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Oncoplastic and Reconstructive Surgery

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Oncoplastic and Reconstructive Surgery

- **Versions 2002–2016:**
  Audretsch / Bauerfeind / Blohmer / Brunnert / Dall / Fersis / Gerber/ Hanf / Kümmel / Lux / Nitz / Rezai / Rody / Scharl / Thomssen

- **Version 2017:**
  Kümmel / Solbach (in consens with AWOGyn)

Definition of Oncoplastic Surgery

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

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	Oxford / AGO LoE	GR	
➢ Tumor adapted reduction mammaplasty	2a	B	+
➢ Local flap techniques	2a	B	+
➢ Partial mastectomy with tissue transfer	3b	B	+/-
➢ Oncological safe	2a	B	
➢ Complication rate comparable with lumpectomy	2a	B	

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Patient wishes to undergo breast reconstruction
N.B.: Habitus, breast volume, wishes

No postmastectomy radiotherapy

SSM/NSM and implantation
or
MRM + tissue expander → Implantat

Postmastectomy radiotherapy indicated

Mastectomy
→Radiotherapy
→Delayed autologous reconstruction

Not suitable for autologous reconstruction
E.g. too little subcutaneous fat, wishes of patient

Prosthesis reconstruction
Radiotherapy
N.B.: Increased complication rate, particularly capsular fibrosis

To be discussed in individual cases:
Immediate autologous reconstruction
N.B.: Increased fibrosis rate

Delayed prothesis reconstruction
N.B.: Increased complication rate

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Breast Reconstruction
General Considerations

AGO: ++

- **Counceling regarding all techniques, including techniques not offered at the own clinic, advantages and disadvantages**
- **Offer of a second opinion**
- **Consider neoadjuvant treatment in unfavourable tumor-breast-relation**
- **Consider adjustment surgery to achieve symmetry**
- **Prefer most convinient and aesthetically long lasting technique**
- **Caveat: delay in adjuvant treatment due to reconstruction**

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Postmastectomy Reconstruction

	Oxford / AGO LoE	GR	
➢ Use of silicone filled breast implants	2a	B	+
➢ Autologous tissue reconstruction	2a	B	+
➢ Pedicled tissue reconstruction	2a	B	+
➢ Free tissue reconstruction	2a	B	+
➢ Autologous tissue combined with implants	3a	C	+

Attention: BMI >30, smoking status, diabetes, RT, age, bilateral mastectomy

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	Oxford / AGO LoE	GR	
➢ **Immediate BR**	3b	B	++
➢ Mandatory: SSM / NSM			
➢ Avoidance of a postmastectomy syndrome			
➢ **Delayed BR**	3b	B	++
➢ No interference with adjuvant procedures (CHT, RT)			
➢ Disadvantage: loss of skin envelope			
➢ **„Delayed-immediate“ BR**	3b	B	+/-

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	Oxford / AGO LoE	/ GR	
➢ **Implant reconstruction (IR)**	2a	B	+
➢ **IR without radiotherapy (RT)**	2a	B	++
➢ **IR prior to RT / following PBRT (higher complication rate)**	2a	B	+
➢ **IR following MX and RT**	2b	B	+/-
➢ **IR following Mx for local relapse after BCT**	2a	B	+/-
➢ **Periop. antibiotic therapy (at least 24 h)**	2b	B	+

*MX = Mastektomie

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Tissue Replacement Techniques and Meshes

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	Oxford / AGO LoE	GR	
➢ **Autologous tissue (e.g. autodermal graft, LDF*)**	3b	C	+#
➢ **Acellular dermal matrix (ADM)**	2b	B	+#
➢ **Synthetic mesh**	2b	B	+#

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* LDF = Latissimus dorsi flap

Participation in register study recommended

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	Oxford / AGO LoE / GR		
➢ Lipotransfer after MX and breast reconstruction	2a	B	+
➢ Lipotransfer after breast-conserving therapy	2a	B	+
➢ Autologous adipose derived stem cells (ASCs)-enriched fat grafts	5	D	-

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Postmastectomy Pedicled Reconstruction

	Oxford / LoE	AGO / GR	
Reconstruction (BR) with autologous tissue			
➢ **TRAM, latissimus-dorsi-flap (both can be performed as a muscle-sparing technique)**	**3b**	**C**	**+**
➢ **Delayed TRAM in risk patients**	**3a**	**B**	**+**
➢ **Ipsilateral pedicled TRAM**	**3b**	**A**	**+**
➢ **Radiotherapy:**			
➢ **BR following RT**	**2 a**	**B**	**+**
➢ **BR prior to RT (more fibrosis, more wound healing problems, more liponecrosis)**	**2a**	**B**	**+/-**

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Free Tissue Transfer

	Oxford LoE	AGO GR	
Free tissue transfer			
➢ **DIEP-flap**	2a	B	+
➢ **Free TRAM-flap**	2a	B	+
➢ **SIEA-flap**	3a	C	+/-
➢ **Gluteal Flaps (SGAP- / IGAP-flap/FCI)**	4	C	+/-
➢ **Free gracilis flap (TMG)**	4	C	+/-

