

Report 2023:

Mage-tarmskolen - digital treatment for IBS

(English: "Stomach-intestine School")

Background

Irritable bowel syndrome (IBS) causes symptoms such as stomach pain, constipation, bloating and diarrhoea. Symptoms are often worsened by stress and certain foods. There is no cure and treatment must be personalised, though treatment alternatives have limited effect. The condition is common and is estimated to affect approximately 15 out of 100 in the population. IBS can be seen in both sexes and at all ages, but the prevalence is higher in women and in young people [1].

In 2022, 539,849 consultations were coded as functional gastrointestinal disease by Norwegian GPs [2]. In addition, 75,882 out-of-hours consultations were coded as functional gastrointestinal disease [3]. GPs often have limited competence and patients are dissatisfied with their healthcare both in primary healthcare services and specialist healthcare services [4]. As a Competence Service, we work for increased knowledge and competence, including assessment and treatment guidelines, but this takes time.

Up to 30% of all patients at the gastroenterology section in Helse Bergen are diagnosed with IBS. The disease ranks lowest on the list according to national prioritisation guidelines for treatment in specialist healthcare services, and guidelines indicate that the patient should have long-term follow-up in primary healthcare services.

Since there is no cure for IBS, treatment largely consists of lifestyle changes and dietary modifications. The low FODMAP diet provides symptom relief in <80%, but is very difficult to implement successfully without guidance from a clinical nutritionist.

What is Mage-tarmskolen?

The Stomach-Intestine School is Norway's first digital treatment offering for patients in somatic medicine, including patients with IBS. The project's overarching goal is equal access to quality-assured health information and treatment for all patients with IBS regardless of geographical location in Norway, by the end of 2025.

The Stomach-Intestine School is based on five modules created by a gastroenterologist, manual therapist, psychiatrist and psychologist, brain researcher, and clinical nutritionist. The content is based on video clips, images, text and is described in the figure below. A clinical nutritionist is available for digital guidance, questions and answers throughout the entire treatment offering. Modules 4 and 5 contain two optional interventions: 1) independent cognitive behavioural therapy and exposure therapy created by a psychology specialist at the OCD clinic and 4-day treatment, and 2) the low FODMAP diet, guided by a clinical nutritionist. The service is available to patients for six months. Patients complete questionnaires about symptoms and quality of life at start-up, three months and six months.

The GP receives a letter from the therapist with results and summary after 3 months and after the completed course.

The patient is called for video consultation in a group before start-up for review and motivational conversation. The patient logs in after receiving a text message with a link to log-in via BANK-ID. The patient can also log in via our website www.helse-bergen.no/NKFM. The Stomach-Intestine School is suitable for patients over 18 years who are diagnosed with IBS. Must have BANK-ID and be able to understand and read Norwegian. A motivated patient who has received good information in advance as the health service requires personal effort from the patient.

Figure 1. Content of the Stomach-Intestine School's five modules

Module 1: The body and gastrointestinal system In this first module, the patient gets an introduction to what irritable bowel is, how it is diagnosed and what causes it. The patient will also learn about how the digestive system works and how the function of the gastrointestinal system can be disturbed in people with irritable bowel, even if all examinations show that the body is healthy and all tests are normal.

Module 2 - Body posture and breathing technique

In this module, we learn about the connection between IBS and muscle and skeletal complaints. Many with irritable bowel can have a hyperactive nervous system that can cause painful muscle tension. Here physiotherapy can be helpful. The patient gets an introduction to pain physiology and how the nervous system can be affected. This is a practical module with useful exercises for people with irritable bowel. The module will help the patient understand why long-term pain occurs and how it can be influenced.

Module 3 - Diet and lifestyle advice There is no miracle cure for irritable bowel, but many experience improvement by following some general advice. In this module, we look at lifestyle advice that is research-based to improve symptoms in people with irritable bowel. It is recommended to follow this advice for at least a month before potentially cutting out other foods or following stricter diets.

Module 4 - Stress management Do you experience that the disease takes up too much space in your life? Do you have intrusive thoughts, feelings, avoidances and symptoms that you don't take up so much space? Would you have prioritised things differently if these parts didn't take up so much space? If you recognise yourself in several of these questions, this module will be especially relevant for you. Intervention: exposure therapy, cognitive behavioural therapy.

