



The gut gender gap

# How IBS impacts women differently



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## About the survey

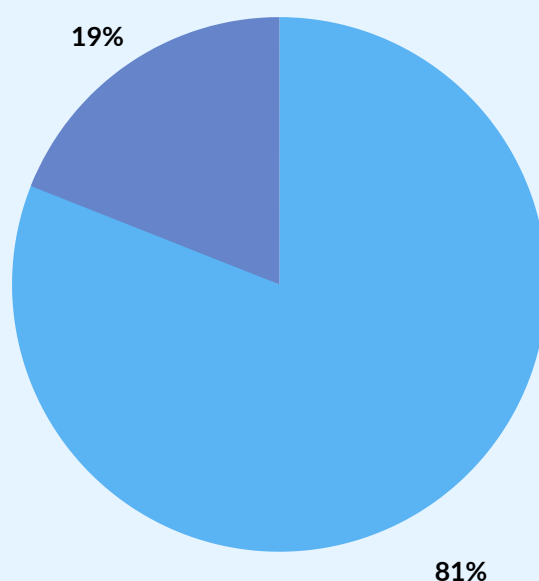
In the UK, 15% of the population suffer from IBS. With a disproportionate impact across genders, the condition is twice as prevalent in women as it is in men, and up to 25% of women will experience IBS at some point in their lives. But it's not just about prevalence.

As men and women go through completely different physiological transitions, it's only natural that the severity, let alone the variety of symptoms will differ, too.

Taking a life course approach to women's health, with this survey we acknowledge the particular

vulnerabilities at different life stages and the health improvement opportunities the insights from this study have presented. As such, the data analysed in the survey is incremental in developing a comprehensive IBS solution that can suit the needs of our community and enable the patient choice to customise the solution to individual requirements.

In partnership with The IBS Network and IFFGD, Bold Health has conducted this study to learn more about IBS from the population directly. Bold Health has received 660 responses to the survey, with participants coming from The IBS Network, Zemedly and IFFGD communities.



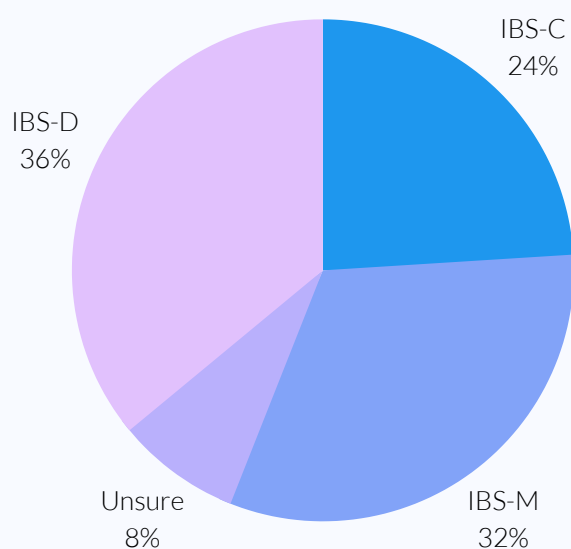
Of 660 participants,  
**534** were women and  
**126** were men.

**90%**

of the men and women in  
our study were formally  
diagnosed with IBS.



