

# Irritable Bowel Syndrome (IBS) Concurrent with Fibromyalgia - Surprisingly Frequent

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**Irritable bowel syndrome (IBS) is a gastrointestinal disorder present in 33% to 77% of individuals with Fibromyalgia.<sup>1</sup> This prevalence rate is far higher than the 10% to 15% rate of IBS in the general population.<sup>2</sup>**

This chapter reviews the nature, impact, and treatment of IBS. It also discusses the efforts researchers are making to understand the causes and implications of the surprisingly frequent coexistence of IBS and Fibromyalgia in the same individuals.

## The Nature of IBS

The diagnosis of IBS is based on a specific cluster of bowel symptoms, primarily recurrent or persistent abdominal pain associated with diarrhea, constipation, or both. Secondary symptoms, such as bloating or the sudden urge to defecate, are also associated with the disorder. Such “supportive symptoms” give doctors more confidence in the diagnosis. A committee of international experts has set criteria (called the “Rome criteria”) for the type and frequency of bowel symptoms that warrant a definite diagnosis of IBS.

IBS is one of several “functional” gastrointestinal disorders. A functional disorder is one in which no structural abnormality can be found, but function is disturbed. Therefore, a confident diagnosis generally requires a careful medical evaluation. Sometimes medical tests, such as blood tests or endoscopy, are also needed to rule out biological problems that could account for the symptoms.

## Demographics

Epidemiological studies throughout the world indicate that IBS is at least twice as common in women as in men. This gender difference is even more pronounced in medical clinics in the United States, where 75% to 80% of patients visiting doctors because of IBS are women.<sup>3</sup> The reasons for the predominance of women with the disorder are largely unknown, but various physiological, psychological, social, and cultural explanations have been proposed.<sup>4</sup>

## Causes of IBS

The causes of IBS aren’t completely understood; however, there is growing recognition among experts that many causal factors are involved and that different factors may cause and maintain IBS in different patients.<sup>5</sup>

- In recent years, the most studied causal factor (which is thought by many to play a central role in explaining why IBS symptoms occur) is heightened sensitivity to pain in the intestines. Studies that use pressure generated by a balloon inflated inside the gut suggest

that approximately two-thirds of IBS patients have abnormally low thresholds for experiencing pain in their bowels.<sup>6</sup> Efforts at developing better drug treatments for IBS often focus on chemical methods to reduce this gut sensitivity.

- Research has also shown that the muscles of the intestines are over-reactive in many IBS patients, contracting excessively in response to stimuli like food, stress, and pressure.<sup>7</sup> This is the likely cause of the crampy bowel discomfort many IBS patients feel after meals and under stress.
- Over the past several years, it has become clear that dysfunctions in the brain and nervous system play some role in IBS. Studies that take snapshots of activity in the brain, using methods such as positron emission tomography and functional magnetic resonance imaging, show that IBS patients tend to process signals from the bowels in different brain centers than other people. In IBS patients, interpretation of sensations from the bowels appears to occur more in brain centers that handle emotional and threatening information, leading to more distress and suffering from these gut sensations.<sup>8</sup>
- Abnormalities in the body's processing of serotonin, an important neurotransmitter (i.e., a chemical that helps carry information from one nerve cell to another) in the nerves of the gastrointestinal tract, are partly responsible for IBS symptoms as well.<sup>9</sup> Therefore, several drugs already used for IBS and several under development work by correcting the serotonin transmission system.
- The functioning of the autonomic nervous system (ANS) – the part of the nervous system that automatically regulates the activity of the internal organs – is often altered in IBS patients.<sup>10</sup> But it has been hard for researchers to detect a consistent pattern of abnormality.
- Moreover, in recent years it has become clear that gastrointestinal infection can predispose people to developing IBS. About 25% to 32% of patients who get bacterial gastroenteritis (often due to food poisoning) develop IBS for the first time afterwards.<sup>11</sup> This post-infectious IBS persists for many years.<sup>12</sup>
- Psychological and social factors also play a significant role in IBS symptoms. But unlike the physical factors described above, these factors appear to aggravate, rather than cause, the symptoms. Compared with other medical patients or healthy individuals, IBS patients are more likely to have significant symptoms of depression and anxiety,<sup>13</sup> high levels of stress, and a history of trauma, such as childhood abuse. Having these problems appears to worsen the bowel symptoms, make them less responsive to treatment, and increase the need for medical care.<sup>14</sup>

