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## PRODUCTS

The Life Extension Foundation regularly profiles and evaluates important new products on the market, often making them available directly to you, as well as to Foundation members at a discount via the Life Extension Buyers Club.

### Urinary Tract Infections Natural Solutions

What's a UTI? Ask a man on the street and you may get a blank stare. You may even get the "I'm not sure. . . something to do with a UFO?" response. But ask any woman and she'll know exactly what you're talking about. UTIs (or urinary tract infections) represent a down-to-earth problem that affects more than 20 million in the U.S. annually.

No woman ever forgets the first time she experienced a full-blown UTI. The burning, the frequency, the urgency. . . the need to find a lavatory right away! And sometimes urination is accompanied by excruciating pain. Yes-for most women, the symptoms of urinary tract infection make themselves known loud and clear.

Most men do not realize how common UTIs are in women, because men don't get UTIs as often as their female counterparts. Even when they do, men don't usually experience many symptoms. A man may not even be aware that he has a urinary tract infection. Aware or not, UTIs are a common and potentially serious problem for men as well as women.

While younger men infrequently get UTIs, a recent article in the *Johns Hopkins Health Letter* states that unrecognized UTIs are frequent among men over 50. Further, there are many medical reports linking UTIs to male prostatitis, so men should be very concerned, too.

Next to respiratory infections, UTIs are the most commonly occurring infections among women. And four out of five women who get a UTI will experience another such infection during their life. Some women have continually recurring bouts with UTIs. For women, urinary tract infections are a significant health challenge at all stages of their lives.

For example, the most common complication of pregnancy is a UTI. When a UTI occurs at this time, it has the potential to become very serious, even life threatening, and can cause premature delivery. Pregnancy brings an increased risk of both bladder infection (cystitis) and kidney infection (pyelonephritis) because the growing fetus presses on the bladder, which may cause the bladder not to empty completely.

Any time urine is left to stagnate in the bladder, the chance of infection increases. (This is a reason why older men, who may be suffering from voiding disorders, are often at risk for UTIs.)

Menopausal and perimenopausal women are also particularly susceptible to UTIs. As the estrogen level decreases, tissues in the urinary and reproductive tracts thin out and become more easily infected. The elderly, especially catheterized patients, are at high risk for UTIs. And urinary tract infections can be a contributing factor to incontinence, a condition that affects many mature and elderly women.

### What is a UTI, and is it serious?

A UTI is a bacterial infection in any part of the urinary tract, but most often refers to a bladder or kidney infection. Although urine contains fluids, salts and waste products from the blood, it is normally sterile. When bacteria enter the bladder or kidney and multiply in the urine, what you get as a result is a urinary tract infection.

The very familiarity of this malady in women tends to minimize it-not only in the minds of those afflicted, but also in the busy medical offices where they go for treatment. For doctors, UTIs are a ubiquitous problem. Antibiotics are frequently prescribed-



sometimes resulting in a round-robin of rotating medicines, trying to keep one generation ahead of mutating bacteria. Antibiotics may be needed to treat an acute urinary tract infection, but they do not represent a long-term solution for most people.

Whether a UTI is a one-time medical condition or a chronic series of painful episodes, each occurrence carries with it the potential to move into a serious, possibly life-threatening kidney infection. In some Third World countries, urinary tract infections are not generally recognized or diagnosed. But just because a woman is unaware of the problem, untreated UTIs can be just as serious. All women, whatever their nationality, have a predisposition to UTIs.

### **What causes UTIs?**

The organism most often responsible for UTIs is *Escherichia coli* (*E. coli*), a bacterium normally found in the digestive tract and present on the skin around the rectal area. Other bacteria can also be involved, but *E. coli* is by far the most prevalent cause (more than 80%) of UTIs.

Female anatomy predisposes women to infection because the urethra opening is located very close to the anus, a common source of bacteria. These bacteria can migrate across the perineum—the narrow band of flesh between the anus and the vagina—to the urethra. This bacterial invasion can result in acute cystitis, the most common urinary tract infection. A more rare condition is called urethritis, in which only the urethra is inflamed. When bacteria from the bladder ascend to the kidneys via the ureters, they can cause a more serious infection called pyelonephritis. While men do get UTIs, their physical anatomy makes infection less likely. The male urethra is much longer and secretions from the prostate gland present a better barrier to this type of infection.

### **How did I get a urinary tract infection?**

This is a frequent question among women, especially when they experience recurrent infections, as many women do. UTIs occur for many reasons. They are not considered to be communicable. UTIs affect women of all ages and lifestyles, including the very young and the elderly.

Since sexual activity seems to activate infections in many women, there is a common misconception that UTIs result from transfer of infection from a sexual partner. In fact, teenagers and young women often have their first experience of a UTI when they become sexually active.

