- Interphase: occupies most of the cell cycle and is some-1. times known as the resting phase because no division takes place.
- 2. Nuclear division: when the nucleus divides either into two (mitosis) or four (meiosis).
- Cytokinesis (division of cytoplasm): follows nuclear divi-3. sion and is the process by which the cytoplasm divides

The length of a complete cell cycle varies be tween organisms. Typically a granimalian cell akes about 20 nours to complete a cell cicle here 90% is interphase





Cancer and the control of Mitosis

Cancer is a group of diseases caused by a growth disorder of cells. It is the result of damage to the genes that regulate mitosis and the cell cycle. This leads to uncontrolled growth and division of cells.

formal cells (a tumour) develops and antly expands in size. Tumours can develop in any organ of the body, but are most commonly found in the lungs/ prostate gland/ breast and ovaries/ large intestine/ stomach/ oesophagus and pancreas.

A tumour becomes cancerous if it changes from benign to malignant.

The mutant cells that are formed are usually structurally and functionally different from normal cells. Most mutated cells die however, any survivors are capable of dividing to form clones of themselves and forming tumours.

Treatment of Cancer:

This often involves killing dividing cells by blocking a part of the cell cycle. In this way, the cell cycle is disrupted and cell division, and cancer growth ceases.

> Drugs used to treat cancer (chemotherapy) usually disrupt the cell cycle by:

Preventing DNA from replicating

Inhibiting the metaphase stage of mitosis by interfering with spindle formation.

However, the drugs also affect normal cells. As cancer cells have a fast rate of division, they are damaged to a greater rate than the normal cells.