## **The Impact of IBS**

IBS isn't life-threatening. Many patients fear that having IBS is dangerous or will lead to dangerous medical problems like colon cancer or inflammatory bowel disease (which sometimes causes symptoms similar to IBS but is unlike IBS in that it is characterized by ulcers in the bowel wall). However, there is no evidence that having IBS harms the body or endangers the sufferer. Nonetheless, it is a costly and difficult problem, both for patients and for society. On the average, IBS increases a person's annual health care expenses by 49%.<sup>15</sup> In the United States, the disorder consumes more than \$20 billion a year in direct and indirect health care costs.<sup>16</sup>

Many IBS patients have mild symptoms and do not seek medical care. However, the disorder is a significant problem for the minority of patients who have severe symptoms. In addition to the suffering that the symptoms bring, they often leave the patient unable to travel, work outside the

home, or participate in social events. And many report that the symptoms substantially undermine intimate relationships with their romantic partners or spouses.

Such serious effects of IBS have traditionally been largely unrecognized by both medical professionals and the general public. This is partly because the disorder is so private that people in the patient's social circle are often unaware that he or she suffers from it. It's partly also because the disorder poses no threat of physical harm and is therefore too easily regarded as less serious and many other medical conditions.

Studies in the last 5 years have documented the negative impact of IBS on patients. This knowledge is helping medical professionals see that the patient's well-being must be seriously considered in clinical care.

For example, a recent study by Miller and colleagues in England found through a confidential survey that 38% of IBS patients in gastroenterology clinics had contemplated suicide because of their symptoms and their hopelessness about their bowel condition improving.<sup>17</sup> Gralnek and his co-workers reported that some aspects of health-related quality of life are worse for individuals with IBS than for patients with major potentially life-threatening medical disorders, such as diabetes mellitus or even dialysis-dependent end-stage renal disease.<sup>18</sup>

### **IBS and Fibromyalgia**

Scientific study of IBS now examines its overlap with other medical conditions. Researchers have discovered that IBS not only co-occurs at high rates with some other digestive tract disorders, such as functional dyspepsia (stomach distress and indigestion), but also co-occurs at much higher rates than expected with four chronic health problems that have little to do with the intestinal tract:

- Fibromyalgia
- Chronic Fatigue Syndrome
- Temporomandibular Joint Disorder (TMJ or TMD)
- And chronic pelvic pain

Of these four, the high rate of co-occurrence between IBS and Fibromyalgia is by far the best established. Six studies show that Fibromyalgia occurs in 20% to 65% of IBS patients.<sup>1,19</sup> Conversely, 13 studies report that between 35% and 77% of Fibromyalgia patients have IBS. In other words, in samples of patients with either condition, the other occurs at rates so far above normal that this cannot be happening by chance. The reasons for this high overlap are currently a matter of considerable interest to experts.

### **Common Characteristics of IBS and Fibromyalgia**

IBS and Fibromyalgia are both chronic and complex conditions that have a number of characteristics in common, as the reader may already have appreciated. Many investigators have examined such commonalities to see if they provide a causal link explaining why these disorders occur together so frequently. Yet it's probably fair to say that, to date, these attempts have resulted in more frustration and confusion than insight.

- For example abnormalities in autonomic nervous system function have been repeatedly found in both IBS and Fibromyalgia, but the pattern of dysfunction is different and, in some ways, tends in opposite directions in the two disorders.
- Stress plays a definite role in both disorders, and hormones involved in the body's response to stress (such as corticotrophin-releasing hormone [CRH] and adrenocorticotropin hormone [ACTH]) also show some abnormality in both conditions. But

the pattern seems to be exaggerated stress hormone activity in IBS and suppressed activity in Fibromyalgia.

- Pain sensitivity is a shared and central characteristic of both IBS and Fibromyalgia, but here again the pattern isn't comparable. In IBS, pain sensitivity is typically increased inside the intestine, but patients don't show the tender points that characterize Fibromyalgia. Conversely, when Fibromyalgia patients are tested for pain, they show musculoskeletal tenderness but none of the heightened intestinal sensitivity seen in IBS.

And so the physiological patterns of these disorders are proving more different than alike. This fact challenges the view of some medical theorists that Fibromyalgia and IBS, along with other chronic health problems, are merely different surface reflections of the same broader "somatic syndrome," with the same underlying physical and psychological causes. Wessely and colleagues<sup>20</sup>, who principally promoted this view, had even suggested that which diagnosis patients receive might be happenstance, depending on what kind of medical expert they visit. (For example, in the same patient a rheumatologist might see Fibromyalgia and a gastroenterologist might see IBS.)

This view seems unwarranted considering the mounting evidence of multiple physiological differences between IBS and Fibromyalgia.

### **The Consequences of Living with Both Disorders**

What are the consequences of having both IBS and Fibromyalgia? A few studies have investigated this question, but the results are inconsistent and make it hard to draw many general conclusions.

