accessed 11/3/10

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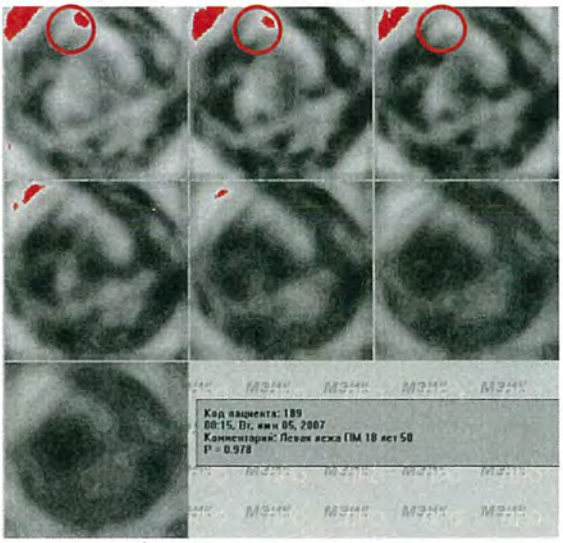
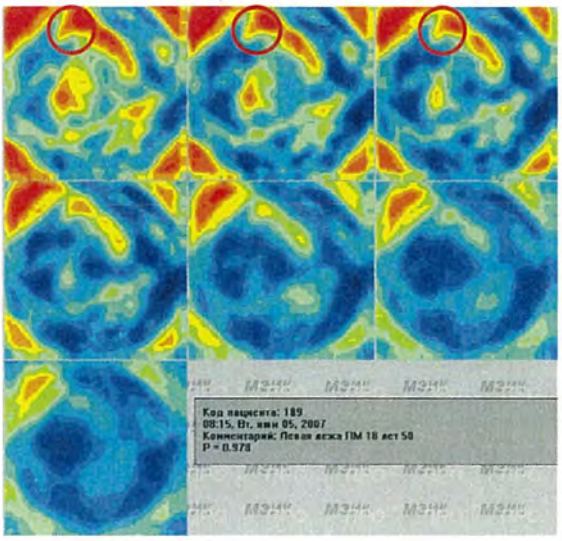
Ultrasound example of 73 yo with malignant tumour in left breast at 12 oclock.
19×20×16 mm

- irregular shape
- blurred contours
- hypoechoic patchy structure
- hyperechoic inclusions of various dimensions
- acoustic shadow

MEM example of same 73 yo showing malignant tumour at 12 oclock down three layers of scanning





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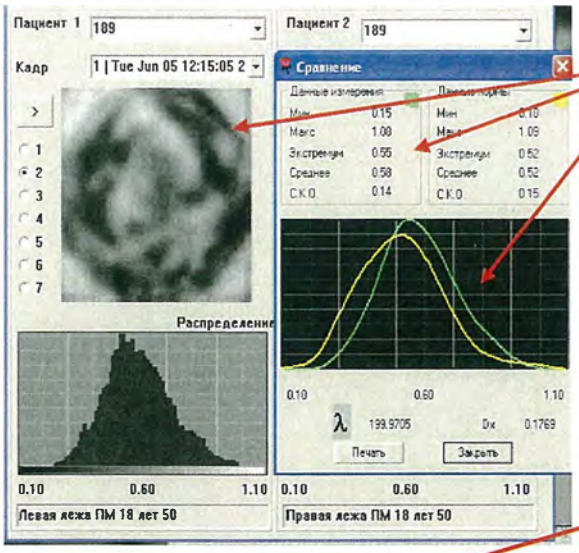
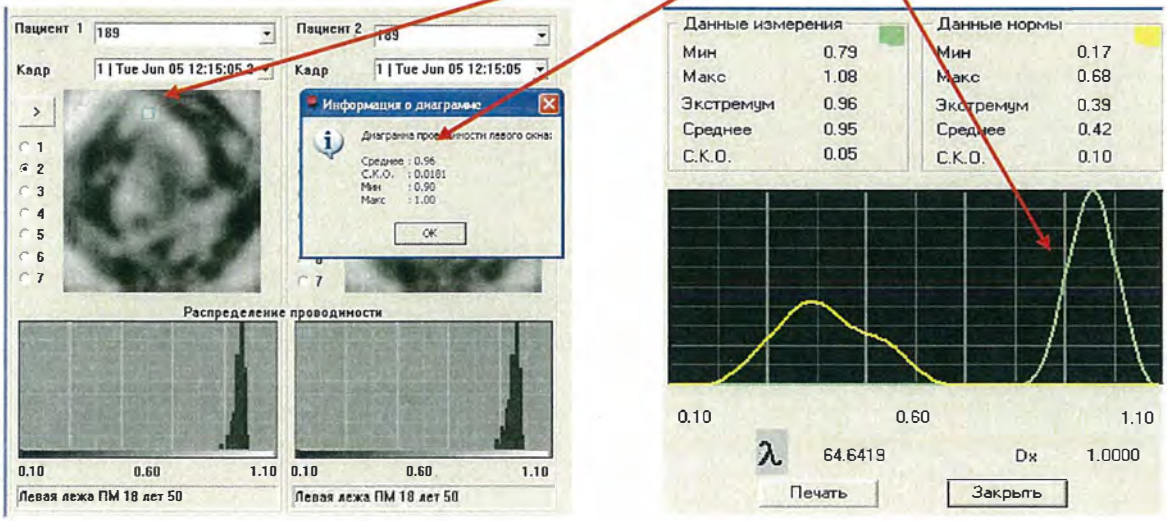
MEM analytical tools showing malignant tumour at 12 oclock in left breast of 73yo woman



