



*250 years of EXCELLENCE in medical  
education, research & innovation and  
healthcare*

# RESEARCH PORTFOLIO

**SEMMELWEIS UNIVERSITY**  
**FACULTY OF HEALTH SCIENCES**

**2022**

---

RESPONSIBLE PUBLISHER:

GABRIELLA DÖRNYEI PHD  
DEAN

EDITED BY:

ÉVA KÁMÁN  
COORDINATOR

## TABLE OF CONTENTS

<b>DEPARTMENT OF ADDICTOLOGY</b> .....	<b>7</b>
PSYCHOSOCIAL CHARACTERISTICS OF NEW PSYCHOACTIVE SUBSTANCE USERS .....	7
EFFICACY STUDY OF A PREVENTION ESCAPE ROOM NAMED MIND-BREAKER .....	8
NEUROPSYCHOLINGUISTICS ANALYSIS OF MENTAL DISORDERS .....	8
<b>DEPARTMENT OF APPLIED PSYCHOLOGY</b> .....	<b>9</b>
ASSESSMENT OF STRESS MANAGEMENT AMONG STUDENTS .....	9
THE INSPECTION OF RISK INTERVENTION POSSIBILITIES FOR OLD-AGE SARCOPENIA, WITH PARTICULAR EMPHASIS ON HMB COMPLEMENTATINO AND ELECTROMAGNETIC FIELD MANAGEMENT .....	10
VALIDATION OF COMPUTER-BASED BODY IMAGE MEASUREMENT METHODS.....	11
<b>DEPARTMENT OF MORPHOLOGY AND PHYSIOLOGY</b> .....	<b>12</b>
THE POTENTIAL THERAPY OF MOTION DISORDERS BY WHOLE BODY VIBRATION AT EARLY DEVELOPMENTAL STAGE .....	12
EFFECTS OF ENDOCANNABINOID SIGNALING ON VASCULAR FUNCTIONS AND REMODELING .....	13
EFFECTS OF METABOLIC AND HORMONAL DISTURBANCES ON VASCULAR ADAPTATION AND REMODELING .	13
MAINTAINING OF FUNCTIONAL ABILITIES AND PREVENTION OF FALLS AMONG OLDER ADULTS .....	14
A MODEL OF THE VENOUS VARICOSITY DISEASE IN RATS.....	14
ROLE OF PHYSICAL ACTIVITY (SPORT) IN PREVENTING VASOMOTOR AND COGNITIVE DYSFUNCTION DURING AGING.....	15
APPLICATION AND ANALYSIS OF MECHANICAL AND ELECTROMAGNETIC TREATMENT METHODS FOR CHILDHOOD CEREBRAL PALSY (CP) .....	16
<b>DEPARTMENT OF SOCIAL SCIENCES</b> .....	<b>17</b>
THE SOCIO-ECONOMIC STATUS OF NURSES .....	17
SOCIO-CULTURAL PATTERNS OF HEALTHCARE SPECIALISTS' WAY OF THINKING, ACTIVITIES AND COMPETENCIES IN CARING FOR ILL PEOPLE IN SPECIAL LIFE-SITUATION.....	18
THE KNOWLEDGE-MANAGEMENT AND THE KNOWLEDGE- RECONVERSION STRATEGIES OF NURSES.....	19
THE RELATION OF ROMAS AND THE HEALTHCARE SYSTEM FROM AN INTERDISCIPLINARY APPROACH .....	20
THE PHILOSOPHICAL HERMENEUTICAL UNDERSTANDING OF INTERCULTURALITY AND ITS CONSEQUENCES ON HEALTHCARE .....	20
ETHICAL AND LEGAL DILEMMAS IN THE PRACTICE OF PERINATAL INTENSIVE CARE, FROM THE POINT OF VIEW OF THE BEGINNING AND THE END OF LIFE .....	21
MODERN PEDAGOGICAL APPROACHES TO HUNGARIAN HEALTH PROMOTION BY PEER EDUCATION; LEARN-TEACH-KNOW (TANTUDSZ) .....	22

INTEGRATION EXPERIENCES OF PARENTS OF SCHOOL-AGED-CHILDREN WITH AUTISM SPECTRUM DISORDER IN A LOCAL EDUCATIONAL CONTEXT .....	23
IMPACT OF THE COVID-19 PANDEMIC ON DOMESTIC HEALTH RESORTS - COMPARATIVE RESEARCH WITH SANATORIUMS IN RUSSIA .....	24
PATIENT SAFETY COMMUNICATION IN MULTICULTURAL AND MULTILINGUAL HEALTHCARE SETTINGS – A REVIEW OF THE MAIN HEALTH SYSTEMS IN EUROPE .....	25
 <b>DEPARTMENT OF NURSING.....</b>	<b>26</b>
THE INCIDENCE OF NEEDLESTICK INJURIES AMONG HEALTH WORKERS - 2006-2021 .....	26
WELL-BEING INVESTIGATION OF PERSONS WITH DEMENTIA IN HUNGARY AND SWEDEN: QUALITATIVE INTERVIEW RESEARCH FROM THE PERSPECTIVES OF THE RELATIVES .....	27
POSSIBILITIES OF STUDENT ATTITUDE FORMATION IN THE FRAMEWORK OF TEACHING THE SUBJECT „PSYCHIATRY AND NURSING” .....	28
THE IMPACT OF COVID-19 ON THE DEVELOPMENT OF SIMULATION-BASED TEACHING METHODS.....	29
PATIENT SAFETY IN TRANSFUSIOLOGY – ADDITIONS TO NURSING CARE, HEALTHCARE ASPECTS OF TRANSFUSION THERAPY.....	29
APPLICABILITY OF BIOLUMINESCENT MONITORING DEVICES IN NURSING PRACTICE.....	30
HIV/AIDS IN THE PRACTICE OF NURSES AND MIDWIVES .....	31
 <b>DEPARTMENT OF DIETETICS AND NUTRITION SCIENCES .....</b>	<b>32</b>
MONITORING THE NUTRITIONAL STATUS AND NUTRIENT INTAKE VALUES OF THE ELDERLY. ELDER EDUCATION FOR INFLUENCING NUTRITIONAL ATTITUDES .....	32
THE HYGIENE OF FORMULA KITCHENS, ACTIVITY PROCESS MANAGEMENT AND ITS INFORMATION SYSTEM ..	33
HEALTHY FUTURE – SUSTAINABILITY IN PUBLIC FOOD .....	33
FACTORS INFLUENCING INTELLIGENCE LEVEL WITH SPECIAL ATTENTION TO NUTRITON .....	34
ROLE OF DIFFERENT DIETARY FIBRES IN WOMEN WITH POLYCYSTIC OVARY SYNDROME.....	34
SUPPORT OF THE DIETOTHERAPY OF DIABETES PATIENTS BY USING A MOBILE APPLICATION PROGRAM .....	35
STUDY OF THE EFFECTS OF SPELT AND LOW FODMAP DIETS IN PATIENTS WITH IRRITABLE BOWEL SYNDROME AND INFLAMMATORY BOWEL DISEASE IN REMISSION .....	35
COMPARISON OF THE DIETS OF VEGAN AND CONVENTIONALDIET GROUPS AS A FUNCTION OF SEASONALITY .....	36
THE ROLE OF PUBLIC CATERING AS A FORM OF NUTRITION EDUCATION IN THE DEVELOPMENT OF NUTRITIONAL ATTITUDES .....	36
ASSESSMENT OF THE NUTRITIONAL ATTITUDES OF AND THE PREVALENCE OF TAKING PRENATAL VITAMIN PRODUCTS BY PREGNANT WOMEN IN THE LIGHT OF THEIR MENTAL HEALTH.....	37
MONITORING NUTRITION STATUS AND NUTRIENT VALUE AT ALL AGES TO IDENTIFY FACTORS OF DIET- RELATED DISEASES AND HEALTH PRESERVATION .....	37
DIETOTHERAPY IN TREATMENT OF WOMAN INFERTILITY .....	38
INVESTIGATION OF BIOLOGICALLY ACTIVE COMPONENTS IN FOOD .....	39

INVESTIGATING THE RELATIONSHIP BETWEEN HUMAN NUTRITION AND COMPANION ANIMAL NUTRITION .....	39
DEVELOPMENT OF FUNCTIONAL FOOD PRODUCTS .....	40
A STUDY OF FAD DIETS AND ALTERNATIVE DIETS IN THE 21ST CENTURY .....	41
<b>DEPARTMENT OF PHYSIOTHERAPY .....</b>	<b>42</b>
TESTING THE EFFECTIVENESS OF VIBRATION TRAINING .....	42
DEVELOPMENT OF SMART APPLICATION IN SUPPORT OF MOVEMENT THERAPY .....	43
FAILURE IN INTERMUSCULAR COORDINATION AFTER SHOULDER INJURIES, PHYSIOTHERAPY OF CENTRAL STABILITY, BALANCE AND COORDINATION .....	43
MOVEMENT THERAPY DURING ONCOTHERAPY OF COLORECTAL CANCER (CRC PATIENTS USING ACTIVITY TRACKER) .....	44
NEW WAYS OF IMPROVING THE FITNESS ABILITIES OF THE INTERVENING STAFF, MANAGING THE EXTREME EFFECTS OCCURING DURING DISASTER ERADICATION .....	45
EPIDEMIOLOGICAL STUDY OF PATIENTS WITH POST-COVID SYNDROME AND DEVELOPMENT OF A COMPLEX PHYSIOTHERAPY ASSESSMENT AND TREATMENT METHOD .....	46
EPIDEMIOLOGICAL MUSCULOSKELETAL INJURY PREVENTION IN PARAATHELETS .....	47
<b>DEPARTMENT OF CLINICAL STUDIES IN OBSTETRICS AND GYNAECOLOGY .....</b>	<b>48</b>
ETIOLOGY AND CLINICAL ASPECTS OF HYPERTENSIVE DYSORDERS IN PREGNANCY AND THE IMPORTANCE OF PRENATAL CARE IN RECOGNITION OF THE DISEASE .....	48
<b>DEPARTMENT OF CLINICAL OPHTHALMOLOGY .....</b>	<b>49</b>
DIAGNOSIS AND THERAPY OF CORNEAL DYSTROPHIES .....	49
THE ROLE OF ORTHOKERATOLOGY IN MYOPIA CONTROL .....	49
NEW POSSIBILITIES IN THE THERAPY OF KERATOCONUS .....	50
NEW POSSIBILITIES IN THE DIAGNOSIS OF EARLY KERATOCONUS .....	50
<b>DEPARTMENT OF FAMILY CARE METHODOLOGY .....</b>	<b>51</b>
SURVEY ON THE GASTROINTESTINAL SIDE EFFECTS OF ANTIBIOTICS IN CHILDREN & RECENT PREVENTIVE MEASURES .....	51
ROLE OF INDOOR ALLERGENS IN THE DEVELOPMENT OF ALLERGIES FROM CHILDHOOD .....	51
EXAMINATIONS OF URINE HOLDING AND EVACUATION PROBLEMS .....	52
PERSPECTIVES OF PREVENTION IN THE PHENOMENOM AND SOCIAL PRACTICE OF CHILD ABUSE, WITH SPECIAL REFERENCE TO THE “SHAKEN BABY SYNDROME”-SBS .....	52
A PROSPECTIVE ANALYSIS OF POSTPARTUM FEMALE SEXUAL FUNCTIONS .....	53
SURVEY ON THE CAUSES OF THE EMERGENCE OF PREMATURE BIRTH/LOW BIRTH WEIGHT/DEVELOPMENTAL DISORDER .....	53

NUTRITION THERAPY FOR DYSPHAGIA WITH SPECIAL EMPHASIS ON STROKE PATIENT ..... 54

**DEPARTMENT OF CLINICAL STUDIES ..... 55**

THERAPEUTIC ADHERENCE OF ORAL ANTICOAGULANTS ..... 55

ECONOMIC AND PATIENT SAFETY ISSUES RELATED TO ONE-DAY SURGERY ..... 56

PREPARATION AND EXAMINATION OF TPN SYSTEMS FOR INDIVIDUAL CLINICAL THERAPY. PRACTICE OF CLINICAL NUTRITION. ANALYSIS OF TEAM WORK PRACTICE IN CLINICAL NUTRITION..... 56

EXAMINATION OF PLATELET RETRACTION IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME ..... 57

EXAMINATION OF AND INFLUENCING THE NUTRITIONAL STATUS OF GERIATRIC PATIENTS ..... 57

EXAMINATION AND PREVENTION OF SARCOPENIA IN THE ELDERLY ..... 58

EXAMINATION OF THROMBOTIC RISK IN THE ELDERLY ..... 58

**DEPARTMENT OF OXIOLOGY AND EMERGENCY CARE ..... 59**

INVESTIGATION OF ON-DUTY PARAMEDICS' ATTITUDES TOWARDS DEATH, AS WELL AS OF FACTORS THAT INFLUENCE IT ..... 59

THE ROLE OF TECHNICAL AND NON-TECHNICAL SKILLS IN EMERGENCY CARE ..... 60

USE OF MORPHINE IN THE PRE-HOSPITAL CARE OF PATIENTS WITH MYOCARDIAL INFARCTION..... 60

**DEPARTMENT OF PUBLIC HEALTH SCIENCES ..... 61**

RAPID MICROBIOLOGICAL METHODS BASED ON THE PRESENCE OF ATP TO INCREASE FOOD SAFETY ..... 61

ENVIRONMENTAL AND HEALTH RISK ASSESSMENT OF NANOMATERIALS..... 62

ASSESSMENT OF ENVIRONMENTAL HEALTH RISK AWARENESS ..... 62

HEALTH RISK ASSESSMENT OF ENVIRONMENTAL DISEASES ..... 63

## DEPARTMENT OF ADDICTOLOGY

HEAD OF THE DEPARTMENT: **JÓZSEF RÁCZ MD, PHD, DSC, PROFESSOR**

CONTACT: TEL: +36-1-48-64919, E-MAIL: [ADDIKTOLOGIA@SE-ETK.HU](mailto:ADDIKTOLOGIA@SE-ETK.HU)

---

## PSYCHOSOCIAL CHARACTERISTICS OF NEW PSYCHOACTIVE SUBSTANCE USERS

The number of new psychoactive substance users continuously grows in Europe and in Hungary. Traditional health and social care interventions do not work effectively in these cases so we have to develop new prevention and treatment methods, which necessitates a better understanding of substance use and users. A part of this task is studying the psychosocial characteristics of users and assessing their respective risk.

