Homeostasis

Homeostasis is the control of the body's internal conditions.

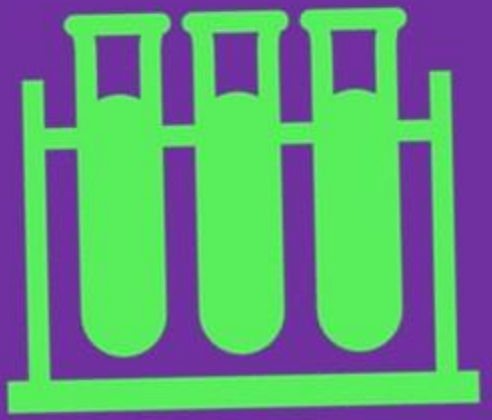
(e) Which internal body condition is controlled by homeostasis?

Tick (✓) **one** box.

Body temperature ☐

Muscle contraction ☐

Nerve impulses ☐



Homeostasis

(a) Which organ system produces hormones?

Tick (✓) **one** box.

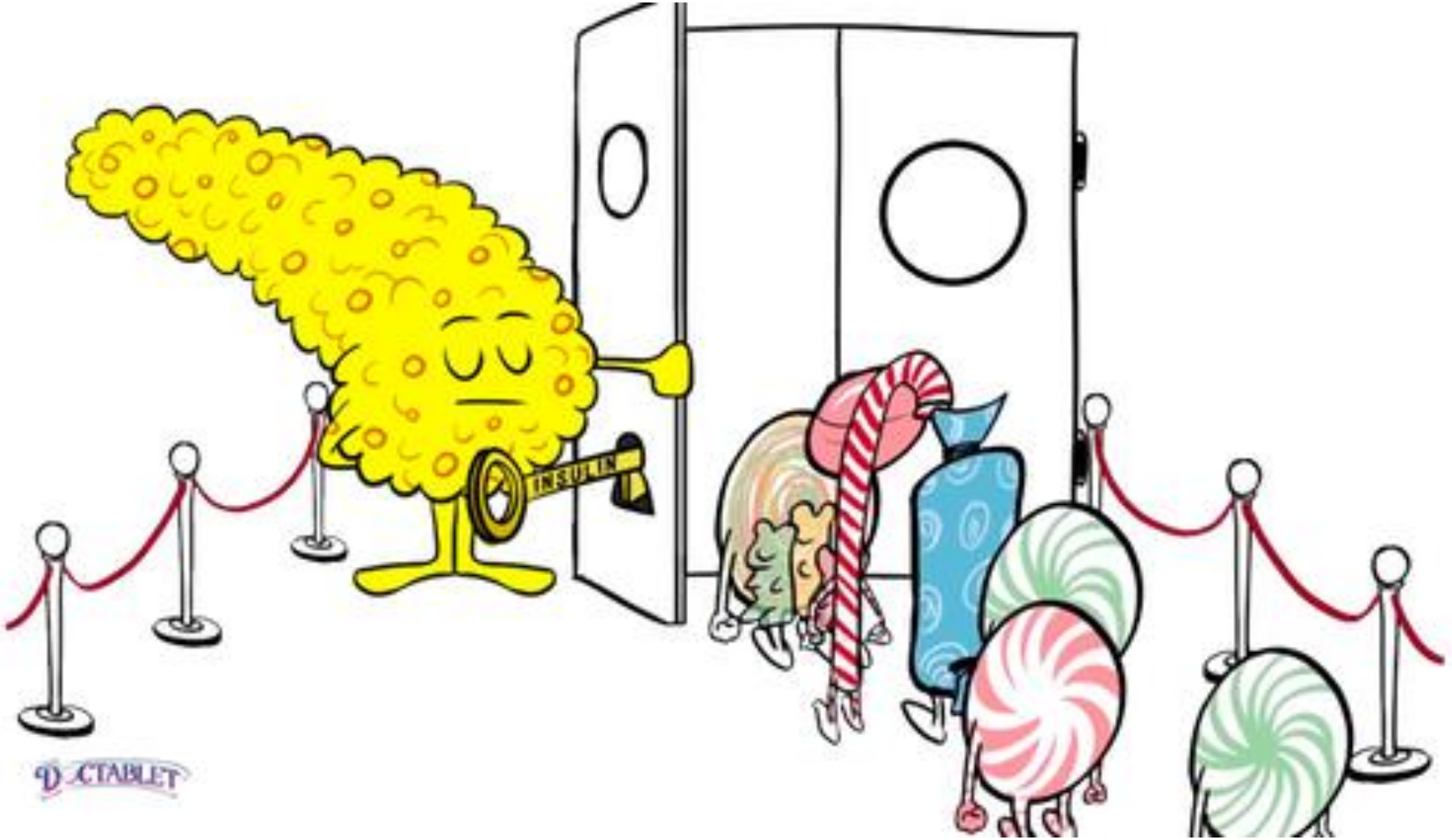
- Circulatory system ☐
- Digestive system ☐
- Endocrine system ☐

