ABSTRACT BOOK

8th Summit Tobacco Harm Reduction

Novel products, Research & Policy

by SCHRE

30 SEPTEMBER - 1 OCTOBER 2025 ∫ ATHENS

Basil & Elise Goulandris Foundation

#NoSmokeSummit25

www.nosmokesummit.org

CONTENTS

29 **ORAL PRESENTATIONS**

30 **RESEARCH TRACK SESSION I | TUESDAY 30.09.2025 | 16:00-17:30**

> INNOVATION & NOVEL PRODUCTS – *OP01*
> EPIDEMIOLOGY & SOCIAL ISSUES (PERCEPTION RISK, ATTRACTIVENESS ETC.) – *OP02-OP06*
> BIOMARKERS' EVALUATION IN ANIMAL OR HUMAN STUDIES – *OP07-OP08*
> TOXICOLOGY AND AEROSOL CHEMISTRY - CHEMICAL COMPOSITION OF THE AEROSOL, DROPLET SIZE AND DISTRIBUTION, TEMPERATURE AND TOXICANTS, INDOOR AIR QUALITY – *OP09*
> REGULATORY ISSUES – *OP10*
> EDUCATIONAL ISSUES IN ADOLESCENCE – *OP11*

41 **RESEARCH TRACK SESSION II | WEDNESDAY 01.10.2025 | 16:00-17:30**

> PRECLINICAL EVALUATION – *OP12-OP13*
> CLINICAL ASSESSMENT AND HARM REDUCTION – *OP14-OP17*
> SMOKING CESSATION – *OP18-OP22*

53 **POSTER PRESENTATIONS**

54 **RESEARCH TRACK POSTER SESSION I | TUESDAY 30.09.2025 | 13:45-14:15**

> EPIDEMIOLOGY & SOCIAL ISSUES (PERCEPTION RISK, ATTRACTIVENESS ETC.) – *PP01*
> TOXICOLOGY AND AEROSOL CHEMISTRY - CHEMICAL COMPOSITION OF THE AEROSOL, DROPLET SIZE AND DISTRIBUTION, TEMPERATURE AND TOXICANTS, INDOOR AIR QUALITY – *PP02-PP04*
> INNOVATION & NOVEL PRODUCTS – *PP05*

59 **RESEARCH TRACK POSTER SESSION II | WEDNESDAY 01.10.2025 | 14:00-14:30**

> PRECLINICAL EVALUATION – *PP06*
> CLINICAL ASSESSMENT AND HARM REDUCTION – *PP07*
> SMOKING CESSATION – *PP08-PP11*

65 **AUTHORS' INDEX**

8th Summit
Tobacco
Harm Reduction
Novel products, Research & Policy
by SOHRE

30 SEPTEMBER - 1 OCTOBER 2025 ∫ ATHENS
Basil & Elise Goulandris Foundation

ORAL PRESENTATIONS

NICOTINE CONTENT IS NOT UPTAKE: FACTORS AFFECTING NICOTINE UPTAKE FROM NICOTINE POUCHES

Anna Masser

OP01

Swedish Match North Europe, Regulatory & Scientific Affairs, SE-104 62, Stockholm, Sweden

Nicotine pouches (NPs) are oral products designed for legal-age nicotine users (LANUs). Packaged in permeable material and placed under the lip, they deliver nicotine through the oral mucosa. Unlike snus and moist snuff, NPs contain no tobacco leaf, and the nicotine meets pharmaceutical-grade standards. This results in a product with substantially reduced levels of harmful and potentially harmful constituents (HPHCs), notably tobacco-specific nitrosamines (TSNAs) can be avoided.

Media coverage often conflates nicotine content with nicotine uptake, and comparisons are sometimes made using smoke-machine data from cigarettes—an approach that overlooks key differences in delivery mechanisms. On the proposed risk continuum for nicotine-containing products, cigarettes represent the highest risk, while NPs and other non-combustible products occupy the lower-risk end. Due to the distinct routes of administration, direct comparisons between these products are akin to comparing apples and pears.

Importantly, not all nicotine in a pouch is absorbed during use. This presentation will focus on factors influencing nicotine uptake from pouches and highlight why pharmacokinetic measures may offer a more meaningful assessment than simple milligram-to-milligram comparisons.

POTENTIAL SOCIAL EFFECTS OF HEATED TOBACCO PRODUCTS: SIMULATION RESULTS

Alexsandr Rozanov

OP02

Therapeutic Endocrinology Department, State Budgetary Healthcare Institution MONIKI, Moskow, Russian Federation

Background: The anti-smoking policy in Russia has reduced the proportion of smokers to 30.7%, however, about a third of smokers are not ready to quit. Underestimating the complexity of completely quitting smoking is a serious barrier to improving the health of the population. In recent years, sufficient data has accumulated supporting that heated tobacco products (HTPs) are less harmful to health and are quite an effective means of quitting smoking.

The objective of study was to model the potential effects of all smokers switching to the use of HTPs. The effect was considered a decrease in the number of deaths when using HTPs, compared to mortality associated with smoking.

Material and Methods: The modelling compared the "zero" scenario (the current situation with smoking prevalence) with the "alternative" one assumed that all smokers completely switch to HTPs, and the reduction in health harm corresponds to the level of reduction in biomarkers of potential harmful effects of tobacco combustion products by 16-49% for five of the 8 endpoints based on data from available studies.

Results: The switching from cigarette smoking to HTPs in men of 35-59 years of age will save 39,102 lives (19.1% of tobacco-associated mortality) and 1.3 million DALY years or 27.7% of the losses that accompany cigarette smoking; in women 35-59 years of age, 3,815 deaths (4.1%) are potentially prevented and 822 thousand DALY years are saved or a reduction in losses by 15.7%.

Conclusions: If we take into account the 49% reduction in toxicity from the use of HTPs and recalculate it for the entire population of smokers, the transition to HTPs can have a significant demographic effect in terms of reducing mortality, primarily in active working ages; the epidemiological gain in per capita GDP metrics could reach 1.5 trillion rubles in 2022.

PUFF PRESSURE: A STUDY OF SOCIAL INFLUENCE ON VAPING BEHAVIORS AMONG LANCASTER UNIVERSITY STUDENTS

Jarod Luckhurst[1], **Benedicta Quaye[2]**

OP03

[1]Biomedical and Life Sciences, Lancaster University, UK
[2]Faculty of Health and Medicine, Lancaster University, UK

Background: Vaping (e-cigarettes) is increasingly being normalized in higher education environments, often under the guise of harm reduction or trend conformity. While some students adopt e-cigarettes for perceived health benefits over smoking, social influence, particularly from peers and family emerges as a critical under-recognized driver of initiation and continued use. This study explores how social exposure normalize vaping and influences vaping habits among students at Lancaster University.

Material and Methods: A repeated cross-sectional survey was conducted among 277 undergraduate students (aged 18–51) at Lancaster university. A structured questionnaire captured demographic data, vaping status and extent of peer and family influence. Data were analysed using cross-tabulation and Z-tests by Qualtrics to determine statistically significant associations. Ethical approval was gained before conducting the study.

