

Thermoregulation

Biology

How core temperature is held near 37°C, in both directions.

Too hot

- Vasodilation — more blood to the skin
- Sweating — evaporative cooling
- Hairs lie flat
- Reduced metabolic rate
- Behavioural: shade, less clothing

Too cold

- Vasoconstriction — blood diverted from skin
- Shivering — heat from muscle activity
- Hairs erect, trapping air
- Increased metabolic rate
- Behavioural: layers, movement

THE DIFFERENCE THAT MATTERS

The hypothalamus is the control centre, receiving input from skin and internal thermoreceptors.

Sweating only cools if the sweat evaporates. In high humidity it drips instead, and the mechanism fails.