

# Urinary Tract Support

Urinary tract infection (UTI) is one of the most common infections in women – affecting up to 40% of women in the United States in their lifetime.<sup>1</sup> UTI refers to an infection of the bladder, urethra, ureters and/or kidneys. Antibiotics are often used to treat the infection; however, some women get recurring UTIs that are resistant to antibiotics and can be very difficult to resolve. This is a result of both microbial resistance and the fact that biofilms are often involved.

UTIs often accompany vaginal infection, further complicating the clinical picture. Vaginal and urinary tract infections are most often caused by pathogens that originate in the digestive tract.<sup>2</sup>

A holistic approach should be considered that aims to:

- Address infection and biofilms in the urinary tract
- Support a healthy urethral and bladder mucosa
- Balance the vaginal and gut microbiomes
- Maintain an appropriate vaginal pH

## Epidemiology

UTIs are most often bacterial infections and affect 150 million people each year worldwide. In 2007, in the United States alone, there were an estimated 10.5 million office visits for UTI symptoms and 2-3 million emergency department visits.<sup>3</sup>

## Physiology/Diagnosis/Clinical Relevance

UTIs are divided into two categories – complicated and uncomplicated, with uncomplicated being the most common. They are defined by their location in the urinary tract, as well as the patient demographic. Recognizing the signs and symptoms of a complicated UTI is important because they have a higher risk of treatment failure and complications.<sup>4</sup>

<sup>1</sup> <https://www.ncbi.nlm.nih.gov/books/NBK470195/>

<sup>2</sup> <https://pubmed.ncbi.nlm.nih.gov/33935619/>

<sup>3</sup> <https://pubmed.ncbi.nlm.nih.gov/25853778/>

<sup>4</sup> <https://www.goodrx.com/conditions/urinary-tract-infection/complicated-uncomplicated-uti>



	Uncomplicated UTI	Complicated UTI
<b>Location</b>	Lower urinary tract (urethra and bladder)	Lower and upper urinary tract (kidney, ureter)
<b>Symptoms</b>	<ul style="list-style-type: none"> <li>• Pain or burning when urinating</li> <li>• Blood in the urine (also called hematuria)</li> <li>• Cloudy or smelly urine</li> <li>• Frequent and urgent need to urinate</li> <li>• Pain in the pelvic area</li> </ul>	<ul style="list-style-type: none"> <li>• All of the uncomplicated symptoms</li> <li>• Pain in the lower back or side</li> <li>• Fever and/or chills</li> <li>• Joint or muscle aches</li> <li>• Nausea and vomiting</li> </ul>
<b>Demographic</b>	<ul style="list-style-type: none"> <li>• Women (non-pregnant)</li> <li>• Children</li> <li>• Elderly</li> </ul>	<ul style="list-style-type: none"> <li>• Male</li> <li>• Pregnant women</li> <li>• Immunocompromised</li> </ul>
<b>Risk Factors</b>	<ul style="list-style-type: none"> <li>• Vaginal dysbiosis or infections</li> <li>• Wiping back to front post-void</li> <li>• Sexual activity</li> <li>• Hormonal fluctuations<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Urinary tract abnormalities</li> <li>• Indwelling catheters</li> <li>• Kidney stones</li> <li>• Unusual bacteria in the urinary tract</li> <li>• Overuse of antibiotics</li> <li>• Sexual activity</li> <li>• Hormonal fluctuations</li> </ul>

#### Serious long-term effects of UTIs include:

- Frequent recurrences
- Pyelonephritis
- Sepsis
- Renal damage
- Pre-term birth and complications
- *Clostridioides difficile* colitis caused by frequent antibiotic use<sup>3</sup>

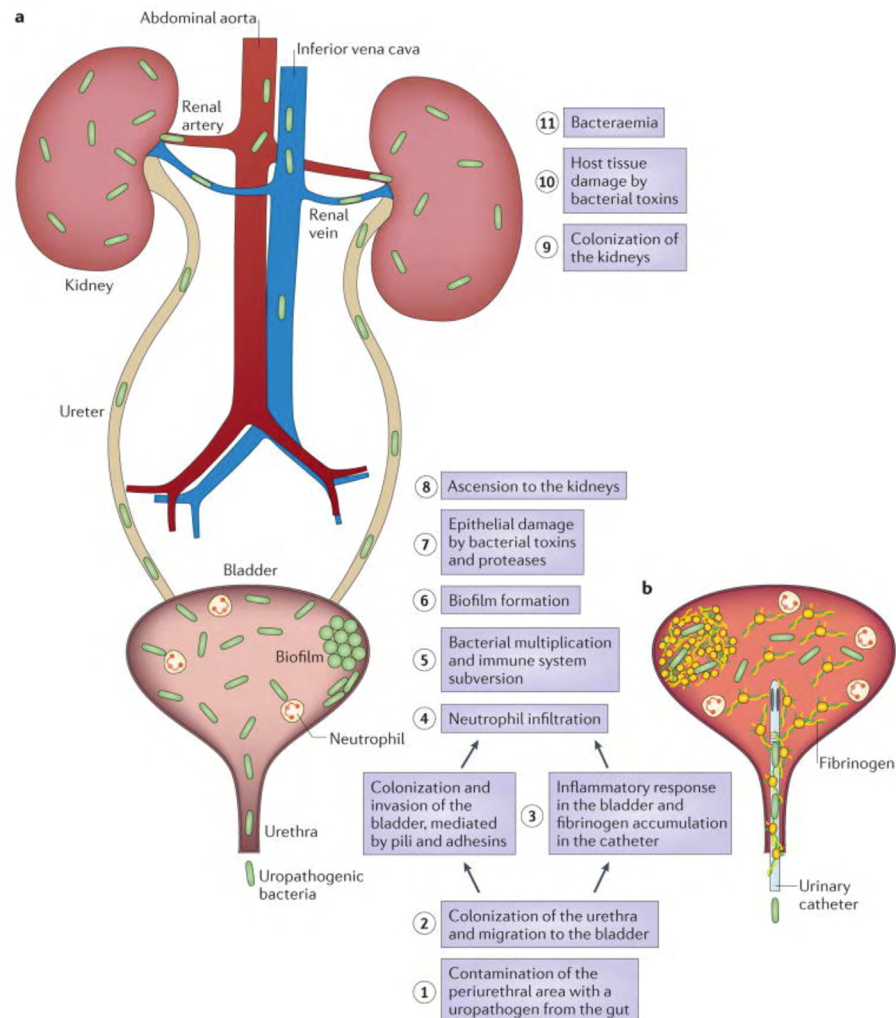
A range of pathogens can cause UTIs. However, most frequently, they involve uropathogenic *Escherichia coli*, originating from the gastrointestinal tract.



