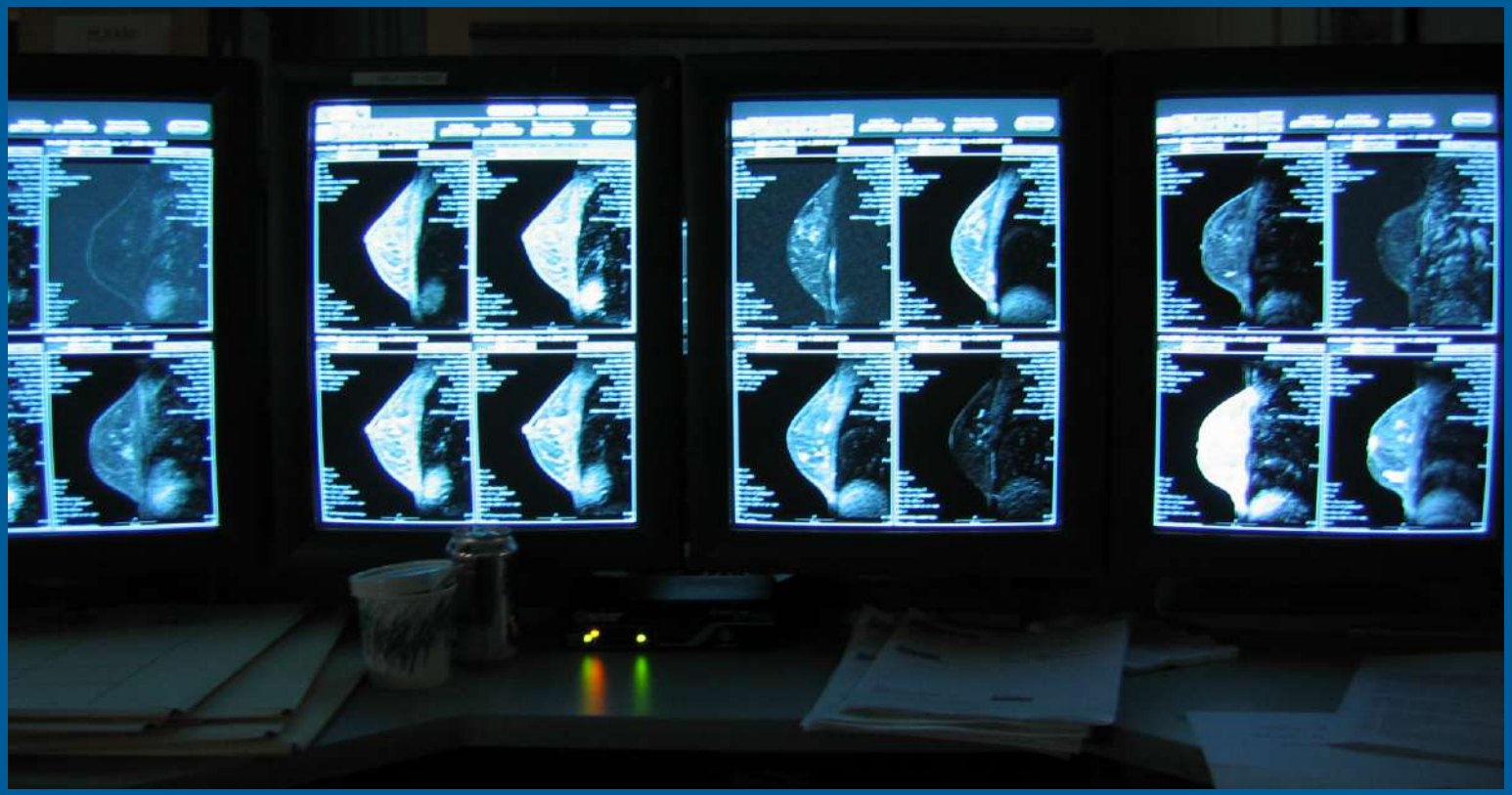
including imaging classification (1–5)

Imaging classification (1–5)