Module 5 - Dietary treatment with low FODMAP diet If the patient has not had sufficient symptom relief after having tried general dietary advice and exercises from modules 1-4, the patient can benefit from trying the low FODMAP diet. This is a dietary treatment that approx. 2/3 of people with IBS experience symptom relief. In this part, the patient will get an introduction to the low FODMAP diet both in theory and practice. Intervention: Low-FODMAP diet.

Clinical Effect of Mage-tarmskolen

The figures and analyses in this report are based on data from 700 patients who have undergone digital treatment in the Stomach-Intestine School from 2021-2023.

No or mild IBS in 44% of responders after 3 months

Patients who receive digital treatment in the Stomach-Intestine School are young with an average age of 38 years. 77% are women and 23% are men. In total, 55% of patients respond very well to the treatment (Fig. 1). Among these, the proportion with no/mild IBS increases from 11% to 44%, and the proportion of patients with severe IBS reduces from 42% to 8%, 3 months after starting digital treatment in the Stomach-Intestine School (Fig. 4). There is little difference between the sexes, where the proportion of female responders is slightly larger than men (2%).

Gastrointestinal symptom burden reduced by 34%

Patients who respond to the Stomach-Intestine School report 34% improvement in the severity of IBS symptoms after 3 months (Fig. 2). After 6 months, patients report stable improvement of IBS symptoms since start-up, at 21%. This indicates that patients master the disease better and have put to use the tools the Stomach-Intestine School has equipped them with, in their own daily life.

There is also a proportion of patients who do not respond to the treatment. Non-responding patients report an increase in symptoms of 10% after 3 months, then return to the starting point (2% improvement) after 6 months. We assume that re-introduction of foods that cause symptom increase at 3 months is the explanatory cause of the increase. The increase may also be due to natural fluctuation in the disease pattern. This will be mapped out and investigated more thoroughly in our ongoing RCT, which started in autumn 2023 [5].

Figur 1

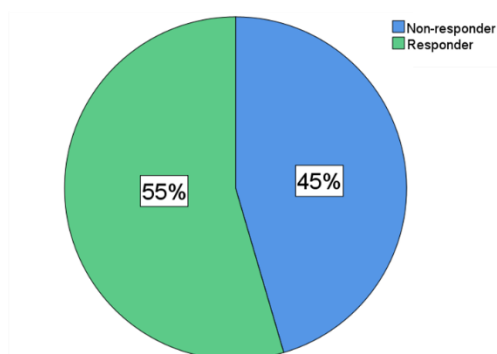


Figure 1. The proportion of patients who respond to the Stomach-Intestine School is 55% (n = 693). Patients are categorised as responders with a >50-point reduction in the IBS-severity scoring system (IBS-SSS, 0-500), after 3 months.

Figur 2

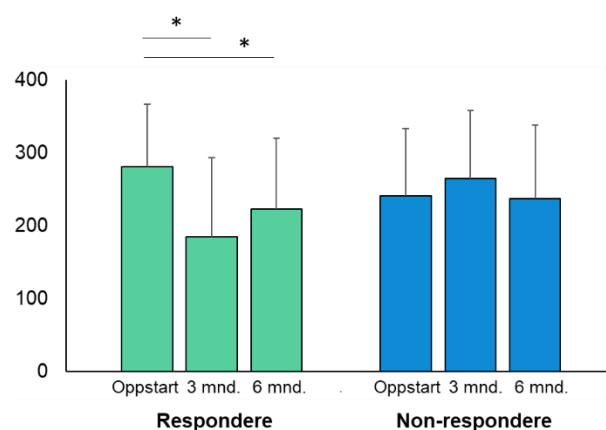


Figure 2. Responders report a 34% reduction in the severity of IBS symptoms after 3 months. After 6 months, sustained improvement of 21% is reported. Non-responding patients report an increase in symptoms of 10% after 3 months, followed by a reduction to 2% improvement at 6 months, compared to baseline. Responders: baseline 280 ± 86 (n = 376), 3 months 184 ± 109 (n = 184), 6 months 222 ± 97 (n = 94). Non-responders: baseline 241 ± 92 (n = 315), 3 months 265 ± 93 (n = 315), 6 months 237 ± 100 (n = 168). Paired t-test, * p = >0.001.

