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Cranberries Can Reduce Risk for Urinary Tract Infections

Analysis by Dr. Joseph Mercola Fact Checked | May 15, 2023

STORY AT-A-GLANCE

- Polyphenols found in cranberries may help reduce the risk of developing urinary tract infections (UTIs) and reduce the risk of symptomatic, culture-verified UTIs in women with recurrent UTIs
- Cranberry products had little to no benefit in elderly men and women in residential facilities, in pregnant women or adults with incomplete bladder emptying
- Data have conclusively demonstrated that a majority of the rising number of UTIs are caused by exposure to contaminated chicken. A close genetic match has been found between drug-resistant E. coli in humans and bacteria found in poultry
- Cranberries are rich in iodine, and a diet high in flavonoids, also found in cranberries, can lower the risk of heart disease, cancer and all-cause mortality, and have a sustained benefit on the cardiovascular system of healthy individuals
- Several preventive practices can reduce the risk of a UTI, including staying well-hydrated, taking showers instead of baths, urinating when you feel the need and avoiding feminine hygiene sprays; consider starting a UTI treatment at home

Cranberries are rich in polyphenols, which are metabolites that scientists believe are involved in plant defense. One group of polyphenols are proanthocyanidins, which are the compounds that give fruits or flowers a distinctive purple, blue or red coloring and belong to a subclass called flavonoids.[1]

Flavonoids are found in some fruits, vegetables, tea, wine and dark chocolate. These compounds have long been studied for their beneficial effects on health and are now an indispensable part of applications in the cosmetics, pharmaceutical, medicinal and nutraceutical industries.[2] Nearly every group of flavonoids acts as an antioxidant to protect the body against reactive oxygen species (ROS).

Proanthocyanidins found in cranberries are unique to the fruit and have very distinctive properties.[3] This distinction may, in part, be responsible for the results of a Cochrane Library systematic review of the literature[4] which continues to demonstrate that cranberries are effective in the effort to reduce urinary tract infections (UTIs).

Cochrane Review Finds Cranberries Help Prevent UTIs

Cranberries are native to North America and were used as a staple by Native Americans for centuries. The berries have a natural preservative, allowing sailors to keep them on board to prevent scurvy.[5] Native Americans once used them to draw poison from wounds, calm nerves and ward off indigestion. The berries have also been commonly used as a treatment for UTIs.

The berries are also known as bearberries since bears enjoy eating them, or bounce berries, since they bounce after being dropped when they are fresh. Although the fruit is little, they pack a nutritional punch, including a good source of fiber, vitamin C and a variety of antioxidants. Unlike other berries, they're naturally low in sugar, which is why many commercially prepared cranberry products contain added sweeteners.

The most recent Cochrane systematic review of the literature[6] included an additional 26 studies more than the last review, bringing the total number to 50 studies with 8,857 randomized participants. The results of this review showed cranberry products reduce both the risk of developing UTIs and the risk of symptomatic, culture-verified urinary tract infections in women with recurrent UTIs.

The review concluded that the data supported the “use of cranberry products to reduce the risk of symptomatic, culture-verified UTIs in women with recurrent UTIs, in children,

and in people susceptible to UTIs following interventions. The evidence currently available does not support its use in the elderly, patients with bladder emptying problems, or pregnant women."[7]

The review also included studies that compared cranberry products with probiotics and antibiotics. When compared to preventive antibiotic use, cranberry products had little or no difference in the risk of a UTI, but when compared against probiotics, cranberry appeared to lower the risk of symptomatic, culture-verified UTIs.

Gastrointestinal side effects were the most reported in the studies and the number of participants who reported GI upset did not differ between those taking the placebo and those taking cranberry products.

