

Exercise and Inflammatory Bowel Disease



Insights into Etiopathogenesis and Modification of Clinical Course

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KEYWORDS

- Inflammatory bowel disease • IBD • Exercise • Inflammatory disorders
- Physical activity

KEY POINTS

- There is a growing appreciation that regular exercise regimens are essential for patients suffering from chronic inflammatory disorders, including IBD.
- Low- to moderate-intensity exercise for IBD patients in remission and those with mild active disease, improves quality of life of these patients and helps counteract IBD-related complications.
- A regular exercise regimen may also exert a beneficial modifying effect on disease course, improving inflammatory parameters, psychological status and quality of life in patients with IBD.
- Exercise may help counteract IBD-related complications such as improving bone mineral density, immunologic response, psychological health, weight loss, and stress management ability.

INTRODUCTION

Exercise and physical activity are crucial for maintaining health and well-being. A sedentary lifestyle contributes to and complicates a multitude of chronic illnesses, often resulting in multiple comorbidities. Although there are recommendations regarding exercise to maintain health in the general population, there is sparse information regarding exercise and inflammatory bowel disease (IBD). Furthermore, the importance of regular exercise in the optimal management of IBD has not received

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attention in guidelines and is often overlooked by practitioners. This review summarizes evidence regarding health benefits of exercise, guidelines regarding exercise in the general population and chronic inflammatory disorder populations, limitations regarding exercise capacity in patients with IBD, the association of lack of exercise with IBD pathogenesis, the role of exercise in beneficially modulating IBD clinical course, and extraintestinal benefits of exercise in patients with IBD.

HEALTH BENEFITS OF EXERCISE: HISTORICAL INFORMATION FROM THE GENERAL POPULATION AND INFLAMMATORY DISORDERS

The 2008 Physical Activity Guidelines for Americans identifies 2 types of physical activity that should be performed on a weekly basis: aerobic and muscle-strengthening exercises.¹ It is recommended that adults perform 150 minutes of moderate physical activity such as brisk walking every week as well as muscle-strengthening activities on at least 2 days of the week to work all major muscle groups including legs, hips, chest, abdomen, shoulders, and arms. If patients choose to perform vigorous-intensity activity (instead of moderate physical activity), such as jogging, running, swimming laps, or playing tennis or basketball, they need 75 minutes per week instead of the 150 minutes.¹ Similarly, these patients should conduct muscle-strengthening activities on at least 2 days of the week to work all major muscle groups.

Regular exercise regimens have been associated with improved cardiovascular status, stamina, and overall well-being. Exercise, which can be limited to as little as 10 minutes of sustained activity per day, has been associated with a decreased lifetime risk of developing ischemic heart disease, hypertension, diabetes, breast cancer, Alzheimer disease, dementia, frailty, and neurodegenerative progression in Parkinson disease.²⁻⁷ Exercise has been shown to decrease serum levels of C-reactive protein (CRP), a biomarker of inflammation and cardiovascular disease risk. In patients with rheumatoid arthritis, exercise programs have uniformly showed benefit regarding improved functional status, emotional status, and quality of life, with no detrimental effects on disease activity.⁸⁻¹⁰

In asthma, a chronic inflammatory disorder of the airways, exercise is a known precipitant of flares in a subset of patients (ie, exercise-induced asthma). Historically, this triggering mechanism prompted recommendations to avoid physical activity in asthmatic children to avoid exertional dyspnea. However, more recent investigation of training programs to promote physical conditioning in children and adolescents with asthma has revealed opposite findings, suggesting that exercise can be safe and well tolerated in most children with asthma, which may potentially improve overall asthma management as well as associated general health benefits.¹¹ Although exercise did not change the overall occurrence or degree of exercise-induced asthma, physical conditioning was tolerated with the use of a bronchodilator before exercise, which led to improvements in aerobic fitness, quality of life, and psychological status.

EXERCISE AND INFLAMMATORY BOWEL DISEASE

Despite the known beneficial effects of exercise on quality of life and psychological status, which overlap with treatment goals in the management of IBD, there has been limited investigation regarding the role of exercise in IBD care. One of the first recommendations advocating regular exercise for patients with IBD was published by Ball in 1998.¹² This single-investigator article suggested patients with IBD target 20 to 60 minutes of aerobic activity for 2 to 5 days a week in addition to resistance training at least twice per week.¹² The basis for this recommendation came from an extrapolation of exercise guidelines for the general population with the creation of

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