

# **Effects of Caffeine and Coffee on Interstitial Cystitis and Cystitis**

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Coffee, regular or decaffeinated, is a well-known bladder irritant and can cause tremendous discomfort for people who suffer from urinary tract disorders. Caffeine, because it is a Central Nervous System stimulant, stimulates spasm in sensitive nerves and bladder muscles. Caffeine is also a diuretic. The acidity of both regular and decaffeinated coffee is highly irritating to the bladder and can contribute to the conditions that lead to cystitis. For people who have interstitial cystitis (IC), drinking just one cup of coffee, even decaffeinated coffee, can trigger hours of pain and agonizing trips to the bathroom.<sup>1</sup> In addition, caffeine stimulates the production of cortisol, epinephrine, and norepinephrine, stress hormones linked to aggravating the bladder irritation common in IC.

## **Interstitial Cystitis:**

Interstitial Cystitis (IC) is a puzzling bladder disorder that is characterized by “urinary frequency, urgency, nocturia, and suprapubic (bladder and/or pelvic) pressure and/or pain in the absence of any identifiable cause, such as a bacterial infection.”<sup>2</sup> Research has yet to discover a distinct cause, and diagnosis may take months or years as physicians rule out other urinary tract disease such as infection or cancer, frustrating patients and clinicians alike. The average IC patient sees several doctors before diagnosis. Examination of the bladder wall by cystoscopy, generally done under anesthesia, often reveals inflammation and ulcerations, but absence of such evidence does not exclude diagnosis if the patient presents with clinical symptoms.

Over 700,000 Americans have IC. Parallel diagnoses of chronic prostatitis and over-active bladder likely boost the true number of sufferers to over one million. The average patient is female (90%), over 40 (75%), and often has concomitant conditions such as irritable bowel syndrome, chronic fatigue syndrome, Hashimoto’s thyroiditis, vulvadynia, and chronic yeast infections.<sup>3</sup>

## **Dietary Modifications for Interstitial Cystitis:**

Although IC can become disabling in some cases, treatment can effectively increase a person’s quality of life. Treatment plans are individualized for each patient, and success, even a remission, may be attained by combining lifestyle changes, stress reduction, medications, and dietary modification. Medical treatments are often experimental and may take months of trials before assessing the benefits, if any, of an individual treatment.

Despite the fact that there has been a lack of scientific studies on the relationship between diet and IC, the effects of particular foods on interstitial cystitis have been observed for decades by patients and doctors. In fact, dietary modifications are often prescribed as a low-risk treatment

with potentially huge benefits to an IC patient. A 2004 online survey by the Interstitial Cystitis Association recorded that 91% of patients with IC report that their symptoms are affected by foods, beverages, and dietary supplements, and 84% report symptoms reduced by changing some aspect of their diet. Additionally, 61% reported that beverages such as coffee caused their symptoms to flare up with 37% listing beverages as the primary offender.<sup>4</sup> Interviews reveal that many patients with interstitial cystitis consume less caffeine as they feel their IC symptoms are aggravated after caffeine consumption.<sup>5</sup> Different foods (including various quantities of the same food) may or may not increase symptoms in individual IC patients. Some researchers explain this phenomenon by differentiating foods either as allergenic to the bladder or as bladder irritants. It may take months of trial and error using an elimination diet to develop a personal “good food/bad food” list.

### **Cystitis:**

Cystitis is a condition of acute inflammation of the bladder, caused by bacterial infection. Coliform bacteria from the bowel are most common, but it can also be due to an infection of many other types of bacteria. Symptoms of cystitis or a bladder infection include: pain or burning sensations with urination, increased urgency and frequency of urination, cloudy, foul smelling, or bloody urine. Although women most often succumb to these types of infections, men can also experience cystitis.