# Subtype prevalence



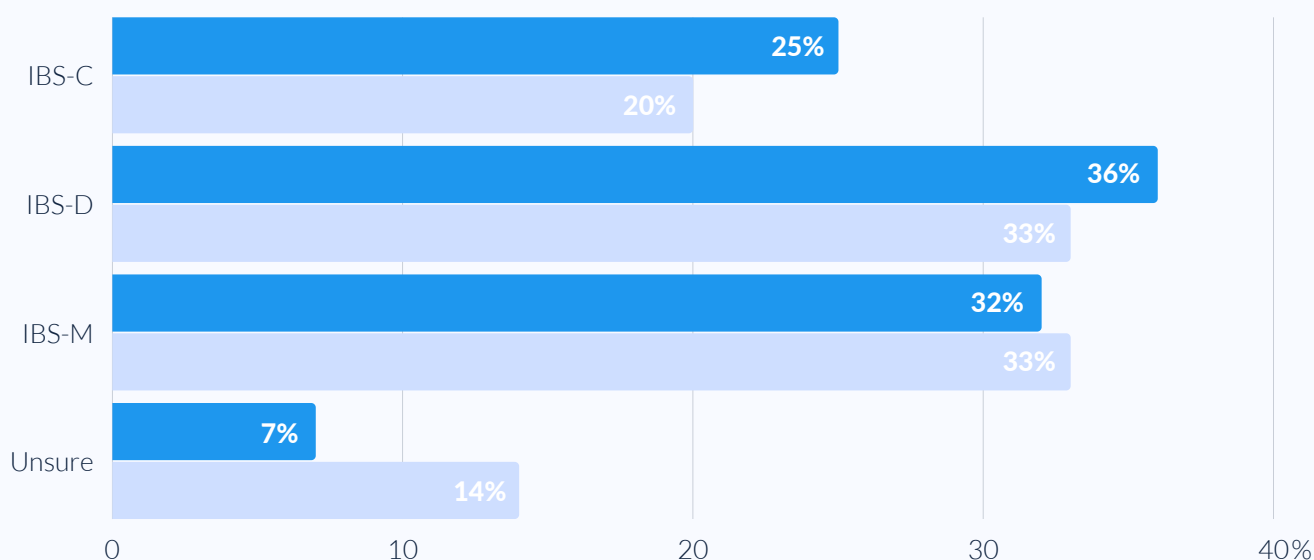
Prevalence of IBS subtypes across all genders

There are three known subtypes of IBS that are based upon bowel patterns at a particular point in time.

These are:

- IBS-C which is constipation predominant
- IBS-D which is diarrhoea predominant
- IBS-M, characterized by mixed symptoms of constipation and diarrhoea

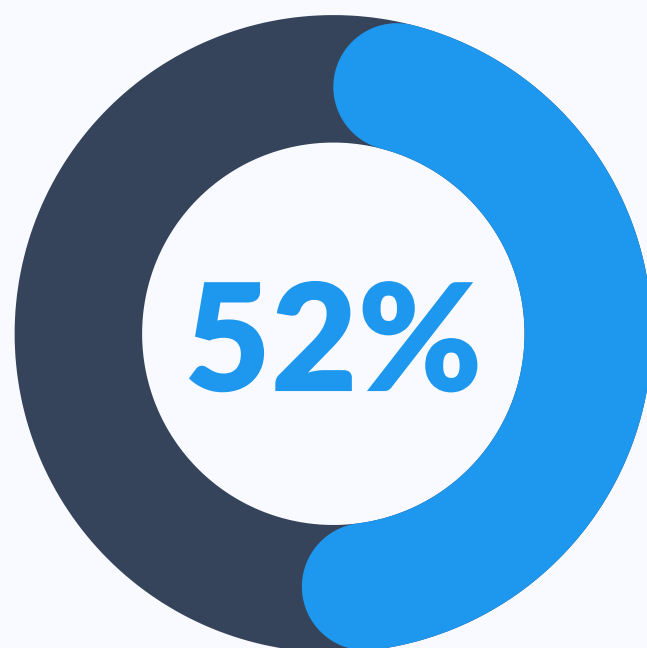
Our findings were similar to previous research, where the subtypes were almost equally prevalent.



IBS subtypes split per gender, %

# Most common symptoms

Though certain symptoms are more apparent in correlation with particular IBS subtypes, some symptoms appear prevalent across both diarrhoea-predominant IBS-D and constipation-predominant IBS-C. As such, we identified that urgency in bowel movements was the most common symptom across the whole participant group with **52% prevalence**.



*52% of respondents experience urgency in bowel movements*

The four most common symptoms were similar for men and women:



