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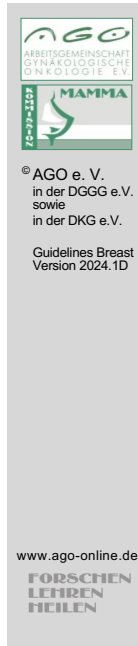
Guidelines Breast
Version 2024.1D

FORSCHEN
LEHREN
HEILEN

Diagnostik und Therapie früher und fortgeschrittener Mammakarzinome

Läsionen mit unsicherem biologischen Potenzial (B3)

(ADH, LIN, FEA, Papillom, Radiäre Narbe/komplexe
sklerosierende Läsion)



Läsionen mit unklarem biologischen Potenzial (B3)

Versionen 2005–2023:

Albert / Audretsch / Bauerfeind / Brunnert / Ditsch / Fallenberg / Fersis / Friedrich / Friedrichs / Gerber / Huober / Kolberg-Liedtke / Kreipe / Maass / Nitz / Reimer / Rody / Schmidt / Schreer / Sinn / Thomssen

Version 2024:

Friedrich / Sinn

Pubmed 2010-2023 queries

Lobular neoplasia (169 Results)

(Breast Diseases/CL[mh] OR Breast Diseases/DI[mh] OR Breast Diseases/EP[mh] OR Breast Diseases/GE[mh] OR Breast Diseases/MO[mh] OR Breast Diseases/PA[mh] OR Breast Diseases/RT[mh] OR Breast Diseases/SU[mh] OR Breast Diseases/TH[mh]) AND ("2012/01/01"[dp] : "2023/01/01"[dp]) AND ("lobular neoplasia"[ti] OR "lobular intraepithelial neoplasia"[ti] OR "atypical lobular hyperplasia"[ti] OR "lobular carcinoma in situ"[ti] OR "LIN"[ti] OR "ALH"[ti] OR "LCIS"[ti]) AND ("english"[la] OR "german"[la])

Atypical ductal hyperplasia (101 Results)

(Breast Diseases/CL[mh] OR Breast Diseases/DI[mh] OR Breast Diseases/EP[mh] OR Breast Diseases/GE[mh] OR Breast Diseases/MO[mh] OR Breast Diseases/PA[mh] OR Breast Diseases/RT[mh] OR Breast Diseases/SU[mh] OR Breast Diseases/TH[mh]) AND ("2012/01/01"[dp] : "2023/01/01"[dp]) AND ("atypical ductal hyperplasia"[ti] OR "atypical hyperplasia"[ti] OR "ADH"[ti]) AND ("english"[la] OR "german"[la])

Flat epithelial atypia (59 Results)

(Breast Diseases/CL[mh] OR Breast Diseases/DI[mh] OR Breast Diseases/EP[mh] OR Breast Diseases/GE[mh] OR Breast Diseases/MO[mh] OR Breast Diseases/PA[mh] OR Breast Diseases/RT[mh] OR Breast Diseases/SU[mh] OR Breast Diseases/TH[mh])

AND ("2012/01/01"[dp] : "2023/01/01"[dp]) AND ("flat epithelial atypia"[ti] OR "columnar cell"[ti] OR "FEA"[ti]) AND ("english"[la] OR "german"[la])

Papilloma (278 Results)

(Breast Diseases/CL[mh] OR Breast Diseases/DI[mh] OR Breast Diseases/EP[mh] OR Breast Diseases/GE[mh] OR Breast Diseases/MO[mh] OR Breast Diseases/PA[mh] OR Breast Diseases/RT[mh] OR Breast Diseases/SU[mh] OR Breast Diseases/TH[mh]) AND ("2012/01/01"[dp] : "2023/01/01"[dp]) AND ("papilloma"[ti] OR "papillary"[ti]) AND ("english"[la] OR "german"[la]) NOT virus[ti]

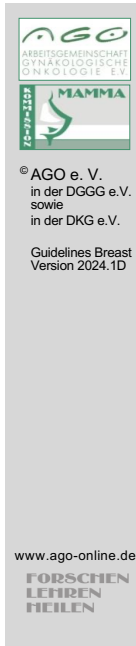
Radial scar (25 Results)

