

Homeostasis and temperature control

Define homeostasis.

Homeostasis and temperature control

Why must the body keep its internal environment constant?

Homeostasis and temperature control **Triple only**

What is thermoregulation and what temperature is maintained?

Homeostasis and temperature control **Triple only**

What happens to enzymes if body temperature is too high?

Homeostasis and temperature control **Triple only**

What is osmoregulation?

Homeostasis and temperature control **Triple only**

What happens to animal cells if the blood is too dilute?

Homeostasis and temperature control **Triple only**

What happens to animal cells if the blood is too concentrated?

Homeostasis and temperature control **Triple only**

What is the role of the dermis in thermoregulation?

Enzymes and cells work best in a narrow range of conditions.

Maintaining a constant internal environment in response to internal and external change.

They are denatured. The active site changes shape and the reaction stops.

Control of body temperature, at about 37°C, the optimum for enzymes.

Water enters by osmosis. The cells swell and may burst.

Control of the water content of the blood.

It contains the sweat glands, blood vessels and temperature receptors that respond to temperature change.

Water leaves by osmosis and the cells shrink.

Homeostasis and temperature control **Triple only**

What is the role of the epidermis in thermoregulation?

Homeostasis and temperature control **Triple only**

What is the role of the hypothalamus in thermoregulation?

Homeostasis and temperature control **Triple only**

How does shivering help when the body is cold?

Homeostasis and temperature control

Triple only **Higher tier**

What is vasoconstriction and when does it happen?

Homeostasis and temperature control

Triple only **Higher tier**

What is vasodilation and when does it happen?

Homeostasis and temperature control **Triple only**

How does sweating cool the body?

It monitors blood temperature and coordinates the response by sending nerve impulses to effectors.

The outer layer of skin. Sweat reaches the surface through pores in it, so heat is lost from the surface.

Blood vessels supplying the skin narrow when cold, so less blood flows near the surface and less heat is lost.

Muscles contract rapidly. Respiration in the muscle cells transfers energy as heat.

Sweat evaporates from the skin and takes heat from it.

Blood vessels supplying the skin widen when hot, so more blood flows near the surface and more heat is lost.