



International Conference

Advancing Research, Enhancing Lives



July 09-10, 2026
Frankfurt, Germany

 **Neuro - 2026**
Frankfurt, Germany

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July 9-10, 2026 | Frankfurt, Germany

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LETTER FROM THE CEO & DIRECTOR

On behalf of United Research Forum, UK we are pleased and delighted to welcome the organization of the International Conference at Hotel NH Frankfurt Airport West, Frankfurt, Germany from 09 to 10 July, 2026.

Our goal is to providing an international forum where international scientists meet with scientists from the different fields of health care sectors to exchange ideas and information on current trends of research results and practical experiences. We are looking forward to welcoming all of you in Germany and to have with you an excellent meeting with great scientists from different countries around the world and sharing new and exciting results in the different subjects of the conference.

We hope that you will enjoy your stay in Germany and advice you to take this opportunity to visit the beautiful historical sites that you can find everywhere in the country. Finally, I would like to add my best wishes for a successful and fruitful conference and many thanks to our partners the organizers of this Conference.



Sincerely,
Dr. Vanga

Director, URF, UK

Exhibitors

Naason Science. Inc



Naason Science Inc.,

South Korea

Naason Science Inc. is a leading preclinical Contract Research Organization (CRO) based in South Korea, specializing in drug discovery and preclinical research services. Established in 2017, the company provides advanced research platforms and customized preclinical models that support pharmaceutical, biotechnology, and academic researchers in the development of innovative therapeutics.

Preclinical Modelling Platforms for Gynecologic, Endocrine, and Inflammatory Diseases are among the company's key areas of expertise, enabling researchers to evaluate novel therapeutic approaches through advanced disease-specific models.

With expertise in efficacy evaluation, disease modeling, and translational research, Naason Science offers integrated solutions that accelerate drug development from early discovery to preclinical validation. The company is committed to scientific excellence, innovation, and global collaboration in advancing healthcare and biomedical research.

Scientific Program

International Conference

Frankfurt, Germany
July 09, 2026

Day-1 (July 09, 2026)

09:00-09:30 Registrations & Opening Remarks

Plenary Forum

09:30-10:00

Inaugural Address by

Thomas Klaholz, University of Bonn, Germany



10:00-10:20 Networking Break

10:20-10:40 Group Photo

Keynote Talk

10:40-11:00

Title: Your Way to Longevity - the 7 Secrets of Healthy Aging

Thomas Klaholz, University of Bonn, Germany

Technical Session-I (10:40 - 14:00)

Session Chairs:

Dr. Barbara L. Parry,
University of California San Diego, USA

Prof. Maria Nicoleta Turliuc,
Alexandru Ioan Cuza University, Romania

11:00-11:20



Title: Technical assistance system for monitoring mobility and nutrition of older adults for preventive care and healthy aging: A pilot study
Mareike Forster, Carl von Ossietzky University of Oldenburg, Germany

11:20-11:40

Title: Better and Healthier Together? The Mediation Effect of Positive Psychological Capital on the Relationship Between Perceived Social Support and Health-Related Quality of Life Among Older Adults



Maria Nicoleta Turliuc, Alexandru Ioan Cuza University, Romania

11:40-12:00



Title: RIPK2 expression in the skin of atopic dermatitis May define Th1/Th2 cytokine profile
Elias Toubi, The holy family Hospital, Israel

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12:00-12:20

Title: Revealing Healthy Aging: AI-Derived Facial Biomarkers for Early Detection and Patient-Centered Preventive Longevity Medicine

Rainer Pooth, Clinical Research ICAAN, Germany



12:20-12:40

Title: CD4+CCR5+ T cells and CCL3+ mast cells are increased in the skin of patients with chronic spontaneous urticaria

Prof. Zahava Vadasz, Bnai-Zion Medical Center, Israel



12:40-13:00

Title: Percentiles of neuromotor functions from 6 to 80 years

Kakebeeke Tanja, University Children's Hospital Zurich, Switzerland



13:00 - 14:00 Lunch @ Restaurant

Technical Session-II (14:00 - 17:30)

14:00-14:20

Title: The prolyl oligopeptidase and α -synuclein connection: context, insights and hypotheses

Anne-Marie Lambeir, University of Antwerp, Belgium





14:20-14:40

Title: Integrated Active Aging Index (IAAI): From Individual-Level Quantification to Community-Based Active Aging Intelligence

Chanvit Tharathep, Thai Biomedical Engineering Association, Thailand

14:40-15:00

Title: Targeting alpha-synuclein with the lipoxygenase inhibitor PTC-041 as a therapeutic approach for the treatment of Parkinson's disease

Angela Minnella, PTC Therapeutics, Inc, USA



15:00-15:20

Title: POMGnT1 Deficiency Promotes Tau Hyperphosphorylation and Cognitive Impairment in Alzheimer's Disease

Xiaofeng Li, The second affiliated hospital of Chongqing Medical University, China



15:20-15:40

Title: Evaluation of resensibilization in flaps containing sensory nerves in the animal model: A systematic review of the literature

Patricia Esther Engels, University Hospitals of Geneva, Switzerland



15:40-16:00 Poster Presentations + Refreshment Break

Poster-1



Title: Acid-Base Dysregulation Links Aging Metabolism to Frailty

Wan-Hui, MacKay Memorial Hospital, Taiwan

Poster-2

Title: Postoperative Course Following Excision Surgery and Biopsy: A Retrospective Cohort Study In The Dermatology Outpatient Department of A Tertiary Hospital In The Philippines

Nicole Therese Mariano Mendiola, Jose R. Reyes Memorial Medical Center, Philippines



Poster-3



Title: Evaluation of Circadian Rhythm Disruption in the DHT-Induced Rat Model of PCOS, Exploratory Pharmacological Modulation with Niclosamide

Dr. Kamalakannan Radhakrishnan, Naason Science Inc. KBIO New Drug Development Center, South Korea

Poster-4

Title: Development of a Dichoptic Chromatic Pupillometer

Dr. Sébastien Buchwalder, Oculox Technologies, Switzerland



Poster-5



Title: The Alleged Harm of Chocolate Consumption on Teeth: A Myth or Reality

Dr. Behzod Shavkatxojayev, Central Asian University, Uzbekistan

Poster-6

Title: Jalili Syndrome: The Rare retinopathy with Amelogenesis Imperfecta, Clinical Insights, novel variant and genetic Perspectives in four patients

Dr. Nehal Hassib, National Research Centre, Egypt



Poster-7

Title: An Analysis of Frontal Sinusitis in three Ancient Populations from the Turpan Basin, Xinjiang, China

Dr. Qingxin Fu, Jilin University, China



Poster-8

Title: Revisiting the Paternal History of the Sherpas
Dr. Lobsang Dargye, Jilin University, China



Session Continues

16:00-16:20

Title: A prospective multi-site cohort study on the prevalence of frailty in patients aged over 70 years presenting after serious injury and implications for outcomes

Martie Botha, Flinders Medical Centre, Australia



16:20-16:40

Title: Microglia-Mediated Neuroinflammation Drives Neuropathology in Alzheimer's Disease during *P. gingivalis* Infection
Zhou Wu, Kyushu University, Japan



16:40-17:00

Title: Human immunomodulatory ligand B7-1 mediates synaptic remodeling via the p75 neurotrophin receptor
Victor Danelon, Weill Cornell University, USA



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17:00-17:20

**Title: Clinical Application of Low Temperature Plasma in Wound Healing: A
Prospective Observational Study**

Xinhua Zhang, Changzhou Institute of Technology, China



DAY 01 CONCLUDES

Scientific Program

International Conference

Frankfurt, Germany
July 10, 2026

Day-2 (July 10, 2026)

Technical Session-III (10:00 - 12:50)

SESSION CHAIRS:

Prof. Anne-Marie Lambeir,
University of Antwerp, Belgium

10:00-10:20

Title: Multiphoton Tomography: A New Technology for Testing Anti-Ageing Products
Aisada Koenig, JenLab GmbH, Germany



10:20-10:40

Title: A Sleep and Light Intervention that Shifts Melatonin Rhythms Earlier Improves Peri- and Post-Menopausal Depression: Preliminary Findings
Barbara L. Parry, University of California San Diego, USA



10:40-11:00

Title: Hereditary transthyretin-related amyloidosis is frequent in polyneuropathy and cardiomyopathy of no obvious aetiology
Volha Skrahina, RareGenetix GmbH, Germany



11:00 - 11:20 Networking Break

11:20-11:40

Title: Probiotic interventions to expand healthy human longevity
Roberto Ricardo Grau, Parque Científico de Madrid, Spain





11:40-12:00

Title: **Cardiometabolic multimorbidity in relation to the metabolic score for insulin resistance and creatinine-to-cystatin C ratio in a middle-aged and aged population**
Li Wang, Department of Geriatrics, The Second Affiliated Hospital of Chongqing Medical University, China

12:00-12:20

Title: **Mitophagy in Alzheimer's disease and its potential as a therapeutic target**
Jiahua Wei, Shanghai Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, China



12:20-12:40

Title: **The Hidden Hierarchy of Functional Aging: Neuromuscular Decline, Predictive Movement Systems, and the Overlooked Role of Motor Units in Longevity**
Tony Ruggia, Germany

12:40-13:00

Title: **Ultrasound and Its Effects on the Skin: Biophysical Mechanisms and Practical Applications for Supporting Skin Health**
Nataliia Koziukevych, NATA-LUX Beauty & Training, Germany



13:00-14:00 Lunch

Technical Session-IV



14:00-14:20

Title: **Pupillary responses as non-invasive biomarkers of cognitive decline in aging**
Manon Lenain, Univ. Lille, CNRS, Institut Pasteur de Lille, France



14:20-14:40

Title: Association between chemotherapy for surgically treated rectal cancer and second primary endometrial cancer

