

KEY FACTS

- Antibiotics: kill/inhibit bacteria **ONLY** — **NO** effect on viruses
- Antibiotic resistance: random mutation → resistant bacterium → survives antibiotic → reproduces → population becomes resistant
- MRSA: resistant to most antibiotics — serious hospital problem
- Drug development: preclinical (cells/animals) → Phase 1 (healthy volunteers, safety) → Phase 2 (patients, effectiveness) → Phase 3 (large-scale, double-blind, placebo)
- Double-blind: neither patients **NOR** doctors know who receives real drug → prevents bias

KEY TERMS

Antibiotic	Drug killing/inhibiting bacteria — does NOT work on viruses
Antibiotic resistance	Bacteria surviving antibiotic treatment — evolved by natural selection
Double-blind	Both patient and doctor unaware of treatment — prevents bias
Placebo	Inactive dummy treatment used as comparison in clinical trials

■ **EXAM TIP: ANTIBIOTICS = BACTERIA ONLY.** Never say they kill viruses. Double-blind = **BOTH** patient **AND** doctor don't know. Both facts tested regularly.