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How well do you know your waterworks?

The eyes may be the windows to the soul, but the bladder gives plenty away about what's going on inside your body! This amazing waste disposal system can reveal many potential health problems

People often take their urinary system for granted, but understanding how and why the urinary system works is vital to your wellbeing and learning to spot unusual symptoms can also prevent larger health problems developing.

The urinary system is designed for disposal of waste. The process starts when you take in fluid from your diet, which is absorbed through your stomach and then your bowel. This fluid is then passed through the liver, where it extracts anything it needs and passes the rest back out into the bloodstream. It remains in the blood until it reaches the kidneys. Think of the kidneys like a tea strainer – they filter out waste and pass this waste fluid along to the bladder. Your kidneys are hugely efficient machines; they can filter up to 180 litres of fluid a day! Most people wee out 1.5 litres, but your kidneys have the ability to change that amount. If you are dehydrated, they will absorb more fluid into the body, making urine darker and more concentrated.

Drinking more means the kidneys do not need to absorb so much fluid, 'diluting' your urine. They also help maintain your blood pressure and have a role to play in adjusting hormone levels.

What's normal?

This depends on your age and size; a full-grown man will produce a lot more than a child, for example. On a normal day you should drink around 1.5 litres of fluid and dispel the same amount; you will also get some fluid from the foods you eat. Your environment will affect the amount of urine you produce – in hot weather we sweat more, producing less.

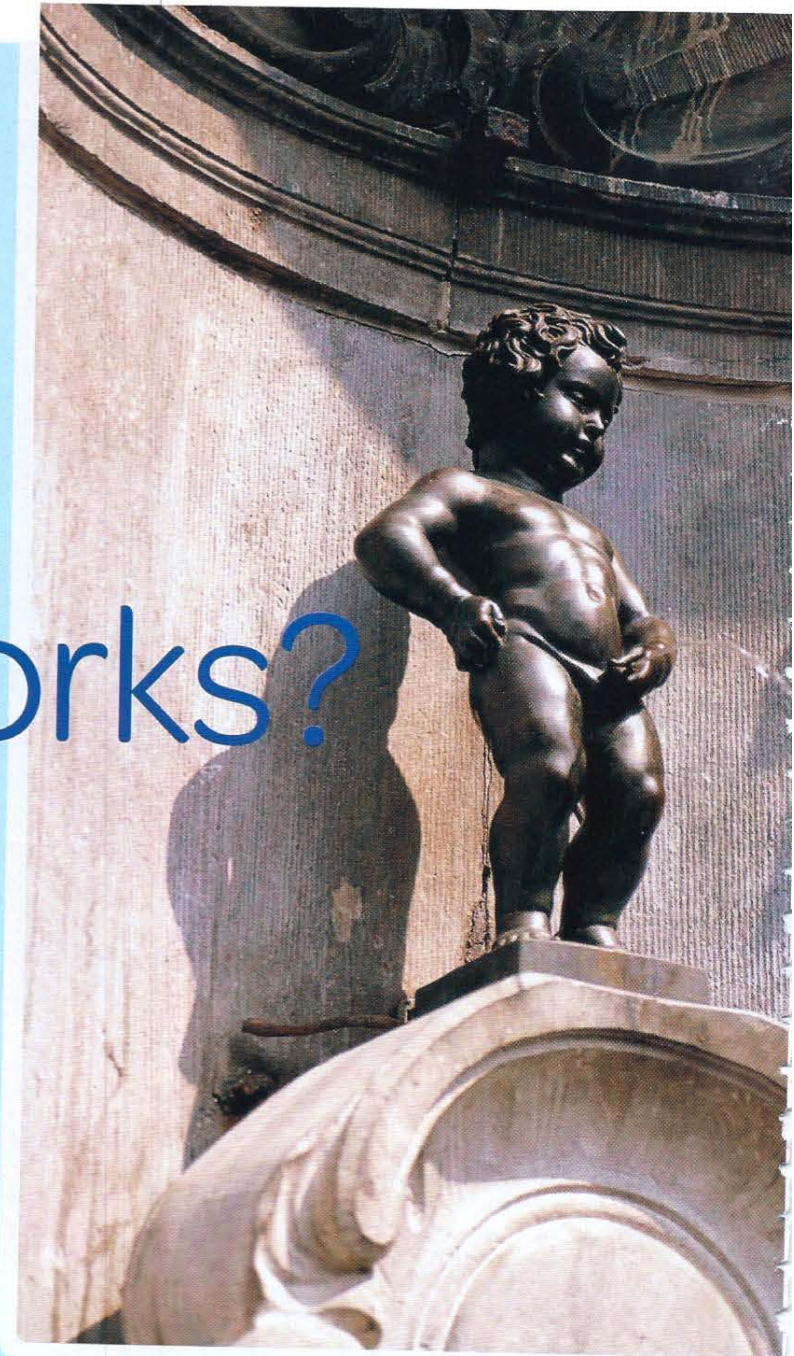
This is why you need to drink more in a hot or humid environment. Doing lots of sports means you will lose more fluid, so it is important to drink more to balance that out. Some sports medicine websites suggest drinking 500ml two to three hours before exercise, and 500 to 1000ml per hour of exercise to stay well hydrated. Dehydration forces your heart and body to work harder and if it is pushed too far, may cause collapse.