Du peng, The Second Hospital of Lanzhou University, China

14:40-15:00

Title: Making the Healthy Choice the Easy Choice

Maelle Poirel, Utrecht Longevity Society, The Netherlands



15:00-15:20

Title: Prevention of cognitive impairment by B-Vitamins and omega-3-fatty acids - state of knowledge

Uwe Till, The First Affiliated Hospital of Shandong First Medical University, Germany

15:20-15:50 Networking Break

15:50-16:10

Title: Constraint-State Neuroscience: A Dynamical Framework for Understanding Neural Vulnerability, Cognitive Decline, and Neurodegenerative Progression

Mohammad Dawood Rahimi, Freie Universtat Berlin, Germany



16:10-16:30

Title: Addressing Anti-Aging Bias and the Impact on Oral Health of Older Adults

Christie Hogue, Mouth Mirrors LLC, USA



16:30-16:50

Title: Examining the Effects Of Chronic Low Back Pain On Sleep Quality, Sleep Variables, Disability, And Quality Of Life

MUSA, Necmettin Erbakan University, Turkey

16:50-17:10

Title: Housing conditions, satisfaction with housing conditions and life satisfaction of older adults in Tanzania: a cross-sectional study

Stellah John Kilawe, Xi'an Jiaotong University, China



DAY 02 CONCLUDES

**Parallel Virtual
Scientific Program
July - 10, 2026
10:00AM CET Time**



Join Zoom Meeting

Meeting ID: 860 2775 9809

Passcode: Urf@2026

Day-2 Virtual Session (July 10, 2026)

09:50-10:10



Title: Association between chemotherapy for surgically treated rectal cancer and second primary endometrial cancer

Du peng, The Second Hospital of Lanzhou University, China

10:10-10:20

Title: Determination of the mechanical properties and in vivo healing assessment of a moxifloxacin hydrocolloid wound dressing

Ni Deng, Liangjiang Hospital of Choongqing Medical University, China



10:20-10:40



Title: POMGnT1 Deficiency Promotes Tau Hyperphosphorylation and Cognitive Impairment in Alzheimer's Disease

Xiaofeng Li, The second affiliated hospital of Chongqing Medical University, China

10:40-11:00

Title: A Pharmacogenetic Panel-Based Prediction of the Clinical Outcomes in Elderly Patients with Coronary Artery Disease

Tong Yin, Institute of Geriatrics, National Clinical Research Center for Geriatric Diseases, Second Medical Center of Chinese PLA General Hospital, China



11:00-11:20



Title: Cardiometabolic multimorbidity in relation to the metabolic score for insulin resistance and creatinine-to-cystatin C ratio in a middle-aged and aged population

Li Wang, Department of Geriatrics, The Second Affiliated Hospital of Chongqing Medical University, China

11:20-11:40

Title: A Buffering Role of Perceived Social Support and Resilience between Caregiver Burden and Perceived Stress among Informal Caregivers of Dementia Elderly Patients
Saba Hayat, Bahria University, School of Professional Psychology, Islamabad, Pakistan



Keynote Talk

11:40-12:10



Title: Telomerase in brain and neurodegeneration
Gabriele Saretzki, Newcastle University, UK

Keynote Talk

12:10-12:40

Title: The role of neurodiversity in older people
Marios Kyriazis, National Gerontology Centre, Cyprus



12:40-13:00

Title: Chr17q21.31 locus risk haplotype H1 susceptibility to Ferroptosis is mediated by the endolysosomal system
Eldem Sadikoglou, DZNE, Germany

13:00-13:20

Title: From awareness to action: How patient organizations are driving DRPLA research forward
Silvia Prades, Ataxia UK, CureDRPLA, UK



13:20-13:40

Title: Predicting Health Trajectories in Older Population: A Multi-Objective Analysis of Climate, Pollution, Life-style Risks
Alina Fedorova, Applied Quantitative Solutions for Complex Systems, Spain

13:40-14:00

Title: Sensorimotor Training Elicits Comparable Strength Gains to Resistance-Endurance Training While Improving Balance-Related Factors Associated with Fall Prevention in Older Women

Lubica Ziska Bohmerova, Faculty of Physical Education and SportComenius University
Bratislava, Slovakia



14:00-14:20



Title: Fulminant Sporadic Creutzfeldt-Jakob Disease Presenting as Rapidly Progressive Confusion: A Case Report

Dalia Salih Mohammed Salih, Walsall Healthcare NHS Trust, UK

14:20-14:40

Title: Lactoferrin and Altered Immune Response: Novel Insights into the Link Between Periodontitis and Alzheimer's disease

Hoda Tayebi Hillali, University of Santiago de Compostela, Spain



14:40-15:00



Title: Spatial Gaps in Access to Specialized Healthcare for the Aging Population: A County-Level Analysis in Poland

Agata Zołtaszek, University of Lodz, Faculty of Economics and Sociology, Poland

15:00-15:20

Title: Arousal Threshold and Sleep Stability Endotypes Under Controlled GABAergic Modulation: A Prospective Cohort Study

Nyree Penn, Nsomnia Sleep, USA





15:20-15:40

Title: Testosterone pellet surface area relates to effectiveness more than dose

Charles Virden, VitalTE Lifesciences, INC, USA

15:40-16:00

Title: Brain-specific microRNA-mediated regulation of metabolic homeostasis in *Drosophila melanogaster*

Pushpa Verma, Harvard Medical School, USA



16:00-16:20

Title: Enhancing Cognitive Functioning in Dementia Through Art Therapy
Jinnie Jeon, Adler University, Canada

16:20-16:40

Title: Model of environment dependent amyloid transformation
Irena Roterman, Jagiellonian university - Medical college, Krakow, Poland



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Ageing and Gerontology

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**Alina Fedorova(1), Valeriy Gavrishchaka(2),
Andrey Makeev(1), Rebecca Miao(1), Zhenyi
Yang(1)**

*1. Applied Quantitative Solutions for Complex Systems, Falls Church, VA, USA
2. Physics Department, West Virginia University, Morgantown, WV, USA*

From risk prediction to causal policy: a decision-support platform for healthy ageing that separates confounded risk factors from modifiable social and systemic levers

Background

Europe is ageing and prevention budgets are finite, yet much guidance is correlational — and predictive models add a trap: a variable that predicts late-life disease is not necessarily one worth acting on. We ask which risk factors are causal and modifiable.

Methods

AETAS, built on the cohort-agnostic CAUSEWAY framework (described elsewhere), is deployed on the observational SHARE panel ($\approx 160,000$ adults aged 50+, 28 countries; waves 4–8 + COVID surveys + a regional exposome). It couples predictive risk stratification; a causal layer (Double Machine Learning, negative controls, Oster δ , E-values, Holm correction, and a "Causal Firewall" that refuses to estimate under severe confounding); and a policy layer turning effects into health–cost–equity trade-offs via Monte-Carlo and multi-objective optimisation.

Findings

Predictive models rank fine-particulate air pollution (PM_{2.5}) among top features, yet causal adjustment nulls it: long-term regional PM_{2.5} shows no detectable effect on late-life disease across ~ 12 cohorts (0 of 44 tests survive correction), while the same engine detects the smoking–COPD control everywhere. What survives is social and systemic: everyday ageism prospectively drives worsening depression ($\beta \approx +0.37$; Oster $\delta = 4.1$, E-value 1.68; survives Holm); life-course persecution drives depression (Spanish Civil War cohort, $p < 10^{-5}$, $\delta = 13.9$); and pre-pandemic chronic-disease burden drove loss of care during COVID, surviving age, sex, education, income — those who lost care were more often hospitalised a year later. In the policy layer the pollution lever pays nothing; anti-ageism is fiscally efficient, care-continuity the equity lever.

Significance. Rigour redirects prevention from a confounded pollution target toward modifiable social and systemic levers — anti-ageism as clinical prevention, and care continuity for the multimorbid — with a path to cross-cohort extension (HRS, ELSA, CHARLS)

Keywords: healthy ageing; causal inference; ageism; continuity of care; COVID-19; multi-objective policy optimisation; SHARE cohort

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Biography

Alina Fedorova is a bioinformatician and longevity researcher leveraging her background in computational physics and population genetics. She applies machine learning and statistical modeling to large-scale health data to investigate the mechanisms of aging. Her research interests include genomic diversity, positive selection, and developing personalized longevity and health strategies, including organ-specific aging trajectories

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Barbara L. Parry, MD^{1,2,3}, Charles J. Meliska, PhD¹, Diane L. Sorenson, MPH¹, L Fernando Martinez, BA¹, Ana M. Lopez, BS¹, Sharron E. Dawes, PhD¹, Jeffrey A. Elliott, PhD^{1,3}, Richard L. Hauger, MD^{1,4}, David Sommerfeld, PhD¹

¹*Department of Psychiatry, University of California, San Diego*

²*Corresponding Author: University of California, San Diego, Department of Psychiatry*

³*Center for Circadian Biology (Drs. Parry, Meliska, Elliott), University of California, San Diego*

⁴*Center for Behavior Genetics of Aging (Dr. Hauger)*

Center of Excellence for Stress and Mental Health (CESAMH), VA San Diego Healthcare System (Dr. Hauger)

A Sleep and Light Intervention that Shifts Melatonin Rhythms Earlier Improves Peri- and Post-Menopausal Depression: Preliminary Findings

Research Question

Will a sleep and light intervention that phase-advances melatonin rhythms improve peri-post menopausal (P-M) depression.

Background

P-M depressed vs. healthy participants have phase-delayed (shifted later) plasma and urinary melatonin rhythms.

Purpose

To determine if correcting circadian rhythms benefits mood.

