Diagnosis and Treatment of Patients with early and advanced Breast Cancer

Oncoplastic and Reconstructive Surgery
Plastic-reconstructive aspects after mastectomy

- **Versions 2002–2018:**
  Audretsch / Bauerfeind / Blohmer / Brunnert / Dall / Ditsch / Fersis / Gerber / Hanf / Kümmel / Lux / Nitz / Rezai / Rody / Scharl / Solbach / Thomssen /

- **Version 2019:**
  Kümmel / Friedrich

Pubmed 2003 - 2017
Cochrane data base (z.B. Cochrane Breast Cancer Specialised Register)
Suchbegriffe: breast reconstruction; ... AND random allocation, ... AND cohort study

**Einteilung in EBM-Grade nach**

**Verwendete Guidelines zu Diagnostik und Therapie des Mammakarzinoms**
National Institute of Health (NIH) – National Cancer Institute:
http://www.cancer.gov/cancertopics/pdq/treatment/breast/HealthProfessional/
American Association of Clinical Oncology (ASCO) and Technology Assessments: http://www.asco.org/portal/site/ASCO/menuitem. (Practice Guidelines),
Definition of oncoplastic surgical procedures

Use of plastic surgical techniques at the time of tumor removal to enable safe resection margins and to preserve aesthetic breast contour.

Focus on favorable scar placement, adequate soft tissue formation, choice of proper reconstruction procedure (including in the context of radiation) and reconstruction of the contralateral side to achieve symmetric results.


3. Optimizing breast cancer adjuvant radiation and integration of breast and reconstructive surgery. Kuerer H, et al. ASCO Educational Book 2017; Memorial Sloan Kettering Cancer Center, Fig. 2 und 3

Breast Reconstruction Principles

AGO: ++

- Planning the reconstructive procedure by an interdisciplinary tumor board before mastectomy
- Counseling regarding all surgical techniques, including advantages and disadvantages
- Offer of a second opinion
- Discussion of neoadjuvant treatment in unfavourable tumor-breast-relation
- Consideration of the contralateral breast:
  - discuss possible alignment / sequencing surgical procedures to produce symmetry; usually after at least 3-6 months (Caveat: need for post-resections, consider effects of radiotherapy on the affected side)
- Preference for a less stressful surgical technique with long-term stable esthetic result (to prefer BCS over mastectomy)
- Caveat: no delay in adjuvant therapy due to reconstruction

1. AWMF Leitlinien: S3-LL. Brustrekonstruktion mit Eigengewebe. Registernummer 015 – 075, Stand: 01.04.2015 , gültig bis 31.03.2020


**Statistical Analysis:**

LPAS data is expressed relative to normative population rates using standardized incidence ratios (SIRs).

Systemic harm rates in the study population are calculated per 10,000 person-years.

Normative population rates for systemic harms, self-harm, and reproductive outcomes are obtained from the literature; rates reflect LPAS demographics for female sex, age, and race in the United States.

Possible Associations between Implants and rare Diseases

<table>
<thead>
<tr>
<th>Rare Systemic Harms Compared With the General Population:</th>
<th>Manufacturer</th>
<th>Study Events</th>
<th>Study Event Rate (Per 10,000 Person Yr)</th>
<th>General Population Event Rate (Per 10,000 Person Yr)</th>
<th>SR</th>
<th>95% CI</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibromyalgia</td>
<td>Allergan</td>
<td>9</td>
<td>1.8</td>
<td>112.8</td>
<td>0.02</td>
<td>0.01-0.03</td>
<td>&lt;0.001</td>
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<tr>
<td>Rheumatoid arthritis</td>
<td>Mentor</td>
<td>307</td>
<td>20.4</td>
<td>112.8</td>
<td>0.25</td>
<td>0.22-0.28</td>
<td>&lt;0.001</td>
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<tr>
<td>Scleroderma</td>
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<td>149</td>
<td>32.2</td>
<td>5.4</td>
<td>5.96</td>
<td>3.35-6.42</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sjogren syndrome</td>
<td>Mentor</td>
<td>62</td>
<td>5.7</td>
<td>0.7</td>
<td>8.14</td>
<td>6.24-10.44</td>
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<tr>
<td>Systemic lupus erythematosus</td>
<td>Mentor</td>
<td>3</td>
<td>0.6</td>
<td>5.4</td>
<td>0.51</td>
<td>0.33-0.72</td>
<td>&lt;0.001</td>
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<tr>
<td>Cancer</td>
<td>Allergan</td>
<td>80</td>
<td>16.0</td>
<td>41.3</td>
<td>0.39</td>
<td>0.31-0.48</td>
<td>&lt;0.001</td>
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<tr>
<td>Breast cancer</td>
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<td>116</td>
<td>13.5</td>
<td>12.5</td>
<td>1.11</td>
<td>0.92-1.33</td>
<td>0.26</td>
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<tr>
<td>Lung cancer</td>
<td>Mentor</td>
<td>5</td>
<td>0.6</td>
<td>5.2</td>
<td>0.12</td>
<td>0.06-0.27</td>
<td>&lt;0.001</td>
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<tr>
<td>Brain cancer</td>
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<td>0.4</td>
<td>0.6</td>
<td>0.67</td>
<td>0.14-1.95</td>
<td>0.619</td>
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<tr>
<td>Melanoma</td>
<td>Mentor</td>
<td>65</td>
<td>7.8</td>
<td>2.1</td>
<td>3.71</td>
<td>2.07-6.73</td>
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<tr>
<td>Neurological disorder</td>
<td>Allergan</td>
<td>18</td>
<td>3.6</td>
<td>22.5</td>
<td>0.16</td>
<td>0.09-0.25</td>
<td>&lt;0.001</td>
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<tr>
<td>Multiple sclerosis</td>
<td>Mentor</td>
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<td>35.8</td>
<td>22.5</td>
<td>1.69</td>
<td>1.44-1.96</td>
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<td>4.3</td>
<td>2.5</td>
<td>1.72</td>
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<td>&lt;0.001</td>
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<tr>
<td>Allergan follow-up 2 years</td>
<td>MentIon</td>
<td>17</td>
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<td>0.8</td>
<td>1.88</td>
<td>1.09-3.00</td>
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<td>Mentor follow-up 7 years</td>
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</tbody>
</table>

