DRUSKININKŲ
SAVIVALDYBĖ

Program of the International Conference

“Advancing Health: The Synergy of Lifestyle, Science, and Cutting-Edge Technologies”

Grand Spa Lietuva, Druskininkai, Lithuania, September 8-12, 2025

Celebrating the Beginning of a Shared Vision

Mr. Ričardas Malinauskas
Mayor of Druskininkai, Lithuania

Prof. Albert Pinhasov
Rector of Ariel University, Israel

Dear Esteemed Guests, Colleagues, and Friends,

It is with great pride and heartfelt joy that we welcome you to the First International Conference **"Advancing Health: The Synergy of Lifestyle, Science, and Cutting-Edge Technologies**", held in the picturesque and health-oriented city of Druskininkai, Lithuania.

This conference marks a milestone in a shared vision between Lithuania and Israel—a vision rooted in the pursuit of scientific excellence, the promotion of healthy living, and the strengthening of international cooperation. It is our firm belief that this gathering will lay the foundation for a lasting tradition—one that will continue to grow in impact and significance in the years to come.

By bringing together distinguished researchers, healthcare professionals, and thought leaders, this initiative seeks to spark meaningful dialogue and foster collaboration at the intersection of biomedicine, aging research, and wellness innovation. It represents not only a scientific endeavor, but also a symbol of the enduring friendship between our nations and our common commitment to enhancing human health and longevity.

May this first conference serve as a beacon for future initiatives, a catalyst for transformative discoveries, and a celebration of the power of knowledge shared across borders.

We thank you for being part of this historic moment and wish you an inspiring and fruitful experience.
With deep respect,

Mr. Ričardas Malinauskas
Mayor of Druskininkai, Lithuania

Prof. Albert Pinhasov
Rector of Ariel University, Israel

DAY 1 – MONDAY, SEPTEMBER 8, 2025

Time	Event	Speakers
14.00 – 15.00	**Registration**	
15.00 – 15.15	**Official Opening** of the Conference "Marking the Beginning of a Shared Vision for Healthy Living in Lithuania and Israel"	**Mr. Ričardas Malinauskas** **Prof. Albert Pinhasov**
15.15 – 16.15	**Panel Discussion** "Extending Healthspan Through Science, Policy, and International Collaboration" *Presentation 1:* "Exercise Training Therapy for Autoimmune Neuroinflammation: An Overview on Translating Insights from Animal Models to Clinical Practice" *Presentation 2:* "Targeting the microbiota-gut-brain axis in aging" *Presentation 3:* "The human microbiome in modern medicine: Challenges and future perspectives" *Presentation 4:* "Human health passport for self-monitoring of health status and aging", poster presentation	**Prof. Ofira Einstein (Moderator)** **Prof. Aurelijus Burokas** **Prof. Shiri Navon-Venezia** **Prof. Osvaldas Rukšėnas;** **Dr. Zoryna Boiarska –** poster presentation

16.15 – 16.30	**Coffee Break**	
16.30 -17.00	**Presentation:** "AI for Health"	**Prof. Tomas Krilavičius**
17.00 – 18.00	**Roundtable discussion:** "Integrating Scientific Knowledge into Community-Based Healthy Lifestyle Programs: Bridging Clinics, Cities, and Research"	
	Presentation 5: "Enhancement of Adaptive Neuroplasticity by Transcranial Magnetic Stimulation in the Rehabilitation of Stroke Patients with Severe Upper Limb Paresis"	**Prof. Silvi Frenkel Toledo (Moderator)**
	Presentation 6: "Integrative Health Approaches: Combining Balneotherapy and Modern Interventions for Psychological Well-being"	**Prof. Lolita Rapoliene**
	Presentation 7: " Biological Mechanisms of Muscular Aging: Telomere Length, Senescence Pathways, and Lifestyle Factors"	**Prof. Valentina Ginevičienė**
	Presentation 8: "Two Worlds – One Challenge: Gifted Children in Lithuanian and Israeli Families"	**Ms. Dileta Tindžiulienė** Panelists: **Dr. Igor Koman,** **Ms. Lina Nosevič** **Ms. Elena Malt** **Ms. Kristina Citvarienė** **Ms. Justina Kilaitė**
19.00 – 21.00	**Gala Dinner**	

DAY 2 – TUESDAY, SEPTEMBER 9, 2025

Time	Event	Speakers
10.00 – 11.00	**Session 1.** "Druskininkai as a Living Laboratory of Preventive Health: Nature, Culture, and Innovation in Harmony" *Presentation 1*: "Exploiting Druskininkai natural factors in medical rehabilitation" *Presentation 2*: "Resortology and medical rehabilitation" *Presentation 3:* "From Prevention to Longevity: Medical Wellness as a Sustainable Health Strategy"	**Mr. Kęstutis Ramanauskas (Moderator)** **Mr. Arvydas Balčius** **Dr. Kęstutis Skauminas**
11.00 – 12.00	**Session 2.** "Health promotion and Aging" *Presentation 4:* "Managing Obesity: Current Concepts in Definition, Prevention, and Treatment" *Presentation 5:* "Stress Resilience, High-Fat Diet, and Healthy Aging: Insights into Metabolic and Neurobiological Interactions" *Presentation 6:* "Multidisciplinary Approach to Aging Reversal: Neuroeducation and Active Phytotherapy with NoAGE	**Prof. Orna Reges (Moderator)** **Prof. Albert Pinhasov** **Prof. Danielius Serapinas**

	Supplement” *Presentation 7:* "Decreased Neisseria in the Oral Microbiome Correlates with Depressive Symptoms During Pregnancy"	**Dr. Oryan Agranyoni**
12.00 – 12. 30	**Coffee Break**	
12.30 – 13.00	**Keynote speech:** "Gender-dependent aging and therapeutics: ADNP/Davunetide as a case study"	**Prof. Illana Gozes**
13.00 – 13.30	**Session 3.** “Cognitive Exhaustion and Recovery: Quantifying Mental Restoration with Brain Electrical Activity”	**Prof. Izhak Michaelevski (Moderator)** **Dr. Daniel Yakubovich** **Dr. Alexandra Gleyzer**
13.30 – 14.30	Lunch	
14.30 – 15.30	**B2B Session** "Global Academic Partnerships"	Speakers and participants of the Conference
15.30 -19.00	"Druskininkai Healing Infrastructure: **A Research Tour through Centers of Preventive Medicine and Wellness**". Locations: Druskininkai Health Resort, Grand SPA Lietuva, Mineral SPA Draugystė	Representatives, Doctors and Researchers of Druskininkai Healing Infrastructure
19.00 – 21.00	**Dinner at the Hotel**	

DAY 3 – WEDNESDAY, SEPTEMBER 10, 25

Time	Event	Speakers
10.00 – 10.30	**Presentation and discussion:** Waves of Change: Science, Startups, and Smarter Care Presentation 1: " The Promise of Sound: Safer, Smarter Cancer Treatment" *Presentation 2*: "From Academia to Venture: Bridging Health Sciences and Innovation"	**Prof. Gary Gellerman (Moderator)** **Ms. Ella Login** Panelists and presenters on zoom: **Mr. Alexander Cherkasov**, Founder of Ustismify, **Ms. Yulia Smal,** Chief Executive Officer for Europe at Miraigenemocis, **Ms. Elena Dobrokhotova,** Founder of NotYet Inc, Engaging Health support System for the elderly, **Mr. Samir Mastaki,** General Partner and CEO, Capital Structure, Mergers& Acquisitions, **Mr. Marat Mazia,** Project Manager, Clinical Trials, Medical Device Studies
10.30 – 11.45	**Session 4.** "Artificial Intelligence in Health Sciences and Medicine: From Data to Personalized Care" *Presentation 3:* "AI-driven	**Dr. Yulia Gendler**

	decision support for parents making informed ADHD treatment decisions for their children" *Presentation 4:* "From Call-Centers to Clinics: Ambient AI that Frees up Humans" *Presentation 5:* "AI and Society: Challenges, Opportunities, Responsibilities" *Presentation 6:* "Smartomica AI Longevity platform- Personalising Preventive care for a longer Healthspan"	**(Moderator)** **Prof. Aistis Raudys** **Dr. Nadia Iermakov** **Dr. Lena Qawasmi**
11.45 – 12. 00	**Coffee Break**	
12.00 – 13.00	**B2B Session** " Collaboration Roadmap"	Speakers and participants of the Conference
13.00 – 14.00	Lunch	
14.00 – 15.30	**Forum of Young Researchers:** "NextGen Science: Young Scientists Leading the Way"	**Dr. Eric Daliri (Moderator)** **Dr. Oryan Agranyoni** **Ms. Beatriz Rocha** **Ms. Yulia Sokol** **Mr. Vincent Wusu Baffour** **Mr. Ronaldo Almeida Araujo** **Ms. Anastasia Bagaev** **Mr. Blay Kwofie** **Mr. Daniel Yonathan** **Mr. Dainel Zinn**
15.30 – 16.00	**Conference Closing Ceremony**	**Mr. Ričardas Malinauskas** **Prof. Albert Pinhasov**

