Guidelines Breast
Version 2017.1

Breast Cancer Surgery
Oncological Aspects

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Guidelines Breast
Version 2017.1

- **Versions 2002–2016:**
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Version 2017.1

Breast Cancer Surgery
Oncological Aspects

AGO: ++

Surgery is one sub-step out of multiple steps in breast cancer treatment. Thus, both a diagnostic and an oncological expertise are indispensable and a definite requirement.

Pretherapeutic Assessment

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Version 2017.1

	Oxford / AGO LoE	GR	
➢ Palpation	5	D	++
➢ Mammography	2b	B	++
➢ Ultrasound (breast & axilla)	2b	B	++
➢ Minimal invasive biopsy*	1c	A	+
➢ MRI**	1c	B	+/-

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*** If clinical examination, mammography, ultrasound and in some cases MRI are not able to determine the extension of lesion**

**** No significant reduction of re-excision rate.**
The possibility of MRI guided biopsy is the precondition of breast MRI (e.g. dense breast tissue 3-4, C, D and invasive lobular cancer , suspicion of multifocal or multicentric disease)

Perioperative Staging

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Version 2017.1

	Oxford / AGO LoE	GR	
➢ **History and physical examination**	5	D	++

Only recommended in high metastatic potential and / or with symptoms:

➢ **Chest X-ray**	5	D	+
➢ **Liver ultrasound**	5	D	+
➢ **CT-scan**	5	D	+
➢ **Bone-scan**	5	D	+
➢ **FDG-PET or FDG-PET / CT**	4	C	-
➢ **Whole body MRI**	4	C	-

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Version 2017.1

Evidence of Surgical Procedure

	Oxford / AGO LoE	GR
➢ Survival rates after lumpectomy + XRT are equivalent to those after (modified) radical mastectomy	1a	A
➢ Survival rates after modified radical mastectomy are equivalent to those after radical mastectomy	1b	A
➢ Local recurrence rates after skin sparing mastectomy are equivalent to those after mastectomy	2b	B
➢ Conservation of the NAC (nipple areola complex) is an adequate surgical procedure in tumors of the periphery of the gland and after tumor-free section of retroareolar tissue	2b	C

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References

Breast Conservation: Surgical Technical Aspects

	Oxford / AGO LoE	GR	
➢ **Non-palpable lesion**			
➢ Wire guided localisation	2b	B	++
➢ Radionuclide guided localisation	2b	B	+/-
➢ Specimen radiography or ultrasound	2b	B	++
➢ **Tumor-free margins required** (also in unfavorable biology „no cells on ink“ are enough)	2a	A	++
➢ **Immediate intraoperative re-excision for close margins (specimen radiography and/or intra-operative pathology)**	1c	B	++
➢ **Re-excision required for involved margins (paraffin section)**	3b	C	+
➢ **Therapeutic stereotactic excision alone**	4	D	- -
➢ **Ultrasound guided surgery to prevent re-excision**	1a	A	+/-
➢ **Intraop. margin evaluation with margin probe**	1b	A	+/-

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References

Breast Conservation Surgery (BCS)

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Version 2017.1

	Oxford / AGO LoE / GR		
➢ **Multicentricity**	2b	B	+/-
➢ **Positive microscopic margins after repeated excision**	2b	B	- -
➢ **Inflammatory breast cancer**	2b	B	- -

Surgery after neoadjuvant chemotherapy go to chapter „neoadjuvant chemotherapy“

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References

Axillary Lymph Node Dissection I

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Version 2017.1

	Oxford / AGO LoE	GR	
Axillary lymph node dissection (>=10 LN)			
➢ To improve survival	3	D	-
➢ For staging	3	A	-
➢ For local control	2a	A	+/-
Axillary lymph node dissection			
➢ DCIS	2b	B	- -
➢ If SLNB is possible	1a	A	- -
➢ SN + (cT1/2 cN*0; < 3 SN +, BCS + tangential radiation field, no subsequent axillary radiation, adequate systemic therapy)	1b	B	+/-
➢ SN + (mic)	1b	A	-
➢ SN (i+)	2b	B	- -
➢ SN + mastectomy (no radiotherapy of the chestwall)	1b	B	+
➢ SN+ mastectomy (radiotherapy of the chestwall)			
➢ Only if T1, T2 and 1-2 pos. SLN	5	D	+/-
Axillary lymph node dissection indicated, but not feasible			
➢ Radiation according to AMAROS-trial	1b[a]	B	+

*** Study participation recommended**

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Version 2017.1

Axillary Intervention Before or After NACT

Oxford / AGO
LoE / GR

SLNB before or after NACT in cN0						
SLNB before NACT **SLNB after NACT**					**2b** **2b**	**B** **B**	**+/-** **+**
Further surgical procedures depending on SLNB status							
cN-Status (before NST)	**pN-Status (before NST)**	**cN-Status (after NST)**		**Surgical Procedure (after NST)**			
cN0	**pN0(sn)**	**-**		**nihil**	**1a**	**A**	**+**
cN0	**pN+(sn)** (analog ACOSOG Z0011)	**ycN0**		**nihil** **Re-SLNB alone** **ALND**	**5** **2b** **3**	**D** **B** **B**	**+** **-** **+/-**
cN0	**pN+(sn)** (not analog ACOSOG Z0011)	**ycN0**		**Re-SLNB alone** **ALND** **Axilla XRT**	**2b** **2b** **2b**	**B** **B** **B**	**-** **+** **+**
cN0	**not done**	**ycN0**	**ypN0 (sn)**	**SLNB alone** **ALND**	**2b** **2b**	**B** **B**	**+** **+/-**
			ypN+ (sn)	**ALND**	**2b**	**B**	**+**
cN+	**cN+ (CNB/FNA)**	**ycN0** **ycN+**		**SLNB alone*** **ALND** **ALND**	**2b** **2b** **2b**	**B** **B** **B**	**+/-** **+** **++**