Drinking too much can be just as dangerous as not drinking enough. Remember those stories of marathon runners who make themselves seriously ill by drinking too much before a race? This is because all that fluid dilutes the

salts in their blood, causing hyponatraemia (low sodium). If your sodium levels get too low this can cause your brain cells to swell, leading to headaches, confusion and, when severe, seizures. Sports drinks containing salts and nutrients can be helpful during endurance events.

When you wee, it should be almost clear – the colour of pale white wine – to show you are well hydrated and your kidneys are working. You should go about five or six times a day; when you get up, before work, at lunchtime, one mid-afternoon and again before bed.

Your bladder can hold about 500ml of fluid, but hanging on when you need to wee can be dangerous. People working



in professions like nursing or teaching historically tend to hold on, but you shouldn't do this when you really need to go as this can weaken the bladder muscles, so you find yourself needing to go more often and will not have as much control.

Emptying the bladder fully when you go is also important as it flushes out bacteria from the bladder and urethra – the tube connecting the bladder to the outside of your body. By not emptying, bacteria can spread causing water infections such as cystitis.

Is something wrong?

There are certain things that can affect your urine, but are perfectly harmless. The classic one is asparagus, which can make your wee quite smelly! Eating beetroot can also turn your urine pink, which can be mistaken for blood. Taking vitamin B can even make it yellow or orange. But these are nothing to worry about. However, if any change in your urine is accompanied by burning or stinging, or

if it becomes much darker and cloudy, then this is a sign you are unwell and should be checked out by a doctor. If you ever spot blood in your urine, this should *never* be ignored and needs to be investigated. Anything that is different from what is normal for you should be checked out by your GP.

Your urinary system can sometimes alert you to deeper health problems. If you start producing lots of urine after eating, and need to go to the loo a lot more often, this could be a sign of diabetes. Diabetes means you cannot process the amount of sugar in your blood properly, so a lot more sugar remains as waste in your urine. As sugar attracts water, you will produce a lot

more urine and need to wee more often; this is called polyuria.

Because you need to go more, this can make you thirstier, so you drink more to make up for it (polydipsia). Other problems can be urinary tract infections. Older women can be more susceptible, as a lack of oestrogen changes the environment in the vagina and surrounding area. These hormonal changes mean the cells produce less glycogen, which normally support 'good' bacteria. When these protective mechanisms are lost, it makes it easier for bugs and bacteria from surrounding skin to travel and multiply, causing infection.

If you're a man and peeing more than usual, rushing to the toilet, getting up at night to go, if it's painful or the stream reduces to a dribble at the end, this could be a sign of prostate trouble – either an enlarged prostate or, sometimes, prostate cancer. Again, you need to see your GP. (For more advice on the prostate, see page 68.)

Kidney stones are a common urinary problem – about one in 10 people will develop them in their lifetime. Once you've had kidney stones, you are more likely to have them again. They are caused by salts in the urine forming crystals, which combine with other compounds and then harden into stones. The stones can range from 1–2mm to 9cm. If stones form in the kidney, they can dislodge and travel down the ureter (the narrow tube that carries urine to the bladder), into the bladder and then into the urethra. If they become stuck in the urethra, they can cause renal colic; an immense pain in the lower back, normally on one side. Other symptoms include blood in the urine, nausea and vomiting. Some people will pass the stones in their wee, but they can get stuck, triggering infections, pain and even kidney failure if they are not removed. We don't know why some people develop them, but being older, a man, obese and having a high protein diet can all contribute. Dehydration can also trigger kidney stones, which is why it's so important to maintain a healthy fluid intake.



Balancing act; adjust how much water you drink when your environment or activity changes

Waking in the night

We tend to think it's only men who get up in the night for a pee, but recently it has been revealed that it affects both men and women. The problem gets worse as we age, affecting two thirds of us between the ages of 50 and 59.

Pregnant women find they need to go more often (over 50 per cent of mums-to-be suffer from incontinence), but other causes could be an overactive bladder, weak bladder muscles – particularly after childbirth – or simply ageing.

As we get older, our bodies produce less anti-diuretic hormone (ADH) at night. This means your body produces more urine, increasing your need to get up and wee. Age also changes the bladder muscles slightly – like all tissues in the body – so it loses some of its efficiency. Doing pelvic floor exercises before, during and after pregnancy may help improve bladder control, as will maintaining a sensible fluid intake.

To make sure your waterworks work properly, you need to follow a healthy balanced diet and a sensible fluid intake. This doesn't all have to be water, but remember things like fizzy cola drinks, tea, and coffee can work as diuretics, making you wee more. It makes sense to keep an eye on your urine as it's a great indicator of your general wellbeing and can alert you to underlying health issues **i**

Helpful herbs and soothing supplements

- **Saw palmetto** has been trialled for treating prostate problems. It works in a similar way to some conventional drugs, shrinking the prostate gland and relieving some symptoms.
- **Lycopene** from tomatoes, pomegranate extract and selenium have been suggested as ways to help prevent prostate cancer.

- **Recurring cystitis?** Try taking cranberry extract. There is some evidence that it can have a protective effect on the urinary tract, preventing further infections.
- **Probiotic yogurts** can help restore good bacteria in your bowel, maintaining a healthy balance and helping protect against other infections.

