



## Review Article

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### TAKRA: AN INTEGRATIVE REVIEW ON ITS EFFICACY IN IRRITABLE BOWEL SYNDROME

Mayank Kumar Keshri <sup>1\*</sup>, Shalini Prakash <sup>2</sup>

<sup>1</sup> PG Scholar, Department of Kriya Sharir, Ch Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Delhi, India

<sup>2</sup> Assistant Professor, Department Of Kriya Sharir, Ch Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Delhi, India

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**\*Corresponding author**

E-mail: mayank.keshri@gmail.com

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#### ABSTRACT

In the quest for effective and holistic therapies for the growing burden of gastrointestinal illnesses, IBS has emerged as a major concern. This integrative review, "Takra: An integrative review on its efficacy in irritable bowel syndrome," examines whether Takra (buttermilk), a fermented dairy product, can treat IBS. The human gut, a dynamic ecology of microbes, is essential to health. New research has shown that gut health affects everything from immunity to mental health. IBS, a persistent functional gastrointestinal illness that causes abdominal pain and bloating and changes bowel patterns, burdens sufferers and healthcare systems worldwide. Takra (buttermilk or chaas) has a long history in traditional medicine, particularly in Ayurveda, which was used to treat digestive issues like Grahani roga (Malabsorption syndrome). Its fermentation process gives it probiotic characteristics, making it ideal for gastrointestinal ailments. This extensive analysis evaluates clinical and preclinical data to determine if Takra (buttermilk) can treat IBS. Historical use, mechanisms of action, clinical evidence, and safety are studied. The results of this review imply that Takra (buttermilk) may be a promising natural and culturally rooted IBS supplement. This article discusses Takra (buttermilk), the ancient elixir, and its potential to improve gut health, treat IBS, and improve the quality of life as the global healthcare landscape evolves towards integrative and holistic treatments.

**Keywords:** Takra (buttermilk), Gut Health, Irritable Bowel Syndrome, Probiotic, Integrative Review, Traditional Medicine, Ayurveda

#### INTRODUCTION

The human gut is a complex ecosystem with billions of microbes. This complex microbial ecosystem is vital to health. Gut bacteria play an important role in human health, such as supplying essential nutrients, synthesizing vitamin K, aiding in the digestion of cellulose, and promoting angiogenesis and enteric nerve function.<sup>1</sup> As research shows its enormous effects on digestive health, immunity, mental health, and metabolic function, gut health has become increasingly important. An imbalance in the gut microbiota can cause irritable bowel syndrome (IBS) and other health concerns.<sup>2</sup>

Takra (buttermilk) has been enjoyed for ages in many civilizations, especially in South Asia. It was used in ancient Ayurvedic writings as a nutritious drink and a digestive treatment. Takra's (buttermilk) fermentation method turns milk into a probiotic-rich drink that may improve gut health and gastrointestinal disorders.<sup>3</sup> The curd is taken in a vessel and with the help of a churner, it is churned for a while. Later, a specified water ratio is added and churning is continued for one prahara kala (3-hour time); the perfect Takra (buttermilk) will be prepared.<sup>4</sup>

The rising prevalence of gastrointestinal illnesses, notably IBS, has sparked interest in natural and traditional therapies. Given Takra's (buttermilk) historical use and putative probiotic qualities, an integrative study of its IBS symptoms management efficacy is needed. This review aims to assess if Takra (buttermilk) is a helpful adjunctive treatment for IBS. The paper will also discuss the safety and contraindications of Takra (buttermilk).

Relevant studies concerned with Takra (buttermilk) and gut health in the ayurvedic texts, indexed journals and contemporary medical science have been used for a systematic search. Literature was collected using MeSH (Medical Subject Headings) phrases like "Takra," "buttermilk," "probiotic," and "Irritable Bowel Syndrome."

#### Gut Health and IBS

The complex and dynamic gastrointestinal tract is essential to digestion, food absorption, and health. Gut health depends on the gut microbiota, a varied ecology of bacteria and other microbes. This community of microbes interacts with the host and significantly affects gut health. Digestion, food metabolism, and immune system health depend on a balanced and diverse gut flora.<sup>5</sup> Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal illness that causes abdominal pain, bloating, discomfort and altered bowel habits.<sup>6</sup> Since no diagnostic tests for IBS, symptoms are used to diagnose it. IBS is a diagnosis of exclusion, so other medical disorders must be checked out before diagnosis.<sup>7</sup>

Millions of people suffer from IBS. IBS symptoms affect 10–15% of the global population.<sup>8</sup> IBS can cause pain, anxiety, and disruptions in daily living. IBS sufferers can be emotionally and physically exhausted due to its unpredictability.<sup>9</sup>

IBS is difficult to manage because there is no single treatment that works for everyone. Diet, lifestyle, and medicine are usually used to treat specific symptoms. Standard IBS treatment methods include:

Dietary changes: Limiting fermentable carbs, like the low-FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) diet, can improve IBS symptoms.<sup>10</sup>

Lifestyle changes: Stress management, exercise, and sleep can help with IBS symptoms.<sup>11</sup>

Drugs: Antispasmodics, laxatives, and anti-diarrheals may be administered depending on the prevalent symptoms.

