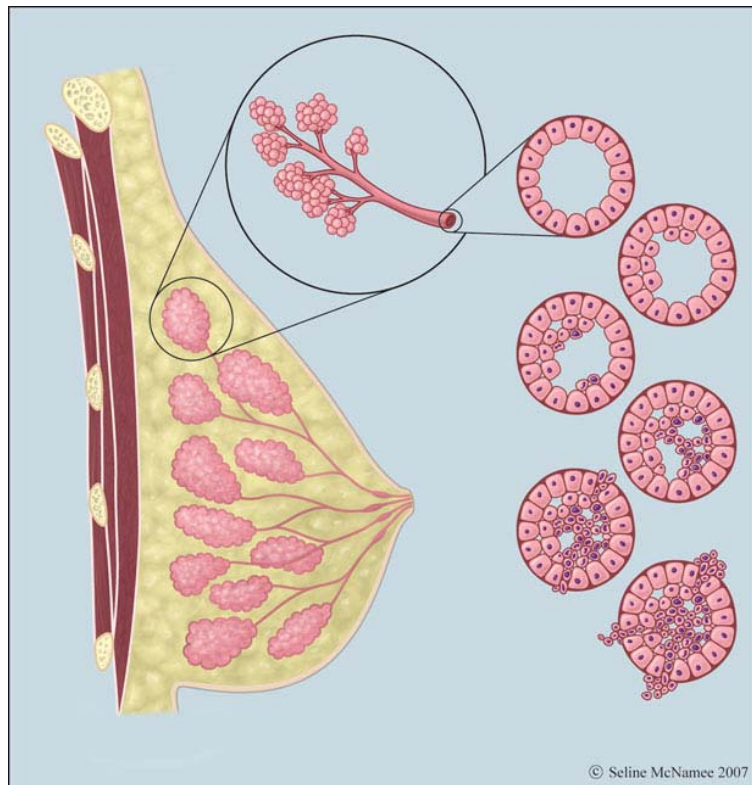


Breast Cancer

The breast consists of milk producing tissue called lobules, connected to the nipple by small ducts. The ducts and lobules are lined by a layer of cells that are gradually replaced to maintain a healthy lining. Normal body cells have a uniform size and shape. The cells all work together in a co-operative manner to ensure that the body functions normally.



Cancer develops when some of these cells stop obeying the body's instructions and start to multiply independently. A cancer starts from a single abnormal cell that produces millions of copies of itself.

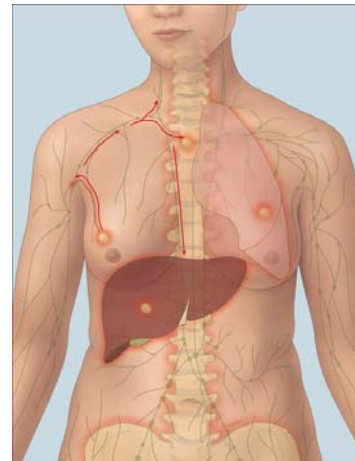
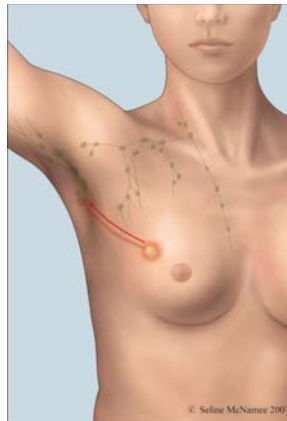
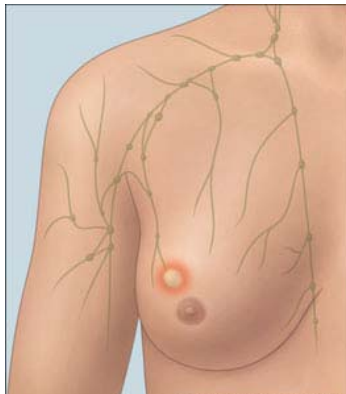
Initially the abnormal cells are confined within the lining of the duct. This is called ductal carcinoma in **situ(DCIS)**.

After some time cancer cells may start to move out of the duct into the surrounding tissue. Once cells move from their normal location inside the **duct**, we describe this as invasive breast cancer. The cells heap up to form a lump and they also continue to move through the tissue.

Cells enter the small lymph vessels (shown in green) running through the breast. Lymph vessels are tiny channels in the tissue that collect and return cell fluid to the circulation. Lymph nodes are filters connected to the lymph channels at various sites such as the armpit, neck and groin. They are able to trap cancer cells and are the first site at which cancer cells may be seen beyond the breast.

Eventually cancer cells bypass the lymph nodes and travel to distant parts of the body. They **end up** in areas that have a good blood supply where they multiply in great numbers.

Common sites are the liver, lungs and bone marrow.



It useful to divide this process of cancer progression into four different stages when planning investigations and treatment.

Stage 1 Localised lump in the breast less than 2cm in size.

Stage 2 A larger lump (2 – 5cm) sometimes with lymph node involvement

Stage 3 Locally advanced disease – a large tumour (bigger than 5cm) that may be attached to the skin or chest wall.

Stage 4 Metastatic disease - cancer that has spread to distant parts of the body

The term **early breast cancer** refers to the first two stages.