**Urgency in bowel movements** was experienced by more than half of the women and men



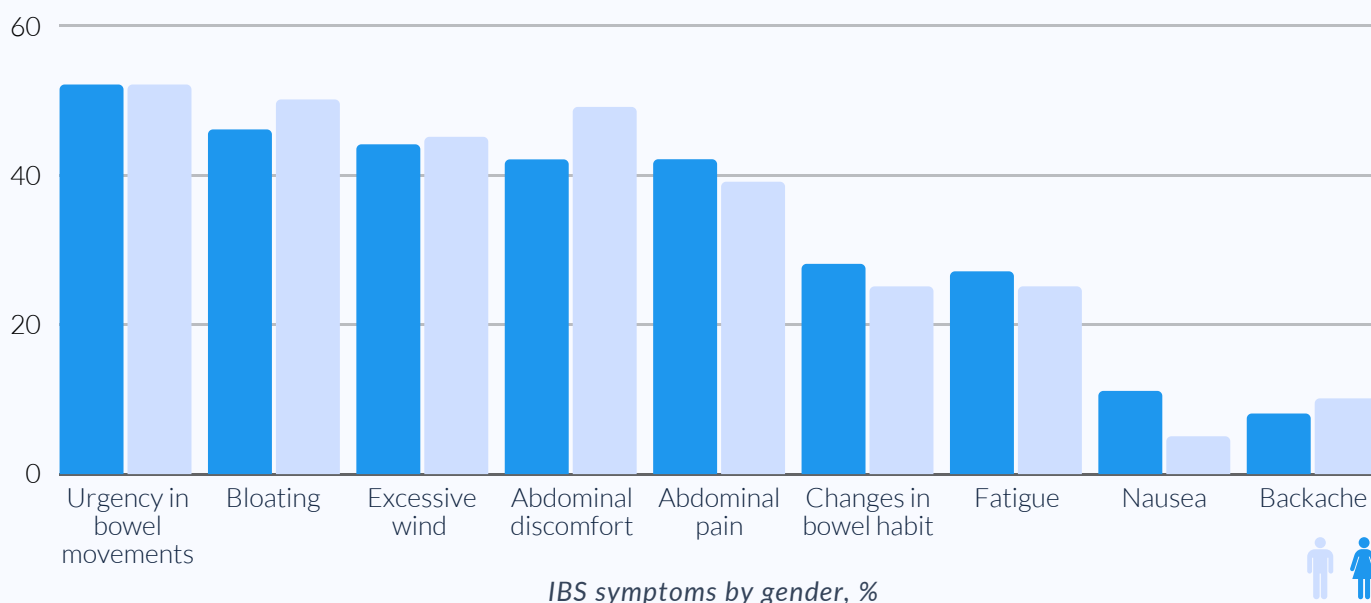
**Excessive wind** was the third most common symptom in women and fourth in men



**Bloating** was experienced by a little less than half of the women and men



**Abdominal discomfort** was the fourth most common symptom in women and third in men



# Anxiety, body confidence and IBS

Relevant to the gut-brain link, physical symptoms of IBS are often accompanied by an impact on mental wellbeing. Research has consistently shown that anxiety, specifically, is highly associated with IBS.

More than three-quarters of our participants reported struggling with anxiety and body confidence, with slightly **higher numbers in women** (a mean score of 6.5 out of 10) than men (a mean score of 6). These are very high and alarming numbers.



**5 or higher** anxiety rating in 81% women

Interestingly, when we ran a statistical test we found that anxiety and body confidence were positively correlated in patients with IBS, meaning if you struggle with anxiety, you are more likely to struggle with your body confidence and vice versa. This finding was statistically significant across both genders.



**5 or higher** anxiety rating in 73% men

We also looked at the levels of anxiety and body confidence across the different IBS subtypes and found that individuals with IBS-D reported the highest levels of struggle with anxiety and body confidence.

*"I feel that anxiety generally worsens symptoms, but it is also a vicious circle - anxiety about symptoms increases symptoms, in turn increasing anxiety"*

Furthermore, the most common rating for **both anxiety levels and the effect on body confidence** was as high as **8 out of 10**, with an average of 20% of participants struggling with these side effects of IBS on their mental wellbeing.



The majority of responders rate IBS impact on their body confidence as 8 out of 10



“

**Living with IBS is utterly miserable, and the effort to remain positive and cheerful for the sake of loved ones is absolutely exhausting.**

”

# Age-related patterns

65%

of participants said their  
IBS-related symptoms  
worsened with age

When asked about symptom severity throughout life stages, 65% of participants agreed that their IBS-related [symptoms worsened with age](#).

There is a limited number of studies on the effects of ageing with IBS available, but [one study into women with IBS](#) showed that abdominal pain and overall quality of life measures were worse in the older age group.<sup>11</sup> What causes this? The current mechanism is unknown, but it could be due to the effects of menopause in women over 50.

