

What is urine?

Urine is the waste liquid produced in the body by the kidneys. Urine is made by filtering blood and removing excess water and waste. Urine is mostly water, but also contains urea, a substance produced in the body as it uses protein, and different salts. The kidneys will adjust how much water and salts are in the urine to ensure that the correct balance in the body is maintained.

What happens to urine once it is made?

The kidneys are unable to store urine. Therefore, once urine is made, it passes down a tube (one for each kidney) called ureters. The ureters drain into the bladder. Urine is stored in the bladder until it is passed.

The muscle in the wall of the bladder is soft and stretchy. This allows the bladder to gradually get bigger as the amount of urine in it increases. When the bladder is filling it sends messages to the brain to alert the individual that they need to pass urine and how urgent this need is. Even small babies get these sensations.

How often should urine be passed?

How often urine is passed varies according to several factors:

The brain: The brain controls how often the bladder is emptied. Sensations from the bladder as it fills are sent via nerves to the brain. This alerts the infant or child of the need to empty their bladder. Even healthy newborns have these sensations. The sensations get stronger as the bladder becomes fuller.

Some children with sensory differences or nerve damage may not receive the sensations, so may not know when they should go to the toilet.

Younger children need to learn to recognise what the sensations are. Therefore, many children who have only recently learnt to use the potty or toilet may appear to leave it to the last minute to ask to go. This is because they only recognise the signals when the bladder is very full.

Their age: Newborns and babies will pass urine (wee) frequently and may even pass urine more than once in ten minutes. This is because they do not always fully empty their bladder when they wee. They will fully empty their bladder at least once every four hours.

Toddlers and pre-school: The frequency with which children empty their bladder gradually decreases towards until they are able to hold for about 60 – 90 minutes. Improved ability to hold is associated with learning to use the potty or toilet: the earlier this happens, the earlier that the bladder learns to hold well.

Children may become more able to communicate the sensations that they need to empty their bladders as they develop speech. However, if they have been using disposable nappies, they will be used to emptying where they are. If they have not started to learn the skills for toileting, they may not know they need to tell someone that they want to wee.

Children from the age 4 years, teenagers, and adults, should be emptying their bladder about five to seven times a day.

Emptying more or less than this can indicate a bladder problem, particularly if associated with any leakage or urgency (the sensation of having to get to the toilet quickly). It may also be associated with drinking too much or not drinking enough.

Drinks: The amount a child drinks will influence how much urine is made, and therefore how often the bladder needs to empty.

How much a child should drink varies with age, size, how hot the environment is and how active they are. The average amount needed at different ages is indicated in the table below:

Age	Sex	Total drinks per day
7 – 12 months	Both male and female	600- 900mls
1 – 3 years	Both male and female	900 – 1000mls
4 – 8 years	Both male and female	1200 – 1400mls
9 – 13 years	Female Males	1200 – 2100mls 1400 – 2300mls
Over 14 years	Female Males	1400 – 2500mls 2100 – 3200mls

Children who are taller or heavier than most and those who are more active than typical, as well as those in hot environments may need more fluids than indicated in the table above.

Type of drinks Infants under six months should have their fluid from breastmilk or formula feeds. Those on formula may occasionally need extra cooled boiled water in hot environments. Ask your health visitor for advice.

Children under two years old should not be given drinks containing sweeteners or sugar. Fruit juices may be used from one year, if diluted with water (one part juice to ten parts of water from one year and half water, half juice from two years old).

For children over six months, the healthiest drink is water.

Children should avoid caffeine, which is found in tea, coffee, hot chocolate, colas and many energy drinks. It is also present in smaller quantities in some decaffeinated drinks. Caffeine can irritate the bladder lining and cause the kidneys to make more urine, as well as having other unwanted effects.








Fizzy drinks can also irritate the bladder lining, so they should be avoided or limited.

Thirst is not a useful indicator of the need to drink in children. They should be encouraged to drink regularly.

What should urine look like?