Results: Among students whose parents currently use e-cigarettes, 67.4% reported e-cigarette use themselves with a significant difference compared to non-users ($p = 0.00084$). Similarly, 71.1% of those with a sibling who vapes also used e-cigarettes. Data on peer influence was especially strong, reporting 67.1% of students with at least one close friend who smokes also used e-cigarettes (a highly significant association ($p<0.00001$).

Conclusions: Social exposure particularly from siblings and peers significantly increases the likelihood of e-cigarette use among Lancaster university students. These influences contribute to the normalization of vaping and appear to outweigh health education and risk messaging. Public health strategies must consider these social dynamics to effectively reduce vaping rates in university student populations.

GENDER DIFFERENCES IN SMOKING PREVALENCE AND TRENDS GLOBALLY AND IN GREECE

Maria Batagianni[1], Vana Sypsa[2]

OP04

[1]National and Kapodistrian University of Athens, Greece
[2]Department of Hygiene, Epidemiology and Medical Statistics, Medical School, National and Kapodistrian University of Athens, Athens, Greece

Background: Smoking is one of the leading preventable causes of death worldwide. A significant gap exists in the literature regarding the inclusion of biological gender as a variable. The purpose of this review is to identify biological gender-related differences in trends of smoking prevalence and broader smoking behaviors.

Materials and Methods: A review of the available literature was conducted using the PubMed database, as well as international/national organizations (WHO, Eurobarometer, UMHRI).

Results: The smoking epidemic has followed different trajectories for men and women, with women adopting smoking later. The largest gender gap in smoking prevalence is observed in low- and middle-income countries. In Europe, and specifically in Greece, although smoking prevalence is higher among men, women also smoke at high rates (Greece 2023: 40% in men, 32% in women). Between 1990 and 2019, smoking decreased in both men and women globally, although in Greece the decrease was negligible among women (-0.6% versus -18.9% in men). Smoking prevalence is similar between sexes during adolescence, although preferences for tobacco products seem to diverge in Greece. Smoking habits change during pregnancy, with demographic and socioeconomic factors being linked to continued smoking. The influence of biological gender and hormonal balance is evident in the study of addiction, motivation to smoke, and perception of risk. Data suggests that women have less successful outcomes than men in quitting smoking.

Conclusions: Recognizing and further investigating the different smoking patterns between men and women may be the key to developing more effective targeted prevention and cessation methods.

TOBACCO HARM REDUCTION — A CALL FOR DIGNITY

Marewa Glover

OP05

Centre of Research Excellence: Indigenous Sovereignty & Smoking, New Zealand

W I T H D R A W N

SMOKING HABITS IN CROATIA: INSIGHTS FROM A NATIONAL SURVEY OF ADULT TOBACCO AND NICOTINE USERS

Ranko Stevanović, Stipe Drmić, Ivana Aras

OP06

Croatian Society for the Harm Reduction in Public Health (CSPHE), Zagreb, Croatia

Background: This study presents findings from a nationally representative survey conducted among 600 adult daily users of tobacco and/or nicotine products in Croatia. The objective was to explore consumption patterns, motivations, and perceptions related to smoking and cessation support.

Material and Methods: The conducted research included a nationally representative sample of smokers aged 18 to 75.

Results: The results of the study show that as many as 52% of respondents have been smoking for more than 10 years, with a quarter of them smoking for over 20 years. Traditional smoking products (cigarettes) remain the most common form of consumption, used by 82% of respondents, while 18% use smokeless products. As many as 44% of smokers admit they are not well informed about the negative health effects of smoking. 51% have attempted to quit smoking, with the average period of abstinence being just over three months. Only 14.9% of respondents reported health problems related to smoking, with 46.6% citing a shortness of breath and 37.5% reporting high blood pressure. More than 70% of smokers stated that they enjoy smoking, indicating that the approach to long-term smokers cannot be based solely on the demand for abstinence. 65% of smokers believe that personal determination and awareness of the harmful effects of smoking are the most effective aids in quitting, while 74% think that access to smoking cessation programs is poor.

Conclusions: These findings underscore the need for improved public health strategies to address persistent smoking rates as well as improved health communication in a way that motivates smokers and their families to reduce health risks.

THE IMPACT OF TOBACCO SMOKING RISK MANAGEMENT ON THE SEVERITY OF SYSTEMIC INFLAMMATION AND ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Tatyana Tayutina

OP07

Rostov State Medical University of the Ministry of Health, Russian Federation

Background: Endothelial dysfunction and systemic inflammation play key roles in COPD pathogenesis, with smoking being the main exogenous factor. The toxic components of cigarette smoke induce oxidative stress, driving inflammation and vascular damage.

This study aims at evaluating the impact of smoking risk management strategies on systemic inflammation and endothelial dysfunction in COPD patients, emphasizing tobacco harm reduction.

Material and Methods: A one-year observational study included 150 COPD patients (73% male, 27% female; mean age 63.94±6.42 and 60.66±7.82 years, respectively), with an average disease duration of 6.2±0.5 years and a smoking index of 24.05±2.97 pack-years. Patients were divided into three groups: Group 1 (50 patients) – smoking cessation, Group 2 (50 patients) – switched to electronic nicotine delivery systems (ENDS), and Group 3 (50 patients) – continued smoking. TNF-α and PDGF-AA levels were assessed using ELISA.

Results: Groups 1 and 2 showed a significant TNF-α reduction (from 14.75±4.52 to 6.35±2.97 pg/ml and 18.59±6.98 to 13.41±4.57 pg/ml, respectively) and PDGF-AA decrease (from 325.85±119.7 to 180.41±49.4 ng/ml and 407.18±123.09 to 282.36±33.19 ng/ml, respectively). The greatest improvement was observed in those who quit smoking, but switching to ENDS also led to notable benefits. Continued smoking worsened systemic inflammation and endothelial dysfunction.

Conclusions: Cigarette smoke and ENDS have different toxic effects on endothelial cells. Harm reduction strategies may mitigate systemic inflammation and vascular damage in COPD patients who are unwilling or unable to quit smoking completely.

DERMAL EMISSION OF NICOTINE AND AMMONIA INDUCED BY HEATED TOBACCO PRODUCT USE

Yoshika Sekine, Masaki Kawaguchi

OP08

Graduate School of Science, Tokai University, Japan

Background: In Japan, heated tobacco products (HTPs) are used as a less hazardous alternative to conventional cigarettes. Our previous study demonstrated that cigarette smoking significantly alters the composition of skin gases which often influence human body odour. However, the effects of HTP use have not yet been investigated.

This study aimed to elucidate the impact of HTP use on dermal emission of skin gases, focusing on nicotine in the mainstream aerosol and ammonia as a stress marker indicative of autonomic nervous system activity.

Material and Methods: Skin gases were non-invasively collected from the forearm of current users using a passive flux sampler for one hour before and after the use of the same brand of HTP. Following sampling, the emission flux of ammonia was quantified via ion chromatography, and that of nicotine was determined via gas chromatography–mass spectrometry.

