

★ **HIGHER TIER ONLY** content is highlighted in blue. Foundation students — focus on the un-highlighted sections.

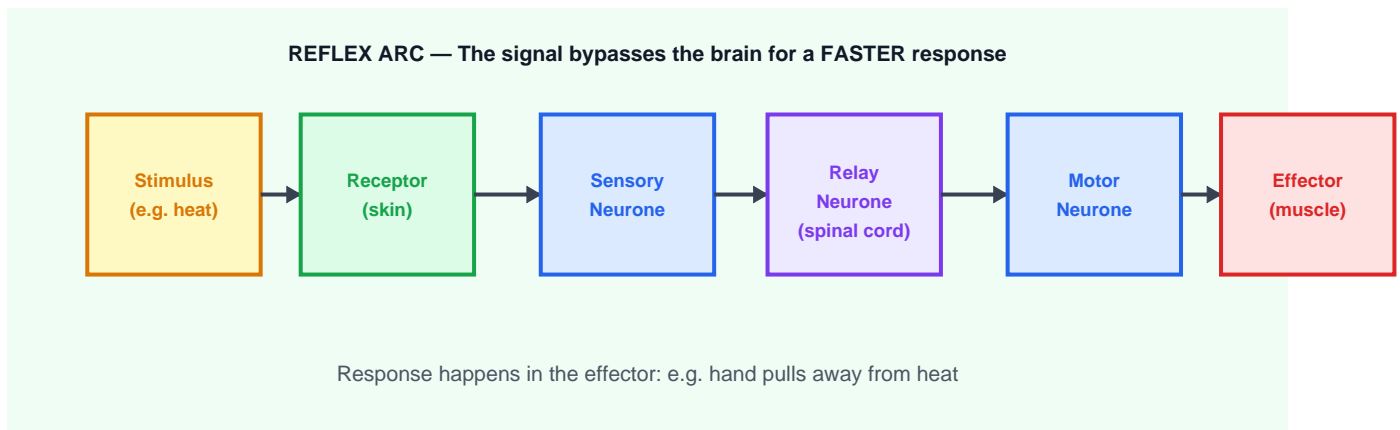


Fig: The reflex arc — a rapid, automatic response

■ **Exam Tip:** Reflex arcs go **STIMULUS** → **RECEPTOR** → **SENSORY** → **RELAY** → **MOTOR** → **EFFECTOR**. Remember: **SRRSME** — "Some Really Reliable Students Master Everything"!

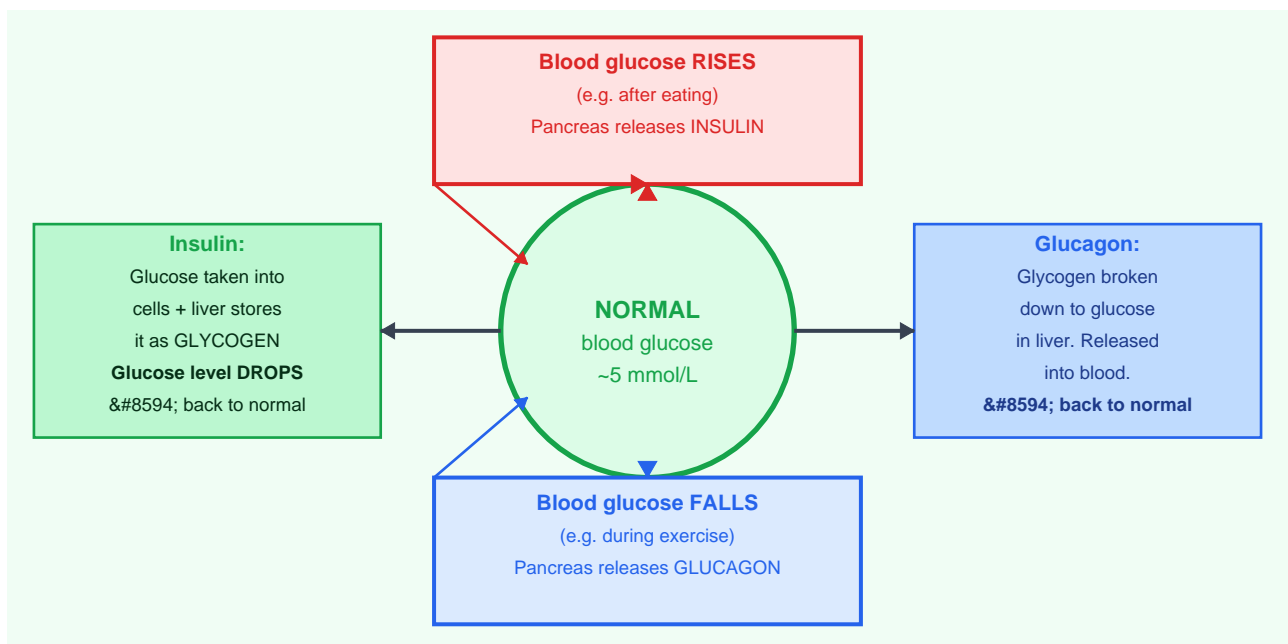


Fig: Negative feedback control of blood glucose — the pancreas acts as the control centre

## Diabetes Comparison

Feature	Type 1 Diabetes	Type 2 Diabetes
Cause	Autoimmune — immune system destroys beta cells in pancreas	Body is resistant to insulin
Insulin production	None	Still produced but cells ignore it
Onset	Usually childhood/early life	Usually adults (linked to lifestyle)
Risk factors	Genetic	Obesity, poor diet, inactivity
Treatment	Insulin injections (multiple per day)	Diet, exercise, weight loss; sometimes medication

★ **HIGHER TIER ONLY:** Plant hormones: Auxin causes phototropism (bends towards light). Ethene ripens fruit. Gibberellins promote germination.

<b>Homeostasis</b>	Maintaining a stable internal environment despite external changes
<b>Insulin</b>	Hormone that LOWERS blood glucose (glucose → glycogen in liver)
<b>Glucagon</b>	Hormone that RAISES blood glucose (glycogen → glucose in liver)
<b>Negative feedback</b>	Body OPPOSES the change to restore normal conditions