

# **Reporter's Guide to Functional Gastrointestinal Disorders**

## **Setting the Record Straight**

Functional GI disorders are among the most common chronic medical conditions – and the least understood.



## Dear Reporter or Medical Writer:

The International Foundation for Functional Gastrointestinal Disorders (IFFGD) is pleased to provide you with the *Reporter's Guide to Functional Gastrointestinal Disorders*, your comprehensive resource on these common chronic medical conditions.

The public is not well informed about digestive health and disease in general. This is particularly true of the functional gastrointestinal (GI) disorders. Compounding this, the nature of the disorders and approach to patients who suffer them are not well taught in medical schools. This lack of knowledge places an unnecessary burden on patients, their families, societies, and healthcare providers alike.

While articles about some functional GI disorders are appearing more frequently, there continues to be a need to educate sufferers and the public. *The Reporter's Guide to Functional Gastrointestinal Disorders* is designed to provide you with accurate information to help you cover the many conditions.

In this Guide, you will find:

- In-depth information about functional GI disorders
- Frequently asked questions
- A glossary of medical terms
- Resources
- A bibliography of key books
- Suggested story ideas and reasons for writing about the disorders

In addition to referring to this informative guide, I also encourage you to suggest that your readers visit IFFGD's website at [www.iffgd.org](http://www.iffgd.org) or call us toll free (in the U.S.) at 888-964-2001 if they want to learn more about a functional GI disorder, treatments, and finding medical care. IFFGD is dedicated to informing, assisting, and supporting people affected by gastrointestinal disorders. We have been working since 1991 to broaden understanding about gastrointestinal disorders and support research.

IFFGD welcomes your calls, and we look forward to working with you as we continue to shed more light on the functional GI disorders.

Sincerely,

Ceciel T. Rooker

President and Executive Director

IFFGD



# Functional GI Disorders: A Background Guide

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## Introduction

Do you know which group of conditions affects two in five Americans, causes considerable suffering and disability, and costs society over \$30 billion annually?<sup>[1,2]</sup>

If you didn't correctly answer functional gastrointestinal (GI) disorders then you're not alone. While functional GI disorders are a highly prevalent group of persistent and recurring conditions, they remain largely hidden and misunderstood. These conditions can affect any part of the GI tract, from the esophagus to the stomach to the small and large intestines, and to the rectum. They are characterized by long-term courses, unpredictable symptom episodes, and sometimes disabling effects. They cause tremendous personal and societal burden – in terms both of monetary and personal costs.

Of all the functional GI disorders, irritable bowel syndrome (IBS) is the most studied and among the most common. Thus, it effectively serves as the prototype for the dozens of functional GI conditions. Consider these sobering facts about IBS:

- IBS is highly prevalent, affecting between 10–15% of the U.S. population.<sup>[3]</sup>
- IBS causes considerable suffering. People being treated for IBS have lower quality of life scores – the measure of physical, social, and emotional wellbeing – than population norms, and those with other chronic illnesses.<sup>[4,5]</sup>
- IBS often leads to unnecessary surgery; compared to persons without IBS, patients with IBS are 3 times more likely to have gallbladder removal surgery, 2 times more likely to have an appendectomy and hysterectomy, and 50% more likely to have back surgery, exposing them to surgically-related morbidity and even mortality.<sup>[6,7]</sup>
- IBS is highly correlated with “Gulf War Syndrome.” A study of nearly 12,000 veterans recognized an association between Gulf War service and IBS as well as post traumatic stress disorder, chronic fatigue syndrome, and chemical sensitivities.<sup>[8]</sup>
- Patients with IBS sorely desire effective therapies; in a study by IFFGD and a group from the University of North Carolina 8% of IBS patients reported they would accept a 1 in 100 chance of death, and 14% would accept a 1 in 1000 risk, to find an effective medication.<sup>[9]</sup>

Yet even with the high occurrence, cost, and burden of the functional GI disorders, most lay persons remain unaware of these conditions; many physicians dismiss the symptoms as being imaginary; only a handful of effective therapies exist; and only a small percentage of medical research funding is aimed at studying these conditions.

What is it about the functional GI disorders that results in their being trivialized by the public and even many physicians? The answer to that likely lies in a lack of understanding of the diseases. *This Guide is intended to set the record straight.*

## **What Makes the Functional GI Disorders so Challenging?**

Functional GI disorders are challenging to patients and physicians. A number of factors contribute to this. Patients with functional GI disorders have normal diagnostic tests such as endoscopies, x-rays, and blood tests. Because these tests are normal, the diagnosis of functional GI disorders is based on whether symptoms meet certain defined criteria. This is quite different from other well accepted conditions such as diabetes, peptic ulcers, or heart disease, which can be easily detected on tests alone.