(Breast Diseases/CL[mh] OR Breast Diseases/DI[mh] OR Breast Diseases/EP[mh] OR Breast Diseases/GE[mh] OR Breast Diseases/MO[mh] OR Breast Diseases/PA[mh] OR Breast Diseases/RT[mh] OR Breast Diseases/SU[mh] OR Breast Diseases/TH[mh]) AND ("2012/01/01"[dp] : "2023/01/01"[dp]) AND ("radial scar"[ti] OR "complex sclerosing lesion"[ti] OR "radial sclerosing lesion"[ti]) AND ("english"[la] OR "german"[la])

National and international guidelines

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Concordance-Assessment-of-Image-Guided-Breast-Biopsies.pdf?v2




Pathologische Berichterstellung für minimalinvasive Biopsien

B-Klassifikation*

- B1 = Normalgewebe oder nicht verwertbares Material**
- B2 = Benigne Läsion**
- B3 = Benigne Läsionen mit unsicherem biologischen Potenzial**
- B4 = Malignitätsverdächtig**
- B5 = Malignom**
 - B5a: In-situ-Karzinom**
 - B5b: Invasives Karzinom**
 - B5c: Nicht zu entscheiden, ob invasiv oder in situ**
 - B5d: Malignom anderer Histogenese oder Metastase**

* AWMF, Deutschen Krebsgesellschaft e.V. und Deutschen Krebshilfe e.V. (Hrsg.). Interdisziplinäre S3-Leitlinie für die Diagnostik, Therapie und Nachsorge des Mammakarzinoms. Langversion 4.4, Juni 2021


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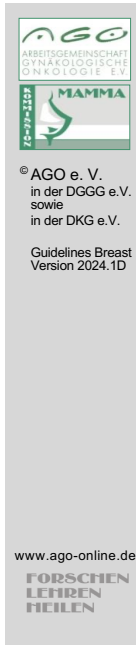


B3-Lesions

- 1. Lesions with increased risk of associated DCIS or invasive carcinoma**
 - Atypical ductal hyperplasia (ADH) or atypical epithelial proliferation of ductal type (classification possibly as B4, depending on extent of lesion)
 - Flat epithelial atypia (FEA)
 - Lobular neoplasia (LIN; LN; now subdivided into ALH and LCIS, no differentiation according to older nomenclature) classical and non-classical type
 - Atypical apocrine adenosis
- 2. Potentially heterogeneous lesions with risk of incomplete sampling**
 - Cellular fibroepithelial lesion or phyllodes tumour without evidence of malignancy
 - Intraductal papilloma with / without atypia (possibly also B4, depending on the extent of the lesion)
 - Radial scar or complex sclerosing lesion (unless the radial scar only microscopically, not radiologically detected: B2)
 - Hemangioma
- 3. Rare Lesions**
 - Adenomyoepithelioma, nipple adenoma, microglandular adenosis, mucocele-like lesion, nodular fasciitis, desmoid-type fibromatosis, spindle cell lesion of unknown significance

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Management nach minimalinvasiver Biopsie



■ Interdisziplinäre Konferenz: Pathologie und Bildgebung konkordant?

- ja: Vorgehen gemäß histologischem Typ und Ausdehnung des Befundes
- nein: offene PE

Vakuumbiopsie (nach Stanzbiopsie)

	Oxford		
	LoE	GR	AGO
ja: Vorgehen gemäß histologischem Typ und Ausdehnung des Befundes	3a	C	++
nein: offene PE	3a	C	++
Vakuumbiopsie (nach Stanzbiopsie)	5	D	+

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Strategie nach Diagnose einer ADH in der Biopsie

	Oxford		
	LoE	GR	AGO
ADH in Stanz- / Vakuumbiopsie:			
▪ Offene Exzisionsbiopsie	3a	C	++
▪ Offene Exzisionsbiopsie verzichtbar, wenn sämtliche folgende Voraussetzungen erfüllt sind:	5	C	+/-
a) Kein radiologischer Herdbefund,			
b) Fokale Läsion (≤ 2 TDLU*) in Vakuumbiopsie und			
c) Suspekte Läsion in der Bildgebung komplett entfernt			
ADH im Resektionsrand nach offener Exzision:	3a	C	+
▪ Keine Nachresektion, wenn die Veränderung ein intraduktales oder invasives Karzinom begleitet			

* TDLU = terminale duktulo-lobuläre Einheit (unit)

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Lobular Intraepithelial Neoplasia (LIN / LCIS)