Figur 3

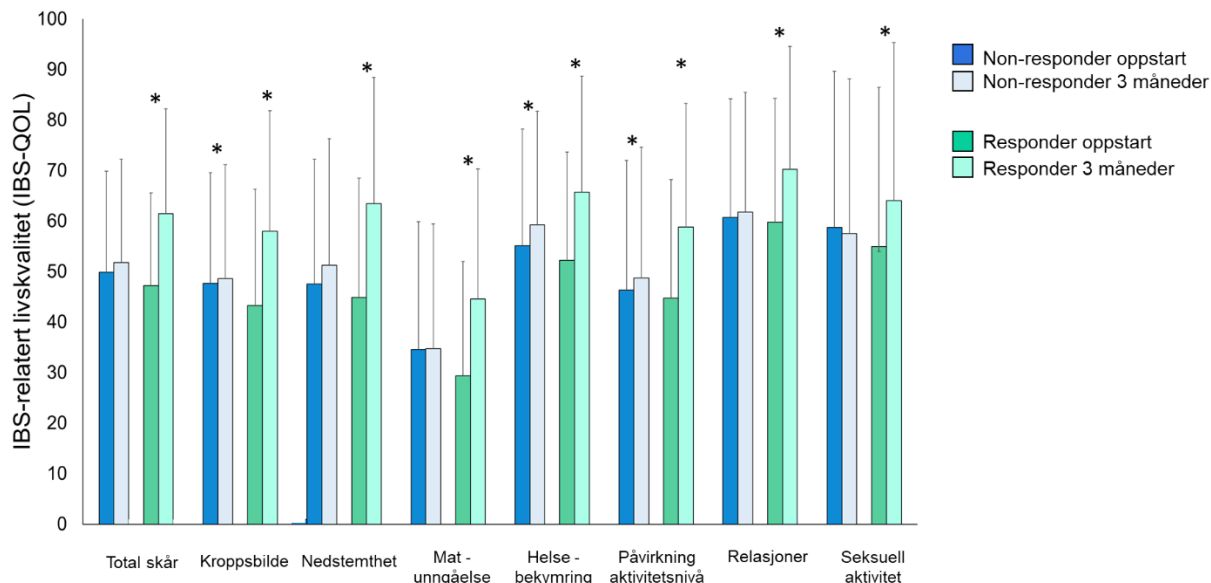


Figure 3. Patients who respond to the Stomach-Intestine School report significantly increased IBS-related quality of life after 3 months (IBS-QOL, n = 204), including body image (from 43.3 to 58), low mood (from 44.9 to 63.5), food avoidance (from 29.4 to 44.6), health anxiety (from 52.2 to 65.7), impact on activity level (from 44.8 to 58.9), relationships (from 59.8 to 70.2) and sexual activity (from 54.9 to 64). Non-responding patients (n = 314) reported no overall improvement in quality of life after 3 months, but reported improvement in the subcategories of health anxiety (from 55.1 to 59.3), low mood (from 47.5 to 51.2) and impact on activity level (from 46.4 to 48.7). Paired t-test, * p < 0.001. Scoring 0-100, where 100 is best and 0 is worst.

Figur 4

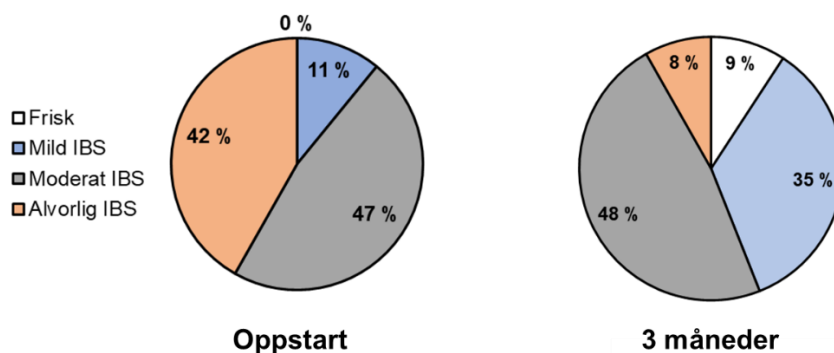


Figure 4. In patients who respond to the Stomach-Intestine School, the proportion with no symptoms/mild IBS increases from 11% to 44%, and the proportion of patients with severe IBS reduces from 42% to 8%, 3 months after commencement (n=192).

IBS-related quality of life increases by 30% in responders

Although IBS is not dangerous, the disease affects quality of life to a great extent. Patients who responded to the Stomach-Intestine School reported a 30% increase in IBS-related quality of life after 3 months. In these patients, the Stomach-Intestine School has a significant positive effect on health anxiety, food avoidance, body image, activity level, relationships, low mood, and sexual activity. Non-responding patients reported no change in total quality of life, but reported significant improvements in body image, health anxiety and impact on activity level after 3 months.