Here's why. During sex, bacteria from the vaginal area may be pushed into the urethra. From there, the bacteria move upward where they may irritate and infect the bladder lining. Additionally, tender tissues in the vaginal area may also become infected.

However, some females develop a UTI long before they become sexually active. Many pediatricians feel that UTIs are widely unrecognized among children.

Many common lifestyle practices contribute to a susceptibility to UTIs: the use of a diaphragm or spermicide greatly increases chances of developing an infection. And personal hygiene following bowel movements may also contribute to the problem. As if all these things weren't enough, women with certain blood types may suffer from recurrent UTIs. A recent study by the National Institutes of Health postulates that women with these blood types are more prone to UTIs because the cells lining the vagina and urethra may allow the *E. coli* bacteria to attach more easily.

Further research is being undertaken to identify other women with a high risk for UTIs. For example, diabetics are already recognized as having particular susceptibility to infection, with a greater potential for serious complications.

### **What's a woman to do?**

Your grandmother knew. "You have that pesky problem again? Drink some cranberry juice, dear." Yes, the ingestion of cranberry juice as an herbal self-medication for urinary tract infection is part of woman's lore.

The awareness of cranberries as having strong antibiotic-type activity goes back to the Pilgrims—and even before. The Indians of Cape Cod used cranberries to cure meats, dress injuries, and treat arrow wounds. They passed this knowledge on to the early settlers in Massachusetts, who also came to use the bright, red berries as a sweetened sauce for meats, and to make cranberry tarts, jams and jellies.

When the settlements turned into thriving towns, cranberries remained popular, and the health and medicinal benefits continued to be recognized. As trade with Europe grew, cranberries were served to sailors because the high vitamin C content in the berries

helped to prevent scurvy.

In the 17th century, other documented medical applications included the relief of stomach ailments, liver problems, blood disorders and cancer. (Current research indicates that this early perceived anti-cancer property of cranberries may have been well founded).

The Cape Cod Indians called this bright red berry "ibimi" (meaning "bitter berry"). If you've ever tasted unsweetened cranberry juice, you know that the name is very appropriate.

But as the herb became more widely used, the colonists wanted to give it an English-derived name. The pink blossoms of the low growing vines looked like the head of a crane. Thus, they started calling the red berries "crane berries." Over time, this evolved into cranberry, part of Americana and a harbinger of Thanksgiving.

### **Cranberries under the microscope**

Previously, it was widely believed that the urinary tract health benefits of cranberry were due to cranberries making the urine more acidic. This old wife's tale still persists (a newly released encyclopedia of women's health identifies the beneficial basis of cranberries in this way) but is no longer considered valid. There is now substantial scientific evidence to refute this theory.

In a body of work undertaken separately and in parallel in both the United States and Israel, studies have now established that:

- Bacterial adherence to the walls of the urinary tract is an important prerequisite for the colonization of *E. coli*. The bacteria adhere to these cells using hair-like fimbriae (or pili) that protrude from their surfaces. These fimbriae attach to specific monosaccharide or oligosaccharide receptors on urothelial cells. The fimbriae are designated either Type 1 (mannose sensitive) or Type P (mannose resistant).
- Through adherence to cells in the urinary tract, *E. coli* can withstand cleaning mechanisms and overcome nutrient deprivation, leading to infection and toxicity.
- Cranberry contains a potent factor that affects and disables the very cell structure of *E. coli*, thus inhibiting the ability of this bacteria to adhere to the wall of the urinary tract.
- This factor in cranberry is composed of certain condensed tannins, or proanthocyanidins, which collectively prevent *E. coli* from colonizing in the urinary tract.

In 1994, a landmark study at Harvard Medical School demonstrated that regular use of cranberry juice significantly reduced bacterial growth in the urinary tract, as well as the body's response to infection in the form of white blood cells. This study added impetus to the familiar woman's lore about cranberries and their benefits against UTIs.

### **Needed: a better cranberry supplement**

Self-medication with cranberry juice cocktail is a common approach to dealing with a UTI-and has often been recommended by physicians as an adjunct to antibiotic treatments. But this could certainly be termed the old-fashioned route. First of all, cranberry juice cocktail contains only 27% cranberry juice; the remainder is sweetened water. While it may be somewhat effective against UTIs, drinking large amounts of this super-sweetened cocktail has many drawbacks in our health-conscious society-too much sugar, all those calories. This isn't the preference of most women. For diabetics, this becomes an impossible prescription.

An obvious alternative would be a cranberry supplement. The most potent cranberry supplements to date have provided the equivalent of sixteen 8 oz glasses of cranberry juice in two capsules. The recommended dose is one capsule every 12 hours. These highly concentrated cranberry supplements have shown efficacy in preventing and facilitating treatment in those suffering from UTIs.