The users of the new psychoactive substances pose a challenge for the system of health and social services therefore it is important to know the psychosocial characteristics of users and of the patients undergoing therapy. Based on this information, we can plan more targeted interventions for them in terms of e.g. prevention, outreach, admission to treatment, and treatment planning.

HEAD OF RESEARCH: Dr. RÁCZ József, Dr. DEMETROVICS Zsolt (Eötvös Loránd University)

CONTACT: Dr. KAPITÁNY-FÖVÉNY Máté - [kapitany.foveny@se-etk.hu](mailto:kapitany.foveny@se-etk.hu)

PARTNER INSTITUTION: Eötvös Loránd University Institute of Psychology

## EFFICACY STUDY OF A PREVENTION ESCAPE ROOM NAMED MIND-BREAKER

Mind-breaker is a prevention escape room that contains various interactive and cooperative tasks related to important life events of an imagined substance user, highlighting the risk factors for substance use and addiction. The players of the room (5-6 persons/game) enter a space that symbolizes the mind of a substance user. The game experience is followed by a group discussion session. The prevention escape room is freely available for adolescents as a preventive intervention.

The current study aims at assessing the efficacy of the escape room by collecting data shortly before (T0) and after (T1) the game experience. The main outcome variables consist of psychoactive substance-related knowledge, perceived self-efficacy, state anxiety and craving regarding the substance used most frequently by the respondent. The experimental group (those who enter the escape room) is compared with a group receiving a prevention lecture as well as with a control group that does not receive any preventive intervention.

HEAD OF RESEARCH: Dr. KAPITÁNY-FÖVÉNY Máté

CONTACT: Dr. KAPITÁNY-FÖVÉNY Máté - kapitany.foveny@se-etk.hu

PARTNER INSTITUTION: Budapest XIII. District Prevention Centre

## NEUROPSYCHOLINGUISTICS ANALYSIS OF MENTAL DISORDERS

In recent years, computational linguistic and psycholinguistic approaches have become increasingly accepted within the field of psychiatry. This is especially true for identifying language markers of depression and psychotic states. Linguistic characteristics are sensitive indicators of these mental disorders, and in many cases are more reliable in signaling depression or psychosis than common screening instruments routinely used in psychiatric practice. The psycholinguistic approach also involves differential diagnostic opportunities: drug-induced psychosis and schizophrenia can be distinguished by analyzing signs of language use.

HEAD OF RESEARCH: Dr. KAPITÁNY-FÖVÉNY Máté

CONTACT: Dr. KAPITÁNY-FÖVÉNY Máté - kapitany.foveny@se-etk.hu

PARTNER INSTITUTION: National Institute of Mental Health, Neurology and Neurosurgery



HEAD OF DEPARTMENT: ILDIKÓ BAJI PHD, COLLEGE PROFESSOR

CONTACT: TEL: +36-1-48-64920, E-MAIL: PSZICHOLOGIA@SE-ETK.HU

---

## ASSESSMENT OF STRESS MANAGEMENT AMONG STUDENTS

At the beginning of their university studies, the pressure significantly increases on students. They face difficulties in terms of fitting in, performance pressure related to obtaining the desired grades and the more intense exposure to stress, which may result in increased anxiety, stress, depression, fatigue, and burn out.

At a global level, the effects of stress on students and together with their negative consequences have reached a degree that students are increasingly exposed to the risk of depression, anxiety and burnout. According to the latest studies, 21-90% of students experience stress load and 27-75% of students experience burn out. 5-10% of students have suicidal thoughts. General exhaustion may induce additional health problems such as sleep disturbances, blood pressure fluctuations or other psychosomatic symptoms.

The purpose of our research is to assess students' overall psychosocial and health psychological state, identify stress factors, analyse the effect of the distress generated by the exam situation on students' psychological and mental condition, and test results. Our goal, furthermore, is to explore approaches that are more effective in dealing with stress, to emotion management and to coping, and to identify all mobilisable resources for students' wellbeing. We intend to develop and study the effect of psychosocial interventions that can effectively help students cope with stress, achieve good exam results and reduce dropout.

In our study, we plan to create a sample involves about 400 students across all university programmes of the Faculty.

HEAD OF RESEARCH: Dr. KOVÁCS Zsuzsanna

CONTACT: Dr. KOVÁCS Zsuzsanna - kovacszs@se-etk.hu

## THE INSPECTION OF RISK INTERVENTION POSSIBILITIES FOR OLD-AGE SARCOPENIA, WITH PARTICULAR EMPHASIS ON HMB COMPLEMENTATION AND ELECTROMAGNETIC FIELD MANAGEMENT

Elderly people (over 65 years of age) face increasing nutritional difficulties. Generalized muscle strength and muscle mass loss, also known as sarcopenia, may be associated with a higher risk of falls in old age, reduced physical performance during daily activities, hospitalization and mortality. Most research into the prevention or treatment of sarcopenia requires complex nutritional and physical interactions. HMB (beta-hydroxybeta-methylbutyrate) is a metabolite of one of our branched chain amino acids (leucine). Meat, fish, dairy products, soy, other legumes and oilseeds are the main external food sources of leucine. Due to its anabolic, muscular, and aerobic endurance, HMB is rapidly gaining popularity among athletes, but it is now almost certain that it is an effective supplement, especially in untrained people. Loss of muscle mass can occur as part of physical inactivity, disease, lifestyle, or a natural aging process. One of the possible causes of sarcopenia is the anabolic resistance of the aged muscle to food stimulation. Salto et al. also assume a positive effect of HMB supplementation on cognitive function. It is presumed that HMB supplementation initiated in adulthood may play a preventive role in the maintenance of cognitive function. Investigation of the effect of HMB supplementation on cognitive function in human models is limited, although the preconception of its efficacy is enhanced by the fact that HMB crosses the blood-brain barrier. Sansa electromagnetic field therapy as a therapeutic method has shown positive results in plastic surgery, both in the treatment of edema and pain, in the healing of chronic wounds, in lower back pain and in the reduction of knee joint pain as well as in the healing of bone fractures. In our research, we use self-questionnaires, Sansa electromagnetic treatment, HMB supplementation, and locomotor and dietetic surveys.

Due to the current situation created by Covid, the research is temporarily at a standstill.

**HEADS OF RESEARCH:** Dr. NYAKAS Csaba, Dr. BAJI Ildikó

**CONTACTS:** Dr. BAJI Ildikó - pszichologia@se-etk.hu  
Dr. NYAKAS Csaba - nyakas.csaba@tf.hu

**PARTNER INSTITUTION:** University of Physical Education

Anorexia nervosa (AN) has the highest mortality rate among psychiatric disorders at the moment. Its leading symptom is body image disorder. The correction of body image disorders in a therapeutic setting is difficult, sometimes not even addressed, and as a consequence the relapse rate in eating disorders is significant. Body image disorders usually precede pathological eating habits; its diagnosis is of utmost importance. The situation is made more difficult due to the earlier onset of eating and body image disorders thanks to the ever stronger media influence.

There are many methods to measure body image disorders, however, these are mostly questionnaires. Computer-based techniques became available in the last 3 decades, which are able to measure both the perceptual and the attitudinal component of body image. These methods, however, are not yet widespread. The advantage of these methods are that they are immersive, detailed, and they do not require specific equipment other than a computer or a tablet.

One goal of my research is to validate computer-based methods that will be available for practitioners in clinical settings. Presently there are more than one 3D graphic modeling softwares that are perfect for body image measurement, however they are not used for that purpose. As my research I aim to validate the DAZ 3D Studio program, so that I could provide a statistically reliable and valid measurement for clinicians. Moreover, I would like to explore the possibilities provided by the detail-oriented nature of these softwares; body image might not be as homogenous as we have thought earlier – not referring to the perceptual and attitude component – since due to the simultaneously present body image ideals and media messages different body parts might actually carry different significance. Exploring the nature of body image this way might provide valuable insight and contribution to improve the care of eating and body image disordered patients.

HEAD OF RESEARCH: LEINDLER Milán

CONTACT: LEINDLER Milán - leindlermilan@gmail.com

HEAD OF DEPARTMENT: **GABRIELLA DÖRNYEI PHD, COLLEGE PROFESSOR, DEAN**

CONTACT: TEL: +36-1-48-64940, E-MAIL: [MORFOLOGIA@SE-ETK.HU](mailto:MORFOLOGIA@SE-ETK.HU)

**THE POTENTIAL THERAPY OF MOTION DISORDERS BY WHOLE BODY VIBRATION AT EARLY DEVELOPMENTAL STAGE**

In our fundamental research program, attention deficit hyperactivity disorder (ADHD) and a potential therapy of it is studied. Previous experiments have established an animal model of ADHD. In this model, the physiology of animals, especially of their brains, can be intensively studied, which is impossible or difficult to perform on human subjects. The basic symptoms of the disorder will be presented on the animals (Wistar rats): hyperactivity, attention deficit, impulsivity and accompanied cognitive and social disturbances. Animals will be exposed to whole body vibration (WBV) at different stages of development and the improvement of symptoms will be tested. Then the positive effects of WBV will be examined on 7-12 year-old children diagnosed with ADHD.

In the followings, the WBV treatment will be applied on children suffered in cerebral palsy as well as in muscle dystrophy.

Our long-term goal is to present the advantages of a simple, non-invasive treatment, and to improve the condition in the mentioned motion disorders.

HEAD OF RESEARCH: Dr. FELSZEGHY Klára (University of Physical Education)

CONTACT: Dr. HRUSKA Anett - [hruskaa@se-etk.hu](mailto:hruskaa@se-etk.hu)

PARTNER INSTITUTION: University of Physical Education

## EFFECTS OF ENDOCANNABINOID SIGNALING ON VASCULAR FUNCTIONS AND REMODELING

It has been known that endogenously produced cannabinoids (endocannabinoids) play a role in the physiological functions. It has also been known that consuming exogenous cannabinoid-derived drugs may induce alterations of cardiovascular and hormonal system. Effects of endocannabinoids in the nervous system and other tissues are mediated mostly via CB1 cannabinoid receptors (CB1R). We have reported before that CB1Rs influence vascular control mechanisms in some vascular beds.

Thus we aim to investigate the roles of endocannabinoid system and CB1 cannabinoid receptor signaling on the vascular functions and remodeling induced by pathological states (e.g. hypertension, hormonal and metabolic diseases).

Research experimental work is performed in the Laboratory of Molecular Physiology, Department of Physiology of Semmelweis University. Blood pressure of rats and transgenic mice (CB1R knockout) is measured and functions of vessels are measured with myography. Vascular remodeling is detected by tissue staining methods.

Beneficial outcomes of the research project targeting endocannabinoid system and cannabinoid signaling may reveal physiological mechanisms and give a therapeutic potential.

**HEADS OF RESEARCH:** Dr. SZEKERES Mária, Dr. KISS Judit (Semmelweis University Faculty of Medicine)

**CONTACT:** Dr. SZEKERES Mária – [szekeres.maria@se-etk.hu](mailto:szekeres.maria@se-etk.hu)

**PARTNER INSTITUTION:** Semmelweis University Faculty of Medicine, Department of Physiology

## EFFECTS OF METABOLIC AND HORMONAL DISTURBANCES ON VASCULAR ADAPTATION AND REMODELING

The research project investigates pathomechanisms of changes in hemodynamic and vascular functions in metabolic and hormonal disorders (e.g. diabetes mellitus, hypertension, menopause, polycystic ovary syndrome). During the research work we aim to investigate the role of the alterations of hormone receptor-induced signaling mechanisms in the progression of these diseases. We also aim to suggest pharmacological intervention attenuating pathophysiological alterations of vascular functions and vascular remodeling by modulating cell-signaling mechanisms.

**HEAD OF RESEARCH:** Dr. VÁRBÍRÓ Szabolcs (Semmelweis University Faculty of Medicine)

**CONTACT:** Dr. DÖRNYEI Gabriella - [dornyeig@se-etk.hu](mailto:dornyeig@se-etk.hu)

## MAINTAINING OF FUNCTIONAL ABILITIES AND PREVENTION OF FALLS AMONG OLDER ADULTS

We conduct controlled studies to investigate whether different types of physical activity and other preventive programs could be feasible exercise forms for Hungarian older adults too. In addition, we evaluate the short-term and long-term effects of these programs on balance, functional mobility, and kinematic variables of gait, lower limb strength, and aerobic endurance in this population. Furthermore, we assess the factors which influence functional abilities in older adults. Outcome variables including static and dynamic balance, kinematic parameters of walking, functional mobility, lower limb strength, and aerobic endurance are measured with standard clinical tests or biomechanical tools. Between and within groups changes and associations will be analysed with statistical tests depending on data quality.

HEAD OF RESEARCH: Dr. KOVÁCS Éva

CONTACT: Dr. KOVÁCS Éva - kovacse@se-etk.hu

PARTNER INSTITUTION: Regional Methodological Centre and Nursing Home of Municipality of Budapest

## A MODEL OF THE VENOUS VARICOSITY DISEASE IN RATS

It is important to know the effects of pressure and flow on the biomechanical changes in the venous wall and on its collateral vessel network for understanding the pathomechanism of venous varicosity. A new animal model was introduced, in which a part of the saphenous vein of rats was partially occluded (4 weeks, pressure increased, flow decreased). Notable angiogenesis and varicosity-like distensions of the side branches were observed after the occlusion. The changes proportionally enhanced with the duration of the occlusion (8-, 12 weeks). The occlusion was combined also with gravitational load (4 weeks, 45° head up tilt position in a tube-like cage). As a result, tortuous vessel segments and significantly enhanced collateral vessel network developed even after 4 weeks. Our further aim is to elucidate the extent of angiogenesis with immunohistochemical markers (f. e. KI-67 (cell division activity), CD 68 (macrophage activity), SMA (smooth muscle actin, angiogenesis), rezorcin fuchsin dye (elastic fibers)).

