University of Rijeka, Faculty of Medicine
Department of Social Medicine and Epidemiology

12^{th} INTERNATIONAL PROFESSIONAL AND SCIENTIFIC SYMPOSIUM

"HEALTH FOR ALL?! HEALTH IN URBAN ENVIRONMENT"

BOOK OF ABSTRACTS

June 12^{th} 2025 Rijeka, Croatia

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Welcome Message

It is a great honour and pleasure to welcome you to the 12^{th} International Professional and Scientific Symposium entitled "Health for All?! Health in Urban Environment", taking place on June 12, 2025 at the Grand Hotel Bonavia, Rijeka, Croatia. The focus of this year's symposium is on health in the urban environment. Although urbanisation has shaped human civilisation for thousands of years, it has accelerated dramatically in recent decades. Today, almost 60% of the world's population lives in cities, resulting in a series of complex and interwoven challenges that global society must address.

Urbanisation has a profound impact on public health and contributes to the increase in chronic non-communicable diseases (NCDs), environmental risks and social inequalities. In light of these challenges, this symposium is focussed on several Sustainable Development Goals (SDGs) of the United Nations:

- SDG 3: Good Health and Well-being – Addressing urban health risks, including air pollution, physical inactivity and mental health challenges.
- SDG 6: Clean Water and Sanitation – Ensure access to safe drinking water and adequate sanitation in urban areas.
- SDG 7: Affordable and Clean Energy – Promote clean energy solutions to reduce air pollution and its health impacts.
- SDG 11: Sustainable Cities and Communities – Promote urban planning and policies that promote health, well-being and resilience.
- SDG 13: Climate Action – Address climate challenges and their impact on public health.

The aim of this year's symposium is to bring together experts in the field of urban environment and health, professionals specialised in chronic diseases and urban lifestyles, stakeholders that define public health policies and interventions for healthier cities as well as representatives of IT companies whose knowledge and innovations can make an important contribution to the concept of future cities. Another aim of the symposium is to present examples of good practise in the implementation of this concepts as well as strategies and measures related to health in the urban environment in order to exchange experiences and knowledge.

The dynamic and informative programme of the symposium includes invited lectures and presentations by internationally renowned experts on four topics:

- Urban environment and health (Subsections: Conceptual models linking urbanisation and public health, impact of urban design, infrastructure and green spaces on health, socio-economic inequalities in health outcomes in cities, climate change as well as air pollution and its health impacts in cities);
- Chronic diseases and urban lifestyles (Subsections: NCDs and urban lifestyles (cardiovascular diseases, diabetes, respiratory diseases), urban food environments and their role in obesity and malnutrition, physical activity, active mobility and access to recreational spaces and mental health challenges for urban populations);
- Public health policies and interventions for healthier cities (Subsections: Strategies for urban planning that promote well-being, sustainable transport, walkability and active mobility in the city, housing quality, urban poverty and social determinants of health, community-based initiatives and participatory health interventions);
- Future cities: innovations and smart health solutions (Subsections: Digital health and smart city solutions for public health, Data-driven urban epidemiology and health surveillance, the role of AI, GIS and Big Data in urban health research and Resilient cities: Preparing for future pandemics and climate-related health risks).

We are delighted to present the Book of Abstracts, featuring the scientific and professional contributions of our participants. We look forward to your active participation in the 12^{th} Symposium and wish you an enjoyable and productive stay in Rijeka.

On behalf of the Organising Committee,

Professor Tomislav Rukavina, MD, PhD

Conference Program Schedule - June 12th 2025

Time	Title	Speaker / Affiliation
09:00-10:00	**Registration**	
09:45-10:00	**Welcome address**	Professor Tomislav Rukavina, MD, PhD Tamara Alhambra-Borrás, PhD *Coordinator of the HORUS project* Professor Goran Hauser, MD, PhD *Dean of the Faculty of Medicine, University of Rijeka*
10:00-10:15	**Official handover ceremony of the "Health Barometer of the City of Rijeka Residents" to the representative of the City of Rijeka**	
SESSION 1: Urban Environment and Health		
10:15-10:25	Healthy Cities: Myth or (Easily) Achievable Reality?	Vjeran Piršić, President *Eko Kvarner Association, Njivice, Island of Krk, Croatia* Katarina Kozina Popović *Slow Food Slavonica, Nuštar, Croatia*
10:25-10:30	Conceptual Models Linking Urbanization and Public Health: The Case of the Project "Biosafety and Biosecurity in Primary and Secondary Schools in Bosnia and Herzegovina"	Professor Jurica Arapović, PhD, MD *School of Medicine, University of Mostar and Center for Disease Control and Geo-Health Studies of the Academy of Sciences and Arts of Bosnia and Herzegovina*
10:30-10:35	Heat Waves and Cardiovascular Risk	Assistant professor Ana Jelaković, PhD, MD *Clinical Hospital Centre Zagreb, Croatia*
10:35-10:40	The Landscape in the Service of Health and Wellbeing	Professor Iva Sorta Bilajac Turina, PhD, MD *Teaching Institute of Public Health of the Primorje - Gorski Kotar County, Rijeka, Croatia*
10:40-10:45	The Health of the City and the "Pollution by Tourism": Breaking Points	Professor Amir Muzur, MD *University of Rijeka, Faculty of Medicine and Faculty of Health Studies*

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Table 1 – *Continued from previous page*

Time	Title	Speaker / Affiliation
10:45-10:50	Trumpism and Climate Change – Drill Baby Drill	Associate professor Aleksandar Racz, PhD, MD *University of Applied Health Sciences, Zagreb, Croatia*
10:50-11:00	**Discussion**	

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Table 1 – *Continued from previous page*

Time	Title	Speaker / Affiliation
SESSION 2: Chronic Diseases and Urban Lifestyles		
11:05-11:15	The Silent Killer is Everywhere	Academician Bojan Jelaković, PhD, MD *Clinical Hospital Centre Zagreb, Croatia*
11:15-11:20	Incidence of Type II Diabetes Mellitus According to Socioeconomic Status and Sex in the City of Valencia (Spain)	Susana Rovira-Llopis, PhD *FISABIO, Valencia, Spain*
11:20-11:25	Nutrition in Urban Environment and Its Role in the Prevention of Chronic Non-Communicable Diseases: Strategies for Promoting Healthy and Sustainable Diets	Assistant professor Gordana Kenđel Jovanović, PhD *University of Rijeka, Faculty of Medicine, Rijeka, Croatia*
11:25-11:30	The Role of Rural and Urban Geography in Community Stigma Around Mental Illness and Obesity – Sneak Peek on Evidence and Research Proposal	Ida Štimac *University of Rijeka, Faculty of Medicine, Rijeka, Croatia*
11:30-11:35	Urban Living and Kidney Health: A Syndemic Approach to Prevention and Management in Nephrology	Marijana Vučković, MD *Clinical Hospital Centre Split, Croatia*
11:35-11:40	City of Zagreb: Non-Communicable Diseases and Urban Life	Ivana Šućur, MD *Teaching Institute of Public Health "Dr. Andrija Štampar", Zagreb, Croatia*
11:40-11:50	**Discussion**	
11:50-12:15	**Coffee break**	

Continued on next pages ... .

Table 1 – *Continued from previous page*

Time	Title	Speaker / Affiliation
SESSION 3: Public Health Policies and Interventions for Healthier Cities		
12:15-12:25	First results of the National Preventive Health Examination	Assistant professor Tomislav Benjak, PhD *Croatian National Institute of Public Health, Zagreb, Croatia*
12:25-12:30	Barriers and Enablers to Implement a Patient Navigator-Based Programme for Cancer Prevention Among Persons with Mental Health Issues: Highlights from the CO-CAPTAIN Project	Ascensión Doñate-Martínez, PhD *Universidad Politecnica de Valencia, Valencia, Spain*
12:30-12:35	Socioeconomic Gradients in the Incidence of T2DM and CVD by Country of Birth: Evidence from a Spanish Urban Cohort	Tamara Alhambra-Borrás, PhD *Polibienestar Research Institute, University of Valencia, Valencia, Spain*
12:35-12:40	stRIt.fitness - The Largest Fitness Centre in Rijeka	Jadran Mandekić, MSc *"Rijeka – Healthy City" Project Manager City of Rijeka*
12:40-12:45	Workplace Health Promotion Activities "Health-Friendly Company" and the National Program "Living Healthy"	Associate professor Antonija Balenović, PhD, MD *Croatian Institute of Public Health, Zagreb, Croatia*
12:45-12:50	Sharing and Caring for Older Adults with Dementia and Disabilities in an Urban Environment	Anthony Polychronakis, MSc *European Liaison Officer for Health and Social Policies, City of Rotterdam, The Netherlands*
12:50-13:00	**Discussion**	

Continued on next pages ... .

