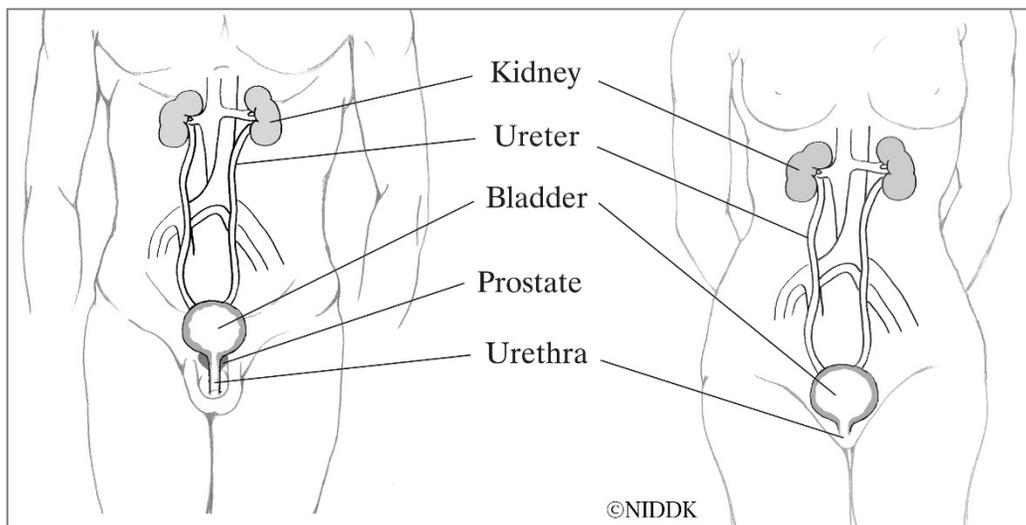


How to Treat Recurrent Urinary Tract Infections (UTIs) Safely and Effectively

What is a Urinary Tract Infection (UTI)?

A Urinary Tract Infection happens when bacteria gets into the urethra and travels up to the bladder or another part of the urinary system such as the



kidney. It causes you to experience uncomfortable **symptoms**.

Symptoms of a **bladder** infection include:

- Burning or pain when urinating
- Urinating more often
- Feeling a strong urge or need to urinate but only get a few drops
- Pain in your lower abdomen, pelvic area, and even your lower back

Symptoms of a **kidney** infection include:

- Fevers (101 Fahrenheit or greater) and upper back pain (located behind your ribcage) - usually on one side or the other.
- Nausea and vomiting.

Some people have bacteria in their urine without any evidence of illness or of the symptoms listed above. This is not considered a urinary tract infection. This is considered “asymptomatic bacteriuria” (**asymptomatic** means no symptoms). We do not check for or treat asymptomatic bacteriuria.

What causes Urinary Tract Infections?

Large numbers of bacteria live in the area around the vagina, the penis, the rectum and on your skin. This bacteria may get into the urine from the urethra and travel up to the bladder. The bacteria may even travel up to the kidneys.

Just as some people are more prone to colds, other people are more prone to UTIs. Women are more likely to get UTIs than men because women have shorter urethras. Therefore, the bacteria have a shorter distance to travel to reach the bladder.

People that have an increased risk of getting a UTI are:

- Women who have gone through menopause. Estrogen helps protect women from UTIs. Post-menopausal women experience a reduced level of estrogen resulting in a change in the lining of the vagina. This can increase the risk for UTI.
- People whose urinary tracts have an abnormality following a recent surgery or procedure, or who recently had a device (such as a tube to drain fluid from the body) placed in their bladder.
- People who are not able to urinate normally because of some type of blockage or have a diagnosis of neurogenic bladder or urinary retention.
- People with issues such as diabetes (high blood sugar) because the body is not able to fight off germs as well.

What are recurrent Urinary Tract Infections?

- **Recurrent** Urinary Tract Infections are defined as two episodes of a symptomatic (showing symptoms) urinary tract infection in the bladder within 6 months or three episodes within 1 year.
- These episodes must be **culture proven**. This means that when you experienced symptoms of a urinary tract infection, a urine culture was obtained and showed bacteria in the urine.

How do I prevent UTIs?