1. **No significant abnormality**
   - There is no significant imaging abnormality
   - Standard-format checklist is not required
   - If there is a clinical symptom, and there are no imaging abnormalities to explain it this should be stated in the report
   - This classification does not preclude biopsy of any clinically suspicious area
2. **Benign findings**
   - No further imaging is required
   - Standard-format checklist is optional
   - Correlation of findings with clinical symptoms, if present, should be stated in the report
   - This classification does not preclude biopsy of any clinically suspicious area
3. **Indeterminate/equivocal findings**
   - Requires further investigation, usually with percutaneous needle biopsy (fine needle aspiration (FNA) cytology and/or core biopsy)
   - Management should be based on the outcome of the triple test
   - There may be a limited role for early follow-up (eg inflammation)
   - Further investigation will almost always resolve the indeterminate nature of the lesion
   - Correlation of findings with clinical symptoms, if present, should be stated in the report
   - This classification does not preclude biopsy of any clinically suspicious area
4. **Suspicious findings of malignancy**
   - Requires further investigation with percutaneous needle biopsy sampling
   - May require excisional biopsy
   - Correlation of findings with clinical symptoms, if present, should be stated in the report
5. **Malignant findings**
   - Requires further investigation even if percutaneous needle biopsy sampling is benign
   - Correlation of findings with clinical symptoms, if present, should be stated in the report

Breast Magnetic Resonance Imaging (MRI)

- MRI has a very high sensitivity and low specificity in screening.
- It picks up lots of abnormalities and many of them are not cancer
- False positive rate is high, leading to lots of unnecessary diagnostic tests



Breast Biopsy

Westmead Breast Cancer Institute

BCI westmead breast cancer institute

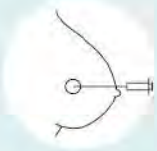
Breast Biopsy

A breast biopsy is a test that removes cells or tissue from the breast so that it can be examined by a pathologist under a microscope. A biopsy gives you and your doctor important information about your breast tissue, which helps to make a diagnosis and plan treatment. In some cases, a biopsy may be used to completely remove small breast abnormalities.

There are several types of biopsy that can be used to take a sample of tissue from the breast. These biopsies include:

> Fine needle biopsy (also called fine needle aspiration biopsy, FNA or FNAB).
> Core biopsy (also called core needle biopsy or CNB).
> Vacuum-assisted core biopsy (also called VACB or Mammotome®).

These procedures all differ slightly in the way they are done and in the information they can give.



Fine Needle Biopsy (FNB)

Fine needle biopsy is a quick and simple test. It removes a collection of cells from the breast with a tiny needle in much the same way as a blood sample is taken. These cells are examined by a pathologist under a microscope.

What are the advantages of fine needle biopsy?

> It is fairly simple and quick, usually taking only a few minutes.
> It can be done without any special preparation.
> The results are available quickly.
> There is no need to stay in hospital, and no scarring of the breast as there is with surgery.

What are the limitations of fine needle biopsy?

> The procedure may not collect enough material for a definite diagnosis.
> Sometimes, even when lots of cells are seen, the results may not be conclusive.

How is a fine needle biopsy done?

> A fine needle, smaller than a needle used for taking a blood sample, is put through the skin into the breast tissue.
> The needle stays in the breast for 20-30 seconds, gently moving through the tissue collecting cells.
> The needle is removed and pressure is applied to the breast to help stop bruising.

The procedure may need to be done several times to get enough cells.

If there is a lump that is felt easily, the needle can be guided into the lump by feel. If the breast tissue that is being tested cannot be felt easily, the biopsy needle is guided accurately into the area with the help of an ultrasound or mammogram.

Is it painful?

Most people describe a fine needle biopsy as uncomfortable but not painful. Local anaesthetic (an injection to numb part of the breast) may or may not be needed for this procedure.