Results: Prior to HTP use, dermal emission of nicotine was detected in most participants, likely attributable to habitual use. A significant increase in dermal nicotine emission was observed in all participants immediately after HTP use, followed by a gradual decline. This indicates that inhaled nicotine is released through the skin surface via a systemic blood route. Meanwhile, a marked decrease in dermal ammonia emission was noted in several participants. The scatter diagram revealed a negative correlation between nicotine and ammonia emissions.

Conclusions: These findings suggest that HTP use may contribute to stress relief among tobacco users. Moreover, such non-invasive monitoring of skin gases may serve as a valuable method for assessing nicotine addiction in users.

TOXICANT AND IN-VITRO TOXICOLOGICAL ASSESSMENT OF ORAL NICOTINE POUCHES (ONPS): COMPARATIVE QUANTITATIVE ANALYSIS WITH SWEDISH SNUS AND CIGARETTE SMOKE

Simone Hadley[1], David Smart[1], Emma Bishop[1], Ioanna Vardakou[1], Belinda Zonnestein[2], Jana Jeffery[1], Yen Nguyen[1], Kevin McAdam[3], Helena Digard[1], Stuart Meredith[1], Fabio Miazzi[1], Lydia Doherty[1], Olivia Chester[1]

OP09

[1]B. A. T. (Investments) Limited
[2]Nicoventures Trading Limited
[3]McAdam Scientific Ltd.

Background: Swedish snus is a smokeless tobacco product (STP) associated with potentially reduced health risks compared with conventional cigarettes, due in large part to the absence of high toxicant levels generated by tobacco combustion. In 2019, the FDA granted a modified risk tobacco product (MRTP) claim for eight PMTA authorised General Snus products. This MRTP status and existing epidemiological data point to the viability of snus as a reduced risk alternative for adults who would otherwise continue to smoke. Oral nicotine pouches (ONPs), are similar in format to snus, but differ by being tobacco-free, offering potentially reduced risk of tobacco-related harm to consumers.

Material and Methods: This research presents an evaluation of ONPs through both chemical and *in-vitro* toxicological assessments. Thirteen products were studied, including nine VELO ONPs, two commercial competitor ONPs, and two snus comparators (General Snus and the 1S4 reference product). A total of 132 analytes (previously of interest in STPs and those examined in recent studies of ONPs) were measured in the toxicant assessment.

Results: The results showed that 70 analytes examined were not quantified in any samples tested. In most tests, the ONPs contained lower levels of analytes (>90%) than snus. Comparison of the analytes tested in this study, which are in the GOTHIATEK® standard, showed that all the ONPs tested did not exceed the specific analytes' maximum allowable limits established for snus.

An *in-vitro* toxicological assessment of the same products found that the studied ONPs have lower toxicological profiles compared to the snus products. Results suggest minimal contribution of flavour complexity and base formulations to cytotoxic or genotoxic effects.

Conclusions: Together, these findings support the hypothesis that ONPs may offer a potentially reduced risk profile alternative to smoking and provide a foundational step toward a comprehensive toxicological evaluation framework for ONPs.

300+ NICOTINE USERS SPEAK OUT: SURVEY ON E-CIGARETTE USE AND USER EXPERIENCES IN COLOMBIA

Maria Alejandra Medina

OP10

Corporación Acción Técnica Social – ATS, Colombia

W I T H D R A W N

HEALTH EDUCATION ACTION ON THE USE OF ELECTRONIC CIGARETTES AMONG PUBLIC SCHOOL STUDENTS IN SÃO PAULO: AN EXPERIENCE REPORT

Osmar Clayton Person[1], Cintia Leci Rodrigues[2], Luciane Lucio Pereira[3], **Ingrid Dragan**[4], Marina Taricano[5]

OP11

[1]Federal University of São Paulo, Brazil
[2]São Camilo University Center, São Paulo, Brazil
[3]Beneficência Portuguesa of São Paulo, Brazil
[4]Independent Toxicologist, São Paulo, Brazil
[5]Morumbi Sul High School, São Paulo, Brazil

Background: The use of electronic nicotine delivery systems (ENDS) among adolescents has risen globally, influenced by lack of regulation, limited knowledge, and socio-cultural factors. In Brazil, although ENDS are banned, their use among teens is growing.

Material and Methods: This report describes a 2025 health education initiative targeting electronic cigarettes devices (ENDS) in a public school in São Paulo.

Results: Educational sessions were conducted with 460 students aged 13 to 17 in southern São Paulo, Brazil. In this region, 59.3% rely on the public health system (SUS), 24.3% live in poor communities, and 12.6% identify as Black or Brown. Students, in a large number of these young people, reported ENDS experimentation and daily use. Health-related behaviors and lifestyles, though strongly influenced by economic and cultural factors, are understood as proximal social determinants. Accounts included peer sales, purchases in peripheral tobacco shops, and even "loyalty cards" for ENDS. Health complaints such as oral burns were mentioned, along with environmental concerns over improper disposal of devices. Despite prohibition to manufacture and sell (by the Brazilian regulatory agency ANVISA), ENDS remain easily accessible to teenagers. ENDS are currently banned in Brazil, despite their large-scale consumption.

Conclusions: Health education, communication, and promotion are essential strategies to reduce teenage access to and use of ENDS. Effective educational guidelines can enhance students' understanding of health and environmental risks. Preventive actions should aim to raise awareness and promote healthier choices among youth. Urgent regulatory measures are needed for these products in Brazil.

ABSTRACT BOOK

PRECLINICAL EVALUATION

DO E-CIGARETTES INFLUENCE CISPLATIN RESPONSE IN HEAD AND NECK CANCER? INSIGHTS FROM A HARMONIZED IN VITRO REPLICATION STUDY

Giuseppe Carota[1], Rosalia Emma[2,3], Konstantinos Partsinevelos[1], Sonja Rust[3], Ang Sun[4], Antonio Giordano[4,5,6], Vladislav Volarevic[7,8,9], Ronny Lesmana[10,1112], Hanna Goenawan[10,11,12], Melisa Intan Barliana[13], Aleksandar Arsenijevic[7,8,9], Nikolina Kastratovic[7,8], Bogdan Spasic[8], Chiara Giardina[1], Miriana Cantali[1], Alessandra Pittalà[1], Miriam Wissam Saab[1], Angela Maria Amorini[1], Riccardo Polosa[14,15], Giovanni Li Volti[1,15], Massimo Caruso[1,15]