Complicating this, the symptoms of a functional GI disorder are quite variable. Their onset is often unpredictable. Their course can vary from day to day, month to month, and year to year. These variations occur both within an individual, and also from person to person with the same diagnosis.

Furthermore, unlike other conditions which may have one or two causes, functional GI disorders are also influenced by multiple factors, including genetic makeup, environmental influences (e.g., prior infection or surgery), and psychological and social factors. Thus, functional GI disorders do not fit the traditional linear biomedical model, which reduces a disease to a single visible cause, such as a bacterial infection with specific treatment.



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*Newer microscopic findings are beginning to blur the distinction between “functional” and “structural” diseases. Subtle but significant evidence of inflammation has been documented in IBS and in functional dyspepsia. But, as of yet no obvious tell-tale signs, or markers, have emerged on which to make a diagnosis.*

Finally, adequate treatment for functional GI disorders is lacking. To compound this, several effective drugs have recently been removed from the market due to safety concerns. All of the above factors contribute to uncertainties that challenge both affected individuals and their physicians.

### **“Disease” versus “Illness” and “Structural” versus “Functional”**

Although often used interchangeably, the terms disease and illness actually connote two fundamentally distinct concepts. Disease is defined as pathology that can be objectively seen on blood tests, x-rays, endoscopies, or other diagnostic tests. For example, on endoscopy esophagitis is seen as inflammation of the esophagus; on blood test diabetes is signified by a high blood-sugar. Illness, on the other hand is what one feels. The patient experiences symptoms and feels ill. Illness is subjective and cannot be easily measured on routine tests.

When illness results from a visible disease (pathology or physiologic abnormality) it is said to be “structural.” For example, consider chest pain that is caused by a myocardial infarction or shortness of breath caused by pneumonia. However, often patients experience illness without underlying disease. For instance, on MRI patients with chronic headaches may have a completely normal brain structure yet may still suffer from persistent symptoms.

The same phenomenon often occurs in the gastrointestinal tract. While gastrointestinal symptoms such as nausea, abdominal pain, or constipation may be sometimes caused by a demonstrable anatomical cause (e.g., peptic ulcer, bowel obstruction, or diverticulitis), quite frequently these symptoms have no underlying anatomical or biochemical bases.



Instead, these symptoms are thought to relate to disorders of gastrointestinal function, such as abnormal intestinal motility (dysmotility or abnormal contractility of the gut), abnormal intestinal perception (visceral hypersensitivity or increased sensitivity to gastrointestinal sensations), and/or abnormal brain-gut communication. Hence the term, “functional” GI disorders.

However, despite these findings:

- 1) These functional abnormalities can often only be detected through expensive and invasive tests that are not available in clinical practice.
- 2) The severity of the functional abnormalities varies from patient to patient and does not correlate with the severity of symptoms.
- 3) Whether these abnormalities are the cause – or the result of – the functional GI disorder is sometimes unclear.

This creates a dilemma for physicians and patients alike. We like to believe that symptoms have an easily discoverable abnormality. If one can only find that abnormality, repairing it should eliminate the symptoms. Hence, in a patient with upper abdominal pain, a physician may discover a peptic ulcer. Then, appropriate drug therapy can heal that ulcer and prevent its recurrence. However, the situation is quite different when no ulcer or other visible abnormality is found. Treatments are far less straightforward and symptom relief less easily attainable.

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*“We grow up in our society thinking about validity based on what you see. What has happened within the last 10 years is this tremendous explosion of gaining new knowledge without seeing it on x-ray or on endoscopy. You see it based on physiologic investigation, brain imaging, and differences in terms of mucosal functioning. That is beginning to explain the basis for these symptoms. In some ways, we need to give it more time and education for people to accept it.”*

*– Douglas A. Drossman, MD*

## How Common are the Disorders?

Functional GI disorders are among society’s most common conditions. At any one time, approximately 2 out of 5 persons are affected by a functional GI disorder. Furthermore, as the disorders often overlap with each other, many are affected by more than one functional GI disorder simultaneously.