Many women suffer from bouts of recurrent cystitis. Education about the prevention of cystitis becomes very important to stop these painful recurrent infections. Although antibiotics are used to treat the acute condition and eliminate the bacterial infection; other suggestions that accelerate the process of healing and prevent a recurrence are very important. The best first aid treatment for cystitis is to increase fluid intake to flush bacteria from the urinary tract and increase the alkalinity of the urine to eradicate germs and soothe the irritated bladder. The consumption of coffee and other caffeinated beverages such as sodas can aggravate cystitis due to their high acidity. They can also contribute to the conditions which give rise to cystitis flare-ups.<sup>5, 8, 28</sup>

Of all the dietary habits that people find difficult to change, coffee drinking is one of the most challenging because it is so entrenched in cultural habits and caffeine addiction.<sup>6</sup> For most IC patients, whose social lives are frequently disrupted by the conditions of the disease, giving up coffee often seems like the final insult. Additionally, withdrawal symptoms from caffeine addiction can involve painful headaches, nausea, vomiting, and loose stools.<sup>7</sup> People whose health problems would be ameliorated if they gave up coffee can improve their chance for successfully quitting coffee if they have both a satisfying alternative and a method to slowly decrease their caffeine intake to reduce withdrawal symptoms.

### **The following characteristics of coffee have an adverse effect on the urinary tract:**

- **Coffee Increases Acidity of the Urine**
  - Urine that has a higher pH and is more acidic is more irritating to the bladder and causes a flare-up of pain and other symptoms in both interstitial and acute cystitis.<sup>5, 8, 28</sup>

- Coffee increases acidity of the urine through increasing acid metabolites of coffee in the urine.<sup>29, 30</sup>
- **Coffee Drinking Irritates Symptoms of Interstitial Cystitis**
  - Coffee and other acidic beverages increase pain in cystitis sufferers. This effect is not linked to caffeine in coffee, but is noted with both caffeinated as well as decaffeinated coffee.<sup>8</sup> Allergic cystitis can also be induced by food and is observed after drinking coffee.<sup>9</sup>
- **Caffeine Increases Incontinence**
  - Urination urgency and frequency dramatically increase during attacks of IC or acute cystitis infections and incontinence can result. Incontinence can also occur for other reasons, and more than 13 million people in the U.S. experience incontinence.<sup>10</sup> Caffeine intake increases urinary incontinence.<sup>11</sup>
- **Coffee Elevates Stress Hormones**
  - Caffeine in coffee elevates the stress hormones cortisol, epinephrine (also known as adrenaline) and norepinephrine.<sup>12, 13, 14, 15</sup> These hormones are responsible for increased heart rate and blood pressure, and a sense of “emergency alert”. Circulation of oxygen to the brain and extremities is decreased and the immune system is suppressed.
  - The purpose of the body’s “fight or flight” response is to provide the body with a temporary energy boost for intense physical activity. With today’s sedentary lifestyle, the continual state of increased stress resulting from caffeine consumption can affect health particularly in people with disorders such as interstitial cystitis and acute cystitis infections that are sensitive to stress.
- **Caffeine Suppresses Immune System Function**
  - Continuous elevation of stress hormones causes suppression of the immune system. Acute cystitis is a bacterial infection and requires a functional immune system to adequately resist and ultimately fight the infection. Cortisol suppresses the activity of cells in the immune system, including natural killer, or T-cell function.<sup>16</sup>

### **Recommendation:**

Individuals who suffer from or are susceptible to problems with the urinary tract would do well to avoid coffee as it has been demonstrated to be a contributing factor associated with increased incidence of IC, cystitis, and other bladder problems. Dietary changes that include weaning off of coffee and all other sources of caffeine can help relieve symptoms of these disorders. Nutrition professionals can support IC patients by guiding them through the process of substituting a non-caffeinated, alkaline herbal coffee that brews and tastes just like coffee.

### **Kicking the Caffeine Habit:**

The social prevalence of coffee drinking and the addictive side effects of caffeine can cause problems with patient compliance. Caffeine-free herbal coffee marketed under the brand name of

Teecino® helps coffee drinkers replace their regular or decaf coffee with a satisfying alternative. Coffee drinkers need a dark, full-bodied, robust brew to help satisfy their coffee craving. Teecino satisfies the 4 needs coffee drinkers require in a coffee alternative:

- 1) Teecino brews just like coffee, allowing coffee drinkers to keep their same brewing ritual.
- 2) It has a delicious, deep roasted flavor that is very coffee-like.
- 3) It wafts an enticing aroma.
- 4) People experience a natural energy boost from nutritious Teecino.