15.30 -18.00	"Therapeutic Landscapes and Healthy Living in Practice: A **Research Tour of Druskininkai"** Locations: Druskininkai Hospital, UPA Medical SPA, Eglės sanatorija	Representatives, Doctors and Researchers of Druskininkai Healing Infrastructure
19.00 – 21.00	Dinner at the Hotel	

DAY 4– THURSDAY, SEPTEMBER 11, 2025

Time	Event	Speakers
10.00 – 12.00	Travel to Kaunas	
12.00-14.00	Research tour and meetings around Vytautas Magnus University, Kaunas	**Ms. Dileta Tindžiulienė**
14.00 – 15.00	Free time	
15.00 – 19.00	Cultural tour around Kaunas	**To be announced**

DAY 5– FRIDAY, SEPTEMBER 12, 2025

Time	Event	Speakers
10.00 – 11.30	Travel to Vilnius	
12.00-14.00	Research tour and meetings around Vilnius University	**Prof. Aurelijus Burokas**
14.00 – 15.00	Free time	
15.00 – 19.00	Cultural tour around Vilnius	**To be announced**

SPEAKERS AND PARTICIPANTS OF THE CONFERENCE

MR. RIČARDAS MALINAUSKAS
Mayor of Druskininkai, Lithuania

PROF. ALBERT PINHASOV
Rector of Ariel University, Israel
Head of the Institute for Personalized and Translation Medicine

PROF. ILLANA GOZES
Past President, European Society for Neurochemistry; Professor Emerita, Clinical Biochemistry, Tel Aviv University, Israel

PROF. LOLITA RAPOLIENĖ
Chair of the Council of the Faculty of Health Sciences, Klaipeda University, Lithuania; Deputy Director for Medicine and family doctor in Baltic Medics Uosto Polyclinic

PROF. AURELIJUS BUROKAS
Life Sciences Center, Vilnius University, Lithuania

PROF. OFIRA IENSTEIN
Vice Rector of Ariel University, Israel; Head, Neurobiology of Exercise Training Lab

PROF. SHIRI NAVON-VENEZIA
Head, Bacterial Pathogens & Antibiotic Resistance Laboratory, Department of Molecular Biology & The Adelson Medicine School, Ariel University, Israel

PROF. TOMAS KRILAVIČIUS
Dean of the Faculty of Informatics, Vytautas Magnus University, Lithuania

PROF. SILVI FRENKEL TOLEDO
Dean, Faculty of Health Sciences, Head, Brain and Motor Behavior Laboratory, Ariel University, Israel

PROF. OSVALDAS RUKŠĖNAS
Professor at the Department of Neurobiology and Biophysics, Institute of Biosciences, Life Sciences Center, Vilnius University, Lithuania

PROF. IZHAK MICHAELEVSKI
Head, Molecular & Functional Neurobiology Laboratory, Ariel University, Israel

PROF. DANIELIUS SERAPINAS
Geneticist, Lithuanian University of Health Sciences, Department of Family medicine, Lithuania

PROF. ORNA REGES
Head of EpiCardio Research Lab
Professor, Department of Health Systems Management
Ariel University, Israel

PROF. AISTIS RAUDYS
Faculty of Mathematics and Informatics, Vilnius University, Lithuania

PROF. GARY GELLERMAN
Head, Targeted Medicine and Drug Design Laboratory, Ariel University, Israel

PROF. VALENTINA GINEVIČIENĖ
Senior Researcher at the Translational Health Research Institute, Faculty of Medicine, Vilnius University, Lithuania

DR. YULIA GENDLER
Head, Department of Nursing, Ariel University; Director, MyHealthAid, Medical Decision-Making Lab, Israel

DR. ALEXANDRA GLEIZER
Medical Director of Emergency Medical Centers and Day Hospitalization centers of Maccabi health care services

DR. IGOR KOMAN
Founder& CEO of Smartomica, Israel

DR. LENA QAWASMI
Head of Analytical Team, Smartomica, Israel

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Research Fellow at the Department of Neurobiology and Biophysics, Institute of Biosciences, Life Sciences Center, Vilnius University, Lithuania

DR. DANIEL YAKUBOVICH
Director, Preterm Follow-Up Clinic, Sanz Medical Center, Laniado Hospital, Israel

DR. KĘSTUTIS SKAUMINAS
Medical SPA Eglės sanatorija
Head of Medicine

DR. ORYAN AGRANYONI
Postdoctoral Fellow, Johns Hopkins Medical Institute, USA

DR. ARVYDAS BALČIUS
Mineral SPA Draugystė Head of Medicine

MS. DILETA TINDŽIULIENĖ
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PhD Student, Ariel University, Israel

MS. ELENA MALT
Owner of EMASMED, Europe-Israel

DR. ROZA ASHUROV
Founder, Rozmedics, Multidisciplinary Medical Center, Israel

DR. ZULIHA KALENDARYEV
Retired Physician, Geriatric Medical Center Rebecca House, Israel

MR. KĘSTUTIS RAMANAUSKAS
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CEO and Founder, Saiga Sprint Venture

MS. LINA NOSEVIČ
Managing director, The National Association of Medical Spa and Rehabilitation Centers

DR. EDWARD KALENDARYEV
Attending physician, Neve Gil Hazahav Geriatric Facility, Israel

MS. JUSTINA KILAITĖ
Researcher at the Translational Health Research Institute, Faculty of Medicine, Vilnius University, Lithuania

YOUNG RESEARCHERS' FORUM – MASTER AND PHD STUDENTS, POSTDOCTORAL FELLOWS

DR. ERIC DALIRI
Researcher, Life Sciences Center, Vilnius University, Lithuania

MS. BEATRIZ ROCHA
Researcher, Behavioral and Molecular Psychiatry Lab, Ariel University, Israel

MR. RONALDO ALMEIDA ARAUJO
Researcher, Behavioral and Molecular Psychiatry Lab, Ariel University, Israel

MS. YULIA SOKOL
Researcher, Behavioral and Molecular Psychiatry Lab, Ariel University, Israel

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Researcher, Life Sciences Center, Vilnius University, Lithuania

MR. VINCENT OWUSU KYEI BAFFOUR
Researcher, Life Sciences Center, Vilnius University, Lithuania

MR. DANIEL YONATHAN
MD Student, Dina Recanati School of Medicine, Reichman University; Researcher, Sheba Medical Center, Israel

MR. DANIEL ZINN
Computer Science student, Ariel University, Israel

[VISIT WEBSITE OF THE CONFERENCE]

DRUSKININKAI LEADING REPRESENTATIVES OF MEDICINE AND REHABILITATION

Kęstutis Ramanauskas
CEO of Druskininkai Health Center

Dr. Dalia Vosylienė
Grand SPA Lietuva PMR doctor

Dr. Arvydas Balčius
Mineral SPA Draugystė Head of Medicine

Dr. Kęstutis Skauminas
Medical SPA Eglės sanatorija Head of Medicine

Evelina Raulušaitienė
CEO of City Hospital

Vytautas Dambrava
CEO UPA Medical SPA

ORGANIZING COMMITTEE

Ričardas Malinauskas

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Prof. Ofira Einstein

Prof. Silvi Frenkel Toledo

Prof. Izhak Michaelevski

Prof. Aurelijus Burokas

Dr. Nadia Iermakov

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Ms. Mishel Sosenko

Ms. Yulia Sokol

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Ričardas Malinauskas

Mayor of Druskininkai

Ričardas Malinauskas (Lithuania) is a long-standing municipal leader with extensive experience in local governance, regional development, and civic engagement. He graduated from Kaunas University of Technology and later worked in the private sector, where he held various leadership roles as a company manager and CEO.

Since 2000, he has served as the Mayor of Druskininkai Municipality, continuously re-elected for multiple terms. From 2004 to 2019, he was the President of the Association of Local Authorities in Lithuania, and from 2019 to 2021, he served as the President of the Lithuanian Resort Association. Between 2004 and 2024, Malinauskas was a permanent member of the European Union's Committee of the Regions.

Since 2016, he has been the Chairman of the non-partisan civic movement "For Druskininkai." His leadership has been recognized nationally: he is a recipient of the Knight's Cross of the Order for Merits to Lithuania and has received numerous awards for innovation, effective municipal governance, and sustainable urban development.

Ričardas Malinauskas is also an accomplished athlete — a Lithuanian motor sports champion and three-time Baltic autocross champion.

Hobbies: gliding, motor sports, hunting, diving, fishing.

Prof. Albert Pinhasov is the Rector of Ariel University in Israel and a Professor in the Department of Molecular Biology and the Dr. Miriam and Mr. Sheldon G. Adelson School of Medicine, where he specializes in Molecular and Behavioral Psychiatry and Psychopharmacology. Prior to his election as Rector, Prof. Pinhasov served as Vice President and Dean for Research & Development, as well as the Head of the Department of Molecular Biology at Ariel University. He co-founded the Pre-Med Department, School of Medicine, and the Institute of Personalized and Translational Medicine at the University.

Prof. Pinhasov earned his BSc from the Nizhny Novgorod Medical Academy in Russia. His MSc and PhD, both in Molecular Biology and Clinical Biochemistry, were obtained from Tel Aviv University in Israel. He completed a postdoctoral fellowship at Johnson & Johnson Pharmaceutical Research and Development in the USA.