Of this large population, only a minority seeks medical care. Still, functional GI disorders are a leading reason for doctor visits; they are found in about half the patients with GI complaints seen by family doctors and are the leading reason for gastroenterologist visits. A review of the annual U.S. national ambulatory medical care survey reported abdominal pain, constipation, dyspepsia, and IBS in the top six diagnostic categories for gastrointestinal disorders.<sup>[1]</sup>

## What are the Different Functional GI Disorders?

So if functional GI disorders are so common, what exactly are the specific conditions? In adults, the disorders are classified into 6 major anatomic domains, such as the esophagus or the bowel, and then further identified by symptom pattern or location. Groups of symptoms that occur together characterize each disorder. The 6 adult domains include:

- Esophageal disorders
- Gastroduodenal (stomach and the duodenum) disorders
- Bowel disorders
- Abdominal pain syndrome
- Gallbladder and sphincter of Oddi disorders
- Anorectal disorders

Functional GI disorders also strike children. The pediatric domains are age related and include:

- Neonates and Toddlers
- Children and Adolescents

The specific disorders are listed in Table I.

### SOME COMMON FUNCTIONAL GI DISORDERS

| Disorder                 | Prevalence in the General Population <sup>[10]</sup> |
|--------------------------|------------------------------------------------------|
| Functional Dyspepsia     | 20% to 30%                                           |
| Irritable Bowel Syndrome | 10% to 20%                                           |
| Functional Constipation  | Up to 27%                                            |
| Pelvic Floor Dysfunction | 5% to 11%                                            |

## What Causes the Disorders?

Historically the causes of functional GI disorders were quite elusive. However, over the past two decades a series of discoveries suggest several mechanisms by which functional GI disorders may develop. While between patients the specific mechanisms may vary, patients with functional GI disorders are often noted to have abnormal gastrointestinal sensory perception and abnormal gastrointestinal motility. These abnormalities may in turn relate to disordered brain-gut communication, genetic factors, infection and altered gut bacteria, and intestinal inflammation.

**Abnormal Sensation.** Two-thirds of patients with functional GI disorders have increased sensitivity to gut stimuli. This is called “visceral hypersensitivity.” As a result, normal physiologic activities such as gut contractions may cause pain or discomfort. In other words, persons with these conditions tend to experience pain or discomfort from sensations that go unnoticed by other people.

**Abnormal Motility.** The gut uses a highly coordinated series of contractions to move food, absorb nutrients, and eliminate waste. In functional GI disorders these activities are sometimes altered. Such “dysmotility” may cause various problems ranging from swallowing difficulties to incontinence. For instance, if the movement of food or waste is too rapid diarrhea may develop. If too slow, then bloating or constipation may occur. Likewise, esophageal or intestinal muscle spasms cause pain.

Ongoing research has begun to unravel the mechanisms by which abnormal sensation and motility may occur. These include the following:

**Brain-gut Interactions.** The brain and the gut are intricately connected. Consider how sadness can cause one’s stomach to feel “upset” or how performance anxiety can trigger intestinal “butterflies.” Similarly, a bout of food poisoning can tell the brain to permanently avoid the responsible food. These brain-gut interactions are mediated by a set of nerves that transmit signals from the gut to higher processing centers in the brain and, in turn, from the brain back to the gut. In patients with functional GI disorders,

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*Are these Disorders Psychological?*

*No – the functional GI disorders are not psychological conditions. In all persons psychological stress can affect physical symptoms. Likewise, among patients with functional GI disorders stress often affects gastrointestinal symptoms and the reaction to them. Additionally, having a functional GI disorder can itself cause psychological distress. Therefore, if any ongoing psychological disturbance is present, it makes sense to seek help and bring it under control.*

brain-gut interactions are disordered. Thus, these individuals may abnormally process gut sensations and consequently experience pain, nausea, and other GI symptoms. Additionally, in patients with functional GI disorders environmental and psychological stressors may have a greater effect on GI symptoms.

**Genetic Factors.** Functional GI disorders often run in families. Research suggests that this may be related to both social learning as well as underlying genetic factors, such as abnormalities in serotonin transporter genes.

**Infection and Intestinal Inflammation.** Among previously asymptomatic patients with a GI infection, between 7% and 31% go on to develop IBS with symptoms that may last for months

to even years. In these patients symptoms may be the result of persistent, low-grade intestinal inflammation.

