What you need to know about...

KIDNEY STONES

WHAT ARE THEY?
- A kidney stone (renal calculus) is a hard mass developed from crystals that separate from the urine and build up in the kidneys.
- Calculi contain calcium combined with oxalate or phosphate.
- A small crystal attracts further crystallisation and in this way calculi can become enlarged.
- Small calculi leave the body via the urine without being noticed.
- A less common calculus, struvite, is caused by urinary tract infection.

INCIDENCE
- Renal calculi occur in 15 per cent of Caucasian men and six per cent of women in industrialised nations, with recurrence in about half of patients (Bihl and Meyers, 2001).

REFERENCES


WEB SITES
National Kidney Federation: www.kidney.org.uk
NHS Direct: www.nhsdirect.nhs.uk

Urinary urgency and a burning sensation on urination.

COMPLICATIONS
- Calculi can block the urinary tract, which can affect the continuing function of the kidney.
- Total obstruction can destroy kidney function – removal is required.

DIAGNOSIS
- Description of the pain and possibly the retrieval of calculi from the urine is often enough for a diagnosis to be made.
- It is confirmed by X-ray or intravenous urogram, in which an injected dye is used to show the calculus on an X-ray.

TREATMENT
- No treatment is required for small asymptomatic calculi.
- Plenty of fluid will help small calculi pass spontaneously.
- Strong analgesia may be required when calculi pass through the ureter.
- Larger calculi may require removal by fibre-optic endoscope.
- An alternative treatment is extracorporeal lithotripsy, in which acoustic shock waves are used to break up the stones. The fragments can then be passed in the urine.

CAUSES
- Urinary tract infections, kidney disorders such as cystic kidney diseases, and metabolic disorders such as hyperparathyroidism are linked to calculus formation.
- More than 70 per cent of people with renal tubular acidosis develop renal calculi (National Kidney and Urologic Diseases Information Clearinghouse, 2003).
- Cystinuria and hyperoxaluria are rare, inherited metabolic disorders that often cause renal calculi.
- Calculi are more likely to occur if the body is dehydrated and the urine concentrated.
- Familial history of calculi increases the likelihood of them developing.

SYMPTOMS
- If a calculus becomes stuck in the ureter, the muscle wall goes into spasm (renal or ureteric colic), which is extremely painful.
- The pain may be referred to the lower abdomen and into the groin.
- Blood in the urine is a common sign of renal calculi.