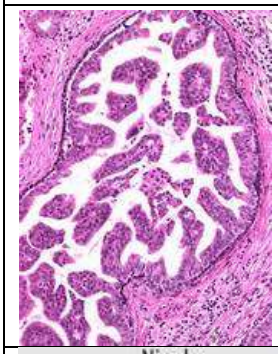
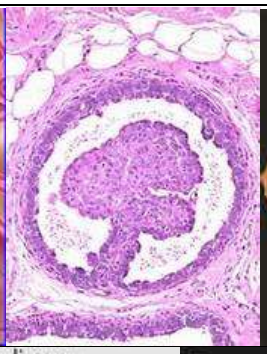
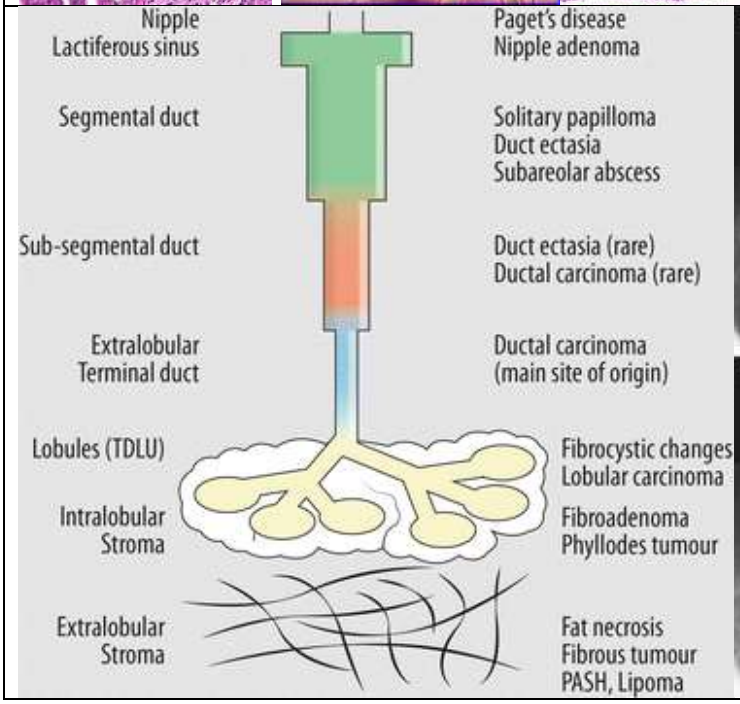
XXII. Diseases of the Breast

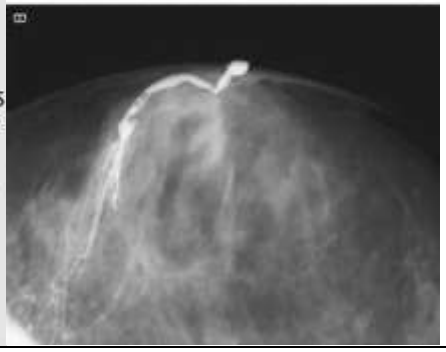
Carcinoma (duct-carcinoma) V-8.555

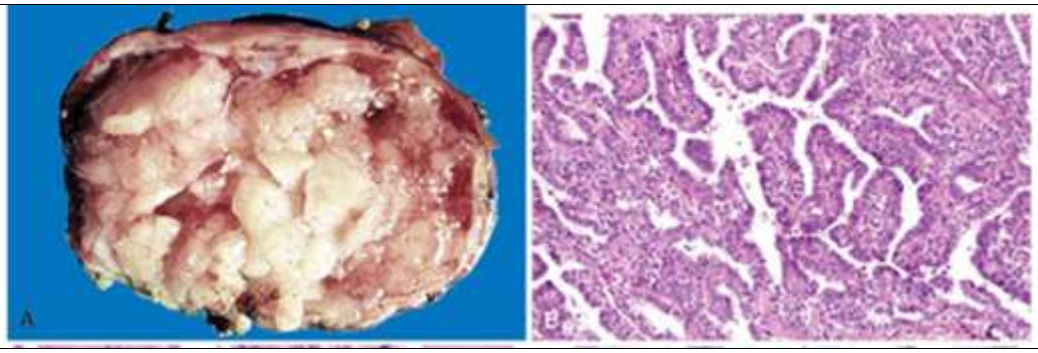
Breast	• Is that of an adult female • Is enlarged (slightly)	
Cut surface:	• Shows a tumour	
	The tumour:	• Moderate in size • Appears in the large ducts of the breast-tissue • Finely-cystic • Pale greyish • Firm in consistence
	Large ducts:	• Appear distended with the tumour-tissue • Filled with opaque greyish material
Peri-ductal tissue:	• Firm	







N.B.I:

Duct carcinoma, which, sometimes, is called "comedo-cancer", is of low grade malignancy (relatively slow growth and late metastases).