Patient Satisfaction with the Stomach-Intestine School as a Health Service

Patients who have received digital treatment in the Stomach-Intestine School are generally satisfied with the health service. Patients have on average scored the health service 22 points on a scale from 8-32 for patient satisfaction 3 months after start-up (Fig. 5, CSQ-8). Interestingly, there are small differences between patient satisfaction between non-responders (21.5 points) and responders (22.9 points), though responders score significantly higher than non-responders (Independent t-test $p > 0.001$, $n=479$). Satisfaction with the health service gives us an indication that most get some benefit from the Stomach-Intestine School, regardless of the degree of symptom relief.

Figur 5

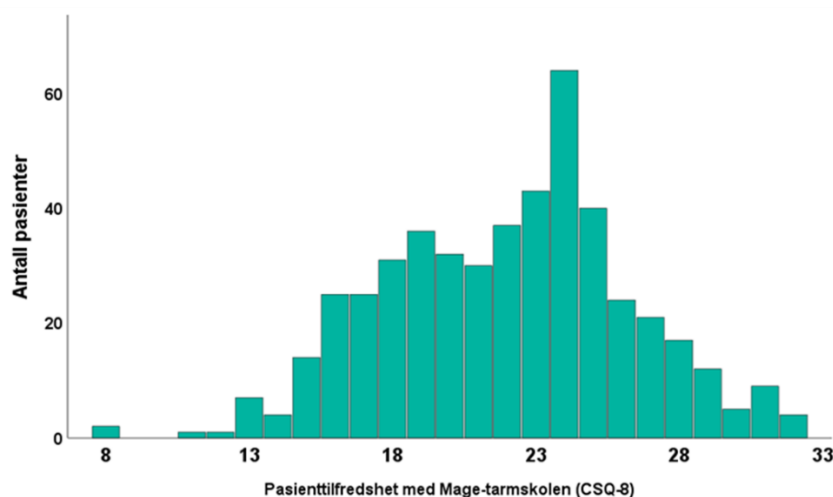


Figure 5. Patients who have participated in the Stomach-Intestine School scored on average 22 ± 4.3 points out of 32 in patient satisfaction (Client Satisfaction Questionnaire-8 (CSQ-8, $n=484$). 0= worst, 32 is best.

Randomised Controlled Study at the Stomach-Intestine School

To confirm the clinical effect of the Stomach-Intestine School, a four-armed RCT will be conducted starting in 2023 ($n = 550$). The project leader is permanently employed at the Medical Clinic, and the PhD position in this project is financed by NFR through Helse Bergen's SFI ForHelse, where the Stomach-Intestine School is a health partner (Forhelse).

The Stomach-Intestine School is not inferior to physical IBS school

We have since 2012 built up extensive experience with "IBS school" which involves a 2-day patient education course at the Learning and Mastery Centre in Helse Bergen. We hold courses every month. Berentsen et al 2025 (In print JMIR "The Effects of Digital eHealth Versus Onsite 2-Day Group-Based Education in 255 Patients With Irritable Bowel Syndrome: A cohort Study"), shows that the Stomach-Intestine School is not inferior to physical IBS school at Helse Bergen's learning and mastery centre.

Implementation of the Stomach-Intestine School as First-Line Treatment

The Stomach-Intestine School is anchored at the Medical Clinic, Haukeland University Hospital and was implemented in regular clinical operation at the Section for Clinical Nutrition in January 2024.

References

1. Norge, H. Irritable bowel syndrome 2023; Available from: <https://www.helsenorge.no/sykdom/mage-ogtarm/irritabel-tarm/>.
2. Statistics Norway, 10141: Consultations with the GP, by age, sex and diagnosis 2012 - 2022. 2023.
3. Statistics Norway, 10903: Out-of-hours consultations, by age, diagnosis, statistical variable, year and sex. 2023.
4. Norwegian IBS Association, F.-T.f., More satisfied with self-treatment than with the health service's offerings M. Ekelund, Editor. 2023.
5. Thuen, C. A randomised controlled study of digital treatment for irritable bowel syndrome. 2023; Available from: <https://www.helse-bergen.no/kliniske-studier/en-randomisert-kontrollert-studie-av-digital-behandling-forirritabel-tarmsyndrom/>.