His research focuses on understanding the molecular mechanisms behind mental disorders and exploring the relationship between resilience to stress, immunomodulation, inflammation, and disease. Prof. Pinhasov has supervised more than 40 graduate students and postdoctoral fellows. His research team demonstrated that inherited susceptibility to stress is linked to the development of chronic inflammation, metabolic problems, behavioral disturbances, and a decrease in life expectancy.

He currently serves as an editor for several scientific journals and has received prestigious national and international grants and awards. With over 120 peer-reviewed scientific articles and multiple international patents to his name, Prof. Pinhasov is recognized globally in his field. As part of his activities, he promotes academic excellence and social diversity, serving as a member of academic and research councils for young scientists. He is invited to speak and lecture at prestigious scientific conferences and renowned universities in the USA, Europe, China, Singapore and the CIS.

Abstract: Stress Resilience, High-Fat Diet, and Healthy Aging: Insights into Metabolic and Neurobiological Interactions.

Chronic stress promotes obesity and metabolic disorders, with stress resilience influencing outcomes. This study examined stress response differences in metabolic health using a mouse model of social dominance (Dom, resilient) and submissiveness (Sub, vulnerable). HFD-induced metabolic dysfunctions, including insulin resistance, steatosis, and inflammation, were pronounced in Sub but not Dom mice. Sub mice exhibited elevated IL-1β and proinflammatory gene expression. Celecoxib (15 mg/kg/d) reduced IL-1β, improved glucose metabolism, and prevented tissue dysfunction in HFD-fed Sub mice. In summary, this study demonstrates that stress resilience modulates inflammation and metabolism, contributing to individual differences in obesity-related health risks.

Prof. Illana Gozes, Professor (Emerita) Tel Aviv University (TAU), formerly Lily and Avraham Gildor Chair and Director of the Adams Super Center for Brain Studies. Currently, Director, Elton Laboratory for Molecular Neuroendocrinology. B.Sc. TAU, Ph.D., Weizmann Institute of Science, postdoc. MIT and Salk Institute. Associate Professor, Weizmann Institute, Fogarty-Scholar-in-Residence, NIH, Humboldt Awardee, Germany. Mentored ~100 students, including Professor Albert Pinahsov (Cum Laude), Rector, Ariel University. Published ~400 papers (h-index 87 -Google Scholar). Inventor of numerous patents including (NAP, Davunetide), a clinical drug candidate targeted at the rare disease indication, the ADNP syndrome and beyond. Discovered ADNP, essential for brain formation implicated in autism, schizophrenia, Alzheimer's disease and cancer. NAP is the active site of ADNP. Multiple prizes including Teva Founders Prize, Landau Prizes and best applied scientist, TAU. Ex-President, Israel Society for Neuroscience (Honorary Member), Ex-Member, Council of Higher Education. Past President, European Society for Neurochemistry, President Summer Neuropeptide Conference. Editor-in-Chief, Journal of Molecular Neuroscience, Vice President, Research and Development, ExoNavis Therapeutics.

Abstract: Gender-dependent aging and therapeutics: ADNP/Davunetide as a case study

Discovered in our laboratory, davunetide, an investigational drug protective against tauopathy, an underlying pathology of Alzheimer's disease neurodegeneration, has recently shown significant differences in responses to treatment between elderly men and women (Gozes et al., Translational Psychiatry, 2024). Davunetide is a fragment of activity-dependent neuroprotective protein (ADNP). ADNP is essential for sex-dependent hippocampal neurogenesis, through male unfolded protein response and female mitochondrial gene regulation, protective against tauopathy and suggesting sex-specific neurodegeneration (Shapira, Karmon et al., Molecular Psychiatry 2024). Indeed, in the pure tauopathy, Progressive Supranuclear Palsy (PSP), we showed that women deteriorated faster than men over a year period. Conversely, women treated with davunetide exhibited a significant protection against disease progression in terms of essential activities of daily living coupled to brain protection (Gozes et al., Translational Psychiatry, 2023). Now, in elderly individuals suffering from mild cognitive impairment—a risk for Alzheimer's disease, we showed dose-dependent efficacy in improving short-term visual memory in men, with an average increase of 20% at 12-16 weeks compared to baseline performance with a low dose davunetide, and an 80% improvement at a sixfold higher dose. In women, the higher davunetide dose showed an average 10% improvement in verbal memory and reduced anxiety, compared to a slight decline in verbal memory among women in the placebo group (Gozes et al., 2024). ExoNavis Therapeutics under an exclusive license from Ramot at Tel Aviv University (Gozes, VP Drug Development) is advancing davunetide to clinical use in tauopathies further including the developmental ADNP syndrome and beyond.

Prof. Aurelijus Burokas is a Research Professor at the Institute of Biochemistry, Life Sciences Center, Vilnius University in Lithuania. He received his PhD in Biomedicine from Pompeu Fabra University, Barcelona, in 2013, and completed a two-year postdoctoral fellowship at University College Cork, APC Microbiome Institute in Ireland. In 2019, he joined Vilnius University, where he leads research on the microbiota–gut–brain axis and its role in neuropsychiatric and age-related disorders. His laboratory employs animal models of depression, anxiety, eating disorders, Alzheimer's disease, and autism spectrum disorders, as well as probiotic and functional food interventions. He has coordinated national projects and published extensively, contributing influential work on the microbiota modulation of brain function and strategies to promote healthy cognitive aging and resilience to stress-related disorders.

Abstract

It is estimated that one in three people in Europe are or will suffer from a brain disorder, and this number is expected to increase as a consequence of the general aging of the European population. Brain disorders include neurodegenerative diseases, like Alzheimer's and Parkinson's diseases, but also schizophrenia, epilepsy, autism, depression, stroke, migraine, sleep disorders, traumatic brain injury, pain syndromes, and addiction. Currently, many of them lack an effective treatment or do not have a cure at all. Neuroinflammation, characterized by the activation of microglia cells, is involved in various brain disorders and could be one of the main targets for treating them. Meanwhile, aging increases neuroinflammation, while some microbiota-derived metabolites can reduce it.

Therefore, the microbiota-gut-brain axis seems an interesting candidate for the modulation of neuroinflammation for treating various brain disorders and diminishing negative aging-related consequences. Accordingly, we aim to identify the possible targets in the gut microbiota for the aging brain and to create the tools that allow us to manipulate those targets. The obtained results could provide a deeper understanding of the role of the gut microbiota in microglia activation and a possibility of obtaining a safer and more economical treatment intervention for aging-related brain disorders.

Ofira Einstein, B.P.T., Ph.D, is an Associate Professor of Neurobiology. She holds a Bachelor of Physical Therapy (B.P.T.) from Tel Aviv University and a Ph.D. from the Hebrew University of Jerusalem. In 2009, she joined the Physical Therapy Department at Ariel University as a faculty member. She served as Chair of the department from 2011 to 2017 and again from 2020 to 2022. From 2022 to 2025, she held the position of Dean of the Faculty of Health Sciences. Since 2024, she has served as Vice Rector of Ariel University.

Prof. Einstein's primary research focus is neuroimmunology. Her earlier work explored the biology of neural stem cells and various aspects of cell therapy for neurological disorders. Her current research centers on the neurobiology of exercise training, particularly its effects on autoimmune neuroinflammation, neuroprotection, and neuroregeneration. She has published extensively in leading scientific journals and has received multiple prestigious research grants and awards for excellence in both research and teaching.

Abstract: Exercise Training Therapy for Autoimmune Neuroinflammation: An Overview on Translating Insights from Animal Models to Clinical Practice

Exercise training (ET) impacts various autoimmune diseases. Accordingly, clinical trials demonstrated the safety of ET in multiple sclerosis (MS) patients and indicated beneficial outcomes. There is also an increasing body of research on the beneficial effects of exercise on experimental autoimmune encephalomyelitis (EAE), the animal model of MS, and various mechanisms underlying these effects were suggested. However, despite the documented favorable impact of ET on our health, we still lack a thorough understanding of its effects on autoimmune neuroinflammation and specific guidelines of ET therapy for MS patients are lacking. To that end, current findings on the impact of ET on autoimmune neuroinflammation, both in human MS and animal models are reviewed. The concept of personalized ET therapy for autoimmune neuroinflammation is discussed, and future research for providing biological rationale for clinical trials to pave the road for precise ET therapy in MS patients is described. ET modifies the pathogenesis of disease mainly due to modulation of encephalitogenic T cell responses, though direct neuroprotective mechanisms mediated by ET can also be involved. Research in animal models indicates that the effects of ET depend on several factors, particularly the intensity and the training paradigm. In-depth understanding of the cellular and molecular mechanisms underlying the beneficial effects of ET on EAE and elucidating the training parameters that induce the optimal immunomodulation and/or neuroprotection are essential for designing effective clinical treatments in MS patients and other patients with autoimmune diseases.

