

If the area of DCIS has been removed with the margins of the excision clear of DCIS by 10mm or more, further surgery or treatment is usually not necessary.

Assessment by the Pathologist

Pathology assessment of the breast tissue sample may take one to two days. Not all DCIS contains calcifications, and so the extent of DCIS found by the pathologist may be far greater than that detected at mammography.

Often however, only small areas of breast tissue are involved. The pathologist will also determine whether all the affected tissue has been removed and how close the DCIS is to each edge or "margin" of the tissue removed.

There are several different types of DCIS recognised microscopically by the pathologist. One useful classification is low-, intermediate- and high-grade to describe activity and growth patterns of the abnormal cells.

Although DCIS is a very early form of breast cancer and is curable by complete removal, when the area of DCIS is very large, total mastectomy may be necessary. Breast reconstruction is usually offered at the time of mastectomy, unless other treatment such as radiotherapy is required. In this instance, reconstruction can be performed at a later stage.

Removal of the lymph nodes from the armpit is not usually necessary for DCIS, because it has not spread outside the ducts. However, if mastectomy is performed for extensive DCIS, some surgery in the armpit may be undertaken, as in 1-2% of such cases a small area of undetected invasive cancer may be present.

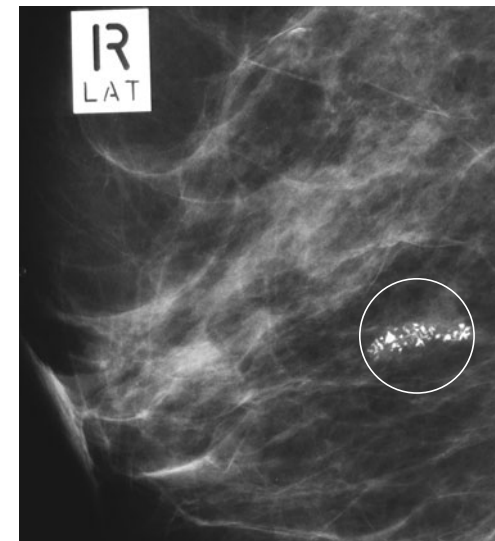
Special issues in the treatment and follow-up of DCIS

1. **Unsuspected invasive cancer.** The presence of invasive cancer within an area of DCIS cannot always be diagnosed pre-operatively. If invasive cancer is found in the tissue removed at operation, further surgery may be required.
2. **Radiotherapy.** Radiotherapy is used to reduce the chances of recurrence in cases where the DCIS has been fully removed but has been found to come close to the edge of tissue removed. In this case radiotherapy may be recommended as an alternative to additional surgery.
3. **Other treatments.**
 - **Tamoxifen.** In women who have had **invasive cancer**, this oestrogen-blocking agent has been shown to reduce the incidence of another invasive cancer developing in the remaining area of the same breast or in the opposite breast. There is however no convincing evidence that tamoxifen is beneficial in the routine management of DCIS after surgery.
 - **Chemotherapy.** This is not currently used in the treatment of DCIS.
4. **Follow-up.** As there is a risk of recurrence and of further DCIS or invasive cancer in either breast, long term specialist follow-up with annual clinical examinations and diagnostic mammography is required.

This information is presented by BreastScreen SA as a general guide only, and should not be relied upon as a substitute for consultation with health professionals.

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Ductal carcinoma in situ (DCIS)



Magnified mammographic view of microcalcifications in right breast - DCIS.

What is ductal carcinoma in situ?

Ductal carcinoma in situ (DCIS) is a form of early breast cancer involving the development of abnormal (cancer) cells inside some ducts in the breast.

In this condition the cells are **only** in the ducts and have not started to spread into the surrounding tissues. Another name for DCIS is **non-invasive** breast cancer.

As the cancer cells accumulate in the ducts they may start to break down, and small areas of calcifications may develop. It is these calcifications that are seen on the mammogram (breast x-ray).

Why is it important to treat DCIS?

We know that in some cases of DCIS, the cancer cells will start to spread beyond the duct walls: this is known as **invasive** cancer. Unlike DCIS, invasive cancers have the ability to spread to other parts of the body, although they may not necessarily do so.

It is estimated that 20-30% of untreated cases of DCIS will progress to invasive breast cancer. Currently it is impossible to distinguish which cancers will progress and which will remain non-invasive. It is therefore important to treat this condition by removal of all the DCIS affected tissue. This usually provides a complete cure.

Is DCIS common?

Before screening mammography was introduced, only about one percent of all breast cancer treated was DCIS. Because DCIS is not usually felt as a lump but is only found on mammograms, there has been a large increase in the diagnosis of DCIS since screening mammography began. DCIS now accounts for 15-20% of cancers diagnosed in a screening program. If DCIS is found in association with invasive breast cancer, the treatment is that of the whole condition.

Diagnosis of DCIS

DCIS can only be seen on a mammogram when calcifications have developed, and it is often not visible on ultrasound.

Not all calcifications seen on mammograms are caused by DCIS - there are several other causes of calcifications, including benign (non-cancerous) conditions. The calcifications may have features that are highly suggestive of DCIS, but often the diagnosis is not clear. A biopsy is needed to determine if DCIS is present.

Investigation

1. Fine needle aspiration biopsy (FNAB) may be undertaken. This is usually done under x-ray control, and involves a fine needle being inserted into the breast to obtain a small sample of cells.

However the calcifications are often scattered, making accurate sampling by FNAB impossible, so that core biopsy is often necessary.

2. Mammotome core biopsy is performed with a larger needle under local anaesthetic. A sample of breast tissue is removed under x-ray control assisted by suction. This technique allows more accurate diagnosis than FNAB and is the best way to identify DCIS.
3. Surgical biopsy (under general anaesthetic) may be necessary if the results of the FNAB or core biopsy are unsatisfactory for confident diagnosis. Surgical biopsy may also be advised if the x-ray findings are still worrying, despite a normal FNAB or core biopsy.

Treatment of DCIS

The key to successful treatment of DCIS is complete surgical removal.

Before the surgery, the radiologist may need to place a "marker" in the breast to assist the surgeon to locate the area that needs to be removed. A surgeon is said to perform a breast excision when a piece of breast tissue is surgically removed.

In cases where the area of DCIS is small, excision of a small section of breast tissue (partial mastectomy) is all that may be needed.