OP12

[1]Department of Biomedical and Biotechnological Sciences, University of Catania, Catania, Italy
[2]Department of Medicine and Surgery, "Kore" University of Enna, Contrada Santa Panasia, Enna, Italy
[3]ECLAT Srl, spin off of the University of Catania, Catania, Italy
[4]Department of Biology, College of Science and Technology, Temple University, Philadelphia, PA 19122, USA
[5]Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia, PA 19122, USA
[6]Department of Medical Biotechnologies, University of Siena, Italy
[7]Center for harm reduction of biological and chemical hazards, Faculty of Medical Sciences University of Kragujevac, Kragujevac, Serbia
[8]Department of Genetics, Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia
[9]Department of Microbiology and Immunology, Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia
[10]Department of Biomedical Sciences, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia
[11]Division of Biological Activity, Central Laboratory, Universitas Padjadjaran, Bandung, Indonesia
[12]Center of Excellence for Pharmaceutical Care Innovation, Universitas Padjadjaran, Bandung, Indonesia
[13]Department of Biological Pharmacy, Faculty of Pharmacy, Universitas Padjadjaran, Bandung, Indonesia
[14]Department of Clinical and Experimental Medicine, University of Catania, Catania, Italy
[15]Center of Excellence for the Acceleration of Harm Reduction (CoEHAR), University of Catania, Catania, Italy

Background: Cisplatin resistance represents a major barrier to effective treatment of head and neck squamous cell carcinoma (HNSCC). A previous study by Manyanga et al. (2021) reported that nicotine and e-cigarette (e-cig) aerosols may enhance cisplatin resistance in oral cancer models. This international replication study aimed to assess those findings using harmonized protocols across multiple laboratories and to investigate the potential impact of e-cig aerosols on cisplatin responsiveness in HNSCC.

Material and Methods: Standardized *in vitro* experiments were conducted using three HNSCC cell lines (SCC-25, FaDu, UM-SCC-1). Cells were exposed to aqueous extracts of cigarette smoke (1R6F) and e-cig aerosols with 0, 12, or 20 mg/mL nicotine. Extracts were generated in PBS using ISO-compliant smoking/vaping machines (ISO20778:2018; ISO20768:2018) and diluted to obtain a 10 puffs/5L concentration. Cytotoxicity (MTS, NRU, trypan blue), clonogenic survival, and gene/protein expression (qRT-PCR, Western blot) were assessed to evaluate the influence of aqueous extracts on cisplatin effectiveness.

Results: Differently from the original work, our results showed no consistent alteration in cisplatin sensitivity following e-cig exposure. IC50 values, cell viability, and colony-forming ability were not significantly different from cisplatin controls. Although some variations in DNA repair gene and transporter protein expression were detected, these were not reproducible across models or conditions.

Conclusions: Our data do not support a generalized link between e-cigarette exposure and increased cisplatin resistance in HNSCC. The variability observed highlights potential context-specific effects and underscores the need for rigorous cross-laboratory validation before drawing clinical conclusions.

ABSTRACT BOOK

PRECLINICAL EVALUATION

COMPARATIVE EVALUATION OF CIGARETTE SMOKE AND A HEATED TOBACCO PRODUCT ON THE METABOLOMIC PROFILE OF MICROGLIAL CELLS

Konstantinos Partsinevelos[1], Alfio Distefano[1], Laura Orlando[1], Lucia Longhitano[1], Rosalia Emma[2,3,4], Massimo Caruso[1,3,5], Nunzio Vicario[1], Simona Denaro[1], Ang Sun[5,6], Antonio Giordano[5,6], Barbara Tomasello[7], Amer M. Alanazi[8], Giovanni Li Volti[1,3], Angela Maria Amorini[1]

OP13

[1]Department of Biomedical and Biotechnological Sciences (BIOMETEC), University of Catania, Catania (CT), Italy
[2]Department of Clinical and Experimental Medicine, University of Catania, Catania (CT), Italy
[3]Center of Excellence for the Acceleration of Harm Reduction (CoEHAR), University of Catania, Catania (CT), Italy
[4]Department of Medicine and Surgery, "Kore" University of Enna, Contrada Santa Panasia, Enna, Italy
[5]Department of Biology, College of Science and Technology, Sbarro Institute for Cancer Research and Molecular Medicine, Temple University, Philadelphia, USA
[6]Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia, USA
[7]Department of Drug and Health Science, Section of Biochemistry, University of Catania, Catania (CT), Italy
[8]Pharmaceutical Biotechnology Laboratory, Department of Pharmaceutical Chemistry, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia

Background: Tobacco smoking is the leading cause of preventable morbidity and mortality worldwide. In recent years, modified risk products (MRPs), including heated tobacco products (HTPs), have transformed the tobacco industry, attracting a growing number of users. This study investigates the impact of combustible cigarette smoke and HTP aerosol on microglial function, with particular focus on the metabolomic profile, under ISO standard and clinically relevant conditions of exposure.

Material and Methods: Human microglial cells (HMC3) were exposed to aqueous extract (AqE) of cigarette smoke (1R6F reference cigarette, University of Kentucky), AqE of aerosol from a commercially available HTP (IQOS 3 DUO, Philip Morris International) and nicotine, each at the same nicotine concentration (340 nM), which falls within the range detected in the brain of smokers, in order to compare metabolomic effects. Smoke and aerosol AqEs were prepared using ISO standard procedures. Nicotine identification and quantification in AqEs, as well as evaluation of the metabolomic profile in exposed cells, were performed using a protocol suitable for HPLC analysis.

Results: Our findings show that cigarette smoke significantly reduces GSH levels and increases NADP+/NADPH ratio, indicating a shift toward oxidative stress not observed with IQOS or nicotine. Additionally, cigarette smoke also alters the intracellular energy charge and decreases total triphosphates, reflecting a suffering state compared to all other treatments. Evidence of mitochondrial dysfunction induced by cigarette smoke is further supported by a remarkable decrease in the ATP/ADP ratio, whereas only a slight alteration was detected after IQOS exposure. Furthermore, NAD+/NADH ratio, a key parameter for oxidative phosphorylation efficiency, decreased only with cigarette smoke.

Conclusions: These results highlight the different effects of combustible cigarette and HTP on the metabolomic profile of microglial cells, suggesting a potential harm reduction strategy in the context of neurodegenerative diseases for smokers unwilling or unable to quit.

SMOKING STATUS AND EARLY VASCULAR AGING: HOW TO REDUCE CARDIOVASCULAR RISK AT THE CURRENT STAGE OF KNOWLEDGE?

Aleksander Filippov, Artur Tuktarov

OP14

St. Petersburg State University,
St Petersburg, Russian Federation

W I T H D R A W N

BIOMARKERS OF CARDIOVASCULAR RISK IN YOUNG MEN DEPENDING ON THE METHODS OF CONSUMPTION OF NICOTINE-CONTAINING PRODUCTS

Anton Barsukov[1], Vladislav Dydyshko[2], Ekaterina Borisova[1], Svetlana Glebova[1]

OP15

[1]KardioKlinika, St. Petersburg, Russian Federation
[2]S.M. Kirov Military Medical Academy, St. Petersburg, Russian Federation

Background: The gradual shift from the widespread use of traditional cigarettes to the active use of alternative nicotine delivery systems (ANDS) in today's young population aged 35-44 years determines the need for scientific research aimed at objectifying their impact on the body.

The objective of this study was to investigate hemodynamic, metabolism, proinflammatory indices in healthy men depending on the nicotine-containing products consumption ways.