Table 1 – *Continued from previous page*

Time	Title	Speaker / Affiliation
SESSION 4: Future Cities: Innovations and Smart Health Solutions		
13:05-13:15	SmartCity and Smart Health - (lost) Opportunities for Synergies?	Damir Medved, MSc *EDIH Adria project director* *University of Rijeka, Croatia*
13:15-13:20	Digital Phenotyping and Closed-Loop Interventions to Improve Health Outcomes of Vulnerable Urban Citizens	Professor Juan M. García-Gómez, PhD *Universidad Politecnica de Valencia, Valencia, Spain*
13:20-13:25	Planning of Future Cities Based on an Advanced Biomodelling Approach: AI Experience Based on Slime Mold Experiment	Associate Professor Sven Maričić, PhD *University of Rijeka, Faculty of Medicine, Rijeka, Croatia*
13:25-13:30	Advanced Tools for Smart Urban Citizens - Significant Parameters Automatic Measurement	Danijela Panić, mag. physioth. *School of Medicine, University of Pula, Croatia* *Faculty of Health Studies, University of Rijeka, Croatia*
13:30-13:35	Privacy Marks: Structuring Privacy for Responsible and Resilient Digital Health in Smart Cities	Filip Pravica, MSc *WERXE, Rijeka, Croatia*
13:35-13:40	The Use of Mobile Sensors and Self-Reported Data to Predict Quality of Life Indicators in Older Populations	Professor Juan M. García-Gómez, PhD *Universidad Politecnica de Valencia, Valencia, Spain*
13:40-13:50	**Discussion**	
13:50-14:00	**Closing remarks**	
14:00	**Lunch**	*Restaurant of the Grand Hotel Bonavia*

Abstracts

SESSION 1: Urban Environment and Health

Healthy Cities: Myth or (Easily) Achievable Reality?

Vjeran Piršić[1], *Katarina Kozina Popović*[2]

[1]*Eko Kvarner Association, Njivice, Island of Krk, Croatia;* [2]*Slow Food Slavonica Nuštar, Croatia*

Our civilization is facing great challenges that threaten the survival not only of civilization, but also of our species, and indeed of all life on the planet. Namely, in addition to the imbecile nuclear arms race and the already traditional greed that unsustainably consumes all the essential resources for life, we also have new major threats: climate change, impending pandemics, bioterrorism based on genome hacking and uncontrolled artificial intelligence that is greeted with panagerism. In parallel with this, the development of means of transportation and the perception of leaving the countryside as social progress led to the concentration of the population in cities, leading to practically uncontrolled urbanization, with all the problems that this brings. One of the main problems is environmental pollution, which (unfortunately) is increasingly considered an acceptable collateral damage of urban living (and not only in developing countries). In addition, the problem of alienation from the environment is increasingly present, i.e. the inability of modern man to produce all the necessary resources even for a bare existence (healthy food, drinking water, renewable energy, etc.). All of this leads to (unfortunately) a subconscious psychosis of modern man who nevertheless realizes that he is completely dependent on centralized resources that are completely beyond his control. All this will become more and more radicalized with the accelerated climate changes that have already begun, which are already turning our cities into real climate traps. The goal of our lecture is to point out solutions to this situation.

Keywords: Sustainability; Transition; Technology; Collapse

Conceptual Models Linking Urbanization and Public Health: The Case of the Project "Biosafety and Biosecurity in Primary and Secondary Schools in Bosnia and Herzegovina"

Jurica Arapović[1,2], *Mersad Omanović*[2]

[1]*School of Medicine, University of Mostar, Bosnia and Herzegovina;* [2]*Center for Disease Control and Geo-Health Studies of the Academy of Sciences and Arts of Bosnia and Herzegovina*

Contemporary trends of urbanization in Bosnia and Herzegovina are shaping new educational and public health needs, demanding the development of integrated approaches to health preservation through institutional education. In this context, the project "Biosafety and Biosecurity in Primary and Secondary Schools," launched in 2024 by the Center for Disease Control and Geo-Health Studies of the Academy of Sciences and Arts of Bosnia and Herzegovina (ANUBiH), represents a functional model of connecting education, healthcare, and the urban community. The project emerged in response to the challenges of the COVID-19 pandemic and focuses on educating students and teaching staff about biological threats and public health protection. Through a multi- disciplinary and elective approach—encompassing medical sciences, arts, ecology, and the spatial dimension of public health—the project enabled the implementation of modern educational activities in schools across various urban areas in Bosnia and Herzegovina. This strengthened the capacity of schools to act as health promoters within their communities, guided by an understanding of local public health contexts. This work analyzes the conceptual models arising from the project, highlighting how urbanization can serve as a stimulus for innovation in education and disease prevention.

Keywords: Biosafety; Biosecurity; Urbanization; Public Health; Education; Multidisciplinary Approach; Spatial Dimension; Bosnia and Herzegovina

Climate Changes, Heat Waves and the Impact on Cardiovascular Health and Mortality

Ana Jelaković[1,2]

[1] *Clinical Hospital Centre Zagreb, Croatia;* [2] *University of Rijeka, Faculty of Medicine, Croatia*

Introduction: human action driven climates changes have been causing significant impact on overall health and mortality especially in most vulnerable individuals. Aim: this literature review explores epidemiological and clinical evidence of direct impact on hospital rates, CV morbidity and mortality. Methods: literature overview and systematic presentation. Results: excess mortality is seen worldwide, and the frequency of heat waves is becoming our everyday life. It is predicted that by 2030, more than half of humanity will live outside the comfort zone (<28 C). The readiness of particular country to adapt to climate change depends on a number of socio-economic factors, environmental and urban policy and planning, and health policy. Conclusion: Croatia is particularly non-resilient to heat waves due to a number of organizational deficiencies at all levels of health care, social policy and disorganized urbanization policy.

Keywords: Cardiovascular Mortality; Heat Waves; Climate Change Resilience

The Landscape in the Service of Health and Wellbeing

Iva Sorta-Bilajac Turina[1]

[1] *Teaching Institute of Public Health of the Primorsko-goranska County, Krešimirova 52a, Rijeka, Croatia & Faculty of Medicine, University of Rijeka, B. Branchetta 20, Rijeka, Croatia*

Landscape architecture offers a holistic approach to analysing the characteristics and needs of a particular place. It creates spaces of high ecological value while enhancing the quality of life for individuals and communities and preserving the local identity. While the aesthetic or "cultural" dimension of landscapes remains prominent, increasing attention is being given to their biological and ecological functions—particularly in light of the inseparability of environmental and cultural factors in human health. The therapeutic potential of landscapes is grounded in three key principles: stress reduction, the promotion of mindfulness, and the emotional connection to place—known as topophilia. These principles highlight the landscape's capacity to contribute to therapeutic processes, support healing, and promote overall well-being. Both therapeutic and everyday landscapes are recognized as integral components of the social determinants of health. As the settings in which people live, work, and interact, these environments play a critical role in shaping physical, mental, and social health outcomes.

Keywords: Ethics; Health; Landscape; Landscape Architecture; Public Health

The Health of the City and the „Pollution by Tourism“: Breaking Points

Amir Muzur[1,2], *Iva Rinčić*[1,2]

[1]*University of Rijeka, Faculty of Medicine, Croatia;* [2]*Faculty of Health Studies, Rijeka, Croatia*

Most Mediterranean countries have long turned to tourism, competing with each other in terms of the attractiveness of prices and offers. At the same time, the inhabitants of many cities, such as Barcelona in Spain, Venice in Italy or Dubrovnik in Croatia, have felt the dangers of the mass influx of guests and have rebelled against it. To what extent has tourism deviated from its original motivation of getting to know culture and vacationing? When did it turn into a threat to the environment, quality of life and health of the hosts? Has tourism only quantitatively endangered cities or has travel changed in its essence? This presentation, following historical, statistical and objective observations, will attempt to dive into the "inconvenient truth" that will attempt to analyze the impact of "overtourism“ upon the health of cities and their inhabitants, but also suggest ways to resist such impacts.

