

# DUCTAL CARCINOMA IN SITU (DCIS) – FACT SHEET

Updated December 2022

## **DUCTAL CARCINOMA IN SITU (DCIS)**

DCIS is a condition of abnormal, but not cancerous, cells found in the lining of the milk ducts, and has not spread into nearby tissue. It is the most common type of non-invasive breast ‘cancer.’ Non-invasive means that the abnormal cells do not move from where they are found and therefore, DCIS is often referred to as a ‘precancer.’

Although DCIS can be a precursor for development of a subsequent invasive breast carcinoma, this is not the case for most people assigned female sex at birth. In fact, if left untreated, it is estimated that roughly 20-50% of DCIS will go on to become invasive breast cancer. DCIS accounts for 20% of breast cancer diagnoses and would be the fifth most common cancer in people assigned female sex at birth if classified independently.<sup>1</sup> Unfortunately, experts cannot tell which of them with untreated DCIS will eventually develop invasive breast cancer and which will not. However, there is a general consensus that DCIS represents an intermediate step between normal breast tissue and invasive breast cancer.

## **DETECTION**

DCIS was rarely diagnosed before 1980, but with increased rates of screening mammography, DCIS detection has come to represent 20-25% of all breast cancer diagnoses.<sup>2</sup>

DCIS is most commonly detected as a small area of abnormal calcifications during routine screening mammography. The distribution and shape of the calcifications may indicate DCIS, but it cannot be diagnosed by mammography alone. A core-needle biopsy, which uses a hollow-needle that draws out tissue samples, collects cells that are examined under a microscope.

## **TREATMENT OPTIONS**

There are several treatment options for people diagnosed with DCIS. Treatments are recommended to reduce the risk of developing a local recurrence and/or an invasive breast cancer.

- **Lumpectomy alone**
  - Lumpectomy is a surgical procedure that removes the breast lump or suspicious tissue, as well as surrounding tissue. Lumpectomy alone is considered if (1) only one area of DCIS abnormality is seen, (2) all the seen DCIS cells can be removed by the surgeon, and/or (3) the type of DCIS is of a low grade/less aggressive type.
- **Lumpectomy plus Radiation**
  - Lumpectomy paired with radiation is used to minimize the chance of having a recurrence of DCIS, by destroying any abnormal cells that have not been removed during surgery. Radiation reduces the risk, leaving less than a 15% chance that there will be a recurrence in the treated breast.<sup>3</sup>
- **Lumpectomy plus Radiation and Tamoxifen**
  - Studies have shown that the addition of 5 years of tamoxifen treatment, an oral medication that inhibits the effects of estrogen, can reduce the risk of recurrence in the treated breast by as much as 50%, as well as reduce the risk of new DCIS and invasive breast cancer in the opposite breast, compared to those who do not take tamoxifen.<sup>4</sup> The addition of tamoxifen therapy is only useful for DCIS that is estrogen receptor positive.

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## **TREATMENT (CONTINUED)**

- Since the risk of recurrence of DCIS is variable, the net benefit for some low-risk people may be very small. This small benefit needs to be weighed against the risk of tamoxifen treatment, which include menopausal-type symptoms, blood clots, and increased risk of uterine cancer.
- **Mastectomy**
  - Mastectomy is a surgical procedure in which the entire breast, including the nipple, is removed. The only part remaining includes the lymph nodes under the arm, as well as the muscle tissue from beneath the breast. Unlike lumpectomy, radiation therapy is not needed after mastectomy.
  - Mastectomy is used to remove (1) high grade DCIS, (2) DCIS that is multifocal (appears in many places within the breast), or (3) persistent positive margins after surgical lumpectomy was done.
- **Mastectomy plus Tamoxifen**
  - See more about tamoxifen in the Lumpectomy plus Radiation and Tamoxifen section above.
- **Watchful Waiting/Active Surveillance**
  - Some respected breast cancer specialists believe it's time to seriously look into the management of DCIS by active surveillance. Similar to how some low-risk patients with prostate cancer are now being advised, patients would be given the option of foregoing treatment while doctors closely monitor them through more frequent screening and follow-up exams.
    - **Concern about over-treatment**
      - A recent study at Oxford University has shown positive results for a blood test that can identify cancer and we hope that further study will produce a practice-changing result.<sup>5</sup> Faced with uncertainty about the likelihood of developing an invasive tumor, most people treat DCIS aggressively, undergoing a combination of lumpectomy and radiation or opting for mastectomy.
    - **Risk associated with uncertainty**
      - The decision made by a person diagnosed with DCIS has a lot to do with how they feels about risk and how comfortable they are with uncertainty. Each person should be given all the available information before undertaking treatment and be encouraged to make decisions that will be best for them.