**Altered Bacterial Flora.** Altered gut flora may have a role. Each person has billions of bacteria scattered throughout his or her GI tract. More than 500 different intestinal bacteria have been identified and it is estimated that there are actually 10 times more bacterial cells in the body than human cells. Some of these bacteria are beneficial to our health. They help maintain normal functioning of our intestine. Others can cause infection, or inflammation. When the normal balance in the intestine between beneficial and harmful bacteria is changed, it may lead to changes in the function of the GI tract and chronic GI symptoms.

Furthermore, certain studies suggest a benefit from certain probiotics (“good” bacteria) and antibiotics.

## What are the Symptoms?

For the most part, variable combinations of symptoms characterize each functional GI disorder. Several are defined by one symptom, including functional abdominal pain syndrome, functional bloating, and functional heartburn. Symptoms are chronic and generally episodic. They recur at unpredictable intervals. Symptom overlap between various functional GI disorders is common. Symptom examples include abdominal pain, nausea, constipation, diarrhea, bloating, urgency, decreased appetite, swallowing difficulties, heartburn, and incontinence.

## How are the Functional GI Disorders Diagnosed?

The symptoms of functional GI disorders have been described for hundreds of years in the medical literature. Yet routine tests like x-rays, CT scans, or endoscopies have generally remained negative. This led to the creation of symptom-based criteria, which have been evolving over the past several decades. Developed by committees of experts from around the world, the “Rome Criteria,” are symptom-based diagnostic systems first published in 1992. Currently in its third iteration, the Rome Criteria provide a framework to consistently categorize and identify the 28 adult and 17 pediatric functional GI disorders. (Table I).

Because the disorders are chronic, the Rome Criteria require symptoms to have started at least 6 months prior to diagnosis and to have been active for at least 3 months. Through a careful history and physical examination, and select diagnostic tests, the physician can use the Rome Criteria to confidently arrive at a functional GI disorder diagnosis. Extensive tests are rarely needed in the absence of signs and symptoms suggestive of a structural disease.

For example, functional dyspepsia is characterized by pain or discomfort in the stomach or upper abdomen, bothersome fullness after eating, or early feeling of fullness with a meal. Irritable bowel syndrome is characterized by pain or discomfort in the abdomen that is associated with bowel habit. The pain/discomfort is either reduced with a bowel movement, and/or associated with a change in frequency and/or consistency of stool.

## What are the Treatments?

There are no cures for the functional GI disorders. Treatment focuses on management over a long-term. It varies based on the severity and symptoms, and the degree of impairment of a person's daily life.

All treatment should begin with an accurate diagnosis which helps assure appropriate treatment, and minimizes unnecessary risk and expense from unneeded tests. Next, the physician should validate and explain the patient's very real illness, even in the absence of objective physical findings while reassuring him or her that nothing has been missed. With this understanding the physician and patient form a partnership in which they attempt to manage symptoms over time. They may work to identify factors that exacerbate symptoms, such as certain foods or stress. Medications that regulate bowel function or relax intestinal spasm may be helpful. In patients with more severe symptoms other techniques such as relaxation techniques, biofeedback therapy, hypnosis, and cognitive behavioral therapy can help restore a sense of control over the disorder. Sometimes low dose antidepressants are used to decrease intestinal hypersensitivity.

*Erin is a 22 year old graduate student. She developed painful abdominal symptoms at age 17. That began a journey of doctor visits that started with her General Practitioner, and then three Gastroenterologists. After undergoing many tests, she was initially diagnosed with IBS. But she received no effective treatment or management help. Despite that, she entered college and kept looking for answers. "My symptoms persisted and were getting worse. I was eating less and having more pain. Four years later, I had lost all hope. I figured I would just get worse and worse until the end of my days. Then, in desperation, my mom helped me find a specialist and center where they truly understood my condition. The team looked at my entire profile, and asked me so many questions. Immediately, I felt that I had found the right place! I was diagnosed with Functional Abdominal Pain Syndrome (FAPS) and provided a treatment regimen that includes a combination of things. Now I can eat so many new foods – and I enjoy life again."*

## The Biopsychosocial Component of Health and Illness

The World Health Organization defines health as, “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”; this includes the capability to be productive both socially and economically.<sup>[1,11]</sup>

The Biopsychosocial model is a concept that provides a framework for understanding, categorizing, and treating functional GI disorders, as well as other illnesses. The symptoms of functional GI disorders result from variable combinations of factors that may involve altered motility, increased nerve sensitivity in the gut, and dysregulation of brain-gut interactions. These factors can be influenced by psychologic and social influences. This interaction of systems at the cellular, tissue, interpersonal, and environmental levels can influence the nature and severity of symptoms. Psychosocial factors can affect gut physiology including pain sensitivity. Understanding a patient’s illness within a biopsychosocial framework can help guide treatment and management decisions.