Mean electrical conductivity of the left breast is 0.58, which corresponds to the age norm.

Electroconductivity in the zone of the malignant tumour location is 0.96.



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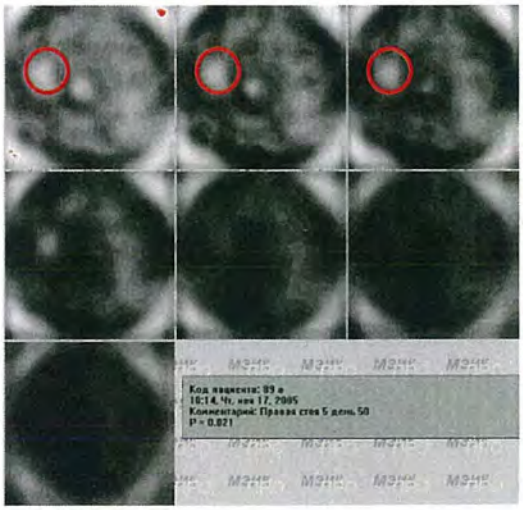
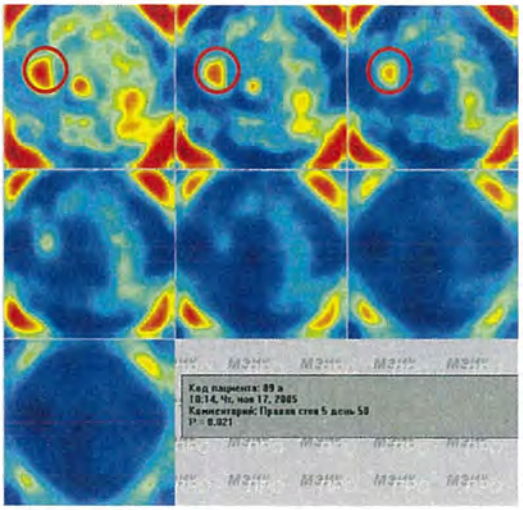
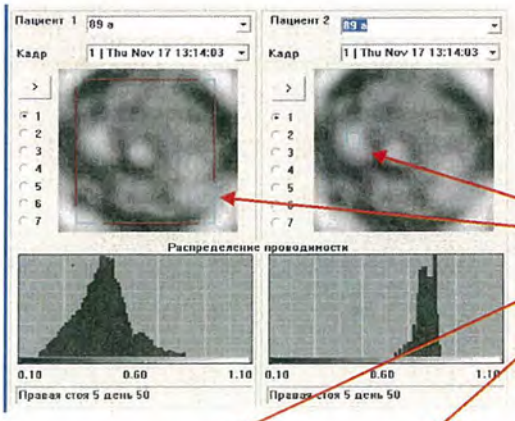
Ultrasound example of 39 yo with cyst in right breast at 10 oclock

- oval form
- absence of reflection from internal contents
- distal enchantment
- well-defined differentiation between internal and external contours
- bright posterior wall
- symmetrical lateral acoustic

MEM example of same 39 yo showing cyst in right breast at 10 oclock down three layers of scanning







Oval shape of cyst, "onion" layers of conductivity surrounding the cyst.

