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*“Notre nature est dans le mouvement; le repos entier est la mort”  
("Our nature consists in motion; complete rest is death")  
Blaise Pascal, 1670*

## THE ROLE OF PHYSICAL EFFORT – INTRODUCTION

We all know that life is movement, and that stagnation is death. Today we can also add that exercise is health, exercise is therapy, exercise is also a source of happiness. Kinesiology is focused on problems related to the above slogans. The majority of studies in kinesiology concern the physiology of physical effort. Progress in kinesiology needs studies in various areas. What seems obvious is skeletal muscle physiology and the metabolism of physical effort. However, today we are aware that adaptations to changes in physical activity level include the central nervous system controlling muscles, hormonal control of metabolism, and interactions between organs and tissues. We also know that adaptation is affected by nutrition and supplementation, and by genetic factors. Although it seems natural that kinesiology is focused on highly trained athletes, studies concerning metabolic performance of recreationally active and sedentary groups of people are increasingly common. Understanding these complex problems becomes very important in the context of the radically decreasing level of physical activity of modern man, because many of our technical civilization achievements, such as: telephones, means of transport, automatic home heating systems, running water, household goods, allow us to perform activities with little effort. It is quite a challenge to indicate the level, frequency and nature of physical activity recommended for health reasons and to relate it to the level of the child's development and the aging of the

body. In response to the question why man should be active, the findings of anthropologists studying the evolution of our species over many millennia are extremely helpful. We know that for thousands of generations our ancestors were hunters and gatherers traveling daily distances which hardly any of us travel today. Finally, there is the problem of whether and what physical exercise has a therapeutic value in civilization, neurodegenerative and psychiatric diseases, and on what mechanisms this action takes place. This issue of the KOSMOS includes several articles focused on the above-mentioned problems, written by a group of Polish researchers dealing with this subject. It is a kind of a photograph of the contribution of currently active Polish researchers and the state of general knowledge in the discussed areas after 100 years of systematic scientific and didactic activity in the field of physical education in our country, i.e. from the moment when the first in Poland, and the third in Europe, Chair of Theory of Physical Education and School Hygiene was established in 1919 by prof. Eugeniusz Piasecki at the Faculty of Philosophy of the Poznan University. This volume has been prepared to honor his achievements and I have the pleasure to invite you to read it.

*Jan Celichowski*