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University Hospital Southampton 
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Renal stones

Patient information and advice



Enhanced Recovery

Patients and health professionals
working together

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What is a renal stone?

You have been given this information because your scan results have shown that you have a renal stone or stones, also known as calculi. These are hard stone-like lumps that can develop in one or both kidneys. They are quite common and affect up to five per cent of people.

There are three main types of kidney stone:

- **calcium** – the most common type of stone
- **struvite** – these form as a result of infection
- **uric acid** – a breakdown product of a compound found in some types of food.

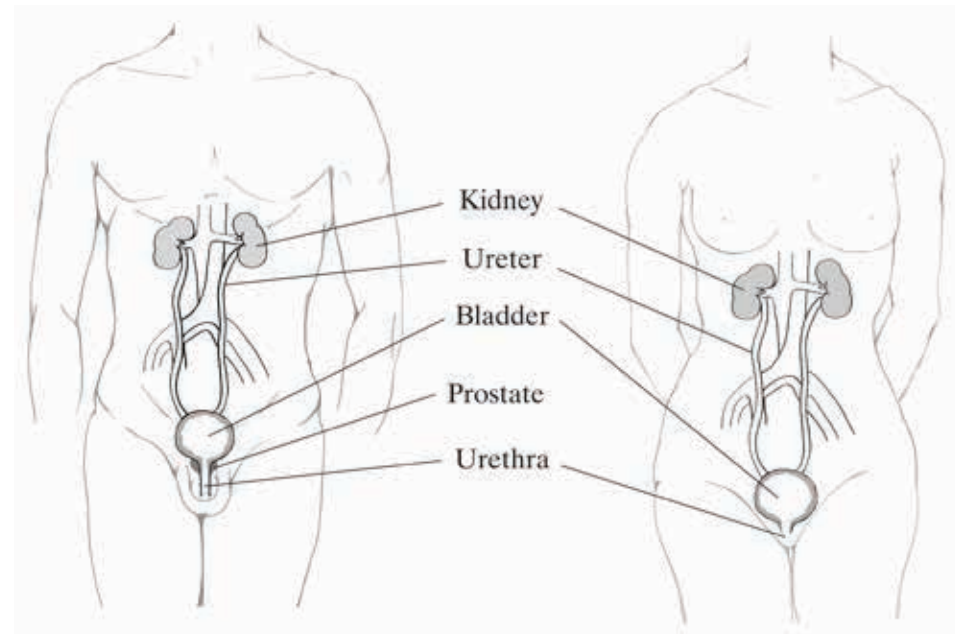
Although most stones are formed in the kidneys, they may move and can therefore be found throughout the renal tract.



What is the renal tract?

The kidneys produce urine as a result of filtering the blood which circulates around the body. Urine drains from each of the kidneys via tubes called ureters into the

bladder. A single tube connects to the base of the bladder and through this, urine leaves the bladder and exits the body. This system is known as the renal tract.



Why do renal stones cause pain?

Renal stones may lie undetected for a number of years. Symptoms occur if the stones move. A stone can move from the kidney through the ureter and bladder and exit the body via the urethra. Small stones may pass undetected, however some stones may cause acute pain in the lower back, loin and

groin area. Whilst on the move, stones may cause damage to the renal tract which results in blood entering your urine. This blood may not be visible as it may be in very small (microscopic) amounts. When we test your urine we are looking for microscopic amounts of blood.

What has caused my renal stones?

There are many causes of renal stones and it is likely that you may have more than one factor. They include:

- anatomical (structural) abnormalities
- excess stone-forming substances in the urine
- lack of chemicals that prevent stones in the urine
- chronic infection in the urine.

50-70% per cent of patients presenting with a stone will develop further stones over the next ten years. It is therefore important to try to minimise the risk of further stone formation by following the dietary advice in the back pages of this booklet.

How will my stones be treated?

If you have confirmed stones you will be referred to the urology team who will make a plan for your care. Many stones will pass from the body without needing any treatment to remove them. This often depends on the size of the stone which can be measured on the scan pictures.

If your stone is less than six millimetres in diameter, no immediate treatment is necessary and you will be able to go home once the pain has subsided. We will arrange for you to have an x-ray of the kidneys either before you go home or as

an outpatient. The urology team will also arrange to see you in clinic in four to six weeks. You should receive an appointment in the post. If you continue to have symptoms when you are seen in clinic, further investigations will be arranged.

If the stone is larger than six millimetres, or you have any medical conditions that may make it difficult for the stone to pass through your renal tract, you may require further intervention on this admission to help the stone to pass out of your renal tract.

How can I help to prevent further stone formation?

The most common reason people develop a kidney stone is through dehydration. You should therefore drink plenty of fluid throughout the day. You should aim to pass around two litres of urine per day. This means drinking around two and a half to three litres of fluid per day. The colour of your urine should be pale rather than yellow.

You should also make sure you drink more than the recommended daily amount when it is hot, or

when you are exercising, in order to replace the fluids that are lost through sweating.

Drinks such as tea and coffee can count towards your fluid intake, but water is the healthiest option for kidney stone prevention. Do not drink large quantities of grapefruit juice, apple juice or cola drinks as these help form kidney stones.

Diet

- You should reduce the amount of animal protein in your diet. Aim for no more than three ounces (eighty-five grams) of red meat, poultry or fish per meal.
- You should NOT reduce the amount of calcium in your diet.
- You should reduce the amount of sodium (salt) in your diet by not adding salt to your cooking or food at the table.
- You should reduce your intake of refined sugars. Refined sugars are found in many foods including cakes, sweets, biscuits, jam, honey and fizzy drinks.
- You should reduce your consumption of food and drink rich in oxalate. Oxalates are naturally occurring substances found in plants, animals, and in humans and can cause stones to develop. Foods and drinks rich in oxalate include:

- beetroot
- asparagus
- rhubarb
- nuts
- chocolate
- berries
- leeks
- spinach
- tofu
- tea.



Will I get another renal stone if I follow this advice?

You may still get another stone, but your chances are reduced. If you do get another renal stone then you can be referred to a clinic that will investigate you in more detail.

For further information regarding your stones and their treatment visit www.baus.org.uk

Contact details

Benign Urology Nurse Specialist, telephone: **07824 547512**