The Cell Cycle

There are 100,000,000,000,000 (100 trillion) cells in your body. All cells originated from a fertilized egg cell.

Cells alternate between two stages dividing and non-dividing.

The sequence of events from one division to another is called the cell cycle.

1. Non-Dividing Stage (Interphase) – most of cell cycle

- Cell growth – G1 phase
- Duplication of chromosomes – DNA is copied – S phase
- Growth and preparation for cell division – G2 phase

2. Dividing Stage (Mitosis)

- Genetic material must be duplicated before cell division
- Each new cell will need a copy of the genetic information (DNA)
- Results in the creation of two new DAUGHTER CELLS
- Parent or original cell is the MOTHER CELL

3. CytoKinesis

- Involves the division of cell organelles and separation of the cytoplasm

Phases of Mitosis

Prophase

- The chromosomes duplicate at the very beginning of prophase.
- The chromosomes then shorten and thicken.
- The nuclear membrane starts to dissolve.

Metaphase

- The double stranded chromosomes line up along the equator.[middle of the cell]

Anaphase

- Each chromosome splits and moves to opposite ends of the cell.
- Each daughter cell will have a complete set of genetic information.

Telophase

- The chromosomes reach the opposite poles.
- Nuclear membranes start to form.