Another way of conceptualizing this is as an interrelationship of physical/biological, environmental, and social factors – body, mind, and spirit. In contrast, the biomedical model reduces disease to an abnormal or damaged part, a target for treatment. The diseased part, even the human body, is viewed as an object within a scientific framework which represents an abstraction from lived experience.<sup>[12]</sup> But what often matters most to persons with chronic conditions is how well they are able to get on with their lives. The biopsychosocial approach takes into account the whole person including how well they are able to function and how they feel about their lives.



*Nina is a 43 year old professional. Her symptoms began abruptly about 2 years ago. Despite receiving a prompt diagnosis and available treatments, the burden of illness persists. “The number and range of my symptoms have changed over time. As some wane, others replace them. Although each is individually mild to moderate at any given time, the cumulative effect and uncertainty of these constant fluctuations are still disruptive to my professional and personal life. We don’t all fit neatly into a severity level or symptom category. Our concerns do not all involve restroom locations, fear of misdiagnosis, or inability to tell others. I simply want enough control to be comfortable, to function independently and continue to earn a living without unduly burdening others.”*

## How Costly are the Disorders?

With the exception of IBS, cost data on the functional GI disorders are limited. However, based on the IBS data alone these chronic disorders are costly. They annually account for significant direct health care costs and indirect expenses.

For example, direct costs of IBS have been estimated to be approximately \$1.5 billion and as high as \$10 billion adjusted costs (excluding the costs of prescription and over-the-counter drugs). Patients with IBS are reported to annually account for 3.65 million physician visits.<sup>[1,2]</sup> Misdiagnosis, under-recognition by patients and physicians leading to multiple physician visits, multiple medications, and unnecessary diagnostic tests, procedures, and surgeries all contribute to higher direct medical costs.<sup>[2]</sup>

Indirect costs, including work absenteeism and presenteeism (i.e., decreased work productivity), of IBS have been estimated as high as \$20 billion annually based only on IBS patients who sought medical attention.<sup>[2]</sup> In one study, over 2,000 patients with IBS in the U.S. and 8 European countries reported missing an average of 4 to 11 days of work during the previous year compared with 1.5 to 6 days reported by control subjects.<sup>[1]</sup> Another survey of 5,430 U.S. households found that illness caused the average IBS patient to miss 13 days per year from work or school compared to 5 days per year by those without a GI disorder.<sup>[13]</sup>

## Summary

Functional gastrointestinal (GI) disorders affect millions of people of all ages – men, women, and children. They are the most commonly presented GI illnesses seen by doctors in primary care or gastroenterology.

The term “functional” is generally applied to disorders where the body’s normal activities in terms of the movement of the intestines, the sensitivity of the nerves of the intestines, or the way in which the brain controls some of these functions is impaired. However, no structural abnormalities are seen on commonly used diagnostic tests. The Rome diagnostic criteria categorize the functional gastrointestinal disorders and define symptom based diagnostic criteria for each category.

The social and economic costs of functional GI disorders are enormous. The disorders generate a considerable financial impact on the healthcare system. Symptoms of these disorders can cause discomfort, ranging from inconvenience to deep personal distress. For those with severe symptoms the disorders can be debilitating, leaving them unable fully to participate in life and work. The disorders lack globally effective or curative treatments.

Much remains unknown about the functional GI disorders. This may lead to confusion and misunderstanding among patients and physicians alike. Lack of understanding can lead to misdiagnosis, unnecessary procedures, and misguided treatment. It can result in added costs and unnecessary suffering. Better understanding and improved treatments – through awareness, education, and research – are truly needed.

## More about Functional GI Disorders

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IFFGD is a nonprofit education and research organization whose mission is to inform, assist and support people affected by gastrointestinal (GI) disorders. We offer educational materials about GI disorders and publish *Digestive Health Matters*, a quarterly journal for the general public. For more information, visit our website at [www.iffgd.org](http://www.iffgd.org).

## Suggested Resources

*Rome III: The Functional Gastrointestinal Disorders, Third Edition.* Edited by Douglas A. Drossman, M.D., (senior editor), Degnon Associates, McLean, VA, 2006. (A “one-stop” technical manual for health professionals.)

W. Grant Thompson, M.D., *Understanding the Irritable Gut: The Functional Gastrointestinal Disorders.* Degnon Associates, McLean VA, 2008. (A nontechnical manual for health professionals and the general public.)