Material and Methods: The cohort (n=411) was divided into three groups comparable in age and body mass index according to smoking status: non-smoking subjects (NS) (n=275; age 40.94±4.90); traditional cigarette smokers (TCSs) (n=68; age 41.09±3.85); ANDS users (n=68; age 39.82±6.31). Data of office blood pressure (BP) and heart rate (HR), blood biochemical analysis were studied. There was used nonparametric statistics (Mann-Whitney U test).

Results: The systolic BP was significantly higher in TCSs and ANDS users than in NS (p=0,02, p=0,04 respectively), HR in TCSs was significantly higher than in NS (p=0,004). High-density lipoproteins (HDL) levels were the lowest and triglyceride (TG), C-reactive protein (CRP), fibrinogen levels were the highest in TCSs. HDL levels didn't differ between NS and ANDS users (p>0.05). CRP and fibrinogen levels were higher in TCSs than in NS (p=0.08, p=0.56 respectively) and ANDS users (p=0.003, p=0.62 respectively).

Conclusions: Analysis of cardiovascular risk biomarkers such as HDL, TG, CRP, and fibrinogen levels revealed a positive trend in the ANDS users compared with TCSs, indicating a reduction in risk. The concept of harm reduction realized by 'switching' from cigarette smoking to ANDS use may improve the cardiovascular prognosis. Further short- and long-term ANDS studies are needed to assess their impact on smoker's health compared with smoking traditional cigarettes and to explore the potential for incorporating the results of these studies into recommendations for the prevention and treatment of tobacco-associated diseases.

VAPING AND ANASTOMOTIC LEAK IN COLORECTAL SURGERY

Fernando Fernandez Bueno

OP16

Plataforma de Reducción de Daños por Tabaquismo, Spain

Background: This study aimed to evaluate the association between traditional smoking, vaping, BMI, and the incidence of anastomotic leak in patients undergoing colorectal surgery. A key objective was to identify vaping as an independent variable associated with anastomotic leak and wound healing in this population.

Material and Methods: A retrospective cohort study was conducted to assess these associations. Multivariable analysis was performed, adjusting for patient comorbidities and surgical approach, to determine independent risk factors for various complications.

Results: After adjustments, traditional smoking was identified as an independent risk factor for wound complications (OR 1.31, 95% CI 1.02-1.70, p = 0.035), primary pulmonary complications (OR 1.40, 95% CI 1.08-2.06, p = 0.021), and anastomotic leak (OR 1.47, 95% CI 1.20-2.46, p = 0.003). While major medical complications, surgical complications, and sepsis showed a trend towards higher risk in smokers, these did not reach statistical significance. Importantly, no significant association was found between vaping and anastomotic leak.

Conclusions: Our findings demonstrate that traditional smoking is an independent risk factor for anastomotic leak and other complications in colorectal surgery patients. These results underscore the critical need for preoperative smoking cessation strategies. Conversely, we found no evidence linking vaping to this complication. Surgeons should emphasize these elevated risks to patients considering elective colorectal surgery.

HEATED TOBACCO PRODUCT AEROSOL EMISSION COMPARED TO CIGARETTE SMOKE: PRECLINICAL AND CLINICAL STUDIES

Stefano Bellosta[1], Alberto Corsini[1], Emanuele Catena[2], Gabriele Catena[2]

OP17

[1]University of Milan, Milan, Italy
[2]COO Sismed Servizi srl, Rome, Italy

Background: Heated tobacco products (HTPs) are marketed as reduced-risk alternatives to traditional tobacco cigarettes (TCs). However, the actual reduction in toxicological burden and health benefits remains debated. We evaluated preclinical and clinical studies comparing HTPs to TCs, focusing on aerosol composition, toxicological exposure, and biomarkers of harm.

Material and Methods: A systematic PubMed search identified 1,105 peer-reviewed studies published between January 2017 and October 2024. We selected 45 studies reporting standardized aerosol characterization, in vivo/in vitro toxicology, or biomarker analysis in humans.

Results: HTPs heat rather than burn tobacco, producing aerosol with significantly lower (up to 95%) toxicant levels and reduced toxic, mutagenic, genotoxic, carcinogenic, and proinflammatory potentials by 85–95% compared to TC smoke in vitro and in vivo. Among 26 human interventional studies, 22 reported 40–97% reductions in toxicant biomarkers of exposure (BoE) —such as tobacco-specific nitrosamines, carboxyhemoglobin, volatile organic compounds, and mutagenic metabolites— in participants who switched from TCs to HTPs. These effects were observed across various time frames, ranging from minutes to 24 months. Four independent studies found no significant improvement or identified adverse effects. Most BoE changes occurred independently of nicotine blood levels. International health authorities confirmed that HTP aerosol contains some mutagenic and carcinogenic compounds, but at much lower levels than TC smoke, thus reducing health risk.

Conclusions: HTPs reduce toxicant exposure relative to TCs, but further independent, long-term studies are needed to determine their full potential health impact.

MAPPING TRANSITIONS IN TOBACCO AND NICOTINE PRODUCT USE – MOVING DOWN THE RISK CONTINUUM

Marina Murphy

Senior Director Scientific Affairs, Haypp Group, London, England

OP18

Background: Tobacco-free nicotine pouches (TFNPs) do not contain tobacco and the levels of toxic chemicals in their extracts are like those in medicinal nicotine products such as nicotine gums and lozenges, which means that they are likely to be the least harmful of any currently available tobacco/nicotine product and to occupy a position to the extreme right of the risk continuum. The value of any reduced-risk products like TFNPs, however, lies in smokers' willingness to use them instead of cigarettes. Here we seek to understand the choices consumers make as they move down the risk continuum from combustible cigarettes at the extreme left to TFNPs at the extreme right.

Material and Methods: We conducted an online survey of 1,409 TFNP users in the US, which was designed to understand tobacco and nicotine product use pathways.

Results: Transitions down the risk continuum among TFNP users involved multiple intermediate steps before arriving at use of lower-risk products. Starting to smoke cigarettes was the most common first-used tobacco product. TFNPs were not the most common second product used. Most cigarette smokers tended to transition to dipping/chewing tobacco and vapour products, with some transitioning to using snus. At further transitions however, these were predominantly to TFNPs, although the ultimate path to TFNP use occurred as far as the sixth transition. Transitioning to TFNP use, regardless of chronology and across all transitions, was most commonly from dipping/chewing tobacco, slightly less commonly from vapour products, and much less commonly from cigarettes. Transitioning from TFNPs to cigarettes was very rare (1.2% of all transitions).

Conclusions: These findings will help the understanding of the population-level impact of TFNPs and of the contribution they can make to Tobacco Harm Reduction. The findings may be used to tailor interventions to maximise THR by promoting more rapid transit down the risk continuum.

