*Spec ref: 4.5.3*

## KEY FACTS

- Hypothalamus: detects blood temperature + coordinates responses
- TOO HOT: sweating (evaporation removes heat), vasodilation (more heat radiated), hairs lie flat
- TOO COLD: shivering (muscle contractions generate heat), vasoconstriction, hairs stand up
- Core temperature must stay ~37°C for enzyme activity to remain optimal

## KEY TERMS

| | |
|---|---|
| **Thermoregulation** | Maintaining stable body temperature |
| **Vasodilation** | Blood vessels near skin widen → more heat lost by radiation |
| **Vasoconstriction** | Blood vessels near skin narrow → less heat lost |
| **Hypothalamus** | Brain region detecting blood temperature and controlling thermoregulation |

■ EXAM TIP: Always explain the MECHANISM not just name the response. E.g. "vasodilation → more blood near skin surface → more heat radiated." Mechanism earns the mark, not just the name.