Functional gastrointestinal disorders and motility disorders (Chapter). *Opportunities and Challenges in Digestive Diseases Research: Recommendations of the National Commission on Digestive Diseases.* U.S. Department of Health and Human Services, National Institutes of Health; NIH Publication No. 08-6514; March 2009.

## Glossary of Terms

**ABDOMEN:** Area between the chest and the hips.

**BOWEL:** Intestines or gut.

**BIOPSYCHOSOCIAL MODEL:** A model that proposes that illness and disease result from simultaneously interacting systems at the cellular, tissue, organism, interpersonal, and environmental level. It incorporates the biologic aspects of the disorder with the unique psychosocial features of the individual, and helps explain the variability in symptom expression among individuals having the same biologic condition.

**CHRONIC:** Symptoms occurring over a long period of time.

**CONSTIPATION:** Reduced stool frequency, or hard stools, difficulty passing stools, or painful bowel movements.

**DIARRHEA:** Passing frequent and loose stools that can be watery.

**DIGESTIVE TRACT:** A group of hollow organs that forms a long, twisting tube extending from the mouth to the anus through which food is ingested, digested, and expelled.

**DISORDER:** A disturbance in regular or normal function. An abnormal condition.

**DYSMOTILITY:** Abnormal contractions, of varying frequency and severity, of the muscles in the gastrointestinal tract, which may or may not be associated with symptoms. They differ from functional gastrointestinal disorders, which are defined by symptoms that may or may not have dysmotility.

**DYSPEPSIA:** Pain or discomfort located in the upper abdomen.

**ESOPHAGITIS:** Inflammation of the esophagus.

**ESOPHAGUS:** The organ that connects the mouth to the stomach.

**FUNCTIONAL DYSPHAGIA:** Sensation of difficulty swallowing.

**FUNCTIONAL GASTROINTESTINAL DISORDER:** A disorder of gastrointestinal functioning where the body's normal activities in terms of the movement of the intestines, the sensitivity of the nerves of the intestines, or the way in which the brain controls some of these functions is impaired. However, there are no structural abnormalities seen by endoscopy, x-ray, or blood tests. Thus a functional GI disorder is identified by the characteristics of the symptoms (e.g., Rome Criteria) and infrequently, when needed, limited tests.

**FUNCTIONAL HEARTBURN:** Persistent burning sensation in the absence of gastroesophageal reflux disease (GERD), a motility disorder, or a structural explanation.

**GASTROENTEROLOGIST:** A doctor who specializes in digestive diseases and disorders.

**GASTROINTESTINAL (GI) TRACT:** The muscular tube from the mouth to the anus, also called the alimentary canal or digestive tract.

**GLOBUS:** Sensation of a lump, something stuck, or tightness in the throat.

**GUT:** Esophagus, stomach, and intestines.

## Glossary of Terms

**ILLNESS:** A subjective state of feeling unwell that may include impairment of normal physiological and social function.

**INTESTINES:** Also known as the gut or bowels, is the long, tube-like organ in the human body that completes digestion or the breaking down of food. Consists of the small intestine and the large intestine.

**IRRITABLE BOWEL SYNDROME (IBS):** A functional bowel disorder in which abdominal discomfort or pain is associated with a range of symptoms. Typically, these include intermittent abdominal pain accompanied by diarrhea, constipation, or alternating episodes of both.

**MOTILITY:** Ability of the digestive tract to propel its contents.

**PELVIC FLOOR DYSSYNERGIA:** A problem with the way certain nerves and muscles function in the pelvic floor.

**ROME CRITERIA:** Criteria generally agreed upon by experts to diagnose functional GI disorders.

**STRESS:** The neurophysiological and subjective response to stimuli.

**SYNDROME:** A set of symptoms or conditions that occur together and suggest the presence of a certain disease.

**VISCERAL HYPERSENSITIVITY (INTESTINAL):** Enhanced perception, or enhanced responsiveness within the gut – even to normal events.

## Frequently Asked Questions

### **What is a functional gastrointestinal (GI) disorder?**

A functional gastrointestinal disorder is a variable combination of chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities.

