HOW DOES YOUR URINARY SYSTEM WORK?

Your urinary system is made up of the kidneys, ureters, bladder and urethra. Your kidneys do many important jobs. One is to remove waste and extra fluid from the blood to make urine.

Narrow tubes called ureters carry urine from the kidneys to the bladder. Urine is stored in your bladder and emptied through the urethra. The urethra is the tube that drains the bladder.

WHAT ARE URINARY TRACT INFECTIONS?

Urinary tract infections (UTIs) are very common – particularly in women, babies and the elderly. Around one in two women and one in 20 men will get a UTI in their lifetime.

A UTI can range from an infection of the bladder to an infection of the kidney. If the infection is in the urethra, it is called urethritis and infection in the vagina is called vaginitis. Pyelonephritis describes an upper urinary tract infection, which is very serious as it may affect the kidneys. If the infection is in the bladder, it is called cystitis. Cystitis is the most common lower urinary tract infection, which causes the bladder lining to become raw and inflamed.

WHAT CAUSES URINARY TRACT INFECTIONS?

Bacteria do not normally live in the urinary tract. When bacteria enter the urinary tract and multiply, they can cause a UTI.

There are many germs that can cause urine infections or cystitis. The most common germ causing urinary tract infections is found in your digestive system, Escherichia coli (E.coli). It can easily spread to the urethra and stick to the lining of your urinary system.

Germs such as Mycoplasma and Chlamydia can cause urethritis in both men and women. These germs can be passed on during sexual intercourse so both partners need medical treatment to avoid re-infection.

Some people may be more susceptible to infections due to the urinary flow being blocked or the urine backed up, flowing from the bladder to the kidneys.

See the ‘Urinary Reflux in Children’ and ‘Kidney Stone’ fact sheets for more information.

WHY ARE URINARY TRACT INFECTIONS MORE COMMON IN WOMEN?

UTIs are common, particularly with increasing age. Women are more likely to get a UTI than men. Nearly 1 in 3 women will have a UTI needing treatment before the age of 24.
In women, the urethra is fairly short and straight, making it easier for germs to travel into the bladder. For some women, UTIs relate to changes in their hormonal levels. Some are more likely to get an infection during certain times in their menstrual cycle, such as just before a period or in pregnancy.

In older women, the tissues of the urethra and bladder become thinner and drier with age as well as after menopause or a hysterectomy. This can be linked to increased UTIs.

During pregnancy, the drainage system from the kidney to the bladder widens so urine does not drain as quickly. This makes it easier to get a UTI. Sometimes germs can move from the bladder to the kidney causing a kidney infection. UTIs during pregnancy can result in increased blood pressure and a smaller, premature baby, so it is very important to have them treated promptly.

Women are also more at risk of repeated UTIs if they:
- use spermicide jelly or diaphragm for contraception
- have had a new sexual partner in the last year (an increase in sexual activity may trigger symptoms of a UTI in some women)
- had their first UTI at or before 15 years of age
- have a family history of repeated UTIs, particularly their mother
- suffer from constipation

**DO MEN GET URINARY TRACT INFECTIONS?**

Men can get UTIs, particularly if they have trouble with urine flow. Older men who experience prostatitis (an inflammation of the prostate) are in a higher risk group. If the bladder is not emptying properly, the residual urine makes it harder to cure the infection but is not itself a cause. A small number of young men may get a UTI. In males, this is usually the result of a sexually transmitted disease.

**WHAT IS THE LINK WITH DIABETES?**

People with diabetes are at increased risk of having UTIs as their urine may have a high glucose (sugar) content, which provides an ideal breeding ground for bacteria. Diabetes may also change the body’s defence system making it harder to fight a UTI. Susceptibility to UTIs increases as the duration and severity of diabetes increases.

**WHY ARE OLDER PEOPLE MORE AT RISK?**

Chronic conditions, some medications, and problems with incontinence put older people in a group with a higher risk for developing UTIs. People using bladder catheters are also more likely to develop a UTI.

