

Surgical Management of Cancer

Normal body cells grow, divide and die in an orderly fashion.



- Cancer begins when genetic changes impair this orderly process.
- Cells start to grow uncontrollably.

Cancer Cells Versus Normal Cells

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TABLE 9.2

Cancer Cells Versus Normal Cells

Cancer Cells

Nondifferentiated cells
Abnormal nuclei
Do not undergo apoptosis
No contact inhibition
Disorganized, multilayered
Undergo metastasis and angiogenesis

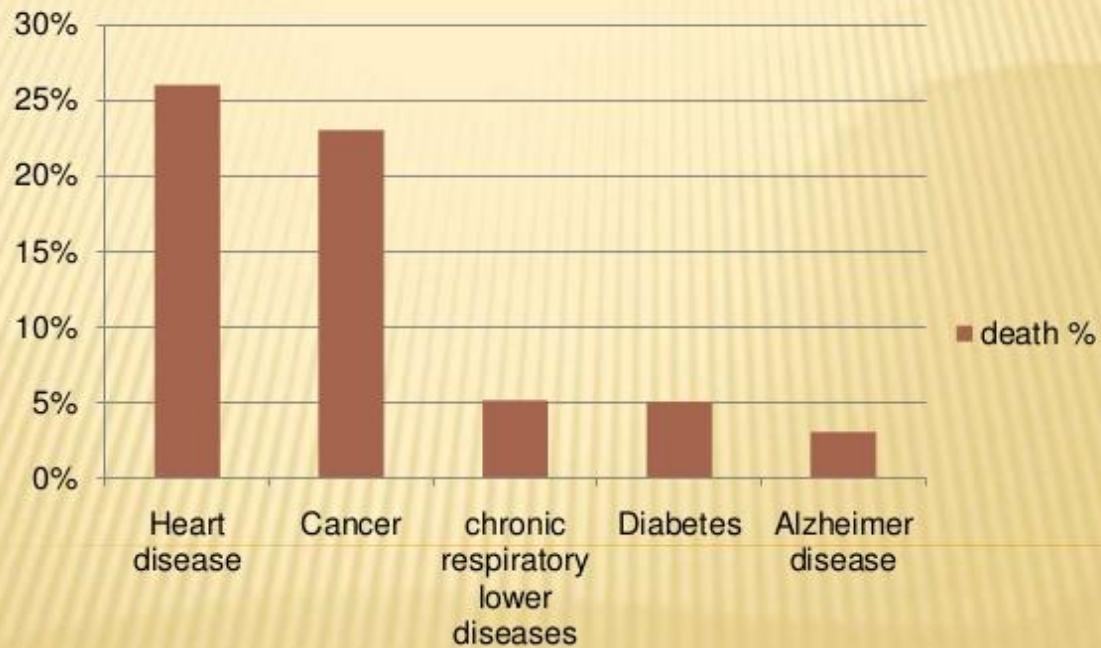
Normal Cells

Differentiated cells
Normal nuclei
Undergo apoptosis
Contact inhibition
One organized layer

Benign and malignant

- ▶ **Benign tumours** do not spread from their site of origin, but can crowd out (squash) surrounding cells eg brain tumour, warts.
- ▶ **Malignant tumours** can spread from the original site and cause secondary tumours. This is called metastasis. They interfere with neighbouring cells and can block blood vessels, the gut, glands, lungs etc.
- ▶ Both types of tumour can tire the body out as they both need a huge amount of nutrients to sustain the rapid growth and division of the cells.

CANCER STATISTICS



Presentation

- Symptoms and signs
- Radiology and labs

Diagnosis

- Incisional biopsy
- Excisional biopsy
- Diagnostic surgery

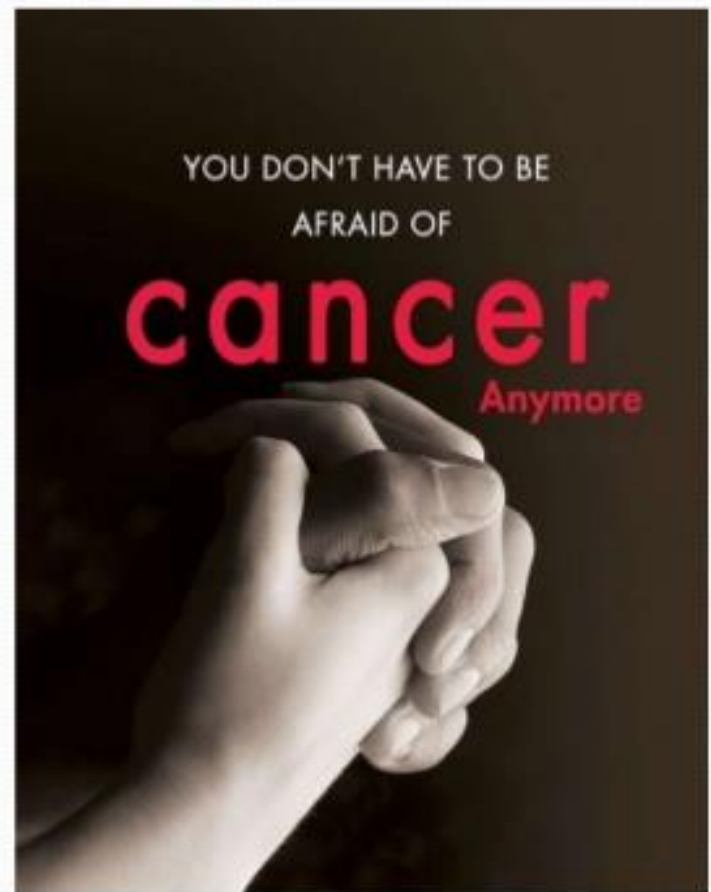
Staging

- Clinical
- Radiological
- Pathological

- Staging surgery

TREATMENT

- Surgery
- Chemotherapy
- Radiation
- Targeted Cancer Treatments
- Small Molecule Inhibitors
- Antibodies
- Cell Based Immunotherapy
- Gene Therapy



Primary Treatment

- Intent :
 1. Curative +/- Adjuvant/Neoadjuvant
 2. Palliative

- Resection
open / Minimally invasive / endoscopic
- Safety margins (R0, R1, R2)
- Lymphadenectomy
- Metastatectomy

Palliation

- Obstruction
- Bleeding
- Pain
- Feeding
- Mass effect
- Perforation

Reconstructive or Plastic Surgery

- . Reconstructive surgery may be done at the same time as surgery to remove the tumor.
- Or, it may be done later after a person has healed or received additional treatment.
- Ex: Breast reconstruction after Mastectomy

Prevention

- Surgery is performed to reduce the risk of developing cancer.
- FAP : colon
- BRCA1/2: Breast

- Open
- Laparoscopic / Robotic
- LASER
- Cryosurgery
- Microscopic
- Endoscopic