Guidelines Breast
Version 2024.1E

Early Detection and Diagnosis

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Early Detection and Diagnosis

- **Versions 2005–2023:**
  Albert / Blohmer / Fallenberg / Fersis / Gerber / Junkermann / Kühn / Maass / Müller-Schimpfle / Scharl / Schreer / Wöckel

- **Version 2024:**
  Fallenberg / Heil

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Early Detection with Mammography

Age	Interval	Oxford		AGO
		LOE	GR	
< 40	na	-	-	--
40-44	na	1b	B	-
45–49	24-36	1a	A	+#
50–75*	24	1a	A	++
> 75**	24	4	C	+/-#

* National Mammography-Screening-Program
** health status + life expectancy more than 10 years
# clear indication necessary, or indicated if screening age is adapted

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Early Detection in Asymptomatic Women
Digital Breast Tomosynthesis, Endpoint: cancer detection rate

	Oxford		
	LOE	GR	AGO
Digital Breast Tomosynthesis (DBT ± SM)*	1a	A	+
Replacing FFDM by synthetic MG in addition to DBT	1a	A	++

The complete DBT dataset of images has to be available for judgment / reporting, the synthetic mammography only is not sufficient.

* **Sign. higher sensitivity, heterogeneous specificity, and higher costs [machine, evaluation, archiving] of DBT in comparison to Full-Field Digital Mammography (FFDM)**
Dose reduction due to calculated synthetic 2D mammography (SM) instead of additional FFDM, no significant reduction of interval cancers to date

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AI for cancer detection

	Oxford		
	LOE	GR	AGO
AI in screening			
Second reader of mammography	1b	B	+/-
To reduce workload (AI only)	2b	B	-
Tomosynthesis: stand alone or second reader	2a	B	-

Breastcancer: incidence and mortality risk

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Tabelle 3.17.2
Erkrankungs- und Sterberisiko in Deutschland nach Alter und Geschlecht, ICD-10 C50, Datenbasis 2019

	Erkrankungsrisiko				Sterberisiko			
Frauen im Alter von	**in den nächsten 10 Jahren**		**jemals**		**in den nächsten 10 Jahren**		**jemals**	
35 Jahren	1,0 %	(1 von 99)	13,1 %	(1 von 8)	0,1 %	(1 von 1.000)	3,5 %	(1 von 28)
45 Jahren	2,2 %	(1 von 45)	12,3 %	(1 von 8)	0,2 %	(1 von 410)	3,5 %	(1 von 29)
55 Jahren	2,8 %	(1 von 35)	10,4 %	(1 von 10)	0,4 %	(1 von 230)	3,3 %	(1 von 31)
65 Jahren	3,4 %	(1 von 29)	8,2 %	(1 von 12)	0,8 %	(1 von 130)	3,0 %	(1 von 34)
75 Jahren	3,6 %	(1 von 28)	5,6 %	(1 von 18)	1,3 %	(1 von 77)	2,5 %	(1 von 40)
Lebenszeitrisiko			13,2 %	(1 von 8)			3,5 %	(1 von 28)
Männer im Alter von	**in den nächsten 10 Jahren**		**jemals**		**in den nächsten 10 Jahren**		**jemals**	
35 Jahren	< 0,1 %	(1 von 29.250)	0,1 %	(1 von 750)	< 0,1 %	(1 von 319.800)	< 0,1 %	(1 von 2.500)
45 Jahren	< 0,1 %	(1 von 11.400)	0,1 %	(1 von 760)	< 0,1 %	(1 von 44.700)	< 0,1 %	(1 von 2.500)
55 Jahren	< 0,1 %	(1 von 4.000)	0,1 %	(1 von 790)	< 0,1 %	(1 von 24.400)	< 0,1 %	(1 von 2.600)
65 Jahren	< 0,1 %	(1 von 2.300)	0,1 %	(1 von 890)	< 0,1 %	(1 von 8.400)	< 0,1 %	(1 von 2.600)
75 Jahren	0,1 %	(1 von 1.700)	0,1 %	(1 von 1.100)	< 0,1 %	(1 von 5.650)	< 0,1 %	(1 von 3.000)
Lebenszeitrisiko			0,1 %	(1 von 750)			< 0,1 %	(1 von 2.500)