- Includes:
 - Atypical lobular hyperplasia
 - Classical lobular carcinoma in situ (LIN, classical variant)
 - Non-Classical lobular carcinoma in situ (LIN, classical variant)
- LIN 1–3 classification is not sufficiently validated prognostically
- Non-Classical LIN (pleomorphic LIN, florid LIN) are classified as lesions with elevated risk → potentially **B5a**
- Indicator / precursor lesion:
Ipsi- and contralaterally increased breast cancer risk:
7x after 10 years

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Upgrade rates* for B3 lesions

* i.e., upgrade to malignant diagnosis when excised

Risk lesion	Upgrade rate to in situ or invasive Ca	References
Atypical lobular hyperplasia (ALH)	5%	[1]
Classical lobular neoplasia (C-LCIS)	4 - 16%	[1-3]
Non-classical lobular neoplasia (pleomorphic, florid LCIS, NC-LCIS)	33 - 39%	[3, 4]
Atypical ductal hyperplasia (ADH)	23%	[1]
Flat epithelial atypia (FEA)	0 - 14%	[5, 6]
Papilloma	12%	[7]
- no atypia	6 - 10%	[7, 8]
- atypia	21 - 29%	[8, 9]
Radial scar or complex sclerosing lesion	7 - 11%	[10-12]
- no atypia	5%	[12]
- atypia	25%	[13]

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Risk of malignant disease during follow-up*

* i.e. ipsilateral or contralateral disease irrespective of localization of prior lesion

Risk lesion	Upgrade rate to in situ or invasive Ca
LIN/LCIS	7x / 10 yrs (ipsi-/contralateral)
Atypical ductal hyperplasia (ADH)	3-5x / 10 years (ipsi-/contralateral)
Papilloma	
• no atypia	4.6% (ipsilateral)
• atypia	13% (ipsilateral)

Allgemeines

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LIN

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Papillome

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LCIS with elevated risk

- **Non-classical LCIS:**
 - **Pleomorphic LCIS:** high-grade cellular atypia, common involvement of ducts with comedo necrosis and microcalcifications
 - **Florid LCIS:** involvement of multiple lobuli with a maximum extension until confluence and involvement of ductuli and neighboring TDLU
- **Microinvasion in classical and non-classical LCIS*:**
 - classical LCIS: n = 11
 - florid LCIS: n = 4
 - pleomorphic LCIS: n = 1

Microinvasion in 0.37% of all LCIS (n = 4310) and in 0.43% among all invasive lobular breast cancers (n = 3740)

* Ross DS & Hoda SA. Am J Surg Pathol 2011; 35: 750–6.

Statement: Pleomorphic lobular carcinoma in situ (PLCIS)

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Statement: Lobular carcinoma in situ with microinvasion

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2. Howat AJ, Armour A, Ellis IO. Microinvasive lobular carcinoma of the breast. *Histopathology*. 2000;37(5):477-478.
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Strategie nach Diagnose einer LIN / eines LCIS

	Oxford		
	LoE	GR	AGO
<ul style="list-style-type: none"> ▪ LIN / LCIS in Stanz- / Vakuumbiopsie <ul style="list-style-type: none"> ▪ Keine weitere Abklärung bei isoliertem oder inzidentellem Befund einer LIN (klassisches LCIS) mit Befall von ≤ 3 TDLU (terminale duktulolobuläre Einheit) in Vakuumbiopsie und Konkordanz mit der Bildgebung. ▪ Offene Exzisionsbiopsie bei pleomorpher LIN, florider LIN (LIN3), LIN mit Komedytypnekrosen, oder wenn Befund nach Korrelation mit der Bildgebung diskordant ist. ▪ LIN / LCIS am Resektionsrand von BET <ul style="list-style-type: none"> ▪ Keine Nachresektion. <p>Ausnahmen</p> <ul style="list-style-type: none"> a) Pleomorphe, floride oder LIN / LCIS mit Nekrosen b) Bildgebende Veränderung wurde nicht entfernt 	2b	C	++
	2b	C	++
	2a	C	++

LIN in core- / vacuum-assisted biopsy (LoE 2b)

1. Kunjummen, J., Rodriguez, K., Newell, M. S., Hanley, K. & Cohen, M. A. Management of Lobular Neoplasia Found on Core Needle Biopsy Performed for Calcifications Using Precise Radiologic-Pathologic Correlation. *Am J Roentgenol* **216**, 1476–1485 (2021).
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12. Calhoun, B. C. *et al.* Lobular neoplasia diagnosed on breast Core biopsy: frequency of carcinoma on excision and implications for management. *Annals of diagnostic pathology* **25**, 20–25 (2016).
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LIN accompanying intraductal or invasive carcinoma in patients with BCT (LoE 2a)