Duct carcinoma may be:

1. Papillary carcinoma of the duct with the following features:

(a) Distends one of the large ducts near the nipple.
(b) Probably arises from a duct papilloma.
(c) Usually remains localized for a long time.
(d) Invasion and occurrence of secondaries are slow and appear at:
    i. Regional lymph nodes.
    ii. Distant organs.
(e) The patient's complaint is "a bloody discharge from the nipple.

2. Intraductal carcinoma (comedo form of adenocarcinoma):

(a) The small ducts are filled with the closely-packed cells.
(b) Worm-like casts may be expressed from the cut surface leaving little cysts representing dilated ducts.

Invasion may lately occur (to the surrounding tissues) after a period of confinement within the ducts.

General causes of a bloody discharge from the nipple:

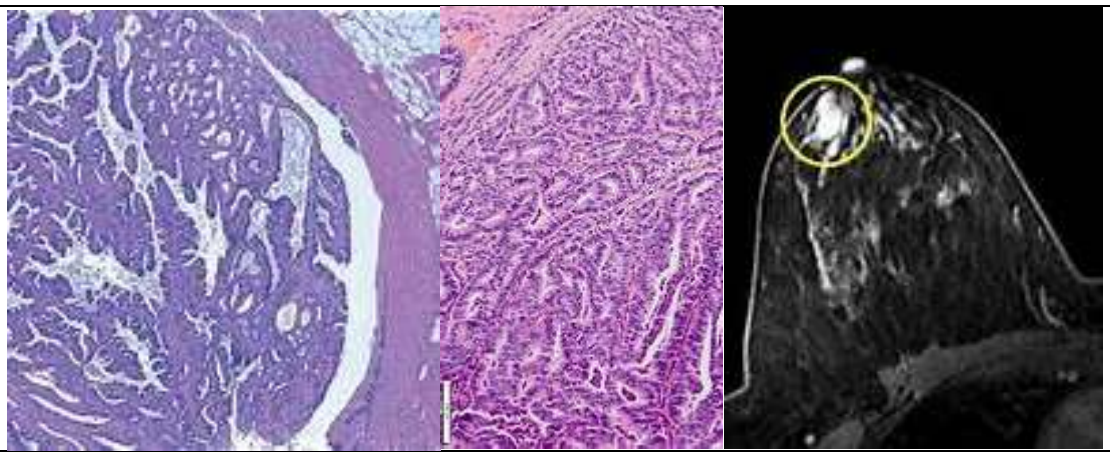
1. Benign:

(a) Duct papilloma.
(b) Papillary cystadenoma.

2. Malignant:

(a) Malignant transformation of a duct papilloma.
(b) Duct-carcinoma.

- The greenish-yellowish-chocolate-coloured discharge which occurs in cystic hyperplasia of the breast is not blood.



N.B. 2

- Duct papilloma (benign) and duct carcinoma (malignant) may be single or often multiple and diffuse (papillomatosis) if occurring on top of cystic hyperplasia and about the menopause.
- Duct papilloma is usually small, delicate, branching within a dilated duct (or cyst) and friable.

TNM staging of breast carcinoma

The breast cancer TNM staging system is the most common way that doctors stage breast cancer. TNM stands for:

- Tumour
- Node
- Metastasis

Your scans and tests give some information about the stage of your cancer.
But your doctor might not be able to tell you the exact stage until you have surgery.
Doctors may also use a number staging system.