Menopause can have both physical and psychological symptoms that

15%

of participants said  
their IBS-related  
symptoms were  
unaffected



worsen the quality of life and the ability to cope with them. Indeed, [studies into post-menopausal women](#) with IBS compared to pre-menopausal have proven it to be true, showing a lower quality of life and more intense IBS symptoms for the former.<sup>5</sup> This link may also be due to the effect of hormone changes on the gut-brain axis which has a role to play in IBS.

“

**“I am extremely tired all  
the time and it's affected  
my mental health”**

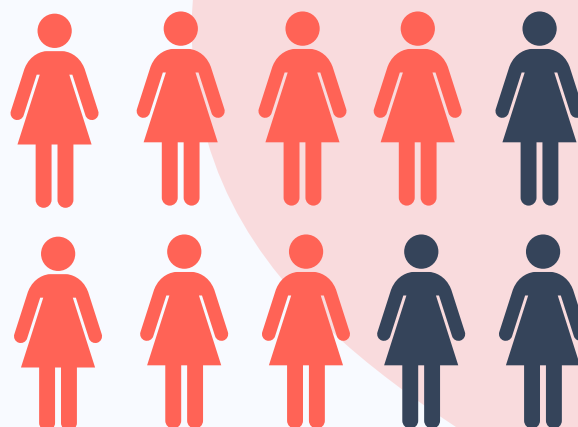


# IBS and menstruation

It is common for people to experience worsening IBS symptoms when menstruating. Experts estimate that this is true for [50% of women with IBS](#).<sup>8</sup> In our study, the numbers were higher.

[Hormone fluctuations](#) during menstruation are well known to affect the bowel even in those without IBS - in fact, this is colloquially known as “period poop”.<sup>9</sup> But the effects are more intense in individuals suffering from irritable bowel syndrome.

Prostaglandins are at high levels during people’s periods. Since this hormone causes the uterus to pulsate and shed its lining, it can also cause increased gut motility - leading to loose stool and [increased frequency of bowel movements](#).<sup>9</sup> The increased stimulation can also lead to stomach cramps - a prominent symptom in both menstruation and IBS.



*7 out of 10 women experience worsening IBS symptoms when menstruating*

Progesterone and oestrogen are also at high levels during menstruation. These tend to make stool firmer and induce constipation.<sup>10,12</sup> So, worsening constipation can also be a feature in menstruation and IBS. Higher progesterone levels can also increase [compulsive emotional eating](#).<sup>3</sup> This can lead to increased intake of high sugar foods, in turn, leading to increased flatulence - another key symptom in IBS.<sup>2,4</sup>

# IBS and pregnancy

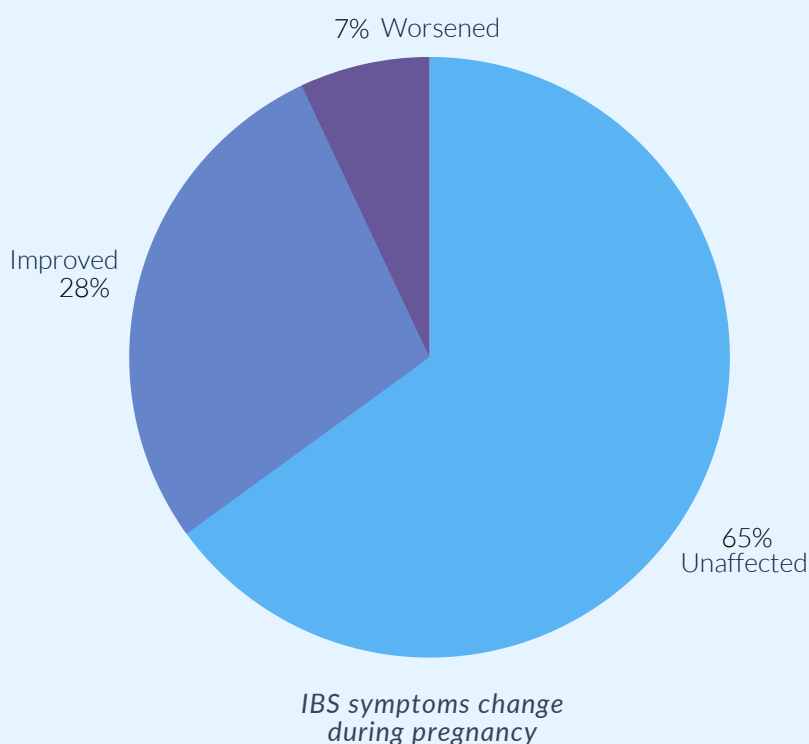
IBS can worsen in pregnancy due to hormonal changes, anxiety, and stress. Previous studies have shown 11%–38% of pregnant women reporting increased constipation, especially in the third trimester, and 34% reported [increased stool frequency](#).<sup>1</sup>