Cyst aspiration

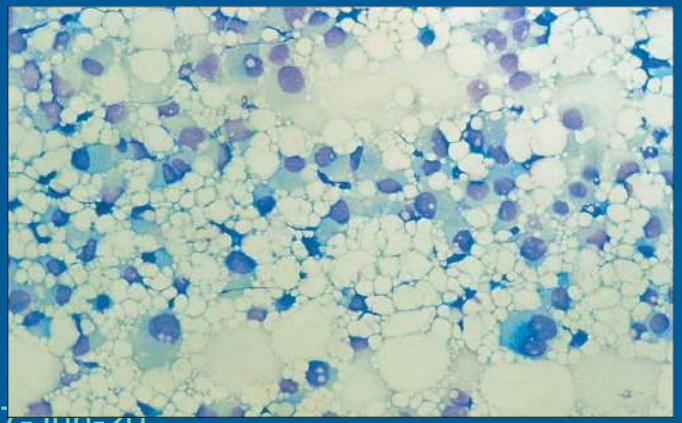
Cyst aspiration is a procedure to remove fluid from a breast cyst. It is similar to a fine needle biopsy. Large tender cysts may be aspirated to reduce pain or small cysts may be aspirated to get a sample for testing.

Cyst fluid may or may not be sent to a pathologist to be examined under a microscope, depending on the individual circumstances. Your doctor will be able to tell you after the procedure if a sample has been sent for testing.