Other tests on the breast cancer cells
Your doctor also uses other information about your breast cancer. This information helps to work out your overall stage, your outlook (prognosis) and treatment plan. These includes:

- **Receptors for the female hormones** (oestrogen and progesterone)
- **HER2 status** (human epidermal growth factor receptor 2)
- **The grade of the cancer**

- By using a tissue sample of your cancer, doctors can find out if you are **oestrogen or progesterone positive, or negative**.
- This depends on the amount of these receptors seen in the sample.
- They also look at the levels of the protein HER2.
- Some breast cancers have large amounts of **human epidermal growth factor receptor 2 (HER2).**
- They are called HER2 positive cancers.
- HER2 makes the cancer cells grow and divide.
- Breast cancers that are HER2 positive generally grow more quickly.
- The grade describes how a cancer cell looks under the microscope and whether they are similar or very different to normal cells.

- **Please remember** staging for breast cancer is very complex.
- Many different factors are considered before doctors can confirm your final stage.
- Do speak to your breast doctor or nurse if you have any questions about your stage.

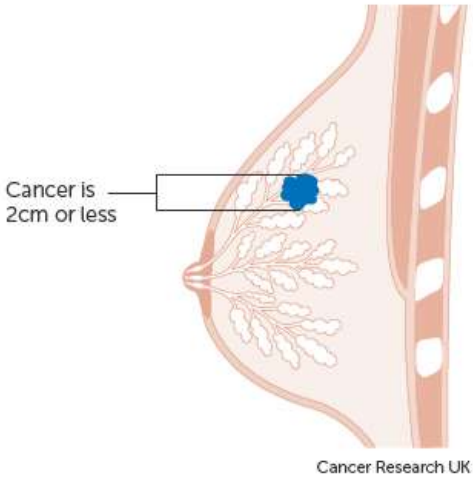
The TNM system

Here is a slightly simplified description of the TNM staging system for breast cancer.

Tumour (T)

Tumour **describes the size of the tumour** (area of cancer).
This is a simplified description of the T stage.
TX means that the tumour size can't be assessed.
Tis (DCIS).
DCIS means **ductal carcinoma in situ**.
It is a pre invasive breast cancer.
The cancer cells are in breast ducts and have not started to spread into the surrounding breast tissue.
Tis (Paget)
Paget's disease is a rare skin condition of the nipple that is associated with some breast cancers**.**
An early symptom of this can be a rash on the nipple.
Sometimes there may be invasive breast cancer with Paget's.
In this situation it is staged by the size of the cancer.

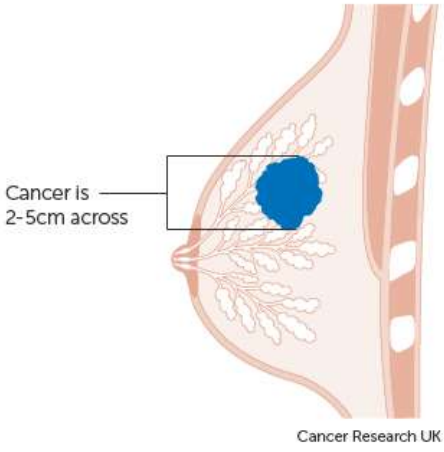
T1 means that the tumour is **2 centimeters (2 cm) across or less**.



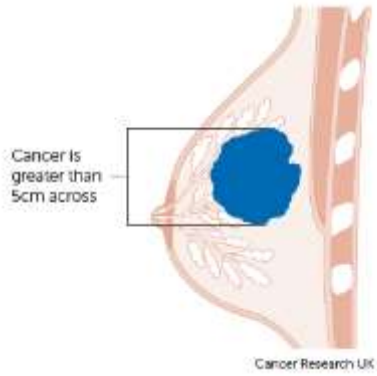
T1 is further divided into 4 groups:

- **T1mi** means the tumour is **0.1cm across or less**
- **(=< 1 mm)**
- **T1a** means the tumour is more than 0.1 cm but not more than 0.5 cm
- **(> 1 to =<5 mm)**
- **T1b** means the tumour is more than 0.5 cm but not more than 1 cm
- **(> 5 to =<10 mm)**
- **T1c** means the tumour is more than 1 cm **but not more** than 2 cm
- **(> 10 to =20 mm)**

T2 means that the tumour is **more than 2 centimetres but no more than 5 centimetres across**.