Methods

We compared: (1) an active, phase-advance intervention (PAI): one night of advanced/restricted sleep from 9pm-1am, followed by 8 weeks of morning bright white light (BWL) for 60 min/day within 30 min of awakening, and (2) a control, phase-delay intervention (PDI): one night of delayed/restricted sleep from 3-7am followed by 8 weeks of evening BWL for 60 min/day within 90 min of bedtime. We tested 17 P-M participants, 9 normal control-NC and 8 depressed-DP (by DSM-5 criteria) at home. Clinicians assessed mood by structured interviews and subjective mood ratings. Participants wore actigraphs to measure sleep and activity, and collected overnight urine samples for the melatonin metabolite, 6-sulfatoxymelatonin (6-SMT), before, during and after interventions.

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Results

Baseline depressed mood correlated with delayed 6-SMT offset time (cessation of melatonin metabolite (6-SMT) secretion) ($r = +.733$, $p=.038$). After PAI vs PDI, 6-SMT Offset (start of melatonin and 6-SMT decrease) advanced significantly in DPs (Mean $\pm$ SD = 2 h 15 min $\pm$ 12 min, $p=.042$); advance in 6-SMT acrophase (time of maximum melatonin and 6-SMT secretion) correlated positively with mood improvement ($r = +.978$, $p=.001$). Mood improved (+70%, $p=.007$) by both 2 and 8 weeks.

Conclusions

These preliminary findings reveal significantly phase-delayed melatonin rhythms in DP vs NC P-M women. Phase-advancing melatonin rhythms improves mood in association with melatonin advance. Thus, sleep and light interventions may potentially offer safe, rapid, non-pharmaceutical, well-tolerated, affordable home treatments for P-M depression.

Keywords: menopause, depression, sleep, light, melatonin, chronobiology

Biography

Barbara L. Parry, M.D. is Professor of Psychiatry at the University of California, San Diego (UCSD) where she has served as Director of the Women's Mood Disorders Clinic of the UCSD Outpatient Psychiatric Services, Director of the Women's Mental Health Clinic at the San Diego Veterans Administration Healthcare Center and Associate Director of the Medical Student Clerkship in Psychiatry. Before joining the faculty at UCSD in 1985, she did a research fellowship in Clinical Psychobiology at the National Institute of Mental Health in Bethesda, Maryland. She completed a residency in Psychiatry and an internship in Internal Medicine at the University of California, Los Angeles. Her clinical research focus is the chronobiology of mood disorders specific to women: premenstrual, pregnancy/postpartum and menopausal depression.

She conducts sleep, light, melatonin and other hormonal studies with the aim of developing non-pharmacological approaches to treatment. Her work is supported by NIH funding, she has authored or co-authored over 280 publications and served on NIH study sections, Data and Safety Monitoring Boards and the editorial boards of the American Journal of Psychiatry, the Journal of Biological Rhythms, the International Journal of Endocrinology and Equilibria, the Journal for Postpartum Psychiatric Illness Research.

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Aisada Koenig

JenLab GmbH, Berlin

Multiphoton Tomography: A New Technology for Testing Anti-Ageing Products

Skin ageing is a complex process involving structural changes of the extracellular matrix proteins such as collagen and elastin, along with alterations in the activity of epidermal cells. Traditional approaches rely on surface imaging or invasive biopsies. These techniques are limited in their ability to directly and dynamically monitor aging processes in deep living skin in its native 3D microenvironment, as well as to perform measurements at multiple time points. Multiphoton Tomography (MPT) overcomes these limitations by providing a kind of multidimensional “virtual biopsy” that shows cellular and structural details with high submicron resolution, including cellular metabolism with high temporal resolution. It combines several advanced optical techniques, including two-photon fluorescence, second harmonic generation, reflectance confocal microscopy, and fluorescence lifetime imaging.

MPT enables visualization of key structural proteins such as collagen, elastin, and keratin, alongside pigment molecules such as melanin, and the important metabolic cofactors NADH and FAD, thereby providing optical metabolic imaging (OMI)¹. This information helps identify age-related skin changes, as well as allows researchers to assess how cosmetics or pharmaceuticals affect skin health, structure, and metabolic activity in vivo.

This presentation highlights the key applications of MPT in gerontology and cosmetic research, with a focus on ageing biomarkers and analysis of cellular metabolism.

Biography

Dr. Aisada König is a researcher at JenLab GmbH in Germany, where she specializes in biophotonics, multiphoton tomography, and femtosecond laser imaging. Her research focuses on the development and application of advanced, non-invasive optical imaging technologies for biomedical and clinical diagnostics. As a key member of the JenLab research team, she contributes to innovations that enhance the visualization of biological tissues with high spatial resolution, supporting both scientific research and medical practice.

Dr. König collaborates on the development and application of multiphoton imaging techniques that enable "virtual biopsies" of human tissues, including skin and corneas, allowing clinicians to evaluate tissue structure and detect conditions such as skin cancer without the need for invasive tissue removal. Her work bridges biomedical laser technology and clinical research, advancing the use of optical imaging for early disease detection, personalized medicine, and translational healthcare applications.

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Liu Sun, PhD, RN^a, Jun-E Liu, PhD^{a,*}, Meihua Ji, PhD^a, Yanling Wang, MS^a, Shaohua Chen, PhD^a, Lingyun Wang, BS, RN^b,

a School of Nursing, Capital Medical University, 10#, Xitoutiao, You An Men Wai, Feng Tai District, Beijing 100069, China

b Desheng Community Health Service Center, Capital Medical University, 34#, De Wai street, Beijing, China

Coping with multiple chronic conditions among Chinese older couples: A community of shared destiny

Multiple chronic conditions (MCCs) affect patients and their spouses. We explored the experience of Chinese older couples living with MCCs to gain deeper understanding of how they cope with MCCs as dyads. A qualitative research design using semi-structured in-depth interviews was conducted. Sixteen couples (≥ 60 years) were included and a thematic analysis was undertaken using NVivo software. Four themes under an overarching theme “A community of shared destiny” were identified: (i) various changes and impacts in normal life; (ii) perceived dynamic stress and dyadic challenges of MCCs; (iii) acceptance and reflection on MCCs influenced by aging and fatalism; (iv) mutual support and dyadic adjustment based on a shared destiny. Coping with MCCs was a dyadic and periodic journey for older couples. They perceived themselves as a community of shared destiny. Our findings are important for healthcare professionals to develop targeted interventions for older couples living with MCCs.

Keywords: Multiple chronic conditions; Dyadic coping; Older adults; Qualitative study

Biography

PhD, Master's Supervisor. Focuses on geriatric health, integrated care, and chronic illness management. Hosted two projects funded by the Beijing Social Science Foundation and has participated in several national and provincial-level research projects. Published more than 40 papers in Chinese and English, serves as a reviewer for several journals, and has co-authored several nursing textbooks. a member of the Working Committee at the Chinese Nursing, external Affairs Committee at the Beijing Nursing Association, and the Health and Rehabilitation Committee at the Chinese Society of Gerontology and Geriatrics, deputy director of the Community Nursing Committee at the Beijing Nursing Workers Association.

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**Uwe Till^{1*}, Hendrik Nieraad², Nina Pannwitz²,
Natasja de Bruin², Gerd Geisslinger^{2,3}**

¹Former Institute of Pathobiochemistry, University of Jena, Germany; ²Fraunhofer Institute for Translational Medicine and Pharmacology ITMP, Frankfurt am Main, Germany; ³Institute of Clinical Pharmacology, Frankfurt am Main, Germany

Prevention of cognitive impairment by B-Vitamins and omega-3-fatty acids - state of knowledge

Deficiency of folic acid and/or vitamin B12 is sensitively reflected by an increase of plasma homocysteine (Hcy). For both events are pathomechanisms known leading to typical Alzheimer-like alterations in brain. Moderately elevated plasma Hcy is a strong risk factor for Alzheimer disease and vascular dementia.

Among long chain polyunsaturated omega-3-fatty acids in particular the docosahexaenoic acid (DHA) is the main fatty acid in gray matter and thought to be of great importance to structure and function of brain. An inverse correlation between dietary intake of DHA and occurrence of cognitive decline is well known.

Moreover, there is a direct connection between the both above mentioned mechanisms as hyperhomocysteinemia leads via hypomethylation to diminished synthesis of phosphatidylcholine from DHA-rich phosphatidylethanolamine in brain. From numerous placebo-controlled intervention studies with the three B-vitamins (B6, B12, folate) those were selected which meet decisive criteria: primary preventive approach, increased Hcy starting level, study duration of at least two years, adequate vitamin dosage, proven decline in cognitive parameters in placebo group. Significant results of these studies in favor of the vitamins: reduction of the brain atrophy rate, significantly better values for dementia status, MMSE (mini mental state evaluation) and learning test.

There is a direct positive influence of plasma omega-3-fatty acid level on the effect of B-vitamins.