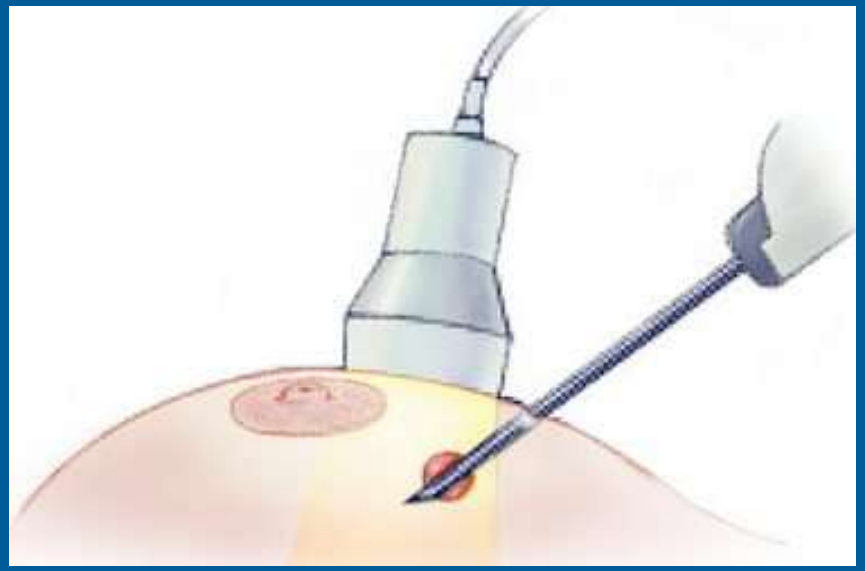
Epworth

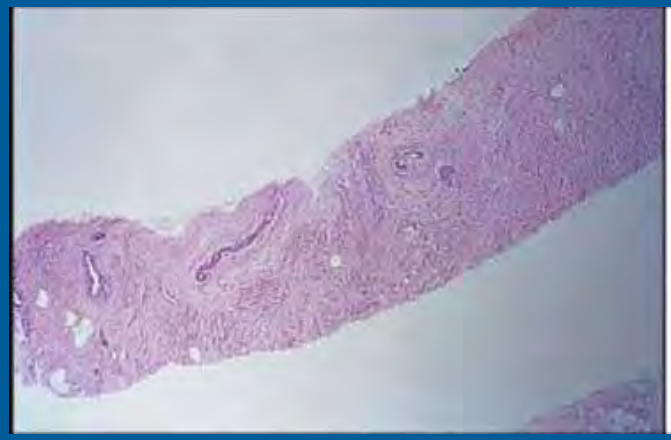
http://uat.bci.org.au/

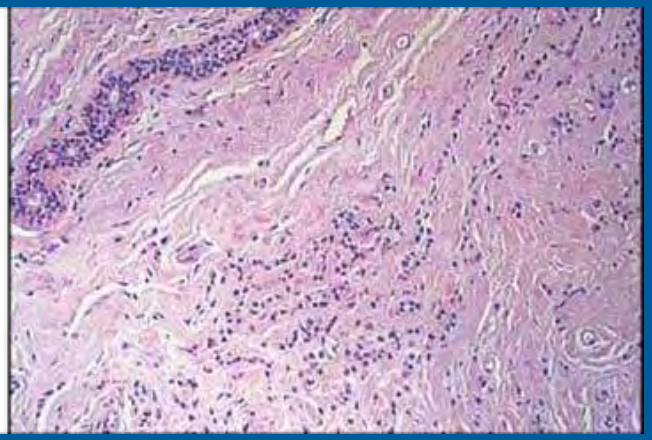
Needle Biopsy
Fine Needle Aspiration (FNA)



CORE BIOPSY







THE TRIPLE TEST

The table below is presented to help clinicians interpret the probability of cancer based on diagnostic information from the triple test and its components.

Accuracy of the triple test and each of its components

	Triple Test	Clinical Examination	Imaging (Mammography & Ultrasound)	Non-excision Biopsy (FNAC & Core Biopsy)
TPR, %	> 99.6	85	95	90
FPR, %	< 38	20	8	0.5
Specificity, %	> 62	90	92	99.5

TPR = True Positive Rate (sensitivity) FPR = False Positive Rate (1- specificity)

- The sensitivity of needle biopsy is 90%, which may seem lower than expected
- This is largely due to sampling techniques ie the lesion is not accurately targeted/sampled on FNA or core biopsy
- It is vital that the results from biopsy correlate with both the clinical and imaging findings
- If this is done, the sensitivity increases to >99.6%

SOURCE NATIONAL BREAST CANCER CENTRE

Breast changes

hat investigations will the doctor suggest?

s recommended that the doctor uses an approach known as the le test to find the cause of a breast change. **However, it should noted that many women with breast changes will not need all these tests.**

e triple test includes:

linical breast examination and taking a personal history
see page 15)

maging tests; i.e. **mammography** and **ultrasound** (see page 20)

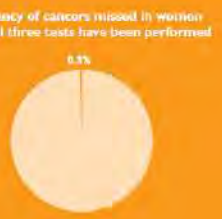
non-surgical biopsy; i.e. a **fine needle aspiration** and **core biopsy.** This is when a sample of cells or tissue is extracted from the lump see pages 26-27)

st women show no signs of cancer on any of the tests. The small mber who do show possible signs of cancer on one or more of the s may be advised to see a surgeon and may have an open surgical psy (see page 29).

How accurate is the triple test?

If used on their own, none of the tests will be able to find all cancers. However, if all tests are done and none show signs of cancer, it is very unlikely that it will be present. If all three tests are performed, more than 99.5% of cancers will be found by one or more of the tests.

Frequency of cancers missed by each test



https://canceraustralia.gov.au/

TAKE HOME MESSAGE

ALL palpable lumps require full triple assessment, irrespective of the perceived risk category of the patient.

MEDICOLEGAL CONSIDERATIONS

- The major source of litigation in Victoria
- 70% of all claims are breast related
- Breast cancer is the malignancy most often cited in delayed diagnosis claims against GPs
- Single biggest risk for GPs

BREAST CANCER IS THE MALIGNANCY MOST OFTEN CITED IN DELAYED DIAGNOSIS CLAIMS AGAINST GPs

- Diagnostic delay is the most common cause of litigation for medico-legal negligence in the USA
- Reduced by strict adherence to protocol for triple assessment, failsafe mechanism for results and timescale for follow-up visits

Nature of Claims

- False negative mammogram
- The patient complains of a lump but the clinician is not impressed by the findings (2nd most common scenario in medico-legal payouts)
- Poor cosmetic outcome following operation for benign breast disease
- False +ve cytology
- Failure to recommend adjuvant therapy

Nature of Claims

- 50% Failure to diagnose
- 26% Delay in diagnosis
- 9% Poor management
- 6% Failure to warn
- 3% Failure to manage
- 3% Failure to advise result
- 3% Failure to follow up

- 77% History of previous breast problems
- 41% Initial mammogram normal
- 41% Multiple GPs involved - holiday, locum, other GP in practice
- 27% Patient asked to return but did not
- 23% Breast feeding or pregnant
- 14% Patient returned but breast problem not followed-up
- 9% System to follow-up known malignancy failed

TAKE HOME MESSAGE

ALL palpable lumps require full triple assessment, irrespective of the perceived risk category of the patient.

