

## **ABSTRACT**

The thesis deals with the possibilities of restoring the mutual homeostatic interactions between the microbiota and the immune system of patients suffering from multiple sclerosis. The theoretical part describes the basic knowledge about the human gut microbiome, multiple sclerosis and the connection between multiple sclerosis and gut dysbiosis. The possibilities of influencing multiple sclerosis by modulating the microbiota are also described. The area of the human microbiome in the context of influencing autoimmune diseases, including multiple sclerosis, represents significant potential and further research in this area is needed in the future.

The aim of the practical part of the study was to investigate whether patients with multiple sclerosis try, in parallel with the indicated treatment, to influence the manifestations of the disease through lifestyle, i.e. physical activity and diet, including the use of dietary supplements or the use of tobacco products or alcohol consumption. Data collection was carried out by means of a questionnaire survey conducted in the MS centre and the questionnaire was filled directly by the patients, or patients were offered assistance if they were interested in filling it in but their health condition did not allow it.

The results of the research showed that dietary changes before and after the diagnosis of multiple sclerosis accounted for only 17.15%. In this regard, there is a need to improve education about the possibilities of health promotion (normalisation of the gut microbiota) through dietary changes. The importance of patient awareness as a key factor in health promotion is also highlighted by other research results. Despite the low percentage of respondents who have made dietary changes, over 93% of patients supplement vitamin D as they are actively informed by health professionals about its health benefits.

**keywords:** microbiome, microbiota, multiple sclerosis, immune system, dysbiosis