

# Support for Healthy Bladder Microbial Balance

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

## Bladder Health and Microbial Balance

The urinary bladder collects and expels urine, which is a liquid solution of metabolic waste and other toxins removed from circulation by kidney cells. It is normal for bladder urine to harbor microbes, though the abundance and diversity of microbial communities is less than in the gastrointestinal tract. Microbial communities are thought to play a role in supporting bladder homeostasis. The microbiota of the gastrointestinal tract, vagina, and kidney form an axis with the bladder. Much of the anaerobic bacteria in the bladder originates from the gut. In females, the proximity of the urinary system and the vagina facilitates shared microbial populations.

Common bladder concerns arise when nonresident microorganisms colonize and adhere to uroepithelial cells of the bladder. Pathogenic bacteria express specialized fimbrial adhesions that attach to glycoproteins and glycolipids of the epithelium. This can disrupt the lining of the urinary tract, permit bacterial invasion, and allow bacterial proliferation. *Escherichia coli* is the most common uropathogen.

A variety of factors can contribute to an imbalance in bladder microbial communities including glucose dysregulation, urine stasis, structural issues, and nerve conduction problems. Females, especially those who are pregnant and postmenopausal, are at increased risk. *Lactobacillus* is the most common genus in the urinary microbiota of healthy women.

Lifestyle and nutritional interventions can support healthy immune function and microbial balance in the urinary bladder and related organs.

## Supportive Lifestyle Practices

- Educate patients about how good hydration can support bladder health. In one year-long study, female patients who increased their fluid intake by 1.7 liters over their typical intake had 50% fewer urinary tract infections compared with those who did not increase their intake. Increased fluid intake can help prevent overgrowth of uropathogens through urine dilution and flushing of bacteriuria.<sup>1</sup>
- Educate female patients on the importance of not holding urine and voiding immediately after sexual intercourse. Bacteria in the bladder have been shown to increase 10 times after sexual activity and holding urine has been associated with an increased risk of infection.<sup>2</sup>
- Consider systemic or local estrogen replacement therapy for postmenopausal women with recurrent urinary tract infections. Estrogen supports *Lactobacilli* populations which help to decrease the vaginal pH and inhibit the growth of gram-negative bacteria such as *E.coli*.<sup>3</sup>

## Whole Foods Nutritional Recommendations

- Recommend vitamin C-rich foods — like citrus fruits, tomatoes, and pepper — to optimize tissue levels of this essential micronutrient and support microbial balance. Vitamin C accumulates in phagocytic cells like neutrophils and can enhance chemotaxis and phagocytosis. It appears to support urinary tract health through urine acidification and modulation of uropathogenic *E. coli* biofilms.<sup>4</sup>
- Recommend consumption of whole cranberry fruit juice which has been shown to inhibit the adherence of uropathogens like *E. coli* and *Proteus* to uroepithelial cells.<sup>5</sup>
- Encourage consumption of fermented foods rich in *Lactobacillus*, such as yogurt, kefir, and sauerkraut. These foods encourage healthy microbial communities in the gut and elsewhere. *Lactobacillus* has demonstrated the ability to displace pathogens adhered to the uroepithelium.<sup>6</sup>

# Dietary Supplement Regimen



## Cataplex® A-C-P

Suggested Use: **3 tablets per meal**

Cataplex® A-C-P supports maintenance of cells and tissues and supports a healthy immune system response function.\*

- Helps maintain healthy mucous membranes\*
- Contains a combination of key ingredients from Cataplex® A, Cataplex® C, and Cyruta®
- Excellent source of vitamin A
- Good source of antioxidant vitamin C



## UriCo Phytosynergist®

Suggested Use: **Dilute 5ml in water or juice 3 times daily**

UriCo Phytosynergist® contains Couch Grass, Echinacea, Licorice and Buchu. These herbs have been traditionally used in herbal preparations to:

- Support healthy mucous membranes within the urinary tract\*
- Support healthy urinary tract function\*
- Maintain healthy urinary tract tissue\*



## Cranberry Complex

Suggested Use: **1 tablet 3-4 times daily**

Cranberry Complex contains Cranberry, Crataeva, Buchu and Uva Ursi to provide urinary system support.\* These herbs have been traditionally used in herbal preparations to:

- Encourage healthy urinary tract function\*
- Support healthy bladder function\*
- Promote healthy mucosal surfaces in the urinary tract\*



## ProSynbiotic

Suggested Use: **3 capsules per day**

ProSynbiotic, a probiotic for everyday microbial support, is a synergistic blend of 4 probiotic microbes and a prebiotic fiber to support overall intestinal health.\*

- Contains inulin which is used by probiotic bacteria as food
- Supports a healthy gut microbial environment\*
- Supports the body's natural immune system response function\*

## Assessment of Bladder Microbial Health

## In Office/Physical Exam

- Vital signs
- Symptoms such as dysuria, frequency, urgency
- Key lab studies: Urinalysis and urine culture, complete blood count (CBC), comprehensive metabolic panel (CMP)
- Physical Exam: Palpation of the abdomen, suprapubic area, costovertebral angles
- Medical History: urinary tract concerns, pregnancy, menopause, gut health issues
- Imaging as indicated

## REFERENCES

1. Hooton, T. M., et al. (2018). JAMA internal medicine, 178(11), 1509–1515.
2. Hooton T. M. (2001). Int. J. Antimicrob. Agents, 17(4), 259–268.
3. Raz, R., & Stamm, W. E. (1993). The New England journal of medicine, 329(11), 753–756.
4. Hassuna, N. A., et al. (2023). BMC microbiology, 23(1), 112.
5. Ofek, I., et al. (1991). The New England journal of medicine, 324(22), 1599.
6. Kontiokari, T., et al. (2003). The American journal of clinical nutrition, 77(3), 600–604.