

Name _____

Chromosome Duplication and Segregation in Mitosis: The Dance of Cell Division

Open-Ended Response Answer Key

1. In cancer, the failure of proper chromosome duplication and segregation can lead to uncontrolled cell division and tumor formation, posing serious health risks.
2. Without mitosis, organisms would not be able to grow or repair damaged tissues, and the complexity of multicellular life would be severely limited.
3. Advances in understanding mitosis can lead to better treatments for diseases like cancer, improved regenerative medicine techniques, and insights into how cells function in health and disease.
4. Chromosome duplication and segregation in mitosis allow a multicellular organism to develop from a single fertilized egg cell by creating the diverse array of specialized cells needed for various body functions.