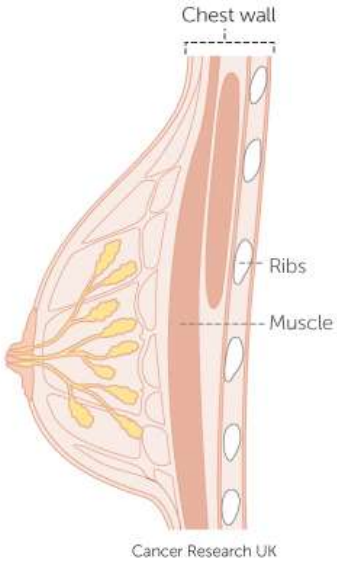


T3 means the tumour is bigger than 5 centimetres across.



T4 is divided into 4 groups:

- **T4a** means the tumour has spread into the **chest wall** (the structures surrounding and protecting the lungs)
- **T4b** means the tumour has spread into the **skin** and the breast might be swollen
- **T4c** means the tumour has spread to both **the skin and the chest wall**
- **T4d** **means inflammatory carcinoma** – this is a cancer in which the overlying skin is red, swollen and painful



Doctors may also use a number staging system.

Node (N)

Node (N) describes whether the cancer has spread to the lymph nodes.
Your doctor might use:

- **Pathological staging if you have surgery**
- **Clinical staging if you don't have surgery**

Pathological staging.
Doctors stage you by using the tissue the surgeon removes during an operation.
This is also called surgical staging. You might see your pathological stage written as **pTNM.**
Clinical staging means the doctor stages you after examining you and looking at test and scan results.
Doctors use clinical staging if you don't have surgery straight away. You might see your clinical stage written as **cTNM**.

Pathological node staging

Below is a simplified description using the pathological staging for nodes in breast cancer.
pNX
Means that the lymph nodes can't be assessed (for example, if they were previously removed).
pN0
Means there are **no cancer cells in any nearby nodes** or **only isolated tumour cells (ITCs).**

Isolated tumour cells (ITCs)

- Are small clusters of cancer cells **less than 0.2 mm across**, or
- A **single tumour cell**, or
- A cluster of **fewer than 200 cells** in one area of a lymph node.

Lymph nodes containing only isolated tumour cells are not counted as positive lymph nodes.

pN1

pN1 is divided into 4 groups

pN1mi

Means one or more lymph nodes contain areas of cancer cells called ***micrometastases that are larger than 0.2mm***.

Or the nodes contain **more than 200 cancer cells but are less than 2mm.**

pN1a

Means that cancer cells have spread (metastasized) into **1 to 3 lymph nodes** and at **least one is larger than 2mm**.

pN1b

Means there are cancer cells in the lymph nodes **behind the breastbone** (the ***internal mammary nodes) found with a sentinel node biopsy***.

pN1c

Means there are cancer cells in **1 to 3 lymph nodes in the armpit and in the lymph nodes behind the breastbone.**

pN2

N2 is divided into 2 groups:

pN2a

Means there are cancer cells in **4 to 9 the lymph nodes in the armpit, and at least one is larger than 2 mm.**

pN2b

Means there are cancer cells in the lymph nodes behind the breast bone (the ***internal mammary nodes***), which have been seen on a scan or felt by the doctor.

There is ***no evidence of cancer in lymph nodes in the armpit***.

pN3

pN3 is divided into 3 groups:

pN3a

Means there are cancer cells in **10 or more lymph nodes in the armpit** and at **least one is larger than 2mm**, or

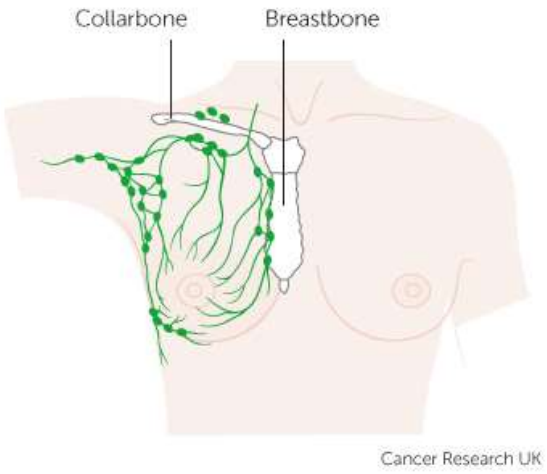
There are cancer cells in the nodes below the collarbone. Subclavicular

pN3b

Means there are cancer cells in

- **Lymph nodes** in the **armpit and**
- **Lymph nodes behind the breastbone.**

pN3c means there are cancer cells in **lymph nodes above the collarbone.** ***Supraclavicular***