(b) How are hormones transported around the body?

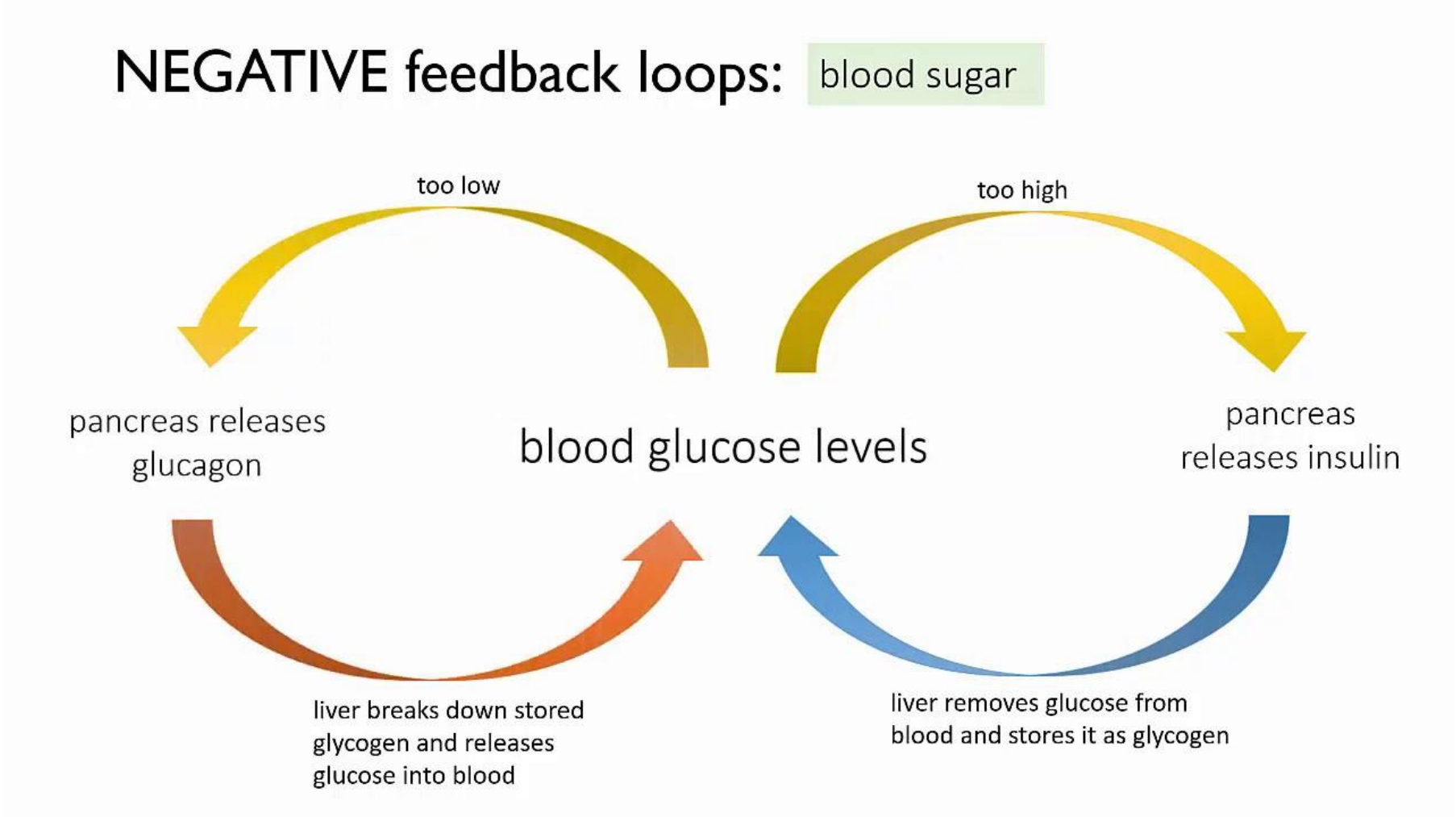
Tick (✓) **one** box.