Prof. Shiri Navon-Venezia is a Full Professor of Microbiology in the Department of Molecular Biology and The Adelson School of Medicine at Ariel University. She is the head of the Lab of Bacterial Pathogens and Antibiotic Resistance at Ariel University. Prof. Navon-Venezia served as the Department of Molecular Biology Chair and in the last 5 years she is a member of the Planning and Budgeting Committee in the Israeli Council for Higher Education.

Prof. Navon-Venezia earned her BSc. in Biotechnology and Food Engineering from the Technion Institute of Technology in Israel, and her MSc and PhD in Molecular Microbiology from the Faculty of Life Sciences at Tel Aviv University in Israel. She completed postdoctoral training in Tel Aviv Medical Center, where she founded and headed the Molecular Epidemiology Research Lab for 12 years - a lab that became the National Reference Lab of Antibiotic Resistance.

In Ariel University, her research focuses on understanding the molecular mechanisms of antibiotic resistance in clinically important pathogens and unraveling the local and global mechanisms underlying resistance spread, including high-risk bacterial clonal expansion and plasmid dissemination. In recent years to discover novel diagnostic biomarkers and develop targeted therapies, her research focuses on understanding the host-pathogen and host-gut microbiome interactions related to various pathologies including infectious diseases and neurological and behavioral disorders. Prof. Navon-Venezia has published more than 120 peer-reviewed papers in leading microbiology, and infectious diseases journals and acts as an editor of FEMS Microbiology Reviews Journal.

Abstract: The human microbiome in modern medicine: Challenges and future perspectives.

The talk will portray the gut human microbiome as a functional 'organ system' essential for immunity, metabolism, and neurobiology. The presentation will focus on currently available clinically relevant microbiota-based therapies, highlighting advantages and risks. Evidence will be surveyed across infectious disease and antimicrobial resistance; metabolic and cardiovascular conditions via microbial metabolites; oncology, where the microbiome modulates immunotherapy responses; and neuropsychiatric disorders along the gut–brain axis. We'll confront key challenges—interindividual variability, causation vs. correlation, strain-level and functional measurement limits, and safety/regulatory considerations and outline a realistic path forward: precision microbiome care, defined microbial consortia and engineered strains, and microbiome-informed diagnostics.

Prof. Silvi Frenkel-Toledo Dr. Silvi Frenkel-Toledo completed her B.PT (2000), M.Sc.PT (2004), and Ph.D. (2014) at Tel-Aviv University, Israel, and a postdoctoral fellowship at McGill University, Canada (2015). Since 2016, she has been at Ariel University, where she headed the Physiotherapy Department (2022–2025) and now serves as Dean of the Faculty of Health Sciences. Her research in clinical neuroscience explores the links between brain and motor behavior in healthy individuals and people with neurological conditions, with a focus on neural mechanisms of sensorimotor recovery and brain plasticity. She has expertise in advanced kinematic, non-invasive brain stimulation techniques (tDCS, TMS), and clinical trial methodology.

Abstract: Enhancement of Adaptive Neuroplasticity by Transcranial Magnetic Stimulation in the Rehabilitation of Stroke Patients with Severe Upper Limb Paresis

Upper limb motor impairment (paresis) is a common consequence of stroke, often leading to loss of independence in daily activities. In cases of severe unilateral corticospinal tract damage, where the ipsilesional hemisphere cannot support recovery, animal studies suggest that transcranial magnetic stimulation (TMS) targeting the contralesional hemisphere may aid movement restoration on the paretic side. This effect is thought to result from neuroplastic changes in non-crossing cortico-reticulo-propriospinal neurons via the reticulospinal tract (RST). Our study aims to investigate the impact of contralesional TMS (targeting the RST) on upper limb recovery in adults with severe stroke-induced brain damage, using neurophysiological biomarkers. In the initial phase, we compared Motor Evoked Potentials (MEPs) generated by standard figure-8 and H7 coils with those from a dual-H-coil configuration, which produces a rotational field to recruit more motor neurons across diverse axonal orientations (rf-coil). Resting motor thresholds and MEP characteristics were recorded in 10 healthy adults from the contralateral first dorsal interosseous muscle following TMS of the right and left primary motor cortex using the figure-8 coil, H7-coil, and rf-coil. The rf-coil demonstrated lower resting motor thresholds and higher MEP amplitudes compared to the other coils, indicating greater sensitivity in recruiting corticospinal tract neurons. The study highlights the potential of using a rotational coil to enhance neuroplasticity for improving upper limb function in patients with severe paresis. We intend to conduct this investigation in the next phase of our research.

Prof. Lolita Rapolienė is a Professor at Klaipėda University's Faculty of Health Sciences and a Doctor of Biomedical Sciences specializing in primary and public health, and rehabilitation. A practicing physician with expertise in family and internal medicine, she serves as Deputy Head of Medicine at Baltic Medics Port Polyclinic. Her research focuses on balneotherapy, natural resources for health, stress management, and public well-being, with numerous publications in international journals. She has led and contributed to EU and national research projects, including Erasmus+ and Interreg initiatives, and collaborates with industry partners on health innovation and product development. Alongside her clinical and academic work, Prof. Rapolienė is an active science communicator, sharing medical knowledge through teaching, media, and public outreach.

Abstract: Integrative Health Approaches: Combining Balneotherapy and Modern Interventions for Psychological Well-being

Psychological well-being is increasingly recognized as a global health priority, with mental, neurological, and substance use disorders contributing substantially to the worldwide disease burden. Traditional models of care, which often treat mental and physical health separately, are insufficient to address the complexity of these challenges. This presentation explores the rising need for integrative approaches that unite modern medical interventions with complementary strategies such as balneotherapy, lifestyle modifications, and digital health tools.

Evidence from a recent study demonstrates that integrative therapies can reduce stress by up to 55%, improve sleep, decrease symptoms of anxiety and depression, and enhance both physical and emotional resilience. Balneotherapy, in particular, shows strong potential in regulating stress biomarkers such as cortisol, supporting both hedonic (pleasure, relaxation) and eudaimonic (growth, purpose) aspects of well-being.

By highlighting historical perspectives, current research findings, and practical applications, this talk emphasizes the importance of synergistic models of care that blend traditional practices with cutting-edge science. Such approaches can foster more person-centered, preventive, and sustainable healthcare solutions, bridging the gap between treatment, recovery, and long-term well-being.

Prof. Tomas Krilavičius is the dean of the Faculty of Informatics at Vytautas Magnus University. He defended his Ph.D. at the University of Twente in 2006. His main research interests are the application of Artificial Intelligence and Language Technologies. Tomas is a Lithuanian representative at the NATO STO IST panel. He is the president of INFOBALT (Lithuanian Association of ICT companies), a board member of the AI Association of Lithuania. Tomas is a co-founder and advisor of several startups and companies. He participated in and led a number of local and international research and applied projects.

Abstract: AI for Health

Artificial Intelligence (AI), especially generative AI, is one of the hottest topics today, while health is of the utmost importance for everybody. In this presentation, we will discuss the potential applications of AI for health, such as (1) Virtual health assistants, e.g., specialized chatbots, which can provide patients with basic information, such as nutritional advice, light physical exercises, etc.; (2) Hospital administration and planning; (3) Diagnostics, analysis of X-rays, MRI, CT scans, and detection of different issues; (4) Clinical decision support, e.g., personalized treatment, predicting disease and its evolution; (5) Precision medicine, e.g., genome-based personalized treatment; (6) Drug discovery, e.g., AI-based molecular modeling, clinical trial optimization; (7) Remote monitoring using wearables and other smart devices; (8) Robotics in medicine, e.g., AI-supported surgery and rehabilitation; (9) Public health, e.g., risk patterns and epidemic detection, general advice on public health issues.

All these areas are developing, and their maturity depends on both technology and demand. Therefore, not only technology, but also end users determine how fast technologies will evolve.

Prof. Aistis Raudys earned his PhD from Vilnius University in Lithuania, where his research focused on developing methods for extracting features from multivariate data. Currently, he serves as a professor at the Faculty of Mathematics and Computer Science at Vilnius University, where he teaches courses related to artificial intelligence, large language models, algorithmic trading and robotics. In addition to his academic role, Aistis is the CEO and co-founder of AAI-Labs, an AI startup dedicated to the development of technologies in the fields of voice recognition, risk assessment, and transport optimization. Prior to his current positions, Aistis gained experience as a researcher working with prominent financial institutions, including Deutsche Bank, Société Générale, and BNP Paribas, London, UK. Aistis Raudys' primary interests lie in financial engineering, robotics, automated trading, and artificial intelligence, and he has authored 50+ publications in these areas.

Abstract: Call-Centres to Clinics: Ambient AI that Frees up Humans

Ambient artificial intelligence (AI) integrates sensing, machine learning, and language processing to autonomously manage routine tasks in professional environments. Academic studies demonstrate that ambient AI systems in call centres and clinical settings significantly reduce the burden of repetitive work by automating standard interactions and documentation. This redistribution of tasks enables human workers to focus on complex problem-solving, patient engagement, and strategic decision-making. Ambient AI thus facilitates greater efficiency and professional well-being by reallocating human expertise from mechanistic duties to cognitively demanding, value-generating activities, while ongoing research underscores the need for transparent integration and ethical oversight.