Keywords: City; Health; Pollution; Tourism

Trumpism and Climate Change – 'Drill, Baby, Drill'

Aleksandar Racz[1]

[1] *University of Applied Health Sciences, Zagreb, Croatia*

This presentation explores the intersection between Trumpism and climate change policy, critically analyzing the ideological and practical consequences of Donald Trump's rhetoric and administrative actions on environmental protection. The work begins by referencing the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), which unequivocally states that human activities are responsible for nearly all global warming observed over the past two centuries. In contrast to this overwhelming scientific consensus—endorsed by 97–98% of climate scientists—Trump's statements and actions consistently deny or undermine the reality of anthropogenic climate change. Trumpism, defined as an ideologically fluid and often contradictory political movement centered on the personal views of Donald Trump, provides fertile ground for climate change denial. The presentation reviews public statements and tweets made by Trump between 2013 and 2025, revealing a persistent dismissal of climate science, often framing it as a hoax or a financial scam. Additionally, it outlines significant policy rollbacks during Trump's terms, including the withdrawal from the Paris Agreement, the deregulation of the Environmental Protection Agency (EPA), the increase of logging in national forests, and budget cuts at NOAA. These actions illustrate the environmental costs of populist political movements when scientific reasoning is subordinated to political expediency. The presentation concludes with a reflection on the broader implications of climate denialism within political leadership, emphasizing the urgency of reaffirming evidence-based policy in addressing the climate crisis.

Keywords: Environment; Climate Change; Evidence-Based Policy

SESSION 2:
Chronic Diseases and Urban Lifestyles

The Silent Killer is Everywhere

Bojan Jelaković[1]

[1] *Clinical Hospital Centre Zagreb, Croatia*

Introduction: arterial hypertension is leading cause of death and morbidity worldwide. Its prevalence is rising despite of better detection, increased awareness and more pharmacologically treated individuals. Aim: to increase health literacy, hypertensin awareness and ameliorate hypertension control rate. Methods: continuous public health action the Hunt on the Silent Killer is a multidisciplinary project of Croatian Hypertension League. The project has several levels (general population, health care providers, medical and other health care students) and several methods for reaching its aimed audience (online platforms, public health action among people and organized Big Hunts in form of overall general check-up). Results: since 2019 we have engaged three major actions: 70/26 aimed to increase the control rate of hypertension to 70% by 2026, Do you know your number? aimed to increase awareness and control of dyslipidaemia, and Where are you? aimed to increase awarness of chronic kidney disease. Results of our efforts will be objectivized through scientific project EH-UH 3 (Epidemiology Of Hypertension And Salt Consumption In Croatia 3) in 2026. Conclusion: hypertension is everywhere in form of Silent Killer, and the Hunt has just begun. Failure is not an option.

Keywords: Health Literacy; Awareness; Prevention; Silent Killer

Incidence of Type 2 Diabetes Mellitus According to Socioeconomic Status and Sex in the City of Valencia (Spain)

Susana Rovira-Llopis[1], *Alfonso Gallego-Valadés*[2], *María Pelecha*[1], *Sandra López-Domènech*[1], *Víctor M Víctor*[3], *Carmen Grau-del Valle*[1], *Milagros Rocha*[1], *Celia Bañuls*[1]

[1]*Department of Endocrinology and Nutrition, University Hospital Doctor Peset, Foundation for the Promotion of Health and Biomedical Research in the Valencian Region (FISABIO), C/ Juan de Garay 19-21, 46017 Valencia, Spain;* [2]*Polibienestar Research Institute – Universitat de València, C/ Serpis 29, 46022 Valencia, Spain ;* [3]*Department of Physiology, University of Valencia, Biomedical Research Institute Valencia (INCLIVA), Av. Blasco Ibáñez 15, 46010 Valencia, Spain*

In 2022, an estimated 828 million adults (18 years and older) had diabetes, an increase of 630 million from 1990. The largest study to date on the incidence of type 2 diabetes mellitus (T2DM) in Spain reported 11.6 cases per 1,000 person-years. While T2DM prevalence in Spain has been linked to the Socioeconomic Status (SES) of the neighbourhood in which a person lives, national longitudinal studies remain limited. This study aimed to estimate the age-adjusted incidence of T2DM in Valencia, Spain (2015-2022), while also analysing variations by sex and SES to assess potential health disparities. Methods: Electronic health records (SIA-GAIA) and SES data (INE) were analysed. The primary outcome measure was the first recorded diagnosis of T2DM based on ICD-9 and ICD-10 codes. The study included residents $\geq$ 40 years from 26 Valencia postal codes, excluding prevalent and recurrent T2DM cases. Census tracts were clustered by income quartiles. Incidence was estimated using Poisson regression. The general incidence of T2DM (2015–2022) was 10.2 (95% CI: 9.85 to 10.6) cases per 1,000 person-years. Age-adjusted incidence decreased with higher neighbourhood SES, from 15.8 (15.2 to 16.5) to 9.4 (9.0–9.8) in men and 11.0 (10.6–11.5) to 6.5 (6.3–6.8) in women. Living in a low-income census tract was associated with a 68.7% higher incidence of T2DM (IRR: 1.687, 95% CI: 1.634–1.742) compared to high-income areas. These findings highlight a socioeconomic gradient in the context of T2DM, with a higher disease burden in disadvantaged neighbourhoods and a higher incidence among men. Acknowledgement: This study was funded by PI22/01009, PI21/01160, CP24/00098 and CD23/006 from ISCIII-ERDF "A way to build Europe"; CIPROM/2022/32 and INVEST/2023/163 from the Generalitat Valenciana, and EU-Horizon Europe (HORUS- No.101136516).

Keywords: Incidence; Sex; Socioeconomic Status; Type 2 Diabetes Mellitus; Valencia

Nutrition in Urban Environment and its Role in the Prevention of Chronic Non-Communicable Diseases: Strategies for Promoting Healthy and Sustainable Diets

Gordana Kenđel Jovanović[1]

[1]*Department of Environmental Psychology, Urban University, Cityville, Countryland*

The expansion of urbanisation significantly shapes dietary behaviours and contributes to the increasing burden of chronic non-communicable diseases. Urban food environments are frequently characterised by an easy and high availability of highly processed, energy-dense foods, alongside limited access to fresh, locally sourced produce. These environments promote unhealthy eating habits, which are closely linked to the rising prevalence of obesity, type 2 diabetes, and cardiovascular diseases in urban populations. Addressing these challenges requires comprehensive and integrated preventive strategies. Some approaches include urban planning initiatives that enhance access to nutritious foods, policy interventions aimed at broader access to nutrition education, counselling, and treatment services, and economic incentives to support providers of healthy and locally grown food options. Community-based approaches are equally important, encouraging home-cooking, food literacy, and increased physical activity. Multisectoral collaboration among policymakers, urban planners, public health professionals, and community stakeholders is essential to redesign urban food systems, implement targeted public health interventions, and promote healthier, more sustainable urban living environments.