**Other causative agents include:**

- *Klebsiella pneumoniae*
- *Staphylococcus saprophyticus*
- *Enterococcus faecalis*
- *Group B Streptococcus (GBS)*
- *Proteus mirabilis*
- *Pseudomonas aeruginosa*
- *Staphylococcus aureus*
- *Candida spp.*

It is common practice to prescribe antibiotics based on symptoms alone, and antibiotic resistance is one of the leading factors in recurrent UTIs. This resistance, coupled with biofilm formation, may lead to chronic and complicated infections that are difficult to treat. Untreated UTIs or resistant strains can lead to upper UTI infections and kidney infections.



## Clinical Pearl #1 – The Gut-Urethra Connection

Uncomplicated UTIs begin when uropathogens that reside in the gut contaminate the periurethral area and colonize the urethra. Addressing gut dysbiosis may provide an important therapeutic intervention for resolving the root cause of recurring UTIs.

## Clinical Pearl #2 – Treat Biofilms

Uropathogens form biofilms and undergo morphological changes, which allows them to persist and cause recurrent infection. Treatment should focus on eradicating biofilms. See our [Biofilm Protocol](#) for more information.

## Clinical Pearl #3 – The Urinary-Vaginal Connection

Interestingly, high vaginal pH can increase susceptibility to getting UTIs due to their anatomical proximity to one another. Hormones play a role, as cycling women often notice an increase in symptoms around their period or as women going through menopause experience an increase in their vaginal pH – both due to naturally shifting hormone levels.

Using natural hormonal solutions such as botanicals or bioidentical hormone replacement (BHRT) can help to return their pH to lower levels and ward off UTIs.

### **Supporting vaginal pH in the following ways around this time can help to lower their risks for UTIs:**

- Avoid scented feminine hygiene products and harsh soaps
- If using a douche or suppository, consider the following instead of over-the-counter products which can raise the vaginal pH:
  - Apple cider vinegar or boric acid
  - Antimicrobial botanicals such as Biocidin®
- Change tampons or menstrual cup regularly
- Use barrier protection during sex
- Apply 1 pump of Biocidin® LSF, or take one capsule orally following sex
- Probiotics specific to vaginal health



## Lifestyle Recommendations

- Looking to support your treatment with simple yet effective lifestyle recommendations? Check out our [Lifestyle Guide](#).
- Basic hygiene measures:
  - Urinate after intercourse
  - Change out of wet swimsuits, workout clothes, or sweaty undergarments as soon as possible
  - Consider wearing cotton underwear and avoid thongs to prevent cross-contamination
- Avoid processed sugar to help reduce susceptibility and prolonged infections

## Therapeutic Plan Suggestions

Urinary Tract Infections/Interstitial Cystitis Support		
ACUTE	CORE PROTOCOL	
	Biocidin® LSF	3 pumps 4x/day until symptoms resolve. Can also be applied TOPICALLY post urination.
	G.I. Detox®+	1-3 capsules 2x/day as needed. 1 hour away from food, supplements, and medications.
	Olivirex®	2 capsules 2-3x/day. Take with food if nausea occurs.
	ADDITIONAL SUPPORT	
	G.I. InnerCalm™	1 stick pack mixed in water, 1-2 times daily, taken any time
CHRONIC	CORE PROTOCOL	
	Biocidin® LSF	Titrate to 2 pumps 2-3x/day
	G.I. Detox®+	2 capsules at bedtime. 1 hour away from food, supplements, and medications. Temporarily increase dose to 2 capsules 2-3x/day if <u>Herxheimer reaction</u> observed/worsens.
	Olivirex®	Titrate to 2 capsules 2x/day
	ADDITIONAL SUPPORT	
	G.I. InnerCalm™	1 stick pack mixed in water, 1-2 times daily, taken any time
For recurrent UTIs, consider 2 additional pumps of Biocidin® LSF orally or 2 capsules of Biocidin® as a suppository following sexual intercourse or after the last day of menses.		

## Additional Therapeutics/Supplements

- Unsweetened cranberry juice or cranberry pills
- D-Mannose
- Boric acid suppository
- Kava Kava

### Questions?

For clinical questions, email [clinical@biocidin.com](mailto:clinical@biocidin.com) or call 800-775-4140, x3.



\*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.