HEALTHY LUNGS FOR LIFE INITIATIVE – COMMUNITY-BASED APPROACHES TO COMBAT INDOOR SMOKE IN RURAL PAKISTAN

Qamar Iqbal

European Lung Foundation (ELF) & European Respiratory Society (ERS), Gujranwala, Pakistan

OP19

Background: Pakistan faces severe health threats from tobacco smoking and indoor/outdoor air pollution, leading to rising respiratory and cardiovascular diseases. This project aimed to reduce these risks by training Lady Health Workers (LHWs) as advocates for healthy lung practices, focusing on smoking cessation and clean air.

Material and Methods: In collaboration with District Health Authorities (DHA) and Basic Health Units (BHUs), 46 LHWs were recruited from four primary health units across three Tehsils. They disseminated HLFL messages to (7,360 households (47,840 individuals) through: awareness pamphlets on avoiding polluted air and smoking risks; health education campaigns integrating HLFL into routine LHW activities; and advocacy on vaccination and physical activity.

Table: ***HLFL Key Interventions***

Intervention	***Target Audience***	***Coverage***
LHW Training & Sensitization	46 LHWs	7,360 Households
Pamphlet Distribution	Rural Communities	47,840 People
Health Education Sessions	Families, Smokers	3 Tehsils*

**a district administration or revenue subdivision*

Results:

> LHWs successfully educated households on reducing indoor pollution (e.g., avoiding active & passive smoking).

> Increased awareness of Sudden Infant Death Syndrome (SIDS) and respiratory risks from second-hand smoke.

> Strengthened preventive healthcare through health education promotion.

Conclusions: The HLFL initiative effectively leveraged LHWs to combat respiratory health risks in rural Pakistan. Sustained efforts in policy enforcement, smoke-free environments, and community education are crucial for long-term impact.

ABSTRACT BOOK

E-CIGARETTES AND HEAT-NOT-BURN PRODUCTS AS A SMOKING CESSATION TOOL IN PATIENTS WITH CVD: A REVIEW OF CURRENT SCIENTIFIC EVIDENCE AND GUIDELINES (2024-2025)

Daria Regushevskaia[1,2], **Yulia Yufereva[1]**

OP20

[1]N.I. Pirogov Russian National Research Medical University, Moscow, Russian Federation
[2]City Clinical Hospital No. 1 n.a. N.I. Pirogov, Moscow, Russian Federation

Background: In recent years, a number of publications have discussed the potential role of e-cigarettes (ECs) and heated tobacco products (HTPs) in smoking cessation.

Material and Methods / Results: The comprehensive review from the Cochrane Library, updated in January 2025, again confirmed that ECs with nicotine increase quit rates compared to nicotine-replacement therapy with high-certainty evidence (RR 1.59, 95% CI 1.30–1.93).

In the Korean nationwide study (2025) of smokers with coronary artery disease undergoing percutaneous coronary intervention, switching to ECs was associated with a significantly lower risk of major adverse cardiac events than continued use of combustible cigarette, similar to quitting smoking (HR 0.82, 95% CI 0.69–0.98 for switchers to ECs and HR 0.87, 95% CI 0.79–0.96 for successful quitters).

A recent scoping review of behavioral studies of HTPs (2024) found that positive individual-level benefits of transitioning to the use of HTPs may also be seen at the population level.

As the 2023 AHA/ACC Guideline for the Management of Patients with Chronic Coronary Disease, the 2024 ESC Guidelines for the management of peripheral arterial and aortic diseases classified the ECs as a possible smoking cessation tool with a Class IIb recommendation. These guidelines emphasize that ECs use is associated with adverse effects on cardiovascular and other systems compared with non-users, but with milder effects than smoked cigarettes. The 2024 ESC Guidelines for the management of chronic coronary syndromes indicate that the use of ECs should only be considered as an adjunct to a formal tobacco cessation program.

Conclusions: While ECs may be considered as a cessation tool for certain patients, significant concerns remain regarding their long-term safety and the potential for prolonged nicotine dependence. The overall consensus of leading cardiology societies is that complete abstinence from all nicotine products remains the optimal goal for cardiovascular health.

ABSTRACT BOOK

FACTORS AFFECTING SMOKING BEHAVIOR IN PATIENTS WITH ACUTE CORONARY SYNDROME: A STUDY IN A SMOKING CESSATION CLINIC OF A SECONDARY HOSPITAL

Evangelos Sdogkos, Martha Amoiradou, Angelos Georgakopoulos, Ioannis Vogiatzis

OP21

Smoking Cessation Clinic, Department of Cardiology, General Hospital of Veroia, Veroia, Greece

Background: Most patients who have suffered from an acute coronary syndrome (ACS) temporarily stop smoking for a short period after the event. Unfortunately, most of them start smoking again within three months. The study aims to assess the factors that influence smoking behavior after an ACS.

Material and Methods: The study has included 420 patients (320 male and 100 female, aged 58.2±14.3 years). All patients were active and heavy smokers (>20 cigarettes/day) at admission. Smoking was the only risk factor in 128 male and 18 female patients. We collected patients' medical histories, risk factors, and smoking habits from their medical records. We used a questionnaire to record additional information, such as nicotine dependence (Fagerstrom Test). During hospitalization, all patients stopped smoking, and we advised them to visit the smoking cessation clinic to receive specialized help. We followed up with all participants for one year after discharge.

Results: Out of 420 patients, 223 (53.1%) quit smoking within the first 3 months after the episode, and 258 (61.4%) within 12 months. Among those who continued to smoke, most patients (90.1%) reported that their nicotine consumption was lower after the episode than before. In multivariate analysis, independent factors for smoking cessation were: participation in the Clinic's smoking cessation program (OR=4.53, p=0.0007), lack of family history of smoking (OR=2.54, p=0.001), younger age (OR=2.1, p=0.001), better educational level (OR=1.89, p=0.01), and female gender (OR=1.7, p=0.01). Independent factors for continuing smoking were antidepressant drug use (OR=2.28, p=0.01), history of vascular disease (OR=2.32, p=0.03), history of COPD (OR=1.35, p=0.001), and high level of nicotine dependence (score >8 on the Fagerstrom Test for Nicotine Dependence) (OR=1.42, p=0.04).

Conclusions: Although quitting smoking is self-evident after an ACS, many factors can influence this behavior. Anti-smoking campaigns, as well as smoking cessation clinics, can successfully contribute to the desired outcome.

ANALYSIS OF FACTORS AFFECTING TOBACCO HARM REDUCTION: A CASE STUDY IN INDONESIA

Hifni Alifahmi[1], Ilham Kariem[2], Kholil Kholil

OP22

[1]Sahid University, Jakarta, Indonesia
[2]KABAR – Indonesian Tar Free Coalition/Koalisi Indonesia Bebas Tar

W I T H D R A W N

8th Summit
Tobacco
Harm Reduction
Novel products, Research & Policy
by SCHRE

30 SEPTEMBER - 1 OCTOBER 2025 ∫ ATHENS
Basil & Elise Goulandris Foundation

POSTER PRESENTATIONS

THE INFLUENCE OF VARIOUS NICOTINE AND TOBACCO DELIVERY METHODS ON THE COURSE OF BRONCHIAL ASTHMA: PRELIMINARY RESEARCH RESULTS

Natalya Nenasheva[1,2], **Marina Peredelskaya[1,2],** Varvara Muchametova[3], Alexander Yudin[4]

PP01

[1]Federal State Budgetary Educational Institution of Further Professional Education «Russian Medical Academy of Continuous Professional Education», Ministry of Healthcare, Russian Federation
[2]State Hospital 24
[3]Exness
[4]State Budgetary Healthcare Institution City Clinical Hospital No. 24 of Moscow

Background: Smoking, as one of the significant modifiable risk factors, is being actively studied in the context of asthma.

