

## Illustration of the process by which somatic cells multiply and divide.

Mitosis is a process of cell division which results in the production of two daughter cells from a single parent cell. The daughter cells are identical to one another and to the original parent cell.

In a typical animal cell, mitosis can be divided into four principal stages:

\* **Prophase:** The chromatin, diffuse in interphase, condenses into chromosomes. Each chromosome has duplicated and now consists of two sister chromatids. At the end of prophase, the nuclear envelope breaks down into vesicles.

\* **Metaphase:** The chromosomes align at the equatorial plate and are held in place by microtubules attached to the mitotic spindle and to part of the centromere.

\* **Anaphase:** The centromeres divide. Sister chromatids separate and move toward the corresponding poles.

\* **Telophase:** Daughter chromosomes arrive at the poles and the microtubules disappear. The condensed chromatin expands and the nuclear envelope reappears. The cytoplasm divides, the cell membrane pinches inward ultimately producing two daughter cells (phase: Cytokinesis).

