

Seventy Years of Systematic Biomedical Research at the Institute of Physiology of the Czech(oslovak) Academy of Sciences

This special issue of the *Physiological Research* journal is intended for the celebration of seventy years since the founding of the Institute of Physiology (IPHYS) of the Czech (former Czechoslovak) Academy of Sciences (CAS). True to its name, IPHYS has been systematically dedicated to the research in the field of normal and pathological physiology, with a special focus on biomedical research. Three main closely interconnected research directions gradually crystallized, which IPHYS continues to pursue today: research in the fields of neuroscience, metabolism, and cardiovascular physiology. Over the seven decades, our society has grown considerably older and fatter, while obesity rates have tripled. Modern medicine is thus facing new challenges in the form of an increased onslaught of so-called lifestyle (or civilization) diseases. The cost of their treatment represents a major burden on health care systems worldwide. The main current goal of IPHYS is to characterize the causes of these non-communicable diseases associated with obesity and ageing.

The origin of the current research at IPHYS is traced back to 1950 when two outstanding personalities, Prof. Zdeněk Servít (1913-1986) and Prof. Arnošt Gutmann (1910-1977), met at the Department of Neurophysiology within the Central Biological Institutes. In 1952, the Czechoslovak Academy of Sciences was founded. Servít's laboratory (epileptology) and Gutmann's laboratory (neuromuscular function) joined a group interested in critical periods of ontogenetic development headed by Prof. Jiří Křeček (1923-2014) to form a section of the new Biological Institute. On the basis of successful research and acceptance at home as well as abroad, IPHYS was officially founded on January 1, 1954 and consisted of these three laboratories. In 1956, a fourth group led by Prof. Otakar Poupa (1916-1999), who studied the adaptation of the organism to its environment, joined the Institute. The outstanding contribution of these scientists in the fields of neurophysiology, muscle regeneration, heart adaptation to

hypoxia and late effects of early interventions was subsequently enriched by their students and follower scientists at IPHYS.

In this introductory article it is not possible to mention all the important bits that make up the seventy-year history of IPHYS. The information about important personalities and key results can be found in previous two anniversary issues of *Physiological Research* (53 (suppl. 1) 2004 and 63 (suppl. 1) 2014) and on the Institute's website (<https://www.fgu.cas.cz/en/about>). The fates of prominent scientists, who worked at IPHYS and who emigrated abroad after 1968, are described in a dedicated book (Štrbáňová & Kostlán: Sto českých vědců v exilu. Academia, Prague, 2011). Most recently, in 2024, this information was presented concisely, including a list of the most important publications in various research fields, in the *Presentation Institute's brochure* (which can be downloaded from the website above). Six articles in this special issue are dedicated to the history of research in the key areas of interest, written by the most respectable scientists in their respective fields, namely by Helena Illnerová, Bohuslav Ošťádal, Jaroslav Kuneš, Zdeněk Drahota, Pavel Mareš and František Vyskočil.

In addition to the six articles devoted to the history of research conducted at IPHYS over the last 70 years, most of the articles in this special issue review specific topics that reflect the scientific interests and expertise of the scientists who represent the main drivers of contemporary research at IPHYS. I believe that you will learn important and interesting information while reading these articles. I thank all my colleagues who were involved in their writing.

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