J Rehabil Med 2023; 55: jrm15761

COCHRANE CORNER

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WHAT ARE THE BENEFITS AND HARMS OF PHYSICAL ACTIVITY ON IRRITABLE BOWEL SYNDROME? - A COCHRANE REVIEW SUMMARY WITH COMMENTARY

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The aim of this commentary is to discuss from a rehabilitation perspective the Cochrane Review "Physical activity for treatment of irritable bowel syndrome"(1) by Nunan D.[a], published by Cochrane Gut Group. This Cochrane Corner is produced in agreement with Journal of Rehabilitation Medicine by Cochrane Rehabilitation with views* of the review summary author in the "implications for practice" section.

J Rehabil Med 2023; 55: jrm15761

DOI: 10.2340/jrm.v55.15761

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BACKGROUND

Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder characterized by recurrent abdominal pain and altered bowel habits (2). It usually affects people < 50 years old with a worldwide prevalence of 14% in women and 8.9% in men (3). The possible causes of IBS may include changes in intestinal and colonic microflora and/or food allergy/intolerance. The diagnosis is based on clinical history, physical examination, and absence of alarm symptoms suggesting other causes (4). Management options in this condition include general dietary advice, soluble fiber intake and "gut-directed" psychological approaches such as cognitive behavioral therapy or hypnotherapy (5). In this scenario, physical activity showed to reduce some intestinal symptoms in general population, such as gas retention or abdominal distension, and it seems associated with a lower incidence of IBS (6).

PHYSICAL ACTIVITY FOR TREATMENT OF IRRITABLE BOWEL SYNDROME (NUNAN D, 2022)

What is the aim of this Cochrane review?

The aim of this Cochrane Review was to assess the benefits and harms of physical activity interventions in adults diagnosed with irritable bowel syndrome.

WHAT WAS STUDIED IN THE COCHRANE REVIEW?

The population addressed in this review was 622 adults with a diagnosis of IBS (according to the diagnostic criteria such as Manning, Rome I, Rome II, Rome III, Rome IV) or clinical symptoms consistent with IBS. The interventions studied were any type of physical activity, exercise or advice to increase physical activity including yoga, Qigong, treadmill, exercise consultations and support to increase physical activity levels compared to usual care, walking intervention, medication and dietary intervention. The outcomes studied were global improvement of symptoms as primary outcome and quality of life, improvement in abdominal pain, discomfort or distention, stool consistency and frequency, bowel transit time, adverse events

[a] This summary is based on a Cochrane Review previously published in the Cochrane Database of Systematic Reviews 2022, Issue 6, Art. No.: CD011497, DOI: 10.1002/14651858.CD011497.pub2 (see www.cochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and Cochrane Database of Systematic Reviews should be consulted for the most recent version of the review.

* The views expressed in the summary with commentary are those of the Cochrane Corner author (different than the original Cochrane Review authors) and do not represent the Cochrane Library or Medical Journals Sweden or *Journal of Rehabilitation Medicine*.

or withdrawal due to physical activity as secondary outcomes.

SEARCH METHODOLOGY AND UP-TO-DATENESS OF THE COCHRANE REVIEW?

The review authors searched for studies that had been published up to 5 November 2021 on Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library, OvidMEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) (OvidSP), Embase (OvidSP), Cumulative Index to Nursing and Allied Health Literature (CINAHL) (EBSCOhost), Physiotherapy Evidence Database (PEDro) database, Science Citation Index Expanded (SCI-EXPANDED) & Conference Proceedings Citation Index-Science (CPCI-S) on Thomson Reuters Web of Science, SPORT Discus database (EBSCOhost). Authors also searched trial registries for potentially relevant studies that were completed or in progress (November 2021), using ClinicalTrials.gov and the World Health Organization International Clinical Trials Registry Platform, screened the reference lists of included trials to identify potential studies; finally, they also conducted forward citation searches on the Web of Science for papers that cited included studies and screened the reference lists of the systematic reviews found through a search of the Cochrane Database of Systematic Reviews to identify further potentially relevant studies.

WHAT ARE THE MAIN RESULTS OF THE COCHRANE REVIEW?

The review included 11 randomized control trials (RCTs).

The review shows that:

- Physical activity versus usual care
  - it is uncertain if physical activity
    - may improve global IBS symptoms [five of the six RCTs with 185 participants showed a standardized mean difference (SMD) - 0.93, 95% confidence interval (CI) –1.44 to –0.42]
    - make no improvement on quality of life (four of the five RCTs with 134 participants showed a SMD 1.17, 95% CI –0.30 to 2.64) and abdominal pain (two RCTs with 64 participants showed a SMD 0.01, 95% CI –0.48 to 0.50).

