



URINARY TRACT INFECTIONS IN WOMEN

Introduction

Urinary tract infections are common in women. Although they are not usually serious from a health standpoint, they can produce severe discomfort and personal anxiety. In some cases, however, they may involve abnormalities of the urinary system, which require prompt evaluation and treatment.

This brochure will describe the symptoms, causes and treatments of both upper and lower urinary tract infections.

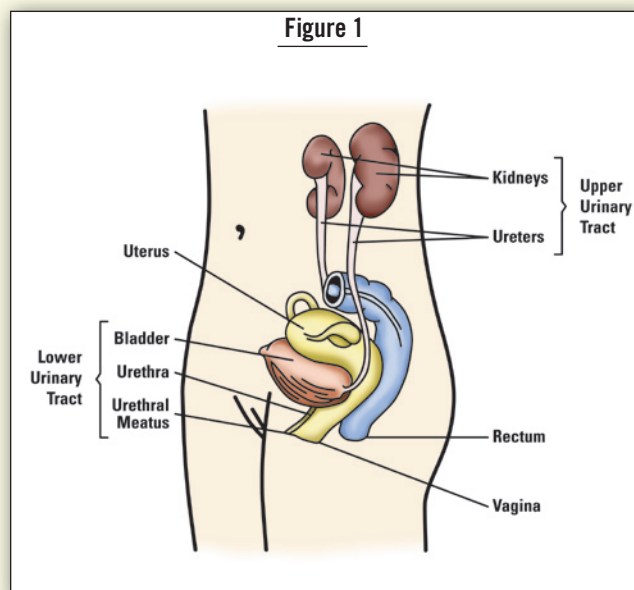
The Urinary Tract

Infections can occur in any part of the urinary system. When they occur in the urethra, they are termed "urethritis," in the bladder, "cystitis," and in the kidney, "pyelonephritis". For the sake of simplicity, we refer to those infections in the kidneys and ureters as "upper urinary infections" and those in the bladder as "lower urinary infections."

Many people mistakenly use the terms "urinary infection" and "kidney infection" synonymously. All kidney infections are in fact urinary infections. However, the majority of urinary infections involve the bladder, but do not involve the kidneys. This distinction is important.

Are Urinary Tract Infections Serious?

Infections of either the upper or lower urinary tract can be extremely uncomfortable. Usually those involving the lower urinary tract are not particularly serious, although they may indicate some underlying abnormality of the urinary system.



The main parts of the urinary system are the kidneys and bladder. Urine is formed in the kidneys and carried by tubes, called "ureters" to the bladder where it is stored. Urine drains from the bladder through a single tube called the "urethra" and exits through an opening termed the "urethral meatus".



Those infections, which involve the upper urinary tract (especially the kidneys) can not only be quite serious in and of themselves; but if they are repetitive or treated unsatisfactorily, they can result in scarring of the kidneys, loss of functioning renal tissue and kidney damage. Thus, any infection of the urinary system should be considered an important matter.

What Are The Symptoms?

Lower Urinary Tract: The most frequent symptoms of infections of the lower urinary tract in females are:

- 1.) Frequent and urgent need to urinate
- 2.) Burning sensation, hesitancy or interruption during urination
- 3.) Pelvic pressure; lower abdominal or back discomfort
- 4.) Occasional visible blood in this urine
- 5.) Low grade fever - 101 degrees F or less

Most patients with lower urinary tract infections are moderately uncomfortable, but would not consider themselves "sick."

Upper Urinary Tract: patients with upper urinary tract infections (kidney infections) may have any of the previously mentioned symptoms; and, may also have:

- 1.) Significant fever - 102 degrees F or greater
- 2.) Shaking chills
- 3.) Generalized aches and pains
- 4.) Upper back or "flank" pain

These patients frequently "look and feel quite ill."

What Are The Causes Of Urinary Tract Infections?

Urinary tract infections are also classified as "uncomplicated" or "complicated" infections.

The vast majority of people have "uncomplicated" urinary infections; that is, where the patient is found to have a urinary system which is free of any significant abnormalities. The most frequent cause of uncomplicated urinary infections is that bacteria which are nor-

mally present in the anal and vaginal area migrate to the urethral meatus, then move up through the urethra and into the bladder. If the condition goes unchecked, the infection can ascend up the ureters and subsequently into the kidneys.

Another way for a urinary infection to develop is for bacteria from other parts of the body to be carried by the blood stream to the kidneys and from there to the bladder. This route of infection is unusual.

