

Exercise walk-through

Excretion in humans ■ 13.1

eXercise

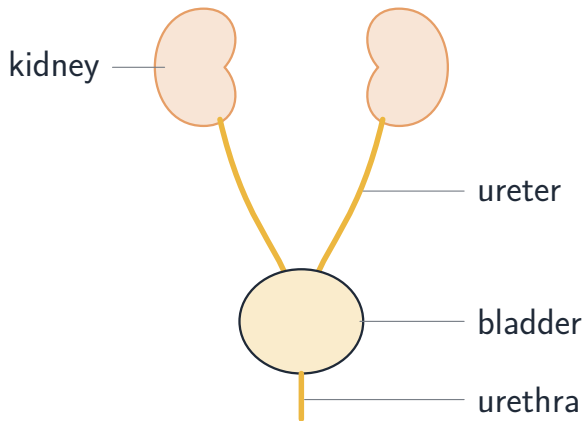
You must be able to

- define excretion and name the main wastes
- state the urine pathway and the role of the kidney
- describe filtration and reabsorption in a nephron; explain how urea is made

Method — Kidney and nephron

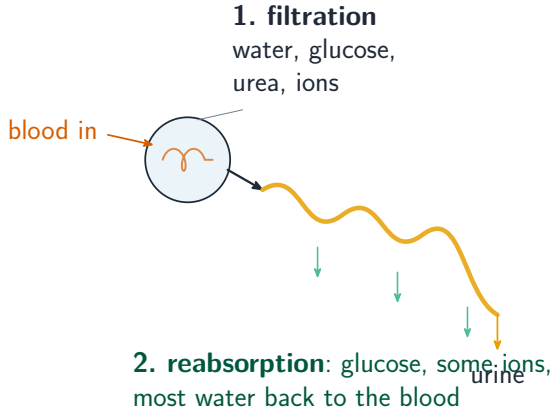
- **urea** is made in the **liver** from excess amino acids (deamination); it is toxic.

Method — Kidney and nephron



The urinary system: kidneys, ureters, bladder, urethra

Method — Kidney and nephron



A nephron: filtration then reabsorption

Practice 2.1 ■ 2 marks

Name the two main waste products removed by excretion.

Solution 2.1

Worked steps

carbon dioxide **B1**; urea **B1**.

Practice 2.2 ■ 2 marks

State the pathway of urine from the kidney to outside the body.

Solution 2.2

Method: Kidney and nephron

Worked steps

kidney → ureter → bladder → urethra **M1** **A1**.

Exam-style 3.1 ■ 1 mark

Urea is made in the:

A kidney

B liver

C bladder

D lungs

Solution 3.1

Method: Kidney and nephron

A kidney

B liver



C bladder

D lungs

Worked steps

B. Urea is made in the liver.

Exam-style 3.2 ■ 2 marks

A nephron cleans the blood.

- (a) Name the two main processes in a nephron.
- (b) State which substances are reabsorbed into the blood.

Solution 3.2

Worked steps

(a) filtration; reabsorption **B1** **B1**.

(b) all the glucose; some ions; most of the water **B1** **B1** *for glucose, for water/ions.*

Exam-style 3.3 ■ 1 mark

Explain why urea must be excreted from the body.

Solution 3.3

Worked steps

because urea is toxic (poisonous) if it builds up in the blood **B1**.