There are steps you can take to avoid UTIs:

- Keep your genital area clean
 - For those with vulvas, follow these vulvar care recommendations and avoid aggressive cleaning or soaps.
<https://www.med.umich.edu/1libr/Gyn/ObgynClinic/ComfortMeasuresVulvarIrritationItchingPain.pdf>
 - For those that urinate through a penis, keep the tip of the penis clean and dry. If there is foreskin, make sure to retract and clean under foreskin regularly.
- Avoid sitting in wet or dirty undergarments for prolonged periods.
- Drink plenty of fluids (approximately 2 Liters per day) to keep well hydrated.
- Don't put off urinating when you need to go and don't rush to finish. Holding in urine or not draining your bladder fully can increase your risk of UTIs.
- Take supplements to help prevent urinary tract infections:
 - **Cranberry supplements:**
 - We recommend supplements that have 36 mg of cranberry proanthocyanidins (PACS). Drinking cranberry juice or concentrate does not have enough active ingredient to prevent UTI.
 - We recommend Ellura, TheraCran or TruNature brands.

- Prices vary between these brands. They can be purchased online at the following websites:
 - Ellura: www.solvwellness.com
 - Theracran: <https://theralogix.com/products/theracran-one-cranberry-capsules>
 - TruNature: www.amazon.com or available at Costco stores
- **D-mannose supplement**
 - There are several different brands available for purchase at health stores or online.
 - The dose of D-mannose is 1000 mg twice per day as either a powder or tablet.
 - The risks of D-mannose are low but include bloating and loose stools.
 - People with diabetes should use caution when taking D-mannose as it may increase blood sugar levels by small amounts.
- Women who have undergone menopause can talk to their doctor about a prescription for a low dose vaginal estrogen cream or tablet. This has been proven in research studies to decrease UTI in older women.
- There are several other ways to prevent urinary tract infections that you can discuss with your Urology provider.

How do I safely and effectively manage urinary tract infection symptoms?

If you experience symptoms such as burning with urination, strong urge to urinate, or pain with urination and think you may have an infection, please consider the following steps:

- Drink plenty of water to try to ‘flush’ the bacteria from your bladder. You do this by drinking at least 2 liters per day of water (unless you have been told by a doctor not to drink this much water)

- Empty your bladder at least every 2 hours.
- If you are able to take Non-Steroidal Anti-Inflammatory Medications (NSAIDS) such as ibuprofen or naproxen, evidence suggests that these are effective at decreasing pain from the urinary tract infection. Take these as is instructed on the bottles.
- If you are able to take phenazopyridine (Pyridium or Azo), you can purchase this from a pharmacy to relieve burning with urination. Take these as is instructed on the bottle.
- If symptoms do not improve, contact your primary care provider or the Urology clinic nurse at (734) 936-7030. It is best to call first thing in the morning on a business day to expedite your treatment. Tell the nurse line about your preferred pharmacy, any new medications and any new allergies that you may have. This will help us treat you efficiently.
- Urinary Tract Infections can be serious. **Please contact the Urology Department immediately at (734) 936-7030 or proceed to your local urgent care center or Emergency Room if you experience any of the following symptoms:**
 - Fever above 100 Fahrenheit on a thermometer
 - Shaking
 - Chills
 - Nausea and vomiting
 - You are unable to eat/drink for several hours because of your symptoms

If you experience these symptoms after hours, a weekend, or during a Holiday, please seek immediate medical care at your local urgent care center or Emergency Room.

What can I expect when I call the Urology Clinic for a Urinary Tract Infection?

The Urology clinic at Michigan Medicine has a standardized approach to help people get relief from recurrent urinary tract infections quickly while balancing the risks of antibiotics.

1. We request that all patients with a concern for a urinary tract infection leave a **urine specimen** at a local lab or a University of Michigan “MLABS.” An order from your doctor (lab requisition) for the urine culture will be required.
 - It is important to know that processing of urine cultures at a University of Michigan lab (“MLABS”) usually takes about 48 hours, whereas outside laboratories can take up to 7 days to process your sample.
2. Generally, your doctor will wait for the **final urine culture result** before prescribing antibiotic. This is usually 48 hours after you drop off a urine specimen at the lab but can be longer depending on the lab. Occasionally, antibiotics may be prescribed before the urine culture returns, on a case-by-case basis.
 - Some bacteria are resistant (are not killed) by certain antibiotics. Waiting for the culture to result will help us identify the exact bacteria that is causing you to be ill and make sure that the bacteria is able to be killed by the antibiotic we prescribe.
 - It is important to wait for the final culture results because trying several antibiotics that are not effective increases your risk of developing bacteria that are resistant to common antibiotics (known as “Superbugs”.)
 - While you are waiting for your culture results, we recommend drinking plenty of water and using over the counter Phenazopyridine Hydrochloride 95 mg (brand name “AZO urinary pain relief”) or ibuprofen to help with your symptoms. Take these as is instructed on the bottles.

