

# 13 Inside the kidney – Part 2

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

| English      | 中文  | Write it 3 times (English) |       |       |
|--------------|-----|----------------------------|-------|-------|
| Filtration   | 过滤  | _____                      | _____ | _____ |
| glomerulus   | 肾小球 | _____                      | _____ | _____ |
| glucose      | 葡萄糖 | _____                      | _____ | _____ |
| Reabsorption | 重吸收 | _____                      | _____ | _____ |
| amino acids  | 氨基酸 | _____                      | _____ | _____ |
| liver        | 肝脏  | _____                      | _____ | _____ |
| deamination  | 脱氨基 | _____                      | _____ | _____ |
| urea         | 尿素  | _____                      | _____ | _____ |
| toxic        | 有毒  | _____                      | _____ | _____ |

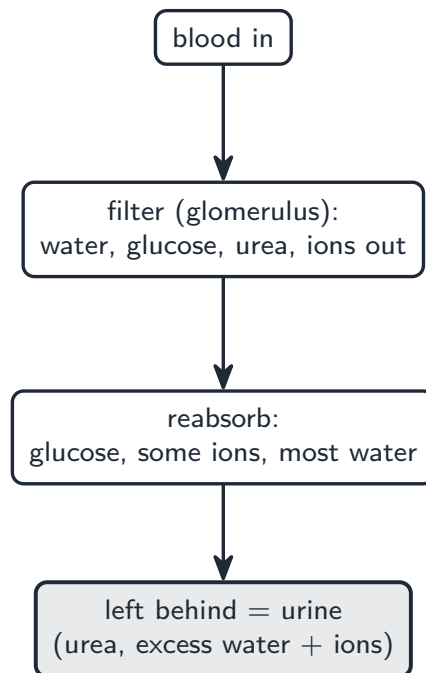
## Recall

Each kidney has millions of tiny tubes that clean the blood in two steps.

## New ideas

Read these first, then do the Practice.

## ■ 1 How a kidney cleans blood



1. **Filtration** 过滤: at the **glomerulus** 肾小球, water, **glucose** 葡萄糖, urea and ions are forced out of the blood.
2. **Reabsorption** 重吸收: **all** the glucose, **some** ions and **most** of the water are taken back into the blood.

What is left — urea and excess water and ions — is the urine.

## ■ 2 Where urea comes from



The body cannot store extra **amino acids** 氨基酸. The **liver** 肝脏 breaks them down (**deamination** 脱氨基) to make **urea** 尿素, which is **toxic** 有毒, so the kidneys remove it.

**Watch out:** the kidney cleans blood in two steps — **filtration** forces small molecules out (including glucose), then **reabsorption** takes back *all* the glucose, *some* ions and *most* of the water. Glucose is normally **not** in urine.

## Practice

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Try these in order.

**13.6** What happens during filtration in the kidney? [1]

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**13.7** Name two things that are reabsorbed back into the blood. [2]

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**13.8** What is left behind to form the urine? [1]

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**13.9** Where is urea made, and from what? [2]

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**13.10** Why must urea be removed from the body? [1]

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**13.11 Challenge.** Healthy urine contains no glucose, even though glucose is filtered out of the blood. Explain why. [2]