Keywords: Chronic Diseases; Dietary Behaviours; Food Environment; Public Health Strategies; Urbanisation

The Role of Rural and Urban Geography in Community Stigma Around Mental Illness and Obesity- Sneak Peek Evidence and Research Proposal

Ida Štimac[1,2], *Ana Jelaković*[1,2], *Bojan Jelaković*[2], *Lovorka Bilajac*[1,2], *Andrej Belančić*[1,2]

[1] *University of Rijeka, Faculty of Medicine, Croatia;* [2] *Croatian Hypertension League*

Stigma surrounding mental illness and obesity contributes to delayed care, poorer clinical outcomes, and exacerbated psychological distress. Geographic context, particularly rural versus urban residency—may shape the nature and intensity of stigma, yet remains insufficiently studied. This project aims to investigate how community-level stigma varies by geographic location and to identify demographic and clinical predictors of perceived and internalized stigma. We propose a cross-sectional study enrolling adult participants from diverse rural and urban settings. Data collection will include socio-demographic and clinical characteristics such as age, gender, education, income, BMI, and self-reported personal or family history of mental illness and/or obesity. Perceived stigma will be measured using Day's Mental Illness Stigma Scale and the Perceived Weight Stigma Scale; internalized stigma via the Weight Bias Internalization Scale; and psychological distress via the Depression, Anxiety, and Stress Scale-21. Multivariable linear regression models will be used to identify independent predictors of stigma across domains. Our primary objective is to evaluate the role of geographic location in shaping public and internalized stigma. Secondary aims include assessing how age, gender, education level, income, BMI, and personal or family experience with mental illness or obesity influence stigma in both rural and urban populations. We hypothesize that mental illness stigma will be higher in rural communities due to lower mental health literacy and greater social conservatism, while obesity-related stigma will be more pronounced in urban settings due to sociocultural emphasis on thinness and appearance. Understanding the geographical determinants of stigma can inform the design of tailored interventions, particularly in underserved rural regions. By addressing contextual barriers through targeted education and outreach, this research aims to contribute to stigma reduction strategies and ultimately improve mental and physical health outcomes across populations.

Keywords: Mental Illness; Obesity; Rural; Stigma; Urban

Urban Living and Kidney Health: A Syndemic Approach to Prevention and Management in Nephrology

Marijana Vučković[1]

[1] *Clinical Hospital Centre Split, Croatia*

Chronic kidney disease has become an increasing public health problem in urban areas. Urban living is characterised by an unfavourable convergence of factors such as air pollution, dietary changes, psychosocial stress, physical inactivity and lack of access to preventive measures, which interact to cause kidney damage and accelerate its progression. This bundle of interacting biological and social conditions represnts a syndemic, wherein the presence of disease is exacerbated by structural inequalities and environmental influences. A syndemic approach to nephrology therefore emphasises the need to adopt an integrative approach that addresses the classical biomedical risks while taking into account the socio-ecological environment in which the occurrence of kidney disease is situated. Preventive measures should include urban planning measures, policy options and initiatives to promote health equity to counteract the upstream determinants. Recognising and addressing these interrelated factors is a necessary step on the road to renal health change in rapidly urbanising populations.

Keywords: Kidney Disease; Urbanisation; Public Health; Air Pollution; Diet

City of Zagreb: Non-Communicable Diseases and Urban Life

Ivana Šućur[1], *Ana Puljak*[1], *Maja Marić Bajs*[1]

[1] *Teaching Institute of Public Health "Dr. Andrija Štampar"*

Zagreb faces a major non-communicable disease (NCD) burden, the leading cause of death in 2023: cardiovascular diseases caused 37.5% of deaths, cancers 27.8%, diabetes 7.4%, and respiratory diseases 5.1%. Environmental factors like air pollution exceeding limits in some areas, high traffic noise, and the urban heat island effect worsen risks. The physical layout of the city fundamentally shapes behavior and NCD risk. High-density, mixed-use neighborhoods with well-connected street networks and good access to public transport and amenities tend to promote walking and cycling and reduce car dependency. Conversely, low-density, segregated land uses and car-oriented design can foster sedentary lifestyles and increase exposure to traffic-related pollution. Zagreb exhibits a mix of urban forms, from the potentially highly walkable historic core to newer peripheral areas that may be more car-dependent. City initiatives aim to improve traffic regulation, enhance public transport, and promote cycling infrastructure. Access to quality green space is linked to improved cardiometabolic health outcomes, including lower blood pressure and better glucose control, and encourages physical activity. Zagreb employs strategies (Air Quality Plan, Green Infrastructure Strategy, Healthy City project) and interventions, but effective implementation and evaluation are needed to reduce NCDs and ensure health equity.

Keywords: Environmental Factors; Health Equity; Non-Communicable Diseases; Urban Lifestyle; Zagreb

SESSION 3:
Public Health Policies and Interventions for Healthier Cities

First Results of the National Preventive Health Examination

Tomislav Benjak[1]

[1]*Croatian National Institute of Public Health, Zagreb, Croatia*

Since November 2024, preventive health examinations started at the national level in Croatia. The target group are the persons over 40 years of age who have not been in any way in contact with their family doctor in the last two years. The invitation for the examination is made by a chosen family medicine team, with the examination being carried out in the doctor's office. The examination includes personal and family anamnesis, a detailed physical examination of the whole body and all organ systems, including measuring height and weight. Except that, ECG and laboratory tests (GUK, blood fats, PSA) are performed, as well as other tests if the doctor estimate that they are necessary. As of 25.03.2025. 10515 people were invited to a preventive health examination, of which 7635 people were examined, thus the response rate in relation to the number of calls sent is 73%. The gender distribution of the examined persons is 52% male and 48% female, with the largest share of those examined in the City of Zagreb and Zagreb County (25% of the total number of examinations) and Split-Dalmatia County (11% of the total number of examinations), with an even distribution of those examined in the age groups 40-50, 50-60, 60-70 years. Examinations were conducted in all counties. So far, 817 family medicine physicians (approx. 30% of the total number of LOM) have been involved in the implementation of preventive health examinations. Regarding the health status of the examined persons who have not visited their doctor in the last two years, the following indicators are currently available: 1. 74% of the examined persons have some of the risk factors for the development of chronic diseases (elevated fat, elevated blood sugar, smoking, elevated blood pressure, physical inactivity, increased body weight); 2. 30% of the examined persons have high blood pressure; 3. 19% of the examined persons have high blood sugar; 4. 30% of the examined persons have certain deviations in the ECG; 5. 6% of the examined persons have high HB1C – probable diagnosis of diabetes; 6. 32% of the examined persons smoke; 7. 44% have certain alcohol consumption; 8. 30% of the examined persons are physically inactive; 9. 34% of the examined persons have increased body weight; 10. 5% of the examined persons have a poor health status according to the doctor's assessment at the time of examination. The above results confirm the absolute justification for conducting these examinations, because only through timely diagnosis of chronic and acute conditions can the patient be adequately treated and provided with the highest possible level of health and quality of life.

Keywords: Examinations; Health; Preventive; Quality of Life Challenge

Barriers and Enablers to Implement a Patient Navigator-Based Programme for Cancer Prevention Among Persons With Mental Health Issues: Highlights from the CO-CAPTAIN Project

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Introduction: People with mental illness (PwMI) face high cancer risk and mortality, cancer being their second leading cause of death after suicide. Contributing factors include delayed diagnosis, treatment non-adherence, and low screening uptake. The CO-CAPTAIN project aims to promote cancer prevention among PwMI through a patient navigator (PN) intervention. This study focuses on identifying barriers and enablers in PN implementation. Methodology: A multicenter single-arm observational study was launched in July 2024 across 5 European cities (Athens, Lodz, Madrid and Vienna) including 198 PwMI so far. Participants joined pathways in nutrition (73.2%), physical activity (22.2%) and smoking cessation (22.2%). Ten (10) navigators support participants, guiding them through services. After 6 weeks of the PN running, navigators completed a survey based on the CFIR framework. Results: Navigators found PwMI recruitment and engagement challenging. However, support from health and community services helped due to their insight into PwMI needs. Due to the specific characteristics of PwMI, balancing motivation without overwhelming participants was key. Navigators also noted the need for peer support spaces to share experiences and solutions across sites. Conclusions: These insights informed next steps, helping optimize resources and improving support for navigators. Early data enabled timely adjustments, emphasizing individualized care and motivation strategies.

