Mammary gland impedance image evaluation
Mammary gland impedance image evaluation

**Image**
- Contour
- Mammary gland anatomy
- Local changes of electrical conductivity
- Lactic sinus zone

**Measurement**
- Mean electrical Conductivity index
- Electrical conductivity distribution divergence
- Local changes of electrical conductivity
Mammary gland impedance image evaluation

- **Contour**
  - deformation
  - hyperimpedance
- **Mammary gland anatomy**
  - anatomy changes
  - displacement of internal structures
  - hyperimpedance area contour around the focus
- **Local changes of electrical conductivity**
  - hyperimpedance area
  - hypoimpedance area
- **Lactic sinus zone**
  - can be imaged
  - can not be imaged
  - dilated
  - not dilated
Mammary gland contours

- Contour deformation
  
  *outwards (bulging)*
  
  *inwards (retraction)*

Mastitis

Mammary gland cancer
Mammary gland contours

- Hyperimpedance of the contour (a 51-years-old patient)

Right mammary gland cancer
Left mammary gland
Mammary gland anatomy

- Anatomy (a 39-years-old patient)

**altered**

Affected mammary gland (cancer)

**not altered**

Normal mammary gland
Mammary gland anatomy

• Displacement of internal structures (a 50-years-old patient)

with displacement

no displacement

Affected mammary gland (cancer)

Normal mammary gland
Mammary gland anatomy

- Hyperimpedance contour around the focus
  (a 67-years-old patient)

![Affected mammary gland (cancer)](image1)

![Normal mammary gland](image2)
Local changes of electrical conductivity

- Changes of electrical conductivity (a 50-years-old patient)

Hyperimpedance area

Hypimpedance area

Mastitis

Mammary gland cancer
Lactic sinus zone

- Lactic sinus
  
  *can be imaged*  
  
  *can not be imaged*

A 42-years-old patient  

A 38-years-old patient
Lactic sinus zone

- Lactic sinus

Not dilated

A 35-years-old patient

A 27-years-old patient
Mammary gland impedance image evaluation

**Measurement**

- Mean electrical conductivity index
  - mean electrical conductivity index
  - histogram of electrical conductivity distribution

- Electrical conductivity distribution divergence

- Local changes of electrical conductivity
  - mean electrical conductivity index of the selected area
  - histogram of electrical conductivity distribution

- Local changes of electrical conductivity
  - mean electrical conductivity index and divergence in electrical conductivity distribution between the left and right breast
  - mean electrical conductivity index and divergence in electrical conductivity distribution between the left (right) and the normal breast
**Mean electrical conductivity index**

- Mean electrical conductivity index and histogram of electrical conductivity distribution

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**Measurement**

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<thead>
<tr>
<th># 1 (4 mm)</th>
<th># 2 (11 mm)</th>
<th># 3 (18 mm)</th>
<th># 4 (25 mm)</th>
<th># 5 (32 mm)</th>
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Mean electrical conductivity index and histogram of electrical conductivity distribution

<table>
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<th>Archive</th>
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**Date:** 26.05.2007 9:57, Comment: невра, лейка, постмеполуза 14 лет

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<th># 6 (39 mm)</th>
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Divergence in electrical conductivity distribution

- Mean electrical conductivity index and divergence in electrical conductivity distribution between the left and right breast
Mean electrical conductivity index and divergence in electrical conductivity distribution between the left and right breast
Divergence in electrical conductivity distribution

- Mean electrical conductivity index and divergence in electrical conductivity distribution between the left (right) and the normal breast

![Diagram showing electrical conductivity distribution](image-url)
Mean electrical conductivity index and divergence in electrical conductivity distribution between the left (right) and the normal breast.
Local changes of electrical conductivity

• Mean conductivity index of the selected area and histogram of electrical conductivity distribution