New Background slide


7. Clinical outcome and patient satisfaction with the use of bovine-derived acellular dermal matrix (SurgiMend™) in implant based immediate reconstruction following skin sparing mastectomy: A prospective observational study in a single centre. Headon H, et


1. AWMF-Leitlinie „Autologe Fetttransplantation“, Klasse: S2k Registernummer: 009/017, 11/2015


Postmastectomy Pedicled Reconstruction

Breast reconstruction (BR) with autologous tissue
- TRAM, Lattissimus-dorsi-flap (both can be performed as a muscle-sparing technique)
- Delayed TRAM in risk patients
- Ipsilateral pedicled TRAM
- Radiotherapy:
  - BR following radiotherapy
  - BR prior to radiotherapy
  (higher rates of fibrosis, wound healing problems, liponecrosis and reduced aesthetic outcome)

<table>
<thead>
<tr>
<th>Oxford LoE</th>
<th>GR</th>
<th>AGO</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>3b</td>
<td>A</td>
<td>+</td>
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<tr>
<td>2a</td>
<td>B</td>
<td>+/-</td>
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<td></td>
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</tr>
</tbody>
</table>


### Free flaps for reconstruction

**Kind of free flap**
- DIEP
- Free TRAM
- SIEA
- Gluteal flaps (SGAP - IGAP, FCI)
- Free gracilis flap (TMG)

**Advantages**
- DIEP and free TRAM are potentially muscle-sparing procedures. The DIEP has a lower rate of abdominal hernias.

**Disadvantages**
- Time- and personnel consuming microsurgical procedure
- Intensified postoperative monitoring
- Higher reoperation rate
- Pre-reconstruction radiotherapy increases rate of vascular complications

<table>
<thead>
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<th>Kind of free flap</th>
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<th>Grade</th>
<th>AGO</th>
</tr>
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<tbody>
<tr>
<td>DIEP</td>
<td>2a</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td>Free TRAM</td>
<td>2a</td>
<td>B</td>
<td>+</td>
</tr>
<tr>
<td>SIEA</td>
<td>3a</td>
<td>C</td>
<td>+/-</td>
</tr>
<tr>
<td>Gluteal flaps</td>
<td>4</td>
<td>C</td>
<td>+/-</td>
</tr>
<tr>
<td>Free gracilis</td>
<td>4</td>
<td>C</td>
<td>+/-</td>
</tr>
</tbody>
</table>


7. Perfusion-related complications are similar for DIEP and muscle-sparing free TRAM flaps harvested on medial or lateral deep


Stalked versus free tissue transfer

- Muscle-sparing techniques and accuracy of abdominal wall closure will lead to low rates of late donor site complications whatever method used
- Autologous abdominal-based reconstructions have the highest satisfaction in all patient groups without any difference
- Donor site morbidity (e.g. impaired muscle function) has to be taken into consideration in all flap techniques.

1. AWMF Leitlinien: S3-LL. Brustrekonstruktion mit Eigengewebe. Registernummer 015 – 075, Stand: 01.04.2015, gültig bis 31.03.2020