There are also low concentration cranberry extracts that require three to eight tablets or capsules a day in order to obtain enough of the active constituents cranberry needed to fight off UTIs. Some of these cranberry supplements are so diluted they have little or no bioactive values, and therefore fail to provide an effective shield against UTI.

The ultimate way of treating UTIs is to prevent bacterial adherence to the urinary wall. Therefore, a low-cost, one-a-day cranberry extract supplement would be ideal for women who are at risk for developing a urinary tract infection. For most people, it's far easier to remember to take one pill a day rather than to take one pill every 12 hours.

### **Introducing the nutraceutical cranberry**

Given the widespread occurrence of UTIs, their potential seriousness, and the urgent need for relief to those afflicted-plus women's

desire to ward off UTIs through a preventative maintenance program there has been a major need for a better cranberry supplement to enter the market.

Now, a super-charged supplement that utilizes the complete cranberry is available. The trade-name of this extract is Cran-Max™ and its state-of-the-art technology is patent-pending by the Cape Cod Biolab Corporation.



Unlike many low-cost cranberry supplements made from diminished juice extracts, this nutraceutical cranberry supplement contains all of the synergistic, full-spectrum activity of the entire cranberry herb—the fruit, seeds and skin and fully vitalized juice.

Additionally, Cran-Max has a unique, all-natural delivery system that protects its cranberry bioactives from degradation while traveling through the stomach, and provides a sustained release of its powerful cran factor to the sites of action in the urinary tract. This means that the E. coli bacteria are continually barraged by the anti-adhesion, deactivating cranberry components over an extended period of time. By comparison, ordinary supplements may deliver a small, insufficient amount of cran factor, and the E. coli quickly recover and continue their colonization.

The extended release feature of Cran-Max holds the E. coli at bay. Colony after colony of the bacteria are rendered helpless to adhere to the urothelial walls, and are washed away in the normal cleaning process of the urinary tract.

This new maximized cranberry, in contrast to the ordinary cranberry extract supplements with their recommended usage of two to eight capsules per day has been proven clinically effective at a dosage rate of just one 500 mg. capsule per day.

### **The clinical outcome studies**

In a recent pilot study conducted by urologist Ronald Wheeler, 38 women of varying ages, all with symptoms of chronic urinary tract infection and urethritis, were given one time-release capsule a day. A standard questionnaire, consistent with guidelines developed by the American Urologic Association, was used to rate nine symptoms. Included were such questions as, "How many times do you get up during the night to urinate? How often do you have the sensation of not emptying your bladder?" The questionnaire also contained a scoring method used for rating, on a 1 to 5 level, sensations of burning, stinging and pain experienced during urination. Study results were extremely impressive, showing a 100% improvement for all participants in respect of burning, stinging and pain; a 60% improvement in urgency; and a 44% improvement in frequency.

In a recent interview, Dr. Wheeler stated: "I can tell you that over 90% of the women in the study noted a significant improvement in all nine categories. At this point in time, I haven't found one woman in the study who hasn't experienced significant improvement. It's a tremendous response."

Additionally, other clinical outcome studies are in progress. The results from this research to date is affirming the effectiveness of Cran-Max as the paragon of cranberry concentrate supplements. According to Dr. Wheeler, "One of the best things about this maintenance program is the convenience. This maximized formula takes just one 500 mg capsule a day. One capsule a day becomes part of a woman's daily regimen, giving her a powerful program for maintaining a healthy urinary tract."

### **An important plus:**

A possible answer to being able to use fewer antibiotics

Perhaps the most significant aspect of this Cran-Max, with its maximum potency, is that it suggests the possibility of reducing the amount of antibiotics used in dealing with UTIs.

The press is full of stories about an ever-increasing resistance of bacteria to antibiotics being used. A woman with recurrent UTIs is likely to be given a rotating series of prescribed antibiotics by her doctor in an effort to outwit newly resistant bacterial strains. Continued use of antibiotics may become a real health consideration. This tends to have an effect on the friendly flora in a woman's body, which can lead to additional health problems.

Initial indications are that Cran-Max has a prophylactic value to doctors for treating women vulnerable to recurrent UTIs. Since cranberry does not actually kill E. coli, but instead only affects the bacteria's ability to colonize in the urinary tract, it is believed unlikely that the bacteria will genetically seek to develop a resistance to cranberry extract as they would to antibiotics.

Used in a daily maintenance program, just one Cran-Max capsule a day can likely head off many UTIs before they occur, thus offering a preventative that can also cut down on the need for a trip to the doctor's office and an ensuing antibiotic being prescribed.

For generations, women have been told by their grandmothers that cranberry is a helpful herbal remedy for warding off urinary tract infections. Now, women everywhere can have a simple, one-tablet a day, maintenance product that works effortlessly, every day, to help maintain a healthy urinary tract.

The new, maximized cranberry promises to be a potent weapon against that "pesky problem." Your grandmother would like that.

-G. Heidi Cannon

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