3. Once the culture results, you will be notified either via the patient portal or by telephone of a treatment course.
- If there are **no bacteria** in your culture, this means that bacteria are not causing your symptoms and no antibiotic will be prescribed.
 - If there are **one or two bacteria** in your culture, we will treat it appropriately by electronically sending a prescription to your preferred pharmacy.
 - If there are **multiple bacteria** in your culture, this is usually due to contamination from the skin around your urethra. We may recommend that you repeat the urine culture or possibly come to the clinic for a catheterized specimen by the nurse.
 - In rare circumstances, bacteria are resistant to oral antibiotics and can only be treated using intravenous (IV) medications. Please be aware that you may be asked to present to your local emergency room for treatment of certain antibiotic resistant bacterial urinary tract infections.

If you are taking a daily UTI prevention medication, do not take these **daily** preventative treatments at the same time as a treatment course of antibiotics for a urinary tract infection. Examples of the daily UTI prevention medications include:

- Hiprex (methenamine hippurate)
- Trimpex (trimethoprim)
- Keflex (cephalexin)
- Macrobid (nitrofurantoin)
- Other daily low dose antibiotic or are performing bladder irrigations with Gentamicin.

Frequently Asked Questions:

My urine is cloudy, dark and smelly. Does this mean I have an infection?

Not necessarily. Cloudy, dark or smelly urine is most often a sign of dehydration rather than an infection. Some foods and vitamins can also cause urine to change color and smell. If these are your **only** symptoms, we recommend that you try drinking at least 1.5 liters of water and seeing if the urine improves.

Am I eligible to call the Urology Clinic for symptoms of a urinary tract infection over the phone?

Active patients (who have been seen at an appointment in urology within 12 months) can use the urology nursing line. If you have not been seen in our clinic for an appointment within 12 months, we cannot safely treat your infection over the phone and **will request that you make an appointment within 48 hours of your phone call to be seen by a clinician.** Also, if you are contacting the clinic frequently or are experiencing frequent UTIs despite a current treatment plan, we will recommend an in-person appointment with a clinician to create an updated care plan to address your symptoms.

Can I see both my primary care doctor and my urologist for my infections?

While there is no manner to prevent you from seeing multiple doctors for the same problem, we recommend avoiding this practice. Keeping your UTI care and management with one clinic will help us provide you with a consistent and effective treatment plan. Please note: If you have gone to an outside clinic, provider, or other healthcare facility with your concern for UTI and they have ordered a urinalysis/urine culture – you will be asked to follow up with that provider to manager your concern. We cannot treat you for labs, tests, or radiologic procedures that were ordered by another provider.

Can I have a ‘standing order’ for a urine culture and self-start antibiotics?

We do not routinely order a ‘standing order’ for a urine culture nor do we routinely write for ‘self-start’ antibiotics *over the phone*. This is a discussion to have with your urology provider during your office visit.

My symptoms are better after treatment with antibiotics. Should I be checked for a urinary tract infection after completing my course of antibiotics, just in case?

No, we do not recommend checking for a urinary tract infection if you are not having symptoms.

Where can I get more information?

Urology Care Foundation provides patient education resources. You can visit their website at www.urologyhealth.org. Specific information regarding urinary tract infections can be found at the following sites:

- *What is a Urinary Tract Infection (UTI) in Adults?*
<https://www.urologyhealth.org/urologic-conditions/urinary-tract-infections-in-adults>
- *Urinary Tract Infection - Treatment and Antibiotic Tips* (download):
<https://www.urologyhealth.org/educational-materials/urinary-tract-infection-treatment-and-antibiotic-tips>

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Reviewed by: Giulia Lane, M.D.

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