Prof. Osvaldas Rukšėnas is Professor of Physiology and Neurobiology at Vilnius University, Lithuania. He is a graduate of Vilnius University. After graduation, he pursued a PhD in Biophysics at Vilnius University and defended his thesis at Kaunas Medicine Academy, Lithuania in 1990. He spent from 1990 to 2005 as Assistant and then Associate Professor of Human and Animal Physiology, Biophysics of Sensory systems at Vilnius University. In 2005 Osvaldas Rukšėnas passed the procedure of habilitation and was employed as Full Professor at Vilnius University, Vilnius, Lithuania.

As a result of his scientific interests in information coding in CNS, transmission and processing of information at different levels of the brain, effects of gonadal steroids on cognitive and visceral functions, aging and mechanisms of addiction he has published over 130 peer-reviewed papers, supervised 15 PhD students, was awarded Lithuanian Science Prize in 2011.

Osvaldas Rukšėnas headed creation of MSc in Neurobiology study program in 1996 and since then is heading the study program committee. He is active in performing administrative duties - Director of Institute of Biosciences, Vilnius University, 2016 – 2017, Dean of Faculty of Natural Sciences, Vilnius University, 2011-2016, Vice-dean of Faculty of Natural Sciences, Vilnius University, 2004 – 2011, President of Lithuanian Neuroscience Association 2004 - 2024, Head of Department of Neurobiology and Biophysics, 2012 - 2024.

Abstract: From the «Human Health Passport» to the «Personal Ageing Profile»: a new approach to self-assessment and early intervention

An increase in the risks of multimorbidity, functional limitations, and psychosocial vulnerability accompanies population aging. Traditional clinical diagnosis often detects these risks only when disorders have already manifested themselves, which significantly reduces the possibilities for timely prevention. The Human Health Passport (HHP) was developed as a multi-domain tool that integrates anthropometric, physiological, sensory, and motor indicators. This approach enables the identification of individuals at risk of accelerated functional decline 5–10 years earlier than is possible in standard clinical practice, providing a unique window for prevention and early intervention. To expand this approach, we are creating a «Personal Ageing Profile» (PAP) that integrates objective HHP data with psychosocial indicators obtained using validated tools, such as the WHOQOL-BREF. The combination of biological indicators and subjective assessments of quality of life forms a multidimensional picture of aging that takes into account both risk and protective factors. Pilot data from Ukraine confirm the multidomain structure of the HHP and demonstrate a statistically significant relationship between the integral HHP score and ageing-rate indices, supporting its use as a foundation for PAP. The current stage of research focuses on developing an integrated indicator of the rate of ageing based on each person's profile. The first pilot results in Ukraine indicate the feasibility of this approach and its potential for detecting accelerated ageing, particularly in conditions of chronic stress. In the future, PAP may be applied for repeated assessments, allowing the monitoring of ageing trajectories and supporting personalized preventive strategies.

Prof. Danielius Serapinas is a professor at the Lithuanian University of Health Sciences (LSMU) and a geneticist at InMedica. In 2009, he defended his dissertation titled "The Effect of Alpha-1 Antitrypsin on Monocyte Activity In Vitro and the Impact of Genotype on the Characteristics of Chronic Obstructive Pulmonary Disease" at LSMU. Throughout his career, he has published over 150 scientific articles. Prof. Serapinas is an active member of several scientific societies, including the Lithuanian Association of Endobiogeny and Integrative Physiology, the Lithuanian Society of Human Genetics, the European Society of Human Genetics, the European Teratology Society, and the International Society of Psychoneuroendocrinology. His research interests encompass genetic studies, the pathogenesis of chronic diseases, and innovative treatment methods. Internationally recognized for his contributions to genetic research, Prof. Serapinas is frequently invited to speak at international conferences and participate in collaborative research projects. His work has significantly advanced the understanding of chronic diseases and the development of new therapeutic approaches.

Abstract: Multidisciplinary Approach to Aging Reversal: Neuroeducation and Active Phytotherapy with NoAGE Supplement

Telomeres and telomerase are critical molecular features of cellular genetic senescence, contributing to various diseases. Chronic inflammation is also a significant factor in accelerated biological aging. This research presents two studies analyzing the effects of psychological (neuroeducational stress management methods) and biological (natural biomolecular supplement NoAGE) factors on senescence processes, specifically telomere length and inflammatory processes. Method: Study I summarizes findings on telomere length dynamics over a 6-month neuroeducational group course. Median telomere length (TL) was measured using HT-Q-FISH (LifeLength, Spain). Study II followed the NoAGE supplement group for 15 weeks, measuring CRP and IL-6 levels. Results: In the neuroeducational group, median TL decreased by 100 ± 27 base pairs (bp) over 6 months, from 10480 bp to 10380 bp. In contrast, the control group lost 420 ± 80 bp, from 10920 bp to 10500 bp, a statistically significant reduction ($p=0.02$). Study II demonstrated that the NoAGE supplement reduced hsCRP and malondialdehyde, a marker of oxidative stress, indicating its antioxidant effect. Conclusion: We hypothesize that neuroeducation and active herbal supplements can influence biochemical pathways involved in stress management and inflammation reduction, contributing to a "remain younger" phenotype.

Prof. Gary Gellerman completed his Ph.D in Medicinal organic chemistry at Tel-Aviv University in 1994 and joined Peptor Ltd. He also received his MBA in 1996 from Tel-Aviv University. In 2005, Prof. Gellerman accepted a position in the Department of Chemical Sciences at Ariel University, where he is currently lecturing, researching, and supervising research students. Prof. Gellerman held a Deanship of the Faculty of Natural Sciences for eight years. The main areas of his research are: a) Theranostic Peptide and Antibody Drug Conjugates in targeted cancer treatment; b) Fluorescent switchable reporters for visualization of Targeted Drug Delivery; c) Drug Chimerism for combined cancer therapy; d) Hyaluronic Acid-Drug conjugates to treat skin disorders. Prof. Gellerman has published more than 100 articles and 26 patents and patent applications.

Abstract: The Promise of Sound: Safer, Smarter Cancer Treatment

Conventional cancer treatments, while effective, often come with devastating side effects that limit their safety and quality of life for patients. There is a critical need for innovative approaches that can deliver powerful anti-cancer effects with greater precision and fewer risks. Sonodynamic therapy represents a groundbreaking strategy that uses harmless sound waves to activate specially designed drugs exactly where they are needed—within the tumor itself. Ultrasound penetrates deep into the body (20–30 cm), making sonodynamic therapy (SDT) more effective for primary tumors and metastatic cancers that are located deep within the body.

This talk will highlight recent innovations in anticancer therapy aimed at creating these targeted, sound-activated therapies. We will explore how this approach can achieve unprecedented efficacy and sparing healthy tissues while delivering potent treatment to cancer cells.

Looking ahead, Targeted Sonodynamic Therapy (TSDT) offers a new perspective on cancer care—one that targets cancer, replaces aggressive methods like chemotherapy and radiation, which often harm healthy tissues and cause severe side effects. By reimagining how we treat cancer, we move toward a future where therapy is guided by precision, compassion, and innovation.

Recently, we developed an antibody-guided sonodynamic therapy (TSDT) that was successfully evaluated in animal models. Our recent findings from preclinical studies on Her2+ breast cancer will be presented.

Prof. Izhak M. Michaelevski is a neuroscientist whose scholarly pursuits are centered upon investigating memory formation and elucidating the intricate mechanisms governing the progression of neurodegenerative disorders accompanied by cognitive impairments. Beyond his research commitments, Prof. Michaelevski undertakes a diverse array of roles, spearheading numerous academic initiatives such as the Integrative Center for Brain Science, the Neuroscience Academic Program, and the International Medical Sciences Program at Ariel University. Moreover, his responsibilities encompass overseeing pre-medical training programs.

With roots in the ex-USSR, Prof. Michaelevski earned his M.Sc. and Ph.D. degrees from Tel Aviv University subsequent to his immigration to Israel. His post-doctoral research encompassed a collaborative project spanning the Weizmann Institute in Israel and the University of California at San Francisco. In 2011, assuming an independent investigator role, Professor Michaelevski established and led a scientific group at Tel Aviv University. Since 2016, the research group under Prof. Michaelevski's purview has diligently sustained its scientific endeavors at Ariel University, concentrating on the synaptic mechanisms governing memory and cognitive dysfunction. Within the extensive array of scientific accomplishments by Prof. Michaelevski's team, notable achievements encompass the identification of protein networks accountable for memory engram formation in the hippocampus, exploration of the involvement of non-canonical AKT kinase pathways in long-term synaptic potentiation, and the revelation of ABL kinase synapse regulation alongside its mediation of synaptic effects induced by amyloid peptides.

Abstract: Cognitive Exhaustion and Recovery: Quantifying Mental Restoration with Brain Electrical Activity

In contemporary work-centric societies, cognitive exhaustion has become a pervasive and underestimated public health concern. Unlike physical fatigue, cognitive overload is more subtle, accumulative, and difficult to quantify, yet it directly impacts productivity, mental health, and overall well-being. While recreational and therapeutic interventions—such as physiotherapy, manual therapy, and wellness programs—are widely promoted as restorative, their impact on cognitive function remains largely anecdotal and unverified.

