Diagnosis and Treatment of Patients with early and advanced Breast Cancer

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Breast Cancer Follow-Up

FORSCHEN
LEHREN
HEILEN

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Breast Cancer Follow-Up

Versions 2002–2023:

Bauerfeind / Bischoff / Blohmer / Böhme / Costa / Diel / Friedrich / Gerber / Gluz / Hanf / Heinrich / Huober / Janni / Kaufmann / Kolberg-Liedtke / Kümmel / Lüftner / Lux / Maass / Möbus / Müller-Schimpfle/ Mundhenke / Oberhoff / Rody / Scharl / Solbach / Solomayer / Stickeler / Thomssen / Wöckel

Version 2024:

Mundhenke / Schmidt

FORSCHEN
LEHREN
HEILEN

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Breast Cancer Follow-Up Objectives

	Oxford LoE	GR	AGO
Early detection of curable events			
▪ In-breast recurrence	1a	B	++
▪ Loco-regional recurrence*	1a	B	++
Early detection of contralateral cancers	1a	B	++
Early detection of metastasis			
▪ Early detection of symptomatic metastases	3b	C	+
▪ Early detection of asymptomatic metastases	1a	A	-

* loco-regional recurrence is associated with a higher risk of mortality in node-positive, PR-negative, younger patients and in patients with a short time between primary diagnosis and recurrence

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Breast Cancer Follow-Up Objectives

	Oxford LoE	Oxford GR	AGO
Improve quality of life	2b	B	+
Improve physical performance	2a	B	+
Reduction and / or early detection of therapy-related side effects (such as osteoporosis, cardiac failure, fatigue, neurotoxicity, lymphedema, web axillary pain syndrome (abacterial lymphangitis), sexual disorders, cognitive impairment, sterility, and secondary tumors) and start of necessary therapies	2b	B	+
Participation in interventional programs during follow-up for breast cancer survivors in order to maximize therapy adherence, assess life-style interventions, and improve quality of life	3b	B	+

Monitoring after Cardiotoxic Therapy (e.g. Anthracycliens, anti-HER2)

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

After anthracyclines / Trastuzumab:

- ECG and echocardiography:
  - 6, 12, 24 months and yearly up to 5 years after therapy
  - after 5th year, every 5 years and if patient is symptomatic
- If cardiovascular risk factors:
  - blood pressure at least yearly
  - lipids and HbA1c in serum yearly
- Modify risk factors if possible:
  - nicotine, body weight, bmi
- Education about individual risk profile and lifestyle

Risk factors:

radiotherapy of left breast, nicotine, hypertonus, diabetes mell., dyslipidaemia, adiposity, age > 60, cardiac diseases: reduced ejection fraction, post-myocardial infarction status , ≥ moderate heart defects

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Breast Cancer Follow-Up Objectives

	Oxford LoE	Oxford GR	AGO
Evaluation of current adjuvant therapy	2b	B	++
incl. monitoring of adherence to endocrine therapies Control of menopausal status, e.g. in case of CT-induced amenorrhea (FSH/2 or bleeding history) and addition of GnRH analogs (up to 2 years after CT) if premenopausal status in women < 45 years old, or switch to aromatase inhibitors (if postmenopausal)			
Pro-active improvement of therapy adherence	5	D	++
Patient information about efficacy data for 5-10 years endocrine therapy Early therapy of side effects (sports, NSAIDs, vitamin D / calcium)			

Breast Cancer Follow-Up Objectives

	Oxford LoE	Oxford GR	AGO
▪ Psycho-social aspects of support and counseling ▪ Pregnancy, contraception, sexuality, quality of life, menopausal symptoms, fear of recurrence ▪ Inclusion of related persons (partner, family, friends, caregivers)	4	C	+
▪ Second opinion regarding primary therapy	2c	B	++
▪ General counseling (e.g. changes in family history of breast, ovarian, prostate, pancreas carcinoma with new indication for genetic counseling, HRT, prophylactic surgery, breast reconstruction)	2c	C	+