Keywords: Cancer Prevention; Implementation; Mental Health; Patient Navigation

Socioeconomic Gradients in the Incidence of T2DM and CVD by Country of Birth: Evidence from a Spanish Urban Cohort

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Type 2 diabetes mellitus (T2DM) and cardiovascular disease (CVD) are key global health concerns with regionally and socioeconomically uneven incidence. This study explores how incidence patterns of known T2DM and CVD vary by country of birth, neighborhood socioeconomic status (SES), and sex, using a population-based cohort in Valencia, Spain. We analyzed electronic health records (SIA-GAIA) and SES data from the INE Household Income Distribution Atlas. Adults aged 40+ living in 26 postal codes of Valencia were followed from 2015 to 2022. Incidence rates were calculated using Poisson regression, adjusted by age, sex, SES, and country of birth. Between 2015 and 2022, T2DM incidence was higher in populations from non-OECD countries, particularly among those in low and medium-low SES groups. Among men, rates in non-OECD populations dropped from 17.8 (low SES) to 8.1 (high SES) per 1,000 person-years; in OECD groups, from 15.2 to 9.8. Women showed a similar but lower pattern. CVD incidence was higher in OECD populations, with modest SES gradients. Among men from non-OECD countries, incidence ranged from 8.9 (low SES) to 10.5 (high SES). Among women, CVD rates declined with SES in both groups, though overall higher in OECD populations. T2DM incidence is highest in low-SES, non-OECD populations. CVD is more common in OECD countries. A clear SES gradient is evident, particularly among men.

Keywords: Diabetes; Cardiovascular Disease; Chronic Conditions; Non-Communicable Diseases; Socioeconomic Status

stRIt.fitness - The Largest Fitness Centre in Rijeka

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Within the framework of the Youth Programme of the City of Rijeka 2018 - 2022, a portal called stRIt.fitness was developed in order to encourage young people to engage in regular physical activity in various public spaces. The project was started at the initiative of young people who participated in the development of the programme. A research project indicated that 70% of young people do not engage in regular physical activity. They most often cite lack of time, lack of money or giving priority to other interests as reasons for their lack of physical activity. The stRIt.fitness project was designed taking into account existing resources, as well as young people's inclination towards digital technologies, but also all of the barriers that prevent them from exercising regularly. The website stRIt.fitness promotes easily accessible physical activity for everyone on 22 outdoor public exercise grounds that the City of Rijeka has been systematically equipping for the last 10 years. The exercise grounds are open 24/7 and can be used for free. A total of about a hundred exercise machines have been installed. On each device there is a sticker with a QR code that leads to a specific page on the website where you can watch a video with a demonstration of the correct performance of the exercises. The website also includes a training plan for each location. For those who have a problem with motivation, a sports psychologist can be contacted through the website. The website was launched in September of 2021, and by the end of that year more than 6,000 visits were recorded. The mid-to-long-term impact of the website is yet to be evaluated. Modern technologies can be utilised to reduce real and perceived barriers that prevent young people, and other citizens, from engaging in regular physical activity, and can make it easier for them to engage in regular and proper exercise, with the aim of long-term health protection.

Keywords: City of Rijeka; Modern Technologies; Physical Activity

Workplace Health Promotion Activities "Health-Friendly Company" and the National Program "Living Healthy"

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The workplace is an important setting for health promotion and NCDs prevention. Workplace health promotion programs can lead to change at both the individual and the organization levels. For individuals, workplace health promotion programs have the potential to impact an employee's health, health behaviors and health risks for NCDs. For organizations, programs have impact on health care costs, absenteeism, productivity, recruitment/ retention, culture and employee morale. Therefore, within the framework of the National Program Living Healthy, the Ministry of Health and the Croatian Institute of Public Health have designed Component IV, „Health and the Workplace", and within it, the „Health-Friendly Company" module. The results of the "Health Polygon", an activity carried out in one company, will be briefly presented. The Health-Friendly Company is recognized by WHO as a success story and and is currently being piloted within The Joint Action Prevent NCD, international project which addresses strategies and policies with the goal of reducing the burden of cancer and other NCDs, focusing on both personal and societal risk factors. The objectives of the „Health-Friendly Company" are: 1. To improve the implementation of the health promotion program at the workplace; 2. Strengthening the competencies of managers and employees to implement programs, 3. Raising awareness of the importance of promoting health in the workplace. Only a coordinated approach to workplace health can result in a planned and comprehensive set of programs, policies and environmental supports designed for the health of all employees.

Keywords: Workplace; Health Promotion; Health-Friendly Company

Sharing and Caring for Older Adults with Dementia and Disabilities in an Urban Environment

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On a global scale, there is a noticeable increase in the number of older people experiencing dementia. Specifically in the Netherlands, an estimated 290,000 elderly individuals are living with dementia of which 15,000 are below 65 (source: Alzheimer Nederland). As the elderly population in the Netherlands continues to grow, it is expected that by 2050, approximately 620,000 older individuals will be dealing with challenges related to dementia or disabilities. Presently, in Rotterdam alone, at least 10,000 elderly individuals are coping with dementia. To create a society that is more accommodating to the needs of these elderly individuals, there is a pressing need for a significant increase in knowledge and coordinated efforts. For elderly patients and their families, this stigma results in social isolation and delays in seeking diagnosis and assistance. Adding to this challenge is the shortage of qualified healthcare professionals specializing in dementia or disability care. To attract and retain healthcare personnel, organizations need to offer opportunities for ongoing professional development, making the healthcare profession more appealing, particularly in the current competitive labor market. Both current healthcare professionals and students require additional training and opportunities for skill development in their respective roles. SACRED is a 3-years EU Erasmus+ project which aims to create an E-learning Platform for professionals and students with an evidence-based knowledge and a best practices database, with the goal of improving care for vulnerable elderly individuals with dementia. The project collects and analyzes existing interventions, develops a digital learning environment, and runs an awareness campaign. The results are validated in 6 pilot locations: Valencia, Flanders, Rotterdam, Hermoupolis, Treviso and Tenerife. Some of the achieved results include:

- A database with approximately 20 best practices from the six pilot locations.
- A co-created e-learning platform, tested by 96 participants.
- A comprehensive awareness campaign.

This project contributes to improving care quality for vulnerable elderly people by sharing knowledge and enhancing the skills of professionals and students across Europe. For more information and access to the learning materials, you can visit the official project website: sacredproject.eu

Keywords: Alzheimer; Dementia; Elderly Care; Older Adult; Sacred Project

SESSION 4:
Future Cities: Innovations and Smart Health Solutions

SmartCity and Smart Health - (Lost) Opportunities for Synergies?

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Smart Cities and Smart Health share a common goal: improving quality of life through innovative technologies. Yet, despite clear overlaps, the synergies between these domains remain largely underexplored. Smart Cities rely on IoT sensors, big data, and AI-driven platforms to optimize urban mobility, energy consumption, and infrastructure management. Similarly, Smart Health employs wearable tech, telemedicine, and AI-driven diagnostics to enhance patient care and preventive health strategies. However, integration is often minimal, limiting the potential for enhanced public health outcomes through smarter urban planning. Lost opportunities emerge in areas such as environmental monitoring and public health management. Smart City sensors tracking air quality, traffic patterns, or noise pollution could directly inform preventive healthcare strategies by correlating environmental data with health incidents. Yet, fragmented governance, data silos, and separate funding streams often prevent such integrated approaches, and we are witnessing this every day in our own city of Rijeka and Croatia. Realizing the synergies between Smart City infrastructure and Smart Health requires collaborative policies, integrated technological platforms, unified data management strategies, and especially vision and commitment of city management. Only by bridging these gaps can cities fully harness innovation to deliver holistic, proactive, and efficient urban health solutions.

Keywords: Smartcity; Smarthealth; Synergies

Digital Phenotyping and Closed-loop Interventions to improve Health Outcomes of Vulnerable Urban Citizens

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Urbanisation and Non-Communicable Diseases (NCDs) are increasing in parallel. In this context, the HORUS project intervenes in vulnerable and socially disadvantaged citizens that may improve to adopt behaviours that decrease the risk of NCDs in urban settings. Smartphones are fully adopted by the European urban citizens at all socioeconomic segments. In this abstract we introduce Wakamola powered by DitiHealth for HORUS, a citizen-tailored app for deploying Digital Phenotyping and Closed-loop Interventions to improve Health Outcomes of Vulnerable Urban Citizens. The Wakamola app is able to track the daily digital phenotype of users through their cell phone. The digital phenotype [Torous, 2016] is the observation of socio-health indicators of the user composed of their physical activity, the degree of social interaction, web activity and their exposure to the environment (noise, light, etc), as well as the collection of responses and symptoms self-reported by the user. The app works in the background of the cell phone under strict informed consent of the user and collects subjective information from users directly through questionnaires, but also objective information, thanks to sensors such as the accelerometer or the light sensor. It also measures the time of use of the interaction with the cell phone, which allows us to know if their social habits have changed due to any health or wellbeing circumstance. All the information stored securely under the supervision of the Data Management Officer of the HORUS project, is displayed through a dashboard to the social&health services to adapt the actions to the specific needs of each group of users, channelled through the app itself. Actions, structured as recommendations and notifications of events, are then directly pushed to citizens involved in the specific interventions planned by the social&health services, who can red, agree or disagree with assisting to the events. All that feedback is displayed in the dashboard, implementing a closed-loop mechanism of the HORUS interventions. Wakamola powered by DitiHealth has been configured according to the requirements of the HORUS project using the local languages of three pilots to assist the HORUS interventions.