This panel explores the use of electroencephalography (EEG) as a powerful, non-invasive method for objectively monitoring changes in brain electrical activity associated with working memory, executive function, and attentional control—core domains affected by cognitive exhaustion. The discussion will introduce a multiphase research initiative conducted in collaboration with recreational healthcare facilities, designed to evaluate cognitive restoration by combining: (1) Psychological and neurocognitive testing at three time points: upon arrival, during treatment, and at discharge. (2) EEG recording and analysis, focusing on spectral and functional connectivity changes across frontal and parietal cortices. (3) Development of a novel Cognitive Recovery Index (CRI)—an algorithmic score derived from EEG and behavioral data that quantifies mental restoration over time. The panel will also address the broader significance of this approach, including the validation of cognitive recovery claims made by health and wellness institutions, and the assessment of occupational cognitive fatigue across professions and employment durations. By integrating neuroscience, public health, and digital health technologies, this initiative proposes a new standard for evaluating mental recovery in both clinical and real-world settings.

Prof. Orna Reges is a Professor in the Department of Health Systems Management, Ariel University. Prof. Reges attained her M.P.H. and PhD. Degree from the School of Public Health and Community Medicine of the Hebrew University, Jerusalem. In parallel to her academic studies, she embarked on a fulfilling career as an epidemiologist, specializing in Cardiovascular Health at Clalit Health Services, while also serving as a senior lecturer at Ariel University.

Seeking to expand her expertise, she ventured into a postdoctoral position at the Department of Preventive Medicine (DPM) within Northwestern University, Chicago. During this time, she had the privilege of joining the project team of Northwestern University/ Lurie Children's Hospital (NU/LCH) American Heart Association Children's Strategically Focused Research Network (SFRN). Upon her return to Israel in October 2021, she joined the senior academic staff at Ariel University and established the EpiCardio Research labs, which is dedicated to the study of CVD epidemiology and prevention, with the aim of shedding light on various aspects of cardiovascular health and its impact throughout the lifespan.

Abstract: Managing Obesity: Current Concepts in Definition, Prevention, and Treatment

Obesity is a major global health challenge, affecting more than one billion individuals worldwide. Its prevalence has more than doubled since 1990, and it is strongly associated with major morbidities, including cardiovascular disease, type 2 diabetes, hypertension, and certain cancers. Obesity is also associated with premature mortality. Traditional definitions, based mainly on body mass index (BMI), do not capture fat distribution or body composition. Recently, the European Association for the Study of Obesity (EASO) introduced a broader definition that combines BMI, waist-to-height ratio, and comorbidities. Applying this definition to NHANES data showed that nearly one in five people previously considered overweight would now be classified as having obesity.

Treatment strategies include lifestyle interventions, bariatric metabolic surgery (BMS), and pharmacotherapy, particularly GLP-1 receptor agonists (GLP-1RAs). BMS is associated with the most effective and sustained weight loss and has also been associated with reduced mortality compared with nonsurgical care. With the advent of GLP-1RAs, which are associated with meaningful weight reduction and anti-inflammatory effects, a critical question is how outcomes compare between the two treatments. Using real-world data from Clalit Health Services, BMS was associated with a 62% reduction in mortality compared with GLP-1RAs among patients with obesity and diabetes of less than 10 years' duration, while no difference was observed for major adverse cardiovascular events (MACE).

While both approaches are effective, the challenge ahead is tailoring treatment to the right patient - advancing personalized medicine.

Prof. Valentina Ginevičienė is an Associate Professor at the Department of Human and Medical Genetics and a Senior Researcher at the Translational Health Research Institute, Faculty of Medicine, Vilnius University, Lithuania. Her research bridges biomedical science and sports medicine, with a focus on geroscience, human exercise genomics, omics technologies, and genetic markers of healthy aging and physical performance. She earned her MA in Biomedical Science in 2006 and completed her PhD in 2010 with a thesis on genome loci linked to physical activity in elite Lithuanian athletes. Since then, she has been a leading voice in the genetics of physical performance, both nationally and internationally. Dr. Ginevičienė has presented at over 80 international conferences and authored more than 40 peer-reviewed publications. Her work has been supported by multiple government research grants, and she is an active member of several professional societies, including the Lithuanian and European Societies of Human Genetics, the Baltic Sport Science Society and the Lithuanian Federation of sport medicine.

Abstract: Biological Mechanisms of Muscular Aging: Telomere Length, Senescence Pathways, and Lifestyle Factors

Muscular aging is characterized by progressive declines in skeletal muscle mass, strength, and function (known as sarcopenia), contributing to frailty and reduced quality of life in older adults. Cellular senescence is a key contributor to muscular decline, although the roles of environmental and genetic factors (including telomere dynamics) remain incompletely understood. This study aimed to identify molecular and phenotypic factors associated with age-related muscle deterioration. A total of 200 older adults (mean age 83±7.5 years), including individuals with sarcopenia and/or frailty and healthy controls, were assessed. Phenotypic data were collected via questionnaires, standardized scales, and anthropometric-physiological testing. Relative blood leukocyte telomere length was measured using qPCR, and genome-wide single nucleotide polymorphisms (SNPs) genotyping was performed using the Infinium Global Screening Array v3.0 for genome-wide association study (GWAS). Study results indicated that sarcopenia-related traits, such as lean mass index (LMI), were associated with multimorbidity, cognitive function, psychomotor speed, polypharmacy, and nutritional status. Positive correlations were observed between LMI and hand grip strength, physical performance, and physical activity levels. GWAS identified 2 SNPs (rs75652203, rs17102732, in regulatory regions) significantly associated with grip strength, while 12 SNPs (in genes related to lifestyle traits and immune system processes) were associated with LMI in individuals with frailty and sarcopenia. Longer telomeres correlated with higher physical activity and greater hemoglobin concentration in muscle; shorter telomeres were linked to both sarcopenia and frailty. These findings provide novel insights into the biological mechanisms of muscular aging, highlighting the role of molecular and lifestyle-related factors in the development of sarcopenia and frailty.

Dr. Yulia Gendler is the Head of the Nursing Department and the 'MyHealthAid Medical Decision-Making Lab' at Ariel University, Israel. She is a leading researcher in shared decision-making, pediatric medicine, and nursing research. Her work focuses on integrating digital decision aids, including AI-driven tools, to enhance patient engagement, improve clinical decision-making, and support parents in navigating complex healthcare choices.

Abstract: AI-driven decision support for parents making informed ADHD treatment decisions for their children

Background

Parents of children with ADHD face complex treatment decisions involving pharmacological and behavioral interventions. Making an informed decision is essential, yet many struggle to access reliable information. This study evaluated Claude 3.5, an AI-driven Large Language Model (LLM), as a decision-support tool to help parents navigate ADHD treatment options with greater confidence and knowledge.

Methods

The study was conducted at the 'MyHealthAid - Medical Decision-Making Lab' at Ariel University. It included 56 Hebrew-speaking parents of children aged 6–17 newly diagnosed with ADHD, 85% of whom were mothers with medium to high literacy and numeracy levels. Participants used Claude-3.5 in a structured session, first engaging with 10 mandatory ADHD-related treatment questions followed by 15 minutes of free exploration. Afterward, participants completed the Satisfaction with LLM Use Questionnaire, and follow-up assessments were conducted one month later to measure decision-making quality, decisional conflict, parental knowledge, and decision self-efficacy.

Results

Decision-making quality significantly improved (mean increase: 15.2 points, $p < 0.001$), while decisional conflict decreased (mean decrease: 23.7 points, $p<0.001$). Parental knowledge increased (mean improvement: 18.4 points, $p<0.001$), and decision self-efficacy improved (mean increase: 21.8 points, $p<0.001$). Additionally, 92% of participants found Claude-3.5 easy to use, 89% were satisfied with the information provided, and 81% would recommend it to others.

Conclusion

AI-driven decision aids like Claude-3.5 enhance informed decision-making by offering interactive, accessible, and evidence-based support tailored to parents' needs. While promising, these tools should complement, not replace, clinical expertise, ensuring that ADHD treatment decisions remain personalized, accurate, and contextually appropriate.

Dr. Igor Koman is the Founder and CEO of Smartomica, a health technology company developing an AI-driven clinical infrastructure for precision medicine, with applications in oncology, longevity, and preventive care. He also founded the Institute for Personalized and Translational Medicine at Ariel University. With PhD and DrcSci degree in clinical pharmacology and background in medical oncology, Dr. Koman has built a career at the intersection of medicine, data science, and healthcare innovation. His work focuses on transforming fragmented medical data into actionable, evidence-based insights that support physicians, improve patient outcomes, and create new standards for global personalized medicine.

Dr. Daniel Yakubovich, MD, Ph.D., is a Director of the Preterm Follow-up clinic at Laniado Hospital, Sanz Medical Center. He immigrated with his family to Israel in 1990. He accomplished his MD and PhD studies at Sackler School of Medicine, Tel-Aviv University. Subsequently, he underwent residency training in pediatrics and a fellowship in neonatology at Sheba Medical Center. After obtaining a specialist degree in pediatrics and neonatology, he worked as a senior physician in the Department of Neonatology, Maynej Yeshua Medical Center, Department of Neonatology, Edmond and Lilly Safra Children's Hospital, Department of Neonatology Schneider Children's Hospital.

