Vocabulary: Cell Division

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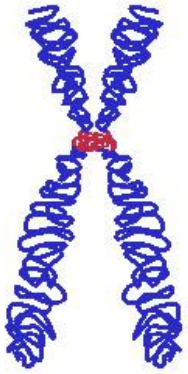
- Cell division – the formation of two daughter cells from a single parent cell.
- Centriole – a cylindrical organelle in animal cells that is involved in cell division.
  - Centrioles form spindle fibers which separate chromosomes during cell division.
- Centromere – the part of a chromosome where the chromatids are attached.
  - During mitosis, spindle fibers attach to the chromosome at the centromere.
- Chromatid – One of two identical halves of a replicated chromosome.
- Chromatin – DNA strands in the nucleus during interphase.
  - Chromatin stains dark, making it relatively easy to see. (The Greek root “chroma” means “color.”)
- Chromosome – a structure formed from condensed chromatin.
  - Chromosomes consist of two identical chromatids attached at the centromere, giving them a characteristic “X” shape.
  - Chromosomes occur in pairs. Human cells have 23 pairs of chromosomes, or 46 total chromosomes.



Chromosome of identical chromatids attached at the centromere

- Cytokinesis – the division of the cytoplasm of the cell to form two daughter cells.
- DNA – a molecule that carries genetic information.
  - DNA stands for deoxyribonucleic acid.
- Interphase – the period in the cell cycle during which the cell grows, matures, and duplicates genetic information.
- Mitosis – the equal division of the chromosomes into two genetically identical daughter nuclei. Mitosis consists of four stages.
  - During *prophase*, chromosomes form from condensed chromatin.
  - During *metaphase*, the chromosomes line up along the center axis of the cell.
  - During *anaphase*, the chromosomes split up and chromatids are pulled to opposite ends of the cell.
  - During *telophase*, a new nuclear membrane forms around each set of chromatids.