"Complicated" urinary infections mean that there is an abnormality somewhere along the course of the urinary system. Such abnormalities could include obstructed kidneys from stones, tumors, or congenital obstructions. There also may be a neurological problem that inhibits normal bladder functioning. On rare occasions the urethral meatus is too small to allow the urine to freely flow to the outside.

How Are Urinary Infections Diagnosed?

The urologist will begin with a general medical history, urologic history and physical examination.

Identification of the infecting bacteria on a urine culture is the final proof of the presence of a urinary infection.

How Are Urinary Infections Treated?

Treatment depends on whether or not the infection is limited to the lower urinary tract or whether there is a suspicion or proof that the kidneys are involved.

If the lower urinary tract is the sole source of infection, the treatment can usually be handled with antibiotics. You will probably be asked to drink increased amounts of water or mild fluids to flush out the urinary system. Your physician may suggest warm tub baths and perhaps aspirin to relieve the discomfort. Various bladder analgesics may be prescribed to soothe the bladder and alleviate urinary burning, frequency and urgency.



Prescribed antibiotics are usually the treatment for 7 to 14 days. In most uncomplicated urinary infections involving the bladder alone, the patient can expect relief from the symptoms in 24 to 48 hours.

In those infections, which involve the kidneys or which are associated with complicating factors, hospitalization may be necessary for the administration of intravenous antibiotics and careful observation of the patient. Obviously, if there is a serious complicating factor, such as significant obstruction or inability to drain the bladder, more sophisticated therapy may be indicated.

Is Follow-Up Treatment Required?

Generally, urinary tract infections respond to a 7 to 14 day course of treatment. However, it is important to have a follow-up urine test to assure that the infection has been eradicated. There are some women whose symptoms will disappear with antibiotic therapy, but whose infection will persist in a symptom-free manner. These women will continue to harbor bacteria in their urinary system and are at risk for further damage. Therefore, complete eradication of infection must be verified.

Patients who have had recurrent infections may require further studies of the urinary system to exclude any underlying, complicating factors. Such studies can usually be performed in the urologist's office. They usually consist of X-rays and ultrasounds of the urinary system.

At times, your urologist will want to directly view the interior of the bladder by passing a small, lighted cystoscope through the urinary channel into the bladder. Unfortunately, many women have heard "horror stories" of this procedure and are unduly concerned about the amount of pain. In fact, with today's small instruments the procedure entails not more than minor discomfort. It lasts approximately 2 to 3 minutes and, usually does not require significant anesthesia.

If you have had evidence of an upper urinary tract infection or if you have had recurrent lower urinary tract infections you should have a complete evaluation of your urinary system to exclude any underlying abnormalities. Such abnormalities may require immediate attention to prevent kidney or bladder damage.

What About Preventive Measures?

Recurrence of urinary infections, particularly bladder infections, is common. Assuming that no complications are involved, there are a variety of things you can do to reduce the likelihood of further infections.

- 1.) Drinking 6 to 8 glasses of bland liquids per day will help to "flush" your urinary system and mechanically rid it of transient bacteria.
- 2.) When cleansing after a bowel movement, "wiping backwards" from the urinary area towards the rectal area may decrease the likelihood of introducing rectal and vaginal bacteria into the urinary area.
- 3.) Many women find that recurrent episodes of infection seem to be related to sexual activity. At times these patients can be helped if they empty their bladder after having intercourse. This may remove bacteria, which have been forced into the bladder during the actual act of intercourse.

These measures may help decrease the likelihood of recurrent infections. However, the most effective therapy is probably long-term, low dose "prophylactic" antibiotics. Your urologist will want to discuss the advantages and disadvantages of this type of therapy and whether the frequency of your infections indicates its use.

Bladder Symptoms Without Infection

There are many women who have all of the symptoms of a bladder infection, but whose urine tests show no sign of infection. The nature of the problem in these



women is not fully known, but some of the factors that are considered likely causes are:

- 1.) A virus or non-bacterial organism
- 2.) Simple irritation of the bladder, particularly after intercourse
- 3.) Vague inflammation of the lining tissue of the bladder or over-activity of the bladder musculature
- 4.) Narrowing of the external urine tube (urethra)
- 5.) Psychological stress
- 6.) Diet including harsh fluids such as coffee and alcohol

In situations where infections are not present, a careful evaluation of the urinary system should be made. If no abnormalities are found, a variety of medications to relieve bladder spasticity and/or inflammation may be prescribed.

Urinary infections for most women are more of a nuisance than a serious health problem. Therapy is available to alleviate their discomfort and eradicate their infection. Some urinary tract infections, however, can be serious. Therefore, any woman with the symptoms of a lower or upper urinary tract infection should seek prompt medical evaluation.