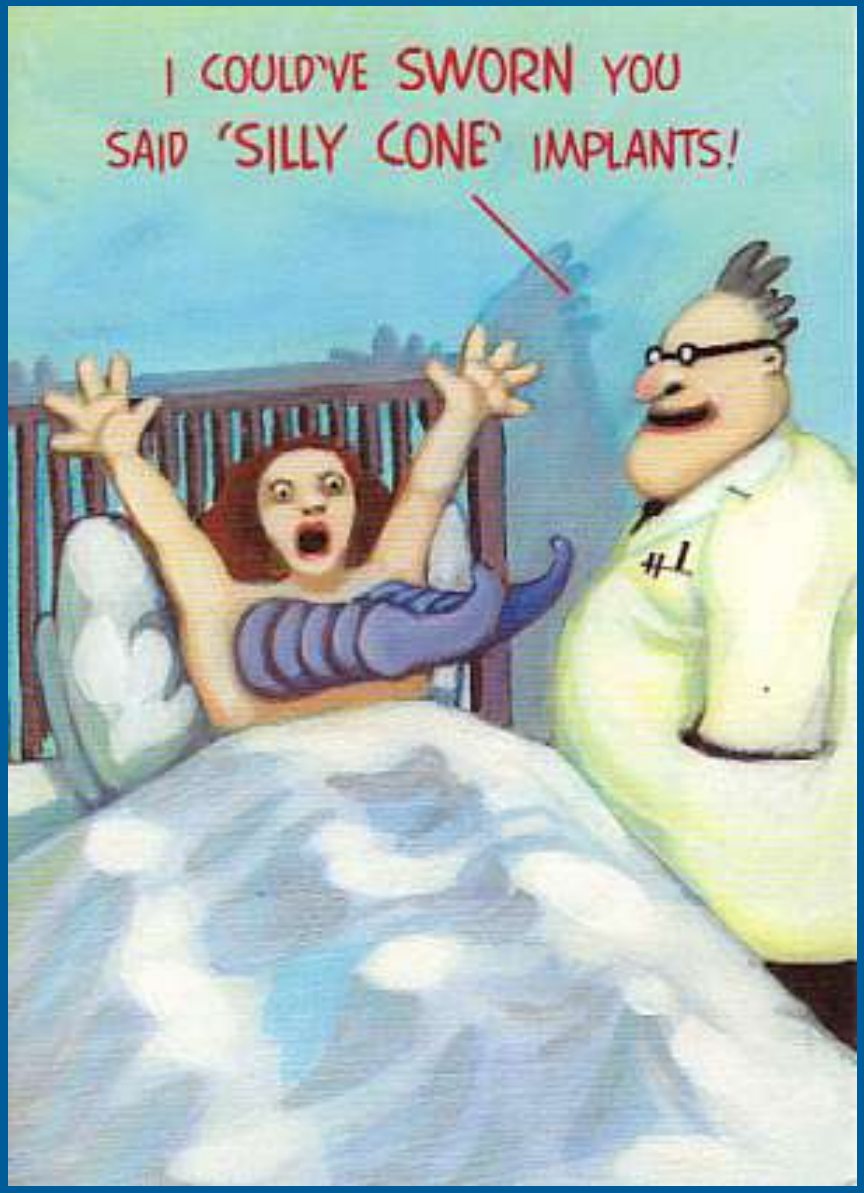
For a triple test to be negative

ALL three components:

- Clinical breast examination
- Medical Imaging
- Biopsy

Must be benign or normal

RISK MANAGEMENT



- Ensure clear communication regarding risk
- Document ALL findings, results and discussions
- Adhere strictly to protocol for triple assessment
- Adopt a "failsafe" method for recall and follow up