Probiotics can help IBS symptoms by supporting gut health with helpful microorganisms.

Psychological Therapies: CBT (Cognitive Behavioural Therapy) and relaxation techniques can help IBS patients handle anxiety and stress.<sup>12</sup>

### Takra Culture and History

Takra, also known as buttermilk or chaas, has historical roots in South Asian traditions. Takra's (buttermilk) history covers the Indian subcontinent, Persian cultures, and even sections of Europe, demonstrating its importance.

Takra (buttermilk) was traditionally used to improve digestion. Takra (buttermilk) was treasured in Ayurveda for its healing abilities. Charaka has mentioned Takra (buttermilk) in several conditions like shotha (swelling), grahani dosha (malabsorption syndrome), garavisha (low potency poison), snehavyapad (complication due to overuse of oil therapy).<sup>13</sup> It was a great digestive aid for indigestion, bloating, and diarrhoea. Takra's (buttermilk) fermentation method makes it a probiotic, which helps preserve intestinal health.<sup>14</sup>

Takra (buttermilk) is made by churning yoghurt and it can also be seasoned with herbs and spices for flavour and therapeutic value. Takra (buttermilk) is typically seasoned with cumin, ginger, curry leaves, asafoetida, and salt.

Based on cream content, Acharya (prominent teacher or guide) divided Takra (buttermilk) into three different categories as Ruksha Takra – Udhrutasneha (Buttermilk without cream), Eashatsnigdha Takra (buttermilk with half removed cream), Snigdha Takra (buttermilk with cream).<sup>15</sup>

Many cultures have incorporated it into their ceremonies and celebrations. Takra (buttermilk) is offered to deities in India during religious rites and festivals. In some locations, guests are served Takra (buttermilk) as a welcome drink and for refreshment.<sup>16</sup>

### Takra Nutrition and Probiotics

Takra (buttermilk), the ancient fermented dairy beverage, is delicious and nutritious. Buttermilk consists mainly of water (about 90 percent), milk sugar lactose (about 5 percent), and protein casein (about 3 percent). Protein, fat, and carbohydrates make up its macronutrients. Lactose, the natural sugar in milk, is the main carbohydrate, but fermentation breaks it down, making it more digestible for lactose intolerance sufferers. Protein contains necessary amino acids.<sup>17</sup>

B vitamins (B2, B12, and folate) and minerals, including calcium, potassium, and magnesium, are also found in Takra (buttermilk).<sup>18</sup> Micronutrients are necessary for metabolic processes.

A hallmark of Takra (buttermilk) is its probiotic content. Lactic acid bacteria (LAB) and other helpful microbes ferment milk into Takra (buttermilk), a probiotic-rich beverage.<sup>19</sup> Takra (buttermilk) contains probiotic bacteria like *Lactobacillus acidophilus*, *Plantarum casei*, and *Streptococcus thermophilus*. Many studies have examined the health effects of these probiotics, notably for gut health.

### Efficacy of Takra in Managing IBS

Evaluation of the efficacy of Takra (buttermilk) in managing IBS has been the subject of multiple research studies. Given its historical use and probiotic properties, these studies aimed to determine the possible benefits of incorporating Takra (buttermilk) into IBS treatment. Several clinical trials and preclinical studies have been conducted to assess the effect of Takra (buttermilk) on IBS symptoms and overall gastrointestinal health.<sup>20</sup>

The research findings concerning the effects of Takra (buttermilk) on IBS have been encouraging. Various IBS symptoms, such as abdominal pain, bloating, and irregular bowel behaviours, have been reported to improve in clinical studies.<sup>21</sup> Patients consuming Takra (buttermilk) have frequently reported decreased discomfort and improved well-being. In addition, several studies have suggested that Takra (buttermilk) may have a positive impact on the mood and psychological factors that are frequently associated with IBS, such as anxiety and tension.<sup>22</sup>

Microbiota Modulation: Takra's (buttermilk) probiotic strains, such as *Lactobacillus* and *Streptococcus* species, help restore a balanced intestinal microbiota. This equilibrium reduces the overgrowth of potentially hazardous bacteria and increases the diversity of beneficial microorganisms, resulting in a healthier gut environment.<sup>23</sup>

Reduction of Inflammation: The anti-inflammatory properties of Takra's (buttermilk) probiotics can help mitigate the chronic low-grade inflammation frequently observed in IBS. By minimizing intestinal inflammation, Takra (buttermilk) may reduce symptoms such as abdominal pain and discomfort.<sup>24</sup>