Subsequently, he was appointed a Director of the Preterm Follow-up clinic at Laniado Hospital, Sanz Medical Center. Dr. Yakubovich's scientific interests concentrate on the fields of kinetic modeling of G-proteins and their interaction with ion channels, physiology of neonatal respiratory and cardiovascular system and recently studies of pain empathy. As a senior lecturer at Ariel University, he teaches several preclinical and clinical courses (cardiac and respiratory physiology, molecular mechanism of learning and memory, pediatrics for interns) and also runs the Abba Kastin and Weihong Pan chronobiology laboratory.

Abstract: Wearable devices and their role in daily activities, monitoring of the chronic conditions and prediction of acute events.

Monitoring of heart rate, electrodermal activity, oxygen saturation, respiratory rate and electrical brain activity is standard of care of hospitalized patient. The devices utilized for the mentioned above are mainly stationary and have limited processing and data storage capabilities. Advances in computer technology during last several decades lead to ongoing process of increase in processing capabilities in conjunction with decrease in size of hardware. The mentioned above evolution has lead to miniaturization of monitors and thus made them portable, wearable and even telemetric. Furthermore, incorporation of this technology in gadgets such as smartwatch enabled their utilization for healthy persons during sport and recreational activities. Additionally, devices based on gaze monitoring combined with evaluation of autonomic nervous system function have been implemented in evaluation of alertness state. Moreover, some wearable devices have received FDA approval for prediction of life threatening events such as seizures. In the current presentation, we will describe hardware characteristics and role of wearable monitoring devices in cognitive load assessment, alertness evaluation and life quality improvement relevant to paroxysmal conditions such as epilepsy and cardiac arrhythmia.

Dr. Nadia Iermakov is a Lecturer in the Department of Multidisciplinary Studies, Faculty of Social Sciences and Humanities, and serves as the Director of Strategic Project Development in the Office of the Rector at Ariel University, Israel. She is a Research Fellow at the Institute for the Study of Global Antisemitism and Policy (ISGAP), USA, a Research Fellow with the Blavatnik Foundation, USA, and a member of the research group at the Shalom Hartman Institute, Israel.

Nadia earned her Ph.D. in Humanities from Dnipro National University, Ukraine, and completed a postdoctoral fellowship at Ariel University. Her research primarily focuses on Identity Studies, the History of the Soviet Jewry Movement, Antisemitism, and the Identity of Modern Academia. She is also actively involved in the establishment of an Academic Research Center for Community Resilience at Ariel University.

In 2024, the Ariel University team, under her leadership, was selected by the Ministry of Diaspora Affairs to lead a governmental project aimed at introducing delegations of international academic leaders to Israel, fostering collaboration.

Dr. Iermakov has presented her research at prestigious institutions around the world, including the University of Oxford, Sorbonne University, the University of Washington, Brandeis University, the Institute of Balkan Studies at the Bulgarian Academy of Sciences, and the Wende Museum in Los Angeles, USA. Dr. Iermakov is the recipient of numerous awards, research grants, and international fellowships for outstanding young academics, including Olami – São Paulo, Brazil; World Jewish Congress International Yiddish Center – Vilnius, Lithuania; ISGAP Oxford Summer Institute – Oxford, England; Nahum Goldmann Memorial Foundation Fellowship – Strasbourg, France; JDC Entwine – Rwanda; Brandeis University – Waltham, USA; JDC Entwine – Argentina and Uruguay; Sinai Foundation – Israel; and the Blavatnik Foundation – New York, USA.

Abstract: AI and Society: Challenges, Opportunities, Responsibilities

Artificial Intelligence is no longer only a technological matter, it has become a factor shaping the social health of societies. Social health, understood as the quality of social relations, equity, trust, and the sense of belonging within communities, is directly influenced by the ways AI is designed, implemented, and governed. This presentation will address how AI affects key determinants of social health: inclusion and exclusion in access to resources, the reproduction of inequalities through biased algorithms, the erosion or reinforcement of social trust, and the changing conditions of work and civic participation. These shifts have profound implications for community resilience, as the ability of societies to withstand crises depends not only on infrastructure and policy but also on the strength of social bonds and collective solidarity. At the same time, AI can serve as a tool to promote social health by supporting equitable access to education and healthcare, enabling community-based problem-solving, and fostering new forms of civic engagement. Realizing these opportunities, however, requires societal responsibility: transparent governance, ethical frameworks, and active participation of diverse social groups in shaping technological futures. By framing AI as a determinant of social health, the lecture emphasizes that the ultimate impact of AI will be measured not just in efficiency or innovation, but in its capacity to sustain healthy, cohesive, and resilient communities.

Dr. Alexandra Gleizer is a pediatrician specializing in pediatric emergency medicine with extensive clinical and leadership experience. She earned her medical degree from the Russian State Medical University in Moscow and a Master of Health Administration from Ben-Gurion University of the Negev. Over the years, she has served in leading pediatric and emergency departments across Israel, including Hadassah Medical Center, Schneider Children's Hospital, Barzilai Medical Center, and Meir Medical Center. Dr. Gleizer has also contributed to academic training programs for pediatric residents and paramedics and has authored several peer-reviewed publications in pediatric infectious diseases and emergency care. She currently serves as the Medical Director of Maccabi's emergency medical centers and day hospitalization centers and is the national head of Maccabi's resuscitation system.

Abstract: "Golden 1000 days" and neurodevelopmental aspects in early post-discharge period.

Concept of "golden 1000 days" emphasizes substantial impact of early life events on growth and development of newborns and consequently their well-being as adults. Many aspects of neonatal care in the early post-discharge period are under responsibility of primary care pediatricians. Among them are feeding, sleep hygiene, vaccination, follow-up of developmental milestones, prevention of post-delivery depression and management of disease with accent of those more frequent during early life. Several of the mentioned above items undergo considerable changes during recent years. In particular the importance of breast-feeding is further supported by recent data about prevention of cow milk allergy and the ongoing debate about formula association with development of diabetes. Furthermore, recent changes in vaccination schedule (such as introduction of RSV vaccine for general population) require additional assessment of their effect on newborn population morbidity. In acute care setting there is development in the field of neonatal sepsis investigation and elaboration of work-up methods to minimize the required procedures such as implementation of POC tests. Maccabi Heathcare Systems is the second largest provider of medical care in Israel and as such is involved in treatment and follow-up of a few thousands of newborn babies annually discharged from hospitals. Additionally, we would share our experience in system preparedness for early postnatal discharge.

Dr. Lena Qawasmi is Head of the Analytical Team at Smartomica. She holds a PhD in Developmental Biology and Cancer Research from The Hebrew University of Jerusalem. Lena has extensive experience in molecular biology, genomics, and translational research. She leads the integration of clinical and multi-omics data, utilizing AI to drive advances in predictive and personalized healthcare. Her passion lies in connecting scientific discoveries with clinical practice to improve diagnostics and patient outcomes.

Abstract: Smartomica Longevity Platform – AI-Powered Preventive Care to Extend Healthspan

Longevity medicine aspires not only to extend life but to extend healthy, productive years. Yet despite advances in omics, imaging, and wearables, the field remains fragmented. Physicians lack the infrastructure to translate these technologies into coherent, evidence-based practice. Standards are incomplete, validated biomarkers are scarce, and most AI tools fail to provide the transparency required for clinical trust.

Smartomica delivers the missing layer of infrastructure. It functions as a clinical operating system for longevity medicine — integrating diagnostics, medical records, and patient management within a unified framework. Its AI mirrors physician reasoning in a transparent, stepwise manner, enabling personalised, standardised, and reproducible care.

By establishing protocols, ensuring quality control, and supporting collaborative research, Smartomica transforms longevity medicine from a collection of tools into a scalable discipline, ready for integration into mainstream healthcare.

Dr. Zoryna Boiarska is a research fellow at the Department of Neurobiology and Biophysics (Life Sciences Center, Vilnius University, Lithuania) and chair of the Ukrainian Department of the Lithuanian Scientific Society. She graduated from Taras Shevchenko National University of Kyiv (Ukraine), where she also defended her PhD thesis in biological sciences (PhD in biology); she holds a master's degree in psychology.

Her research interests include the biology of aging, the impact of chronic stress on health and functional capacity, gender differences in ageing, and the role of psychosocial resilience.

Dr. Boiarska is involved in the adaptation of the Human Health Passport developed in Ukraine and its development into a Personal Aging Profile, an integrative model that combines biological and psychosocial domains for early risk detection and support of preventive strategies. She is involved in international collaborations and regularly presents her findings at international scientific forums.