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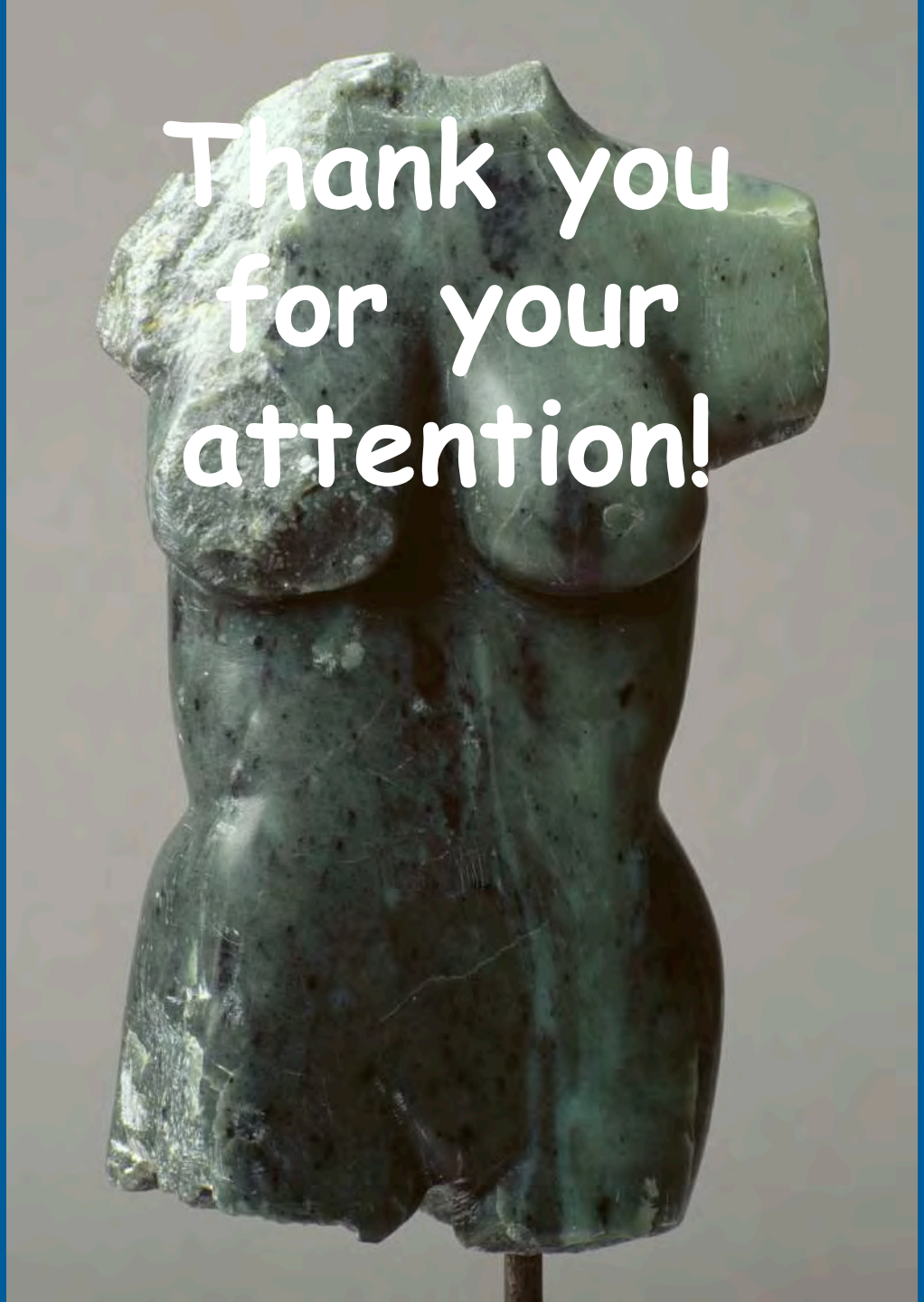

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