HEAD OF RESEARCH: Dr. NÁDASY György (Semmelweis University Faculty of Medicine)

CONTACT: Dr. DÖRNYEI Gabriella - dornyeg@se-etk.hu

PARTNER INSTITUTION: Hungarian Defence Forces Medical Centre, Department of Pathology

## ROLE OF PHYSICAL ACTIVITY (SPORT) IN PREVENTING VASOMOTOR AND COGNITIVE DYSFUNCTION DURING AGING

It is known that mental / cognitive functions are diminishing with aging. It has also been shown that increased physical and mental activity significantly reduces cognitive aging. This is due to the improved functioning of the cardiovascular system, especially cerebrovascular circulation and its (auto) regulation. Today, the phenomenon the "so-called vascular dementia" (such as forgetfulness) has been recognized, that is the mental decline is due to pathological functioning of cerebral vessels. In the course of our research, this idea is continued by examining the vasomotor function of arteries isolated from the brain of the exercised (EX), compared with the sedentary (SED) rats (young and old, male and female), and correlations will be established among these groups regarding vascular and mental / cognitive function. This research is an extension of our previous research in a similar field. The following specific experiments are planned:

### **Animal studies:**

1. Studying the vasomotor function of cerebral vessels, correlated with the aging of the brain, the cognitive and psycho-motor performance of elderly rats. Functional (vascular changes, agents with known mechanism of action), morphological (such as, wall thickness, enzyme detection, immunocytochemistry and histochemistry) and biochemical (Western blot, PCR) parameters are measured. The focus includes endothelial (NO, PGs), smooth muscle (contractility), and neuro-vascular coupling factors, such as neurotransmitters. Measurement of synaptogenesis and functions under the control of BDNF, PACAP, serotonin, etc., which are crucial for the regulation of learning and sensory motor processes. Later, we are also planning age-related changes. Age will be studied: 3, 12, 24 and 30-32 months.

2. We assume that the following "interventions", "influences", which can be used in clinical practice, improve positively both the vasomotor function of the cerebral vessels and the mental functions of the rats. There are two types of effects that have clinical significance: active and passive exercise types.

#### *Active:*

a) rat treadmill: chronic moderately intense therapy (which meets the requirements of the human age), b) rotarod: improving chronic learning and balancing skills and progressing as the workout progresses, c) 'enriched environment' which improves the psychosocial environment d) a combination of the above

#### *Passive:*

a) Whole body, pulsed electromagnetic field stimulation (EMT pacing) b) Whole body vibration c) Acute or chronic age dependent

### **Human Studies:**

Examination of forearm and foot skin microvascular reactions (with Perimed Laser Doppler Flow-meter) in various conditions of young and old subjects and the effects of passive and active exercise treatments.

**HEADS OF RESEARCH:** Dr. KOLLER Ákos, Dr. NYAKAS Csaba

**CONTACT:** Dr. NYAKAS Csaba – nyakas@se-etk.hu

## APPLICATION AND ANALYSIS OF MECHANICAL AND ELECTROMAGNETIC TREATMENT METHODS FOR CHILDHOOD CEREBRAL PALSY (CP)

Cerebral palsy (CP) is a central nervous system injury that involves the perception and cognitive functions in addition to damage of motor areas, with cognitive, communication, and affective deficits as co-symptoms. Based on our own and international research, the organization of movement and brain activity (including its early development) are closely related. It is promising to supplement movement development with modern device treatments, in which bionics and bioelectronics play a significant role.

The aim of the study is to assess the possible effects of the devices in relieving the symptoms associated with spastic disease, such as resolving contractures, relaxing spasms, improving balance, movement coordination, and cognitive perception: development of attention and response time. The former is since we consider the central nervous system injury (CP) as a disorder of the learning process, a condition for which there is no cure, and to which we give answers with a pedagogical approach. We hypothesize that several positive observations can be expected using both treatments, however, the focus of our research is to examine which treatment produces effective results and to compare which of the two treatments is more effective.

**HEADS OF RESEARCH:** Dr. NYAKAS Csaba, Dr. TÚRI Ibolya, Dr. BRETZ Károly

**CONTACTS:** Dr. NYAKAS Csaba – nyakas.csaba@tf.hu,  
MATISCSÁK Attila - matiscsak.attila@se-etk.hu

**PARTNER INSTITUTION:** Semmelweis University András Pető Faculty



## DEPARTMENT OF SOCIAL SCIENCES

HEAD OF DEPARTMENT: **JUDIT HELGA FEITH PHD, HABIL. COLLEGE PROFESSOR**

CONTACT: TEL: +36-1-48-64910, E-MAIL: [TARSTUD@SE-ETK.HU](mailto:TARSTUD@SE-ETK.HU)

---

## THE SOCIO-ECONOMIC STATUS OF NURSES

The aim of our research is to get a complex picture about the socio-economic status of Hungarian nurses, along with an understanding of the causes, backgrounds, and expected consequences of their situation. Our plans include making reliable and standard comparison with other reference-groups and with nurse communities of other countries as well. We will examine all dimensions and components of their social status, since we suppose that – just as in other social groups – the particular status-characters are consistent with each other and at the same time, the status-inconsistency appears in the nurse-group as well. To represent the socio-economic status of nurses solely through their income level would be a serious oversimplification. On the contrary, in our research we examine this in 21 dimensions. The causal system, interdependency, and generative correspondence of both subjective and objective indicators of the social status are in the focus of our research.

The complexity and the multidimensional character of our study require several research methods, including survey and focus group inquiry.

HEAD OF RESEARCH: Dr. VINGENDER István

CONTACT: Dr. VINGENDER István - [vingenderi@se-etk.hu](mailto:vingenderi@se-etk.hu)

## SOCIO-CULTURAL PATTERNS OF HEALTHCARE SPECIALISTS' WAY OF THINKING, ACTIVITIES AND COMPETENCIES IN CARING FOR ILL PEOPLE IN SPECIAL LIFE-SITUATION

Healthcare professionals more and more often meet patients who are in special a life-situation. These situations are sometimes the causes of the development of their illness or their patient status, while in other cases they merely accompany the specific life situation. The amount of special life-situations is increasingly growing during the postmodernization of the societies. Due to the differentiation and divergency of social life and to the postmodern social way of thinking, there are more and more identified positions that allow or call for such a denomination.

The social, socio-demografic and socio-cultural position of the healthcare professionals, the special ethos and the normative millieu of their work and profession, as well as the significant stress on their social responsibility taking pose several questions. These include the following: what kind of predispositions they have when facing these special life-situations, what kind of cognitive and behavioural strategies they work out for integrating these aspects into the structure of their work and proficiency, and how they construct their life-world in a healthcare providing segment that is increasingly gaining importance.

The diversified thematic structure and multidisciplinary horizon of the research necessitates the application of various research methods from questionnaire-based survey researches across focus-group researches to the content-analyzes of healthcare documents are necessary.

The results of the research can contribute to the improvement of the community and professional support provided for healthcare workers, to the modernization of their studies, and to increase their work-efficiency.

HEAD OF RESEARCH: Dr. VINGENDER István

CONTACT: Dr. VINGENDER István - [vingenderi@se-etk.hu](mailto:vingenderi@se-etk.hu)

Human resources for nurses or recruiting nurses raises not only a qualitative, but also a quantitative issue. Not only is the extremely topical question of where the health care system recruits the required supply of professionals, but also what qualitative indicators this echelon has in the helping role in which the profession is classified.

The knowledge of nurses, including general literacy, professional knowledge, and last but not least the relations connected to gaining the knowledge (as Bourdieu calls it *habitus*) is an extremely complex, multidimensional factor, which diversely defines the casual links. The research explores the origin of nurses' habitus, its patterns of evolution, structural and functional nature, adaptability, recognition for the work performed and convertibility into the other types of capital.

Applying Bourdieu's field-theory, we examine the sociocultural context dealing, interpreting and evaluating this habitus, in other words, the network society, which defines the origin and development of the examined habitus.

HEAD OF RESEARCH: Dr. VINGENDER István

CONTACT: Dr. VINGENDER István - [vingenderi@se-etk.hu](mailto:vingenderi@se-etk.hu)

## THE RELATION OF ROMAS AND THE HEALTHCARE SYSTEM FROM AN INTERDISCIPLINARY APPROACH

The research applying both sociological and legal aspects aims at identifying the main factors determining the relation of Roma women and the healthcare system. In the qualitative research, we conduct focus group interviews with midwives and health visitors about Roma women's situation in terms of family planning, prenatal care, birth, and infant nursing. We would like 1) to describe the main conflicts and actors in the relations of Romas and the healthcare system; 2) to address the difference between the Roma and non-Roma patients in terms of their sociodemographic characteristics, health behaviour, health awareness, and cultural background; 3) to explore the difference between Roma groups based on the former aspects and 4) to reveal the attitude of the majority of the society to the Roma, from the point of view of the institutions, healthcare workers, and non-Roma patients.

**HEADS OF RESEARCH:** Dr. FEITH Helga Judit, Dr. LUKÁCS J. Ágnes

**CONTACT:** Dr. LUKÁCS J. Ágnes - lukacs.agnes@se-etk.hu

## THE PHILOSOPHICAL HERMENEUTICAL UNDERSTANDING OF INTERCULTURALITY AND ITS CONSEQUENCES ON HEALTHCARE

This research aims at investigating what promises could be identified in deepening the discussion on interculturality by the help of the conceptual framework of philosophical hermeneutics as it was articulated by Hans-Georg Gadamer and Paul Ricoeur. Further to that, it aims to reveal opportunities this inquiry may reveal for the healthcare sector. By analysing the well-known intercultural models in health care delivery, the research would like to foster prevention and resolution of conflicts driven by the relation of parties with different cultural identity.

**HEAD OF RESEARCH:** Dr. DOBOS Attila

**CONTACT:** Dr. DOBOS Attila - dobosa@se-etk.hu

**PARTNER INSTITUTION:** University of Debrecen Faculty of Fine Arts

## ETHICAL AND LEGAL DILEMMAS IN THE PRACTICE OF PERINATAL INTENSIVE CARE, FROM THE POINT OF VIEW OF THE BEGINNING AND THE END OF LIFE

The general goal of the research is to shed light on the formation of the social and professional identities and roles of medical and health care professionals working in perinatal intensive care. Furthermore, we aim to understand the coping strategies these professionals use when facing communicational, professional, personal, and social challenges. At the same time, we concentrate on the effects of brand new technological solutions in the everyday medical practice of the field.

Our research focuses on those critical points where the related ethical and legal norms no longer correspond with professional and personal values. Due to these conflicting argumentations, several questions arise about the beginning and the end of life.

We want to show the nature of the conflicts stemming from the differences of legal and moral horizons and their effects on the everyday practice of perinatal intensive care.

With our findings, we try to support the more effective usage of highly developed professional solutions and the cooperation of the various professional and lay groups involved.

**HEADS OF RESEARCH:** Dr. FEITH Helga Judit, Dr. GRADVOHL Edina

**CONTACT:** Dr. FEITH Helga Judit - feith@se-etk.hu

## MODERN PEDAGOGICAL APPROACHES TO HUNGARIAN HEALTH PROMOTION BY PEER EDUCATION; LEARN-TEACH-KNOW (TANTUDSZ)

The primary goals of our research project supported by the Hungarian Academy of Sciences are to increase health-consciousness among the youth and to enhance the effectiveness of school health programmes with the detailed elaboration and launch of a new pedagogical methodology (Learn, Teach, Know!) in Hungary.

This methodology will be based on scientific evidence (Evidence-Based Education, EBE) and put into international context. The main point of our pedagogical concept is to involve older student age-groups to younger children's health education in the framework of a professional tutorial system. Modern and innovative health education is a complex pedagogical challenge and it involves numerous scientific fields (biology, health pedagogy, psychology, health sociology, information technology, etc.), so it is impossible to restrict it merely to the field of social or natural sciences. That is why the aims of our project are multidisciplinary. The members and experts of our programme belong to various science fields and professions and the connecting thread among them is the health education of children and youngsters.

HEAD OF RESEARCH: Dr. FALUS András

CONTACT: Dr. FEITH Helga Judit - feith@se-etk.hu

PARTNER INSTITUTIONS: Eötvös Loránd University Faculty of Primary and Pre-School Education,  
Eduvital Non-profit Health Education Society

## INTEGRATION EXPERIENCES OF PARENTS OF SCHOOL-AGED-CHILDREN WITH AUTISM SPECTRUM DISORDER IN A LOCAL EDUCATIONAL CONTEXT

Social and symbolic boundary-processes related to disability experiences are put in a particular ray of light by the perspective of families raising a kid with a disability. The boundaries that define family itself are re-understood in relation to disability, as caring of a disabled child supposes a social network of relationships of educators, health and social care professionals, informal actors (such as neighbours, friends) as active agents of the everyday life of the family. Based on the social model of disability, disability is situative because all the family members around the disabled are sharing experiences of disability: even though family members may acquire different perspectives, experiences, tasks, understandings, the family in its unity experiences disability. The different formal and informal actors helping the family may reacting differently to the needs of the family and creates their narratives about it in different ways too. The central focus of this research is on families raising kids living with autism. It concentrates on the relevance of the developed family-school interface on the experiences of inclusion of these families. In doing so, it explores the discourses of the local society and school about autism, inclusion/exclusion that forms the educational strategies of the parents also. Therefore, the local social-cultural-economic context has to be discovered too, because it forms many phenomena, including patterns of interactions about school disadvantages or disabilities.

