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Understanding Your Pathology Report: Ductal Carcinoma In Situ (DCIS)

When your breast was biopsied, the samples taken were studied under the microscope by a specialized doctor with many years of training called a *pathologist*. The pathologist sends your doctor a report that gives a diagnosis for each sample taken. Information in this report will be used to help manage your care. The questions and answers that follow are meant to help you understand medical language you might find in the pathology report from a [breast biopsy](#)¹, such as a needle biopsy or an excision biopsy.

In a needle biopsy, a needle is used to remove a sample of an abnormal area. An excision biopsy removes the entire abnormal area, often with some of the surrounding normal tissue. An excision biopsy is much like a type of [breast-conserving surgery](#)² called a lumpectomy.

What is carcinoma?

This is a term used to describe a cancer that begins in the lining layer (epithelial cells) of organs like the breast. Nearly all breast cancers are carcinomas.

What is in-situ carcinoma (or carcinoma in situ) of the breast?

This term is used for the earliest [stage](#)³ of breast cancer, when it is confined to the layer of cells where it began. The normal breast is made of tiny tubes (ducts) that end in a group of sacs (lobules). Cancer starts in the cells lining the ducts or lobules, when a normal cell becomes a carcinoma cell. As long as the carcinoma cells are still confined to the breast ducts or lobules, and do not break out and grow into surrounding tissue, it is considered in-situ carcinoma (also known as carcinoma in situ, or CIS).

Once the carcinoma cells have grown and broken out of the ducts or lobules, it is called

invasive or infiltrating carcinoma. In an [invasive carcinoma](#)⁴, the tumor cells can spread (metastasize) to other parts of your body.

What does it mean if my in-situ carcinoma is called ductal carcinoma in situ (DCIS), intraductal carcinoma, or in-situ carcinoma with duct and lobular features?

There are 2 main types of in-situ carcinoma of the breast: ductal carcinoma in-situ (DCIS) and lobular carcinoma in situ (LCIS). Intraductal carcinoma is another name for ductal carcinoma in-situ.

LCIS is discussed on a [different page](#).⁵

Sometimes DCIS and LCIS are both found in the same biopsy.

In-situ carcinoma with duct and lobular features means that the in-situ carcinoma looks like DCIS in some ways and LCIS in some ways (when looked at under the microscope), and so the pathologist can't call it one or the other.

If **DCIS** is left untreated, it can go on to become an invasive cancer, so it is often called a *pre-cancer*. Still, we don't really understand it well. We don't think that all DCIS would go on to become invasive cancer, but we can't tell which DCIS would be safe to leave untreated. [Treatment](#)⁶ is aimed at getting rid of all the DCIS, usually by surgery. In some cases, radiation (radiotherapy) or hormone therapy (like tamoxifen) is given after surgery to lower the chance that it will come back later (recur) or that invasive carcinoma will occur.

What does it mean if my report mentions E-cadherin?

E-cadherin is a test that the pathologist might use to help determine if the carcinoma in situ is ductal or lobular. If your report does not mention E-cadherin, it means that this test was not needed to make the distinction.

What does it mean if my report describes my ductal carcinoma in situ (DCIS) as being cribriform, micropapillary, apocrine, comedo, with comedonecrosis, papillary, or solid?

These terms are used to describe certain ways that the DCIS looks under the microscope. Some of these are linked to a higher chance that the DCIS may come back after treatment, so finding them may change your treatment. Your doctor should discuss this with you.

What does it mean if my ductal carcinoma in situ (DCIS) is described as being low grade, intermediate grade, or high grade; or nuclear grade 1, nuclear grade 2, or nuclear grade 3; or low mitotic rate, intermediate mitotic rate, or high mitotic rate?

These are all different ways of describing how the DCIS looks under the microscope:

- DCIS that is high grade, is nuclear grade 3, or has a high mitotic rate is more likely to come back (recur) after it is removed with surgery.
- DCIS that is low grade, is nuclear grade 1, or has a low mitotic rate is less likely to come back after surgery.
- DCIS that is intermediate grade, is nuclear grade 2, or has an intermediate mitotic rate falls in between these two.

Patients with higher grade DCIS may need additional treatment.

What is the significance of the reported size of the ductal carcinoma in situ (DCIS)?

If the entire tumor or area of DCIS is removed (such as in an [excisional biopsy](#)⁷ or [breast-conserving surgery](#)⁸), the pathologist will say how big the DCIS is by measuring how long it is across (in greatest dimension), either by looking at it under the microscope or by gross examination (just looking at it with the naked eye) of the tissue taken out at surgery. Another way to measure DCIS is to note the number of microscopic slides that contain DCIS. For example, the report may say that DCIS was found in 3 slides.

On needle biopsy, measurements of the area of DCIS are not often reported because this type of biopsy only samples a part of the tumor. Later, when the entire area of DCIS is removed (with surgery), an accurate measurement can be done.

The larger the area of DCIS, the more likely it is to come back (recur) after surgery. Doctors use information about the size of the DCIS when recommending further treatments.

What does it mean if my report mentions Paget disease?

Paget disease (also called Paget's disease, Paget disease of the nipple, or Paget disease of the breast) is when cells resembling the cells of ductal carcinoma in situ (DCIS) are found in the skin of the nipple and the nearby skin (the areola). Paget

disease of the nipple is usually associated with DCIS or invasive carcinoma (cancer) in the underlying breast tissue. If Paget disease is found on needle or punch biopsy, more tissue in that area usually needs to be removed with the goal of entirely removing the area of Paget disease. Talk to your doctor about the best treatment for you.