Biography:

Born February 8 at 1939 in Berlin, Germany, married, 3 children

1958-64 Medical Study at Jena-University

1964-76 Scientific Assistant at Jena-University, PhD, postdoctoral lecturing qualification

1976-93 Director of the Institute of Pathobiochemistry at Erfurt-Medical Academy

1984 chair of Pathobiochemistry

1993-99 Director of Centre of Vascular Biology and Medicine at Jena-University

1999-2004 Director of the Institute of Pathobiochemistry at Jena-University, then emeritus

200 publications in periodica, 30 monographs, 6 textbooks (among: „Homocystein-assoziierte Erkrankungen – Prävention und Therapie“, UNI-MED Verlag AG Bremen-London-Boston 2008)

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**M. Förster, V. Quinten, R. Puhlemann, M. Timper,
R. Diekmann**

Junior Research Group Nutrition and Physical Function in Older Adults, Department of Health Services Research, School of Medicine and Health Sciences, Carl von Ossietzky University of Oldenburg, German

Technical assistance system for monitoring mobility and nutrition of older adults for preventive care and healthy aging: A pilot study

With increasing life expectancy, preventive strategies that promote healthy aging and independence in old age by addressing early declines in mobility and nutritional status are highly important. However, it is often difficult for older adults to implement recommendations or therapies that have been started for physical activity or dietary adjustments in everyday life. This pilot study of the AS-Tra project (Assistance System for the Sustainable Improvement of the Nutritional and Mobility Status of Older Adults Considering the Transtheoretical Model of Behavior Change) investigates whether a technical assistance system, combining a tablet-based app with a measurement and training station (MuTS), can support older adults (≥ 70 years) in regularly assessing key indicators of mobility and nutrition as part of preventive care. Over a period of four weeks, a total of $n=10$ participants used the system regularly to perform standardized geriatric assessments (grip strength, Timed Up and Go, 5-Time Chair Rise) and training after one week (T0), two weeks (T1), and four weeks (T2). Their food intake was documented approximately twice (in the weeks before T0 and before T2) for three consecutive days each time using the tablet-based food diary. Validated questionnaires such as the Short Physical Performance Battery (SPPB) and the Mini Nutritional Assessment–Short Form (MNA-SF) were used at the beginning of the study (BL) and at T2 to assess mobility and nutritional status. The study shows that technology-based monitoring enables the collection of mobility and nutrition data. Overall, the results show that the AS-Tra system is well suited for independent use by older adults. This can contribute to supporting preventive care and maintaining mobility and adequate nutrition, thereby promoting healthy aging and longevity.

Keywords: Healthy Aging, Mobility, Nutrition, Technical Assistance System, Geriatric Assessments

Biography

I am holding a Master of Science in Bionics – Mobile Systems and a Bachelor of Science in Medical Engineering. Since 2023, I have worked as a research associate in medicine and health sciences focusing on user-centered development and evaluation of technical assistance systems for older adults at University Oldenburg. Since May 2025, I have been working at OFFIS (an institute affiliated with the university) in the department ‘Assistive Technologies for Care and Nursing’. My work includes projects on nutrition and mobility in aging populations, app development, and the implementation of digital solutions to support preventive care and independent living.

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Rainer Pooth

Clinical Research ICAAN, Germany

Revealing Healthy Aging: AI-Derived Facial Biomarkers for Early Detection and Patient-Centered Preventive Longevity Medicine

In longevity medicine, biological aging is commonly assessed using abstract biomarkers such as epigenetic clocks, blood-based parameters, and multi-omics data. While scientifically robust, these measures are often difficult for patients to intuitively understand and therefore provide limited motivational value for long-term therapy adherence.

We present an artificial intelligence-based approach that performs holistic facial analysis to derive three clinically interpretable indices: the Facial Youthfulness Index, Facial Aesthetic Index, and Skin Quality Index. These indices reflect systemic aging processes, including inflammaging, hormonal alterations, oxidative stress, and lifestyle-related effects.

Beyond static assessment, the system quantifies individual improvement potential and generates structured, personalized treatment strategies. This enables the face to serve as a visible, longitudinal outcome marker for longevity interventions, ranging from lifestyle modification and supplementation to regenerative and preventive medical therapies.

By translating molecular and systemic aging processes into an immediately perceivable and clinically actionable metric, this approach bridges the gap between biological aging assessment and patient-centered motivation, offering a novel tool for outcome monitoring and adherence optimization in longevity medicine.

Biography

Dr. Rainer Pooth is the Managing Director of ICAAN GmbH, a company based in the Frankfurt Rhine-Main Metropolitan Area, Germany. With an academic background from Johann Wolfgang Goethe University Frankfurt am Main, he combines scientific expertise with leadership experience in industry and innovation. In his executive role, Dr. Pooth is involved in strategic management, organizational development, and advancing the objectives of ICAAN GmbH.

Throughout his professional career, Dr. Pooth has contributed to the intersection of research, technology, and business development. His expertise reflects a commitment to applying scientific knowledge and strategic approaches to create innovative solutions and foster collaboration between academic and industrial environments. As a leader, he supports the growth of his organization while promoting research-driven approaches and sustainable advancement.

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Dr. Chanvit Tharathep, M.D., Dr. Somkiat Wattanasirichaigoon, M.D.*

**Program Director, Active Aging for Greater Empowerment Program (AGE⁺ Program), National Research Council of Thailand*

Integrated Active Aging Index (IAAI): From Individual-Level Quantification to Community-Based Active Aging Intelligence

As global populations age, conventional geriatric monitoring systems often fail to deliver real-time, holistic, and engaging mechanisms necessary for proactive care. There is a need for dynamic digital frameworks that not only ensure safety but also actively quantify and promote Active Aging through technology. This study addresses the research question: How can a multi-dimensional digital framework effectively quantify Active Aging at both individual and community levels while preserving data sovereignty for older adults with diverse physical capacities? The objective is to develop the Integrated Active Aging Index (IAAI) platform, a responsive digital ecosystem designed to assess and enhance four core dimensions of Active Aging: Security, Health Capacity, Social Participation, and Employment. The platform conceptualizes IAAI as an individual-level Active Aging Index, in which each senior generates a personalized four-dimensional AAI profile. Aggregated mean values of individual indices within a defined community subsequently form a community-level Active Aging Index, providing an area-based representation of aging capacity across the same four dimensions. Built on a React/TypeScript architecture with centralized state management (Zustand v5), the system categorizes users into three physical tiers—Seedling, Tree, and Forest. A gamification engine applies weighted multipliers to real-time step counts while penalizing fall events to generate a dynamic IAAI Total Index. Objective movement data are integrated with subjective self-assessment inputs into a unified dashboard. The platform adopts a Privacy-by-Design approach, with all data stored exclusively on-device, eliminating registration and cloud synchronization. This architecture ensures full data ownership and fosters trust among older users.

Keywords: Integrated Active Aging Index (IAAI), Gerontechnology, Privacy-by-Design, Digital Health Gamification, Multidimensional Assessment

Biography

A Thai physician and public health leader, he served as Deputy Permanent Secretary and Inspector General of Thailand's Ministry of Public Health. A pioneer in digital health, he implemented the nation's first Online Hospital Information System and helped architect the Universal Coverage Scheme. With deep expertise in aging society strategies, he directed the MoPH-JICA integrated welfare model for seniors. An alumnus of Harvard Business School (AMP 180) and a Fellow of the Royal College of Surgeons, he now integrates clinical expertise with system analysis to innovate gerontechnology via the Integrated Active Aging Index (IAAI) framework.

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Agata Żółtaszek

University of Lodz, Faculty of Economics and Sociology, Łódź, Poland

Spatial Gaps in Access to Specialized Healthcare for the Aging Population: A County-Level Analysis in Poland

As populations age globally, ensuring equitable access to specialized medical services becomes a critical challenge for public health systems. This study identifies and classifies patterns of accessibility to specialist clinics at the county level (LAU2) in Poland, with a specific focus on the elderly population (65+) and the access gap for chronic-care-related specialties between 2021 and 2024. Using unpublished data from the Statistics Poland (GUS) survey 1.29.07, the research evaluates 22 medical specialties essential for geriatric and long-term care. An arbitrary taxonomy method was employed to categorize 380 counties based on the intensity of use (visits per 1,000 residents) and the breadth of the local medical offer. The results reveal profound spatial inequalities, identifying numerous "healthcare deserts" where the aging population faces significant barriers to accessing vital specialties such as geriatrics, neurology, and cardiology. Even in highly urbanized areas, the availability of specialized care for seniors is often fragmented, failing to meet the demands of rapid demographic shifts. The findings suggest that the current hybrid model of healthcare delivery in Poland fosters regional polarization, leaving peripheral regions with insufficient resources. This study argues for a transition toward integrated spatial planning and the development of regional geriatric excellence centers. Such centers should be strategically located based on potential spatial accessibility models, accounting for travel time and distance for senior citizens. Understanding these local gaps is indispensable for implementing egalitarian health policies that effectively address the complex needs of an aging society.

Keywords: aging population, geriatric care, spatial accessibility, health disparities, Poland, specialist outpatient care

Biography

Agata Żółtaszek is a researcher specializing in health economics, socioeconomic, and labour market studies. Her methodological expertise includes statistical, econometric, and spatial analysis to evaluate healthcare system efficiency. Her current research emphasizes the impact of regional disparities on the health outcomes of the elderly in Central Europe, with a focus on identifying local access gaps in specialized care. By integrating spatial methods with economic drivers, she seeks to develop evidence-based recommendations for more equitable health policies in aging societies.

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Maria Nicoleta Turliuc & Leonti Raluca Maria

Alexandru Ioan Cuza University, Romania

Better and Healthier Together? The Mediation Effect of Positive Psychological Capital on the Relationship Between Perceived Social Support and Health-Related Quality of Life Among Older Adults

Objectives

This study aims to investigate the mediating effects of positive psychological capital (both as compound PsyCap and separate resources) in the relationship between social support and the two components of HRQoL: physical and mental health.

Method

We conducted the current cross-sectional study on a sample of 319 participants (114 male; 205 female) aged 65 to 90.

Results

The results indicated significant positive associations between social support, PsyCap, physical health and mental health. Compound PsyCap fully mediated the relationship between perceived social support and physical/mental health. Hope and optimism positively predicted physical health, while the same PsyCap resources, along with self-efficacy positively predicted mental health.

Discussion

The retirees that perceived increased social support presented higher levels of PsyCap, which in turn increased their physical and mental health. Our results highlighted some new explanatory mechanisms regarding the relationships between variables that affect health-related quality of life among older adults.

Biography

Professor Maria Nicoleta Turliuc is a Professor of Psychology at Alexandru Ioan Cuza University of Iași, Romania, where she is recognized for her contributions to psychological research, teaching, and academic leadership. Her work focuses on advancing the understanding of human behavior, interpersonal relationships, and psychological well-being through evidence-based research and higher education. Throughout her academic career, she has mentored students and contributed to the development of psychology as both a scientific discipline and a professional field.