Epidemiologist Jonathan Craig from Flinders University, commented on the results, "This is a review of the totality of the evidence, and as new evidence emerges, new findings might occur. In this case, the new evidence shows a very positive finding that cranberry juice can prevent UTI in susceptible people."[8]

UTI Prevalence Rises With Increasing Antimicrobial Resistance

You may have learned that UTIs are primarily caused by the transfer of Escherichia coli (E. coli) during sexual contact with an infected individual or by transferring fecal bacteria from your anus to your urethra. However, more recent studies have conclusively demonstrated that a majority of the rising number of UTIs[9] are caused by exposure to contaminated chicken.[10]

Factory-farmed chickens are a source of most antibiotic-resistant UTIs. This can be traced back to the routine use of antibiotics for growth promotion and infection prevention for animals kept in close quarters, which has increased antibiotic resistance. Data[11] gathered from 2005 to 2007 matched drug-resistant E. coli strains from supermarket meat to human E. coli infections.

Research[12,13] has since confirmed humans can develop antibiotic resistance by eating poultry treated with antibiotics. Bacteria from conventionally raised chicken, and in

those who ate the chicken, were found to be more prone to developing resistance against Synercid, a strong antibiotic used to treat Vancomycin-resistant enterococcus faecium.

Researchers have also found a close genetic match between drug-resistant E. coli in human patients and bacteria found in poultry. In a 2018 study,[14] 79.8% of chicken, pork and turkey samples from stores in Flagstaff, Arizona, were contaminated with E. coli.

Blood and urine samples from patients at a major medical center in the area revealed E. coli in 72.4% of those who were diagnosed with a UTI. A strain of E. coli known as E. coli ST131 showed up in the meat samples and the human UTI samples.

"Our results suggest that one ST131 sublineage — ST131-H22 — has become established in poultry populations around the world and that meat may serve as a vehicle for human exposure and infection," the researchers noted,[15] adding that this E. coli lineage is just one of many that may be transmitted from poultry and other meat sources to people.

In essence, the research showed that eating chicken treated with antibiotics can cause you to develop resistance to the last known line of defense against bacterial pathogens, which is a steep price to pay for inexpensive meat. By 2023, multidrug-resistant E. coli was found in 68.3% of meat samples in Spain.[16]

Factory Farmed Chicken Linked to UTI Mechanism of Infection

The featured study found that cranberry products had a significant impact on preventing UTIs in women. Women are also more prone to urinary tract infections, in part because of a shorter urethra. This is the tube that carries urine from the bladder to the outside of the body. The prostate gland in adult men[17] produces a bacterial growth inhibitor secreted directly into the urinary system, which may help prevent urinary tract infections.

Research in 2015[18] demonstrated that while several pathogens can trigger a UTI, the most common are E. coli, Klebsiella pneumoniae, Proteus mirabilis, Enterococcus

faecalis and Staphylococcus saprophyticus. Of these, about 90% of UTIs are caused by E. coli,[19] which is normally found in the intestinal tract.

E. coli only triggers an infection when it's present in high numbers in areas of the body where it should not be, like the urinary tract system. The usual signs and symptoms of a UTI[20] include frequent urges to urinate and burning with urination, lower abdominal pain, blood in the urine and or cloudy or foul-smelling urine.

Your body cannot flush E. coli out of the body with urine because the bacteria are covered with finger-like projections called fimbria.[21] These are made of an amino acid sugar complex that makes them sticky. The stickiness allows the bacteria to adhere to the wall of the bladder and increases the potential for the bacteria to work its way up to the kidneys. At this point, the situation can become serious.

A complication of untreated or unsuccessfully treated UTIs is sepsis. When the infection is caused by a drug-resistant bacterium, sepsis becomes more likely. An infusion of vitamin C, hydrocortisone and thiamine has been shown to impressively reduce mortality from sepsis, but many health care professionals are still unaware of this revolutionary treatment.[22]

A UTI in an older individual can trigger behavioral changes, such as agitation, social withdrawal, mental confusion and even hallucinations. According to Dr. Amanda Smith, medical director at the Byrd Alzheimer's Institute at the University of South Florida, symptoms of UTI in the elderly actually tend to be primarily behavioral,[23] which can result in delayed diagnosis and treatment.

Flavonoids Each Day Help Keep the Doctor Away

After many years of research, scientists have found that the nutrient value in cranberries is associated with more than preventing urinary tract infections. Since your body cannot produce iodine, you must consume it from your food. While an iodine deficiency is reemerging as a public health threat,[24] it is also completely preventable in the Western world.

