

Dietary pattern linked to symptoms in patients with a disorder of gut-brain interaction

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i Arvid Carlsson, Medicinaregatan 3, 41390 Göteborg, torsdagen den 7:e september 2023, klockan 17h00.

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Avhandlingen baseras på följande delarbeten

- I. Colomier E, Melchior C, Algera JP, Hreinsson JP, Störsrud S, Törnblom H, Van Oudenhove L, Palsson OS, Bangdiwala SI, Sperber AD, Tack J, Simrén M. Global prevalence and burden of meal-related abdominal pain. *BMC Med.* 2022 Feb 17;20(1):71.
- II. Colomier E, Van Oudenhove L, Tack J, Böhn L, Bennet S, Nybacka S, Störsrud S, Öhman L, Törnblom H, Simrén M. Predictors of symptom-specific treatment response to dietary interventions in irritable bowel syndrome. *Nutrients.* 2022 Jan 17;14(2):397.
- III. Colomier E, Halminen J, Björck M, Höskuldsdóttir G, Mossberg K, Engström M, Eliasson B, Wallenius V, Fändriks L, Tack J, Törnblom H, Simrén M. Prevalence and factors associated with disorders of gut-brain interaction in obesity before and after treatment. *Submitted.*
- IV. Colomier E, Nybacka S, Hreinsson JP, Störsrud S, Tack J, Törnblom H, Simrén M. Habitual dietary intake and diet quality of patients with irritable bowel syndrome vs. the general population. *Submitted.*
- V. Colomier E, Jones MP, Holvoet L, Carbone F, Bai T, Liu J, Melchior C, Gourcerol G, Chuah KH, Hui KX, Mahadeva S, Siah KTH, Lipták P, Banovcin P, Holtmann G, Koloski N, Carabotti M, Annibale B, Suzuki H, Sano M, Ueda T, Hashemi P, Shahoon H, Adibi P, Simrén M, Gwee KA, Tack J. Symptom patterns outside the Rome IV consensus in both Eastern and Western patients with a disorder of gut-brain interaction. *Submitted.*

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Abstract

Disorders of gut-brain interaction (DGBI) encompass a range of medical conditions characterized by gastrointestinal (GI) symptoms, in the absence of alarm features or organic diseases that explain the symptoms, after a minimal relevant clinical evaluation. With a global prevalence of approximately 40%, DGBI exert a considerable impact on both patients and society as a whole.

The multifactorial pathophysiology of DGBI is only partly understood. During the last decade, research has started focusing on gut luminal factors, including food as pathophysiological factors, as many patients with a DGBI report food intake to be related to symptoms. A few underlying mechanisms for these food-related symptoms have been proposed, including altered nutrient sensing and tasting, physical considerations after food intake, malabsorption, local allergy-like reactions to food, and the interaction between food and microbiota. Nevertheless, how food intake and specific dietary habits may generate GI symptoms currently remains incompletely elucidated.

This thesis examines various aspects of food-related symptoms in patients with a DGBI, all aiming to contribute to the overall understanding of the underlying mechanisms of food-related symptoms and optimizing the diagnosis and management of patients with a DGBI.

Keywords: Disorders of gut-brain interaction, irritable bowel syndrome, diet