

# Kidney stones

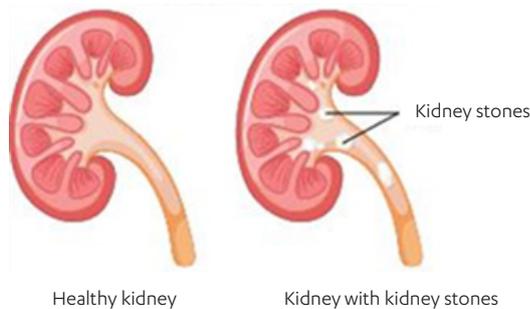
## What is a kidney stone?

Kidney stones (the medical term is 'renal calculi') are small, hard stones that form in the kidney and urinary tract when the salts in the urine become solid. They can vary in size and location.

Most stones are small and are flushed out in the urine. Some grow over years to become quite large. Stones can lodge anywhere in the urinary tract and cause severe pain or block urine flow. There can be one or more stones present at any one time (see Figure 1).

Anyone can get a kidney stone. One in 10 men and one in 35 women develop a kidney stone in their lifetime. Most occur between the ages of 20 and 60. Some people keep getting kidney stones throughout their lives.

Figure 1: Kidney stones



## What causes a kidney stone?

Stones can be made of different substances. The most common ones are made of calcium. They form because there is the wrong mix of chemicals in the urine, which allows salts to turn into crystals.

For most people with stones, the exact cause is not found.

You are more likely to have a stone if you drink small amounts of fluids. This makes the urine more concentrated. If you have a urinary tract infection (UTI) this can also lead to a stone forming.

You may be unaware that you have a kidney stone. It is only when the stone blocks the ureter (the tube that runs from the kidney to the bladder) that you have problems. When this happens it may cause severe pain; this is called renal colic.

## What are the symptoms?

You may feel a strong pain in your back below your ribs, and you may also have pain in your side, groin and thigh.

Other symptoms may include nausea and vomiting, and blood in your urine.

An attack may last many hours. This often settles when the stone has passed into your bladder, which may take some time. Most stones are not painful to pass (once past the bladder) and some people don't even know when this happens.

## Treatment

While in the emergency department you may be given:

- A strong pain medication to ease your pain (as a tablet or through a drip) – these medications can make you drowsy and you should avoid driving if affected
- An anti-inflammatory medication such as ibuprofen or indomethacin – these medications have been shown to be very effective for treating the pain of kidney stones and also for preventing further attacks in days following
- Medication for nausea
- A urine test to look for infection, blood and crystals
- A blood test to look at the salts in your blood and how well your kidneys are working
- Fluids into the vein (intravenous) to help flush out the stone
- An x-ray, ultrasound or CT scan to see whether there is a stone, to rule out other causes of your pain and to check the state of the urinary tract. If you have had kidney stones in the past, and have the same pain again, then you may not need any scans.

A doctor may prescribe pain relief medication for you to take home. Most patients will be prescribed anti-inflammatory medications (such as ibuprofen) to prevent early recurrence of pain. These are not suitable for everyone. Ask your doctor which medications are suitable for you. Sometimes medications specifically designed to increase stone expulsion such as tamsulosin will be prescribed. These can increase the likelihood of passing the stone and the time needed for this to occur. Your doctor will advise if you need this.

## Home care

- Drink at least eight glasses of water a day to help flush out the kidney stone
- If you have pain, take pain medications as advised by your doctor. Check the instructions for the correct dose and take only as directed.

## PATIENT INFORMATION

- If you have been prescribed anti-inflammatory medications or medications to help stone expulsion, take them as prescribed by your doctor, even if you do not have pain

If pain is severe and not controlled by medication or you develop symptoms of infection such as a fever, chills and stinging when you pass urine, return to Cabrini ED.

### What to expect

Most people will pass the kidney stone without any trouble in the next few days to weeks. The time it takes to pass a stone varies from person to person.

A large stone may cause a blockage and you may be referred to a urologist (a doctor who specialises in kidney stones) for treatment. A treatment called lithotripsy may be used to break the stone up into smaller pieces. Some people need surgery to remove the stone.

If a stone blocks the natural flow of urine, this can cause an infection in the urinary tract and antibiotics will be needed. If symptoms of infection develop, such as a fever (temperature 37.5°C or greater), it is important to seek urgent medical review – return to Cabrini ED if safe to do so, or attend your closest emergency department.

### Prevention

If you have had a kidney stone, there is a higher chance you will have another kidney stone in the future.

- Studies suggest that you can halve your risk of forming another stone by drinking two litres of water a day. If your urine is dark yellow, you are not drinking enough.
- You can help prevent a kidney stone by getting prompt treatment for a UTI. See your doctor.
- If you have had more than one attack your doctor may arrange tests to check for causes such as acids and minerals in your blood
- Changes in your diet are only advised for some causes of kidney stones. Please check with your doctor before changing your diet.

### Seeking help

**Cabrini Emergency Department (ED)** is staffed by experienced emergency doctors and nurses 24 hours a day, 7 days per week. If you have any questions about your ED treatment our qualified ED staff can be contacted on **(03) 9508 1500** at any time. If you need to return to Cabrini ED for ongoing care we would be glad to take care of you again and if this occurs within a week of your initial consultation the doctor's fee will be bulk-billed.

You can also expect to receive a phone call or SMS message from one of our emergency nurses the day after you have been discharged. The nurse will be able to clarify any aspect of your diagnosis, treatment, or follow-up.

In a medical emergency return to Cabrini ED if it is safe to do so or go to the nearest hospital emergency department or call an ambulance – dial triple zero (000).

#### Return to Cabrini ED if you have:

- **Pain that is getting worse despite taking pain medication**
- **Fever, sweats or shivers**
- **Repeated vomiting**
- **Urine that is cloudy or has blood in it**
- **Pain on passing urine**
- **Any other concerns**

### Want to know more?

- Contact Cabrini ED on **(03) 9508 1500**
- Ask your local doctor or healthcare professional
- Visit Kidney Health Australia at [www.kidney.org.au](http://www.kidney.org.au)
- Visit the Better Health Channel at [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)