**DO BABIES AND YOUNG CHILDREN GET URINARY TRACT INFECTIONS?**

Babies and children are at risk of UTIs. These infections always need to be investigated as they may indicate a serious underlying condition, such as urinary reflux. Reflux is caused by a bladder valve problem allowing urine to flow back into the kidneys from the bladder. Reflux can cause the urine to stay inside the body and become a pool for infection. It may lead to kidney scarring, which in turn leads to high blood pressure and sometimes kidney problems.
**WHAT ARE THE SYMPTOMS?**

Bacteria can be present in a urine sample without causing any symptoms. This is more common in women who have diabetes, repeated UTIs or the elderly. This type of UTI may not always need treatment except in special situations, such as in pregnant women.

Common symptoms of a UTI include:
- burning sensation when passing urine
- wanting to urinate more often, if only to pass a few drops
- cloudy, bloody or very smelly urine
- pain above the pubic bone

Signs of UTIs in children can also include:
- low fever
- irritability
- day or night wetting in a child who has been dry
- feeding problems in babies

If the infection moves to the kidneys, you may also have high fever, back pain and vomiting. It is important to see a doctor if a kidney infection or kidney stones are suspected because kidney damage or even kidney failure can occur if these conditions are left untreated. Infection which has spread from cystitis or pyelonephritis is a serious condition.

**WHAT IS THE RECOMMENDED TREATMENT?**

A faint prickly feeling during urination is usually the first sign of a urinary tract infection. Sometimes mild cystitis can be treated by:
- drinking plenty of fluids, particularly water
- taking a commercial urinary alkalinising agent (such as Ural or Citralite) or one teaspoon of baking soda or bicarbonate of soda in water to help to alleviate the discomfort of burning and scalding when passing urine (it is important to refer to your doctor if symptoms persist as this treatment may reduce symptoms but an infection can still be present and need different treatment)
- avoiding acidic food or drinks - they cancel out the effect of urinary alkalisers and can aggravate the burning when passing urine

Medical advice is needed if self-help treatments aren’t working. The doctor usually tests the urine to check for blood, white blood cells and acidity. UTIs respond well to antibiotics.

If a UTI comes back, your doctor can order a ‘culture’. A culture is a test to see which germs are present in your urine. The identification of the germs assists with the choice of antibiotic to treat the infection. Sometimes a low-dose antibiotic may be prescribed for long-term use if the UTI is persistent. If the UTI does not improve or is frequently recurring, it may be a good idea to get a referral to a specialist. See the ‘Make the most of your visit to the doctor’ fact sheet for more information.

Men should see a doctor if they have trouble with the urine stream or with starting and stopping the urine flow as it may point to an enlargement of the prostate.
HOW CAN URINARY TRACT INFECTIONS BE AVOIDED?

Women can lower their risk of having a urinary tract infection by:

- drinking lots of fluid, particularly water, to wash bacteria from the bladder and urinary tract
- promptly treating a vaginal infection, such as thrush or trichomoniasis
- avoiding spermicide-containing products, particularly with a diaphragm
- avoiding constipation

Some women have found the following tips helpful:

- Urinate immediately after sexual intercourse
- Do not delay going to the toilet when you need to
- Wipe from front to back after urinating
- Wear cotton underwear
- Use only water when washing between your legs
- Wash between your legs every day and before having sexual intercourse

Cranberries (usually as cranberry juice) have been used to prevent recurrent UTIs. Cranberries contain a substance that can prevent bacteria from sticking to the walls of the bladder. However, recent research has shown that cranberry juice does not have a significant benefit in preventing UTIs, and most people are unable to continue drinking the juice on a long-term basis.

It is important to remember that UTIs are not caused by a lack of cleanliness. Self-help treatments such as vaginal douching do not change the likelihood of getting UTIs.

For more information about Kidney or Urinary health, please contact our free call Kidney Health Information Service (KHIS) on 1800 454 363. Alternatively, you may wish to email KHIS@kidney.org.au or visit our website www.kidney.org.au to access free health literature.

This is intended as a general introduction to this topic and is not meant to substitute for your doctor's or Health Professional's advice. All care is taken to ensure that the information is relevant to the reader and applicable to each state in Australia. It should be noted that Kidney Health Australia recognises that each person's experience is individual and that variations do occur in treatment and management due to personal circumstances, the health professional and the state one lives in. Should you require further information always consult your doctor or health professional.

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If you have a hearing or speech impairment, contact the National Relay Service on 1800 555 677 or www.relayservice.com.au. For all types of services ask for 1800 454 363.