Abstract: From "Human Health Passport" to "Personal Ageing Profile": pilot results in Ukraine

Population ageing represents a major demographic and health challenge, associated with a higher prevalence of chronic diseases and functional decline. The study aimed to test the "Human Health Passport" (HHP) as a multi-domain tool for assessing health status and to verify its potential in creating a "Personal Ageing Profile". The study involved 182 respondents aged 18–70. Descriptive statistics, correlation analysis, and exploratory factor analysis with parallel analysis were performed for 21 HHP questions. The results of the factor analysis confirmed the multi-domain structure of the HHP. The integral score of HHP (maximum 21 points) reflects the functional reserve of health. Correlation analysis showed its statistically significant relationship with the rate of ageing (RA) ($r \approx 0.30$, $p < 0.001$). At the same time, a comparison of RA and the RA_HHP indicator (calculated directly from HHP) showed a moderate inverse correlation ($r \approx -0.27$, $p<0.001$), which indicates the complementarity of the two approaches: RA_score reflects the dynamics of ageing, while RA_HHP reflects the level of preserved functional reserve. The first pilot results confirm the feasibility of using the HHP as a basis for creating a "Personal Ageing Profile". The combination of objective biological indicators with subjective assessments of quality of life will allow the formation of a multidimensional model of ageing, which can become a tool for early detection of risks and personalised prevention.

Dr. Oryan Agranyoni is a postdoctoral fellow in the Stanley Division of Developmental Neurology at Johns Hopkins University School of Medicine. Her research focuses on the role of microbiome and extracellular vesicles in shaping immune–brain communication, with an emphasis on mental health outcomes such as depression, anxiety, and social behavior. She combines molecular biology and advanced bioinformatics to investigate how host–microbe interactions and extracellular vesicles can serve as biomarkers of mental illness. Dr. Agranyoni has published on microbiome–host interactions, developed innovative approaches for extracellular vesicle isolation and characterization, and is the recipient of a Binational Science Foundation grant supporting international collaboration between Johns Hopkins and Ariel University. Her long-term goal is to identify microbial and immune-derived biomarkers that can inform novel diagnostic and therapeutic strategies for psychiatric disorders.

Abstract: Decreased Neisseria in the Oral Microbiome Correlates with Depressive Symptoms During Pregnancy

Oral microbiome dysbiosis is increasingly recognized as a contributor to systemic inflammation, yet its role in perinatal mood disorders remains underexplored. Depression during pregnancy is both common and consequential, with potential implications for both maternal and fetal outcomes. This study aimed to characterize the salivary microbiome in pregnant women and determine whether specific microbial patterns are associated with depressive symptoms. We analyzed saliva samples from 400 pregnant women using 16S rRNA sequencing. Participants were assessed using the CES-D scale (cutoff ≥16 for clinically significant depressive symptoms). Bacterial composition was compared between women with depressive symptoms (n=46) and controls (n=327), accounting for confounders such as BMI, smoking, gestational age, and oral health status. Overall bacterial diversity decreased in the third trimester and was modulated by oral health and smoking. However, these factors did not explain the distinct microbiome pattern seen in women with depressive symptoms. Nine taxa, including the Neisseria genus, were significantly reduced in the depressive symptoms group. Neisseria has known anti-inflammatory properties and has been previously associated with oral and systemic health. Using PICRUSt2, we found that women with depressive symptoms had predicted decreases in Menaquinol (vitamin K2) biosynthesis pathways—key to nitric oxide reduction and immune regulation. Our findings suggest that specific oral microbial signatures, particularly reduced Neisseria, may be linked to inflammation-associated mood symptoms during pregnancy. These patterns are independent of common confounding factors and support the potential of the oral microbiome as a biomarker or therapeutic target in perinatal mental health. This study provides novel evidence linking the oral microbiome to antenatal depressive symptoms. Follow-up studies should validate these biomarkers in prospective cohorts and explore mechanistic links using cell-based and animal models.

Arvydas Balčius

Mineral SPA Draugystė Head of Medicine

Arvydas Balčius (Lithuania) is a physician specializing in physical medicine and rehabilitation with over two decades of experience in the field. He has actively contributed to the development of Lithuania's rehabilitation system and participated in international study visits to health resorts across Europe.

He was a researcher in the 2020 scientific study on the effects of balneotherapy and peloid therapy for knee osteoarthritis and contributed to the development of a methodological guide on the same topic. He also took part in the LUGISES project on the use of Lithuania's natural resources for improving stress-related health.

Balčius is a board member of the Lithuanian Association of Physical Medicine and Rehabilitation Physicians. He is qualified in cognitive behavioral therapy (CBT) and mindfulness-based therapy.

In 2023, he was awarded the honorary title Distinguished Lithuanian Doctor and completed a course in nature and forest therapy. He worked as Head of Medicine at Medical SPA "Eglės" Sanatorija for 25 years and currently holds the same position at "Draugystės Sanatorija."

Kęstutis Skauminas

Medical SPA „Eglės" sanatorija Head of Medicine

Kęstutis Skauminas (Lithuania) is a neurosurgeon and neuroscientist specializing in neuro-oncology, cognitive health, and the medical application of neuroscience in rehabilitation and wellness. Since 2023, he has served as the Medical Director of Eglės Sanatorija in Druskininkai and Birštonas, where he oversees medical strategy, clinical operations, and the integration of scientific research into sanatorium-based care.

He holds a doctoral degree in biomedical sciences and previously worked as a neurosurgeon at the Hospital of Lithuanian University of Health Sciences (Kaunas Clinics), as well as a docent at the university's Neurosurgery Clinic. Skauminas also led the Molecular Neuro-oncology Laboratory at the LSMU Neuroscience Institute, focusing on glioma biology and therapeutic innovation.

His current work emphasizes healthy aging, the preservation of cognitive function, and evidence-based sanatorium medicine. In 2024, he launched the Physical Medicine and Rehabilitation Center (FMRC) at Eglės Sanatorija, dedicated to medical research, professional training, and collaboration with national universities and health science institutions.

Skauminas is the author and co-author of several peer-reviewed publications in neuroscience and clinical neuro-oncology. He is also actively involved in promoting science-driven rehabilitation approaches that blend modern neuroscience with traditional natural therapies.

Dileta Tindžiulienė is the Head of the International Lithuanian–Israeli Children's Education Center "Gifted" at Vytautas Magnus University, Lithuania, and a PhD researcher at Ariel University, Israel. Her work focuses on gifted education and emotional intelligence, combining leadership in educational initiatives with academic research. She coordinates the International Lithuanian–Israeli Gifted Program for the Education of Gifted Children and leads the Emotional Intelligence Program. In addition, she serves as Kaunas City Team Manager for the National Program LL3. Her professional profile is further distinguished by international experience through multiple internships in Israel, Germany, Finland, Estonia, the Czech Republic, Poland, and Ukraine, underscoring her commitment to fostering cross-cultural collaboration in education and research.

Abstract: Two Worlds – One Challenge: Gifted Children in Lithuanian and Israeli Families

This presentation explores the experiences of families raising gifted children in Lithuania and Israel, focusing on the complex interplay between cultural contexts, educational systems, and family life. While much research emphasizes the abilities and needs of gifted children themselves, this study highlights the central role of families, who carry the responsibility of supporting and nurturing talent while facing considerable challenges.

Particular attention is given to issues of emotional intelligence, parental and sibling stress, and the economic demands associated with specialized education and extracurricular opportunities. Families must balance high expectations with the everyday realities of family dynamics, financial pressures, and the need to maintain emotional stability. Despite differences in historical and cultural environments, Lithuanian and Israeli families encounter strikingly similar dilemmas: how to foster giftedness without overwhelming the child, how to respond to social isolation or misunderstanding, and how to sustain family cohesion under pressure.

By foregrounding the family perspective, this presentation offers a more holistic understanding of giftedness, emphasizing that effective support for gifted children requires not only educational strategies but also recognition of the emotional, social, and economic realities of family life.

Elena Malt is an entrepreneur and the founder of EMAS MED and the EMAS Foundation, organizations dedicated to advancing international collaboration in healthcare and medical tourism. Through her work, Elena develops large-scale international projects that combine cutting-edge medicine, innovative technologies, and personalized patient care.

With EMAS MED, she has built a global platform that connects leading clinics, hospitals, and medical specialists across different countries, providing patients with access to advanced treatments, diagnostics, and rehabilitation programs. In parallel, through the EMAS Foundation, Elena promotes initiatives that strengthen healthcare cooperation worldwide and foster humanitarian values in medicine.

Elena's mission is to build bridges between nations by uniting health, technology, and compassion for people. Her projects aim not only to deliver high-quality medical services but also to create sustainable models of international collaboration in healthcare, with a strong focus on patient well-being and innovation.

Ella Logina is an entrepreneur. She graduated from the Financial Academy in Moscow and founded a network of 21 clinics (19 for women, plus a dental clinic and a sleep center). Today, she is developing Saiga Sprint Ventures, an accelerator that transforms medical discoveries into venture businesses.

Abstract: Advancing Health

From Lab to Venture a talk by Ella Logina, an entrepreneur who built and sold a network of 21 clinics and is now leading Saiga Sprint Ventures accelerator. The keynote addresses one of healthcare's main challenges: how to turn strong academic discoveries into working companies. Through real-world case studies, Ella will show where the path from lab to market often breaks down and which strategies help scientists and startups successfully cross that bridge.
