

KEY FACTS

- Insulin (beta cells): lowers blood glucose → glycogen stored in liver
- Glucagon (alpha cells): raises blood glucose → glycogen broken down
- Type 1: no insulin (autoimmune), needs injections. Type 2: insulin resistance, diet/exercise.
- Thermoregulation: hot → sweating + vasodilation + hairs flat. Cold → shivering + vasoconstriction + hairs up.

KEY TERMS

Insulin	Lowers blood glucose — glycogenesis
Glucagon	Raises blood glucose — glycogenolysis
Vasodilation	Widening blood vessels near skin — more heat lost

■ EXAM TIP: Insulin LOWERS. Glucagon RAISES. Negative feedback brings both back to normal. Mechanism for thermoregulation: name response AND explain how it removes/retains heat.