D3.3 Homeostasis

What the Cell · DP Biology · note-taking sheet · statements D3.3.1–6

Name _____ **Date** _____

How to use this sheet: go through the slides and videos with it, then close them and write from memory. Use your own words and add page numbers from the book where you want more detail.

Guiding questions. How do humans keep internal conditions constant? Why is it useful for organisms to keep internal conditions constant?

D3.3.1 What homeostasis is

Textbook p. 760

Define homeostasis, and list four variables that humans control.

D3.3.2 Negative feedback

Textbook p. 761

Draw the loop: **change, receptor, coordinator, effector, return to set point**.

Why is negative feedback used in homeostasis, and not positive feedback?

D3.3.3 Regulating blood glucose

Textbook pp. 761–763

	Blood glucose too high	**Blood glucose too low**
Detected by		
Hormone		
Target cells		
Effects		

Why does low blood glucose affect the brain so quickly?

D3.3.4 Type 1 and type 2 diabetes

Textbook pp. 764–765

	Type 1	Type 2
Physiological change		
Risk factors		
Prevention		
Treatment		

D3.3.5 Thermoregulation as negative feedback

Textbook p. 766

Complete the pathway from cold skin to more heat. Include **peripheral thermoreceptors**, **hypothalamus**, **pituitary gland** and **thyroxin**.

D3.3.6 Thermoregulation mechanisms in humans

Textbook pp. 766–767

Mechanism	What happens	Effect on temperature
Vasodilation		
Vasoconstriction		
Sweating		
Shivering		
Hair erection		
Uncoupled respiration		

Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

- ☐ Four homeostatic variables
- ☐ Why negative feedback
- ☐ Insulin and its effects
- ☐ Glucagon and its effects
- ☐ Type 1 and type 2 diabetes
- ☐ The role of thyroxin
- ☐ Responses to heat
- ☐ Responses to cold