

## **Carcinoma in situ (Core and Non-core) and Classification of carcinoma in situ (Core and Non-core)**

The presence of coexisting ductal carcinoma in situ (DCIS) (and/or florid or pleomorphic lobular carcinoma in situ (LCIS)) is commonplace with invasive carcinomas of the breast and forms part of the overall disease process which requires complete surgical excision to reduce the risk of local recurrence.

It is recognised that the term “Extensive Intraductal Component” (EIC) has different definitions in different countries and centres. Most refer to either substantial volume of DCIS within the invasive carcinoma and/or substantial DCIS quantity beyond the limits of the invasive cancer. No preferred definition is provided as there is a limited evidence base for each of these proffered definitions, with no international consensus. For this reason, sub-categorisation as EIC is deemed non-core and its use is optional.

Classification of DCIS and accompanying in situ lesions with respect to histological nuclear grade (core), presence or absence of necrosis (core), and architectural pattern (non-core) is dealt with in the International Collaboration on Cancer Reporting (ICCR) DCIS, variants of LCIS and low grade lesions dataset.<sup>1</sup> Nuclear grade of DCIS is largely determined by size and pleomorphism, although other morphologic features (see Table 3) are also of help.

**Table 3: Nuclear grade of ductal carcinoma in situ.**

<b>Feature</b>	<b>Grade I (Low)</b>	<b>Grade II (Intermediate)</b>	<b>Grade III (High)</b>
<b>Pleomorphism</b>	Monotonous (monomorphic)	Intermediate	Markedly pleomorphic
<b>Size</b>	1.5 to 2 x the size of a normal RBC or a normal duct epithelial cell nucleus	Intermediate	>2.5 x the size of a normal red blood cell or a normal duct epithelial cell nucleus
<b>Chromatin</b>	Usually diffuse, finely dispersed chromatin	Intermediate	Usually vesicular with irregular chromatin distribution
<b>Nucleoli</b>	Only occasional	Intermediate	Prominent, often multiple
<b>Mitoses</b>	Only occasional	Intermediate	May be frequent
<b>Orientation</b>	Polarized toward luminal spaces	Intermediate	Usually not polarized toward the luminal space

Definition: RBC, red blood cell.

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Pleomorphic and florid LCIS have overlapping features with DCIS and may be treated similarly, but at present there is insufficient evidence to establish definitive recommendations for treatment. The current understanding of the natural history of pleomorphic LCIS and florid LCIS is limited, and the optimal treatment is unknown with regard to pursuing negative margins and consideration of additional adjuvant therapies. Nevertheless, although pleomorphic and florid LCIS are not currently included in the American Joint Committee on Cancer (AJCC) pTis classification,<sup>3</sup> they remain as a category in the Union for International Cancer Control (UICC) TNM 8<sup>th</sup> edition,<sup>4</sup> and there is emerging evidence suggesting that these forms of LCIS might be better treated as DCIS,<sup>5,6</sup> in particular the practice of excision to negative margins.

## References

- 1 International Collaboration on Cancer Reporting (2021). *Ductal Carcinoma In Situ, Variants of Lobular Carcinoma In Situ and Low Grade Lesions Histopathology Reporting Guide*. Available from: <http://www.iccr-cancer.org/datasets/published-datasets/breast> (Accessed 20th June 2021).
- 2 College of American Pathologists (2020). *Protocol for the Examination of Resection Specimens From Patients With Ductal Carcinoma In Situ (DCIS) of the Breast*. Available from: <https://documents.cap.org/protocols/cp-breast-dcis-resection-19-4301.pdf> (Accessed 20th September 2020).
- 3 Amin MB, Edge S, Greene FL, Byrd DR, Brookland RK, Washington MK, Gershenwald JE, Compton CC, Hess KR, Sullivan DC, Jessup JM, Brierley JD, Gaspar LE, Schilsky RL, Balch CM, Winchester DP, Asare EA, Madera M, Gress DM and Meyer LR (eds) (2017). *AJCC Cancer Staging Manual. 8th ed.* Springer, New York.
- 4 Brierley JD, Gospodarowicz MK and Wittekind C (eds) (2016). *Union for International Cancer Control. TNM Classification of Malignant Tumours, 8th Edition*, Wiley, USA.
- 5 WHO Classification of Tumours Editorial Board (ed) (2019). *WHO Classification of Tumours, Breast Tumours, 5th Edition*. IARC Publications, Lyon.
- 6 Foschini MP, Miglio R, Fiore R, Baldovini C, Castellano I, Callagy G, Bianchi S, Kaya H, Amendoeira I, Querzoli P, Poli F, Scatena C, Cordoba A, Pietribiasi F, Kovács A, Faistova H, Cserni G and Quinn C (2019). Pre-operative management of Pleomorphic and florid lobular carcinoma in situ of the breast: Report of a large multi-institutional series and review of the literature. *Eur J Surg Oncol* 45(12):2279-2286.