

Kidney stones

Emergency Department factsheets

What is a kidney stone?

Kidney stones are small hard stones that form in the kidney when salts in the urine turn into solid crystals. They can vary in size and location. The medical term for them is renal calculi.

Anyone can get a kidney stone. They affect up to 12% of men and 5% of women during their lifetime. Most occur between the ages of 20 and 60. Some people keep getting kidney stones throughout their lives.

What causes a kidney stone?

Stones can be made up of different matter. The most common ones are made up 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 only 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. Stones can be as small as a grain of sand or as large as a marble, but most stones are small and are flushed out in the urine. Stones usually only cause pain once they leave the kidney.

Kidney stone pain occurs in one of two ways. When the muscular tube that carries urine from the kidney to the bladder contracts on a stone, it causes severe pain, called renal colic.

Alternatively a stone can get stuck and lead to a blockage of urine flow, which causes pain due to

swelling in the kidney.

What are the symptoms?

You may feel a strong gripping pain in the back below the ribs, and you may also have pain in your side, groin and thigh. Other symptoms may include:

- blood in your urine
- nausea and vomiting
- sweating, fever and shivers
- 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 painkiller to ease your pain (such as Panadeine Forte or morphine through a drip) – do not drive home if you feel drowsy or have had morphine.
- medication for nausea.
- a urine test to look for infection, blood and crystals.
- fluids into the vein (intravenous) to help flush out the stone.
- a blood test to look at the salts in your blood and how well your kidneys are working.
- a CT scan to see whether there is a stone, its size and where it is. In some cases, an ultrasound scan is done instead.
- stones that do not pass may need treatment to break them up, or surgery to remove them; you will be referred to a urologist (kidney specialist) for this.

- stones that are associated with a urine infection often need treatment with antibiotics in hospital to start with, to make sure the kidney remains healthy.

Home care

- Drink at least eight glasses of water a day to help flush the kidney stone out.
- If you have pain, take painkillers such as paracetamol or whatever medication the doctor has prescribed. Check the packet for the correct dose and take only as directed.
- Each time you urinate, do so in a jar. Pour the urine from the jar through the strainer and into the toilet. Continue doing this until 24 hours after your pain stops. By then, if there was a kidney stone, it should pass from your bladder. Some stones dissolve into sand-like particles and pass right through the strainer. In that case, you may never see a stone.
- Save any stone that you find in the strainer and bring it to your doctor for analysis. It may be possible to prevent certain types of stones from re-forming. Therefore, it is important to know what kind of stone you have.
- Try to stay as active as possible since this will help the stone pass. Do not stay in bed unless your pain prevents you from getting up. You may notice a red, pink or brown colour to your urine. This is normal while passing a kidney stone.

What to expect when you return home

- Kidney stone pain is usually treated at home with anti-inflammatory medications such as ibuprofen; a useful alternative, particularly if you feel nauseated, is an anti-inflammatory suppository called indomethacin. Anti-inflammatory medications are not suitable for everyone and your doctor or health-care professional will discuss this with you. Your doctor may also prescribe opiate pain relief

such as Panadeine Forte (paracetamol and codeine) for you to go home with.

- You may also receive a medication called tamsulosin, particularly if you have a larger stone. This medication may help the stone to pass by relaxing the muscular tube between the kidney and bladder. It is not suitable for every patient.
- 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.
- You should see your general practitioner in 2-3 weeks and take along any stone you have collected from the urine. You may have repeat imaging or blood tests.
- If you have had a kidney stone, there is strong possibility 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 urinary tract infection (UTI). See your doctor if you have had more than one attack your doctor may arrange tests to check for troublesome 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.

Return immediately

Return to the emergency department immediately if you develop any of the following:

- severe pain that can't be controlled with paracetamol plus prescribed analgesia
- fevers, chills and sweats.

Seeking help

In a medical emergency, go to the nearest hospital emergency department or call an ambulance (dial 000). For other medical problems see your local doctor or health-care

professional.

13 HEALTH (13 43 25 84) provides health information, referral and teletriage services to the public in all parts of Queensland and is available 24 hours a day, 7 days a week, 365 days a year for the cost of a local call*.

*Calls from mobile phones may be charged at a higher rate.
Please check with your telephone service provider

Disclaimer: This health information is for general education purposes only. Please consult with your doctor or other health professional to make sure this information is right for you.

Want to know more?

Kidney Health Australia

www.kidney.org.au

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