

# Functional Gastrointestinal Protocol

## Introduction

Functional gastrointestinal disorder (FGID) affects over 65% of adults in the U.S.<sup>1</sup> It is one of the main complaints seen in medical practice. Often, this disorder lacks a distinct organic explanation. In FGID, the gastrointestinal (GI) tract looks normal on examination. But non-specific symptoms are present, making a definitive diagnosis challenging. These may include:

- Abdominal pain
- Heartburn and indigestion
- Nausea
- Vomiting
- Diarrhea
- Constipation

Patients with FGID tend to have a very low quality of life and incur a lot of healthcare costs. For these reasons, it is vital to recognize and manage these disorders promptly.<sup>2</sup>

## Epidemiology

FGIDs affect up to 40% of adults worldwide. They are more common in women than men and account for 12% of primary care visits and 30% of gastroenterology outpatient visits.<sup>2</sup>

FGIDs are associated with more serious GI diseases such as inflammatory bowel disease and cholecystitis.<sup>3</sup> These conditions share the common underlying risk factor of dysbiosis, which creates additional impacts related to quality of life and healthcare.<sup>4</sup> In the U.S., \$135.9 billion is spent on GI diseases annually. Non-malignant GI diseases account for 97,700 deaths every year.<sup>5</sup>

| Estimated Number of Annual Visits |                         |               |                 |                         |
|-----------------------------------|-------------------------|---------------|-----------------|-------------------------|
| Rank                              | Symptoms                | Office Visits | Emergency Dept. | Total                   |
| 1                                 | Abdominal pain          | 10,705,448    | 11,135,099      | 21,840,547              |
| 2                                 | Vomiting                | 1,725,616     | 2,936,210       | 4,661,826               |
| 3                                 | Diarrhea                | 2,423,825     | 994,454         | 3,418,279               |
| 4                                 | Nausea                  | 1,063,883     | 2,004,732       | 3,068,615               |
| 5                                 | Bleeding                | 2,147,949     | 606,970         | 2,754,919               |
| 6                                 | Constipation            | 1,086,452     | 511,317         | 1,597,769               |
| 7                                 | Anorectal symptoms      | 928,119       | 220,585         | 1,148,704               |
| 8                                 | Heartburn & indigestion | 878,808       | 63,485          | 942,293                 |
| 9                                 | Decreased appetite      | 564,112       | 94,685          | 658,797                 |
| 10                                | Dysphagia               | 537,975       | 88,731          | 626,706                 |
| Total                             |                         |               |                 | 40,718,455 <sup>5</sup> |