Keywords: Closed-Loop Interventions; Digital Phenotyping; Health Outcomes; Smartphones; Vulnerable Urban Citizens

Planning of Future Cities Based on an Advanced Biomodelling Approach: AI Experience Based on Slime Mold Experiment

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Future urban planning requires innovative approaches for addressing complex problems such as sustainable development and effective infrastructure. This abstract discusses an unconventional method to use biomodeling in urban design. It is based on the way slime mold (Physarum polycephalum) organizes itself. By translating the dynamic network formation and adaptive expansion of slime molds into computational algorithms, the aim is to create a smart, AI-powered planning tool. This study investigates how the decentralized intelligence and emergent traits of biological systems, including the ability of slime mold to navigate and allocate resources efficiently, can aid in building strong and flexible cities. The proposed biomodeling method, which uses AI and is based on real-life slime mold studies, offers a possible new way to plan cities by providing a bio-inspired, scalable, and intelligent framework for improving city designs, transportation systems, and resource distribution in future cities.

Keywords: Urban Planning; Slime Mold; Biomodeling; Future Cities

Advanced Tools for Smart Urban Citizens - Significant Parameters of Automatic Measurement

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Nonverbal communication is an integral part of human daily experience and cannot be fully replaced by verbal signs. The face is a very important channel of nonverbal communication. We use facial expressions in a wide range of social situations to show our emotions, personality traits, intelligence, temperament, and more. In digital communication based on text, emojis replace nonverbal cues that are otherwise present in face-to-face communication and allow for better expression of emotions, attitudes, and personality traits—in one word, interaction. What is also missing in recognizing traits is the definition of the age and gender of the person involved in the interaction. To assist in everyday digital communication and enable faster and simpler estimation of human parameters such as age, gender, and facial expression, an application called Aeye was designed. It was developed as a lightweight web application that recognizes the human face in real time, estimates age and gender, and detects a person's emotional state via a camera. All processing takes place locally in the user's browser, without sending data to external servers, thereby ensuring complete privacy. The application enables users to remain in constant interaction in real time and directly see the results, with the response time short enough to be perceived as instantaneous. The purpose of using this application is educational: to demonstrate artificial intelligence and computer vision in schools, workshops, and universities; for interactive exhibits at science fairs, museums, and exhibitions; for research in the field of human-computer interaction (HCI) and cognitive science; and potentially for broader applications in accessibility systems, digital communication, and emotionally adaptive user interfaces.

Keywords: Interactive Applications; Facial Expression Analysis; Age and Gender Estimation; Digital Emotions

Privacy Marks: Structuring Privacy for Responsible and Resilient Digital Health in Smart Cities

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As digital health systems expand across smart cities, managing privacy in increasingly complex data flows is critical. Accidental data misuse often occurs when key context—such as purpose, sensitivity, or legal basis—is lost once data leaves its original environment. This creates significant risks under an evolving and overlapping regulatory landscape, including the GDPR, European Health Data Space, Data Governance Act, AI Act, and others. We propose privacy marks—structured, embedded metadata that travel with datasets, documents, and digital systems. Each privacy mark specifies the data's purpose, legal basis, anonymisation status, retention period, sharing conditions, and required safeguards. They serve as both a contract and a technical requirement for compliant data handling. For example, urban air quality data linked with citizen feedback must meet a privacy mark indicating public use, pseudonymisation, limited retention... Privacy marks are embedded in three ways: (1) metadata blocks within datasets, (2) compact codes in file metadata (e.g. PDFs, images), and (3) app-level marks for admins and processors to understand data privacy risks and required security measures. Privacy marks not only automate compliance—they empower individuals and organisations to manage data responsibly, from collection to sharing and safe disposal, enabling ethical, secure, and trusted digital health in urban environments.

Keywords: Data Governance; Embedded Metadata; GDPR Compliance; Privacy Marks; Smart Health

The use of Mobile Sensors and Self-Reported Data to Predict Quality of Life Indicators in Older Populations

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In recent years, healthcare technology has experienced a paradigm shift toward nonintrusive mobile sensing for digital phenotyping. By leveraging smartphone sensors, it is possible to passively capture multimodal data without imposing significant user burden overcoming the limitations of conventional invasive monitoring devices. The proposed study assesses whether passive data acquisition can reliably uncover individual patterns in aging populations, serving as objective indicators of quality of life through artificial intelligence techniques. The Lalaby App collected data from 241 participants (68% female, 31% male, 1% other) from 7 rural villages from the Valencia region (Spain) using mobile sensors (ambient light, phone calls, accelerometer, microphone, pedometer, internet usage, location), external sensors (temperature and rainfall), self-reported sociodemographic information and daily activity. Participants engaged with the Lalaby app by responding to 5,416 questionnaires—including 5,107 daily activity surveys—with an average installation period of 90 days (SD=86.54), and an average of 4GB of data in 7 weeks for the different sensors. The study involves the design of Artificial Intelligence models capable of integrate comprehensive sensor data and predicting selected self-reported questionnaire values, thereby forecasting early changes in quality of life, enhancing personalized healthcare interventions, and supporting active aging strategies by health and care providers.

Keywords: Machine Learning; Mobile Sensors; Older People; Quality of Life

E–Posters

Thromboprophylaxis in Polytrauma - Case report

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Introduction: Polytrauma involving thoracic and pelvic injuries presents significant challenges, especially when pulmonary contusion and active intrabronchial bleeding are present. Decisions regarding thromboprophylaxis become complex in such cases due to the competing risks of bleeding and venous thromboembolism (VTE). Case Report: A 50-year-old male (BMI 24.2) was admitted to the ICU after falling from height. Imaging and clinical evaluation revealed right-sided hematopneumothorax (treated with chest drainage), pulmonary contusion, rib fractures (III–VII right), acetabular and sacral fractures, bilateral pubic rami fractures (with right-sided displacement), and a subcapital fracture of the right femoral neck. The patient was somnolent but hemodynamically stable and breathing spontaneously on oxygen. Flexible bronchoscopy revealed fresh blood in the trachea and right bronchial tree, without signs of active hemorrhage. Therapeutic bronchoscopy included suctioning and local administration of tranexamic acid and adrenaline. Analgesia was managed with paracetamol, tramadol, ketoprofen, and continuous sufentanil infusion, considering the pulmonary contusion and rib fractures. Due to bronchial bleeding risk, low-molecular-weight heparin (LMWH) was withheld. Mechanical thromboprophylaxis with the GEKO device was initiated instead. On day three, the femoral neck fracture was surgically stabilized with internal fixation using three cannulated screws. Conclusion: This case underscores the need for individualized treatment in trauma care. In the setting of pulmonary bleeding, mechanical thromboprophylaxis using the GEKO device offered a safe alternative to anticoagulation. Effective analgesia, especially in rib fractures, and a multidisciplinary approach were key to the patient's stabilization and recovery.

Keywords: Multiple Trauma; Sufentanil; Rib Fractures; Anticoagulants; Contusions

Fast-Paced Life, Fast-Food Diets: Urban Lifestyles and the Oral Microbiome

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Oral microflora is a complex community of microorganisms in the oral cavity, crucial for oral and general health. Today's urbanization is greatly changing the habits of the population affecting the oral microbiome. Research analysis highlights that 58% of urban participants have some form of periodontal disease, while the prevalence was 72% in rural area. Research shows that food, alcohol consumption, smoking and irregular oral hygiene contribute to the development of an imbalance in the microbiome that favors the growth of pathogenic microorganisms. Rural residents consume an average of 4,5 sweet snacks servings per day, while urban residents consume 3 servings. Also, in urban areas 62% of adults visit the dentist regulary, while in rural areas only 45%. Such changes are associated with an increased risk of caries, gingivitis and periodontitis, but also with systemic consequences. Research that involved 160,000 people over 15 years showed that specific oral bacteria increased the risk of neck and head cell carcinoma by 50%. Physical activity plays an important role in microbioma balance, demonstrating that lifestyle habits can rapidly influence microbioma balance. It is essential to develope public health strategies that promote proper nutrition and physical activity. Maintaining the oral microbiome is an important step in preventing disease and improving the health of urban areas. Still there are gaps in the knowledge on this topic, that needs to be further investigated.