HEAD OF RESEARCH: Dr. NAGY Éva

CONTACT: Dr. NAGY Éva - [nagyeva@se-etk.hu](mailto:nagyeva@se-etk.hu)

PARTNER INSTITUTION: University of Debrecen Faculty of Fine Arts

## IMPACT OF THE COVID-19 PANDEMIC ON DOMESTIC HEALTH RESORTS - COMPARATIVE RESEARCH WITH SANATORIUMS IN RUSSIA

The aim of the research is to examine how the situation caused by the COVID-19 pandemic was handled by Hungarian and Russian health resorts, and whether their supply was adapted to the situation caused by the pandemic. It is a very new subject in medical tourism – the corona recovery concept in medical spas and climate health resorts. The goal is to use the historical, scientific tradition of balneology and current modern technology at COVID-19 recovery programme. Balneology has been the elementary source of rehabilitation and optimization of the human immune system and healing in times when the present modern medicine has not been yet born.

Russian Federation, like Hungary, is rich in natural healing factors. Russia managed to preserve and even actively develop sanatoriums, where medical services are provided under medical supervision. In many ways Russian professional activities can be considered as good practices. That is the reason why Russia was chosen to this comparative research.

HEAD OF RESEARCH: Dr. SZEGEDI Andrea

CONTACT: Dr. SZEGEDI Andrea – [szegedi.andrea@se-etk.hu](mailto:szegedi.andrea@se-etk.hu)



Numerous research has reported on the difficulties of communication in multicultural, multilingual healthcare settings, which often lead to misunderstandings and miscommunication exerting a negative impact on patient care, such as serious harm and preventable adverse events. Therefore, experts emphasize the necessity of clear communication, which can only be established if healthcare institutions have a policy and system for managing multicultural, multilingual cases, their healthcare staff is trained, and professional language services are available.

The aim of the research is to explore what tools the main European health systems have to manage cultural diversity and overcome language barriers in order to prevent minorities and patients not speaking the local language from experiencing inequalities and disparities and provide them with safe and quality care.

HEADS OF RESEARCH: HORVÁTH Ágnes, Dr. PÖRZSE Gábor

CONTACT: HORVÁTH Ágnes - horvath.agnes@se-etk.hu

## DEPARTMENT OF NURSING

HEAD OF DEPARTMENT: **ZOLTÁN BALOGH BSN, MSC, PHD, COLLEGE PROFESSOR, VICE DEAN FOR CLINICAL RELATIONS**

CONTACT: TEL: +36-1-48-65929, E-MAIL: [APOLASTAN@SE-ETK.HU](mailto:APOLASTAN@SE-ETK.HU)

---

## THE INCIDENCE OF NEEDLESTICK INJURIES AMONG HEALTH WORKERS - 2006-2021

The European Union regulated the cuts and needlestick injury prevention issues, methods in 2010, which the domestic legal system adapted in 2013. We performed four investigative researches into the Hungarian situation with regard to needlestick injuries among health care workers in the period 2006-2019.

The objectives of the previous study were twofold: to reveal the trend in the extent to which health workers are affected, and to draw the attention of economic and professional decision-makers to the importance and currency of the issue.

The aim of current study is to explore what changes have occurred over the past five years in the practice of care, the incidence of needlestick accidents, the orders of accident reporting procedures and in the attitudes of healthcare workers as well as in the methods and tools used.

The results of the research are basically for the development of professional trainings for workers, which are organized on a yearly basis to prevent needlestick and cut injuries, to prevent accidents, to apply preventive mechanisms to be followed, and to learn about post-accident work and good practice. At the same time, we intend to use the research results in the development of curricula at nursing education at BSc and MSc.

HEAD OF RESEARCH: Dr. BALOGH Zoltán

CONTACTS: Dr. BALOGH Zoltán - [baloghz@se-etk.hu](mailto:baloghz@se-etk.hu)  
SINKA LÁSZLÓNÉ ADAMIK Erika - [sinka@emk.sote.hu](mailto:sinka@emk.sote.hu)

PARTNER INSTITUTIONS: Council of Hungarian Healthcare Professionals, Semmelweis University  
Health Services Management Training Centre

## WELL-BEING INVESTIGATION OF PERSONS WITH DEMENTIA IN HUNGARY AND SWEDEN: QUALITATIVE INTERVIEW RESEARCH FROM THE PERSPECTIVES OF THE RELATIVES

**Introduction:** Dementia is one of the leading challenges of the aging societies of the 21<sup>st</sup> century, which is a featured problem in the European Union, including in Hungary and Sweden. One of the corner stones of caring for a person with dementia is maintaining his/her well-being, which cannot be measured due to the nature of the disease. The theory of person-centred care and symbolic interactionism emphasizes the focus on the attitudes of relatives, which can be used to examine the nursing-care approach of a person with dementia, including the observation of patient well-being.

**Objectives:** Analysis of the perceptions of the well-being of relatives of people with dementia living in elderly care institution in Sweden and Hungary. The research has a touch of ethnographic approach and uses phenomenographic qualitative research analysis with the help of individually edited help questions that leads to semi-structured in-depth interviews.

**Method:** As a data collection tool, we apply five to five deep interviews that will be conducted in each country with a pre-selected method for relatives at a pre-arranged location. Interview will be made by using an interview guide and lasts approximately 30-40 minutes. The interviews in both countries will be recorded, transcribed and the Hungarian material will be translated to Swedish. The material will be shared with the help of an excel spreadsheet via Dalarna University's cloud (coded storage) and will be analysed using the data analysis method of phenomenographic research.

**Conclusion:** The research will hopefully contribute to the rise of attention of care and nursing approaches for people with dementia. It could draw attention to the dignity of people who suffer in dementia and the interrelationships between aspects of their care and well-being. It highlights the importance of person-centred care and the need of support for relatives. The bilateral nature of the research emphasizes the international path of dementia and may contribute to the modernization and cost-effectiveness of future social care in the European Union and to the development of university-level nursing training.

**HEAD OF RESEARCH:** Dr. BALOGH Zoltán

**CONTACTS:** STALLER Judit - staller.judit@se-etk.hu  
Dr. FROM Ingrid - ifr@du.se  
NILSSON Jenny - v19jenil@du.se

**PARTNER INSTITUTION:** Dalarna University, Sweden

## POSSIBILITIES OF STUDENT ATTITUDE FORMATION IN THE FRAMEWORK OF TEACHING THE SUBJECT „PSYCHIATRY AND NURSING”

In the first phase of our research, which ended in 2020, we examined the knowledge of health professionals about mental illnesses and their attitudes towards the people affected by the ailments. In addition to the historical development of psychiatric care, we presented the prevailing views today, general theories about stigma, and the stigma associated with mental disorders. Exploring the most important research results of the international and domestic literature, we confirmed the lack of nursing education and the need for attitude formation with the conclusions drawn from the results of our own research.

Using the results of our online questionnaire survey to uncover hidden stigmatizing attitudes, we would like to continue our previous research and examine student attitudes in the second phase. The theoretical teaching of the subject “psychiatry and nursing” in our department, has been involving experiential experts for the third year in a row. From the very beginning, we have been using a questionnaire before a lesson starts to measure the attitudes of students, and at the end of the course the effectiveness of teaching with experiential experts. In connection with the previously mentioned things, our further plans include the development and application of a new type of „psychiatric simulation scenario”, which is still unknown in college psychiatry education.

In line with our previous objectives, we would like to use educational development tools to promote the acceptance of people with mental disorders. We would like to reduce stigma and thereby strengthen the core values of the nursing profession.

**HEADS OF RESEARCH:** Dr. BALOGH Zoltán, Dr. ÁCS Andrea

**CONTACT:** Dr. ÁCS Andrea - [acs.andrea@se-etk.hu](mailto:acs.andrea@se-etk.hu)

**PARTNER INSTITUTION:** Awakenings Foundation - Semmelweis University Community Psychiatric Centre

## THE IMPACT OF COVID-19 ON THE DEVELOPMENT OF SIMULATION-BASED TEACHING METHODS

Simulation as an innovative teaching method is becoming increasingly popular in all areas of training for healthcare professionals. Understanding and applying this state-of-the-art educational technique is essential to training the health professionals of the future. As a result of the COVID-19 pandemic, several novel, unknown, simulation-based teaching methods have emerged as alternatives.

The aim of the research is to introduce and apply different simulation - based teaching techniques for educators and healthcare teachers. It is especially important to examine how new simulation-based techniques can be placed in different subjects, and how simulation can be placed as an educational methodology in the curriculum and further training of healthcare teachers and nursing professionals.

**HEADS OF RESEARCH:** Dr. BALOGH Zoltán, LŐRINCZ Attila

**CONTACT:** LŐRINCZ Attila - lorincza@se-etk.hu

## PATIENT SAFETY IN TRANSFUSIOLOGY – ADDITIONS TO NURSING CARE, HEALTHCARE ASPECTS OF TRANSFUSION THERAPY

Nowadays, blood safety and hemovigilance remain a top priority issue in healthcare in Hungary and internationally. The importance of the topic is clarified by the domestic and international practice, as well as the domestic and international legal aspects, guidelines and strategies affecting patient safety, covering the entire process of the transfusion chain.

In the previous years, a nationwide survey was conducted on the topic of transfusion-related knowledge of Hungarian nurses and their role in blood safety. The further research is the continuation of a survey of nurses. The new research aims to fill the gaps in the medical, professional aspects of transfusion therapy. As part of the research, a survey will be conducted among physicians and healthcare practitioners on the topic of clinical transfusiology on local habits, knowledge, attitude, and administrative and/or technical errors in the practice. A further aim of the research is to highlight on the practical problems of transfusion therapy due to a lack of knowledge, in order to outline the extent and form of further improvements in transfusion therapy in courses in order to effectively reduce errors, mistakes in the practice.

**HEAD OF RESEARCH:** Dr. RAJKI Veronika

**CONTACT:** Dr. RAJKI Veronika – rajki.veronika@se-etk.hu

The prevention of healthcare-associated infections is a multifaceted task. The real results can be achieved with a complex approach only, involving the relevant disciplines (technical or health science). In contrast to the previous, predominantly environment-oriented approach, recently we are talking about infection control activities, in which, traditional methods continue to play a role, necessarily. Currently, the basis for examining the effectiveness of the certain procedures and protocols is mostly provided by culture testing following environmental or personal sampling, or merely visual inspection. Nowadays, an innovative solutions have been accepted as the Semmelweis Scanner, which provide opportunities primarily in the field of education and further training, especially in the field of improving the protocol and the movements of hand disinfection. In contrast, in the practice the measurement of effectivity is still carried out by traditional methods of microbiological analysis. Although, these are essential procedures that provide a lot of information, their disadvantage is that we do not receive immediate feedback on the examined area, and therefore, the possibility of correction is extended. The application of the lumitester instrument in nursing practice can be an advantage, especially due to the time and cost implications of microbiological methods. In the bioluminescence-based method, the products of the enzymatic degradation of adenosine triphosphate (ATP) and adenosine monophosphate (AMP), luciferase and pyruvate phosphate dikinase, are detected

Within the framework of our multi- and interdisciplinary research, we want to investigate the application possibilities of bioluminescence in an active patient care environment. The study focuses primarily on high-risk elements of nursing activities in terms of infections, including milieu and surfaces where the possibility of biofilm formation arises, playing a role in the development of colonization or infection. The analysis of the samples is quantified with mathematical operations and characteristic intervals that can be performed with quantified data.

The main area of application of our research is education, with a special emphasis on the joint program that can be implemented in connection with the training of nurses and public health inspectors. In any case, education must play a major role in achieving safe patient care. Thus, bioluminescent monitoring devices could be used to a large extent in the effectiveness of the teaching of (hand) hygiene good practice, within the framework of the projects of the two specialization.

**HEADS OF RESEARCH:** Dr. RAJKI Veronika, KÁDÁR László Csaba

**CONTACTS:** Dr. RAJKI Veronika – rajki.veronika@se-etk.hu  
KÁDÁR László Csaba – kadal@se-etk.hu

**PARTNER INSTITUTIONS:** Semmelweis University Faculty of Health Sciences, Department of Epidemiology

When the WHO and the International Council of Nurses declared 2020 the International Year of the Nurse and the Midwife, it was not suspected at all that the world's attention was focused on health care and health care professionals so much. It all happened because of the COVID-19 pandemic. However, attention to another pandemic, HIV / AIDS, remains much lower.

The topic of HIV infection / AIDS is one of the common link between the nursing and midwifery professions. Representatives of both professions have / would have a part in providing information on how HIV spreads and how HIV does not spread. The role would be common in supporting HIV prevention and promoting medical confidentiality. Both nurses and midwives have a common moral and ethical responsibility in dealing with fear, stigmatization, isolation, marginalization, and discrimination. The responsibility is also shared in shaping attitudes. Furthermore, both nurses and midwives are at risk of HIV infection, due to their work. Therefore, the monitoring and ensuring the post-exposure prophylaxis (PEP) and precautions have paramount importance for nurses and midwives.

Through their trainings, nurses and midwives become competent in caring for problems associated with HIV infection and the students are aware of the used medical treatments, cART therapy, and the specifics of caring for HIV-infected pregnant and their newborns.

Keeping the possibilities of multi- and interdisciplinary pedagogy in mind, we intend to carry out joint researches on the topic of HIV/AIDS with the involvement of students from the two specializations. The results of these researchers focus on education, with special emphasis on joint professional programs in nursing and midwifery and the development of topic-specific knowledge too.

**HEADS OF RESEARCH:** Dr. RAJKI Veronika, Dr. LIPIENNÉ KRÉMER Ibolya

**CONTACTS:** Dr. RAJKI Veronika – rajki.veronika@se-etk.hu  
Dr. LIPIENNÉ KRÉMER Ibolya – lipienne@se-etk.hu

**PARTNER INSTITUTION:** Semmelweis University Faculty of Health Sciences Department of Clinical Studies in Obstetrics and Gynaecology

HEAD OF DEPARTMENT: MÁRTA VERESNÉ BÁLINT PHD, COLLEGE PROFESSOR

CONTACT: TEL: +36-1-48-64820 E-MAIL: DIETETIKA@SE-ETK.HU

---

**MONITORING THE NUTRITIONAL STATUS AND NUTRIENT INTAKE VALUES OF THE ELDERLY. ELDER EDUCATION FOR INFLUENCING NUTRITIONAL ATTITUDES**

More and more attention is paid to the nutritional status and testing of nutritional problems that affect the development and quality of life of the human body from conception all the way to old age. The problem occurs not only in developing but also in developed countries. Therefore, the study of the dietary habits and nutritional status is in the centre of focus even here.