<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6453579/>

<sup>2</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7850201/>

<sup>3</sup> <https://pubmed.ncbi.nlm.nih.gov/21214889/>

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/books/NBK470312/>

<sup>5</sup> <https://pubmed.ncbi.nlm.nih.gov/30315778/>



## Physiology/Diagnosis/Clinical Relevance

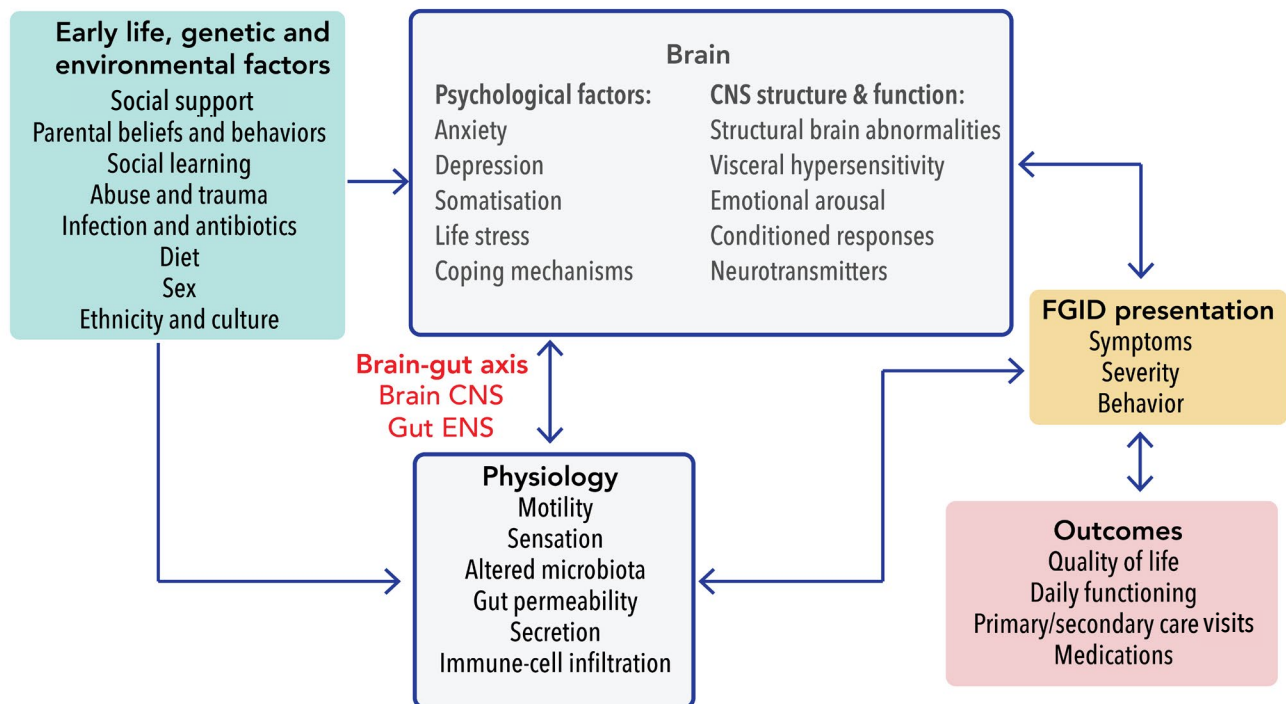
Symptom-based criteria are used to make a diagnosis of FGID, with judicious use of limited testing in some patients.<sup>6</sup> These conditions, which include **irritable bowel syndrome or functional dyspepsia**, frequently involve some combination of the following:

- Abnormal GI motility (constipation, diarrhea, or alternating constipation and diarrhea)
- Visceral hypersensitivity
- Altered mucosal immune function
- Disrupted gut-brain axis communication
- Altered central nervous system processing
- Imbalance or dysbiosis in the microbiome

Psychological comorbidity is common; however, whether or not this predates or is driven by symptoms is not clear.<sup>6</sup>



## Biopsychosocial Model of Functional Gastrointestinal Disorders



<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7850201/figure/F0001/>

<sup>6</sup> <https://pubmed.ncbi.nlm.nih.gov/33049221/>

| Risk Factors for FGID  |                                     |
|--|-------------------------------------|
| Low-fiber diet   | Lack of exercise and movement       |
| Consuming excess dairy products                                    | Food sensitivities                  |
| Traveling or other changes to routine                              | Stress                              |
| Overuse of laxatives   | Resisting urge for a bowel movement |
| Certain medications (e.g., antidepressants, iron pills, narcotics) | Calcium- or aluminum-based antacids |
| Pregnancy  |                                     |



## Clinical Pearl # 1 – Motility Matters! The Migrating Motor Complex (MMC)

Many FGID patients have deranged motility symptoms, as seen in IBS – with diarrhea, constipation, or mixed type. This can be related to mechanical function (e.g., low stomach acid, pancreatic insufficiency, cholestasis), irritation to the GI mucosa (e.g., dysbiosis, food sensitivities, celiac disease), or disruption of neurological activity in the peripheral (gut mucosa) or central nervous system.

The migrating motor complex (MMC) involves both the CNS and the enteric nervous system. It is a cyclic, recurring motility pattern that occurs in the stomach and small bowel during fasting and is interrupted by feeding. The physiological role of the MMC is not entirely understood, though it's considered an “intestinal housekeeper” – responsible for moving undigested food and microbes from the small intestine into the colon. Its absence has been associated with gastroparesis, intestinal pseudo-obstruction, and small intestinal bacterial overgrowth.

Supporting healthy motility is essential and can include meal spacing (at least three to five hours between meals) and the use of botanicals. Ginger, Triphala, and fennel can directly influence motility. The novel, clinically researched, and patented Digexin® – a blend of okra and ashwagandha – has also been shown to be effective in supporting motility. All of these botanicals can be found in Motility Assist™.

## Clinical Pearl # 2 – Address Stress!

Stress impacts gastrointestinal function via bidirectional communication in the gut-brain axis. Human studies show that stress decreases gastric emptying and influences colonic transit in typical research participants. Emotional distress is also very common in IBS patients, particularly those who seek medical treatment for the condition. Nearly 40% report experiencing anxiety and depression.