Electroconductivity of the cyst is 0.77 against background mean electroconductivity of 0.46, which corresponds to the age group in the norm

Диаграмма проводимости левого

Среднее : 0.46
С.К.О. : 0.1100
Мин : 0.18
Макс : 0.84

Диаграмма проводимости правого

Среднее : 0.77

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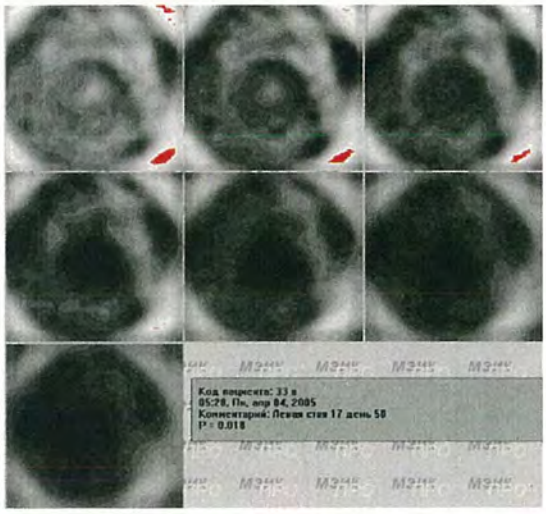
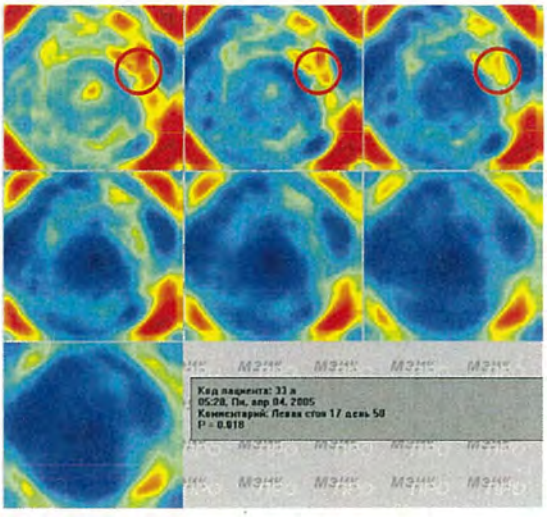
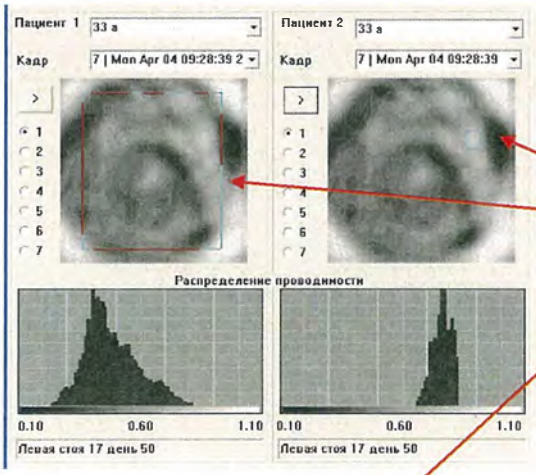
Example of 33yo with fibroadenoma in left breast.

- oval shape
- well-defined hyperechoic contours
- hypoechoic heterogeneous structure
- hyperechoic inclusions of various dimensions
- distal pseudou-enhancement behind the fibroadenoma.

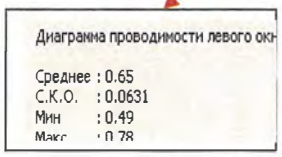
MEM example of same 33 yo showing fibroadenoma in left breast at 2 oclock down three layers of scanning







Electroconductivity of the Fibroadenoma 0,65 against background of mean electroconductivity of 0,48, which corresponds to the age norm.