40% of the women who participated in our study have been pregnant at one point in their lives. When asked about the effect of pregnancy on their IBS symptoms, the majority said their symptoms were unaffected, and nearly a third felt like their symptoms have, in fact, improved.



A recent review in the American Journal of Gastroenterology highlighted the current gaps and scarcity of research into the link between [IBS and pregnancy](#).

What's interesting is that women [reported symptom improvement](#) during pregnancy and this further highlights the need for more studies into this complex relationship.



"I am learning, slowly, to live with it."

“

It destroys my life with worry and embarrassment, limited food choice, no sex and I cannot go beyond the reach of the toilet.

“

IBS has impacted my social and recreational life for decades, limiting my options and narrowing life experiences.

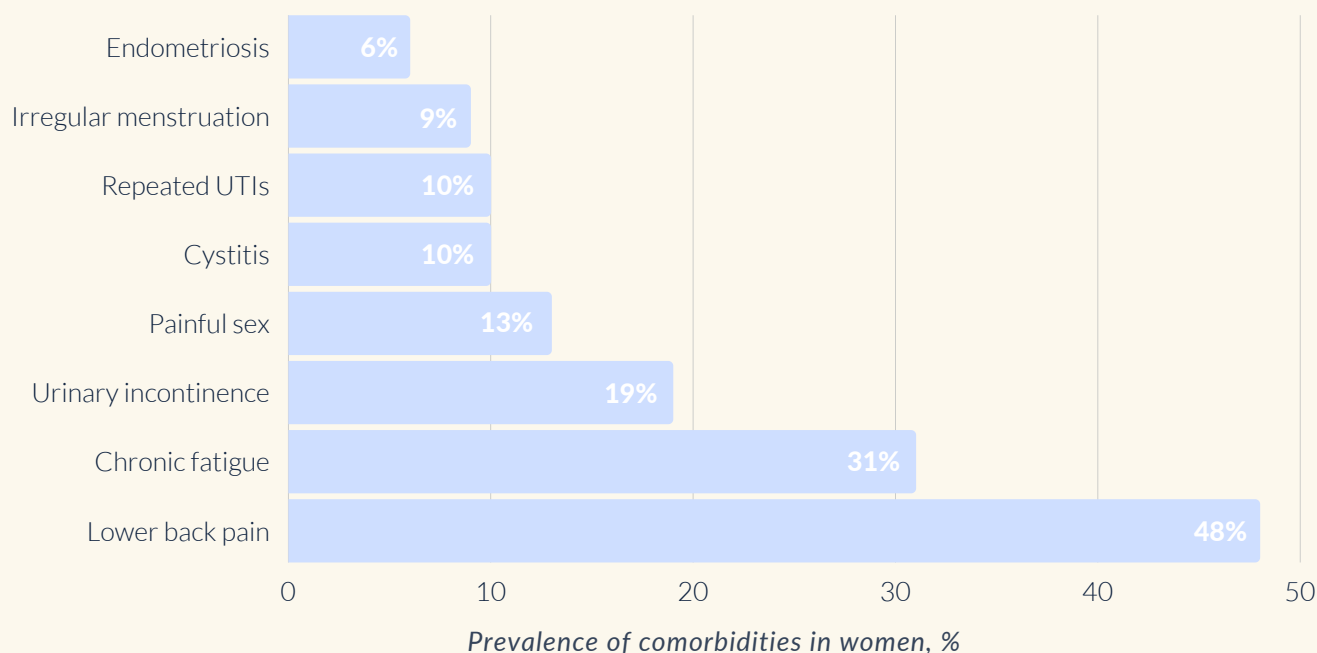
“

People don't want to know about your symptoms because they're toilet-related. It's definitely not nice to air the subject, so no one talks about it, and we all suffer in silence.

“

I also worry about eating out, in case there isn't anything on the menu that I can eat. Then, I feel bad for limiting the choice of where other people can go with me.