Include stress management strategies for your FGID patients as a foundational therapy. Practices may include yoga/stretching, deep breathing, meditation, journaling, spending time in nature and/or with loved ones. Also consider Motility Assist, which not only supports healthy motility but also addresses stress and the gut-brain axis. The ingredient Digexin has been clinically shown to reduce cortisol while simultaneously improving GI serotonin levels.

## Clinical Pearl #3 – Consider Biofilms (Oral or GI) as a Cause of Recurrent Symptoms

Biofilms are communities of bacteria embedded in an extracellular matrix, making them resistant to eradication. They are responsible for most chronic and recurrent infections, and contribute to toxic loads and inflammatory burden. They can be found almost anywhere in the body but are most prevalent in the GI tract and oral cavity. If patients improve with treatment but worsen when treatment is discontinued, biofilms may be reseeding and must be addressed for lasting therapeutic effects.



Scan here to view  
our Biofilms protocol

## Clinical Pearl #4 - Include Detoxification Support

Many toxins are eliminated primarily through the liver via bile and the kidneys via the urine. Bile is released into the small intestines, and these bile-bound toxins are destined for excretion in the stool. Ensuring healthy bile production and flow is essential for optimal digestive function and toxin elimination.

Additionally, biofilms may harbor bacterial metabolites and toxins, including mycotoxins. When biofilms are broken, these toxins and metabolites may cause damage to the surrounding tissues or transient increases in inflammation. Including a binder, such as G.I.Detox+<sup>®</sup>, can prevent the reabsorption of toxins and reduce the burden on the liver. This step makes detoxification more efficient, improves patient experience, and promotes compliance.

## Optimize liver and kidney function

Additionally, consider including botanicals, such as those found in Liver GB+<sup>™</sup>, to support the liver and kidneys, including:

|                     |   |
|---------------------|---|
| <b>Artichoke</b>    | Stimulates bile flow, enhances fat digestion, supports detoxification, liver and kidney health  |
| <b>Milk Thistle</b> | Enhances absorption, detoxification, and digestion, protects liver and kidneys  |
| <b>Turmeric</b>     | Helps support & stimulate bile flow, protects and supports the liver and kidneys  |
| <b>TUDCA</b>        | Supports healthy bile flow and gallbladder health, protects and supports the liver, thins bile, protects kidneys  |
| <b>Ginger</b>       | Improves production and flow of bile, promotes gastric emptying and reduces intestinal transit time, helps ease indigestion, belching, gas, and feelings of fullness after eating, and protects kidneys |

## Lifestyle Recommendations

Support your treatment with simple yet effective lifestyle recommendations.

Check out the list contained in the [Bioclear® Microbiome Detox Program Lifestyle Guide](#).

- Adopt a low-inflammation diet (Modified Paleo, Mediterranean, etc.) that includes a high intake of non-starchy vegetables.
- Increase fiber intake.
- Increase exercise to support movement of the intestines.



Scan here to go to the  
Bioclear® Microbiome Detox  
Program Lifestyle Guide

## Therapeutic Plan Suggestions

| General Dysbiosis Support   |   |                              |
|---|---|------------------------------|
| CORE PROTOCOL   |   |                              |
| Biocidin® Liquid or Capsules  | Titrate to 15 drops 2x/day  | Titrate to 2 capsules 2x/day |
| G.I. Detox+®  | 2 capsules at bedtime. 1 hour away from food, supplements, and medications. Temporarily increase dose to 2 capsules 2-3x/day if <a href="#">Herxheimer reaction</a> observed/worsens. |                              |
| Proflora® 4R  | 1 capsule any time  |                              |
| Liver GB+™  | 1 capsule 2x/day  |                              |
| ADDITIONAL SUPPORT  |   |                              |
| G.I. InnerCalm®   | 1 stick pack mixed in water, 1-2 times daily, taken any time  |                              |
| Motility Assist™  | 1-2 capsules per day, before bedtime  |                              |
| Olivirex®   | Titrate to 2 capsules 2x/day  |                              |
| In the case of long-standing dysbiosis, testing for presence of pathogenic strains is highly recommended. |   |                              |

## Questions?

For clinical questions,  
email [clinical@biocidin.com](mailto:clinical@biocidin.com)

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