

6.10 Sexual reproduction requires special cells (meiosis)

Sperm & egg are produced by meiosis: the details, step-by-step

~ Mitosis occurs almost everywhere in an animal's body

~ Meiosis occurs in sex organs (ovaries & testicles)

① Reduces amt of genetic material in gametes (Reduction Division)

② produce gametes w/ new genetic combinations (Genetic Variation)

Cellular Fission ~ Binary fission

Who ~ Prokaryotic cells

Why

Result - 2 identical daughter cells

Mitosis - Eukaryotic cells (somatic cells)

Why ~ repair & replacement

Result ~ 2 daughter cells

Meiosis ^{who} sex organs, gonads & ovaries

~ Sexual reproduction

~ 4 haploid gametes

Controls Cell Division

* uncontrolled cell division - Cancer

2 types cell Division is controlled

(1) Contact Inhibition - create new cells to fill in the gaps

↳ fibrous cells form scar tissue for protection

(2) Cell Senescence / Apoptosis

- most cells keep track of how often they divide
- timing their lives
- they kill themselves after # is reached

Telomere - end caps of chromosome

- protective cap at end of DNA
- every time cell divides - telomere gets shorter

Cell Senescence

Apoptosis - cell suicide by lysosome turning itself inside out