Professor Turliuc's research encompasses family psychology, couple and interpersonal relationships, emotional development, parenting, and mental health across the lifespan. Through numerous scientific publications and collaborative projects, she has examined the psychological factors that influence relationship quality, resilience, and individual well-being. Her work continues to inform research, education, and professional practice in clinical, counseling, and developmental psychology.

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Dr. Roberto Grau

*Parque Científico de Madrid, Spain.
Juventas 4life SL, Spain / Kyojin SA, Argentina*

Probiotic interventions to expand healthy human longevity

Hippocrates proposed that all diseases originate in the intestine, and the Russian scientist Elie Metchnikoff proposed that human aging was caused by the “intestine putrefaction” (i.e., “gut dysbiosis”). Today, we are beginning to understand the genetic and molecular basis of how the intestinal microbiota (the trillions of microorganisms that inhabit the intestine), and in particular certain probiotics, could play a fundamental role in how slowly or how quickly a person ages (biological age versus chronological age). Our paradigm to prevent human aging and natural death itself is through the selection of key probiotic bacteria with anti-aging properties. Our model of study during the last 20 years is the probiotic bacteria of Japanese origin *Bacillus subtilis natto* DG101 (i.e., Kyojin Probiotic[®]). This probiotic has proven properties in the prevention of non-communicable diseases (diabetes, obesity) in addition to anti-aging and healthy prolongevity effects in human beings. In the *Caenorhabditis elegans* animal model, *B. subtilis natto* DG101 extends the animal's life expectancy by 40 to 50% without showing signs of animal aging. The extension of life expectancy occurred concomitantly with the maintenance of the animal's cognitive, neurological and locomotor capacities. In transgenic strains of *C. elegans* used as genetic models of Parkinson's and Alzheimer's diseases (strains that produce alpha-synuclein or with accelerated death of dopaminergic neurons, for Parkinson's; or that express the Beta-amyloid peptide, for Alzheimer's, PD and AD, respectively) the diseases did not manifest when the intestines were colonized with *B. subtilis natto* DG101, unlike the PD and AD animals in whose intestines *B. subtilis natto* DG101 was absent, which quickly became ill and died. Significantly, the prolongevity and neuroprotective effect of *B. subtilis natto* DG101 is primarily due to a FOXO- and Nrf2-dependent downregulation of the insulin-like signaling system (ILS) that precisely is a key player in the extended and healthy longevity of many human centenarians. Overall, the incorporation of *B. subtilis natto* DG101 (i.e., Kyojin Probiotic[®]) and other friendly gut bacteria (i.e., other *Bacillus* with live biotherapeutic properties) to the human diet represents a promising, non-genetic and safe intervention to slowdown, prevent or revert human aging.

Biography

Biochemist (Faculty of Biochemical and Pharmaceutical Sciences, National University of Rosario, UNR); PhD in Biological Sciences (UNR); International Master's in Human Microbiota (Technological University of Spain); Professor of the Diploma Program in Microbiota and Nutrigenomics at the University of Mendoza; advanced studies in Philosophy (Faculty of Humanities and Arts, UNR). Postdoctoral Fellow in Molecular Biology of Signal Transduction in Bacteria (The Scripps Research Institute, Department of Molecular and Experimental Medicine, San Diego, California, USA). University professor and researcher, Latin American Fellow of the Pew Charitable Trust in Biological Sciences (San Francisco, USA); Fulbright International Scholar (Washington, DC, USA). With 43 years of experience in scientific research; recipient of more than 20 national and international awards for his teaching and scientific career; director of more than 40 scientific research projects funded by national and international government agencies and private companies.

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He has published over 50 original articles in prestigious journals and given over 150 presentations at scientific conferences, supervised dozens of postgraduate and doctoral theses, trained over 50 professionals in science, been a visiting professor at more than 15 universities and research institutes worldwide (France, Spain, Germany, India, Japan, Brazil, Cuba, Chile, USA, UK), and founded and/or catalyzed the creation of half a dozen biotechnology companies, including Kyojin S.A. in Argentina and Juventas 4life SL in Spain. Current Research Topics of Interest: Role of Microbiota and Probiotics in Neuroprotection, Antitumor Therapies and Healthy Longevity.

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Marios Kyriazis

National Gerontology Centre, Cyprus

The role of neurodiversity in older people

The impact of neurodiversity conditions such as ASD (Autism Spectrum Disorder), and Attention Deficit Hyperactivity Disorder (ADHD) upon the older individual is considerable but not well studied. Chronic degenerative conditions which affect the brain, such as dementia, may share several symptoms with autism and ADHD, including behavioural, social and genetic elements. Both autism and ADHD are portrayed in the medical literature as adverse conditions, as disorders which need medical treatment, and this is a valid consideration to a large extent. However, both have positive aspects which need to be encouraged in older people so that they can reach their full potential, and ensuring that a correct diagnosis is made. Here, we explore the links between these neurodiverse and neurodegenerative conditions, providing insights which may be useful in a clinical setting. While the available research is still not sufficient, it is nevertheless important to be aware of how one condition affects the other, and what are the similarities and differences which can confuse the clinician who may provide the wrong diagnosis and treatment approach.

Keywords: Autism, ADHD, neurodiversity, older people, dementia

Biography

Qualified as a medical doctor (MD) from the University of Rome, Italy, and worked in acute medicine in the USA, Cyprus, and the UK. He subsequently qualified as a Gerontologist with interest in the biology of aging and became a Chartered Member of the academic organisation 'Royal Society of Biology' in the UK. He also has a post-graduate qualification in Geriatric Medicine from the Royal College of Physicians of London, and a Doctor of Science (Medical Research) in 2022. He is the scientific director of the National Gerontology Centre (Cyprus) in association with the Ministry of Health. His recent publications include papers on the complexity of aging, technology and society, clinical geriatrics, as well as books on hormesis.

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Xiaofeng Li, Songsheng Wang, Xia Hao, Hanxiao Jiang, Guiqiong He

Department of Geriatric medicine, The second Affiliate Hospital of Chongqing Medical University, Chongqing, China

POMGnT1 Deficiency Promotes Tau Hyperphosphorylation and Cognitive Impairment in Alzheimer's Disease

Protein O-linked mannose β 1,2-N-acetylglucosaminyltransferase 1 (POMGnT1) is a well-characterized mannosyltransferase widely distributed in the brain, and its dysregulation has been implicated in neurodegenerative diseases. Our research team found that POMGnT1 expression is downregulated while Tau protein phosphorylation levels are increased in the brain tissues of both Alzheimer's disease (AD) patients and AD mouse models. To elucidate whether POMGnT1 deficiency serves as a causative factor for Tau pathology in AD or merely represents an epiphenomenon during disease progression, we generated neuron-specific POMGnT1 conditional knockout (POMGnT1 cKO) mice and established POMGnT1-knockdown N2a cells. Furthermore, rescue experiments were conducted by overexpressing POMGnT1 in an N2a cell model stably transfected with the TauP301L plasmid (N2a-Tau). Cognitive function in mice was assessed using the Morris water maze test and open field test, while Tau phosphorylation levels in mouse brain tissues and cultured cells were examined via Western blotting (WB) and immunofluorescence (IF). Our results demonstrated that, compared to wild-type (WT) mice, 15-month-old POMGnT1 cKO mice exhibited cognitive decline and increased Tau hyperphosphorylation in the cerebral cortex and hippocampus. Similarly, POMGnT1 deficiency in cultured cells induced elevated Tau phosphorylation levels. Notably, overexpression of POMGnT1 in the rescue experiment reversed Tau hyperphosphorylation in the N2a-Tau cell model. Collectively, these findings demonstrate that POMGnT1 deficiency is a causative factor for Tau pathology in AD, suggesting that POMGnT1 may serve as a potential therapeutic target for this disease.

Keywords: POMGnT1, Tau phosphorylation, Alzheimer's disease, Conditional knockout mice, Neurodegeneration

Biography

Master's Supervisor, Deputy Director of the Department of Geriatrics at the Second Affiliated Hospital of Chongqing Medical University, and a "Kuanren Backbone Talent" at the Second Affiliated Hospital of Chongqing Medical University. She serves as Executive Committee Member of the Cognitive Impairment Branch of the Chinese Geriatrics Society. She has studied abroad in the United States and Canada. She has been engaged in neurology for 27 years. Her main research interests include the mechanisms, diagnosis, and treatment of memory decline, cognitive dysfunction, and dementia. She has published 70 academic papers.

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Roushan Zhang, Jian Ma, Li Wang*

**Corresponding Author, Department of Cardiology, The Second Affiliated Hospital of Chongqing Medical University, Chongqing, China*

Cardiometabolic multimorbidity in relation to the metabolic score for insulin resistance and creatinine-to-cystatin C ratio in a middle-aged and aged population

Objective

With the aging population, cardiometabolic multimorbidity (CMM) has become a major public health concern, increasing disease burden and impairing quality of life. The metabolic score for insulin resistance (METS-IR) and creatinine-to-cystatin C (CCR) are promising biomarkers linked to metabolic dysfunction and muscle-renal status, respectively. However, their combined effects on cardiometabolic multimorbidity (CMM), especially in both community and hospitalized populations, remain unclear. This study aims to explore the associations of METS-IR, CCR, and $1/CCR \times METS-IR$ (MRII) with CMM using data from the China Health and Retirement Longitudinal Study (CHARLS) and clinical sources.

Research design and methods

This cross-sectional study included 10,811 participants from the 2014–2015 CHARLS follow-up and 437 elderly inpatients from the Second Affiliated Hospital of Chongqing Medical University. CMM was defined as the coexistence of two or more of heart disease, diabetes, and stroke. METS-IR and CCR were calculated using standard formulas.