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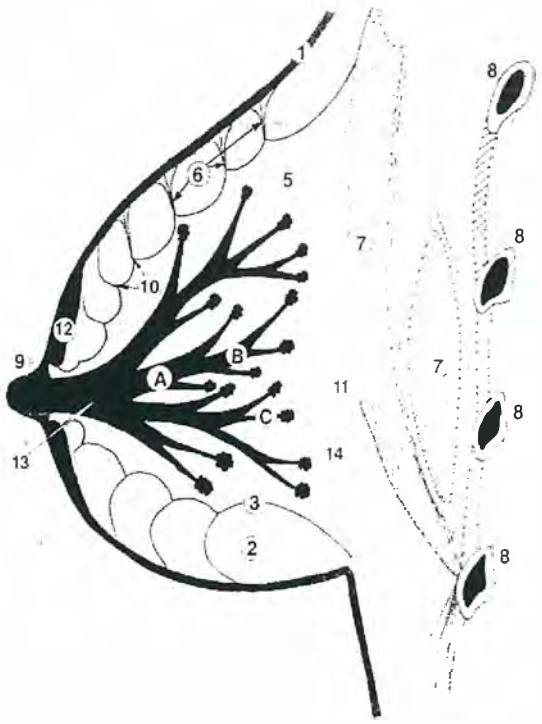
Breast Structure



1	skin
2	subcutaneous adipose tissue
3	superficial fascia,
4	lacteal ducts
5	glandular tissue
6	Cooper ligaments
7	pectoral muscles
8	ribs
9	nipple
10	Duret crest
11	retromammary adipose bursa
12	perinipple muscle
13	lacteal sinus
14	posterior folium of the pectoral fascia

A	Lacteal ducts Level 1
B	Lacteal ducts Level 2
C	Lacteal ducts Level 3

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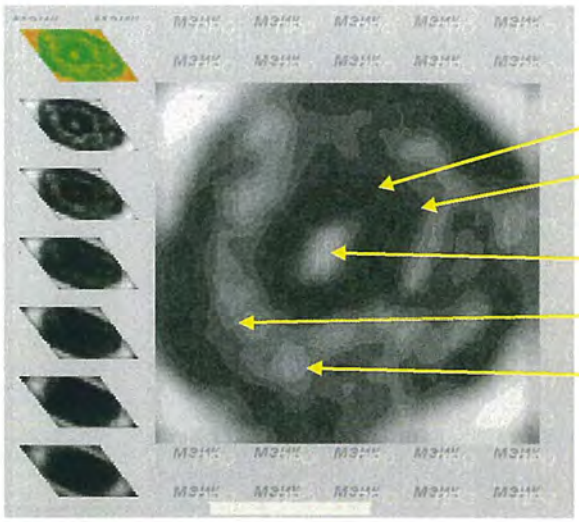
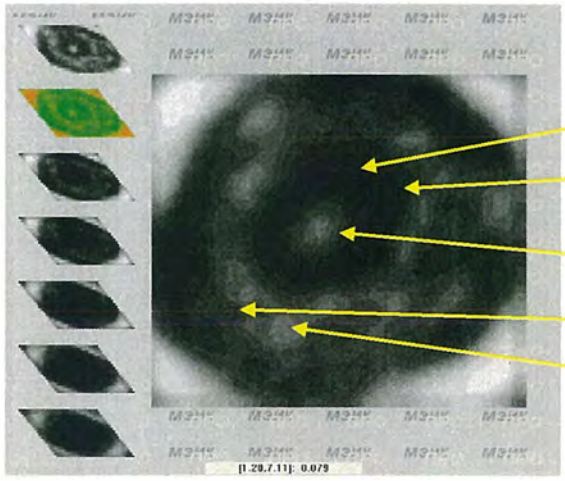
Electrical impedance anatomy of the breast



The first scanning level

(depth 4mm)

