

Effects of Caffeine and Coffee on Irritable Bowel Syndrome, Crohn's Disease, & Colitis

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The prevalence today of Irritable Bowel Syndrome (IBS) and inflammatory bowel diseases such as Crohn's disease and ulcerative colitis among the adult population is linked to causative factors from both stress and diet. Twenty percent of adults are estimated to be suffering from IBS alone with symptoms of abdominal pain, bloating, flatulence and constipation and/or loose stools. Certain foods including: caffeine, coffee, decaffeinated coffee, insoluble fiber, alcohol, chocolate, hot spices, carbonated drinks and foods high in fat can trigger IBS symptoms.^{1,2,3} Additionally, certain food intolerances may trigger IBS like dairy products and gluten containing grains.

As many as 1.4 million⁴ people in the United States suffer from inflammatory bowel diseases (IBD); a state of intestinal inflammation so severe that the disease interferes with their nutritional status and their ability to absorb nutrients in the intestinal tract. A common characteristic of those suffering from Crohn's disease and ulcerative colitis is a compromised ability to properly digest and absorb necessary nutrients, leading to deficiencies. People suffering from IBS, Crohn's disease and colitis find that making certain dietary changes can be very helpful to relieve symptoms and prevent recurrence.

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.⁵ Withdrawal symptoms can involve painful headaches, nausea, vomiting, and loose stools.⁶ 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 intestinal tract:

- **Coffee Stimulates the Gastrointestinal (GI) Tract to Overactivity**
 - Coffee produces a laxative effect in susceptible people through stimulation of rectosigmoid motor activity, as soon as four minutes after drinking. Even modest doses of coffee can have this effect, whether or not the body is ready to dispose of the feces, resulting in loose stools. Studies show that decaffeinated coffee has a similar stimulant effect on the GI tract proving that the laxative effect is not only due to caffeine.^{7,8,9}

- **Coffee Elevates Stress Hormones**
 - Caffeine in coffee elevates the stress hormones cortisol, epinephrine (also known as adrenaline) and norepinephrine.^{10,11,12} These hormones are responsible for increased heart rate, increased blood pressure, and a sense of "emergency alert". Blood is diverted from the digestive system which can cause indigestion. The circulation of oxygen to the brain and extremities is decreased and the immune system is suppressed.
 - The purpose of this "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 especially in those types of disorders like IBS and IBD that are sensitive to stress, particularly because neural control of the gastrointestinal tract is affected by stress and emotions.^{13,14,15}

- **The Acidity of Coffee Irritates the Intestines**

- Coffee is highly acidic and it can stimulate the hypersecretion of gastric acids. Decaffeinated coffee has been shown to increase acidity to a greater degree than either regular coffee or caffeine alone.¹⁶ Both caffeine and coffee stimulate gastric acid secretion and decaffeinated coffee raises serum gastrin levels.^{17,18} A study comparing the effect of decaffeinated coffee on gastric acid secretion and gastrin levels to high protein meals, which normally stimulate high acid production, found that decaffeinated coffee was a more powerful stimulant of acid secretion and gastrin release than the meals.¹⁹
- Coffee tends to speed up the process of gastric emptying, which may result in highly acidic stomach contents passing into the small intestine too soon. This may lead to injury of the intestinal tissue.²⁰

- **Coffee Decreases Magnesium Absorption**

- Magnesium is one of the most plentiful minerals in the body and plays an essential role in more than 300 cellular reactions. When magnesium is low in the body, it will be pulled from cells to maintain plasma concentration, so magnesium deficiencies are difficult to detect. Adequate magnesium is important for maintaining bowel regularity and magnesium is often used to produce a laxative effect in constipation. For people suffering from irritation of the mucous membranes within the colon present in irritable bowel disease, the presence of adequate dietary magnesium is essential. Magnesium is necessary for stable collagen formation in connective and epithelial tissue.²¹ It is also a crucial mineral for the biochemical processes involved in wound healing,²² making it vital to healing the irritated lining of the colon in IBS.

