

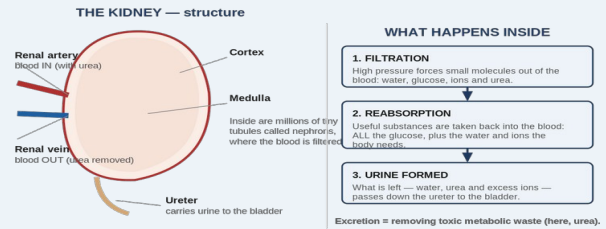
# 2.9 Excretion

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## 1. KEY VOCABULARY

TERM	MEANING
Excretion	Removing the waste products of the body's reactions.
Urea	Waste made in the liver from breaking down excess protein.
Kidney	Organ that filters the blood and makes urine.
Urine	Watery waste — contains water, urea and ions.
Deamination	Removing the nitrogen part of excess amino acids (in the liver).

## 2. THE KIDNEY



## 3. THE EXCRETORY ORGANS

ORGAN	EXCRETES
Lungs	Carbon dioxide (from respiration)
Kidneys	Urea, excess water and excess ions
Skin	Some water, ions and urea in sweat

## 4. HOW THE KIDNEY WORKS

1. Blood is filtered — small molecules (water, glucose, ions, urea) pass out.
2. Useful substances are reabsorbed: all the glucose, and the water and ions the body needs.
3. What is left — water, urea and excess ions — becomes urine.

## 5. WHY UREA IS MADE

The body cannot store excess protein or amino acids. In the liver, the amino group is removed (deamination) and turned into urea, which the kidneys then remove.

## 6. THE WHY

**Why excretion is essential:** waste products like CO<sub>2</sub> and urea are toxic if they build up — they must be removed.  
**Why glucose is reabsorbed but urea is not:** glucose is useful and needed for respiration; urea is a toxic waste product.

## 7. COMMON EXAM MISTAKES

- ✗ "Faeces is excreted by the body."
- ✓ Faeces is egested — it was never part of the body's reactions.
- ✗ "Urine contains glucose."
- ✓ In a healthy person all glucose is reabsorbed — urine has none.
- ✗ "Urea is made in the kidneys."
- ✓ Urea is made in the LIVER; the kidneys remove it.

## 8. SELF-CHECK · cover & quiz

Can you...

1. Define excretion?
2. Name the excretory organs and what each removes?
3. Describe how the kidney makes urine?
4. Explain where urea comes from and why it is made?
5. Explain why glucose is reabsorbed but urea is not?
6. Explain the difference between excretion and egestion?