The target group will be elderly people. The assessment of nutritional status will be made with BMI (body mass index) and with bioelectrical impedance analysis equipment (InBody 170/770). For the malnutritional risk screening Mini Nutritional Assessment (MNA) method will be used. The dietary assessment methods will be examined with the help of 3-day records, 2x24-hour recall. The nutritional attitude will be tested with Likert / Osgood scale. The data processing will be performed with "NutriComp Sport" programme. The evaluation of the data (descriptive statistics, significance analysis, correlation test) will be done with SPSS statistical and Excel program. In our country, primarily cross-sectional studies have been carried out so far, thus the novelty of his study is its longitudinal investigation.

HEAD OF RESEARCH: VERESNÉ Dr. BÁLINT Márta

CONTACT: VERESNÉ Dr. BÁLINT Márta - veresne@se-etk.hu



## THE HYGIENE OF FORMULA KITCHENS, ACTIVITY PROCESS MANAGEMENT AND ITS INFORMATION SYSTEM

In hospitals that supply infants, formula kitchens operate attached to the infant care units. There are no guidelines on how to operate these kitchens and how to regulate the ongoing activities. Since hygiene is of key importance in such places, in the hygiene manual of the institution these questions - regarding food preparations, breast milk collection, the preparation of the possible complementary foods - should be discussed. The aim of our research is to assess whether healthcare institutions regulate the above-mentioned activities to any extent. Based on the results, we would like to make recommendations for universal criteria that would fit in the good hygienic practice.

HEAD OF RESEARCH: Dr. TÁTRAI-NÉMETH Katalin

CONTACT: CSAJBÓKNÉ Dr. CSOBOD Éva - csajbokne@se-etk.hu

## HEALTHY FUTURE – SUSTAINABILITY IN PUBLIC FOOD

The social, public health and nutritional significance of public catering is becoming the center of attention today, and there is an increasing expectation in consumer, economic, political and social terms. However, the responsibility of public catering is not just about shaping the public's health, responding to the objective and subjective needs of consumers, it is not just an economic question, but also its impact on the environment is becoming more and more important in many countries in terms of sustainable development. Sustainability is a process of development (land, cities, production processes, societies, etc.) that "satisfies the needs of today without reducing the ability of future generations to meet their own needs" (United Nations Organization 1987 Brundtland report). In the course of our research, we examine the ways in which the various catering establishments can help to realize this.

HEAD OF RESEARCH: Dr. TÁTRAI-NÉMETH Katalin

CONTACT: CSAJBÓKNÉ Dr. CSOBOD Éva - csajbokne@se-etk.hu

## FACTORS INFLUENCING INTELLIGENCE LEVEL WITH SPECIAL ATTENTION TO NUTRITION

The aim of the research is to find out the dietary habits that influence the development of intelligence levels. To look for correlations between the intake of vitamins, minerals and trace elements and the existing level of intelligence. How do dietary behaviours such as vegetarianism and higher intakes of long-chain polyunsaturated fatty acids and iron in children who have been breastfed for a long time affect the intelligence level of the Hungarian population, as described in previous literature.

Methods: Questionnaires and food diaries will be used to assess the dietary habits of the subjects. Methods will also include reviews and meta-analysis studies of previous publications.

HEAD OF RESEARCH: Dr. MÁK Erzsébet

CONTACT: Dr. MÁK Erzsébet - [make@se-etk.hu](mailto:make@se-etk.hu)

## ROLE OF DIFFERENT DIETARY FIBRES IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

The primary aim of this research is to summarise the dietary implications of dietary management of PCOS, with a particular focus on the role of dietary fibre. The immediate exercise is to get at least 50% of patients to have a normal blood glucose curve by eating a diet rich in a particular type of fibre. The dietary habits of the subjects will be assessed by questionnaire or by dietary diary. Methods will also include review or meta-analysis type studies from previous publications.

HEAD OF RESEARCH: HERMÁNNÉ Dr. JUHÁSZ Réka, Dr. MÁK Erzsébet

CONTACT: HERMÁNNÉ Dr. JUHÁSZ Réka – [juhasz.reka@se-etk.hu](mailto:juhasz.reka@se-etk.hu)

## SUPPORT OF THE DIETOTHERAPY OF DIABETES PATIENTS BY USING A MOBILE APPLICATION PROGRAM

According to the data of the International Diabetes Federation, there are 387 million people living with diabetes, the prevalence of diabetes is 8.3%. The diabetes prevalence is 7.5% among the domestic population. The object and purpose of the research is to support the development of a mobile application system from the point of view of dietetics. This application would hinder the progression of diabetes and thus decrease complications. Our hypothesis is that the mobile application systems and motivational trainings providing individualized patient motivation assessment systems as well as blood sugar level prognosis possibilities would support the development of better life-style habits.

HEAD OF RESEARCH: Dr. MÁK Erzsébet  
CONTACT: Dr. MÁK Erzsébet - make@se-etk.hu  
PARTNER INSTITUTION: University of Pannonia Healthcare Business Analytics R&D Center

## STUDY OF THE EFFECTS OF SPELT AND LOW FODMAP DIETS IN PATIENTS WITH IRRITABLE BOWEL SYNDROME AND INFLAMMATORY BOWEL DISEASE IN REMISSION

Irritable bowel syndrome (IBS) is a functional disorder affecting the gastrointestinal system. It affects 10-15% of the population worldwide and accounts for about 25% of all presentations in gastroenterology outpatient clinics. Low-FODMAP (low fermentable oligosaccharide, disaccharide, monosaccharide and polyol) diets have been shown to alleviate symptoms in patients with IBS and improvements in IBD disease-specific scores have been demonstrated. The aim of this study is to investigate the effects of sourdough and conventional gluten-free breads on quality of life, with a focus on abdominal discomfort and bloating, using clinical data.

HEAD OF RESEARCH: Dr. MÁK Erzsébet, Dr. IHÁSZ Ferenc (University of West Hungary)  
CONTACT: Dr. MÁK Erzsébet - make@se-etk.hu  
PARTNER INSTITUTION: Grain Research Nonprofit Ltd., University of West Hungary

## COMPARISON OF THE DIETS OF VEGAN AND CONVENTIONAL DIET GROUPS AS A FUNCTION OF SEASONALITY

The current huge popularity of plant-based diets can be attributed to a number of reasons, most of which are ethical, ecological, spiritual and health-related. My aim was to compare a domestic vegan and a conventional dietary sample in terms of nutrient intake and seasonality, as such studies have not yet been done in our country. I also aimed to investigate the ecological footprint, taking into account seasonality. I have applied for ethical approval (SE RKEB 275/220) to carry out this research. The diets of the two groups (n=15/15 individuals) were monitored seasonally for one year using a three-day food diary. Diaries were analysed using NutriComp software. I adopted the World Health Organization and European Food Safety Authority recommendations as the basis for nutrient requirements.

HEAD OF RESEARCH: Dr. MÁK Erzsébet

CONTACT: Dr. MÁK Erzsébet - [make@se-etk.hu](mailto:make@se-etk.hu)

## THE ROLE OF PUBLIC CATERING AS A FORM OF NUTRITION EDUCATION IN THE DEVELOPMENT OF NUTRITIONAL ATTITUDES

Civilisation diseases include overweight and obesity, which are potential causes of other chronic non-communicable diseases. These include cardiovascular disease, malignant tumours and diabetes and its complications. Public catering is the organised provision of food to populations of different ages, sexes, occupations and varying health status. My work will examine the organised form of nutrition, public catering, from a complex health-science perspective, analysing studies that will provide a sound basis for the necessary direction of change. My aim is to map the current public catering system, to identify its shortcomings and deficiencies, and to find its positive features.

HEAD OF RESEARCH: Dr. MOLNÁR Szilvia

CONTACT: Dr. MOLNÁR Szilvia - [molnar.szilvia@se-etk.hu](mailto:molnar.szilvia@se-etk.hu)

## ASSESSMENT OF THE NUTRITIONAL ATTITUDES OF AND THE PREVALENCE OF TAKING PRENATAL VITAMIN PRODUCTS BY PREGNANT WOMEN IN THE LIGHT OF THEIR MENTAL HEALTH

The means as infants are fed during the first 1,000 days of their life has a significant bearing on their later exposure to obesity and/or to non-contagious, chronic diseases. Such first 1,000-day period is deemed to start on the date of their conception and last when they become of 2 years old. The adequate nutrition of the mother is important for the healthy development of the infant and the mental well-being of the mother is also indispensable from the same aspect. The aim of our research was mapping the health consciousness and the nutritional habits of pregnant women and their inclination take prenatal vitamin products and folic acid while their mental status was also surveyed and assessed in the same context. We also surveyed the correlation between our findings and the socio-demographic characteristics of the participants.

HEAD OF RESEARCH: Dr. MOLNÁR Szilvia

CONTACT: Dr. MOLNÁR Szilvia - molnar.szilvia@se-etk.hu

## MONITORING NUTRITION STATUS AND NUTRIENT VALUE AT ALL AGES TO IDENTIFY FACTORS OF DIET-RELATED DISEASES AND HEALTH PRESERVATION

There is a worldwide growing interest in the investigation of the nutritional status and erroneous eating habits. These interrelated factors heavily affect the development and quality of life of the human organism from conception to ripe old age. Nutrition related problems also occur in the developed countries apart from the developing countries. Therefore, the study and assessment of the nutritional habits and of the closely related nutritional status are important focus areas of reseraches in the developed countries. The study of the young adult age group plays a particularly important part in this field, because during these formative years young adults are consolidating their health-influencing life habits. The investigations will be planned to be conducted among young adults. The research participants are the students of the Semmelweis University Faculty of Health Sciences. The nutritional status analysis will be carried out on InBody 770 bioimpedance analyser device. The procedure incorporates Body Mass Index calculation. The nutritional intake of the subjects will be recorded with the help of a 3-day dietary record. The recorded data will be analysed with the help of the NutriComp nutrition analysis software. The statistical evaluation will be carried out with the help of SPSS and Microsoft Excel softwares. There have been mainly cross-sectional studies conducted in our country to this day. The novelty content of this study is that it is a groundbreaking longitudinal study.

HEAD OF RESEARCH: Dr. LICHTHAMMER Adrienn

CONTACT: Dr. LICHTHAMMER Adrienn – lichthammera@se-etk.hu

Polycystic ovary syndrome (PCOS) is one of the most common (12-24%) diseases in women of reproductive age resulting infertility. Diagnosis of PCOS based on a consensus since cause and mechanism are not exactly known. However, most of patients suffer from obesity and insulin resistance, therefore suitable diet is essential in their treatment. Diet includes limitation of carbohydrate intake. Every meal should include a certain amount of carbohydrate obtained by a mix of fast and slow absorbing sources.

Slow absorbing carbohydrates can be provided by high dietary fiber content food such as cereals, wheat or oat bran, wheat germ, fruits and vegetables. Among dietary fibers the most common types are cellulose, inulin, beta-glucan and non digestible oligosaccharides (ie xylo-oligosaccharides). The main benefit of consuming proper amount of dietary fibers are their ability to decrease absorbing rate of sugars thus facilitate to achieve the optimal blood sugar curve and normal blood sugar level.

Aim of research is to develop a dietotherapy effective in medicine less treatment of women with PCOS. Effect of regular consumption of dietary fibers on blood sugar level, insulin level and certain female hormones are investigated in comparison with the recently used blood sugar regulating medicines.

**HEADS OF RESEARCH:** HERMÁNNÉ Dr. JUHÁSZ Réka, Dr. MÁK Erzsébet

**CONTACT:** HERMÁNNÉ Dr. JUHÁSZ Réka – [juhasz.reka@se-etk.hu](mailto:juhasz.reka@se-etk.hu)

**PARTNER INSTITUTE:** Centre of Translation Medicine

## INVESTIGATION OF BIOLOGICALLY ACTIVE COMPONENTS IN FOOD

One of the focus points of the research is the determination of the antioxidant properties of domestic foodstuffs (e.g. honey, small-series vinegars, fruits and vegetables as well as their preparations, fermented alcoholic beverages). We also investigate the impact of certain food processing technologies (e.g. thermal treatment) on changes in antioxidant capacity. These results are completed by targeted, product-specific physico-chemical measurements and (classical and instrumental) sensory analyses. The relationships existing between the different properties can be determined by statistical methods, highlighting new interdependences between these, enabling estimation of botanical/geographical origin. The other main direction of our research is the determination of allergen contaminants and mycotoxins in selected foodstuffs and devices used during food processing.

HEADS OF RESEARCH:	Dr. BENEDEK Csilla, HERMÁNNÉ Dr. JUHÁSZ Réka
CONTACT:	Dr. BENEDEK Csilla - benedek.csilla@se-etk.hu HERMÁNNÉ Dr. JUHÁSZ Réka – juhasz.reka@se-etk.hu
PARTNER INSTITUTION:	Hungarian University of Agriculture and Life Sciences Faculty of Food Science

## INVESTIGATING THE RELATIONSHIP BETWEEN HUMAN NUTRITION AND COMPANION ANIMAL NUTRITION

According to available data, one in four people is a dog keeper. The complex relationship between the owner and his/her pet (companion animal) is primarily an ethologically studied area. The influencing effects of dog / cat husbandry on human lifestyle, nutrition and physical activity are even less known and less researched areas. The effect of dog / cat husbandry on physical activity is well-known, but the effect on human lifestyle and diet has been negligible.

The aim of our research is to assess the health status and nutritional attitude of a group of pet owners. Examination of pet husbandry as an influencing factor on health behaviors, especially with regard to nutrition, including in detail the rhythm of eating, following fad, alternative diets (vegan, B.A.R.F., ketogen), similarities between their cooking habits. Another goal is to explore and analyze the behavioral relationships of nutrition between the owner and the pet (companion animal), and to implement a quality of life study.

