The background features a vibrant pink color with large, overlapping organic shapes in orange and yellow. The text is positioned in the upper left quadrant.

DUCTAL CARCINOMA IN SITU (DCIS)

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ABOUT THIS BOOKLET

This booklet is for people who would like more information about ductal carcinoma in situ (DCIS). It describes what DCIS is, the symptoms, how it's diagnosed and possible treatments.

We hope it helps you understand more about DCIS, discuss any questions with your treatment team and be involved as much as you want in any decisions about your treatment.

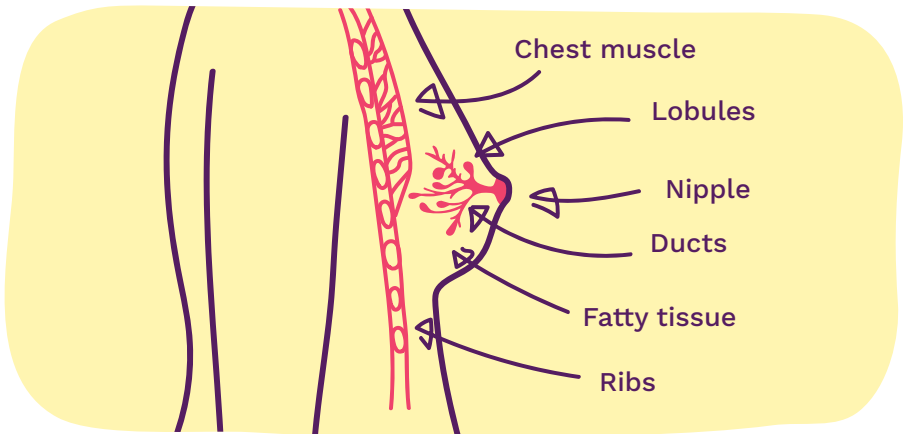
You may also find it useful to read our **Treating primary breast cancer** booklet.

WHAT IS DCIS?

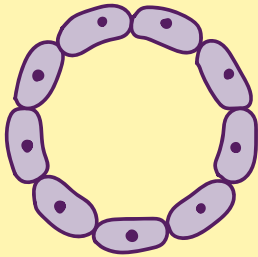
DCIS is an early form of breast cancer.

Breast cancer starts when cells in the breast begin to divide and grow in an unusual and uncontrolled way.

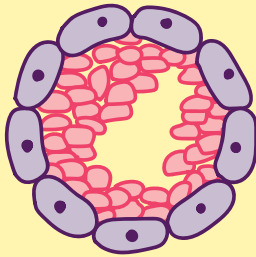
Breasts are made up of lobules (milk-producing glands) and ducts (tubes that carry milk to the nipple). These are surrounded by tissue that gives the breasts their size and shape.



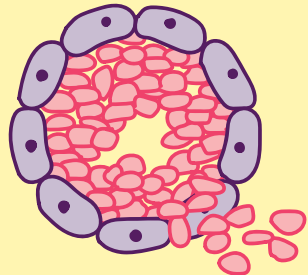
When cancer cells have developed within the ducts of the breast and remain within the ducts ('in situ'), it is called DCIS. The cancer cells have not yet developed the ability to spread outside these ducts into the surrounding breast tissue or to other parts of the body. As a result, DCIS has a very good prognosis (outlook).



Normal breast duct



DCIS



Invasive breast cancer

You may hear DCIS described in different ways such as a pre-invasive, intraductal, non-invasive, in situ cancer, or stage 0 breast cancer.

WHAT ARE THE SYMPTOMS OF DCIS?

DCIS usually has no symptoms. Most cases of DCIS are found during routine breast screening or if a mammogram (breast x-ray) is done for some other reason.

Occasionally DCIS is found when someone has a breast change such as a lump or discharge (liquid) from the nipple. However, if someone with DCIS has a breast change it's more likely they will also have an invasive breast cancer (see page 7).

Some people with DCIS also have a type of rash involving the nipple known as Paget's disease of the nipple, although this is rare. If you've been told you have Paget's disease of the nipple, you can find more information about it on our website breastcancernow.org

HOW IS DCIS DIAGNOSED?

DCIS is diagnosed using a range of tests. These may include:

- A breast examination
- A mammogram (breast x-ray)
- An ultrasound scan (uses sound waves to produce an image)
- A core biopsy (using a hollow needle to take a sample of tissue, under local anaesthetic, to be looked at under a microscope – several tissue samples may be taken at the same time)
- A vacuum assisted biopsy (a hollow probe connected to a vacuum is used to take a sample of tissue, under local anaesthetic, to be looked at under a microscope)

You can read more about these tests in our booklet **Your breast clinic appointment**.

Diagnosing calcifications

If you have no symptoms and are recalled following a mammogram it may be because some tiny white dots were seen on the mammogram. These white dots are spots of calcium salts called calcifications. Calcifications can be due to DCIS. However, not all calcifications are found to be DCIS. Many women develop benign (not cancer) calcifications in their breasts as they get older.

If you have calcifications, further mammograms will be done to see the calcifications in more detail. Sometimes an ultrasound will also be done.

