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Mechanism of tumour development

"We are all cells in the same body of humanity."
Peace Pilgrim,
born Mildred Lisette Norman Ryder,
writer and activist (1908–81)

Normal cells divide, mature and die. Cancer develops when abnormal cells in the body do not follow this progression.

Cancer begins with damage to one or more genes in a single cell. This damage can cause the cell to divide incorrectly and to produce abnormal cells. If the body's immune system does not repair or destroy these abnormal cells, then the newer cells can become even more abnormal,

eventually producing cancer cells. Cancer cells also divide more rapidly than do normal cells, and usually do not function normally. Eventually, cancer cells may begin to pile on top of nearby cells, forming a mass of tissue called a tumour. The process by which a normal cell becomes a cancerous tumour usually takes years.

The term "stage" describes the extent or severity of a person's cancer. During early stages of cancer, a

person may have only one small, cancerous tumour. More advanced stages may involve a larger tumour, the spread of cancer to lymph nodes, or the spread of cancer to other parts of the body (metastases).

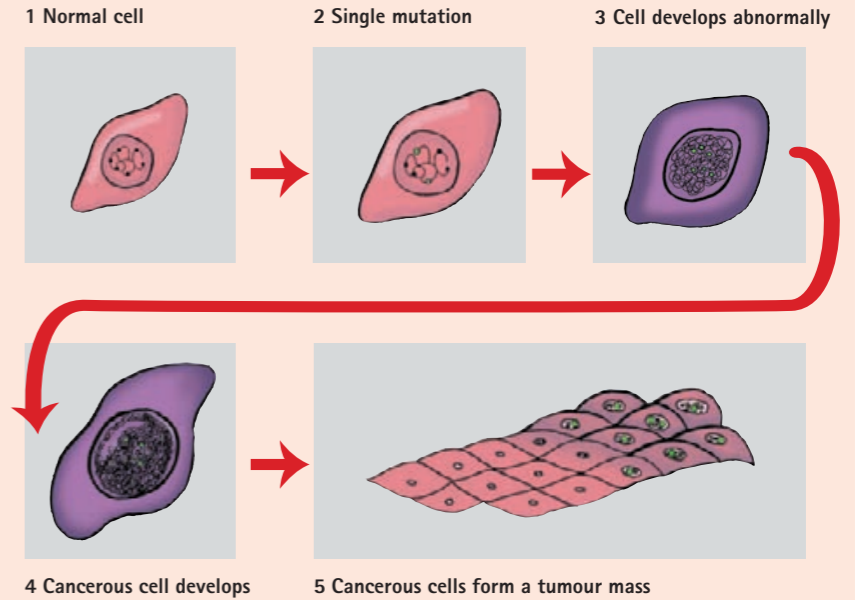
To determine the likelihood that a person will recover from cancer (prognosis), physicians look at many factors, including the type and stage of cancer.

Not all cancers form solid tumours. Leukaemia cancer cells are found in blood and blood-forming organs.

Cancers that develop slowly may present opportunities for early detection.

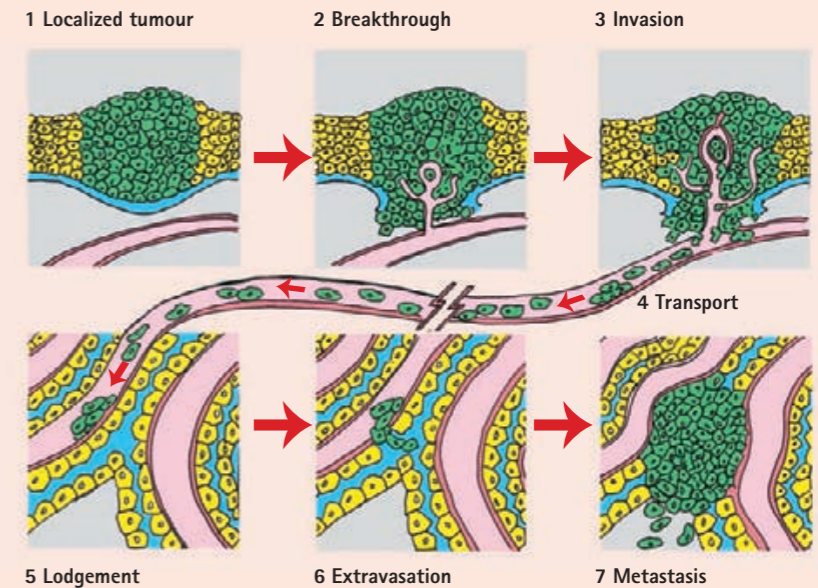
How a tumour develops

Damage to genes in a single cell (mutations) can lead to progressively more abnormal cells. Eventually, abnormal cells may become cancerous cells, which often divide quickly and do not die.



How a tumour spreads

Metastases happen when cancer cells from the original tumour spread to different parts of the body, and eventually form secondary tumours at sites distant from the original tumour.



Cancers begin to develop years before they are obvious.