Enhanced Gut Barrier Function: The probiotics in Takra (buttermilk) may improve the integrity of the intestinal barrier, thereby preventing the absorption of toxic substances into the circulation. This can reduce immune system activation and alleviate gut-related symptoms.<sup>25</sup>

Digestive Support: Takra's (buttermilk) probiotics assist in the digestion of lactose and other food components, which may be advantageous for individuals with lactose intolerance or other digestive issues commonly observed in IBS patients.<sup>26</sup>

Psychological Advantages: The connection between the gut and brain, known as the gut-brain axis, plays a crucial function in irritable bowel syndrome. This axis can help alleviate the tension and anxiety associated with IBS, which may account for Takra's (buttermilk) beneficial effects on mood and psychological well-being.<sup>27</sup>

Takra (buttermilk) is Kashaya (Astringent) in rasa (taste) and anurasa (sub-taste) and has grahi (absorbent), laghu (light) and ruksha (dry) gunas (properties) so that it is best agnidipaka (digestive fire enhancers), triptikaraka (thirst satisfying) and vatanashaka (balances vata dosha),<sup>28</sup> all these properties benefit the patient of IBS in controlling their symptoms.

## Takra Safety and Adverse Effects

Takra (buttermilk), a traditional fermented dairy product, is safe to consume. However, some people may encounter negative responses or side effects, especially if they have specific food allergies or sensitivities. Takra (buttermilk) intake has been linked to certain modest adverse effects.

In the case of lactose intolerance, people with lactose sensitivity may react by experiencing gas, bloating, and diarrhoea. People may rarely experience an allergic reaction to Takra (buttermilk).<sup>29</sup> It's crucial to consider dosage and abide by safety recommendations to maximize the possible advantages of Takra (buttermilk) while lowering the danger of unwanted effects. Unlike other meals or drinks, Takra (buttermilk) consumption should be moderate. Takra's (buttermilk) composition might change depending on elements like the particular probiotic strains employed and the fermentation procedure.<sup>30</sup>

Even though Takra (buttermilk) is typically safe, contradictions and possible drug interactions should be taken into account. Takra's (buttermilk) probiotics may interact with specific drugs, particularly immunosuppressants.<sup>31</sup>

## DISCUSSION

Takra's (buttermilk) effectiveness in treating irritable bowel syndrome (IBS) is encouraging, but some information gaps still call for additional research. Future studies should concentrate on:

**Long-Term Consequences:** Long-term trials are required to determine whether Takra (buttermilk) intake can prevent the recurrence of symptoms and provide sustained benefits for controlling IBS.

**Dose-Response Relationship:** Knowing the ideal Takra (buttermilk) dosage for managing IBS is essential. Future research should examine dose-response correlations to establish the most efficient and secure consumption levels.

**Probiotic Strain Variability:** Takra (buttermilk) contains various probiotic strains,<sup>32</sup> of which may affect IBS symptoms differently. The best strains and their modes of action should be the subject of future research.

**Patient Stratification:** IBS is a diverse disorder with a range of symptomologies. Future research should examine whether Takra (buttermilk) is more efficient for particular symptom clusters by grouping individuals based on their unique IBS subtype.<sup>7</sup>

**Safety in Vulnerable Populations:** Research should examine Takra's (buttermilk) effectiveness and safety in vulnerable groups, including pregnant women, young children, and those with severe comorbidities.

Incorporating Takra's (buttermilk) into contemporary IBS management techniques has much potential. Takra's (buttermilk) probiotic and dietary components align with the growing knowledge of the gut-brain axis and the significance of gut health in IBS. Takra can be included in nutritional suggestions for people with IBS, particularly those who have mild to moderate symptoms. It can support current dietary plans like the low-FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) diet or fibre supplements.<sup>33</sup> Takra (buttermilk) can act as a natural probiotic source, obviating the need for additional probiotic supplementation.

## CONCLUSION

This integrative review examined Takra (buttermilk) and its potential for treating irritable bowel syndrome (IBS). Takra (buttermilk) is a valuable source of nutrients. Takra (buttermilk) contains probiotics. Takra (buttermilk) may help IBS patients with their symptoms, especially with regard to lowering bloating, stomach pain and irregular bowel movements. Microbiota modification, decreased inflammation, enhanced gut barrier function, and psychological advantages contribute to Takra's (buttermilk) ability to control IBS. Takra's (buttermilk) probiotic and nutritional makeup aligns with current ideas about gut health and how it affects overall well-being. It can potentially be an important supplement to current gut health care techniques. While it might not be a cure-all for everyone with IBS, it can support current dietary and lifestyle changes. Additional research and clinical trials are required to fully comprehend Takra's (buttermilk) potential and ensure it is effectively incorporated into contemporary healthcare practices.

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