## **QUESTIONS TO CONSIDER**

Here are some questions to ask your health care provider, and some questions that you need to ask yourself as only you can provide the direction that's right for you.

- **Exactly what type/grade of DCIS do I have? What is the risk in my case of developing invasive breast cancer?**
  - Breast cancer is highly heterogeneous, influenced by the interaction of genetic and environmental factors. Some patients with seemingly low-risk DCIS, based on clinical and pathologic assessments, develop local recurrence or even invasive breast cancer. However, most low-grade DCIS does not develop into invasive carcinoma.
- **What treatment options are available for my type of DCIS? What are the risks related to the treatments?**
  - There is risk related to every treatment, including delaying or choosing no treatment. You have the right to get complete information about the treatments (risk, effectiveness, alternatives, etc.) before you make a decision. This includes short term and long-term risks associated with surgery, radiation, tamoxifen treatment, and watchful waiting.
- **What's my risk tolerance and how good am I with living with ambiguity and uncertainty? Can I accept the possible side effects of treatment?**
  - Currently, doctors can perform both an ultrasound and MRI to assist them in determining if DCIS has developed into invasive breast cancer.<sup>6</sup> It is hard to make the "right" decision with a sea of uncertainties. Are you going to take progressive actions, undergo conservative treatment, or go with watchful waiting to see how the DCIS progresses? The decision will be based on your tolerance for uncertainty, your feelings about risk, and the condition of your body.

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## **QUESTIONS TO CONSIDER (CONTINUED)**

- If I decide to have surgery, am I clear on what I am authorizing my physician to do or not to do while I am under anesthesia?
  - Understand and discuss all your options and preferences with your surgeon prior to surgery. For example, if high grade and/or extensive DCIS is found during surgery, you may approve your surgeon to do a sentinel node biopsy at the time of lumpectomy or mastectomy. By discussing this in advance, the need for additional surgery later may be eliminated. If you don't want any additional procedures done at the time of lumpectomy or mastectomy, it is important that your surgeon is clear about this as well.

## **IN SUMMARY**

There are several treatment options for DCIS and they depend on various factors including your tolerance for risk. Whatever you decide, if you receive a diagnosis of DCIS, you don't have to rush to decide which treatment is best for you. By the time DCIS is usually detected, it's probably been there for some time. You can usually take a couple of weeks to make your decisions without affecting your outcome.

What's most important is for you to understand your diagnosis and situation, discuss it with your doctor, and then decide and communicate the treatment options you feel are best suited to you.

## **REFERENCES**

<sup>1</sup> <https://www.cuimc.columbia.edu/news/stage-zero-breast-cancer-whats-optimal-treatment-dcis>

<sup>2</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5161058/>

<sup>3</sup> <https://moffitt.org/cancers/ductal-carcinoma-in-situ/recurrence/>

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4999067/>

<sup>5</sup> <https://www.ox.ac.uk/news/2022-01-05-new-test-can-identify-if-patient-has-cancer-and-if-it-has-spread>

<sup>6</sup> <https://www.webmd.com/breast-cancer/guide/ductal-carcinoma-invasive-in-situ>