# Effectiveness of Acupressure in Alleviating Symptoms of Irritable Bowel Syndrome

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## Abstract

Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal disorder characterized by recurrent abdominal pain, altered bowel habits, bloating, and discomfort in the absence of identifiable structural abnormalities. The condition significantly affects quality of life and is often associated with psychological stress, anxiety, and dysregulation of the gut–brain axis. Conventional management strategies, including dietary modification, antispasmodic agents, laxatives, antidiarrheal medications, and psychological therapies, provide variable symptom relief and may not fully address the chronic and multifactorial nature of the disorder. Acupressure, a non-invasive technique derived from traditional East Asian medicine, involves applying manual pressure to specific acupoints to promote physiological balance and symptom control. In gastrointestinal disorders, commonly targeted points include ST25 (Tianshu), ST36 (Zusanli), and SP6 (Sanyinjiao), which are believed to influence digestive function and autonomic regulation. This study examines the effectiveness of acupressure in alleviating core IBS symptoms, including abdominal pain, bloating, constipation, and diarrhea.

**Keywords:** Irritable Bowel Syndrome (IBS); Acupressure; Gut–Brain Axis; Abdominal Pain

## Introduction

Irritable Bowel Syndrome (IBS) is a chronic functional gastrointestinal disorder characterized by recurrent abdominal pain associated with altered bowel habits, including diarrhea, constipation, or a mixed pattern. Unlike inflammatory or structural gastrointestinal diseases, IBS does not present with identifiable anatomical abnormalities, yet it significantly affects daily functioning and quality of life. The global prevalence of IBS is estimated to range between 5% and 15%, with higher rates reported among women and younger adults. The pathophysiology of IBS is complex and multifactorial. Key mechanisms include altered gastrointestinal motility, visceral hypersensitivity, dysregulation of the gut–brain axis, low-grade inflammation, and changes in the intestinal microbiota. Psychological factors such as stress, anxiety, and depression frequently coexist with IBS and may exacerbate symptom severity through neuroendocrine pathways. This bidirectional interaction between the central nervous system and the gastrointestinal tract highlights the importance of holistic management strategies. Conventional treatment approaches focus on symptom relief and may include dietary modifications, fiber supplementation, antispasmodics, laxatives, antidiarrheal agents, probiotics, and psychological therapies such as cognitive behavioral therapy. While many patients experience partial improvement, long-term symptom control remains challenging, and some pharmacological treatments may produce side effects or inconsistent outcomes. In recent

years, complementary and integrative therapies have gained attention as supportive options for IBS management. Acupressure, a non-invasive technique derived from traditional East Asian medicine, involves applying manual pressure to specific acupoints believed to regulate internal organ function and restore physiological balance. From a biomedical perspective, acupressure may influence autonomic nervous system activity, reduce visceral hypersensitivity, regulate gastrointestinal motility, and modulate stress-related hormonal responses. Given the chronic and stress-sensitive nature of IBS, evaluating the effectiveness of acupressure as a complementary intervention is clinically relevant. This study aims to explore the role of acupressure in alleviating core IBS symptoms, improving gastrointestinal function, and enhancing overall well-being, while assessing its safety and feasibility in long-term management.

**Epidemiology and Risk Factors of Irritable Bowel Syndrome**

Irritable Bowel Syndrome (IBS) is one of the most common functional gastrointestinal disorders worldwide. Population-based studies estimate that the global prevalence ranges from approximately 5% to 15%, depending on diagnostic criteria and geographic region. Variability in prevalence is influenced by differences in dietary patterns, healthcare access, cultural perceptions of symptoms, and the application of diagnostic guidelines such as the Rome criteria.

1. Age and Gender Distribution

IBS is more frequently diagnosed in women than in men, with female-to-male ratios reported between 1.5:1 and 2:1 in many regions. Hormonal influences, differences in visceral sensitivity, and healthcare-seeking behavior may contribute to this disparity.

The condition commonly presents in adolescence or early adulthood, with peak incidence observed in individuals under 50 years of age. Although IBS can occur at any age, new onset in older adults warrants careful evaluation to exclude organic pathology.

2. Geographic and Socioeconomic Variations

Prevalence rates vary globally, with higher reported rates in North America and Europe compared to some Asian and African populations. Urbanization, dietary shifts toward processed foods, and increased psychosocial stress may contribute to rising prevalence in developing regions. Socioeconomic status, healthcare awareness, and cultural attitudes toward gastrointestinal symptoms also influence reporting patterns.

3. Psychological and Psychosocial Factors

Psychological stress, anxiety, depression, and history of trauma are strongly associated with IBS. The bidirectional relationship between the central nervous system and the gastrointestinal tract, often described as the gut–brain axis, plays a critical role. Chronic stress can alter gut motility, increase visceral hypersensitivity, and disrupt intestinal barrier function, thereby exacerbating IBS symptoms.

4. Post-Infectious and Inflammatory Factors

A subset of patients develops IBS following an episode of acute gastroenteritis, known as post-infectious IBS. Persistent low-grade inflammation, altered gut microbiota, and immune activation may contribute to symptom persistence after the initial infection resolves.