From:https://www.krebsdaten.de/Krebs/DE/Content/Publikationen/Krebs_in_Deutschland/kid_2023/kid_2023_c50_brust.pdf?__blob=publicationFile

Breastcancer: Age specific new Cancer cases

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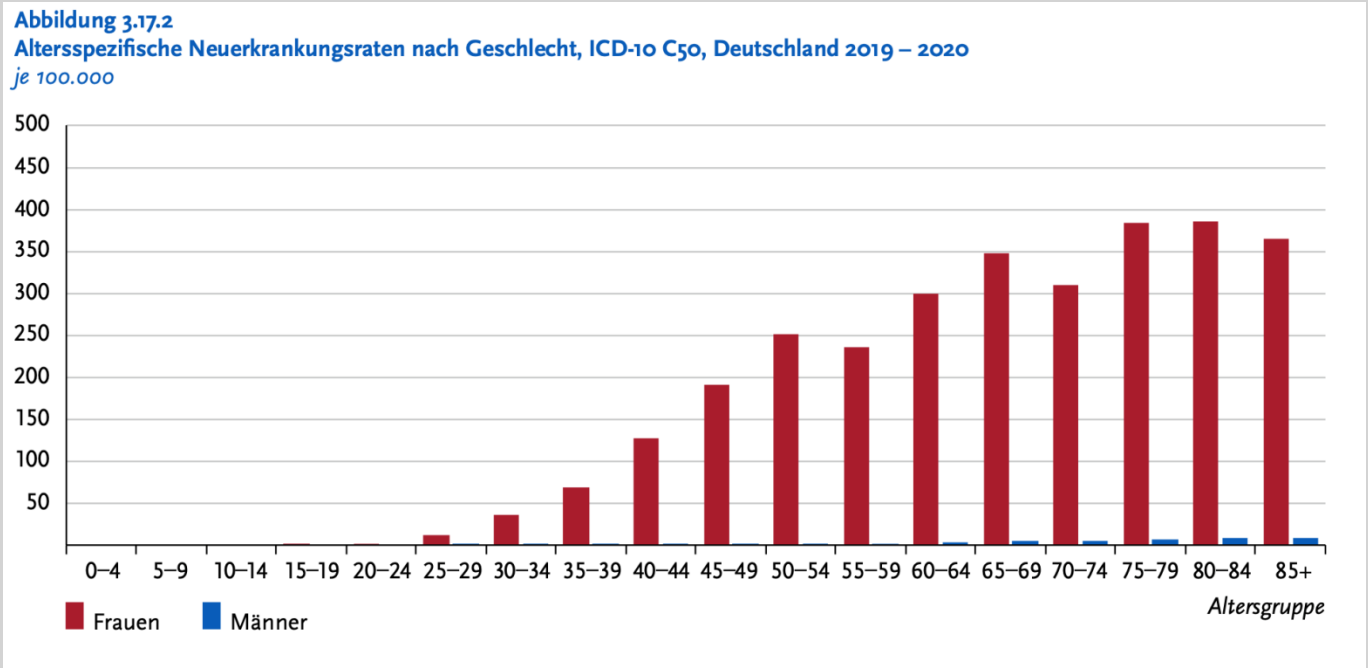

From:https://www.krebsdaten.de/Krebs/DE/Content/Publikationen/Krebs_in_Deutschland/kid_2023/kid_2023_c50_brust.pdf?__blob=publicationFile

Mammography-Screening
Benefit and Harm

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Data background: Breast Cancer Surveillance Consortium Registry Data per 10.000 Women screened over 10 years

Age	40-49	50-59	60-69	70-74
Breast cancer death avoided (CI 95%)	3 (0-9)	8 (2-17)	21 (11-32)	13 (0-32)
False-positive (n)	1212	932	808	696
Breast biopsies (n)	164	159	165	175
False-negative (n)	10	11	12	13

Siu Al on behalf of the USPSTF 2016, 164:279–296

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Early Detection (normal risk) Sonography / MRI

	Oxford LoE	Oxford GR	Oxford AGO
▪ Screening-Breast sonography allone	5	D	--
▪ Automated 3D-sonography	3a	C	-
▪ Breast sonography as an adjunct:			
▪ Dense mammogram (heterogeneously dense, extremely dense)	2a	B	++
▪ Elevated risk	1b	C	++
▪ Mammographic lesion	2b	B	++
▪ Second-look US (MRI-only detected lesions)	2b	C	++
▪ MRI if screening MG is negative and breast composition: extremely dense* 45–75 LJ	1b	B	+