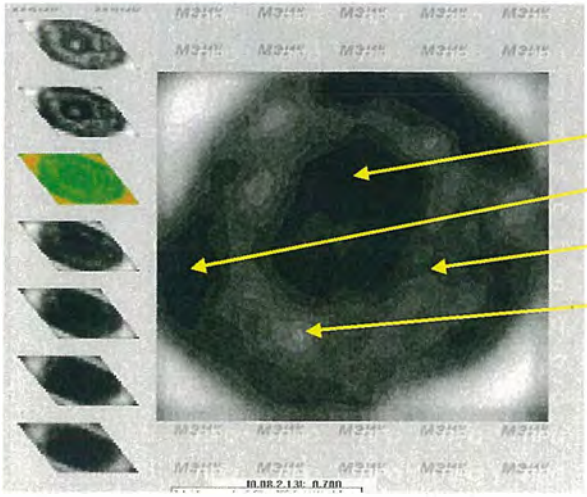
- Subcutaneous adipose tissue
- Superficial fascia (anterior folium of the pectoral fascia)
- Lacteal sinus
- Cooper ligament
- Glandular tissue (fibro-glandular complex)



The second scanning level

(depth 11mm)

- Subcutaneous adipose tissue
- Superficial fascia (anterior folium of the pectoral fascia)
- Lacteal sinus
- Cooper ligaments
- Glandular tissue (fibro-glandular complex)



The third scanning level

(depth 18mm)

- Subcutaneous adipose tissue
- Intralobular adipose tissue
- Cooper ligaments
- Glandular tissue (fibro-glandular complex)

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Examples of Patient Cases

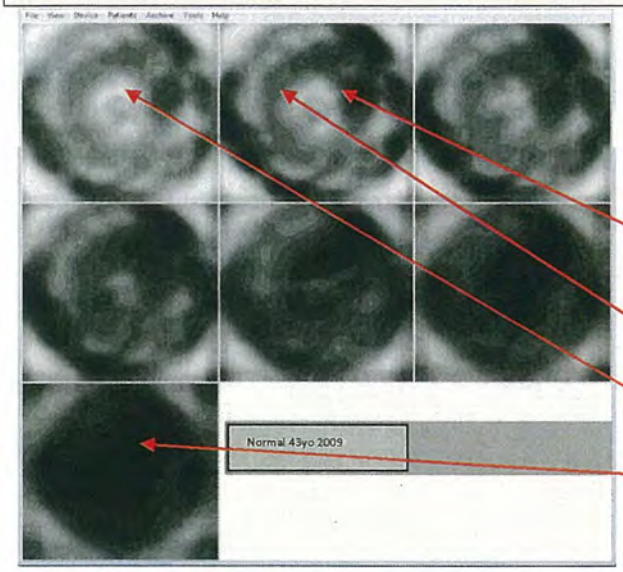

Image of right breast of healthy 43yo (Slide 1)

Second phase of menstrual cycle.

7 layers, each 7mm apart down to 46mm.

Normal anatomical structure.

Fatty lipoma at second and third level (very low conductivity).

Adipose tissue surrounding nipple (Low conductivity).

Oestrogen at nipple (High conductivity).

Retromammary adipose tissue.

Reimage annually.

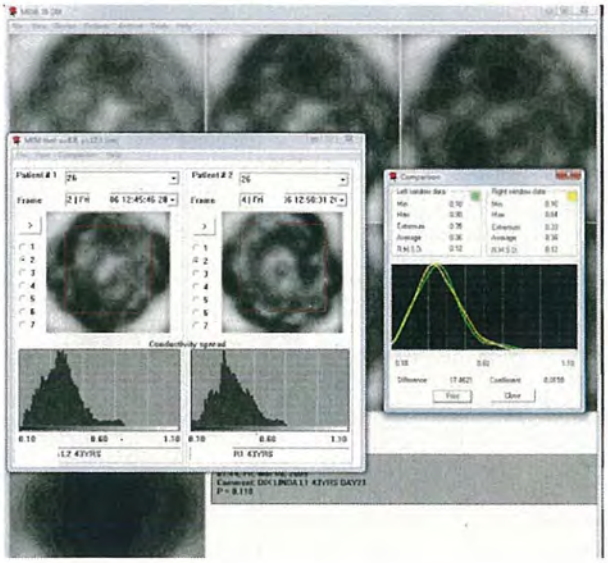

Image of right breast of healthy 43yo (Slide 2)

Analytical tool in two frames to compare right and left breast to each other, and breast compared to a normal database.