What does it mean if my report mentions special tests such as high molecular weight cytokeratin (HMWCK), CK903, CK5/6, p63, muscle specific actin, smooth muscle myosin heavy chain, calponin, or keratin?

These are special tests that the pathologist sometimes uses to help make the diagnosis of DCIS. Not all cases need these tests. Whether your report does or does not mention these tests has no bearing on the accuracy of your diagnosis.

What does it mean if my report on ductal carcinoma in situ (DCIS) mentions estrogen receptor (ER) or progesterone receptor (PR)?

ER and PR are special tests that the pathologist does that are important in predicting response of the DCIS to [hormone therapy](#)⁹ (like tamoxifen). Testing for ER is done for most cases of DCIS, but testing for PR is not typically needed. Results for ER and PR are reported separately and can be reported in different ways:

- Negative, weakly positive, positive
- Percent positive
- Percent positive with something saying whether the staining is weak, moderate, or strong

Ask your doctor how these results will affect your treatment.

What if my report on ductal carcinoma in situ (DCIS) mentions margins or ink?

When the entire area of DCIS is removed, the outside surface (edges or margins) of the specimen is coated with ink, sometimes even with different colors of ink on different sides of the specimen. The pathologist looks at slides of the DCIS under the microscope to see how close the DCIS cells get to the ink (the edges or margins of the specimen). If DCIS is touching the ink (called *positive margins*), it can mean that some DCIS cells were left behind, and more surgery or other treatments may be needed. Sometimes, though, the surgeon has already removed more tissue (at surgery) to help make sure that this isn't needed. If your pathology report shows DCIS with positive margins, your doctor will talk to you about what treatment is best.

What does it mean if my report also mentions atypical ductal hyperplasia (ADH) or atypical lobular hyperplasia (ALH)?

[These findings](#)¹⁰ are less serious than DCIS, and you should talk with your doctor about what these findings may mean to your care.

What does it mean if my report also uses any of the following terms: usual ductal hyperplasia, adenosis, sclerosing adenosis, radial scar, complex sclerosing lesion, papillomatosis, papilloma, apocrine metaplasia, cysts, columnar cell change, collagenous spherulosis, duct ectasia, fibrocystic changes, flat epithelial atypia, or columnar alteration with prominent apical snouts and secretions (CAPSS)?

All of these are terms for benign ([non-cancerous changes](#)¹¹) that the pathologist might see under the microscope. They are not important when seen on a biopsy where there is DCIS.

What does it mean if my report mentions microcalcifications or calcifications?

Microcalcifications or calcifications are calcium deposits that can be found in both non-cancerous and cancerous breast lesions. They can be seen both on mammograms and under the microscope. Because certain calcifications are found in areas containing cancer, their presence on a mammogram may lead to a biopsy of the area. Then, when the biopsy is done, the pathologist looks at the tissue removed to be sure that it contains calcifications. If the calcifications are there, the treating physician knows that the biopsy sampled the correct area (the abnormal area with calcifications that was seen on the mammogram).

What does it mean if my doctor asks for a special molecular (genomic) test, such as Oncotype DX®, to be done on my specimen?

Molecular tests may help predict the chances of DCIS coming back (recurring) in the breast, but not all cases need these tests. The results should be discussed with your doctor. The results do not affect your diagnosis, although they might affect your treatment.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
2. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/breast-

- [conserving-surgery-lumpectomy.html](#)
3. www.cancer.org/cancer/breast-cancer/understanding-a-breast-cancer-diagnosis/stages-of-breast-cancer.html
 4. www.cancer.org/treatment/understanding-your-diagnosis/tests/understanding-your-pathology-report/breast-pathology/breast-cancer-pathology.html
 5. www.cancer.org/treatment/understanding-your-diagnosis/tests/understanding-your-pathology-report/breast-pathology/lobular-carcinoma-in-situ.html
 6. www.cancer.org/cancer/breast-cancer/treatment/treatment-of-breast-cancer-by-stage/treatment-of-ductal-carcinoma-in-situ-dcis.html
 7. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-biopsy/surgical-breast-biopsy.html
 8. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/breast-conserving-surgery-lumpectomy.html
 9. www.cancer.org/cancer/breast-cancer/treatment/hormone-therapy-for-breast-cancer.html
 10. www.cancer.org/cancer/breast-cancer/non-cancerous-breast-conditions/hyperplasia-of-the-breast-ductal-or-lobular.html
 11. www.cancer.org/cancer/breast-cancer/non-cancerous-breast-conditions.html
 12. www.cancer.org/treatment/understanding-your-diagnosis/tests/understanding-your-pathology-report/faq-initiative-understanding-your-pathology-report.html

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Written by

This series of Frequently Asked Questions (FAQs) was developed by the Association of Directors of Anatomic and Surgical Pathology to help patients and their families better understand what their pathology report means. These FAQs have been endorsed by the College of American Pathologists (CAP) and reviewed by the American Cancer Society.

Learn more about the FAQ Initiative (www.cancer.org/treatment/understanding-your-diagnosis/tests/understanding-your-pathology-report/faq-initiative-understanding-your-pathology-report.html)¹²

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