The objective of this study was to assess the effect of electronic cigarettes and electronic tobacco heating devices on the course and control of bronchial asthma, as well as changes on inflammatory profiles. An important aspect is to assess the profile of the patient using smoking devices in order to optimize the therapy selection and patient management strategies.

Material and Methods: An open-label observational clinical trial including medical history assessment, physical examination, completion of the Asthma Control Questionnaire (ACT) and the Asthma Quality of Life Questionnaire (AQLQ), clinical functional examination, and venous blood sampling for biomarker analysis. The study included patients aged 18–45 years with a confirmed diagnosis of bronchial asthma for at least 12 months.

Results: 84 patients were included in the study (82 men and 2 women), with a mean age of 21.99 ± 2.38 years. Of these, 32 patients were non-smokers, while 52 reported using various nicotine and tobacco products. Among the smokers, 30 (57.7%) used two or more types of smoking devices. Passive smoking exposure was reported across all groups, with 69 patients (82.1%) indicating regular exposure to environmental tobacco smoke from their surroundings. Smokers were more frequently exposed to passive smoking. The average age of smoking initiation is 16 years. In both groups, according to ACT data, the lack of asthma control in smokers is 18.1± 4.2, non-smokers 16.8 ±3.4. ACT score distribution curves showed a broader spread among smokers, with a more pronounced secondary peak corresponding to partial asthma control. Correlation analysis of peripheral blood eosinophil levels revealed a narrower distribution among smokers, while non-smokers exhibited a longer right-tail distribution, indicating a higher proportion of individuals with elevated eosinophil counts.

Conclusions: Further research is needed to optimize therapy and management of patients using smoking devices.

EXPERIMENTAL AND THEORETICAL STUDY OF THE VIBRATIONAL DYNAMICS OF NICOTINE AND ITS DERIVATIVES IN DIFFERENT STATES

jupco Pejov[1,2], Jasmina Tonikj Ribarska[3], Kristina Mitik[4], Mereme Idrizi[3], Blagoj Achevski[3]

PP02

[1]Faculty of Natural Sciences and Mathematics, SS. Cyril and Methodius University, Skopje, North Macedonia
[2]Department of Chemistry, Bioscience and Environmental Engineering, Faculty of Science and Technology, University of Stavanger, Norway
[3]Faculty of Pharmacy, SS. Cyril and Methodius University, Skopje, North Macedonia
[4]Faculty of Dentistry, SS. Cyril and Methodius University, Skopje, North Macedonia

Using combined experimental and theoretical methods, the vibrational dynamics of nicotine and some of its derivatives have been studied. Molecular clusters in the vapor phase, as well as molecular crystals, have been covered. Infrared and Raman spectroscopy have been used as experimental techniques. On the theoretical side, modern variants of the electron density functional theory were used, using different combinations of exchange-correlation functionals. The geometry optimization as well as additional investigations of the potential energy hyper surfaces of the isolated clusters was performed using gradient optimization techniques. The character of the located stationary points is examined by analyzing the mass-normalized Hessian of the system. By its sequential diagonalization, a harmonic vibration analysis is also performed. The modes with strongly expressed anharmonicity are analyzed using perturbation techniques.

The comparison of the experimental and theoretical spectra as well as the calculations of the degrees of agreement is performed using vector analysis methods, as well as two-dimensional spectroscopic techniques. Conclusions are drawn for the exact analysis and assignment of the vibrational modes in the mentioned systems.

MEXICAN STUDY ON THE CHEMISTRY OF VAPORIZER LIQUIDS VERSUS COMBUSTIBLE CIGARETTES

Susana Lizeth Pérez Leal[2], Christian Heinrich Henoin[1]

[1]Universidad Anáhuac México, Mexico City, Mexico
[2]Instituto Politécnico Nacional, Escuela Superior de Ingeniería Química e Industrias Extractivas, Mexico City, Mexico

PP03

Background: Tobacco combustion produces thousands of toxic compounds, many of them confirmed carcinogens. In contrast, electronic cigarettes (ECs) heat e-liquids at significantly lower temperatures, potentially reducing users' exposure to harmful substances. This study aimed to characterize five target compounds —diacetyl, formaldehyde, acetaldehyde, benzaldehyde, and vitamin E acetate (VEA)— in commercial e-liquids and to compare their chemical profile with combustible cigarette smoke.

Material and Methods: Twenty e-liquids (10 domestic, 10 international) and one brand of combustible cigarette were analyzed. E-liquids were assessed via Headspace-GC-FID and GC-MS. Cigarette smoke was collected in a methanol-dichloromethane mixture and analyzed by GC-MS. Compound identification was performed using retention times and mass spectra compared to analytical standards. All detected substances were classified by the Hazardous Substances Data Bank (HSDB) and the Globally Harmonized System (GHS).

Results: None of the five target compounds were detected in the e-liquid samples. A total of 24 compounds were found in e-liquids, with only 1.7% classified as carcinogenic and 5.5% as toxic. By contrast, combustible cigarette smoke contained 27 compounds, of which 10.2% were carcinogenic and 12.7% toxic, with a predominance of aldehydes, ketones, and PAHs. The lower operational temperatures of ECs (≤250°C) and absence of combustion may explain the reduced toxicant profile observed.

Conclusions: The e-liquids analyzed exhibited a substantially lower toxicological burden than combustible cigarette smoke. These findings support their potential as lower-risk alternatives within harm reduction strategies. However, EC aerosols are not free from health risks. Further quantitative studies, realistic-use simulations, and long-term toxicological assessments are essential to determine their safety profile and regulatory implications accurately.

CHEMICAL CHARACTERIZATION OF AEROSOLS FROM DISPOSABLE FLAVORED E-CIGARETTES AVAILABLE IN POLAND

Katarzyna Koziak[1], Maciej Wierzbicki[1], Arkadiusz Szterk[2]

PP04

[1]Medical University of Warsaw, Warsaw, Poland
[2]Aslab Research and Development Center, Warsaw, Poland

Background: The rising popularity of disposable flavored e-cigarettes among adolescents has raised serious public health concerns, yet the chemical composition of the aerosols they produce remains insufficiently investigated. This study aimed to identify and compare the constituents of aerosols and e-liquids from ten popular single-use e-cigarette products sold in Poland using gas chromatography–mass spectrometry (GC-MS).

