

Cancer



Source: under-microscope.com

Learning Goals



- I can explain how cancer multiplies and affects a person.

What is Cancer?



- cells with abnormal genetic material that are dividing **uncontrollably**
 - “**checkpoints**” in the cell cycle have been ignored!

Breast Cancer Cells Dividing (over 3 days)

Types of Cancer



There are more than 100 different types of cancer. Most cancers are named for the organ or type of cell in which they start:

- **Carcinoma** - cancer of epithelial cell (skin/surface of internal organs)

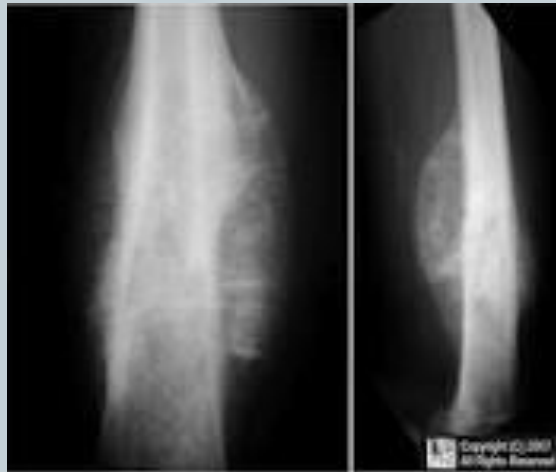


Source: virtualmedicalcentre.com

Types of Cancer



- **Sarcoma** - cancer of muscle, bone, cartilage, & other connective tissue

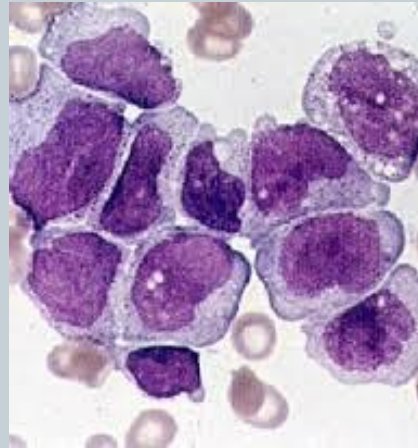


Source: graphicshunt.com

Types of Cancer



- **Leukemia** - cancer of bone marrow; particularly, white blood cells



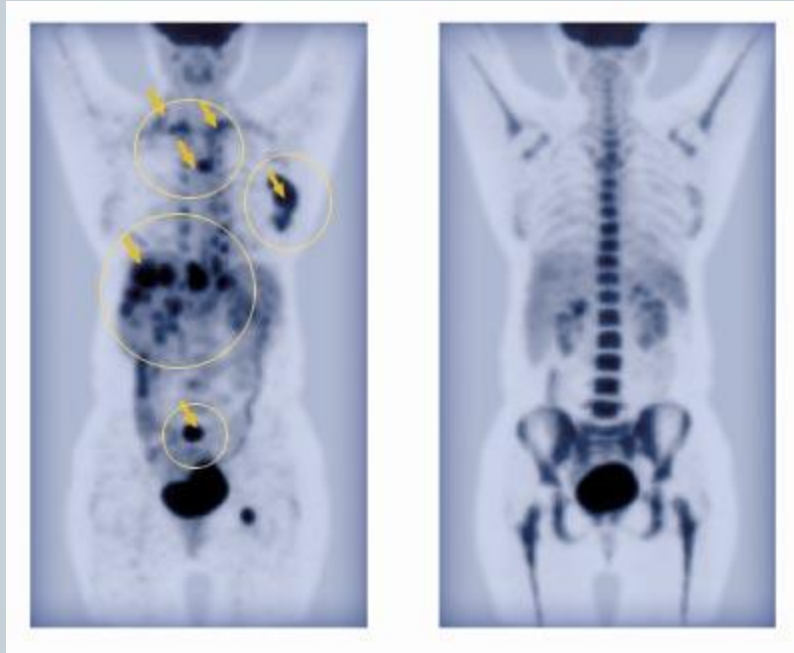
Source: unitedhealthdirectory.com

- **Myeloma** - cancer of white blood cells that produce antibodies

Types of Cancer



- **Lymphoma** - cancer of immune system cells



Source: caseylibero.blogspot.com

Tumours



What is a tumour?

- an abnormal clump or group of cells.
 - reduce **normal functions** of other body tissues by “invading” it.

Types of Tumors

- **Benign Tumor** → not cancerous; does not spread to other tissue
- **Malignant Tumor** → cancerous; does spread to other tissue

Effects of Cancer on Other Tissues



(see ON Science 10 text p. 43)

Summarize:

- can travel to other places in body, spreading the cancer
- lower the effectiveness of other body tissues
- use up nutrients needed by normal cells

Common Treatments



Surgery:

- abnormal cells are **removed**

Radiation:

- abnormal cells are damaged with **high energy radiation beams**
 - affects their DNA causing them to die

Chemotherapy:

- abnormal cells are damaged with intake of **chemical drugs**
 - affects their ability to divide causing them to stop growing

Less Known Treatment



Biological Therapy:

- “chemicals” given to help your **immune system** fight cancer
 - such as cancer **vaccines** for preventative **OR** therapeutic purpose

Success Criteria



- I can explain the connection between cancer and mitosis.