The colour of urine will vary. How well your child is drinking is likely to have the most effect. If they are drinking well, their urine will be pale straw-coloured. If they are drinking more than they need to, their urine may look clear.

If your child is not drinking enough or has become dehydrated for any reason, such as due to illness, their urine will become darker yellow or even a brown colour.

	Pale urine: drinking well.
	Light coloured urine: drinking well.
	Slightly darker urine. Consider having a drink.
	Darker urine: slightly dehydrated. Have a drink.
	Dark urine: dehydrated. Have a drink.
	Dark urine: dehydrated. Have a drink. If unwell, consult a doctor.
	Very dark urine: severely dehydrated. If unwell, consult a doctor.

What else may urine look like?

Pink or red urine: may be caused by blood in the urine. It can also be caused by eating large quantities of dark red foods such as blackberries or beetroot. Speak to your child's healthcare professional if you think there may be blood in their urine.

Orange urine: is often caused by not drinking enough (dehydration). If your child's urine is pale, orange it may indicate a problem with the bile duct or liver. Some medicines can also cause orange urine. If this is possible, it should be indicated on the information that comes with the medicine.

Blue or green urine: This is usually caused by blue or green food additives or colourings, or certain medicines. Rarely, the bacteria *pseudomonas* can make urine look green. In children, a rare condition called familial benign hypercalcaemia can make urine look blue.

Brown urine can be the result of eating large quantities of rhubarb or broad beans or taking an antibiotic called metronidazole. It can also be caused by severe dehydration, liver or kidney disease. If your child has brown urine and is unwell, speak to their healthcare professional.

Cloudy urine can indicate an infection. This can be difficult to see if your child's urine is also dark due to dehydration, or if they are using a nappy. A urinary tract infection (UTI) may cause pain when passing urine, more frequent bladder emptying, new wetting, urgent need to empty the bladder, blood in the urine, a raised temperature, abdominal pain or pain in the back near the kidneys (just below the waist). If you think your child may have a UTI speak to their healthcare professional.

Foamy urine it is normal for urine to form some bubbles when it meets toilet water. Protein in the urine can cause lots of bubbles that do not disappear quickly. Speak to your child's healthcare professional if you notice this.

Should urine smell?

Urine is mainly water, so it usually has no or a mild smell. However, some foods and drinks, such as garlic, asparagus or coffee, and some medicines and vitamin supplements can make the urine smell differently.

Urea is also in urine. When it mixes with air, it breaks down to form ammonia, which can have a strong smell. That is why urine that has been around for a while can smell quite strongly and why concentrated urine (passed when a child or young person is dehydrated) smells more strongly than weak urine.

Urine can smell more when your child has a UTI, but the smell on its own is not a good indicator of UTI. There are some other illnesses that can make urine smell.

What about babies and young children who wear nappies or continence pads?

Most nappies and continence pads have odour protection in them, so they should not smell of urine when they are changed. It can be difficult to see the colour of urine in a nappy or pad, but if you have any concerns, speak to your child's healthcare professional.

It is usually easy to tell approximately how much urine a child using a nappy or continence pad is passing due to the weight of the nappy or pad. Adult pads, which may be used by older children who are not able to use the toilet, often have wetness indicators on them. (see the Bladder & Bowel UK leaflet [Getting the best out of continence products](#) for more information).

More advice

The best way to maintain healthy urine and therefore bladder health is to encourage your child to drink water-based drinks regularly throughout the day, from waking until about an hour before bed. Drinking enough to make sure that the urine stays dilute (see urine chart above for more information) and avoiding caffeinated and fizzy drinks will help.

Regular bladder emptying and helping your child start to learn the skills they will need for toileting are also helpful. (There is more information on supporting children to learn to use the potty or toilet on the [Bladder & Bowel UK website](#).)

If you have concerns about your child's urine, speak to their healthcare professional.

Further information

Find more information about bladder and bowel health in our [children's information library](#). You can also contact the [Bladder & Bowel UK confidential helpline](#) (0161 214 4591).

For further advice on bladder and bowel problems speak to your GP or other healthcare professional.

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