**Teecino offers the following health benefits to people suffering from urinary tract disorders:**

<b><u>Beneficial Features of Teecino</u></b>	<b><u>Teecino Ingredients:</u></b> <sup>17,18,19,20,21,22,23,24,25,26,27</sup>
<ul style="list-style-type: none"> <li>▪ Inulin fiber from chicory               <ul style="list-style-type: none"> <li>· Unlike coffee, Teecino has nutritional value, including inulin, a soluble fiber that helps support a healthy population of beneficial microflora</li> <li>· Inulin improves mineral absorption</li> </ul> </li> <li>▪ Naturally Caffeine-free               <ul style="list-style-type: none"> <li>· No chemical processing like decaf coffee</li> </ul> </li> <li>▪ 65 mg of Potassium               <ul style="list-style-type: none"> <li>· Teecino is a source of potassium, an electrolyte mineral that is important in the healthy functioning of stomach acid production.</li> <li>· Potassium in liquid form is easily absorbed to help relieve muscle spasm.</li> </ul> </li> <li>▪ Alkaline – helps reduce acidity               <ul style="list-style-type: none"> <li>· As opposed to acidic coffee, Teecino is alkaline, which reduces urinary acidity to reduce bladder and urinary tract irritation.</li> </ul> </li> <li>▪ Gluten Free               <ul style="list-style-type: none"> <li>· Gluten does not extract into boiling water. Tests show Teecino is gluten free although it contains barley.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Carob               <ul style="list-style-type: none"> <li>· Improves lipid metabolism and soothes inflamed membranes.</li> </ul> </li> <li>▪ Barley               <ul style="list-style-type: none"> <li>· Increases alkalinity of the urine and has a soothing effect on inflammation of the bladder and urinary tract.</li> </ul> </li> <li>▪ Chicory root               <ul style="list-style-type: none"> <li>· Used to treat abdominal cramps.</li> <li>· Contains inulin fiber which has been shown to improve mineral absorption including magnesium.</li> </ul> </li> <li>▪ Almond               <ul style="list-style-type: none"> <li>· Contains antioxidants.</li> </ul> </li> <li>▪ Figs               <ul style="list-style-type: none"> <li>· Mucilages and pectin within the fruit provide a soothing effect on inflamed mucosa. A good source of potassium.</li> <li>· Potassium improves immune system’s ability to cope with stress.</li> </ul> </li> <li>▪ Dates               <ul style="list-style-type: none"> <li>· Contains potassium and magnesium.</li> <li>· Magnesium is essential for a healthy immune system</li> </ul> </li> </ul>

## The Pain-free Way to Wean off of Coffee:

Start by mixing normal coffee 3/4 to 1/4 Teeccino Herbal Coffee. Gradually reduce the percentage of coffee over a two to three week period until only 100% Teeccino Herbal Coffee is brewed. Gradual reduction of caffeine is recommended.<sup>13</sup> Side effects such as headaches, fatigue, and brain foginess can be avoided as the body gradually adjusts to less reliance on stimulants.

**Example:** Use the following proportions if you make a 10-cup pot of coffee daily:

DAY	Regular Coffee	Teeccino
Day 1-3:	4 tablespoons	1 tablespoon
Day 4-6:	3 tablespoons	2 tablespoons
Day 7-9:	2 tablespoons	3 tablespoons
Day 10:	1 1/2 tablespoons	3 1/2 tablespoons
Day 11:	1 tablespoon	4 tablespoons
Day 12-13:	1/2 tablespoon	4 1/2 tablespoons
Day 14:	0	5 tablespoons

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### **Resources**

1. Interstitial Cystitis Network: <http://www.ic-network.com/>
2. Interstitial Cystitis Association: <http://www.ichelp.org>
3. National Institutes of Health: <http://kidney.niddk.nih.gov/kudiseases/pubs/interstitialcystitis/>
4. The National Women's Health Information Center: <http://www.4woman.gov/faq/intcyst.pdf>