If the calcifications are not clearly benign, you'll have an image-guided biopsy to help make a diagnosis. This is where samples of breast tissue are taken using a mammogram to help locate the exact position of the calcifications. Sometimes an ultrasound is used but this is less common. It's done as an outpatient procedure so you'll be able to leave soon after.

The biopsy samples will be x-rayed to check if they contain calcifications before being sent to the laboratory to be examined under a microscope.

Inserting a metal marker

If you have a biopsy, sometimes a small metal clip called a marker is placed in the breast where the biopsy samples were taken. This is so the area can be found again if another biopsy or surgery is needed. It can safely be left in the breast and does not need to be removed, even if no further procedures are needed.

Getting your results

The staff at the clinic will tell you how and when you will get your biopsy results. You will usually be given an appointment to return to the clinic for your results.

How is DCIS graded?

DCIS is graded based on what the cells look like under the microscope. They will be given a grade according to how different they are to normal breast cells and how quickly they are growing.

DCIS is graded as:

- Low grade – the cancer cells look most like normal breast cells and are usually slow growing
- Intermediate grade – the cancer cells look less like normal breast cells and are growing faster
- High grade – the cancer cells look different to normal breast cells and may be fast growing

For more information see our booklet **Understanding your pathology results**.

CAN DCIS DEVELOP INTO INVASIVE BREAST CANCER?

If DCIS is not treated, the cancer cells may develop the ability to spread outside the ducts into the surrounding breast tissue. This is known as invasive breast cancer. Invasive cancer has the potential to also spread to other parts of the body.

For more information see our booklet **Invasive ductal breast cancer**.

In some cases, DCIS will never develop further or grows so slowly that it would never cause harm during a person's lifetime. Although the size and grade of the DCIS can help predict if it will become invasive, there is currently no way of knowing if this will happen. High-grade DCIS is more likely to become an invasive breast cancer and to do so over a shorter time than low-grade DCIS.

HOW IS DCIS TREATED?

The aim of treatment is to remove all the DCIS from within the breast to reduce the chance of it becoming an invasive cancer.

Because there's no way of knowing when or if DCIS will become invasive, treatment is usually recommended. It's possible this may lead to unnecessary treatment for some people.

Research is looking at which cases of DCIS are more likely to develop into invasive breast cancer and which could be closely monitored instead of being treated. If you are diagnosed with low-grade DCIS, you may be invited to join a clinical trial.

If you have any questions or concerns about your diagnosis and treatment, talk to your treatment team.

Surgery

Surgery is nearly always the first treatment for DCIS. This may be breast-conserving surgery or a mastectomy.

Breast-conserving surgery, also known as wide local excision or lumpectomy, is the removal of the DCIS with a margin (border) of normal breast tissue around it.

A mastectomy is the removal of all the breast tissue including the nipple area. A nipple-sparing mastectomy may be possible in some cases. You may wish to ask your treatment team about this.

You may be offered a choice between these types of surgery, depending on the size and location of the area affected. Your breast surgeon will discuss this with you.

The breast tissue removed during surgery is examined by a doctor who analyses tissue and cells (pathologist). If any cancer cells are seen at or close to the margin of normal breast tissue, you may need more surgery.

A mastectomy is more likely to be recommended if:

- The DCIS affects a large area of the breast
- The DCIS is in more than one part of the breast (although if the areas are small, it may be possible to have two wide local excisions instead of a mastectomy)
- The area has been removed but it hasn't been possible to get a clear margin of normal tissue around the DCIS using wide local excision

If a mastectomy is not required but you would prefer to have one, you can discuss this with your breast surgeon.

You can find out more about the different types of surgery and recovery after surgery on our website **breastcancer.org**

Localisation

As most cases of DCIS can't be felt, the exact position usually has to be 'marked' for the surgeon, so that they can remove the right area. A technique called wire localisation is used. In the

x-ray department or breast clinic, a mammogram or ultrasound scan will be used as a guide to insert a fine wire into the breast under local anaesthetic. The wire is then carefully secured under a small dressing and left in place until the operation to remove the area of DCIS. The operation is usually done under a general anaesthetic on the same day, and the wire will be removed during the operation.

Some hospitals are using a new localisation procedure. Instead of a fine wire, a tiny very low-dose radioactive seed (about the size of a grain of rice) or a small radiation-free magnetic marker (known as a Magseed) is inserted into the breast tissue. This can be done up to two weeks before your operation.

During surgery, a special probe is used to locate the marker and guide the surgeon to the tissue that needs to be removed. The marker will be removed during the operation.

Sometimes the operation is done on a different day. You'll go home after the wire or seed has been inserted and come back to the hospital the day of your operation. If the wire or seed feels uncomfortable while it is in place you can have mild pain relief, such as paracetamol.

After your operation you may feel soreness and discomfort, but this can be managed with pain relief. There will be a scar, but this should fade in time.

Breast reconstruction

If you're going to have a mastectomy, you will usually be given the option of having breast reconstruction. This can be done at the same time as your mastectomy (immediate reconstruction) or months or years later (delayed reconstruction). For more information, see our **Breast reconstruction** booklet.

