The effect of cranberry proanthocyanidins (PACs) is dependent on the dose. Higher doses are significantly more effective at maintaining urinary health.

A new study supports the theory that at least 36 milligrams of proanthocyanidins (PAC) are needed to reduce the adhesion of E. coli bacteria to urinary tract walls. A lower dose proved to be less effective.

However, according to NutraIngredients:

“On the other hand, a higher dose of 72 mg was even more efficient at protecting against bacterial adhesion in the urinary tract, according to findings published in the open-access journal BMC Infectious Diseases.”

Source: NutraIngredients June 1, 2010

Dr. Mercola’s Comments:

Urinary tract infections affect up to half of all women over the course of a lifetime and are responsible for 8 million doctor visits each year.

Women are more prone to urinary tract infections than men, in part because of their shorter urethras. Adult men have another factor going for them – a bacterial growth inhibitor injected directly into their urinary system by their prostate glands.

You’ve probably heard that drinking cranberry juice can be helpful in supporting a healthy urinary tract. Studies do show that cranberry juice can help by promoting a healthy flora. What many studies fail to mention is that most cranberry juice is loaded with fructose, a monosaccharide (simple sugar) that can potentially lead to health problems.

So, in effect, you are trading good urinary health for blood sugar instability, stress on your liver, and increased uric acid levels that can raise your blood pressure, along with other negative health sequelae. That’s why I don’t recommend cranberry juice. It’s not a beneficial trade-off.

Honeymooners Rejoice!

But there is a great discovery that has come from the cranberry juice-urinary tract connection. The active ingredient in cranberry juice responsible for its benefit to your urinary system has been identified and isolated – and that is D-mannose.

D-mannose can be derived from berries, peaches, apples, and some other plants. Pure D-mannose is amazingly 10-50 times stronger than cranberry, non-toxic and completely safe, with NO adverse effects.

Why drink sugary cranberry juice if you can get the active ingredient instead, with none of the damaging metabolic consequences? D-mannose can help cure more than 90 percent of all UTIs within 1 to 2 days!

The condition euphemistically called “Honeymoon Cystitis” is now preventable – no abstinence required.
D-Mannose: An Example of a Healthful Sugar

D-Mannose is not a drug. It’s a naturally occurring sugar, closely related to glucose and you even produce it in your body. And very importantly, it does NOT produce the metabolic stresses that fructose does because it’s more like glucose, which every cell in your body is designed to use.

Your body absorbs D-mannose much more slowly than glucose, and the D-mannose does not convert to glycogen or get stored in your liver. Only very small amounts of D-mannose are metabolized, so it doesn’t interfere with blood sugar regulation.

Most of the D-mannose is filtered through your kidneys and routed to your bladder, then quickly excreted in your urine.

D-mannose helps to nourish your healthy flora because it doesn’t affect “friendly” bacteria. It doesn’t kill any bacteria – it just renders them unable to stay in your urinary tract.

When you take antibiotics for a urinary tract infection (UTI), the good bacteria are killed along with the bad, which is why you can develop secondary yeast infections and digestive problems.

But how can a natural sugar combat a UTI? The answer lies in how bacteria adhere to the inside of your bladder.

A Sticky Situation to Control UTIs

More than 90 percent of all UTIs are caused by Escherichia coli (E. coli), which is normally found in your intestinal tract. Problems only arise when this ordinary bacterium is present in high numbers in places where it shouldn’t be – like your urinary system.

It should be noted that this is NOT the same E. coli associated with killer outbreaks in unsanitary food processing plants – that is a mutant variety, probably created by antibiotic overuse in our country. This E.coli is typically a normal part of your gut flora and typically is accidentally transferred to the bladder through lapses in optimal hygiene.

When normal E. coli gets into your urinary tract and multiplies, you experience the usual signs and symptoms of a UTI:

- Burning with urination
- Frequent urges to urinate
- Lower abdominal pain or aching
- Blood in your urine (sometimes, but not always)
- Cloudy urine

You might be wondering, if the bacteria are in my urine, why doesn’t my body simply flush them out when I urinate?

As it turns out, the cell walls of each E. coli are covered with tiny fingerlike projections called fimbria allowing them to “stick” to the inner walls of your bladder and even work their way upward to your ureter and kidneys. Because they cling to your urinary organs, they can’t simply be washed out.