- **Caffeine Acts as a Diuretic**

- The diuretic effect of caffeine causes excretion of fluid through the kidneys, which can lead to dehydration. Since water is an important part of the digestion and elimination process, dehydration due to excess caffeine intake may produce hard stools that are difficult to pass leading to constipation.²³

- **Caffeine Interferes with GABA Metabolism**

- GABA (Gamma-aminobutyric acid) is a neurotransmitter that is naturally produced in the brain and the GI tract. It plays an important role in mood and stress management and it exerts a calming effect on the GI tract.
- Caffeine has been found to interfere with binding of GABA to GABA receptors, preventing it from performing its calming function.²⁴ In cases of IBS, ulcerative colitis, and other lower digestive disorders in which the lower GI tract is already irritated and often hyperactive, the lack of GABA's effect only further exacerbates the problem. In addition to the direct effect on the GI tract, GABA's role in stress management is also compromised in the presence of caffeine since psychological stress is known to be a contributing factor in IBS.^{25,26}

Recommendation:

Based on the unfavorable effects that coffee and caffeine have been shown to have on the GI tract, anyone suffering from gastrointestinal disorders should consider eliminating coffee drinking and any caffeine intake from other dietary sources. In the case of IBS, Crohn's disease and ulcerative colitis, the lower GI tract is already irritated and hypersensitive. Dietary changes that include weaning off of coffee and all other sources of caffeine can help relieve symptoms of these disorders.²⁷ Nutritional professionals can support people with bowel disorders who are changing their coffee drinking habits through the processing of substituting a non-caffeinated, soothing, 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 Teccino[®] 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. Teccino satisfies the 4 needs coffee drinkers require in a coffee alternative:

- 1) Teccino 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 Teccino.

Teecino offers the following health benefits to people suffering from gastrointestinal and lower GI tract disorders:

<u>Beneficial Features of Teecino</u>	<u>Teecino Ingredients:</u> ^{28,29,30,31}
<ul style="list-style-type: none"> ▪ Inulin fiber from chicory <ul style="list-style-type: none"> · Unlike coffee, Teecino has nutritional value, including inulin, a soluble fiber that helps support a healthy population of beneficial microflora · Inulin improves mineral absorption ▪ Naturally Caffeine-free <ul style="list-style-type: none"> · No chemical processing like decaf coffee ▪ 65 mg of Potassium <ul style="list-style-type: none"> · Teecino is a source of potassium, an electrolyte mineral that is often deficient especially in those suffering from diarrhea disorders. · Potassium in liquid form is easily absorbed to help relieve muscle, mental and nervous fatigue. ▪ Alkaline – helps reduce acidity <ul style="list-style-type: none"> · As opposed to acidic coffee, Teecino is alkaline, which makes digestion more efficient in terms of enzyme function in the small intestine. ▪ Gluten Free <ul style="list-style-type: none"> · Gluten does not extract into boiling water. Tests show Teecino is gluten free although it contains barley. 	<ul style="list-style-type: none"> ▪ Carob <ul style="list-style-type: none"> · An herb that has long been used for various diarrhea disorders due to its anti-diarrheal properties. ▪ Barley <ul style="list-style-type: none"> · Has a soothing effect on the GI tract and has been used to treat diarrhea, gastritis and inflammatory bowel conditions. ▪ Chicory root <ul style="list-style-type: none"> · Used to treat abdominal cramps, vomiting, and diarrhea. · Contains inulin fiber. ▪ Almond <ul style="list-style-type: none"> · The high tannin content of almonds has an anti-diarrheal effect. Also useful for treating other gastric complaints and gastritis. ▪ Figs <ul style="list-style-type: none"> · Mucilages and pectin within the fruit make it useful for treating diarrhea. In China, figs are commonly used for dysentery and enteritis. · A good source of potassium. ▪ Dates <ul style="list-style-type: none"> · In Indian medicine, traditionally used for relief of gastric complaints. · Contain some potassium.

The Pain-free Way to Wean off of Coffee

Start by mixing normal coffee 3/4 to 1/4 Teecino Herbal Coffee. Gradually reduce the percentage of coffee over a two to three week period until only 100% Teecino Herbal Coffee is brewed. Gradual reduction of caffeine is recommended.²⁸ 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	Teecino
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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¹ NIH Publication No. 03-4686, copyright 2003.

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