

This fact sheet provides information about Ductal Carcinoma in Situ (DCIS), current treatment options, and questions for you and your health care provider to help guide you in making your decisions about DCIS.

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 tissues.ⁱ DCIS 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 women.ⁱⁱ In fact, if untreated, it is estimated that only about 20-30% of DCIS will go on to become invasive breast cancer.^{iii,iv} Currently experts cannot tell which women with untreated DCIS would eventually develop invasive breast cancer and which will not. However, there is general consensus that DCIS represents an intermediate step between normal breast tissue and invasive breast cancer.^v

There are three grades of DCIS: Grade I (low), Grade II (moderate/intermediate), and Grade III (high).^{vi} The lower the grade, the more closely the DCIS cells resemble normal breast cells and the slower they evolve.^{vii}

Detection

DCIS was rarely diagnosed before 1980, but with increased rates of screening mammography, DCIS detection has come to represent a 25% of all breast cancer diagnoses.^{viii}

DCIS is most commonly detected as a small area of abnormal calcifications during routine screening mammography.^{ix} The distribution and shape of the calcifications may indicate DCIS, but it cannot be definitively 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

When a woman is diagnosed with DCIS, there are several treatment options. These treatments are recommended not because DCIS itself is life

threatening, but because the treatments reduce the risk for 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 and some 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.^x

• Lumpectomy plus Radiation

Lumpectomy paired with radiation is used to minimize the chances of having a recurrence of DCIS, by destroying any abnormal cells that have not been removed during surgery. Although radiation reduces the risk, there still remains an 8-10% chance that there will be a recurrence in the treated breast.^{xi,xii} In half of those women, the recurrence will be invasive cancer.^{xiii}

• 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 half, and can also reduce the risk of new DCIS and invasive breast cancer in the opposite breast, compared to women who do not take tamoxifen.^{xiv xv} The addition of tamoxifen therapy is only useful for DCIS that is estrogen receptor positive.^{xvi}

Since the risk of recurrence of DCIS is variable, the net benefit for some low-risk women may be very small. This small benefit needs to be weighed against the risks of tamoxifen treatment, which include menopausal type symptoms, blood clots, and increased risk of uterine cancer.^{xvii}

• Mastectomy

Mastectomy is a surgical procedure in which the entire breast, including the nipple, is removed but not the lymph nodes under the arm or 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 the information about tamoxifen in the **Lumpectomy, plus Radiation and Tamoxifen** section above.

- **Watchful Waiting/Active Surveillance**

There are some respected breast cancer specialists who believe it's time to seriously look into what's known as management of DCIS by active surveillance.^{xviii} Similar to how some low-risk patients with prostate cancer are now being advised, patients would be given the option of forgoing treatment while doctors closely monitor them including more frequent screening, follow-up exams, etc.

Concern about over-treatment: Unfortunately, there is no existing test that permits a woman to determine whether or when her condition might progress to invasive breast cancer. Faced with uncertainty about the likelihood of developing an invasive tumor, most women treat DCIS aggressively, undergoing a combination of lumpectomy and radiation or opting for mastectomy.^{xix}

Risk associated with uncertainty: The decision made by a woman diagnosed with DCIS has a lot to do with how she feels about risk and how comfortable she is with uncertainty. Each woman should be given all of the available information before undertaking the treatment and be encouraged to make the decision that she thinks best for her.

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.^{xx} 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?**

Unfortunately there is no test yet that can tell whether DCIS would eventually develop into invasive breast cancer if you do not undergo treatment.^{xxi} 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.

- **If I decide to have surgery, am I clear on what I am authorizing my physician to do or not 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 many choices for treatment options of 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 mode 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 decide on the option that's best for you without it affecting your outcome.

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

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