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# Gut Microbiota and its Influence on Obesity: Physiotherapy as a Non-pharmacological Strategy

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## ABSTRACT

Due to its ability to alter adiposity and glucose metabolism, the human gut microbiota has been involved in obesity and related comorbidities. The development of obesity is significantly impacted by gut microbiota metabolites, which are produced by fermentation of food ingredients and bacterial alteration of host molecules. These metabolites play a role in a number of processes that lead to obesity, such as inflammation, altered energy metabolism, and altered gut barrier function. The management of obesity still mostly involves pharmacological and dietary interventions, but physiotherapy provides an additional, non-pharmacological strategy that can use the gut-muscle axis to enhance metabolic results. The aim of this study is to investigate the mechanisms by which gut microbiota contribute to obesity and how physiotherapy can help to curb it. A comprehensive literature search was conducted in which the articles from 2014 to 2024 were included using the search terms "Gut microbiota," "Obesity," and "Rehabilitation," which yielded 11,300 results from various digital databases like PubMed, Google Scholar, Ovid, Web of Science and the Cochrane Library. The search is then further filtered through the inclusion and exclusion criteria. It has been demonstrated that regular exercise, an important component of physical therapy, which can alter the composition of the gut microbiota, and the target physical therapy interventions such as resistance training, aerobic exercise, and core-strengthening regimens, improve gastrointestinal motility, lower visceral fat, and improve insulin sensitivity. While examining the possibility of physical therapy as a therapeutic tool, this review emphasises the dynamic interaction between gut microbes and obesity.

**Keywords:** Diet, Inflammation, Overweight.