### **What causes the functional GI disorders?**

A common feature of the functional disorders is that there is no defining pathology and the cause(s) of the disorders is/are unknown. Whatever is causing symptoms of the functional GI disorders is not explained by structural damage to the intestines. Rather, they result from abnormalities in the way the gut is functioning – its physiology. The abnormal functions may involve motility, gut nerve sensitivity, secretions into the intestines, or activities of nerves and chemicals that control these functions. Yet the abnormalities are rarely visible and not always clear. Over the past few decades, research has advanced the understanding of mechanisms underlying the disorders of GI functioning. This knowledge base spans the molecular to the behavioral. It involves basic science, neurophysiology, and clinical investigations. The functional GI disorders may now be understood as dysfunctions of highly integrated biological, social, and behavioral systems within the individual.<sup>[14]</sup>

### **Who is likely to develop a functional GI disorder?**

A functional GI disorder can afflict anybody, male and female. It is very likely that most persons will have at least one of these disorders during a lifetime. Onset can begin any time from youth to old age, and once established the disorders are often chronic or recurrent. Men and women report similar rates of functional esophageal symptoms and dyspepsia. Women are more likely to report other functional GI disorders.



## Frequently Asked Questions

### **How are these disorders diagnosed?**

With functional GI disorders, no pathology or abnormal test is discovered. Therefore, the diagnosis depends on a history, physical exam, and the person's description of his or her symptoms. The Rome Criteria for the various disorders can assist physicians to recognize the disorders and also serve to select patients for clinical research. Depending on an individual's medical history, selective diagnostic tests may be performed to rule out other disorders.

### **Are there functional symptoms in other systems?**

Functional disorders, although they may not be labeled so, occur in most body systems. Examples include migraine headache, vulvodynia (a type of chronic pelvic pain), and chronic fatigue syndrome. The disorders lack readily identifiable structural or biochemical abnormalities that are visible on physical examination or common diagnostic tests. These have in common the use of symptom-based criteria to explain them.

### **How are functional GI disorders currently treated?**

Since the cause(s) of the disorders is/are unknown, there are no known cures. Management rests on a firm diagnosis that ends investigation, reassures the patient, and indicates the measures to be taken to relieve symptoms. Each patient deserves to learn what is known about his or her illness, and to receive appropriate diet and lifestyle advice. Symptomatic or palliative therapy may consist of such treatments as laxatives, antidiarrheal drugs, pain relief, and other therapies where appropriate.

**How is stress related to functional GI disorders?**

In contrast to the common interpretation of the term “stress” as a psychological phenomenon, it should be understood as any real or perceived perturbation of an organism’s homeostasis, or balanced state. Stress may disrupt the function of nerve and even immune cells in the GI tract and in the brain. The central stress system involves the release of chemical stress mediators in the brain, which in turn orchestrate an integrated autonomic, behavioral, neuroendocrine, and pain modulatory response. This biological response in turn will alter the way the brain and the viscera interact, and this altered brain-gut interaction can result in worsening of symptoms in functional GI disorders. For example, stress can increase GI symptoms by changing how the brain controls unwanted and painful sensation.

**Why are antidepressants sometimes used to treat functional GI disorders, if not for depression?**

Like some other drugs, aspirin for example, antidepressants are a class of drugs with multiple uses. At doses much lower than used to treat depression, some of these agents can be effective as an analgesic; they reduce pain. For this reason, antidepressants are useful to treat pain in some persons with functional GI disorders. Similarly, they are used for pain relief in other conditions such as migraine headache and diabetic neuropathy.

## Story ideas

### *What is Normal?*

What constitutes normal bowel habits is a topic everyone wants to know about!

### *Constipation may be a Learned – and Unlearned.*

A large subgroup of constipated patients may suffer from pelvic floor dyssynergia, a condition which frequently responds to biofeedback therapy.

### *Post-infectious IBS*

It's becoming clear that a significant number of people develop chronic disorders after an acute bout of a GI infection. What are the risks and how can they be reduced?

### *Good and Bad Gut Bacteria*

We know that the right balance of gut flora is important to digestive health. What can change the balance causing illness? Is there a benefit from “good” bacteria?

### *Common but Hidden Health Problems*

Functional GI disorders occur in over half of adults and can take a huge toll in terms of impairment of physical, emotional, economic and social well-being. They prompt the utilization of medical resources such as physician visits, investigative procedures, and sometimes costly and only partially effective treatments. They collectively result in considerable work loss.

### *Common but Misunderstood Health Conditions*

Many persons still believe that the functional GI disorders are psychological or psychosomatic conditions and that it is “all in the heads” of sufferers, even though leading researchers say that is not the case. The lack of a visible marker for these disorders is puzzling and challenging to patients and physicians alike.