1. Ciocca R: Presence of lobular carcinoma in situ does not increase recurrence in patients treated with breast-conserving therapy. *Ann Surg Oncol* 2008; 15:2263-2271

Strategie nach Diagnose einer FEA

	Oxford		
	LoE	GR	AGO
<ul style="list-style-type: none"> ▪ FEA in Stanz- / Vakuumbiopsie: <ul style="list-style-type: none"> ▪ Offene Exzisionsbiopsie ▪ Auf offene Biopsie kann verzichtet werden unter folgenden Voraussetzungen: <ul style="list-style-type: none"> a. Kleinherdiger Befund (≤ 2 TDLU* in Vakuumbiopsie) <u>und</u> b. Entfernung oder weitgehend vollständige Entfernung der auffälligen Läsion in der Bildgebung (≥ 90 %) ▪ FEA im Resektionsrand nach Exzisionsbiopsie: <ul style="list-style-type: none"> ▪ Keine Nachresektion, außer bei verbliebenem mammographischem Korrelat 	2b	B	+
	2b	B	+
	3b	C	++

* TDLU = terminale duktulolobuläre Einheit

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8. McCroskey, Z. *et al.* Flat epithelial atypia in directional vacuum-assisted biopsy of breast microcalcifications: surgical excision may not be necessary. *Modern Pathol* **31**, 1097–1106 (2018).
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Breast Cancer Res Tr **174**, 279–296 (2019).

10. Alencherry, E. *et al.* Clinical, imaging, and intervention factors associated with the upgrade of isolated flat epithelial atypia. *Clin Imag* **54**, 21–24 (2019).
11. Liu, C. *et al.* Pure flat epithelial atypia identified on core needle biopsy does not require excision. *Eur J Surg Oncol* **46**, 235–239 (2020).
12. Srour, M. K. *et al.* Flat epithelial atypia on core needle biopsy does not always mandate excisional biopsy. *Breast J* **26**, 679–684 (2020).
13. Grabenstetter, A., Brennan, S., Salagean, E. D., Morrow, M. & Brogi, E. Flat Epithelial Atypia in Breast Core Needle Biopsies With Radiologic-Pathologic Concordance. *Am J Surg Pathology* **44**, 182–190 (2020).
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Papilloma

- **Includes:** Central and peripheral papilloma > 2 mm, atypical intraductal papilloma (B3)
- To be **distinguished from** peripheral micropapilloma arising in the TDLU, size ≤ 2 mm, may be multiple
- To be distinguished from papilloma with DCIS, from intraductal papillary carcinoma, and from encapsulated papillary carcinoma
- **Precursor lesion:**
May be associated with in-situ or invasive cancer (up to 6% without atypia if concordant imaging, up to 30% with atypia), increased ipsilateral risk for cancer (up to 4.6% and up to 13% in case of atypical papilloma).

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Vorgehen nach Diagnose eines Papilloms

	Oxford		
	LoE	GR	AGO
<ul style="list-style-type: none"> ▪ Solitäres Papillom ohne Atypien in Stanz- / Vakuumbiopsie <ul style="list-style-type: none"> ▪ Keine weiteren Maßnahmen, wenn Biopsie ausreichend repräsentativ (100 mm²) und keine Diskordanz zur Bildgebung 	2b	C	+
<ul style="list-style-type: none"> ▪ Multiple Papillome (> 2 mm) <ul style="list-style-type: none"> ▪ Offene Biopsie 	3a	C	++
<ul style="list-style-type: none"> ▪ Atypisches Papillom in Stanz- / Vakuumbiopsie <ul style="list-style-type: none"> ▪ Offene Biopsie 	3a	C	++
<ul style="list-style-type: none"> ▪ Papillom am Rand von Resektaten <ul style="list-style-type: none"> ▪ Keine verfügbaren Daten 			

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12. Chen, Y. A. *et al.* Excision recommended in high-risk patients: Revisiting the diagnosis of papilloma on core biopsy in the context of patient risk. *Breast J* **25**, 232–236 (2019).
13. Liu, C. *et al.* Risk of malignancy in papillary neoplasms of the breast. *Breast Cancer Res Tr* **178**, 87–94 (2019).
14. Kiran, S. *et al.* Are we overtreating intraductal papillomas? *The Journal of surgical research* **231**, 387–394 (2018).



