

**KEY FACTS**

- Continuous variation: range of values (height, mass) — many genes + environment
- Discontinuous variation: distinct categories (blood type) — usually one gene
- Mutation: change in DNA base sequence — random, not directed by environment
- Causes: UV radiation, X-rays, certain chemicals (mutagens)
- Most mutations: neutral (silent). Some: harmful. Rare: beneficial.
- Mutations = source of ALL new alleles → raw material for natural selection

**KEY TERMS**

<b>Mutation</b>	Change in DNA base sequence — source of all new alleles
<b>Continuous variation</b>	Range of values — normal distribution — many genes + environment
<b>Discontinuous variation</b>	Distinct categories — usually one gene — no intermediates

■ **EXAM TIP:** Mutations in **BODY** cells = not inherited. Mutations in **GAMETES** = can be inherited. Most mutations are neutral due to the degeneracy of the genetic code.