- Through the bloodstream ☐
- Through the muscles ☐
- Through the nerves ☐

Maintaining blood glucose level



Negative feedback mechanism

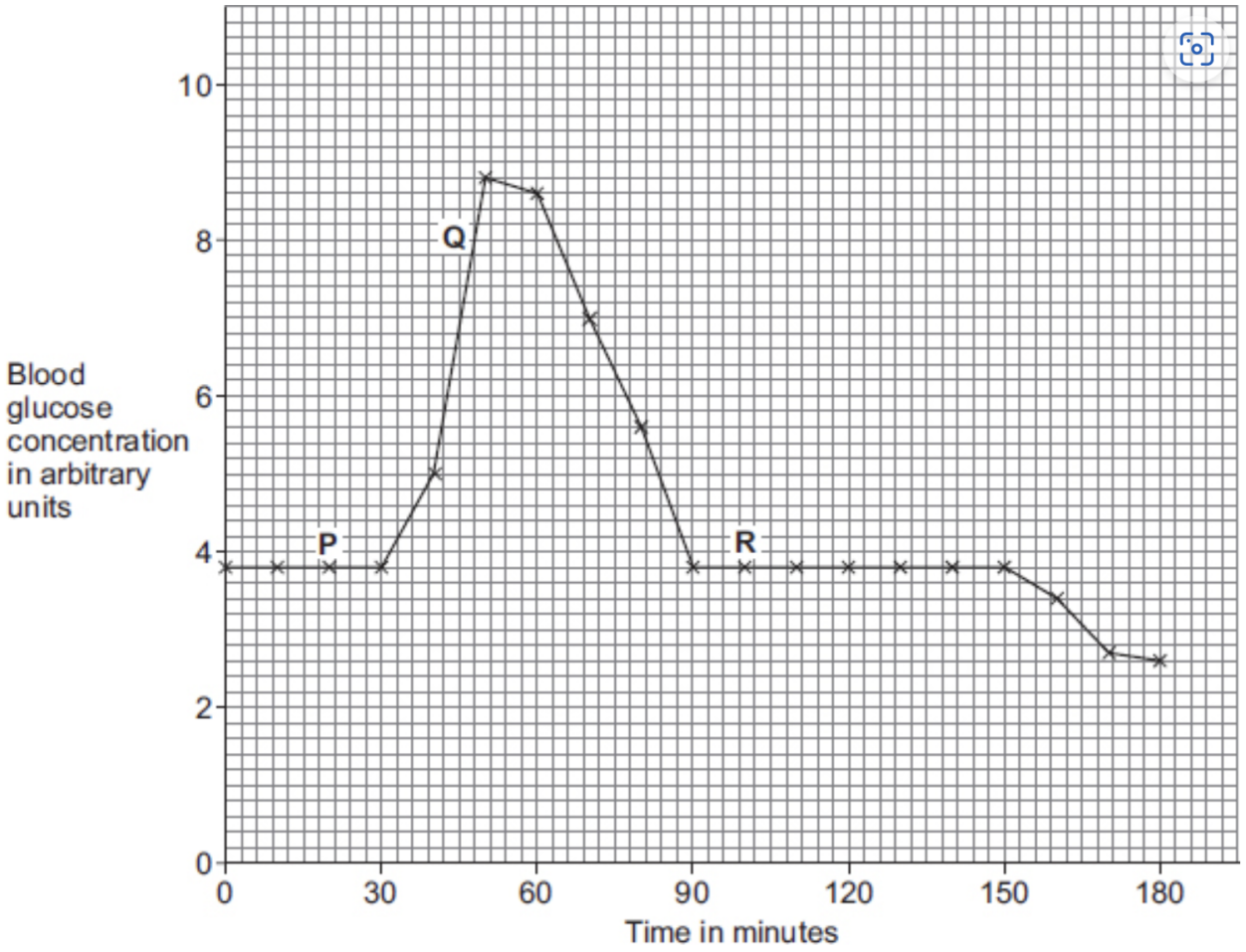


What else is controlled by a negative feedback mechanism?

Homeostasis also controls blood glucose concentration.

Figure 2 shows the change in blood glucose concentration in a person during 180 minutes.

Figure 2



(f) When did the person start eating a meal?

Use **Figure 2**.

Tick (✓) **one** box.

P ☐ **Q** ☐ **R** ☐

When blood glucose concentration is high the hormone insulin is released into the blood.

(g) Complete the sentence.

Choose the answer from the box.

kidney	**pancreas**	**stomach**

Insulin is produced by the _____ .

(h) When will the concentration of insulin in the blood be the greatest?

Use **Figure 2**.

Tick (✓) **one** box.

P ☐ **Q** ☐ **R** ☐

(i) What might have caused the fall in blood glucose concentration at 150 minutes?

_____

_____

Reducing blood glucose level.