Keywords: Oral Microbioma; Oral Disease; Urbanization

The Spatial Distribution of T2DM and CVD Incidence in Valencia

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We analysed spatial patterns and socioeconomic gradients in chronic disease incidence in an urban population. We estimate the age- and sex-adjusted cumulative incidence (2015 - 2022) at census tract level of known T2DM and CVD in population $\geq$ 40 years residing in 26 postcodes of the city of Valencia, from secondary electronic health record data. We also estimate the association between the adjusted rate per 1000 person-years and the mean income per unit of consumption in 2022, based on data from the National Institute of Statistics, Spain. The age- and sex-adjusted incidence rate per 1000 person-years shows moderate to strong positive spatial autocorrelation in the case of known T2DM (Moran I = 0.46, pseudo-p $<$ 0.001), and mild positive in the case of known CVD (Moran I = 0.17, pseudo-p $<$ 0.001), suggesting spatial autocorrelation in the prevalence of lifestyles leading to increased likelihood of T2DM as a CVD risk factor. Both rates show a negative, non-linear association with mean income per unit of consumption in 2022. Conditional means decay more rapidly in the lower part of the income distribution, being this effect more prominent in the case of T2DM. Specifically, the predicted rate falls by 6.8 cases per 1,000 inhabitants from €10,000 to €20,000, while it falls by 1.2 cases per 1,000 inhabitants from €30,000 to €40,000. In the case of CVD, these falls are 1.7 and 0.4 cases, respectively. These findings highlight the socio-spatial disparities in chronic disease burden within the urban environment.

Keywords: CVD; T2DM; Spatial Distribution; Incidence; Chronic Diseases

Differences in Adherence to the Mediterranean Diet Based on Rural vs. Urban Residency

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The Mediterranean Diet, rooted in the traditional eating habits of countries bordering the Mediterranean Sea, is widely recognized for improving health and increasing longevity. However, adherence varies between rural and urban areas due to social, economic, and environmental factors. In rural areas, people often have easier access to fresh, homegrown produce, aligning naturally with MeDi principles. Yet, food variety may be limited, and some key ingredients like seafood or extra virgin olive oil can be harder to find or more expensive. Urban residents benefit from diverse food options, but face higher costs, time constraints, and greater exposure to processed foods. Education and income also play a major role. More educated and higher-income individuals typically follow the diet more closely. However traditional habits in rural areas can offset lower education levels. For instance, a study in rural Morocco found strong MeDi adherence among children, largely due to cultural continuity despite limited resources. Regarding income, the PURE study found that in lower-income regions, the cost of meeting dietary recommen- dations can consume over 50% household income, limiting access to key MeDi components. Addressing these factors is essential for future research and most importantly for improving diet quality across diverse populations.

Keywords: Mediterranean Diet; Urban Environment; Healthy Lifestyle

Design of the Rijeka Pilot Site: Interventions to Promote Behaviour Change Towards a Healthier Lifestyle (Project HORUS)

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The World Health Organization 4x4 framework for non-communi cable diseases (NCDs) highlights four key behavioural risk factors - unhealthy diet, physical inactivity, tobacco and alcohol consumption - that are associated with the four major NCDs: Cardiovascular Disease, Diabetes, Chronic Respiratory Disease and Cancer. The aim of the project Health Outcomes from Raised Urban Settings (HORUS, G.A. 101136516) is to analyse and explore the causal links between the characteristics of the urban environment and the prevalence of NCD risk behaviours and its links with cardiovascular diseases and diabetes and to develop and test pilot interventions in three European cities – Rijeka (Croatia), Valencia, (Spain) and Rotterdam (The Netherlands). In the pilot site Rijeka, the intervention will involve 150 participants who can take part in two main intervention pathways: physical activity and nutrition. The intervention is aimed at 18+, vulnerable groups such as low-income citizens, the socially disadvantaged, ethnic minorities and migrants. To be involved in the intervention, participants will have to complete a questionnaire and provide informed consent to participate in the study which will be followed by a motivational interview. The intervention will start in July 2025 and last for 9 months. Within the intervention group participants will be able to engage in the following activities: nutrition lectures and personalized diet plans, cooking school, Nordic walking, strength training, forest therapy, mindfulness and health literacy workshops. Interventions are aimed to promote behavioral change towards healthier lifestyles to empower vulnerable population and support citizens to make the most of the urban environment, ultimately reducing risk factors for NCDs.

Keywords: Cardiovascular Disease; Diabetes; Lifestyle; Non-Communicable Disease; Urban Health

Program Improving the Oral Health of Children and Youth in the Primorsko-Goranska County – 17 Years on the Path to Excellence

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Introduction: The program has been continuously implemented in Primorsko-Goranska County for 17 years. It focuses on raising awareness and providing health education to parents and children about the importance of maintaining proper oral hygiene from an early age, and encouraging regular visits to the dentist with the goal of achieving good oral health. Respondents and methods: The program includes 1st and 5th grade elementary school students, pregnant women, kindergarten and preschool children, and their parents. Education is also provided to educators: kindergarten health managers educate both children and parents, while community nurses educate pregnant women. Nurses from the Department of School and Adolescent Medicine educate 1st and 5th grade students. Pediatricians and dentists educate parents and promote early preventive dental check-ups for children. Results: From 2008 to 2024, 53,790 school children were examined, and 53,059 kindergarten children and 29,588 pregnant women were educated. Progress has been made in oral health indicators: the dmft/DMFT index decreased from 4.7 to 2.9 in six-year-olds and from 2.5 to 1.5 in twelve-year-olds. Conclusion: This program plays a significant role in improving children's oral health, establishing better communication within the system, and shifting from curative to preventive dental care. The importance of the program is best demonstrated by the launch of a national preventive program and the receipt of a global award for excellence.

Keywords: Children; Education; Oral Health; Preventive Program

Counseling Clinic for Healthy Lifestyle Habits

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In the counseling clinic, a doctor, nurse, and nutritionist provide professional assistance in the areas of proper nutrition, balanced nutrient intake, and maintaining health. The nutritionist analyzes the client's eating habits, identifies nutritional deficiencies or excesses, and provides advice to achieve optimal body weight. The doctor in the team assesses the client's eating habits and overall health. They perform a thorough medical examination, analyze symptoms or specific issues related to nutrition, and identify potential health problems. In the context of the counseling center, the doctor can be crucial in diagnosing certain disorders.

Keywords: Healthy Habits; Nutrition; Physical Activity

From Faculty to Community: Academic-Public Health Partnership for NCD Prevention

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Chronic non-communicable diseases (NCDs) continue to be the main cause of morbidity and mortality in both Europe and Croatia. Among them, cardiovascular diseases are the most prevalent, with hypertension and its associated comorbidities being the most important modifiable risk factors. Early detection of symptoms plays a crucial role in disease prevention and health maintenance. In response to this ongoing public health challenge — and building on years of collaboration with the Croatian Hypertension League in health promotion activities across Croatia — medical students from the University of Rijeka, under the mentorship of the Department of Social Medicine and Epidemiology, have established the Student Public Health Section. This student-led initiative focuses on promoting healthy lifestyles, early identification of risk factors for NCDs, and educating the general population about cardiovascular health and associated risks, including obesity, diabetes mellitus, dyslipidemia, smoking, physical inactivity, unhealthy diet, and stress-related conditions. The initiative aims to raise public awareness, promote early risk detection, and encourage sustainable lifestyle changes across different population groups. At the same time, it provides medical students with practical experience in health communication, leadership, and population health research — strengthening the link between medical education and socially responsible practice. The "Rijeka Student Section" serves as an innovative and scalable collaboration model between academia and public health, emphasizing the central role of student engagement in addressing the growing burden of cardiovascular disease at both individual and community levels. This initiative also supports the efforts of the Croatian Hypertension League and its national campaign, "Hunting the Silent Killer," which has two goals: achieving target blood pressure levels in 70% of patients treated for hypertension and achieving LDL-C levels below 3 mmol/L in 60% of the general population by 2026, through the "70/26" and "Do You Know Your Number?" strategies.