Comparative analysis of left and right breast shows symmetrical and low conductivity, suggesting slight fibrous mastopathy.

No excess oestrogen.

Reimage annually.

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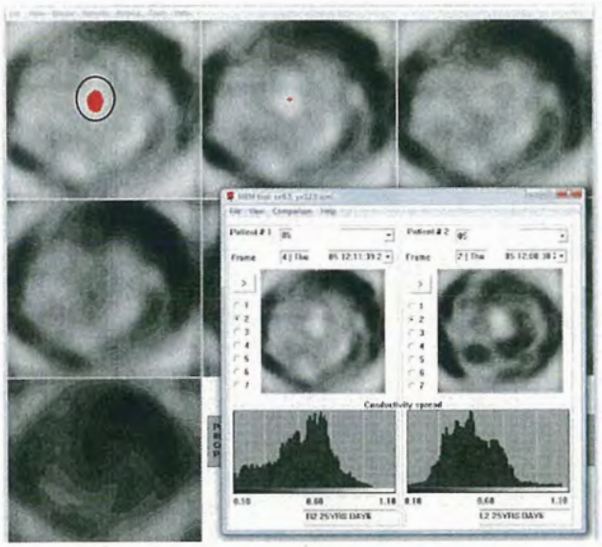
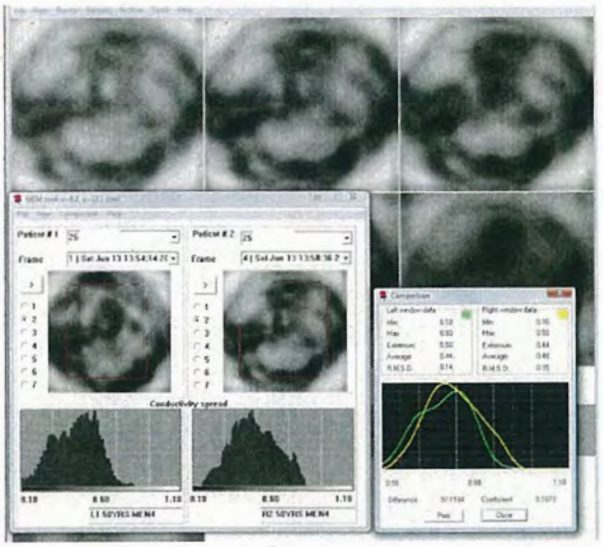


Example of healthy 25yo, day 6 of menstrual cycle

Normal level of high conductivity at nipple area, down to 2 levels.

Conductivity is small, circular and symmetrical in each breast.

Reimage annually.



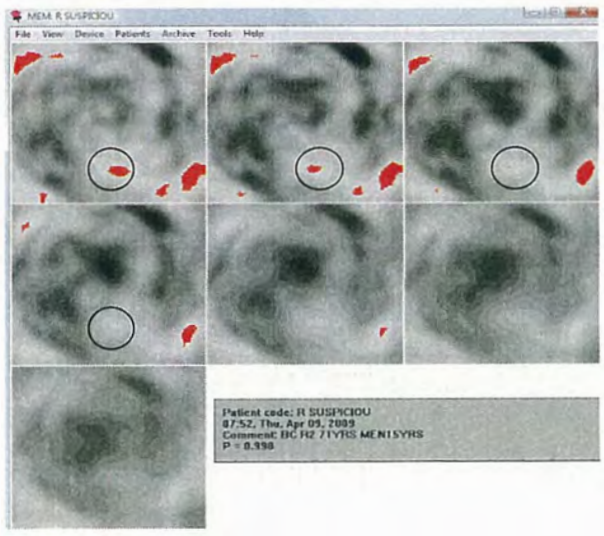
Example of 56yo, post-menopause 4 years with fibrous mastopathy

Symmetrical conductivity in each breast.

Lower than comparison to the norm for age group in conductivity.

Slight fibrous mastopathy.

Reimage annually.



Example of 71yo, post-menopause 15 years with suspicious mass (Slide 1)

Contour of right breast distorted.

Distortion of structure down 4 levels (to 25mm).

High conductivity (highlighted in red) down 3 levels in right breast.

Excess glandular tissue for age.