One relatively large Italian study recently found that if IBS patients also have Fibromyalgia, their bowel symptoms are more severe, but they don't have worse psychological symptoms.<sup>21</sup> An Israeli research team reports that patients who have both IBS and Fibromyalgia have poorer quality of life, poorer physical functioning, greater sleep disturbance, and (in contrast with the Italian findings) more psychological distress than those with only one disorder.<sup>22</sup>

Yet Chang and colleagues conducted two smaller studies in the United States that contradicted the Italian findings. They found that IBS patients with Fibromyalgia had less abdominal pain than patients suffering only from IBS,<sup>23</sup> and that IBS patients without Fibromyalgia were less sensitive to pain at traditional Fibromyalgia tender points than even healthy subjects.<sup>24</sup>

*Although it is hard to draw firm general conclusions from these data, it seems that having both disorders at least worsens overall physical functioning and quality of life.*

### **Treatment of IBS**

As the previous discussion shows, IBS is a mysterious and complicated disorder, and its symptoms appear to result from several variables that may be different from one patient to the next. This makes conventional medical treatment, which typically addresses health problems through focused targeting of a main cause, difficult and relatively ineffective.

In fact, despite the marvels of modern pharmaceuticals and medical technologies, the most frequently used treatment approaches aren't biomedical. The first large-scale survey of medical care for IBS in the United States, conducted in a large health maintenance organization (HMO) in the Seattle area and published in 2004, found that the three most common interventions physicians used were education, reassurance, and suggestions for diet change, such a fiber-rich

foods or fiber supplements.<sup>25</sup> These simple methods are often sufficient to help patients with mild IBS symptoms.

For patients with moderate symptoms, one or more of many medications are also used. They treat the most distressing symptoms, such as diarrhea or pain. Such treatments can ameliorate a distressing symptom, but there's little evidence that most of these medications are effective in treating IBS.<sup>26</sup>

In the last few years, the first two medications approved for IBS treatment, alosetron and tegaserod, have become available in the United States. However, these drugs are applicable only to certain subsets of patients. Objectively examined, the research shows that few patients benefit more by taking them than by taking any other medication. In controlled research studies, only 5% to 17% more patients report improvement with them than with a placebo (that is, with an inert or "fake" pill).<sup>27</sup>

In addition to prescription medications, many IBS patients take over-the-counter medications for their symptoms. Many also use herbal medications and other alternative therapies.

Data on the outcomes of the medical care given IBS patients make it hard to escape the conclusion that it is ineffective. Less than half of IBS patients say they are satisfied with the outcome of conventional medical treatment.<sup>28</sup> The large HMO survey of IBS care by Whitehead and colleagues<sup>25</sup> mentioned above found that 6 months after visiting doctors for their bowel symptoms, only 49% of patients reported being any better, and only 22% showed 50% or greater improvement. For patients with the most severe symptoms the rates of improvement were even poorer.

### **Additional Treatments**

The symptoms of patients with severe IBS continue unabated despite their seeing doctors and receiving typical medical care. So, various alternatives or additions to conventional treatment have been, and continue to be, tested. Two such options for severe IBS patients unresponsive to regular medical interventions seem most promising.

- One is the use of antidepressant medications. They are often effective in reducing pain even when the patient isn't depressed. (The same has been observed for Fibromyalgia.) The older class of antidepressants, called tricyclics, seems more effective than the newer and more popular selective serotonin reuptake inhibitors (SSRIs).
- The other effective way to improve outcomes in severe IBS cases is through psychological treatments. A wide range of psychological treatments has been tested, but cognitive-behavioral therapy and **hypnosis** are currently the two types best supported by research as effective in a large proportion of patients. Both have been shown to reduce the severity of bowel symptoms by 50% or better in some studies,<sup>29</sup> and the benefits often last for years.

### **The Future Direction of Treatment**

We have every reason to believe that IBS treatment will soon become more effective.

- Several medications are under development, some of which are likely to be more effective than the two currently available.
- Psychological treatment and antidepressants are becoming more widespread as adjunctive treatments.

- Furthermore, there is growing interest in testing the benefits of using different treatments in combination, which may be more effective than any particular treatment alone.
- Finally, treatment will probably become increasingly customized, and therefore more successful, by basing it on tests that identify the causal factors present in each patient.

Much remains to be understood about IBS and how it can be reliably treated. A great deal of research and money is currently devoted to improving our understanding and therapies. And the pace of discovery is accelerating like never before. Getting a better handle on the nature of this complex disorder will also reveal the reasons for the high coincidence of IBS and Fibromyalgia, which today continues to be a mystery despite much hard work by researchers.

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