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Radially Sclerosing Lesion

- **Benign pseudoinfiltrative lesion with central fibroelastic core and radial configuration.**
- **Includes:**
 - radial scar (usually ≤ 1 cm)
 - complex sclerosing lesion (> 1 cm)
- **Additional risk factor in patients with benign epithelial hyperplasia (proliferating breast disease)**
- **Risk for upgrade in open biopsy after diagnosis of a radial sclerosing lesion, depending on the size of the needle (CNB) or method (VAB) and additional atypia: 1–18%**

1. Donaldson, A. R., Sieck, L., Booth, C. N. & Calhoun, B. C. Radial scars diagnosed on breast core biopsy: Frequency of atypia and carcinoma on excision and implications for management. *Breast (Edinburgh, Scotland)* **30**, 201–207 (2016).
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3. Li, Z., Ranade, A. & Zhao, C. Pathologic findings of follow-up surgical excision for radial scar on breast core needle biopsy. *Human Pathology* **48**, 76–80 (2016).
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16. Trombadori, C. M. L. *et al.* Radial Scar: a management dilemma. *La Radiologia Medica* **126**, 774–785 (2021).
17. Alsharif, S., Aldis, A., Subahi, A., Khoury, M. E. & Mesurole, B. Breast MRI Does Not Help Differentiating Radial Scar With and Without Associated Atypia or Malignancy. *Can Assoc Radiologists J* **72**, 759–766 (2021).
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Brustkrebs-Früherkennung: Follow-up nach B3-Läsionen für Frauen im Alter zwischen 50 und 69 Jahren

	Oxford		
	LoE	GR	AGO
<ul style="list-style-type: none"> ▪ FEA, Papillom ohne Atypien, Radiäre sklerosierende Läsion <ul style="list-style-type: none"> ▪ Screening-Mammographie 	5	C	++
<ul style="list-style-type: none"> ▪ LIN / LCIS <ul style="list-style-type: none"> ▪ Kurative Mammographie (12 Monate) 	3a	C	++
<ul style="list-style-type: none"> ▪ ADH <ul style="list-style-type: none"> ▪ Kurative Mammographie (12 Monate) ▪ Frauen mit LIN und ADH sind über ihr persönlich erhöhtes Brustkrebsrisiko zu informieren 	3a	C	++

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Medikamentöse Prävention bei erhöhtem Risiko für ein DCIS oder invasives Karzinom

	Oxford		
	LoE	GR	AGO
▪ Tamoxifen 20 mg/d (5 Jahre) für Frauen ≥ 35 Jahre	1a	A	+/-
▪ Low-dose Tamoxifen 5 mg/d* (3 Jahre) unabh. vom Menopausenstatus	1b	B	+/-
▪ Aromataseinhibitor (Exemestan, Anastrozol) für postmenopausale Frauen	1a	A	+/-
▪ Raloxifen für postmenopausale Frauen – Reduktion nur von invasivem Karzinom	1a	A	+/-**

Eine präventive Medikamentenbehandlung sollte nur nach ausführlicher individueller Beratung angeboten werden. Der Netto-Benefit ist stark abhängig vom Risikostatus, Lebensalter und vorbestehenden Risiken für Nebenwirkungen.

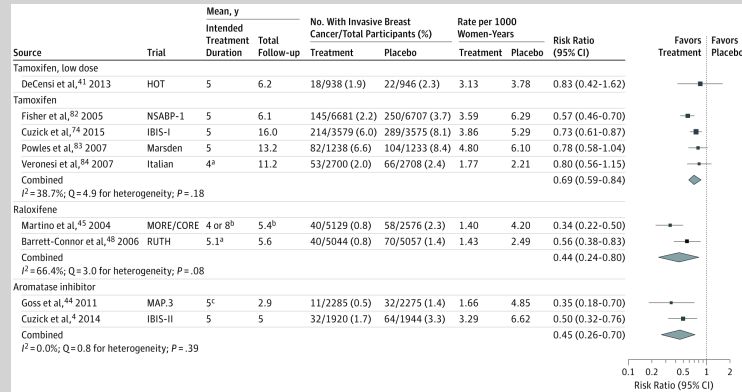
* 5 mg Tabl. nicht verfügbar; alternativ 10 mg alle 2 Tage p.o.

** Risiko definiert wie in der NSABP P1-Studie (1.66 % in 5 Jahren) oder nach #Tyrer-Cuzick-Modell (IBIS-II).

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