## Comorbid symptoms among women

Irritable bowel syndrome is also associated with various comorbid features that can manifest simultaneously with the main symptoms.

In women, it is especially presented in urogenital and musculoskeletal areas.

We asked the participants of our study to indicate whether any of the most common comorbidities have affected them throughout their life with IBS and discovered that the prevalence of comorbid conditions is indeed very high.

Only 25% of the women in our study answered “none of the above” when asked about comorbidities, meaning that **75% of them struggled with at least one other comorbidity.**

The most common comorbidity was lower back pain, and it was experienced by almost half of the participants. Followed by chronic fatigue which was reported by 3 out of 10 of our participants and urinary incontinence that was reported by 2 out of 10 of our participants.

# Patients' perspective

Previous studies on the experience of IBS state that uncertainty, unpredictability, loss of freedom, spontaneity, and social contacts, along with feelings of fearfulness, shame, and embarrassment are some of the struggles that come with IBS. We observed all these to be true in the participants of this study.

We asked the women in our study if there was anything that they would like to share beyond the standard questions we presented them with. What we found has proven just how much of a struggle IBS has been for them.

*"People don't realise how awful it feels and how debilitating it can be. It changes my moods, it changes me, it limits my life. I am totally drained and exhausted by it."*

Perpetuating a vicious cycle, both the physical and psychosocial symptoms unavoidably affect people's lives.

Putting an enormous strain on a person's mental wellbeing, the condition can be detrimental to all aspects of an individual's life.

*"It now totally rules and dominates my life and I am very nearly housebound"*

The most common theme in our data was how restrictive and "life-limiting" IBS can be.

Aside from affecting one's ability to perform daily routine activities usually unnoticed by individuals without IBS, those who suffer from it also emphasise the impact of the condition on their relationships and social life overall.

With a constant fear of being misunderstood and embarrassed, some tend to avoid social gatherings altogether. And due to the highly stigmatised nature of IBS, those who suffer feel unable to voice their concerns even to their closest circle.

*"There is nothing left I can enjoy, and I cannot even talk about it as it's an unmentionable subject."*



“

**It can be a very lonely  
experience, as no one  
understands it.**





# Final note

We believe that these results validate the need for a more personalised approach in IBS management for each individual. Bringing awareness to the struggles of IBS, this paper aims to attract more efforts to support individuals suffering from it. At the very least, we hope that this paper validates IBS patients' experiences, for the struggle is real. It is not "in your head" and you are not alone in this.

IBS can be a very difficult experience. We want to thank all the women and men that have participated in this study, gave us their time, and shared their experiences with us.

At Bold Health, we plan to utilise these insights in the development of a better solution for IBS, its management and the overall improvement for the lives of people affected by the condition.

Finally, we would like to thank IFFGD for the support with the content for this survey. We are also grateful for the tremendous help from The IBS Network in reaching our participants and their community for making this study possible.



