



## OVERVIEW OF FUNCTIONAL GI DISORDERS

### WHAT IS A FUNCTIONAL GASTROINTESTINAL DISORDER?

Functional gastrointestinal (GI) disorders can affect any part of the GI tract, including the esophagus, stomach, and intestines. They are disorders of function (how the GI tract works), not structural or biochemical abnormalities. As a result, x-rays, blood tests, and endoscopies can have essentially normal results.

Importantly, they are not psychiatric disorders, although stress and psychological difficulties can make the functional GI symptoms worse.

The most common disorders are Irritable Bowel Syndrome (altered bowel consistency combined with abdominal pain that is usually relieved with a bowel movement) and Functional Dyspepsia (ulcer-like symptoms - upper abdominal pain, feeling of indigestion).

Approximately 25 million Americans have functional GI disorders. 50 - 80% of them do not consult physicians, although they may take over-the-counter medications and report significantly more job absenteeism and disability.

There are three primary features to functional GI disorders: Motility, Sensation, and Brain-Gut Dysfunction.

Motility is the muscular activity of the GI tract. Normal motility (e.g., peristalsis) is an orderly sequence of muscular contractions from top to bottom. In functional GI disorders, the motility is abnormal. There can be muscular spasms that can cause pain, and the contractions can be very rapid or very slow.

Sensation is how the nerves of the GI tract respond to stimuli (for example, digesting a meal). In functional GI disorders, the nerves are sometimes so sensitive that even normal contractions can bring on pain or discomfort.

Brain-Gut Dysfunction relates to the disharmony in the way that the brain and gastrointestinal system communicate. With functional GI disorders, the regulatory conduit between brain and gut function may be impaired.

### AN AREA OF GROWING INTEREST

Fortunately, attention to functional GI disorders is increasing, as reflected in support of research in this area. The Center, whose Co-directors are two of only several investigators ever funded by NIH for research involving these disorders, has received funding for several NIH-funded projects, as well as many pharmaceutical-funded projects. Research is focused on understanding mechanisms that may cause this group of disorders, treatment options to improve the symptoms, and understanding the complexity of symptoms. Publication of these research findings in peer reviewed scientific journals helps to educate other physicians about this rapidly expanding field.

Recent efforts by the Center and the International Foundation for Functional Gastrointestinal Disorders (IFFGD) and by the Digestive Health Initiative at the



American Digestive Health Foundation have led to greater public awareness. Drs. Drossman and Whitehead, and Nancy Norton, IFFGD President, have been quoted in many mainstream magazines for their work, including *Cosmopolitan*, *Self*, *Ladies Home Journal*, *New Woman*, *Prevention*, *American Health*, *Redbook*, and *Better Homes and Gardens*. Support groups and patient-focused symposia are becoming easier to find, and patients are beginning to have more access to accurate information about their disorders.

While it is true that research funding agencies, institutes of medical education, and the general public are beginning to recognize functional GI disorders as a legitimate area of focus, the field has plenty of room for further growth.

### **FUNCTIONAL GI DISORDERS: CURRENT STATE OF KNOWLEDGE**

It is safe to assume from the writings of physicians and historians that functional GI disorders have existed throughout history, but the lack of identifiable cause prevented their categorization as diseases, and may have made their diagnosis and treatment "second class" in medical school, residency teaching, and research.

There were only occasional reports of these disorders until the middle of this century, when systematic investigation began. Scientific attention to understanding and caring for patients with functional GI disorders developed only in the last 20 years, and has grown progressively. Some reasons for increased interest relates to the symptoms viewed as a syndrome that has treatment options, as well as the use of newer investigative techniques in gastrointestinal physiology.

There is a need for additional research on these disorders given their health care impact. In order to train physicians and psychologists to care for these patients, investigation into the pathophysiology, classification, and treatment of functional GI disorders must continue.

Research on the psychosocial aspects of these disorders has yielded three general observations:

- Psychological stress exacerbates gastrointestinal symptoms.
- Psychosocial disturbances amplify illness experience and adversely affect health status.
- Having a functional GI disorder impairs the quality of one's life.

### **PSYCHOLOGICAL STRESS EXACERBATES GASTROINTESTINAL SYMPTOMS**

The evolving theory suggests that chronic GI symptoms are generated by a combination of intestinal motor, sensory and CNS activity. The mechanism for these associations relates to the existence of bi-directional pathways between the central and enteric nervous systems, the so-called "brain-gut" axis.

These bi-directional pathways provide the linkage between sensation in the gut and intestinal motor function. External stressors and cognitive information (emotion, thought) have, by nature of their neural connections in the brain, the capability to affect



gastrointestinal sensation, motility, and secretion. Conversely, not only does the brain affect the gut, but activity in the gut affects central pain perception, mood, and behavior.

**PSYCHOSOCIAL DISTURBANCES AMPLIFY ILLNESS EXPERIENCE  
AND ADVERSELY AFFECT HEALTH STATUS**

Patients with functional gastrointestinal disorders show greater psychological difficulties than healthy subjects or other medical patients. However, these data are drawn from selected patients at referral centers which overestimate the true association.

For example, persons with irritable bowel syndrome who do not consult a physician are psychologically similar to normal subjects. This shows that IBS is not a psychiatric disorder. Rather, psychosocial factors modulate the illness experience and health outcomes, including physician visits.

**HAVING A FUNCTIONAL GI DISORDER IMPAIRS THE QUALITY OF ONE'S LIFE**

Any chronic illness, including IBS, will affect one's health-related quality of life (i.e., one's general well-being, ability to carry out everyday activities, concerns about the illness, and satisfaction with health care). The investigation of clinical and psychosocial outcomes, including quality of life, is new to Gastroenterology.