Keywords: Academic-Community Partnership; Cardiovascular Disease Prevention; Public Health Campaigns; Student Engagement

Effects of Nordic Walking on Functional Capacity of Women with Breast Cancer

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Introduction: Breast cancer is one of the most prevalent malignancies and one of the leading causes of mortality among women globally. The aim of this study was to evaluate the influence of Nordic walking (NW) on the functional capacity of women who had undergone breast cancer surgery. Respondents and Methods: The study included a group of women who participated in a 10-week NW program (from March to May 2022). Training was conducted twice a week, lasting 70–80 min each, and was led by a certified instructor following the INWA method. Data were collected on pain, arm mobility, hand grip strength, shoulder joint range of motion bilaterally, circumference of both arms, body mass index, physical activity, aerobic capacity, and endurance. Results: A total of 14 women participated, with a median age of 63. BMI was significantly lower (28.9/28.1; p = 0.013) after training and an improvement in shoulder range of motion was noted (anteflexion right (142.5/170, p = 0.002), retroflexion right (40/60, p = 0.005), abduction right (135/180, p = 0.005), abduction left (135/180, p = 0.005)). There was a significant difference in left hand strength (19/20, p = 0.007). A correlation was found between BMI and the six-minute walk test (r = -0.70; p = 0.005). Conclusions: Given the multidimensionality of the disease itself and the results of this study, Nordic walking appears to be a beneficial and well-suited choice of physical activity for breast cancer surgery patients.

Keywords: Breast Cancer; Hand Strength; Nordic Walking; Physical Activity; Range of Motion; 6MWT

CAM in Oncology: Beliefs, Emotions, and Behaviors

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Even though Western medicine is still closed and reserved toward other approaches to health, oh yes, it is evident that Oncology patients widely use complementary and Alternative Medicine (CAM) to alleviate side effects of conventional treatment. However, attitudes towards CAM differ across population groups. This cross-sectional study aimed to explore cognitive, affective, and behavioral components of CAM attitudes and their associations with sociodemographic characteristics. A total of 832 participants were surveyed using validated instruments. CAM was used by 55.6% of patients, compared to 32.2% of healthcare professionals. Women, older individuals, and religious participants held more positive attitudes toward CAM. Cognitive attitudes were strongest among patients and nurses, while affective attitudes were most pronounced in patients. In terms of behavior, patients reported the highest CAM usage, followed by nurses. Physicians expressed the most skepticism. Significant influencing factors included gender, age, income, religiosity, and education. Marital status and place of residence showed no significant effects. Despite high usage,CAM remains under-discussed in clinical settings. Training and education of healthcare providers are crucial for supporting the informed integration of CAM into healthcare systems.

Keywords: Attitude to Health; Complementary Therapy; Health Personnel; Patients

Spiritual Well-Being as a Predictor of Quality of Life in Patients with Cancer During their Oncological Treatment

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Background: Spiritual well-being and its correlation with quality of life are increasingly being integrated into the curricula of many academic institutions worldwide. They are also becoming an important component of the therapeutic process in institutions. However, this area has not been thoroughly investigated in cancer patients in Croatia so far. Objective: To examine the correlation between spiritual well-being and the quality of life in patients with cancer during their oncological treatment. Material and Methods: The study "Spiritual Well-Being and Quality of Life of Cancer Patients" was conducted at the Department of Radiation Therapy and Oncology of the University Hospital Rijeka. The study included 143 patients with cancer diagnoses, who met the inclusion criteria and were undergoing oncological treatment. The „Quality of Life- Spiritual Wellbeing Questionnaire“ was used to assess spiritual well-being and the Croatian version of this questionnaire was linguistically and psychometrically validated. The “Quality of Life of Cancer Patients“ questionnaire validated Croatian 3.0 version, was used to asses the overall quality of life. Results: A review of the results revealed positive correlations between spiritual well-being and quality of life: (Global-SWB) (0.431 $P < 0.000$) and (RO) scale (0.360 $P < 0.000$). In addition, a strong correlation was found between (QL2), (RS) (0.577 $P < 0.000$) and (EX) (0.635 $P < 0.000$) scales. Conclusion: Spiritual well-being is a predictor of quality of life of cancer patients during their oncological treatment.

Keywords: Medical Oncology; Neoplasms; Patients; Spiritual Therapies; Quality of Life

Counseling Center for Young People with Disabilities

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Background: One of the main goals of National Strategy of Equal Opportunities for People with Disabilities from 2021 to 2027 is the encouragement of their full participation in education, family and community life. According to Croatian Register of People with Disabilities, 115,880 people with disabilities live in the City of Zagreb in 2024. That accounts for 15.1% of the total population of the city, of which 16.1% is under the age of 19. In the school year 2023/2024 in regular primary schools, 5,497 children with disability were included. Objectives: The aim of this project is to advice, support and educate young people with disabilities, students, parents, staff and experts in education system in health literacy skills about the categories of disability types, how to appropriate communicate and support them to realize their opportunities, to reduce of stereotypes regarding children with disabilities, fight against discrimination and stigma. Results: Andrija Stampar Teaching Institute of Public Health in partnership with City Office for Social Protection, Health, War Veterans and People with Disabilities, Center for Youth Health and Health Center Zagreb - East carries out the project „Counseling Center for Young People with Disabilities“ in the City of Zagreb in two locations. In the period from 2022 to 2025, a total of 50 health workshops were conducted through which 882 participitants were educated, 715 young people with disabilities were supported, 488 individual counseling sessions and 1,344 short counseling sessions were provided. Conclusions: A disabling condition or diagnosis of impairment does not define individuals, their abilities and talents, or health status and health behaviors. The final evaluation with extremely positive reactions of professionals and young people with disabilities in these project, indicated that the program should be continuously implemented and expanded.

Keywords: Counseling Center; Young with Disabilities

University of Rijeka, Faculty of Medicine - Department of Social Medicine and Epidemiology

The Department of Social Medicine and Epidemiology has been operating as part of the Faculty of Medicine, University of Rijeka, since its establishment in 1955. Initially, it was named the Department of Hygiene and Social Medicine and conducted teaching for only one course, with teachers who occasionally came from Zagreb. In 1961, the first permanent teacher was employed at the Department, and in the same year, Prof. Hinko Emili, MD, PhD, was elected as Head of the Department. Since its establishment, the Department changed its name to the Department of Hygiene, Epidemiology, and Public Health, then to the Department of Social Medicine and Health Ecology, while today it is named the Department of Social Medicine and Epidemiology. In 1973, Prof. Kajetan Blečić, MD, PhD, was elected Head of the Department, and in 1983, Prof. Anto Jonjić, MD, PhD, who held this position until his retirement in 2007. In the same year, Prof. Tomislav Rukavina, MD, PhD, was elected Head of the Department, a position he holds to this day. Over the years, the Department has conducted teaching for an increasing number of courses, and a growing number of teachers and associates have become involved in the Department's work.

Today, the Department is responsible for education in the preventive group of courses for all profiles of healthcare professionals educated at the Faculty of Medicine. The developmental vision of the Department is to continuously improve the teaching process with its human resources potential, and to keep pace with contemporary trends in the broader field of public health through its professional and scientific activities.

The Department of Social Medicine and Epidemiology is actively involved in scientific research, with its recently established Public Health Laboratory functioning as a vital core for these activities. The laboratory supports research for various important projects, including the EU-funded initiatives ValueCare (H2020) and HORUS, together with the national project "Hunt for the Silent Killer" in collaboration with the Croatian Hypertension League.

This research utilises the laboratory's capability to do many tests, including blood pressure, blood glucose, ECG, spirometry, and anthropometric measurements. Through these research projects, the Department realises its aim of coordinating with current public health trends and actively involving the community in health promotion and illness prevention.

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