All these findings were downgraded to very low for high risk of bias, inconsistency, and imprecision.

- Yoga versus walking intervention
  - it is uncertain if yoga
    - improves global IBS symptoms (two RCTs with 124 participants showed a SMD –1.16, 95% CI –3.93 to 1.62).
    - yoga may improve quality of life (one RCT showed a MD 53.45, 95% CI 38.85 to 68.05) and make no difference on abdominal pain (one RCT showed a MD 2.30, 95% CI –0.79 to 5.39).

All these findings were downgraded to very low for unclear and high risk of bias, inconsistency and imprecision.

- Physical activity versus any control
  - it is uncertain if yoga, supervised treadmill exercise or advice to increase physical activity
    - improve global IBS symptoms (yoga: five RCTs with 218 participants showed a SMD –0.75, 95% CI –2.01 to 0.51; supervised treadmill exercise: two RCTs with 71 participants showed a SMD –1.24, 95% CI –2.64 to 0.15; advice to increase physical activity: two RCTs with 93 participants showed a SMD –0.72, 95% CI –1.61 to 0.17);
  - it is uncertain if yoga and advice to increase physical activity
    - improve quality of life (QoL) (yoga: three RCTs with 177 participants showed a SMD 0.60, 95% CI –0.59 to 1.79; advice to increase physical activity: two RCTs with 93 participants showed a SMD 1.04, 95% CI –1.65 to 3.7)
  - supervised treadmill exercise
    - may improve QoL, although the quality of evidence is judged very low (one RCT showed a SMD 2.39, 95% CI 1.18 to 3.59).
  - It is uncertain if yoga
    - improves abdominal pain (two RCTs with 48 participants showed a SMD 0.13, 95% CI –0.45 to 0.72).

All these findings were downgraded to very low for unclear and high risk of bias, inconsistency and imprecision.

- Physical activity intervention (yoga) versus medication
  - it is uncertain if yoga
    - improves global IBS symptoms (one RCT with 21 participants showed a MD –1.20, 95% CI –2.65 to 0.25).

The evidence was downgraded to very low for unclear and high risk of bias and imprecision.

- Yoga versus dietary intervention
  - no difference were found between comparison for global IBS symptoms (MD 33.31, 95% CI –12.86 to 79.48), quality of life at 12 weeks (MD –1.67, 95% CI –7.62 to 4.28) and 24 weeks (MD 0.20, 95% CI –4.90 to 5.30) and abdominal pain at 12 weeks (MD 12.00, 95% CI –4.96 to 28.29) and 24 weeks (MD 7.89, 95% CI –8.19 to 23.97)

according to the results of one study with 59 participants (low certainty evidence).
- There was not enough data about harms associated with physical activity.

HOW DID THE AUTHORS CONCLUDE?

The authors concluded that physical activity may improve global IBS symptoms and it is uncertain if improves quality of life and abdominal pain compared to usual care, any control, and walking/dietary or pharmacological interventions with a very low certainty of evidence.

WHAT ARE THE IMPLICATIONS OF THE COCHRANE EVIDENCE FOR PRACTICE IN REHABILITATION?

IBS is a condition that compromises the everyday life of the individuals affected, with consequences on social, familial and professional domains (6). Due to the scarce knowledge of the cause, the chronic course of the disease and the frequent inefficacy of pharmacological treatments, people with IBS often approach in a self-manage manner to this disabling condition, thus contributing to their own care through modification of their dietary habits and lifestyle (7). In this context, physical activity seems useful to counteract the overall risk of several gastrointestinal (GI) diseases, reduce somatic manifestations of IBS and improve the psychological well-being of the patients. From a biological perspective, physical activity seems to increase gut motility, promote the development of healthy mucosal immunity, and provide benefits in gut tissue and beyond (8).

To the best of our knowledge, activities like running, jogging, cycling, and swimming done at low to moderate intensity seem effective in relieving IBS symptoms. However, this benefit could vary between individuals (6). Moreover, international guidelines recommend physical activity as a therapeutic modality with low evidence (1). According to the findings of this Cochrane systematic review, there is still very low certainty of evidence if physical activity and in particular yoga effectively produces benefits on global IBS symptoms, quality of life and relief of abdominal pain. At the same time, there is a scarcity of data in terms of safety.

Therefore, there is a lack of evidence supporting this non-pharmacological approach due to the qualitative and quantitative issues of the studies included.

High-quality RCTs with larger sample sizes and clear methodological designs are needed to definitively assess the efficacy and safety of physical activity for the IBS population.

DISCLOSURES

The author declares no conflicts of interest.

ACKNOWLEDGEMENTS

The author thanks Cochrane Rehabilitation and Cochrane Gut Group for reviewing the contents of the Cochrane Corner.

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