Logistic regression analyses with multi-model adjustment, restricted cubic spline (RCS) curves, receiver operating characteristic (ROC) curves, and subgroup analyses were performed to assess associations, nonlinear relationships, predictive value, and effect modification.

Results

In both datasets, participants with CMM had higher METS-IR, older age, and higher prevalence of metabolic risk factors. METS-IR was independently and dose-dependently associated with increased CMM risk. CCR showed context-dependent associations, with inverse links in partially adjusted CHARLS models but no significance in clinical data. The “Low CCR and High METS-IR” combination and highest quartile of MRII were consistently linked to elevated CMM risk. METS-IR had moderate predictive value (AUC = 0.712 in CHARLS, 0.618 in clinical data), outperforming CCR. RCS curves revealed linear associations for METS-IR and U-shaped patterns for CCR in CHARLS. Subgroup analyses showed heterogeneity by age, comorbidities, and hypertension.

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Conclusion

METS-IR is a robust independent predictor of CMM in both community and hospitalized populations, while CCR's role is context-dependent. The MRII enhances CMM risk stratification, highlighting the value of concurrent assessment of metabolic and muscle-renal status for CMM prevention and personalized risk management.

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Dr. Charles P Virden M.D

VitalTE Lifesciences, INC, Canada

Testosterone pellet surface area relates to effectiveness more than dose

This study evaluates the relationship between testosterone pellet surface area versus total dose and resultant serum testosterone levels over a three-month period in men undergoing subcutaneous hormone therapy. Traditional paradigms have emphasized total milligram dosing as the primary determinant of therapeutic effect. However, this investigation challenges that assumption by examining the pharmacokinetic impact of pellet surface area on hormone diffusion and bioavailability.

Men presenting with symptomatic hypogonadism and baseline testosterone levels between 350–600 ng/dL were treated with subcutaneous pellets and followed longitudinally. Outcomes demonstrate that increased surface area, independent of total dose, correlates more consistently with sustained therapeutic serum testosterone levels. These findings suggest that tissue interface dynamics and diffusion characteristics play a critical role in hormone delivery efficiency.

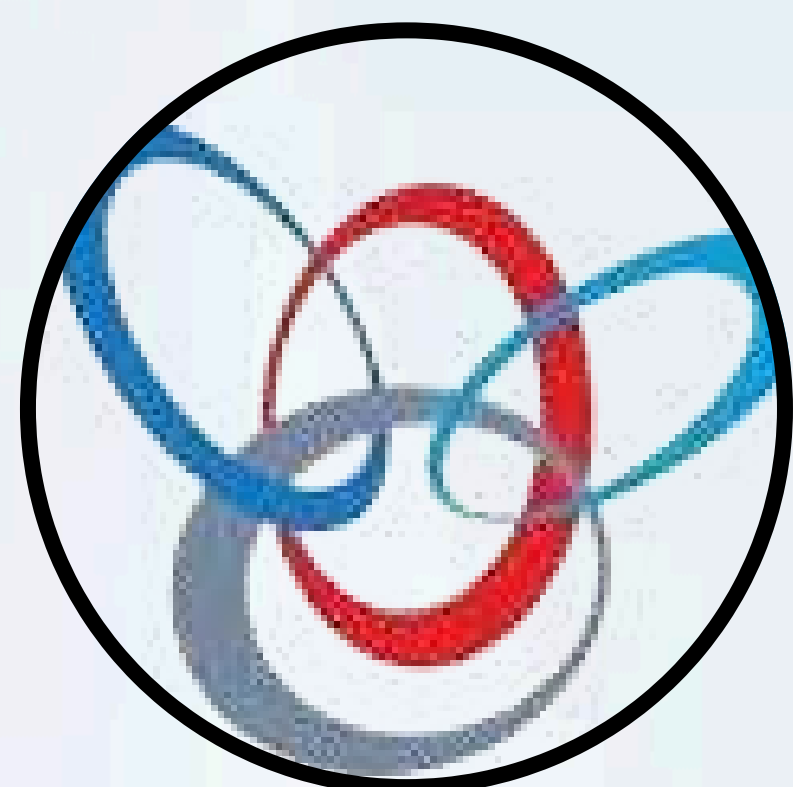
The implications are significant: optimizing pellet geometry and placement technique may allow for reduced total dosing while maintaining or improving clinical outcomes. This paradigm shift supports a move toward more precise, physiology-driven hormone replacement strategies, with potential benefits including improved safety, reduced side effects, and enhanced patient compliance in aging male populations.

Biography

Dr. Charles P. Virden, M.D., is a double board-certified plastic surgeon and anti-aging medicine specialist with over 30 years of clinical experience, having treated more than 40,000 patients. He is the CEO of VitalTE Life Sciences and an innovator in hormone therapy delivery, holding multiple patents for medical devices and procedural methods that enhance safety, efficacy, and patient experience. His work focuses on optimizing drug delivery dynamics, including tissue preservation and surface area optimization in pellet therapy. Outside of medicine, he maintains humility through an ongoing, humbling effort to improve his pickleball game.

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A Pharmacogenetic Panel-Based Prediction of the Clinical Outcomes in Elderly Patients with Coronary Artery Disease

Current longevity research primarily focuses on molecular and cellular hallmarks of aging, including senescence, mitochondrial dysfunction, genomic instability, and metabolic regulation. While these mechanisms are critically important, functional decline in aging humans may also involve an underrecognized neurogenic hierarchy that precedes visible frailty, loss of movement quality, and reductions in explosive physical capacity.

This presentation introduces a framework referred to as the “Hidden Hierarchy of Aging,” which explores how age-related deterioration in predictive motor systems, descending neural drive, rapid signaling capacity, motor unit behavior, and fast-twitch muscular function may contribute to functional aging long before substantial muscle loss becomes visible.

Keywords: pharmacogenes; polypharmacy; panel; coronary artery diseases; elderly patients

Biography:

Prof. Tong Yin serves as the Vice Director of the Institute of Geriatrics at the National Clinical Research Center for Geriatric Diseases (NCRCGD), Second Medical Center of the PLA General Hospital. She concurrently holds the positions of the Vice President of the Comorbidity Precision Diagnosis and Treatment Branch of the Chinese Society of Geriatrics, Deputy Chair of the Pharmacogenomics Branch of the Chinese Society of Pharmacology, and Director of the Academic Department of the NCRCGD. She is dedicated to pharmacogenomics and multi-omics research, clinical translation, and application of precise medication for cardiovascular diseases and elderly comorbidities.

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Acid-Base Dysregulation Links Aging Metabolism to Frailty

Frailty in older adults, modelled either as an accumulation of health deficits or a phenotypic energetic collapse, is characterized by heightened vulnerability and reduced physiological reserve. Despite these established diagnostic frameworks, the fundamental pathophysiology connecting cumulative stress to systemic energy failure remains incompletely understood. We propose that the dysregulation of acid-base balance is a critical, yet underappreciated mechanism driving this collapse. In a narrative review, we examine how aging-related cumulative stress and mitochondrial dysfunction escalate acid load alongside disease and deficit accumulation. This accumulating metabolic acid strongly taxes the diminishing capacity for intracellular and extracellular buffering, renal acid excretion, and ventilatory reserve, causing subtle acidosis. Subtle acidosis further reduces mitochondrial ATP production, driving system-wide inefficiency and accelerating the accumulation of deficits. It also prompts compensatory responses such as fatigue and reduced activity to lower the metabolic acid load. To preserve serum pH, skeletal muscle, bone, liver, and kidneys cooperate to mobilize base reserves and redirect amino acid metabolism for renal acid elimination. However, this critical adaptation occurs at the direct expense of musculoskeletal integrity, driving sarcopenia and osteoporosis. The "shrinking iceberg" metaphor illustrates this frailty progression: repeated stressors silently erode acid buffers and energy reserves, rendering individuals vulnerable to homeostatic and multiorgan failure during acute stress. Crucially, this metabolic acid model bridges Rockwood's deficit accumulation with Fried's phenotype, unifying two foundational concepts of frailty. Recognizing this specific pathophysiology suggests novel therapeutic targets (diet, exercise, buffering) to preserve metabolic reserve and delay frailty.

Keywords: Frailty, Physiological reserve, Metabolic buffer, Sarcopenia

Biography

As a clinical geriatric fellow at MacKay Memorial Hospital, I deliver holistic care across both hospital and home-based settings, anchored in a deep passion for the pathophysiology of aging. With a PhD from ETH Zurich, an MD from Poznan University of Medical Sciences, and a foundation in Life Science from NTU, I leverage over a decade of training to bridge the gap between molecular research and clinical practice.

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Tony Ruggia

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The Hidden Hierarchy of Functional Aging: Neuromuscular Decline, Predictive Movement Systems, and the Overlooked Role of Motor Units in Longevity

Clinical annotations for the actionable pharmacogenetic variants affecting the efficacy of cardiovascular drugs have been collected, yet their impacts on elderly patients with coronary artery disease (CAD) undergoing polypharmacy remain uncertain. We consecutively enrolled 892 elderly patients (mean age 80.7 ± 5.2) with CAD and polypharmacy. All the included patients underwent genotyping for 13 variants in 10 pharmacogenes (CYP2C19, CYP2C9, CYP4F2, CYP2D6, VKORC1, SLCO1B1, APOE, ACE, ADRB1, and MTHFR), which have the clinical annotations for 12 drugs that are commonly prescribed for patients with CAD. We found that 80.3% of the elderly CAD patients had at least one drug-gene pair associated with a therapeutical drug change. After adjusting for covariates, the number of drug-gene pairs was independently associated with a decreased risk of both major cardiovascular events (MACEs) (adjusted hazard ratio [HR]: 0.803, 95% confidence interval [CI]: 0.683–0.945, $p = 0.008$) and all-cause mortality (adjusted HR: 0.848, 95% CI: 0.722–0.996, $p = 0.045$), but also with an increased risk of adverse drug reactions (ADRs) (adjusted HR: 1.170, 95% CI: 1.030–1.329, $p = 0.016$). The Kaplan–Meier survival curves showed that compared to patients without a drug-gene pair, a significantly lower risk of MACEs could be observed in patients with a drug-gene pair during a 4-year follow-up (HR: 0.556, 95% CI: 0.325–0.951, $p = 0.013$). In conclusion, the carrier status of the actionable drug-gene pair is predictive for the clinical outcomes in elderly patients with CAD and polypharmacy. Implementing early or preemptive pharmacogenetic panel-guided polypharmacy holds the potential to enhance clinical outcomes for these patients.