## References

1. Gastrointestinal Complications in Pregnancy | GLOWM. <http://www.glowm.com/section-view/heading/gastrointestinal-complications-in-pregnancy/item/172>. Accessed 1 Mar. 2021.
2. Hyams, J. S. "Sorbitol Intolerance: An Unappreciated Cause of Functional Gastrointestinal Complaints." *Gastroenterology*, vol. 84, no. 1, Jan. 1983, pp. 30–33.
3. Klump, K. L., et al. "Ovarian Hormones and Binge Eating: Exploring Associations in Community Samples." *Psychological Medicine*, vol. 38, no. 12, Dec. 2008, pp. 1749–57. PubMed Central, doi:10.1017/S0033291708002997.
4. Latulippe, Marie E., and Suzanne M. Skoog. "Fructose Malabsorption and Intolerance: Effects of Fructose with and without Simultaneous Glucose Ingestion." *Critical Reviews in Food Science and Nutrition*, vol. 51, no. 7, Aug. 2011, pp. 583–92. PubMed Central, doi:10.1080/10408398.2011.566646.
5. Lenhart, Adrienne, et al. "Postmenopausal Women with Irritable Bowel Syndrome (IBS) Have More Severe Symptoms than Premenopausal Women with IBS." *Neurogastroenterology and Motility: The Official Journal of the European Gastrointestinal Motility Society*, vol. 32, no. 10, Oct. 2020, p. e13913. PubMed, doi:10.1111/nmo.13913.
6. "Postmenopausal Women with Irritable Bowel Syndrome (IBS) Have More Severe Symptoms than Premenopausal Women with IBS." *Neurogastroenterology and Motility: The Official Journal of the European Gastrointestinal Motility Society*, vol. 32, no. 10, Oct. 2020, p. e13913. PubMed, doi:10.1111/nmo.13913.
7. Moosavi, Sarvee, et al. "Irritable Bowel Syndrome in Pregnancy." *The American Journal of Gastroenterology*, Jan. 2021. PubMed, doi:10.14309/ajg.0000000000001124.
8. Mulak, Agata, et al. "Sex Hormones in the Modulation of Irritable Bowel Syndrome." *World Journal of Gastroenterology: WJG*, vol. 20, no. 10, Mar. 2014, pp. 2433–48. PubMed Central, doi:10.3748/wjg.v20.i10.2433.
9. Rees, W. D., and J. Rhodes. "Altered Bowel Habit and Menstruation." *Lancet (London, England)*, vol. 2, no. 7983, Aug. 1976, p. 475. PubMed, doi:10.1016/s0140-6736(76)92575-7.
10. Shah, S., et al. "E2 and Not P4 Increases NO Release from NANC Nerves of the Gastrointestinal Tract: Implications in Pregnancy." *American Journal of Physiology. Regulatory, Integrative and Comparative Physiology*, vol. 280, no. 5, May 2001, pp. R1546–1554. PubMed, doi:10.1152/ajpregu.2001.280.5.R1546.
11. Tang, Yu-Rong, et al. "Age-Related Symptom and Life Quality Changes in Women with Irritable Bowel Syndrome." *World Journal of Gastroenterology: WJG*, vol. 18, no. 48, Dec. 2012, pp. 7175–83. PubMed Central, doi:10.3748/wjg.v18.i48.7175.
12. Xiao, Zuo-Liang, et al. "Role of Progesterone Signaling in the Regulation of G-Protein Levels in Female Chronic Constipation." *Gastroenterology*, vol. 128, no. 3, Mar. 2005, pp. 667–75. PubMed, doi:10.1053/j.gastro.2004.12.001.

# Background

Irritable Bowel Syndrome (IBS) is a chronic bowel disease characterised by abdominal pain and/or discomfort and associated with altered bowel habits.

To this day, we don't know what causes IBS, however, factors such as genetic disposition, diet, intestinal microbiota, and mucosal low-grade inflammation have been associated with its development.

Similarly, there is no single universal treatment for IBS. Individuals with IBS are usually advised to make modifications to their lifestyle and diet and take prescription drugs to manage symptoms. Less than one-third of IBS patients are satisfied with the therapies they receive.

In the UK, NICE guidelines for IBS management recommend referring patients to psychological therapies such as Cognitive Behavioural Therapy (CBT). Evidence shows that CBT is significantly more effective in decreasing IBS symptom severity and improving the quality of life for IBS patients, compared to other therapies. However, CBT is not often offered to IBS patients due to the global shortage of therapists specialising in CBT for IBS.



With that in mind and with a vision of a world where individuals have access to effective care when and where they need it, Bold Health has developed Zemedly, an evidenced-based digital CBT intervention, designed to improve gut health through effective and accessible digital care.

# About the authors



Bold Health is a leading digital therapeutics provider on a mission to improve the gut health of 1 billion people through effective digital care. With a purpose to free people from the burden of chronic illness and live a limitless life, we develop the latest solutions to improve access to effective digital therapies for digestive health.



Zemedy is a personalised, digital CBT-based programme that offers cost-effective, scalable care for individuals living with IBS.



IFFGD, the International Foundation for Gastrointestinal Disorders, is an American Public Charity on a mission to to inform, assist, and support people affected by gastrointestinal (GI) disorders.

The charity's support in designing the survey was incremental to conducting this study.



The IBS Network is the UK's national charity supporting people living with irritable bowel syndrome. With core values to provide information, support and help people better self-manage their condition, the charity was central to the recruitment of participants for this survey.

Data for this survey was collected between the 2nd and 14th of February 2021, through various online community channels.



BOLD HEALTH  
THE GUT GENDER GAP



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