

Kidneys

Kidneys basically act as filters to "clean the blood"

The kidneys perform three main roles:

- 1) Removal of urea from the blood.
- 2) Adjustment of ions in the blood.
- 3) Adjustment of water content of the blood.

1) Removal of urea

- 1) Urea is produced in the liver.
- 2) Proteins can't be stored by the body so excess amino acids are broken down by the liver into fats and carbohydrates. The waste product of this is ammonia which is highly toxic. The liver breaks ammonia down into less-harmful urea.
- 3) Urea is passed into the blood to be filtered out by the kidneys. Some urea is also lost in sweat.

2) Adjustment of ion content

- 1) Ions, such as sodium are taken into the body in food, and then absorbed into the blood.
- 2) Excess ions are removed by the kidneys. For example, a salty meal will contain far too much sodium and the kidneys will remove the excess from the blood.
- 3) Some ions are also lost in sweat (which tastes salty, you'll have noticed).
- 4) But the important thing to remember is that the balance is always maintained by the kidneys.

3) Adjustment of water content

Water is taken into the body as food and drink and is lost from the body in three ways:

- 1) in urine
- 2) in sweat
- 3) in breath

There's a need for the body to constantly balance the water coming in against the water going out.

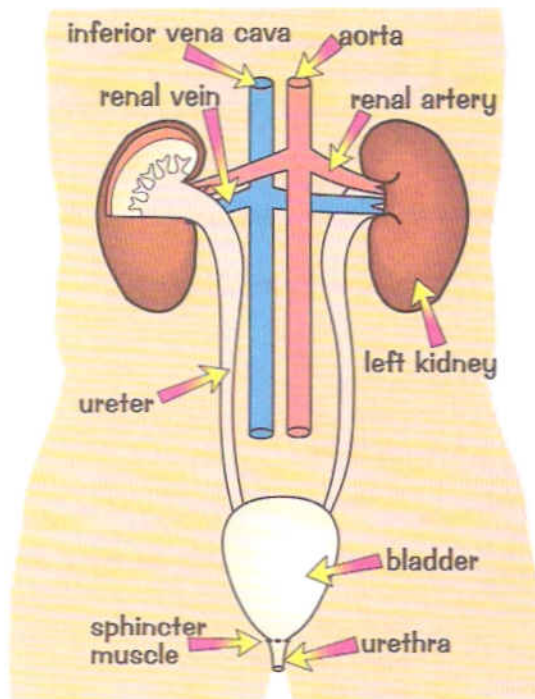
The amount lost through breathing is fairly constant, which means the water balance is between:

- 1) Liquids consumed
- 2) Amount sweated out
- 3) Amount dumped by the kidneys into the urine.

On a cold day, if you don't sweat, you'll produce more urine which will be pale and dilute.

On a hot day, you sweat a lot, your urine will be dark-colored and concentrated, and there'll be little of it.

The water lost when it is hot has to be taken in as food and drink to restore the balance.



How much do you know about kidneys? Let's see...

Phew. There's some stuff on this page isn't there. It's definitely a perfect candidate for the exciting mini-essay method. Learn the three headings, then cover the page, write them down, and then scribble a mini-essay for each one. Then look back and see what you missed. Then try again. And learn the diagram, until you can repeat that too.