### *Researching the Brain-Gut Connection*

Although functional GI disorders embrace such symptoms as abdominal pain, altered bowel habits, bloating, swallowing difficulties, and more, the focus of scientists is going beyond simply controlling gut function. It is looking at the brain and how its interaction with the gut causes these symptoms.

### *Non-drug Treatments for Common Conditions*

Approved drugs to treat functional GI disorders symptoms are few at present. Lifestyle changes, hypnosis, meditation, and stress management may help some people.

### *Disease vs. Illness*

We know much about disease, but less about illness. Even with disease, the severity of illness is not always predictable.

### *Functional GI Disorders: The Importance of a Diagnosis*

A diagnosis points to appropriate investigation and treatment, identifies patients for scientific study and those who may benefit from the data, and provides a vehicle for mutual understanding of the disorder. Above all, diagnosis of a functional disorder itself is treatment. No one wants symptoms characterized as “nothing” or “all in the head.”

### *Awareness may Avoid Surgical Risks*

Surgery is not a treatment for IBS, a common functional GI disorder characterized by abdominal pain that can be severe. Yet patients with IBS have significantly higher rates of abdominal and pelvic floor surgery. Thus, they are exposed to increased risks, including morbidity and mortality associated with anesthesia and surgery, worsening of IBS symptoms due to surgery, and an increased economic burden. Better awareness of the symptoms, diagnosis, and appropriate treatments of IBS and functional GI disorders will eliminate these risks.

### *The Costs of War: Significant Incidence of Functional GI Disorder Symptoms Seen in Deployed Veterans.*

We are gaining new understanding of GI infections and war trauma leading to IBS.

# Table I: The Functional Gastrointestinal Disorders<sup>[10]</sup>

The digestive tract is a continuous tube from the mouth and esophagus through to the rectum and anus. Each region of the gut carries out a number of special tasks.

## A. Functional Esophageal Disorders

- A1. Functional heartburn
- A2. Functional chest pain of presumed esophageal origin
- A3. Functional dysphagia
- A4. Globus

## B. Functional Gastroduodenal Disorders (Attributable to the stomach and duodenum, the 1st 12 inches of the small intestine)

- B1. Functional dyspepsia
  - a. Postprandial distress syndrome (PDS)
  - b. Epigastric pain syndrome (EPS)
- B2. Belching disorders
  - a. Aerophagia
  - b. Unspecified excessive belching
- B3. Nausea and vomiting disorders
  - a. Chronic idiopathic vomiting (CIN)
  - b. Functional vomiting
  - c. Cyclic vomiting syndrome (CVS)
- B4. Rumination syndrome in adults

## C. Functional Bowel Disorders

- C1. Irritable bowel syndrome (IBS)
- C2. Functional bloating
- C3. Functional constipation
- C4. Functional diarrhea
- C5. Unspecified functional bowel disorder

## D. Functional Abdominal Pain Syndrome (FAPS)

## E. Functional Gallbladder and Sphincter of Oddi (SO) Disorders

- E1. Functional gallbladder disorder
- E2. Functional biliary SO disorder
- E3. Functional pancreatic SO disorder

## **F. Functional Anorectal Disorders**

- F1. Functional fecal incontinence
- F2. Functional anorectal pain
  - a. Chronic proctalgia
    - 1. Levator ani syndrome
    - 2. Unspecified functional anorectal pain
  - b. Proctalgia fugax
- F3. Functional defecation disorders
  - F3a. Dyssynergic defecation
  - F3b. Inadequate defecatory propulsion

## **G. Childhood Functional GI Disorders: Infant/Toddler**

- G1. Infant regurgitation
- G2. Infant rumination syndrome
- G3. Cyclic vomiting syndrome
- G4. Infant colic
- G5. Functional diarrhea
- G6. Infant dyschezia
- G7. Functional constipation

## **H. Childhood Functional GI Disorders: Child/Adolescent**

- H1. Vomiting and aerophagia
  - H1a. Adolescent rumination syndrome
  - H1b. Cyclic vomiting syndrome
  - H1c. Aerophagia
- H2. Abdominal pain-related functional GI disorders
  - H2a. Functional dyspepsia
  - H2b. Irritable bowel syndrome
  - H2c. Abdominal migraine
  - H2d. Childhood functional abdominal pain
    - H2d1. Childhood functional abdominal pain syndrome
- H3. Constipation and incontinence
  - H3a. Functional constipation
  - H3b. Nonretentive fecal incontinence

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