5. Dietary and Lifestyle Influences

Certain dietary components, particularly fermentable oligo-, di-, and monosaccharides and polyols (FODMAPs), can trigger symptoms in susceptible individuals. Sedentary lifestyle, irregular eating habits, and sleep disturbances are additional risk factors that may influence gastrointestinal function and symptom severity.

6. Genetic and Biological Predisposition

Although IBS is not strictly hereditary, family clustering suggests a possible genetic predisposition or shared environmental influences. Altered serotonin signaling in the gastrointestinal tract has also been implicated in bowel habit irregularities and pain perception.

IBS is a highly prevalent and multifactorial disorder influenced by biological, psychological, environmental, and lifestyle factors. Understanding its epidemiological patterns and associated risk factors is essential for developing targeted prevention strategies and comprehensive management approaches, including complementary therapies such as acupressure.

**Pathophysiology of IBS and the Gut–Brain Axis**

Irritable Bowel Syndrome (IBS) is a functional gastrointestinal disorder characterized by chronic abdominal pain and altered bowel habits without detectable structural abnormalities. Its pathophysiology is complex and multifactorial, involving dysregulation of intestinal motility, visceral hypersensitivity, immune activation, microbiota imbalance, and altered communication between the gut and the brain. Central to this process is the gut–brain axis, a bidirectional communication network linking the central nervous system (CNS) and the gastrointestinal tract.

1. Altered Gastrointestinal Motility

Patients with IBS often exhibit abnormal patterns of intestinal contraction. Accelerated transit may contribute to diarrhea-predominant IBS, while delayed transit may lead to constipation-predominant IBS. These motility disturbances are partly influenced by dysregulation of the enteric nervous system and altered neurotransmitter signaling, particularly involving serotonin (5-HT), which plays a key role in regulating bowel function.

2. Visceral Hypersensitivity

One of the hallmark features of IBS is heightened sensitivity to normal gastrointestinal stimuli. Patients may perceive normal intestinal gas or bowel movements as painful. This phenomenon, known as visceral hypersensitivity, results from enhanced activation of pain pathways within the gut and altered processing of sensory signals in the spinal cord and brain.

Peripheral sensitization of gut nociceptors and central amplification of pain signals both contribute to symptom severity.

3. Dysregulation of the Gut–Brain Axis

The gut–brain axis integrates neural, hormonal, and immunological signaling between the gastrointestinal system and the CNS. Stress and emotional disturbances can influence gut motility, secretion, and immune responses through activation of the hypothalamic–pituitary–adrenal (HPA) axis and autonomic nervous system.

Chronic stress increases cortisol release and sympathetic activity, which may alter intestinal permeability and microbiota composition, thereby exacerbating IBS symptoms. Conversely, persistent gastrointestinal discomfort can heighten anxiety and stress, creating a self-reinforcing cycle.

4. Role of the Intestinal Microbiota

Emerging evidence suggests that alterations in the composition and diversity of gut microbiota contribute to IBS pathogenesis. Dysbiosis may affect fermentation processes, gas production, immune activation, and intestinal barrier integrity. Changes in microbial metabolites can influence both local gut function and central nervous system activity.

5. Low-Grade Inflammation and Immune Activation

Some individuals with IBS exhibit subtle inflammatory changes in the intestinal mucosa. Increased numbers of immune cells and elevated pro-inflammatory cytokines may enhance sensory nerve activation and contribute to visceral hypersensitivity.

6. Neurotransmitter Imbalance

Serotonin, dopamine, and other neurochemicals are involved in regulating both mood and gastrointestinal function. Approximately 90% of the body's serotonin is produced in the gut. Abnormal serotonin signaling has been linked to altered bowel habits and pain perception in IBS patients.

IBS arises from a dynamic interplay between intestinal function, neural signaling, immune responses, and psychological factors. The gut–brain axis serves as the central framework connecting these mechanisms. Understanding this complex pathophysiology provides a rationale for integrative therapeutic approaches, including acupressure, which may modulate autonomic activity, reduce stress-related neuroendocrine activation, and influence gastrointestinal regulation.

**Conclusion**

Irritable Bowel Syndrome is a multifactorial and stress-sensitive gastrointestinal disorder that significantly affects physical comfort, emotional well-being, and daily functioning. Its pathophysiology involves a complex interaction among altered gut motility, visceral hypersensitivity, immune activation, microbiota imbalance, and dysregulation of the gut–brain axis. These interconnected mechanisms explain why IBS symptoms often fluctuate in response to psychological stress and environmental triggers. Conventional management strategies focus primarily on symptom control through dietary modification, pharmacological agents, and psychological interventions. While many patients achieve partial relief, long-term management remains challenging due to the chronic and recurrent nature of the disorder. Acupressure offers a complementary approach that may address both gastrointestinal symptoms and stress-related neuroendocrine factors. By modulating autonomic nervous system activity, influencing gut motility, reducing visceral sensitivity, and promoting relaxation, acupressure may help restore balance within the gut–brain axis. Its non-invasive nature, safety profile, and feasibility for self-administration make it a practical adjunct in IBS care. Although current findings are encouraging, further well-designed randomized controlled trials are required to establish standardized treatment protocols and confirm long-term efficacy. Overall, integrating acupressure into comprehensive IBS management may contribute to improved symptom control, enhanced quality of life, and a more holistic therapeutic approach.

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