

Summary

Research project *The impact of selected exogenous and endogenous factors on participants of organized trekking in the Sagarmatha National Park*, carried out during the trek to the Everest Base Camp, organized by the “Polish Himalayas 2018”, whose partial results are presented in this paper, is a voice in the discussion on the impact of staying in highaltitude mountain conditions on the human body.

The study group consisted of 25 trekking participants (11 women and 14 men), aged 25 to 54 ($\bar{x} = 41.9$, $SD = 6.5$). The research was carried out in three stages: the first was to get to know the baseline status of the project participants, the second stage was carried out during trekking and included the analysis of the behaviour and reaction of the organism, while the third stage was analysed in order to find relationships between the data collected during laboratory tests and under conditions. The measurements of heart rate and variability, as well as biochemical, physiological and psychological measurements were analysed and measurements of the structure of physical activity. All study participants volunteered to do so, confirming it with a written consent. The research project received a positive opinion from the University Bioethics Committee for Scientific Research at the Academy of Physical Education in Katowice.

The results of the presented work prove that altitudes exceeding 2,500 m above sea level, can negatively affect the well-being and proper functioning of the human body. Individual differences in the reaction of the circulatory system (HR, HRV, SpO₂) under hypoxic conditions, at rest and during exercise, assume higher baseline values in laboratory conditions than in the natural environment of high mountains, during trekking. In the group of cases with symptoms of acute mountain sickness, a higher rate of heart contractions was recorded in the morning orthostatic test in a standing position, which may indicate a greater stimulation of the sympathetic system and a stronger reduction of the stimulation of the parasympathetic system. The structure of physical activity in high mountain conditions during trekking in the Sagarmatha National Park took the form of long-term aerobic training of moderate intensity (building oxygen capacity) and a varied sum of ascents and descents.

High mountains undoubtedly constitute an unfavourable environment for the proper functioning of the human body, at the same time creating real threats to health and life. The participation in activities in high-mountain areas always requires appropriate, prior psychophysical preparation and appropriate knowledge. The content of the work and the

presented research results may constitute useful information for people visiting high mountain areas and guides, leaders and organizers of this type of tourist trips.