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Breast Cancer Follow-Up
Recommended Interventions

Interventions regarding lifestyle risks and comorbidity in order to reduce an unfavorable impact on disease outcome

	Oxford LoE	Oxford GR	AGO
Treatment of type II-diabetes (> 25% undetected DM in postmenopausal BC patients, endocrine therapy improves risk for DM)	2a	B	++
Weight/lifestyle intervention (if BMI < 18.5 and > 30)	2a	B	+
Nightly fastening > 13 h	2b	B	+
Reduction of dietary intake (at least 15 % calories from fat) in HR-negative BC is associated with improved overall survival	2b	B	+
Stop smoking (smoking causes 2-fold increase in BC-specific and 4-fold increase in not directly BC-associated mortality)	2b	B	++
Alcohol consumption reduction (below 6g/d)	2b	B	+
Moderate sport (in patients with reduced physical activity prior to diagnosis) (at least 150 minutes/w, 2x/w)	1b	A	++
Distress reduction	3b	B	+

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Nightly Fasting

Prolonged nightly fasting improves prognosis in breast cancer patients

retrospective cohort study:

2413 BC-pat. (no diabetes), nightly fasting more or less than 13 hrs

Fasting < 13 hrs: **HR 1.36, 36% increase of risk for recurrence**
HR 1.21, n.s. increase of risk for mortality

every 2-hrs-prolonged fasting was correlated with a 20% increase of sleeping duration

Marinac CR, Nelson SH, Breen CI et al. JAMA Oncol 2016: 2:1049-1055

Routine Follow-Up Examinations in Asymptomatic Patients

Tests:	Oxford LoE	GR	AGO
History (specific symptoms)	1a	A	++
Physical examination	1a	B	++
Breast self-examination	5	D	+
Mammography	1a	A	++
Sonography of the breast	2a	B	++
Routine MRI of the breast*	3a	B	+/-
Breast MRI if conventional imaging is inconclusive	3b	B	+
Pelvic examination	5	D	++
DXA-scan at baseline and repeat scan according to individual risk in women with premature menopause or women taking an AI	5	D	+

* Consider in case of increased risk (age < 50 y, HR-neg., diagnostic assessability C/D in mammography + ultrasound)

AGO ARBEITSGEMEINSCHAFT GYNÄKOLOGISCHE ONKOLOGIE E.V.
KOMMISSION MAMMA
© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

www.ago-online.de
FORSCHEN
LEHREN
HEILEN

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Routine Follow-Up Examinations in Asymptomatic Patients

	Oxford		
	LoE	GR	AGO
Routine biochemistry (incl. tumor markers)	1a	A	-
Blood tests for monitoring of acute and late toxicities	5	D	+
Ultrasound of the liver/ Bone scan/ Chest X-ray	1a	A	-
CT of chest, abdomen, and pelvis	2a	D	-
Detection of isolated / circulating tumor cells	2a	D	-
ctDNA	2a	D	-
PET/ Whole body MRI	2b	B	-

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Background for Toxicity Management

Tamoxifen:	Cholesterol, Triglycerides, Bilirubin, ALAT, ASAT, gamma-GT, Glucose
Aromatase inhibitors:	Cholesterol, Triglycerides, Bilirubin, ALAT, ASAT, gamma-GT
Anthracyclines:	pro-BNP, possibly Troponin
Trastuzumab:	pro-BNP, possibly Troponin
Checkpoint inhibitors:	Bilirubin, ALAT, ASAT, gamma-GT, Creatinine, TSH, fT3/T4, Myoglobin

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Early Detection of Potentially Curable Events

Locoregional recurrence (chest wall, in-breast):

Incidence 7–20% (depending on time of F/U)

	Oxford LoE	Oxford GR	AGO
Breast self-examination	5	D	+
Physical examination, mammography & US	1a	A	++
Magnetic resonance imaging (MRI)*	3a	B	+/-