Some women choose not to or cannot have a breast reconstruction. They may use a breast prosthesis (an artificial breast form) that replaces the shape of a breast, or may prefer not to use anything. See our **Breast prostheses, bras and clothes after surgery** booklet for more information about this.

Lymph node removal

Lymph node removal is not usually recommended for people with DCIS. The cancer cells haven't developed the ability to spread outside the ducts into the surrounding breast tissue and therefore cannot have spread to the lymph nodes.

Sentinel lymph node biopsy

If you're having a mastectomy your specialist may discuss having a sentinel lymph node biopsy at the same time.

Sentinel lymph node biopsy identifies whether the sentinel lymph node (the first lymph node that the cancer cells are most likely to spread to) is clear of cancer cells. There may be more than one sentinel lymph node. If clear, this usually means the other nodes are clear too, so no more will need to be removed.

If the results of the sentinel lymph node biopsy show that the first node or nodes are affected, then this may mean there is an invasive breast cancer as well as DCIS. Occasionally, small areas of invasive cancer may be missed during the initial biopsy.

If an area of invasive breast cancer is found as well as DCIS this will affect the treatment you're offered. For more information see our **Treating primary breast cancer** booklet.

ADJUVANT (ADDITIONAL) TREATMENTS

After surgery, you may need other treatments. These are called adjuvant treatments and can include radiotherapy and, in some cases, hormone (endocrine) therapy.

The aim of these treatments is to reduce the risk of DCIS coming back or an invasive cancer developing.

Chemotherapy and targeted (biological) therapy are not used as treatment for DCIS.

Radiotherapy

Radiotherapy uses high energy x-rays to destroy cancer cells. If you have breast-conserving surgery you may be offered radiotherapy. It is not usually necessary to have radiotherapy after a mastectomy for DCIS.

You'll have radiotherapy as an outpatient, about four to six weeks after your surgery.

Radiotherapy is usually given for a total of three weeks. Treatment is given every day from Monday to Friday, with a break at the weekend.

Radiotherapy can also be given over a shorter time, for example five treatments over one week.

Your treatment team will let you know how long your radiotherapy will last. They will explain the likely benefits of radiotherapy for you and also tell you about any possible side effects. For more information see our **Radiotherapy for primary breast cancer** booklet.

Hormone (endocrine) therapy

Some breast cancers use oestrogen in the body to help them to grow. These are known as oestrogen receptor positive or ER+ breast cancers.

Hormone therapies block or stop the effect of oestrogen on breast cancer cells. Different hormone therapy drugs do this in different ways.

Hormone therapy will only be prescribed if your breast cancer is ER+.

Breast cancers are tested to see if they are ER+ using tissue from a biopsy or after surgery. If your cancer is ER+, your specialist will discuss with you which hormone therapy they think is most appropriate.

Some studies have found taking hormone therapy after surgery reduces the risk of DCIS coming back (recurrence) and the risk of invasive breast cancer developing.

The benefits of hormone therapy for people with ER+ DCIS vary according to what other treatment is given and it isn't recommended for everyone.

If your breast cancer is not stimulated by oestrogen it is known as oestrogen receptor negative (ER-), and hormone therapy won't be of benefit.

Tests may also be done to see if your breast cancer is progesterone receptor positive (PR+). Progesterone is another hormone. The benefits of hormone therapy are less clear for people whose breast cancer is only progesterone receptor positive (PR+ and ER-). Very few breast cancers fall into this category. However, if this is the case your specialist will discuss with you whether hormone therapy is appropriate.

See our **Treating primary breast cancer** booklet or our individual hormone drug booklets for more information.

FURTHER SUPPORT

Being told you have DCIS can be difficult and worrying. Everyone reacts differently to their diagnosis and has their own way of coping.

Although DCIS is an early form of breast cancer with a very good prognosis, people understandably may feel very anxious and frightened by the diagnosis. People can often struggle to come to terms with being offered treatments such as a mastectomy, at the same time as being told their DCIS is an early form of breast cancer.

Some people are reluctant to say they're anxious about a diagnosis of DCIS because they worry others will see it as less important than other types of breast cancer. Because of this they might feel less able to ask for help. But there are people who can support you so don't be afraid to ask for help if you need it. By letting other people know how you feel, particularly your family and friends, they can be more supportive.

Some people find it helpful to discuss their feelings and concerns with their breast care nurse or specialist. If you'd like to talk it through in more depth over a period of time, a counsellor or psychologist may be more appropriate. Your breast care nurse, specialist or GP can arrange this.

You can also call our Helpline on **0808 800 6000**.

HELP US TO HELP OTHERS

If you have found this information helpful, would you consider making a donation to support our care and research work? You can donate on our website breastcancer.org/donate

ABOUT THIS BOOKLET

Ductal carcinoma in situ (DCIS) was written by Breast Cancer Now's clinical specialists, and reviewed by healthcare professionals and people affected by breast cancer.



For a full list of the sources we used to research it:
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For breast cancer care, support and information, call us free on **0808 800 6000** or visit **breastcancernow.org**

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