HEADS OF RESEARCH:	VÉKONY Blanka, Dr. MÁK Erzsébet
CONTACTS:	VÉKONY Blanka – vekony.blanka@se-etk.hu Dr. MÁK Erzsébet – make@se-etk.hu

## DEVELOPMENT OF FUNCTIONAL FOOD PRODUCTS

Objective of the research is to develop food products in several food groups (such as bakery products, dried pasta, milk substitute drinks etc.) that are suit to certain diets and have additional nutritional value. Gluten and milk free food products are intended to produce with high protein, dietary fiber, vitamin and antioxidant content and with low sugar and carbohydrate content in order to meet the requirements of both the food industry and the consumers.

Product composition and technological properties are analysed using classic and instrumental analytical methods such as titration, spectrophotometry, liquid chromatography. Physical properties are also tested with special focus on rheological characteristics using rotational viscometry and texture profile analysis methods. Sensory properties of product are evaluated using well documented methods including statistical analysis.

Wide range of measurement results allows us to investigate the interactions between certain food ingredients and to evaluate nutritional value of the developed food products. Nutritional and technological aspects of food development are combined resulting healthy and attractive products.

**HEADS OF RESEARCH:** Dr. BENEDEK Csilla, HERMÁNNÉ Dr. JUHÁSZ Réka

**CONTACT:** Dr. BENEDEK Csilla - benedek.csilla@se-etk.hu  
HERMÁNNÉ Dr. JUHÁSZ Réka – juhasz.reka@se-etk.hu  
HAJAS Livia - hajas.livia@se-etk.hu

**PARTNER INSTITUTE:** Hungarian University of Agriculture and Life Sciences Faculty of Food Science



The presence of fad diets in the public consciousness is now natural, which is partly due to the fact that the number of obese people has tripled worldwide in the last nearly 50 years. As part of this, dieters and those suffering from other diseases are constantly looking for new-minded diets and lifestyle-changing approaches. In recent decades, a variety of eating trends that promise weight loss or health have appeared in several waves. Their effectiveness has not been proven. Their different prescriptions mostly from a misunderstanding of basic life processes. This is why it is often the case that dieters do harm to themselves rather than benefit from the diet they follow.

The aim of our research is to assess the habits, motivations, orientation habits and knowledge of healthy dieters following different fad /alternative diets (eg: intermittent fasting, ketogenic, paleo, vegan, raw vegan). Our study included a comparison of diets followed, demographic data such as body mass index, level of education, type of residence. A further aim of the research is to assess the dietary attitudes, food choices, possible cooking habits, adverse and desirable effects, and their frequency of those who follow popular diets.

**HEADS OF RESEARCH:** VÉKONY Blanka, Dr. MÁK Erzsébet

**CONTACTS:** VÉKONY Blanka – vekony.blanka@se-etk.hu  
Dr. MÁK Erzsébet – make@se-etk.hu

HEAD OF DEPARTMENT: **MÓNIKA HORVÁTH DPT, PHD, COLLEGE PROFESSOR**

CONTACT: TEL: +36-1-48-65980, E-MAIL: [FIZIOTERAPIA@SE-ETK.HU](mailto:FIZIOTERAPIA@SE-ETK.HU)

---

## TESTING THE EFFECTIVENESS OF VIBRATION TRAINING

Adequate muscle strength and motor coordination — static and dynamic balance is a prerequisite for functional mobility. Decreased functional mobility can be caused by a musculoskeletal problem, a physiological or pathological change associated with old age, or immobilization due to multi-organ post-COVID syndrome that affects many individuals today, or sarcopenia caused by the disease. Vibration is caused by a force exerted on the outside of the body. The intensity of the oscillating motion is characterized by the frequency and amplitude. The intensity of the oscillation is shown by the value of the amplitude and the frequency of the repetition by the frequency. Vibration of 20-40Hz and 2-10 mm amplitude has a physiologically proven positive effect. The physiological effect is based on the myotatic reflex, through which it acts on the proprioceptors and a series of extremely intense muscle contractions. Basically, the acute and chronic, short and long term physiological effects of vibration training should be examined separately. Studies demonstrating the positive metabolic effects of vibration training (increased oxygen uptake, increased blood flow) and its significant neuromuscular effects began to appear in the late 1990s and early 2000s. Significant performance-enhancing effects of whole-body vibration training have been shown among athletes. Improvements in the magnitude of the isometric force and the ability to exert dynamic forces have also been demonstrated. Studies in the field of geriatrics and research on postmenopausal and osteoporosis, which show a positive effect on bone, are of great importance in the literature of vibration training. Also in the case of some orthopedic conditions, where e.g. running is not recommended, adequate locomotor load can be given by vibration. A significant decrease in cardiorespiratory burden is specific in the elderly and in patients with post-COVID syndrome. Adapted to this, it is necessary to ensure a cardiovascular safe musculoskeletal load, by which the consequent joint mobility and muscle strength loss are prevented. Because the duration of treatment is significantly shorter than that of conventional training with the same exercises, its applicability is also assumed in the case of chronic fatigue typical of patients with post-COVID syndrome. The aim of the research is to investigate the effectiveness of Galileo vibration training on musculoskeletal condition and certain exercise physiological parameters.

HEAD OF RESEARCH: Dr. HORVÁTH Mónika

CONTACT: Dr. HORVÁTH Mónika - [horvathm@se-etk.hu](mailto:horvathm@se-etk.hu)

## DEVELOPMENT OF SMART APPLICATION IN SUPPORT OF MOVEMENT THERAPY

Osteoarthritis is a degenerative disease of the musculoskeletal system that typically affects the large, load-bearing joints of the lower limbs, the knees, and the hips. Since the middle of the last century, the incidence of the disease has doubled to the present day, causing a major health and economic problem. According to the Osteoarthritis Research Society International (OARSI) 2014 guideline, all patients with knee osteoarthritis are recommended to practice land based and water based exercises, muscle strengthening, to take part patient in education and weight control. If arthroplasty is planned, movement therapy is also recommended before surgery, as part of a preparatory program, and after surgery. Modern technologies are increasingly being used in the field of rehabilitation. In our research, a smart application is being developed, which enables continuous communication with the professionals involved in the treatment, and helps to perform the tasks to be performed independently at home. This reduces the number of specialist-patient appointments while maintaining the standard of care.

**HEAD OF RESEARCH:** Dr. HORVÁTH Mónika  
**CONTACT:** Dr. HORVÁTH Mónika - horvathm@se-etk.hu  
**PARTNER INSTITUTION:** Semmelweis University Department of Orthopaedics

## FAILURE IN INTERMUSCULAR COORDINATION AFTER SHOULDER INJURIES, PHYSIOTHERAPY OF CENTRAL STABILITY, BALANCE AND COORDINATION

One of the most common injuries requiring treatment for shoulder joint is damage to the rotator cuff. Injury to the shoulder joint, in addition to shoulder pain and reduced movement, changes the kinematic chains that are activated during the movement of the body, impairs coordination and the ability to maintain balance. Distal mobility, i.e., upper limb functionality, is unthinkable without proximal stability. In addition to the restoration of the centralization ability and movement dynamics of the shoulder joint, the restoration of the balancing ability, the stability and dynamics of standing and walking are also of decisive importance in physiotherapy. The aim of the research is to investigate the assessment and reconstruction of the changing balance ability, coordination problem, stability disorder during shoulder joint injury.

**HEADS OF RESEARCH:** Dr. DOMJÁN Gyula (Semmelweis University Doctoral School),  
Dr. HORVÁTH Mónika, KISS-BÁLVÁNYOSSY Eszter  
**CONTACT:** KISS-BÁLVÁNYOSSY Eszter - kiss-balvanyossy@se-etk.hu

## MOVEMENT THERAPY DURING ONCOTHERAPY OF COLORECTAL CANCER (CRC PATIENTS USING ACTIVITY TRACKER

Exercise is known to play a significant role in both primary and secondary prevention of CRC. Patients with metastatic CRC will receive a 48-hour continuous infusion. Patients receiving adjuvant and first-line treatment were included in the study. During the treatment, the patients' physical activity shows a large variance, so a complete condition assessment is performed before the study. The Godin Leisure-Time Exercise Questionnaire (GLTEQ) measures ordinary physical activity habitus, the BERG Balance Scale (BBS) and the Tinetti test provide an objective data of static and dynamic balance and gait testing, while the MFSI-SF test provides information on psychical activity. The QLQ-c30as questionnaire was completed both before and after the week of chemotherapy. Activity Tracker watches are placed on patients at the start of treatment, are evaluated at the end of treatment. The selection of the patient group is homogeneous. Our questions: Can change be measured in overall survival (OS) and time to progression (PFD) or only in quality of life? The pilot program is planned to target 3 months of training and then 5 years of follow-up.

**HEADS OF RESEARCH:** Dr. HORVÁTH Anna (Semmelweis University Faculty of Medicine), KAPITÁNY Zsuzsanna

**CONTACT:** Dr. HORVÁTH Mónika - horvathm@se-etk.hu

**PARTNER INSTITUTIONS:** Hungarian Academy of Sciences, Lorand Eötvös University Statistical and Statistical and Biological Physics Research Group

## NEW WAYS OF IMPROVING THE FITNESS ABILITIES OF THE INTERVENING STAFF, MANAGING THE EXTREME EFFECTS OCCURING DURING DISASTER ERADICATION

Based on the HAC's science-taxonomic classification and its 2012/7/III/9. and 2014/7/VI/1. resolutions, military science resides within the disciplines of the field of social sciences. Definition: knowledge system summarizing hypothetical theses and experiences defining the success of the military forces and tools applied against the challenges and dangers threatening national and international security.

Modern military science makes recommendations, besides military strategy, military doctrines, military operations, military tactics, on the most expedient organization and execution of the construction of the armed forces, specific shaping of their organizations, their preparations, their material, technical and military healthcare supply and logistics.

Defense science includes the military theory and practice related to warfare, armed combats, defense economics, military technology, policing and law enforcement. In the more and more complex and broad understanding of the defense of the country, the role of the law enforcement is interpretable beside the „classic” military science or within military science (Police; Disaster Management, including the roles of civil defense and firefighting; the NTCA).

The biggest asset of the armed and law enforcement organizations is their staff. The aptitude of personnel should be examined during selection and preparation. The objective of field retention (while upholding deployability, combat capability) is the continuous training, the development of conditional abilities and rehabilitation when necessary. The development of conditional abilities deserves distinct attention in all branches of national defense and law enforcement. During the everyday work of the intervening personnel, they are subjected to enormous burdens. Central nervous systemic, regulatory and muscular (local) factors play a crucial role in the reduction of performance, exhaustion. The hardened can utilize their reserves better; therefore such development of the nervous system needs to play a role in order to keep up the performance of the personnel in the long run. I have given the neurological approach a prominent role in my research, like the examination of coordination and balancing ability. I examine all possible opportunity, which could reduce the damage to health, but at the same time could maximize the years in service and professional fulfillment and the expected quality of life.

HEAD OF RESEARCH:

VÁSÁRHELYI-NAGY Ildikó

CONTACT:

VÁSÁRHELYI-NAGY Ildikó - [vasarhelyi.nagy@se-etk.hu](mailto:vasarhelyi.nagy@se-etk.hu)

PARTNER INSTITUTION:

National University of Public Service, Doctoral School of Military Engineering

## EPIDEMIOLOGICAL STUDY OF PATIENTS WITH POST-COVID SYNDROME AND DEVELOPMENT OF A COMPLEX PHYSIOTHERAPY ASSESSMENT AND TREATMENT METHOD

Currently, there are limited resources available on cardiovascular exercise programs and physiotherapy that can be safely and effectively prescribed to post-COVID patients. Due to the wide range of physical activity levels post-COVID patients present with, it is challenging to plan physiotherapy. To our knowledge, there are no evidence-based recommendations for the cardiovascular and locomotive functional exercises of patients with post-COVID syndrome. Planning treatment is especially difficult for patients whose symptoms might worsen due to exercise. Therefore, recommendations are needed for physiotherapy treatment and assessment that considers the activity levels appropriate to the post-COVID patient's cardiovascular, pulmonary, and musculoskeletal conditions.

Developing such recommendations requires not only the collection and evaluation of published evidence but also comprehensive assessment of the epidemiological situation regarding post-COVID patients in Hungary. Therefore, the first objective of the present research is to assess the health status, risk factors, and relevant health needs of the post-COVID patient population in need of rehabilitation, including physiotherapy in Hungary.

During the first year of the project, we will conduct a retrospective cohort study to collect data from patients that meet the selection criteria, who previously suffered from confirmed COVID-19 that required hospitalisation (sample size of 1,200) and examine the number of people who meet the post-COVID case definition by the World Health Organization. The survey will be carried out with the involvement of approximately 50 physiotherapists working in the first line of health care in all regions of Hungary.

During the second year of the project, based on results from the comprehensive literature search and epidemiological situation assessment, our objective is to develop specific physiotherapy assessment that is tailored to the needs of patients with post-COVID symptoms. Recommendations will consider post-COVID symptoms, functional consequences, age characteristics and the different levels of physical activity.

The results of the evaluation will be collected, processed, and analysed using a standardised questionnaire. Based on the results of this evaluation study, we will review and finalize the physiotherapy assessment recommendations, which will then be shared with physiotherapists helping patients with post-COVID syndrome in Hungary and abroad.

The research will be carried out by an interdisciplinary team, consisting of epidemiologists, a cardiologist, several physiotherapists experienced in rehabilitation. This research team is collaborating with the WHO-affiliated World Physio (COPD) Post-COVID rehabilitation team.

**HEAD OF RESEARCH:** Dr. HORVÁTH Mónika, Dr. OROSZI Beatrix

**CONTACT:** Dr. Horváth Mónika - horvathm@se-etk.hu

**PARTNER INSTITUTION:** Semmelweis University Epidemiology and Surveillance Centre

Paraathletes may be considered to be at high risk for musculoskeletal injuries due to their congenital or acquired disabilities and / or disabilities. The available literature is incomplete in the international context, and no comprehensive research assessing musculoskeletal complaints has been carried out in our country. The aim of our research is to develop a prevention program in cooperation with the Hungarian Paralympic Committee. According to a preliminary questionnaire survey, almost 60% of the surveyed Hungarian athletes have pain related to sports. The extremely heterogeneous sample - different disabilities and classification - only partially allows the development of a group sports-specific program. We aimed to develop individual programs based on the results of the physical examination, the type of disability and the knowledge of the sport.