* Definition of extremely dense corresponds to BIRADS-density category D, heterogeneously dense to BIRADS-category C according to ACR BI-RADS-Atlas 5th ed. 2013

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Early Detection (normal risk)
Clinical Breast Examination (CBE)

	Oxford		
	LoE	GR	AGO
As stand alone procedure			
▪ Self-examination	1a	A	-*
▪ Clinical breast examination (CBE) by health professionals outside checkup for cancer	1a	C	-*
▪ Clinical breast examination (CBE) by health professionals during checkup for cancer	1a	B	++
▪ Medical palpation by blind / visually impaired persons	3b	C	-
CBE because of mammographic / sonographic lesion	5	D	++
CBE in combination with imaging	1a	A	++

* May increase breast awareness

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Assessment of Breast Symptoms or Lesions

	Oxford		
	LoE	GR	AGO
▪ Clinical examination	3b	B	++
▪ Mammography	1b	A	++
▪ Tomosynthesis***	2a	B	+
▪ Contrast-enhanced mammography (alone or as adjunct)	2a	B	+
▪ Sonography	2b	B	++
▪ Elastography (shear-wave) *	2b	B	+
▪ Automated 3D-sonography	3b	B	+/-
▪ MRI**	2b	B	+
▪ Minimally invasive biopsy	1b	A	++

* Adjunct assessment

** If clinical examination, mammography and sonography incl. needle biopsy do not allow a clear assesment

*** Replacement of additional FFDM with SM

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Pre-therapeutic Assessment of Breast

	Oxford		
	LoE	GR	AGO
▪ Clinical examination	5	D	++
▪ Mammography (completion of the imaging)	2b	B	++
▪ + Tomosynthesis (DBT)***	2b	B	+
▪ Contrast-enhanced mammography (alone) adjusted with regards of radiation sensitivity of patient and availability*	2a	B	+
▪ Sonography (breast)	2b	B	++
▪ MRI*	1b	A	+
▪ Minimally invasive biopsy**	1b	A	++
▪ Breast-CT	4	D	-
▪ Axillary PET (PET-CT, PET-MR)	2b	B	-

* MRI- or CEM guided vacuum biopsy is mandatory in case of MRI- or CEM detected additional lesions (in house or with cooperations).
Individual decision for patients at high familiar risk, with dense breast (density C / D), lobular invasive tumors, suspicion of multilocular disease.

** Histopathology of additional lesions if relevant for treatment

*** Replacement of additional FFDM with SM

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Pre-therapeutic Assessment Axilla

	Oxford		
	LoE	GR	AGO
▪ Clinical examination	5	D	++
▪ Mammography	2b	B	-
▪ + Tomosynthesis***	2b	B	-
▪ CEM (alone) after unclear resection (Rx) if available	2a	B	-
▪ Ultrasound (Axilla#)	2a#	B	++
▪ MRI	1b	A	+
▪ CNB Axilla, if suspicious LN and marking of the node if TAD planned ≤3 susp. LK	2b	B	++
▪ Breast-CT	4	D	-
▪ PET CT / MRI for axillary LN	2b	B	-

*** Replacement additional DM through SM

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Pre-therapeutic Staging

	Oxford		
	LoE	GR	AGO
▪ History and clinical examination	5	D	++
Only in case of high metastatic potential and/or symptoms and/or indication for (neo-) adjuvant chemotherapy and/or antibody-therapy:			
▪ CT scan of thorax / abdomen / pelvis	2a	B	+
▪ Bone scan	2b	B	+
▪ Chest X-ray	5	C	+/-
▪ Liver ultrasound	5	D	+/-
▪ Further investigation in case of additonal suspicious lesions (e.g. liver-MRI, CEUS*, biopsy etc.)	2a	B	+
▪ FDG-PET or FDG-PET-CT** FDG-PET-MRI**	2b	B	+/-
▪ Whole body MRI	4	C	+/-

* Contrast enhanced ultrasound

** especially in patients with high tumor stage (III) if available