

On the ground of Laboratory of Cardiology (1978–1991, the chief J. Juskenas; 1992–2001, the chief dr. J. Brozaitiene) and Department (2002–2011) of Cardiovascular Rehabilitation and Prevention (chief J. Brozaitiene) and Clinical Physiology (chief prof. G. Varoneckas) in 2012 Laboratory of Clinical Physiology and Rehabilitation (the chief J. Brozaitiene) was founded.

The main research area: Cardiovascular psychophysiology, cardiac rehabilitation, exercise capacity, heart rate variability, oxygen uptake, sleep, metabolic syndrome.

Researches were performed in the following study programs: 1977–1981 – automatic heart rate variability analysis during functional tests; 1981–1985 – evaluation functional status in CAD patients, dependence on severity of disease, during rehabilitation; 1986–1990 – evaluation functional status in CAD patients during rehabilitation on the basis of heart rate variability during complex functional tests (orthostasis, ergometric and spiroergometric tests, sleep, exercise training procedure); 1991–1995 – individualisation of cardiovascular rehabilitation program in CAD with cerebrovascular disturbances; 1996–2001 – heart rate variability as fast cardiovascular reserve reflection: dependence on leading diseases, basic autonomic disturbances and psychoemotional status; 2002–2006 – evaluation efficacy of rehabilitation in patients after acute myocardial infarction, cardiac revascularization operation, follow-up study and outcomes; 2007–2011 – impact of psychosomatic, neuroendocrine and sleep disturbances on CAD course, rehabilitation and outcomes; 2012–2016 – impact of behavioural and biomolecular factors for cardiovascular disease course, rehabilitation and outcomes and impact meteorological, heliophysical and health resort factors on human health.

Prepared autonomic heart rate variability analysis system allowed to assess standard HRV patterns and Poincare plots, constructed from RR interval sequence, collected during functional tests, considered as useful for their practical purpose (prof. D. Zemaityte). Cardiovascular rehabilitation/secondary prevention program with computerized quantitative evaluation of the integrate parameters of functional status and efficacy of rehabilitation may be useful for country rehabilitation system monitoring. Made-up exercise program with training efficacy evaluation for patients after acute coronary syndromes and cardiac surgery operations is used in rehabilitation institutions. Comprehensive cardiovascular rehabilitation and training program for patients after acute coronary syndrome and cardiac surgery was published in university textbook “Cardiovascular rehabilitation” (Kaunas, 2001) and introduced in Cardiovascular Clinic of institute.

Laboratory colleagues prepared 3 habilitation and 10 doctoral dissertations.

Laboratory is responsible for development rehabilitation optimization methods for patients with CVD as well as for conducting research, concerning informative cardiovascular functional condition indicators in order to prognose the course and outcome of the disease. The research explores the associations of the severity of cardiological condition, biomarkers and genetic indicators, their impact to the patient-oriented outcomes, the course and outcome of an illness among CAD patients who experienced acute coronary syndromes. Currently, new methods of cardiovascular rehabilitation are being developed, which will be based on informative indicators of functional state, cardiovascular system reactions during physical and/or psychoemotional stress tests, and during night time sleep as well as application of feedback

In the laboratory, there are 2 habilitated doctors, 4 doctors of science and 3 PhD students.