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Improvement of the False-Negative Rate of SLNB after NACT in Patients with (cN+) (FNA/CNB)

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Version 2017.1

	Oxford / AGO LoE / GR		
➢ Removal of > 2 SLNs	3b	C	+/-
➢ Combined tracer	3b	C	+/-
➢ IHC and serial sections	2b	C	+/-
➢ LN localisation	3b	C	+/-

Sentinel Lymph Node Biopsy (SLNB): Indications I

	Oxford / AGO LoE / GR		
➢ Clinically (cN0) / sonographically neg. axilla	1b	A	++
➢ Add. FNA/CNB of LN (clinical/sonogr. suspicious) in order to enable SLNB	2a	B	+
➢ T 1-2	2b	A	++
➢ T 3, 4a-c	3b	B	+
➢ Multifocal / multicentric lesions	2b	B	+
➢ DCIS	3b	B	+
➢ Mastectomy	3b	B	+
➢ DCIS in male	5	D	+
➢ BCT	3b	B	-
➢ Male breast cancer	2b	B	+
➢ In the elderly	3b	B	+

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Further Information

References

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Version 2017.1

Sentinel Lymph Node Excision (SNE): Indications II

	Oxford / AGO LoE / GR		
➢ During pregnancy and / or breast feeding (no blue dye)	3	C	+
➢ After previous tumor excision	2b	B	+
➢ Previous major breast surgery (e.g. reduction mammoplasty, mastectomy)	3b	C	+/-
➢ Ipsilateral breast recurrence after prior BCS and prior SNE	4	D	+/-*
➢ SN in the mammarian internal chain	2b	B	-
➢ After axillary surgery	3b	B	+/-*
➢ Prophylactic bilateral / contralateral mastectomy	3b	B	- -
➢ Inflammatory breast cancer	3b	C	-

*** Lymph node scintigraphy is necessary**

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Sentinel Lymph Node Excision (SNE): Marking

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Version 2017.1

	Oxford / AGO LoE	GR	
➢ ^{99m}Tc Kolloid	1a	A	++
➢ Blue dye	1a	B	+/-
➢ Methylen blue	4	D	-
➢ Indocyanin green (ICG)*	2b	B	+/-
➢ SPIO#	2b	B	+/-

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SPIO: Superparamagnetic Iron Oxide

* Study participation recommended

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Version 2017.1

Procedure after Neoadjuvant Therapy

	Oxford / AGO LoE / GR		
➢ Marking of tumor in a timely manner	5	D	++
➢ Surgery	2b	C	++
➢ Microscopically clear margins	5	D	++
➢ Tumor resection in the new margins	3b	C	+

For „Surgery after neoadjuvant chemotherapy“ see chapter „Neoadjuvant chemotherapy“

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References

Adjuvant Therapy after Primary Surgery

	Oxford / AGO LoE	GR	
➢ Start adjuvant systemic therapy and RT as soon as possible (a.s.a.p.) after surgery	1b	A	++
➢ Start of adjuvant chemotherapy after surgery a.s.a.p., and prior to RT	1b	A	++
Without cytotoxic therapy:			
➢ Start irradiation 6-8 weeks after surgery	2b	B	++
➢ Start endocrine therapy after surgery and a.s.a.p.	5	D	++
➢ Tamoxifen concurrent with radiotherapy	3b	C	+
➢ AI concurrent with radiotherapy	3b	C	+

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Further Information

References

Breast Cancer Surgery Oncologic Aspects (2/16)

Further information and references:

Update Januar 2017

Screened data bases: Pubmed 1998 - 2016, ASCO 2016, SABCS 2016, ESMO 2016, EBCC 2016
Screened consensus conference:

- Goldhirsch A, Winer EP, Coates AS, Gelber RD, Piccart-Gebhart M, Thürlimann B, Senn HJ; Panel members. Personalizing the treatment of women with early breast cancer: highlights of the St Gallen International Expert Consensus on the Primary Therapy of Early Breast Cancer 2013.
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Cochrane library:
- http://onlinelibrary.wiley.com/cochranelibrary/search

Breast Cancer Surgery Oncologic Aspects (3/16)

No further information

No references

Pretherapeutic assessment (4/16)

No further information

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Pre-operative staging (5/16)

No further information

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Statement: history and physical examination

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Statement: high metastatic potential / symptoms

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Evidence of surgical procedure (6/16)

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Breast Conservation, Surgical Technical Aspects (7/16)

No further information

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Breast Conservation Surgery (8/16)

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Axillary Lymph Node Dissection I (9/16)

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Surgical Treatment of Axillary Lymph Nodes Pre and Post Nact (10/16)

No further information

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Sentinel Lymph Node Excision: Indications I (12/16)

No further information

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Sentinel Lymph Node Excision: Indications II (13/16)

No further information

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Procedure after Neoadjuvant Therapy (15/16)

No further information

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