Scientists are only just beginning to understand the relationship that iodine has with more than the thyroid gland. Cranberries are a rich source of iodine. I suggest consuming fresh, organic cranberries or 100% cranberry juice with no added sugar. If you have urinary tract stones[25] or take blood thinning medication like warfarin,[26] it's important to avoid cranberries.

Research data[27] have also determined that cranberries can have a sustained benefit on the cardiovascular system of healthy individuals. In an initial pilot study with five young men, the data showed cranberry powder improved flow mediated dilation,[28] which is a noninvasive assessment of endothelial function proven to be an effective prognostic indicator of future cardiovascular events.[29]

Following the pilot study, 45 healthy men consumed cranberry powder equivalent to 100 grams of fresh cranberries for one month. In just two hours after the first dose, researchers measured a significant Improvement in flow mediated dilation,[30] which was duplicated at the end of the study. They also identified cranberry metabolites that could be used to predict the positive effects they found in the flow mediated dilation measurements.

A 23-year study[31] published in 2019 also demonstrated that a diet high in flavonoids can lower the risk of heart disease, cancer and all-cause mortality. The researchers studied the diet of 56,048 Danish people and found even moderate consumption of foods high in flavonoids was inversely associated with all-cause, cardiovascular and cancer mortality. After reaching 500 mg per day, the association between intake and lower risk plateaued.

In 2015,[32] researchers observed that the more flavonoid-rich foods people ate, the less apt they were to develop heart disease, experience a nonfatal heart problem or die from heart disease. A 2013 meta-analysis[33] demonstrated the incidence of breast cancer was “significantly decreased” in women who reported high intake.

Among the nutrients packed into cranberries is resveratrol. This is another phytochemical that has antioxidant, anti-inflammatory and anticarcinogenic properties. Resveratrol helps protect against age-related diseases, including improving blood flow

to the brain, suppressing inflammatory effects in microglia and astrocytes[34] and protecting against vascular dementia.[35]

Preventing and Treating a UTI at Home

Prevention is, of course, your best option. Fermented foods such as kefir, sauerkraut and other fermented vegetables are great for your overall health, including your urinary system. Women can take some specific hygiene steps to maintain a healthy urinary tract:

Drink plenty of pure, filtered water every day	Urinate when you feel the need; don't put off going to the bathroom
Wipe from front to back to prevent bacteria from entering your urethra	Take showers instead of tub baths; avoid hot tubs/Jacuzzis
Cleanse male and female genital areas prior to sexual intercourse	Avoid using feminine hygiene sprays, which may irritate your urethra
Use a bidet	

As mentioned earlier, the fimbria (fingerlike projections) of E. coli is made of a sticky glycoprotein called lectin, which is why the bacteria are so hard to flush out. It's not impossible, however, even without an antibiotic. While antibiotics are typically the go-to treatment, you may want to start with a D-mannose supplement.[36]

Mannose is produced by your cells and covers the internal lining of your urinary organs. The lectin on the bacteria's fimbria binds to mannose. This is why the bacteria adhere to the walls of your urinary system. When you take D-mannose, the E. coli adheres to the mannose in your urine and is then flushed out when you urinate. As the bacterial load is reduced, they're more easily overtaken by agents of your immune system.

According to Dr. Jonathan Wright, medical director of Tahoma Clinic in Tukwila, Washington, infections caused by a bacterium other than E. coli may be eliminated by taking a saturated solution of potassium iodide (SSKI). Both treatments are recommended by Wright, who is also author of the book, "D-Mannose and Bladder Infection: The Natural Alternative to Antibiotics."

For UTIs caused by bacteria or fungi other than E. coli, Wright suggests taking 15 drops of SSKI in water every three to four hours for two days (three days maximum). In order to know which of these treatments would work best, you'd need to perform a culture test to identify the bacteria responsible for your infection.

Alternatively, Wright suggests taking D-mannose first, and if significant improvement doesn't occur, move on to SSKI. A culture test is also advisable when symptoms do not quickly abate to rule out a drug-resistant infection, as this will require close medical supervision to avoid serious complications.

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