* Consider in case of increased risk (age < 50 y, HR-neg., diagnostic assessability C/D in mammography + ultrasound)

FORSCHEN
LEHREN
HEILEN

ARBEITSGEMEINSCHAFT GYNÄKOLOGISCHE ONKOLOGIE E.V.
KOMMISSION MAMMA

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Early Detection of Potentially Curable Events

	Oxford LoE	Oxford GR	AGO
Contralateral breast cancer:			
Relative risk: 2.5 - 5			
Incidence: 0.5 - 1.0 %/year			
Breast self-examination	5	D	+
Physical examination, mammography & US	1a	A	++
Routine breast MRI*	3b	B	+/-
▪ Male breast cancer: analogous to BC in women**	5	D	+

* Consider in case of increased risk: age < 50 y, HR-neg., diagnostic assessability C/D in mammography + ultrasound.

** See chapter “Breast Cancer Specific Situations”

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Early Detection of Potentially Curable Events

	Oxford LoE	Oxford GR	AGO
Unrelated site carcinoma:			
MDS (RR 10.9), AML (RR 2.6–5.3), Colon RR 3.0; endometrium RR 1.6; ovary RR 1.5; lymphoma RR 7			
Screening for secondary malignancies according to current guidelines	5	D	++
Pelvic examination and PAP smear	5	D	++
Routine endometrial ultrasound / biopsy	1b	B	-

FORSCHEN
LEHREN
HEILEN

ARBEITSGEMEINSCHAFT GYNÄKOLOGISCHE ONKOLOGIE E.V.
KOMMISSION MAMMA
© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Guidelines Breast
Version 2024.1E

Follow-Up Care for invasive / non-invasive Breast Cancer

Recommendations for asymptomatic pts.
(mod. according to ASCO-ACS recommendations 2016, NCCN 2021, ESMO 2019 and S3-guidelines 2017)

Clinical follow-up		Follow-up*		Screening/ Follow-up
Years after primary therapy		1 2 3	4 5	> 5
History, physical examination, counseling		every 3 months DCIS every 6 months	every 6 months	inv.: every 12 months
Self-examination		monthly		
Imaging modalities and biochemistry		indicated only if complaints, clinical findings, or suspicion of recurrence Monitoring of side effects of therapy		
Mammo-graphy and additional sonography	BCT**	both sides: every 12 months		
	Mastectomy	contralateral every 12 months		
Echocardiography		6,12,24 months and yearly up to 5 years after completion of cardiotoxic therapy, after 5th year, every 5 years and if patient is symptomatic.		

* Continued follow-up visits if still on adjuvant treatment

** In pts after breast-conserving therapy (BCT): First mammography 1 year after initial mammography or at least 6 months after completion of radiotherapy

www.ago-online.de
FORSCHEN
LEHREN
HEILEN

ARBEITSGEMEINSCHAFT GYNÄKOLOGISCHE ONKOLOGIE E.V.
KOMMISSION MAMMA

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

Breast Cancer Follow-up Duration and Breast Nurses

	Oxford LoE	GR	AGO
Duration of follow-up			
up to 5 years	1c	A	++
up to 10 years	1c	A	+
Surveillance by specialized breast nurses	2b	B	+/-*

* Studies recommended

www.ago-online.de
FORSCHEN
LEHREN
HEILEN

Luminal-like, HER2-positive and Triple-negative Breast Cancer Patients

© AGO e. V.
in der DGGG e.V.
sowie
in der DKG e.V.

- **Intrinsic typing of breast cancer leads to subgroups with different course of disease. Thus, postoperative surveillance should be adapted to specific time-dependent hazards of recurrence.**
- **ER-positive patients have stable risk over many years requiring long term surveillance.**
- **However, patients with HER2-positive disease and TNBC have more risk in the early phase of follow-up and should therefore receive more intense surveillance in the first years of follow-up.**

Ribelles et al. BCR 2013