

Background

Paralympic athletes, such as athletes with spinal cord injuries, are at higher risk for developing urinary tract infections (UTIs) because of the impaired voiding and storing function of their urinary tract.

- Poor hygiene, inadequate hydration, and decreased immune function increase the risk of developing a UTI.
- Athletes may be at greater risk for developing UTIs during travel because of deliberate dehydration related to a lack of clean, accessible restrooms.
- Most athletes that present with bacteria in their urinalysis results do not present with any symptoms of a UTI. This is most often related to a non “clean catch” sample or bacteria getting in the specimen container from a catheterized urine sample.
- While antibiotics are very effective at treating a UTI, overuse can cause bacterial resistance. Therefore, preventing UTI’s is a better option long term.

Symptoms include:

- Acute or worsening fever
- Increased spasticity
- Pelvic discomfort or pain
- Urinary incontinence
- Fatigue
- Increased frequency of voiding

Key Point: UTIs can progress and symptoms may worsen if dehydrated because regular bladder emptying is necessary to keep the bladder clean and healthy.

Catheters

- The use of catheters puts individuals with bladder dysfunction related to neurologic damage (aka neurogenic bladder) at risk for developing UTIs because they can introduce pathogens if not handled hygienically or if re-used.
- **Intermittent catheterization:** preferred method by urologists, but poses the most risk for introduction to pathogens that cause UTIs.
- **Indwelling catheter:** has less risk for introduction of pathogens because it does not require changing as often as other types of catheters.
- It is important to fully empty your bladder because if not voided completely, bacteria can build up in the urinary tract.

Key Point: If using intermittent catheterization, maintain good hygiene by utilizing a fresh catheter each time to reduce UTI risk.

Prevention

- Stay adequately hydrated because regular urination helps keep the bladder clean.
- The use of nutrition interventions may be beneficial in preventing UTIs and does NOT lead to bacterial resistance. See table below.
- A diet rich in fruits and vegetables increases nutrients (i.e., vitamins, minerals, fiber, antioxidants) in the body that can boost your immune system to help decrease risk for UTIs.
- Foods that contain probiotics like yogurt, cottage cheese, miso, and kombucha can help to keep bacteria in the GI tract healthy, which boosts the overall immune system.

Nutrition Interventions

Intervention	Benefit	Mechanism	Form
Probiotics	May be beneficial for those wanting to prevent reoccurring UTIs	Aid in fighting off harmful bacteria, like E. coli, that cause UTIs, and promote the production of "healthy" bacteria in the urinary tract to boost immunity	<ul style="list-style-type: none"> • Oral probiotic capsules containing at least 1 billion CFUs • Lactobacillus strain has been found to be most beneficial • Increase consumption of probiotic-rich foods like yogurt, kombucha and kimchi
Cranberries	May be helpful in preventing UTIs if the pathogen is E. coli	An active substance in cranberries prevents E. coli from adhering to the urinary tract wall	<ul style="list-style-type: none"> • 100% pure cranberry juice - 8 oz. three times daily • Cranberry extract tablets - 500 mg • Dried or raw cranberries
D - Mannose	May decrease the incidence of UTIs, but only effective against certain pathogens	A sugar that gets filtered through the kidneys into the bladder, where it prevents bacteria from sticking to the walls of the urinary tract and causing an infection	<ul style="list-style-type: none"> • Oral supplement - 1.5 grams per day