Particular attention will be given to:

- cerebellar predictive processing and internal movement models,
- rapid force production and the first milliseconds of neuromuscular activation,
- age-related suppression of firing rates and motor unit recruitment,
- decline in movement adaptability and coordination,
- and the distinction between muscle mass preservation and functional neuromuscular preservation.

The presentation also explores the possibility that conventional biological age assessments may insufficiently capture real-time neuromuscular performance, movement prediction, and dynamic functional capacity.

In addition to theoretical discussion, the presentation will include practical demonstrations illustrating aspects of explosive movement, coordination, and functional neuromuscular performance as they relate to aging and longevity.

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The goal is not to replace existing hallmarks-of-aging frameworks, but to propose that functional neural systems and motor-unit-related decline may represent an important and underappreciated dimension of the aging process deserving greater attention in longevity science.

Biography

Tony Ruggia is a longevity advocate, educator, and movement-focused health professional dedicated to uncovering the real science of aging. Through his platform, I Am Longevity, he explores evidence-based approaches to extending healthspan by emphasizing the essential roles of physical power, strength, and functional movement throughout life.

His work challenges conventional views of aging by promoting movement as a cornerstone of long-term health, independence, and resilience. Tony combines scientific research with practical strategies to help individuals build stronger bodies, improve physical performance, and adopt sustainable habits that support healthy aging.

Passionate about translating complex longevity research into actionable insights, Tony educates audiences on the connections between exercise, muscle health, metabolic fitness, and overall well-being. His mission is to empower people to take control of the aging process through informed lifestyle choices, enabling them to maintain vitality, mobility, and quality of life for years to come.

Through educational content, speaking engagements, and community outreach, Tony Ruggia continues to inspire individuals to embrace strength, movement, and evidence-based health practices as the foundation for living longer, healthier, and more active lives.

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Pupillary responses as non-invasive biomarkers of cognitive decline in aging

Early detection of cognitive decline is a key issue for improving preventive strategies and maintaining autonomy in an ageing population. Locus Coeruleus plays a central role in supporting cognitive functions, and its dysfunction has been linked to age-related cognitive decline. Task-evoked pupillary responses provide a non-invasive index of this system's integrity, as they reflect mental effort and cognitive resource allocation. Pupil dilation typically increases with cognitive demand but decreases when resources are depleted or engagement diminishes, reflecting cognitive disengagement. To examine whether pupillary dynamics may serve as an early marker of cognitive decline, healthy younger and older adults completed an auditory working memory task under low, moderate, and high cognitive load while pupil size was continuously recorded. The data showed accuracy declined similarly across both groups as cognitive load increased. However, a clear divergence emerged under higher demands: younger adults showed flexible, load-dependent pupillary modulation, whereas older adults exhibited significantly reduced pupillary reactivity under moderate and high loads. This reduced dilation was associated with age and Stroop interference scores, indicating a link with executive inhibitory control. Overall, these findings suggest that attenuated pupillary responses in cognitively healthy older adults may reflect early functional alterations in the locus coeruleus–noradrenergic system before overt behavioural deficits emerge. Pupillary reactivity may therefore represent a sensitive, non-invasive biomarker of cognitive integrity.

Keywords: Aging, cognitive load, working memory, pupillometry, prevention

Biography

After a career in geriatric services focused on the screening of cognitive disorders and in clinical research, I turned towards prevention in 2018 with the creation of the Centre de Prévention Santé Longévité at the Institut Pasteur de Lille. My passion for research led me to pursue a PhD in psychology. My work focuses on potential non-invasive biomarkers of cognitive aging and cognitive decline, particularly pupillary responses. I am especially interested in the mechanisms underlying cognitive aging, with a focus on attention, executive functioning, and in the locus coeruleus–noradrenergic system as a key pathway involved in age-related cognitive changes.

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Sensorimotor Training Elicits Comparable Strength Gains to Resistance-Endurance Training While Improving Balance-Related Factors Associated with Fall Prevention in Older Women

Aging is associated with declines in muscle strength, postural control, and functional performance, contributing to an increased risk of falls, mobility limitations, and loss of independence. While resistance training is considered an effective strategy for attenuating these age-related changes, alternative exercise modalities may be needed for older adults who are unable or unwilling to perform conventional resistance exercise. The study aimed to investigate the effects of sensorimotor training on muscle strength, postural control, and functional performance in older women and subsequently determine whether these adaptations differ from those induced by traditional resistance-endurance training. Thirty-three healthy women aged 65–80 years, with no previous experience in resistance or sensorimotor training, no participation in organized sports during the preceding five years, and no engagement in systematic physical activity, were randomly assigned to a resistance-endurance training group (RET, $n = 11$), a sensorimotor training group (SMT, $n = 11$), or a control group (CG, $n = 11$). Both intervention programs lasted 10 weeks. Strength, postural control, and functional performance were assessed before and after the intervention. Both RET and SMT resulted in significant improvements in maximal and relative lower-limb strength, with no significant differences between the intervention groups. However, only SMT produced significant improvements in postural control and stair-climbing performance, whereas maximal walking speed remained unchanged. No improvements were observed in the control group. These findings indicate that sensorimotor training elicits strength gains comparable to those achieved through resistance-endurance training in previously untrained older women while providing additional benefits for balance and functional mobility. Sensorimotor training may therefore represent an effective strategy for enhancing physical capacities associated with fall prevention and functional independence in older adults.

Keywords: aging, sensorimotor training, strength, balance, mobility, older adults

Biography

Mgr. Ľubica Žiška Böhmerová, PhD. is an Assistant Professor at the Faculty of Physical Education and Sport, Comenius University in Bratislava, Slovakia. Her research focuses on motor abilities, balance assessment, sensorimotor functions, strength diagnostics, and exercise interventions across the lifespan, with particular emphasis on older adults and children. She has extensive experience in the assessment of postural control and motor performance and has participated in several national research projects. Her scientific work includes publications in peer-reviewed journals indexed in Web of Science and Scopus. She is also actively involved in applied sport practice as a coach of artistic gymnastics.

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Saba Zahid Hayat

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A Buffering Role of Perceived Social Support and Resilience between Caregiver Burden and Perceived Stress among Informal Caregivers of Dementia Elderly Patients

Background

The psychological health of caregivers of dementia patients is at risk due to excessive burden, stress, and emotional strain. The study aimed to investigate the relationship between caregiver burden, perceived stress, resilience, and perceived social support among informal caregivers of dementia patients.

Method

A purposive and snowball sampling technique was used to recruit a sample of 101 adult informal caregivers (immediate family members) of dementia patients, ranging in age from 18 to 60 years. Data were collected using English versions of the Caregiver Burden Scale (Zarit, 1980), the Brief Resilience Scale (Smith et al., 2008), the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), and the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988). SPSS - 27 and PROCESS Macro (Model 6) by Hayes (2022) were employed for data analysis.

Result

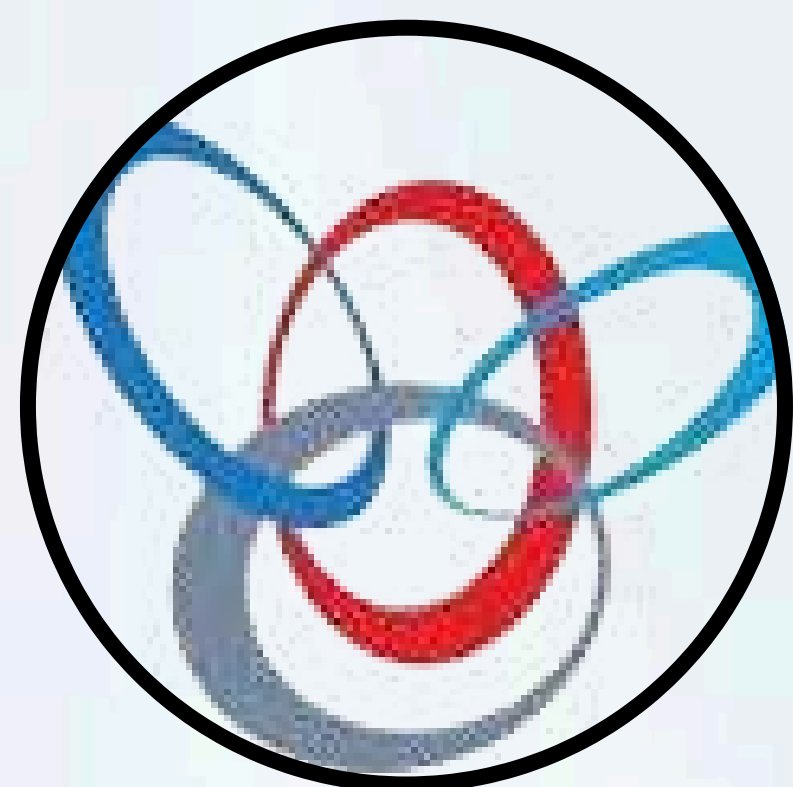
The findings supported the hypothesized relationships among all tested variables. Serial mediation revealed that perceived social support and resilience partially mediated the relationship between caregiver burden and perceived stress. However, no significant interaction was found between perceived social support and resilience in predicting perceived stress. The results suggest that both perceived social support and resilience are important buffers between caregiver burden and perceived stress. Additionally, sociodemographic analyses indicated that the caregiver burden varied according to the type of caregiving responsibilities informal caregivers provided.

