

Chapter 12.4: Mutations

Sometimes cells make mistakes when copying their own DNA

Mutations: changes in the genetic material

- gene mutations
- chromosomal mutations



Point mutations: Gene mutations with changes in only a few nucleotides bases

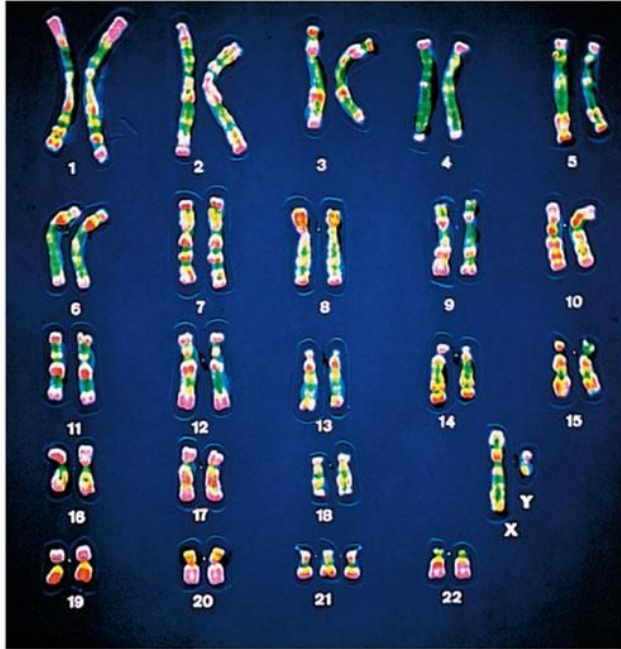
- **Substitutions**: when one base is changed to another
- **Insertions**: when a base is inserted
- **Deletions**: when a base is removed

Substitution

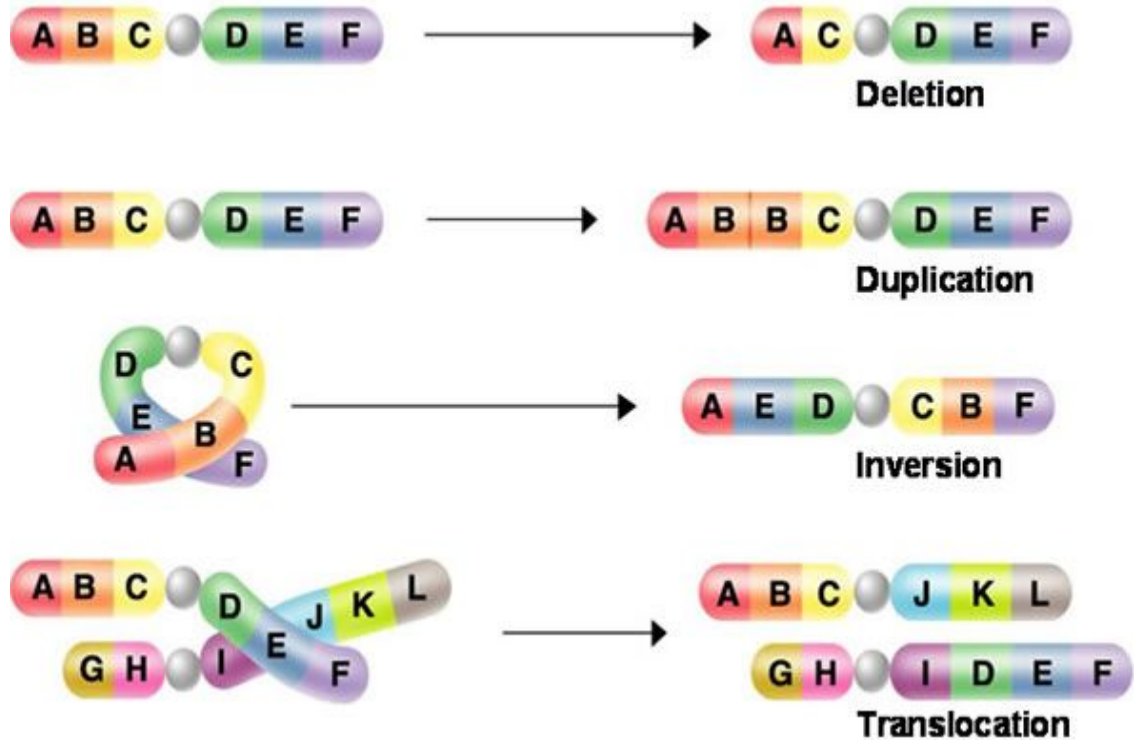


Chromosomal mutations involve changes in the number or structure of chromosomes.

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Karyotype of a person with Down syndrome. Note the three number 21 chromosomes.



Mutations