**HEAD OF RESEARCH:** Dr. MAYER Ágnes

**CONTACT:** Dr. MAYER Ágnes - mayer.agnes@se-etk.hu

**PARTNER INSTITUTIONS:** Hungarian Paralympic Committee, Semmelweis University Department of Orthopaedics, Fonyódi Gyógyintézet

HEAD OF DEPARTMENT: JÁNOS RIGÓ MD, PHD, DSC, PROFESSOR

CONTACT: TEL: +36-1-48-64890, E-MAIL: SZULESZETI.TANSZEK@SE-ETK.HU

---

ETIOLOGY AND CLINICAL ASPECTS OF HYPERTENSIVE DISORDERS IN PREGNANCY AND THE IMPORTANCE OF PRENATAL CARE IN RECOGNITION OF THE DISEASE

Preeclampsia (PE) is the major cause of maternal and fetal morbidity and mortality, affecting 3-8% of all pregnancies worldwide. miRNAs are short, non-coding RNA molecules which have emerged as key post-transcriptional regulators of gene expression. The function of miRNAs in the placenta is poorly understood, but it is clear that they take part in the regulation of placental development and are essential for normal physiology. Abnormally expressed miRNAs may contribute to complications of pregnancy by causing placental insufficiency.

miRNAs are released from trophoblast cells to the maternal circulation via exosomes predominantly. In PE, impaired placental function with enhanced apoptosis and necrosis causes increased release of exosomes. The expression analysis of circulating exosomal miRNAs may facilitate the development of new biomarkers for hypertensive disorders of pregnancy.

HEAD OF RESEARCH: Dr. RIGÓ János

CONTACT: Dr. RIGÓ János - rigo.janos @se-etk.hu

PARTNER INSTITUTION: Hungarian Academy of Sciences, Institute of Enzymology



## DEPARTMENT OF CLINICAL OPHTHALMOLOGY

HEAD OF DEPARTMENT: ILLÉS KOVÁCS MD, PHD, ASSOCIATE PROFESSOR

CONTACT: TEL: +36-1-48-65855, E-MAIL: SZEMESZETI.TANSZEK@SE-ETK.HU

---

## DIAGNOSIS AND THERAPY OF CORNEAL DYSTROPHIES

The aim of this study is to evaluate the accuracy of new imaging methods in the diagnosis of vision-threatening corneal dystrophies as well as to measure the improvement in visual acuity after therapy. As a result of this study we can acquire knowledge concerning corneal dystrophies causing poor vision and through the management of the disease we can assure a better quality of life for patients.

HEAD OF RESEARCH: Dr. SZENTMÁRY Nóra

CONTACT: Dr. KOVÁCS Illés - kovacs.illes@se-etk.hu

## THE ROLE OF ORTHOKERATOLOGY IN MYOPIA CONTROL

The aim of this study is to analyze the outcomes in more than 150 patients who have undergone orthokeratology at the Department of Ophthalmology, Semmelweis University. This study focuses on objective tests (such as measuring refraction, axial length, corneal thickness) during the follow-up period. The variation of axial length in children subjected to orthokeratology treatment is slight. The control group exhibits more change in axial length than the orthokeratology group. As a result of this study we acquire knowledge about the pathomechanism of myopia progression and the possibilities of influencing it in order to improve the quality of life of patients.

HEAD OF RESEARCH: Dr. TAPASZTÓ Beáta

CONTACT: Dr. TAPASZTÓ Beáta - tapaszto.beata@se-etk.hu

## NEW POSSIBILITIES IN THE THERAPY OF KERATOCONUS

Keratoconus is a progressive, bilateral corneal ectatic disease that, if not diagnosed preoperatively, can lead to corneal ectasia following refractive surgery. The aim of this prospective clinical study is to evaluate the effectivity of corneal crosslinking treatment in keratoconus at different stages of the disease. We use Scheimpflug imaging, aberrometry and corneal sensitivity measurements to detect subtle changes in corneal topographic, tomographic, optical and sensory parameters after treatment. The results of this study might help to initiate therapy in a timely manner to prevent disease progression and might be used in planning an individualized treatment to effectively prevent further postoperative corneal ectasia in patients with keratoconus.

HEAD OF RESEARCH: Dr. NAGY Zoltán Zsolt

CONTACT: Dr. NAGY Zoltán Zsolt – [nagy.zoltan@se-etk.hu](mailto:nagy.zoltan@se-etk.hu)

## NEW POSSIBILITIES IN THE DIAGNOSIS OF EARLY KERATOCONUS

Keratoconus is a progressive, bilateral corneal ectatic disease that, if not diagnosed preoperatively, can lead to corneal ectasia following refractive surgery. The aim of this prospective clinical study is to evaluate the accuracy of new imaging methods in the diagnosis of early keratoconus with no associated clinical signs. We use Scheimpflug imaging and aberrometry to detect subtle changes in corneal topographic, tomographic and optical parameters. The results of this study might help to initiate therapy in a timely manner to prevent disease progression and might be used in keratoconus screening to prevent postoperative corneal ectasia in patients scheduled for corneal refractive surgery.

HEAD OF RESEARCH: Dr. KOVÁCS Illés

CONTACT: Dr. KOVÁCS Illés - [kovacs.illes@se-etk.hu](mailto:kovacs.illes@se-etk.hu)

## DEPARTMENT OF FAMILY CARE METHODOLOGY

HEAD OF DEPARTMENT: LAJOS ATTILA RÉTHY MD, PHD, DSC

CONTACT: TEL: +36-1-48-64840, E-MAIL: CSALADGONDOZAS@SE-ETK.HU

---

## SURVEY ON THE GASTROINTESTINAL SIDE EFFECTS OF ANTIBIOTICS IN CHILDREN & RECENT PREVENTIVE MEASURES

In the lack of representative and comparable data on the side effects and efficacy of probiotic support during antibiotic (AB) therapy among children, the main goals of present study are:

- a. to evaluate the data of a representative, large scale survey targeting the current prevalence of AB-associated gastrointestinal (aaGI) side effects in children.
- b. To evaluate current preventive therapies and their effects among children receiving AB treatment.

HEAD OF RESEARCH: Dr. RÉTHY Lajos Attila

CONTACT: Dr. RÉTHY Lajos Attila - rethy.lajos@se-etk.hu

## ROLE OF INDOOR ALLERGENS IN THE DEVELOPMENT OF ALLERGIES FROM CHILDHOOD

Airway symptoms provoked by indoor allergens (house dust mites, fungal allergens, animal dander etc) many times may mimic regular symptoms of common cold. Delay in the diagnosis may result in the development of concomitant further allergies (allergic march).

The main goal of the study is the elaboration of better preventive measures by understanding the role of indoor allergens in this process.

HEAD OF RESEARCH: Dr. RÉTHY Lajos Attila

CONTACT: Dr. RÉTHY Lajos Attila - rethy.lajos@se-etk.hu

## EXAMINATIONS OF URINE HOLDING AND EVACUATION PROBLEMS

Urodynamics is the study of function of the lower urinary tract. There is a significant application of this technology in a number of diverse clinical pediatric problems, and it can be used in patients of both sexes from infancy to adulthood. The aim of the study is to investigate micturition in children with Type 1 (insulin-dependent) diabetes and to look for early signs of diabetic autonomic neuropathy, and to assess the relationship between urinary bladder dysfunction and subclinical cardiovascular autonomic neuropathy in diabetic children and adolescents. To investigate neurotoxicity of different drugs for bladder function.

HEAD OF RESEARCH: Dr. SZABÓ László

CONTACT: Dr. SZABÓ László – szabo.laszlo@se-etk.hu

## PERSPECTIVES OF PREVENTION IN THE PHENOMENON AND SOCIAL PRACTICE OF CHILD ABUSE, WITH SPECIAL REFERENCE TO THE “SHAKEN BABY SYNDROME”-SBS

Violent deaths in infants and young children are most often the result of abuse. The significance of the SBS syndrome is difficult to define. There is no data collection in Hungary. Act of Induction. The trigger is most often an unquenchable cry, which the parents are unable to tolerate. In my research, I investigated parents' knowledge about the disease, infant crying and parental frustration. SBS is entirely preventable. There is no specific, systematic SBS prevention education programme in our country. My research fills a gap on this topic. With adequate knowledge, developed and systematically implemented antenatal care based on appropriate methodology, the development of serious, sometimes fatal or permanently injurious pathologies resulting from shock can be avoided.

HEAD OF RESEARCH: TOMÁNÉ MÉSZÁROS Andrea

CONTACT: TOMÁNÉ MÉSZÁROS Andrea – toma.andrea@se-etk.hu

## A PROSPECTIVE ANALYSIS OF POSTPARTUM FEMALE SEXUAL FUNCTIONS

Childbirth bring many changes into a couple's life including sexuality. Postpartum female sexual problems are common after birth. Our research sought to investigate how the mode of delivery, newborn feeding methods, incontinence, and quality of relationship, depression and body image as well as sociodemographic functions influence postpartum female sexual functions. We planned a prospective analysis using validated and self-made questionnaires. The results can help to understand the connection between these factors, which can be the base of further professional protocols.

HEAD OF RESEARCH: SZÖLLŐSI Katalin

CONTACT: SZÖLLŐSI Katalin - szollosi.katalin@se-etk.hu

## SURVEY ON THE CAUSES OF THE EMERGENCE OF PREMATURE BIRTH/LOW BIRTH WEIGHT/DEVELOPMENTAL DISORDER

In Hungary, the proportion of premature births is 8.7%. This is higher than the European average (2016), which has not changed significantly over the past two decades. Comparing to European countries, we find the highest proportion of "immature premature babies" (<34 weeks) (15%), which means nearly 1,400 babies per year. In addition to premature births, there is a significant incidence of mild (39.9 / 1000) and severe (13.9 / 1000) developmental disorders. These conditions significantly affect short-term survival chances after birth, and long-term health-related years, causing chronic illnesses and often permanent damage. These facts affect the development of a person and also have a significant effect on the family's functioning, its possible weakening and numerous social processes. The emergence of these two crises has significant implications for pregnancy-related and non-maternal illnesses, demographic, social, economic and psychological impacts on maternal health behaviors, addictive behaviors. The detailed mapping and correlation analysis of these facts help to design interventions based on representative research results in Hungary.

TUKEB number: 5297-2/2018/EKU

HEAD OF RESEARCH: Dr. FOGARASI-GRENCZER Andrea

CONTACT: Dr. FOGARASI-GRENCZER Andrea - grenczera@gmail.com

## NUTRITION THERAPY FOR DYSPHAGIA WITH SPECIAL EMPHASIS ON STROKE PATIENTS

Introduction: Stroke and its immediate complications are the third most common cause of death in our country. The increasing number of stroke diseases implies the need to treat the associated dysfunction, including swallowing. 30-50% of acute stroke patients (ASPs) suffer from dysphagia. These patients have a high risk of dehydration, malnutrition, aspiration pneumonia, and cough due to reduced nutrient and fluid intake due to dysphagia. Their poor prognosis is higher mortality. Aims: My goal is to draw attention to the negative consequences of dysphagia, its complications, and effective solutions to help patients with dysphagia avoid time-consuming and consistently malnutrition. Supporting their quality of life, effective healing, and rehabilitation. Method: A questionnaire design designed at designated stroke department to examine the characteristics of applying a texture-modified (dysphagia diet) will help provide adequate, elaboration of an educational method for dietitians, based on the professional protocols of nutrition therapy, to facilitate the practical implementation of the nutritional therapy of dysphagia. Result: The educational program consists of two important elements. One is the dysphagia chef program, which has already been tried and successfully operated for three years, on which we can build the first, unified educational method for dietitians. They will master the technology recommendations based on practical elements and have been tested in advance and will then be taught the circumstances, conditions, needs and process of preparing foods of changed consistency. Conclusion: The method first handles and develops educational materials designed for dietitians to enrich the nutrition team with scientifically sound knowledge and practical. experience, helping to provide safe nutrition tailored to the needs of dysphagia stroke patients.

**HEADS OF RESEARCH:** KOVÁCS Andrea, Dr. FOLYOVICH András, Dr. BÁLINT Márta

**CONTACT:** KOVÁCS Andrea – kovacs.andrea@se-etk.hu

**PARTNER INSTITUTIONS:** Szent János Hospital, Department of Neurology and Stroke Center, Semmelweis University Department of Dietetics and Nutrition

## DEPARTMENT OF CLINICAL STUDIES

HEAD OF DEPARTMENT: **KLÁRA GADÓ MD, PHD, COLLEGE PROFESSOR, DEPUTY  
GENERAL DEAN**

CONTACT: TEL: +36-1-48-64850, E-MAIL: [EGTUD.KLINIKAI@SE-ETK.HU](mailto:EGTUD.KLINIKAI@SE-ETK.HU)

---

## THERAPEUTIC ADHERENCE OF ORAL ANTICOAGULANTS

Therapeutical adherence of patients is necessary for the effective medical treatment. As venous thromboembolic diseases have a high morbidity and mortality rate, and these patients experience significant decrease in the quality of life, prevention and effective treatment have a great importance. It is well known that only 40% of patients with venous thromboembolic diseases are treated effectively. We have to recognize the factors of non-adherence to improve the efficacy of the treatment. The aim of the research is to identify the factors of non-adherence, to map the patient's knowledge about their illnesses, to improve patient education. Comparing the therapeutical adherence to vitamin K antagonists and new oral anticoagulants are also part of the study. The main goal is the improvement of the efficacy of anticoagulant therapy.

