

# Irritable bowel syndrome and physical activity

Akademisk avhandling

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligen försvaras i hörsal Arvid Carlsson, Academicum, Medicinargatan 3, den 25 maj, klockan 13:00

av

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## Avhandlingen baseras på följande delarbeten

- I. Johannesson, E., Simrén, M., Strid, H., Bajor, A., Sadik, R. Physical activity Improves Symptoms in Irritable Bowel Syndrome: A Randomized Controlled Trial. *American Journal of Gastroenterology and Hepatology* 2011; 106: 915-22.
- II. Johannesson, E., Ringström, G., Abrahamsson, H., Sadik, R. Intervention to increase physical activity in irritable bowel syndrome shows long-term positive effects. *World Journal of Gastroenterology*; 2015; 14; 21(2):600-8.
- III. Johannesson, E., Jakobsson Ung, E., Sadik, R.\*, Ringström, G.\* Experiences of the effects of physical activity in persons with irritable bowel syndrome (IBS): a qualitative content analysis. *Submitted*.
- IV. Johannesson, E., Jakobsson Ung, E., Ringström, G.\*, Sadik, R.\* The experiences of physical activity in Irritable Bowel Syndrome: A qualitative study. *Submitted*.

**SAHLGRENKA AKADEMIN  
INSTITUTIONEN FÖR MEDICIN**



# Irritable bowel syndrome and physical activity

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## Abstract

Irritable bowel syndrome (IBS) is a common functional gastrointestinal disorder. It is characterized by abdominal pain or discomfort associated with altered bowel habits. The symptoms of IBS limit the patients in daily life and affect their quality of life considerably.

The general aim of this PhD project was to elucidate the relationship between IBS symptoms and moderately increased physical activity in the short and long term. The other aims were to explore patients' experiences of the effects of physical activity in symptoms and of physical activity in general. A multimethod design was applied, combining physical measurements, questionnaires and qualitative patient interviews.

**Study I:** In a randomized controlled trial, the physical activity group improved their IBS symptoms at 12 weeks in comparison to the control group. A larger proportion in the control group experienced symptom deterioration. **Study II:** At long-term follow-up after 5.2 (range 3.8-6.2) years, IBS symptoms and psychological parameters improved compared with baseline. **Study III:** A qualitative content analysis on effects of physical activity revealed three themes in each area. *Gastrointestinal symptoms* covered normalizing bowel movements; experiencing changes in abdominal pain; and handling gas and bloating. *Extra-intestinal symptoms* covered flexibility, strength, and pain modulation; modulating stress level and mood; and stabilizing energy. *Quality of life* covered overcoming weaknesses; stimuli and distraction; and self-strengthening. **Study IV:** Two themes emerged in a hermeneutic analysis: *requirements of physical activity* and *capability for physical activity*. The first comprised the patients' motives for being physically active. The second theme described the possibility and resources to be physically active in everyday life.

**Conclusion:** Increased physical activity improves gastrointestinal symptoms in IBS. Physical activity is associated with improved IBS symptoms and psychological parameters in the long term. Increased physical activity is a treatment option in IBS. In order to understand the hindering and motivating factors, it is important to take into account the patient's experiences of the effects of physical activity, as well as the requirements and capabilities for physical activity.

**Keywords:** Irritable bowel syndrome; Gastrointestinal diseases; Functional disorder; Physical activity; Exercise; Physiotherapy