Advantage:

- 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 RT increases rate of vascular complications

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Pedicled vs. Free Tissue Transfer

	Oxford LoE	AGO GR	
➢ **Muscle-sparing techniques and accuracy of abdominal wall closure will lead to low rates of late donor site complications whatever method used**	3a	A	++
➢ **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**			

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Flap-Implant Combination

	Oxford LoE	/ GR	AGO
LDF* + implant	**2b**	**C**	**+**
➢ **IR following RT**	**3b**	**C**	**+**
➢ **IR prior to RT**	**5**	**D**	**-**
Other flaps + implant	**5**	**C**	**+/-**

Advantages:

- TRAM: staged procedure preferable
- Improved implant coverage
- Suitable for radiated tissue

Disadvantage:

- Muscle contraction (LDF)

* LDF = Latissimus dorsi flap

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Skin/Nipple Sparing Mastectomy (SSM/NSM) and Reconstruction

	Oxford LoE	/ GR	AGO
➢ **Skin sparing mastectomy (SSM/NSM)**			
➢ Safe (same recurrence rate as MX)	2b	B	++
➢ Higher QoL for patients	2b	B	++
➢ NAC can be preserved under special conditions	2b	B	++
➢ Feasible after mastopexy / reduction mammoplasty	4	C	++
➢ **Skin incisions ⇨ different options possible:**			
➢ Periareolar („purse-string“; higher risk of necrosis)			
➢ Reduction pattern: „inverted-T“ or vertical			
➢ Inferior lateral approach, inframammary fold			
➢ Lowest incidence of complications	2b	B	+

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Risk Reducing Bilateral Mastectomy in Healthy Women (RRBM)

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	Oxford / AGO LoE	/ GR	
➢ RRBM reduces breast cancer incidence	1b	A	++
➢ RRBM in deleterious BRCA1/2 mutation	2a	B	+*
➢ RRBM in high risk situation without BRCA 1/2 mutation (individual decision depending on personal-family history and mutational status – e.g. high and moderate risk genes, Hodgkin lymphoma)	4	D	+/-*
➢ High risk and no BRCA counselling in specialized centre*	5	D	- -
➢ Non-directive counselling prior to RRBM	2b	B	++*
➢ RRBM should be considered with other prophylactic surgical options incl. bilateral salpingoophorectomy (BSO)	2a	A	++*
➢ Further need for education of physicians regarding possibilities and advantages of RRBM	1b	A	++

*Counselling, risk prediction and follow-up in specialised centres recommended

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Types of Risk Reducing (bilateral) Mastectomy (RRBM)

	Oxford / AGO LoE	/ GR	
Risk Reducing Mastectomy reduces breast cancer incidence; bc-spec mortality reduction likely			
➢ **Simple mastectomy**	2b	B	+
➢ **RRBM by SSM***	2b	C	+
➢ **RRBM by NSM* (NAC# sparing)**	2b	C	+
➢ **Contralateral prophylactic MX**	4	C	+/-

* SSM / NSM: Skin-/Nipple-Sparing Mastectomy
# NAC: Nipple-Areola-Complex

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Oncoplastic and Reconstructive Surgery (2/18)

Further information and references:

Pubmed 2003 - 2016
Cochrane data base (z.B. Cochrane Breast Cancer Specialised Register)
Suchbegriffe: breast reconstruction; … AND random allocation, … AND cohort study

Einteilung in EBM-Grade nach

Jeremy Howick, Iain Chalmers, Paul Glasziou, Trish Greenhalgh, Carl Heneghan, Alessandro Liberati, Ivan Moschetti, Bob Phillips, and Hazel Thornton. "The 2011 Oxford CEBM Evidence Levels of Evidence (Introductory Document)". Oxford Centre for Evidence-Based Medicine. http://www.cebm.net/index.aspx?o=5653

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),
Canadian Medical Association (CMA): http://www.cmaj.ca/cgi/content/full/158/3/DC1
NCCN 2016
Regeln zur Überarbeitung der AGO Empfehlungsdias_Stand 04.08.2016

Definition of oncoplastic surgery (3/18)

Further information:

Aesthetics must play a key role in the surgery of the breast in order to avoid deformities which could have a negative impact on a patient`s self esteem irrespective of age. With the help of oncoplastic surgery free margins due to wide excisions of malignant tumors are possible without compromising the shape of the breast thus preserving physical integrity. As a result oncoplastic surgery plays an integral role in the primary surgical treatment of BC.

No references

Oncoplastic breast conserving surgery (4/18)

No further information

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Algorithm of Breast Reconstruction (5/21)

No further information

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Breast Reconstruction - General Considerations (6/18)

No further information

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Postmastectomy Reconstruction (7/18)

No further information

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Timing of Reconstruction (8/18)

No further information

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Timing of Implant Based Reconstruction and Radiotherapy (9/18)

No further information

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Tissue replacement techniques and Meshes (10/18)

No further information

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Lipotransfer (11/18)

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