Clinical node staging

Clinical staging means the doctor stages you after examining you and looking at test and scan results. Doctors use clinical staging if you don't have surgery straight away. You might see your clinical stage written as **cTNM.**

This is a simplified description using the clinical staging for nodes in breast cancer.

cNX

means it is **not possible to assess** the lymph nodes (for example, if they were previously removed).

cN0

means there are **no signs of cancer in the lymph nodes** following scans and examination.

cN1

cN1 is divided into 2 groups

- **cN1**
- Means the cancer cells have spread to one or more lymph nodes in the lower and middle part of the armpit.
- The lymph nodes **move** a little when they are **felt and are not stuck** to surrounding tissue
- **cN1mi**
- Means the cancer cells in the lymph nodes **are very small and can only be seen under a microscope.**
- These are called micrometastases. *They are larger than 0.2mm, but no larger than 2mm.*

cN2

cN2 is divided into 2 groups

- **cN2a**
- Means the cancer cells in **the armpit** are
  - **Stuck together or**
  - **Fixed to other areas** of the breast such as the muscle.
- **cN2b**
  - Means there are cancer cells in the lymph nodes behind the breast bone (the internal mammary nodes).
  - There is no sign of cancer in the lymph nodes in the armpit.

cN3

cN3 is divided into 3 groups

- **cN3a**
- Means cancer cells are seen **in one or more lymph nodes below the collar bone**.
- **cN3b**
- Means cancer cells are seen in **one or more lymph nodes around the armpit and breast bone.**
- **cN3c**
- Means cancer cells are seen in **one more lymph nodes above the collar bone**.

Metastasis (M)

Metastasis (M) describes whether the cancer has spread to a different part of the body.

M0

- Means that there is no sign that the cancer has spread.

cMo(i+)

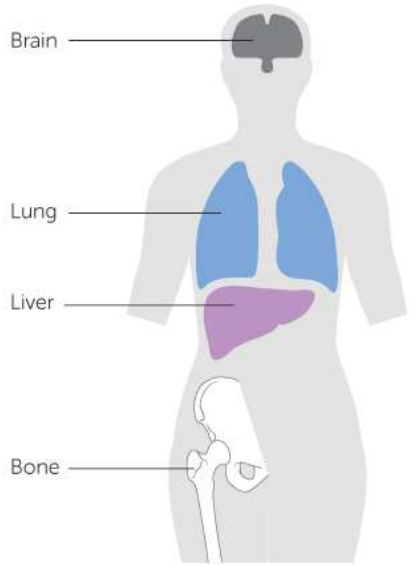
- Means there is no sign of the cancer on physical examination, scans or x-rays.
- But cancer cells are present in blood, bone marrow, or lymph nodes far away from the breast cancer – **the cells are found by laboratory tests.**

cM1

- Means the cancer has spread to another part of the body, seen on scans or felt by the doctor.

pM1

- Means that cancer measuring **more than 0.2 mm** across has spread to another part of the body.
- This has been confirmed by examining tissue from a biopsy, or surgery and scans.



Treatment

The stage of your cancer helps your doctor to decide which treatment you need. Treatment also depends on:

- your type of cancer (the type of cells the cancer started in)
- where the cancer is
- other health conditions that you have

The stage of the cancer and these other factors can also give an idea of your outlook (prognosis).

Other factors that may influence treatment are:

- the grade of your cancer cells
- whether you have had your menopause
- whether your cancer cells have receptors for particular cancer drugs

Your doctor will take many different factors into account when deciding which treatment is best for you.

Treatment may include:

- surgery
- radiotherapy
- chemotherapy
- hormone therapy
- targeted cancer drug therapy

Bisphosphonates

You may also have treatment with a group of drugs called bisphosphonates. You may have this if you have early breast cancer and no longer have periods (post menopausal). They can help reduce the risk of the cancer spreading to the bones.

People with advanced breast cancer may have this to treat symptoms such as bone pain.

Your doctor will let you know if this is suitable for you,

- **Find out more about bisphosphonates**
- **Find out about treatment for breast cancer**