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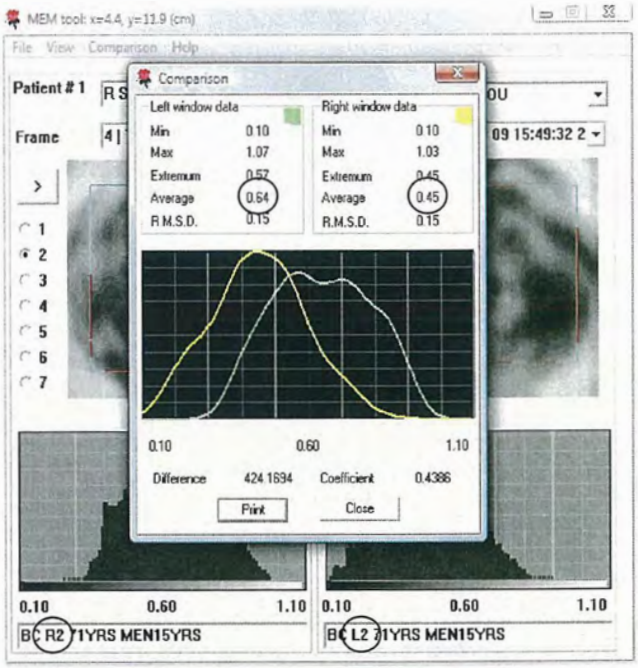


Example of 71yo, post-menopause 15 years with suspicious mass (Slide 2)

Comparison right and left breast.

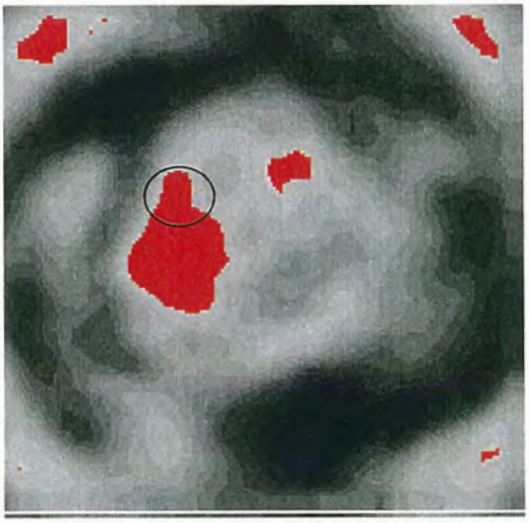
Right breast in green, left breast in yellow.

Right breast higher conductivity than left, and irregular histogram shape.

Average conductivity of right breast is 0.64, compared to 0.45 for left.

Refer to own doctor for clinical examination and further investigation.

Reimage in 3 months.



Example of 61 yo, post-menopause 3 years with cancer

Dense fibroglandular breasts

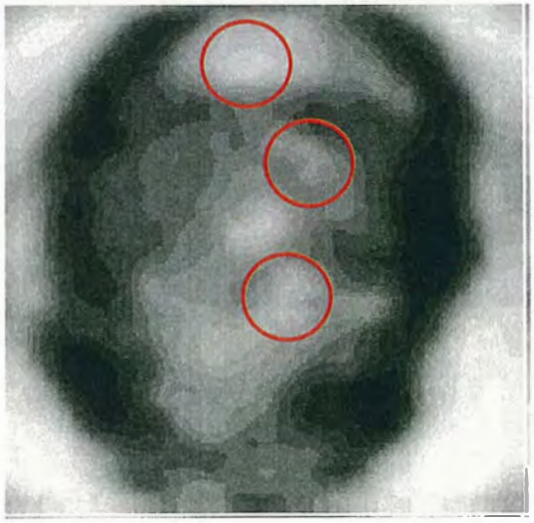
Large area of glandular tissue in right breast

Conductivity significantly higher to the normal database

Cancer at 10 o'clock, Right breast

2cm from nipple, 2cm x 1.25cm

Refer to own doctor for clinical examination and further investigation.



Example of 45 yo with lumpy left breast and multiple cysts.

Hysterectomy at 33.

Images show cysts circled in red.

Distortion of outline of the breast due to lumpiness.

Fatty lobules shown in black (low conductivity).

Increased breast cancer risk and should be monitored regularly.

Reimage in 6 months.