

**The impact of behavioural and biomolecular agents on cardiovascular disease course, rehabilitation and outcomes (2007-04-13 Nr.BE-2-21;2009-01-15 Nr.P1-38/2007;2009-09-12 Nr.P2-38/2007;2010-04-20 Nr.P3-38/2007; 2012-10-24 Nr.P1-110/2012). Program manager – Julija Brožaitienė, MD, PhD**

*The aim of the program* is to analyse informative factors of functional status and molecular markers (inflammation, genetic, hormonal), examine the relation with rehabilitation, disease process, patient oriented outcomes and prognosis.

*The main tasks of research:*

1. Examine informative factors of functional status and molecular markers (inflammation, genetic, hormonal), study the relation with rehabilitation, disease process, patient oriented outcomes and prognosis in CAD patients.
2. Examine informative factors of functional status and molecular markers (inflammation, genetic, hormonal), study the relation with rehabilitation, disease process, patient oriented outcomes and prognosis in stroke patients.
3. Examine informative factors of functional status and molecular markers (inflammation, genetic, hormonal), estimate the relation with rehabilitation, disease process, patient oriented outcomes and prognosis in patients after cardiac surgery.
4. Examine relationship clinical, psychoemotional state, social and stressful life events with quality of live and relation with disease process and outcomes in CAD patients.
5. Examine relationship psychoemotional state, cognitive, sleep disorders and neuroendocrine, genetic factors with disease course, outcomes in CAD patients.
6. Examine relation depressive disorders for cardiovascular reactivity and cortisol secretion during emotional and physical stress tests in healthy and CAD patients.

**The impact of meteorological, heliophysical and health resort factors on human health. (2008-05-12 Nr. BE-2-26; 2009-03-04 Nr.P1-82/2008). Program manager – Dalia Stropute, PhD**

Much attention has been given recently to analyse effects of health resort factors on human health. It is crucial to investigate the impact of meteorological and heliophysical factors on humans health in order to orientate patient to recreation, treatment or rehabilitation facilities according to their needs and illnesses. Weather changes play a significant role in human's health. It is important to investigate this topic as well.

*The aim of this program* is to investigate the impact of meteorological, heliophysical and health resort factors on human health.

*The main goals of research:*

1. To analyse meteorological and heliophysical factors of Lithuanian coastal resort Palanga.
2. To analyse the impact of meteorological, heliophysical factors of resort Palanga and medical-meteorological weather classes on patients with cardiovascular diseases.
3. To analyse the impact of meteorological, heliophysical factors of resort Palanga and medical-meteorological weather classes on patients with behavioural and mental disorders.
4. To compare meteorological reactions of patients with cardiovascular diseases and patients with behavioural and mental disorders.
5. To specify the evaluation of medical-meteorological weather classes.
6. To create climatic factors forecasting model as well as prepare recommendations for prophylaxis of meteorological reactions.

**The impact of genetic and environmental factors on course and outcomes of mental disorders (approved by the Kaunas regional Biomedical Research Ethics Committee 2009-10-12 Nr.BE-2-17; 2010-09-30 Nr.P1-72/2009; 2010-12-08 Nr. P2-72/2009; 2013-10-15 Nr. P3-102/2013).**

**Leader of the programme dr. N.Mickuvienė**

The aim of the study is to evaluate the impact of genetic predisposition and its interaction with neuroendocrine, immune, inflammatory, infectious and other environmental factors on the course of psychiatric disorders and their treatment as well as on the risks for physical diseases.

This study will focus on deeper understanding role of the molecular mechanisms and environmental factors on mental disorders with the possibility to predict their course and outcome and impact on the development of physical diseases. In some cases, genetic markers may influence the choice of psychiatric treatment. Complex associations between mental disorders and physical functioning, quality of life, cardiovascular reactivity, cognitive functions, biochemical indicators will be analyzed.

A total of 500 consenting patients attending LUHS Behavioral Medicine Institute day care Department of Stress Related Disorders will be recruited. All patients included in the study will be interviewed using standardized and well-validated psychiatric/psychological clinical scales and questionnaires. Biochemical, hormonal, immune/serological and genetic factors will be evaluated using patients' blood and saliva samples. Experienced practitioner will evaluate patients' cardiovascular reactivity and physiological sleep factors.

This study will help better understand genetic and environmental risks for mental disorders, as well as contribute to better treatment selection and relapse prevention as well as early prevention of serious physical diseases.

## **Information technologies in the biomedical research. Program Manager – Aurelija Podlipskyte, PhD**

Participating in these projects:

7 BP BIO ASQ: “A challenge on large-scale biomedical semantic indexing and question answering (ICT Call 8:FP7-ICT-2011-8)”.

Open Science Link: “Open Semantically-enabled, Social-aware Access to Scientific Data (CIP-ICT PSP-2012-6)”.

7BP PONTE:”Efficient Patient Recruitment for Innovative Clinical Trials of Existing Drugs to other Indications”, (Sut.Nr.247945).