Insulin secreted by pancreas

Glucose used by cells

Glucose stored as glycogen

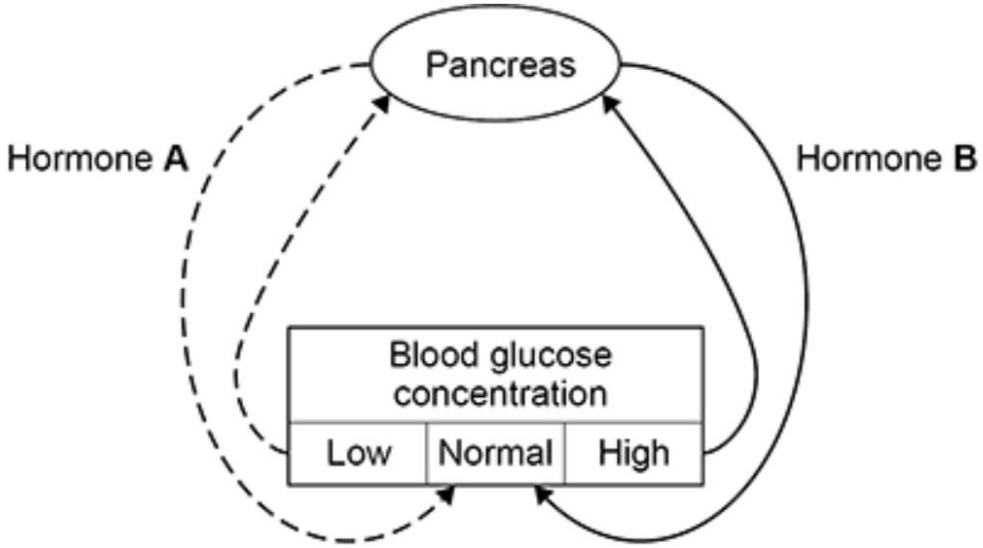
Increasing blood glucose level.

Glucagon secreted by pancreas

Glycogen turns into glucose

Blood glucose concentration in the human body needs to be kept within the normal range.

The figure below shows that two hormones control blood glucose concentration.



(a) Name the type of hormonal control shown in the figure above.

_____

(b) Name hormones **A** and **B** in the figure above.

A _____

B _____

(c) Explain how the two hormones in the figure above keep the blood glucose concentration within the normal range for 3 hours after a meal.

Diabetes

Type 1	Inherited Pancreas does not produce enough insulin	Controlled with insulin injections and diet
Type 2	Develops later in life Linked to several risk factors Body cells don't respond to insulin	Controlled with diet and exercise. Sometimes medication required

Producing Insulin