These little fingerlike projections are made of an amino acid-sugar complex, a glycoprotein called lectin, which makes them sticky.
Lectin on the bacteria’s fimbria binds to mannose, which is produced by your cells and covers the internal lining of your urinary organs. This mannose allows the bacteria to adhere to you – like Velcro.

Lenard and Wright describe what happens when you take D-mannose:

“Now imagine what would happen to E. coli in the urinary tract if those sweet little mannose molecules they crave were present not just on the surface of the epithelial cells but surrounding them in the urine as well. The E. coli couldn’t turn around without bumping into D-mannose “just floating around” in the urine.

Unable to resist the tasty bait they suddenly find themselves swimming in, they would latch onto the nearest mannose molecules, and happily sail off into the porcelain sunset. Those few E. coli left clinging to mannose molecules on cells then become easy prey for white blood cells and other agents of the immune system.”

Research Backs up the Therapeutic Value of D-Mannose

Physicians who employ natural therapies have been using D-mannose since the mid-1980s with great success. Laboratory studies have now confirmed what these physicians and patients have known for many years.

Consider the three following studies:

* Rats whose urinary tracts were inoculated with E. coli were found to have significantly lower levels of bacteria in their urine when given D-mannose than rats given the inoculation without the D-mannose.
* E. coli infected rats given a mannose-like substance showed a 90 percent reduction in bacterial attachment in their urinary tracts.
* Research in humans shows that ingesting D-mannose significantly raises blood mannose levels, which is what is needed to raise urinary mannose levels.

Antibiotics Should Be Your LAST Choice

Why avoid the use of antibiotics for a UTI whenever possible?

There are are a number of very good reasons:

1. Antibiotics are highly overused in humans and pets, as well as in livestock, and this careless overuse has created antibiotic-resistant superbugs like MRSA and antibiotic-resistant tuberculosis.
2. Antibiotics kill the good bacteria, along with the bad, as described earlier, setting you up for fungal infections, diarrhea, and other digestive trouble.
3. Many antibiotics have terrible side effects and can cause dangerous allergic reactions.
4. Antibiotic treatment does not successfully kill all the bacteria participating in the infection and may, in fact, encourage many of the bacteria to persist in a resting state.
5. Using unnecessary antibiotics with children prevents them from developing their own natural defenses as their immune systems mature.
6. Physicians often prescribe newer, very expensive antibiotics for UTIs instead of “old gold standards,” which is a strain on your pocketbook.

The majority of urinary tract infections can be cured when symptoms first arise, or prevented altogether by practicing the natural measures outlined in this article.
Occasionally, despite preventative measures, a kidney infection can develop. If you suspect you have a kidney infection – especially if you have a fever – it might be necessary to see a physician and employ an antibiotic so the infection does not spread to your kidney and cause some very serious problems.

**How to Recognize a Kidney Infection**

Urinary tract infections can affect any part of your urinary tract, but the lower urinary tract is far more common – specifically, your bladder (cystitis) and urethra (urethritis). Once in a while, a UTI can progress up to the kidneys (nephritis or pyelonephritis), which is a more serious infection and warrants a trip to your health care provider.

Kidney infections can cause permanent kidney damage and kidney failure if not promptly resolved, or can spread to your bloodstream.

In addition to the classic UTI symptoms listed earlier, symptoms of kidney infection can include:

* Fever
* Back, side (flank) or groin pain
* Abdominal pain

If you do use an antibiotic, it is important to take a high quality, high potency probiotic to replace the beneficial bacteria killed by the antibiotic. It is advisable to take the probiotic as far from the antibiotic dose as possible. For example, if you take your antibiotic at 8am and 8pm, take your probiotic at 2pm to minimize the affects on it from the antibiotic.

**Steps to Promoting a Healthy Urinary Tract**

As a woman, there are some specific hygiene steps you can take to maintain a healthy urinary tract:

* Drink plenty of pure, filtered water every day
* Urinate when you feel the need; don't resist the urge to go
* Wipe from front to back to prevent bacteria from entering your urethra
* Take showers instead of tub baths; avoid hot tubs/Jacuzzis
* Cleanse your genital area prior to sexual intercourse
* Avoid using feminine hygiene sprays, which may irritate your urethra
* Use only white unscented toilet paper to avoid potential dye reactions, or better yet—a bidet

In addition, a healthy diet is key in supporting your urinary tract.

Research shows that frequent consumption of products containing probiotic bacteria can promote good urinary tract health – fermented foods such as kefir, sauerkraut and other fermented vegetables are great for your overall health – including your urinary system.