

Name _____

Mitosis and Meiosis: The Aging Dance of Cells

Short Answer Key

1. Mitosis in youth involves the division of one cell into two identical daughter cells, contributing to growth, tissue repair, and cell replacement. Meiosis in youth reduces the number of chromosomes in gametes to ensure genetic diversity.
2. In midlife, mitosis may become less precise, leading to the accumulation of genetic mutations and age-related diseases. Meiosis in midlife becomes less efficient, increasing the chances of genetic abnormalities in offspring.
3. Advanced maternal and paternal age is associated with a higher risk of genetic disorders in children because older eggs and sperm are more prone to genetic mutations and errors during meiosis.
4. Aging affects the efficiency of mitosis and meiosis in old age by making them less precise and prone to errors, including the accumulation of genetic mutations.
5. Understanding aging cell division can inform healthcare practices, support informed family planning decisions, and guide genetic counseling. It can also help address age-related health challenges, ultimately improving the quality of life for older individuals.