Conclusion

The study expands existing caregiving models by testing the buffering roles of social support and resilience among Pakistan informal dementia caregivers. The study highlights that, alongside elderly patients, their informal caregivers also require psychological support and intervention. It emphasizes the importance of developing intervention-based programs to reduce excessive burden and perceived stress among informal caregivers of dementia patients in Pakistan.

Keywords: Dementia, caregivers of dementia, Alzheimer's, elderly/old population Gerontology, Longterm Care, Ageing

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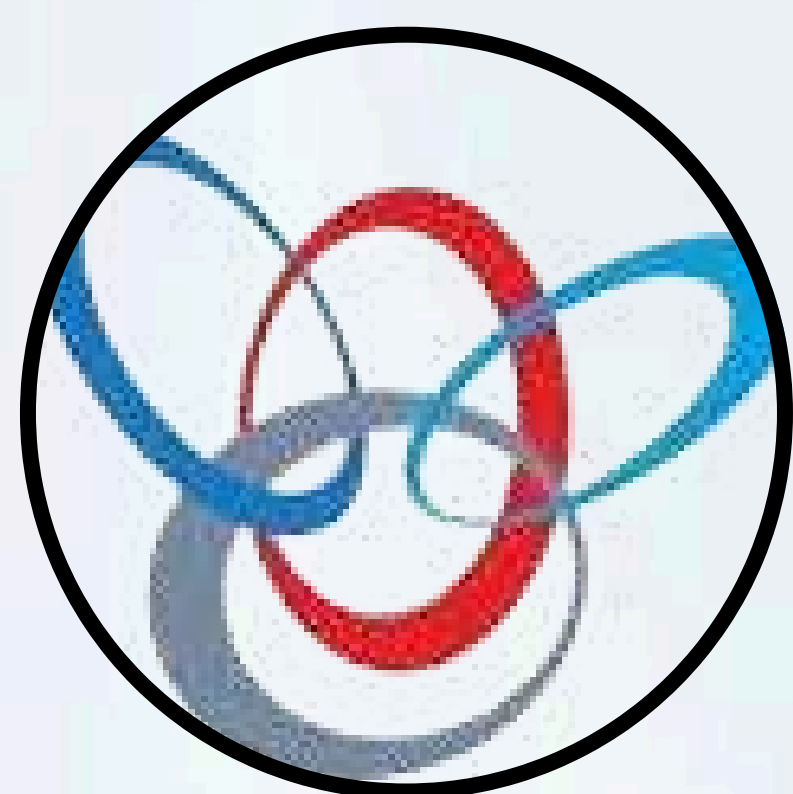
Dalia Salih

Walsall Healthcare NHS Trust, UK

Fulminant Sporadic Creutzfeldt-Jakob Disease Presenting as Rapidly Progressive Confusion: A Case Report

We describe an elderly woman who presented with a two-week history of progressive confusion and myoclonus, ultimately diagnosed with sporadic Creutzfeldt-Jakob disease (sCJD). Despite extensive investigations and empirical treatment for alternative causes, her condition rapidly deteriorated and she died within five weeks of symptom onset. Post-mortem cerebrospinal fluid (CSF) RT-QuIC testing confirmed the diagnosis. This case highlights the diagnostic challenges of sCJD and the importance of early recognition in rapidly progressive dementias.

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Heesu Jinnie Jeon

Adler University, USA

Creative engagement as a pathway to healthy aging in dementia

As the global population ages, dementia continues to challenge healthcare systems to move beyond symptom management toward approaches that support quality of life, participation, and personhood. Although pharmacological treatments remain important, there is increasing recognition that healthy aging also requires interventions that preserve dignity, autonomy, and meaningful engagement.

This presentation examines how individualized art therapy may contribute to healthy aging among older adults living with dementia. Guided by the Expressive Therapies Continuum (ETC)—a conceptual framework originally developed by Vija B. Lusebrink and further developed by Lisa D. Hinz to understand information processing through art-making and to individualize therapeutic interventions—the presentation explores how creative engagement can build on preserved strengths despite progressive cognitive decline.

Evidence is drawn from a randomized controlled study conducted in a Canadian complex care setting involving older adults living with dementia. Participants received either an ETC-informed, individualized art therapy intervention or standard art activities for approximately 4 months. Outcomes included cognitive functioning, quality of life, and patterns of creative engagement.

Participants who received the ETC-informed intervention demonstrated improvements in language-related cognitive functioning and quality-of-life indicators compared with the comparison group. Clinical observations further revealed sustained engagement, visual organization, purposeful decision-making, and meaningful participation throughout the art-making process. These findings suggest that individualized art therapy may support communication, cognitive functioning, and psychosocial well-being while creating opportunities for expression, connection, and continued participation.

Beyond reporting research findings, this presentation considers the broader implications for interdisciplinary dementia care. It argues that person-centred interventions should focus not only on managing cognitive decline, but also on recognizing and building upon the capacities that remain. Supporting healthy aging is ultimately about creating opportunities for purpose, connection, dignity, and meaning throughout the dementia journey.

Keywords: Dementia; Healthy Aging; Art Therapy; Expressive Therapies Continuum; Person-Centred Care; Quality of Life

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Nataliia Koziukevych

NATA-LUX Beauty & Training, Munich, Germany

Ultrasound and Its Effects on the Skin: Biophysical Mechanisms and Practical Applications for Supporting Skin Health

The skin is the largest organ of the human body and performs essential barrier, protective, immune, and regulatory functions. With ageing, as well as under the influence of environmental factors, the skin undergoes structural and functional changes, including impaired microcirculation, slower cellular metabolism, reduced regenerative capacity, and deterioration of barrier function. As interest in the concept of healthy ageing continues to grow, increasing attention is being given to non-invasive approaches that support skin health and maintain its physiological functions.

This presentation explores the biophysical mechanisms through which ultrasound waves interact with skin tissues and examines their practical relevance in contemporary aesthetic practice. Particular attention is given to the transmission of acoustic energy through the skin, mechanical stimulation of tissues, acoustic microstreaming, temporary enhancement of stratum corneum permeability, improvement of local microcirculation and lymphatic drainage, as well as the influence of ultrasound on the extracellular matrix and cellular activity.

Special focus is placed on sonophoresis as a method for enhancing the penetration of active ingredients through the skin barrier and its role in supporting physiological skin processes. The presentation discusses the application of ultrasound for both younger skin affected by dehydration, impaired barrier function, and post-inflammatory changes, and ageing skin characterized by slower metabolic activity and reduced regenerative potential.

Based on current scientific knowledge and extensive practical experience with ultrasound technologies in device-based cosmetology and skin health management, this presentation highlights how a deeper understanding of ultrasound-tissue interactions can support evidence-informed practice. Ultrasound may serve as a valuable non-invasive tool for maintaining skin health, improving skin quality, and supporting overall well-being and quality of life within the framework of healthy ageing.

Keywords: ultrasound, skin health, sonophoresis, microcirculation, barrier function, device-based cosmetology

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Biography

Nataliia Koziukevych is a practicing specialist in device-based cosmetology and an educator at NATA-LUX Beauty & Training in Munich, Germany. She specializes in non-invasive skin quality improvement technologies, device-based cosmetic procedures, and skin health management. With extensive practical experience working with clients of different age groups and various skin conditions, she focuses on evidence-informed approaches that combine skin physiology, modern device-based technologies, and clinical practice. Through her educational and professional activities, she contributes to the development of safe and effective treatment protocols aimed at maintaining skin health, improving skin quality, and supporting healthy ageing.

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Thomas Klaholz

Rheinische Friedrich-Wilhelms-Universität Bonn, Germany

The 7 Secrets of a Long & Healthy Life : An interdisciplinary approach to a holistic healthy aging strategy

The dream of healthy aging remains out of reach for the vast majority of individuals. Statistically, only one in twelve people will be able to say at the age of 80: "I am healthy and feel vital." However, evidence suggests that with appropriate interventions and lifestyle choices, this outcome is within reach for many more. This presentation invites you to engage in a data-driven exploration of the determinants of longevity and vitality. We will examine current scientific insights into the biology of aging and explore seven key evidence-based strategies for promoting healthy aging. In conclusion, we will consider a potentially foundational yet often overlooked factor – the so-called 8th secret to healthspan optimization.

Overview of topics:

- The road to potential immortality: what are the biological limits of human lifespan?
- Longevity vs. healthspan: why aging well is more important than simply aging longer
- The root causes of aging, disease and death
- Key questions of healthy aging:
 - What are the current biological and environmental barriers to healthy aging?
 - Which interventions have demonstrated efficacy in delaying or mitigating age-related decline?
 - What proactive measures can individuals take?

Biography

Thomas Klaholz is a longevity, healthy aging, and personal development expert dedicated to helping individuals and organizations build healthier, more fulfilling lives. His work centers on the belief that living longer should also mean living healthier, happier, and with greater purpose.

He encourages people to reflect on and improve both their professional and personal lifestyles by adopting healthier nutrition, increasing physical activity, managing stress more effectively, and strengthening positive social relationships. His approach emphasizes that sustainable health and wellbeing are achieved through conscious behavioral change rather than chance.

In the business world, Thomas supports organizations in fostering healthy workplace cultures, developing resilient leadership, and driving positive organizational change. He believes that personal growth and organizational success go hand in hand, creating environments where individuals and teams can thrive.

A strong advocate of preventive health and behavioral change, Thomas views health promotion as an ongoing process of personal maturity and continuous development. He emphasizes that happiness is not a matter of luck but the result of intentional effort, describing it as "an achievement of the soul"—both for individuals and for groups working together toward shared wellbeing.