HEAD OF RESEARCH: Dr. GADÓ Klára

CONTACT: Dr. GADÓ Klára - [gadok@se-etk.hu](mailto:gadok@se-etk.hu)

PARTNER INSTITUTION: Semmelweis Egyetem Szent Rókus University Hospital and its Institutions

## ECONOMIC AND PATIENT SAFETY ISSUES RELATED TO ONE-DAY SURGERY

We would like to make a review about the rules, specialities and problems concerning One-Day Surgery in Hungary compared to other countries. Subsequently we project a representative assessment questionnaire about One Day Surgery in Hungary. The topic of this study is the economical organisation and patient safety at One-Day Surgery, especially infection control.

HEAD OF RESEARCH: Dr. GADÓ Klára  
CONTACT: Dr. GADÓ Klára - gadok@se-etk.hu  
PARTNER INSTITUTION: Health Care Service of Ferencváros

## PREPARATION AND EXAMINATION OF TPN SYSTEMS FOR INDIVIDUAL CLINICAL THERAPY. PRACTICE OF CLINICAL NUTRITION. ANALYSIS OF TEAM WORK PRACTICE IN CLINICAL NUTRITION

Follow-up of the stability of all-in-one TPN mixtures with the use of non-invasive spectrophotometry.  
Analysis of the use and effects of enteral nutrition in elderly care in Budapest/countryside and in rehabilitation centres.

HEADS OF RESEARCH: Dr. ZELKÓ Romána (Semmelweis University Faculty of Pharmacy),  
Dr. GAÁL Péter (Semmelweis University Faculty of Health and Public Services)  
CONTACT: KOVÁCSNÉ Dr. BALOGH Judit - balogh.judit@se-etk.hu



## EXAMINATION OF PLATELET RETRACTION IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME

Decreased platelet retraction augments the possibility of thrombosis generation. Antiphospholipid syndrome is characterized by arterial and venous blood clot generation and also the abnormality of platelet function. Examination of platelet retraction is carried out with the help of a retractometer created in the Department of Biophysics and Radiation Biology. It allows for a new, quick and more informative diagnostic examination.

HEAD OF RESEARCH: Dr. DOMJÁN Gyula

CONTACT: Dr. GADÓ Klára - gadok@se-etk.hu

PARTNER INSTITUTIONS: Semmelweis University 1<sup>st</sup> Department of Internal Medicine, Semmelweis University Department of Laboratory Medicine

## EXAMINATION OF AND INFLUENCING THE NUTRITIONAL STATUS OF GERIATRIC PATIENTS

Malnutrition is very common in the elderly. The reason for this is complex: from social circumstances, through defective teeth, to decreased appetite, and cognitive dysfunction, many factors play a role in the development of malnutrition. The problem also has a significant impact on the physical and mental well-being of the elderly, so it is important to examine and influence the process in a positive way. Our aim is to assess the frequency of malnutrition, its characteristics in Hungary, the role of hospital stays, and the possibilities we can use to influence the nutritional status of our patients.

HEAD OF RESEARCH: Dr. GADÓ Klára

CONTACT: Dr. GADÓ Klára - gado.klara@med.semmelweis-univ.hu

PARTNER INSTITUTION: Semmelweis University Geriatrics Clinic and Center of Nursing Sciences

## EXAMINATION AND PREVENTION OF SARCOPENIA IN THE ELDERLY

Loss of muscle mass is a characteristic feature of old age. It plays a significant role in the development of frailty syndrome, which is an important factor of mortality, deteriorating quality of life, and loss of independence. Maintaining muscle mass and muscle strength is very important for healthy aging. We aimed to develop an appropriate physiotherapy program and dietary changes to prevent and slow down sarcopenia.

HEAD OF RESEARCH: Dr. GADÓ Klára

CONTACT: Dr. GADÓ Klára - gado.klara@med.semmelweis-univ.hu

PARTNER INSTITUTION: Semmelweis University Geriatrics Clinic and Center of Nursing Sciences

## EXAMINATION OF THROMBOTIC RISK IN THE ELDERLY

Treatment in a hospital ward, old age *per se*, increases the risk of blood clots. Internal medicine diseases, such as heart failure, nephrotic syndrome, and obesity, cancer, and certain anti-tumor drug therapies. Consideration of risk factors is very important in order to be able to use appropriate thrombosis prophylaxis to prevent thromboembolic events leading to a significant increase in mortality.

HEAD OF RESEARCH: Dr. GADÓ Klára MD, PhD

CONTACT: Dr. GADÓ Klára - gado.klara@med.semmelweis-univ.hu

PARTNER INSTITUTION: Semmelweis University Geriatrics Clinic and Center of Nursing Sciences

HEAD OF DEPARTMENT: **ANDREA SZÉKELY MD, PHD, PROF. HABIL.**

CONTACT: TEL: +36-1-48-65844, E-MAIL: **OXIOLOGIA@SE-ETK.HU**

---

**INVESTIGATION OF ON-DUTY PARAMEDICS' ATTITUDES TOWARDS DEATH, AS WELL AS OF FACTORS THAT INFLUENCE IT**

The meaning of death differs fundamentally from one culture to another, and attitudes to death are constantly changing in function of the given cultural and social system. Man, although afraid of death, is curious. Fear of our own death is a negative emotional reaction that is provoked by recalling a state when we personally encounter the end of a life during work. Examining the issue of death is also justified by the demographic and economic changes in welfare societies. The sustained rise in average age and the decline in the birth rate have led to a decline in the population of welfare societies, which entails a number of health, pension insurance and social problems. The rapid increase in the number of the elderly places a not insignificant burden on the health care system, a special branch of which is emergency care. Relatives of these patients often seek the assistance of the national ambulance service, therefore it is often the paramedics who are the first to encounter dying or deceased people. Employees must prepare for this – sometimes even - everyday experience, and thus they have to master various coping strategies to work smoothly. The often negative coping strategy created by stress has a significant long-term adverse effect on health. Over time, this leads to poor quality years of life and premature death. Exposure to enhanced stress and its consequences has long been known to ambulance workers. As mentioned above, encountering death is an inherent and, as such, stressful factor of prehospital care. In the current research, we seek to determine how paramedics' attitudes toward death influence conflict resolution responses and whether upbringing plays a role in developing these responses.

Aim of the study: To look at correlations and influencing factors between the attitudes towards death as a stressor factor, conflict management responses, and upbringing. Knowing all these interrelationships it is possible to create more effective conflict resolution responses, thus coping with death-related stress among on-duty paramedics.

HEAD OF RESEARCH: MOSKOLA Vladimír

CONTACT: MOSKOLA Vladimír – [moskola.vladimir@se-etk.hu](mailto:moskola.vladimir@se-etk.hu)

PARTNER INSTITUTION: National Ambulance Service

## THE ROLE OF TECHNICAL AND NON-TECHNICAL SKILLS IN EMERGENCY CARE

In all areas of patient care, especially emergency care, it is extremely important to teach and apply non-technical skills in addition to technical skills. Understanding and practicing the forms of communication with patients, relatives, and colleagues, organizing teamwork, situational awareness, task management, and the decision-making process are essential to ensure safe and effective care. The teaching of all this and the development and updating of the teaching methodology are also extremely important elements of the process. Our research aims to map, systematize and standardize the teaching of non-technical skills and the application of certain methodologies in the future, to increase their efficiency and applicability. We assess in which professional fields, in what form and methodology students teach non-technical skills, and whether there is a need to develop these knowledge, methodological guidelines and their own personal skills.

At the same time, we are conducting research in the educational environment on the retention and entrenchment of short- and long-term knowledge of adult basic resuscitation (BLS) performed by students, supplemented by monitoring the effectiveness of resuscitation.

In addition, our plans include the preparation and implementation of an efficiency survey covering various forms of simulation education, with a special focus on exploring the spectra of the student experience in each methodological form, complementing the measurement by monitoring the knowledge and practical application of non-technical skills.

The short-term and long-term goals of our research are to improve the efficiency of non-technical skills education and simulation training, to further think about the methodological possibilities of enhancing the student experience, and to design and implement effective and supportive educational materials for instructors.

**HEAD OF RESEARCH:** Dr. SZÉKELY Andrea, Dr. SZABÓ Dominika

**CONTACT:** Dr. SZÉKELY Andrea – [szekely.andrea@se-etk.hu](mailto:szekely.andrea@se-etk.hu)

## USE OF MORPHINE IN THE PRE-HOSPITAL CARE OF PATIENTS WITH MYOCARDIAL INFARCTION

Opioids, mainly morphine, are used for ST elevation for symptomatic treatment of myocardial infarction (STEMI). According to our recently published study, smoking patients they received morphine significantly more times than non-smokers. Known chronic obstructive pulmonary disease (COPD) in the same proportion received morphine as non-COPDs. Resuscitation as well as mechanical morphine was significantly less common with respiration. To clarify these differences in a questionnaire survey we measured the morphine use patterns of rescuers in STEMI in the care of patients. In addition, with the permission of OMSZ and SE-RKEB. We also process OMSZ case sheets for patients with STEMI to explore pre-hospital opiate treatment habits.

**HEAD OF RESEARCH:** Dr. SZÉKELY Andrea, Dr. SZABÓ Dominika

**CONTACT:** Dr. SZÉKELY Andrea – [szekely.andrea@se-etk.hu](mailto:szekely.andrea@se-etk.hu)

**HEAD OF DEPARTMENT: TAMÁS PÁNDICS COLLEGE ASSOCIATE PROFESSOR**

**CONTACT: TEL: +36-1-486-4870, E-MAIL: KOZEG@SE-ETK.HU**

---

**RAPID MICROBIOLOGICAL METHODS BASED ON THE PRESENCE OF ATP TO INCREASE FOOD SAFETY**

Microbiological hazards in food are a major source of foodborne illness. Microbiological testing under conventional laboratory conditions can take 1-4 days, depending on the microbe, using classical standard methods, while identification on a molecular basis can be done in as little as 3-4 hours. It requires an expensive fleet of equipment and specialists with molecular laboratory experience to operate it.

Food safety is greatly facilitated by the work of a specialist in the field of public health, especially during inspections, if it is available in their field work, a technical tool that is easy to carry, requires simple handling and shows results in a short time.

The device, called a luminometer based on the presence of ATP, is also regularly used in microbiological exercises at our department not only for students majoring in public health inspection, but for almost all those involved in practical training in our microbiology laboratory work after graduation.

The aim of our research is to use the luminometer to perform measurements in different matrices, such as quick-frozen foods, milk and dairy products, various cold cuts, soft drinks, etc. in order to compare whether the results of conventional food microbiological culture correlate with the measurement results of the rapid technique compared to the regulatory background.

With these research findings, we are helping to raise awareness of the importance of prevention and the implementation of remedial action as soon as possible, thus contributing to maintaining health and increasing food safety.

**HEAD OF RESEARCH:** BURGETTINÉ Dr. BÖSZÖRMÉNYI Erzsébet

**CONTACT:** BURGETTINÉ Dr. BÖSZÖRMÉNYI Erzsébet - boszormenyie@se-etk.hu

## ENVIRONMENTAL AND HEALTH RISK ASSESSMENT OF NANOMATERIALS

The use of materials produced by nanotechnology is expanding, due to their advantageous technological features. However, beside the numerous positive characteristics of nanomaterials, their negative impact on the environment and human health was also confirmed in a number of cases. The lack of data is the major limitation for the systematic assessment of the potential adverse effects of nanomaterials. Therefore the systematic review and analysis of the available data on environmental and health impact is crucial, as well as their complementation by measurements or modeling. For nanomaterials which are currently in common use from pharmacy to food production it is also indispensable to carry out in vitro testing in biological-toxicological test systems, assess their fate in the environment, and human exposure. Quantitative risk assessment of nanomaterials is often hindered by the lack of data. Semi-quantitative modeling is a potential tool to overcome these difficulties, but its applicability needs further assessment. Since the physico-chemical characteristics of nanomaterials often vary even within a size range, assessments should be carried out in the size-dose-effect matrix. The developed models will also assist the identification of specific data need for regulation and risk assessment, and the adaptation of the corresponding test guidelines, but preliminary data on the expected risk should precede the regulatory update. The final aim is the full-scale quantitative risk assessment of nanomaterials based on test result. This is indispensable for the responsible use of nanomaterials.

HEAD OF RESEARCH: Dr. PÁNDICS Tamás

CONTACT: Dr. PÁNDICS Tamás - [pandics.tamas@se-etk.hu](mailto:pandics.tamas@se-etk.hu)

## ASSESSMENT OF ENVIRONMENTAL HEALTH RISK AWARENESS

The significant health impact of environmental pollution implies that not only the risk assessment of the professionals but the risk awareness of the public should also receive attention. Risk awareness is primarily a subjective assessment process. Rational risk awareness has high impact on the risk itself and the means of risk management, thus influencing the probability and extent of adverse health effect.

The assessment of the risk awareness of the public requires the analysis of the relationship of the environment and health, the prevalence of potentially environment-related diseases, and the public knowledge of environmental questions. The results of the analysis indicate the applicability and the potential limitations of the psychometric paradigm developed for risk awareness and the cultural theory in the Hungarian context. The outcomes facilitate the more efficient risk communication through rational risk awareness, the prevention and recognition of environmental diseases and subsequently improve the efficiency of health protection.

HEAD OF RESEARCH: Dr. PÁNDICS Tamás

CONTACT: Dr. PÁNDICS Tamás - [pandics.tamas@se-etk.hu](mailto:pandics.tamas@se-etk.hu)

Natural and built environment both have significant impact on human health. The environmental burden of disease in Hungary is 16 % according to the estimate of the World Health Organization (WHO), which is a heavy toll on both the healthcare system and the society. Efficient reduction of the environmental burden of disease requires mapping the most significant and prevalent risks. Environmental health risk assessment is the most objective tool for the identification of the adverse health effects from the exposure to different environmental pollutants.

The health impact of the indoor environment is exceptionally important, since we spend almost 90 % of the day indoors. The chemical and biological air quality, the quality of construction materials and the condition of the plumbing system are all relevant to our health.

The analysis of these factors through risk assessment and the development of risk management interventions will contribute to the improvement of human health.

HEAD OF RESEARCH: Dr. PÁNDICS Tamás

CONTACT: Dr. PÁNDICS Tamás - [pandics.tamas@se-etk.hu](mailto:pandics.tamas@se-etk.hu)