Material and Methods: Over 60 distinct compounds were identified across samples, including solvents, esters, aldehydes, ketones, alcohols, and aromatic compounds. The predominant components in all aerosols were glycerin and nicotine, with concentrations ranging from 15.5 to 54.3 mg/ml and 7.4 to 20.8 mg/ml, respectively (normalized to liquid converted to aerosol). Numerous flavoring agents were detected, including ethyl maltol, vanillin, methyl anthranilate, and γ-lactones. Notably, 1-ethyl-3-piperidinol, a compound with potential sensory and pharmacological activity, was consistently found at high levels.

Results: Direct comparisons between e-liquids and their corresponding aerosols revealed significant quantitative and qualitative differences, with several compounds appearing exclusively in aerosols, suggesting thermal degradation or reaction byproducts. Additionally, discrepancies were observed between the manufacturer-declared e-liquid ingredients and the actual chemical profiles identified.

Conclusions: These findings underscore the need for regulatory frameworks that evaluate the inhaled aerosol rather than just the e-liquid composition. They also emphasize the urgency of stricter controls over product labeling and ingredient transparency, especially considering the widespread use of these products by minors. Future studies will expand the analysis to include less stable and potentially more reactive aerosol constituents.

TRANSFORMING ORAL HEALTH THROUGH TOBACCO HARM REDUCTION: A PRAGMATIC STRATEGY FOR GLOBAL HEALTH EQUITY

Jessica Perkins, Delon Human

Health Diplomats, UK

PP05

Background: Oral diseases affect 3.5 billion people globally, creating major health, social, and economic burdens, especially in low- and middle-income countries (LMICs). Tobacco use, including smoking and unregulated oral tobacco products, is a key contributor to oral morbidity and mortality. While conventional tobacco control policies have reduced smoking in some high-income countries, cessation rates remain low and oral health inequalities persist. This report evaluates Tobacco Harm Reduction (THR) as a complementary public health strategy to reduce tobacco-related oral disease.

Material and Methods: This analysis draws on global case studies, epidemiological and biomarker data, and policy reviews. Countries implementing safer, non-combustible nicotine alternatives e.g., e-cigarettes, nicotine pouches, and heated tobacco products (HTPs) were evaluated for impacts on smoking prevalence and oral health. The report also examines the role of oral health professionals (OHPs) and the alignment of THR with WHO's Global Strategy on Oral Health (2023–2030).

Results: Sweden, the UK, New Zealand, and Japan show significant public health gains from THR adoption. Sweden has the EU's lowest oral cancer and adult smoking rates, due to widespread snus and nicotine pouch use. Biomarker studies confirm reduced toxicant exposure and improved oral markers among users who switch from smoking. In contrast, South Asian countries face high oral cancer rates linked to unregulated smokeless tobacco use, compounded by limited THR access and misinformation about nicotine. Oral Health Policies remain underutilised in tobacco prevention strategies.

Conclusions: THR offers a pragmatic, evidence-based approach to reduce global oral disease. Integrating it into oral health policy is urgent and essential for equity.

ABSTRACT BOOK

EVALUATION OF THE CYTOTOXIC EFFECTS OF IQOS AEROSOL EXTRACTS AND TOBACCO CIGARETTE SMOKE EXTRACTS ON A549 CELLS. AN IN VITRO STUDY

Myrto Aikaterini Daponte[1], Kyriaki Kyriakidou[1], Konstantinos Mesiakaris[2], Konstantinos Farsalinos[2], Konstantinos Poulas[2], Xanthippi Dereka[1]

PP06

[1]Department of Periodontology, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece
[2]Department of Pharmacy, University of Patras, Patras, Greece

Background: Heated tobacco products (HTPs) are gaining popularity as a potentially less harmful alternative to conventional cigarettes. HTPs produce aerosols by heating —not burning— tobacco, resulting in fewer harmful constituents than conventional cigarettes (CS), but their effects on human lung cells are not fully investigated. This study aimed to evaluate the cytotoxic effects of HTP and CS extracts on human lung epithelial cells (A549) using the MTT assay.

Material and Methods: A549 cells were exposed to CS or IQOS (an HTP product) extracts at dilutions of 20%, 10%, 5%, and 2.5%, derived from 100% solutions containing approximately 42 µg/mL nicotine. Cell viability/proliferation was assessed after 24 and 48 hours of exposure using the MTT assay. Absorbance values were normalized to untreated controls to determine percent viability.

Results: At 24 hours, treatment with 20% IQOS extract resulted in an increase in cell proliferation (113.7%), whereas the same concentration of CS extract maintained at baseline levels (100%), indicating no proliferative stimulation. In contrast, lower concentrations of both IQOS and CS extracts significantly enhanced cell proliferation (>120%), indicating a stimulatory effect on cell metabolism.

At 48 hours, a time-dependent cytotoxic shift was observed. Both extracts at 20% caused marked reductions in viability (73.8% and 62.7%, respectively), with IQOS demonstrating slightly lower cytotoxicity. At lower concentrations (2.5%), cell viability remained near 76%, although the proliferative effect reported at 24 hours was no longer evident. These findings indicate a dose- and time-dependent biological response with lower concentrations promote proliferation during short-term exposure, while prolonged exposure leads to reduced viability, particularly at higher doses.

Conclusions: IQOS induced lower cytotoxicity than cigarette smoke in A549 cells, particularly after 48 hours at high concentrations. However, both products affected cell viability in a time- and dose-dependent manner. While IQOS appears less harmful, it still exerts biological effects.

IMPACT OF COMBUSTIBLE CIGARETTES AND ELECTRONIC NICOTINE DELIVERY SYSTEMS ON THE REGENERATIVE CAPACITY OF PERIODONTAL LIGAMENT-DERIVED MESENCHYMAL STEM CELLS (PDL-MSCS)

Vladislav Volarevic, Ana Volarevic, **Nikolina Kastratovic**

PP07

Faculty of Medical Sciences
University of Kragujevac,
Kragujevac, Serbia

Background: Periodontal ligament-derived mesenchymal stem cells (PDL-MSCs) play a vital role in the repair and maintenance of periodontal tissues. However, their regenerative potential can be compromised by external factors such as exposure to cigarette smoke (CS) and aerosols from electronic nicotine delivery systems (ENDS). While ENDS are often marketed as a safer alternative to traditional tobacco products, the scientific evidence supporting their safety remains limited and inconclusive.

Material and Methods: Following the generation of cigarette smoke and ENDS aerosol, PDL-MSCs were exposed under controlled conditions. Cell viability and proliferation were assessed post-exposure. Additionally, the immunomodulatory function of PDL-MSCs was analyzed through co-culture with T lymphocytes. Cytokine profiling and flow cytometric analysis were conducted to evaluate changes in immune response and T cell phenotype.

Results: Exposure to cigarette smoke resulted in significantly reduced viability and proliferation of PDL-MSCs compared to ENDS aerosol. Moreover, cigarette smoke triggered a heightened pro-inflammatory immune response, potentially contributing to further tissue degradation. In contrast, ENDS exposure appeared to elicit an immunosuppressive effect, which may help mitigate ongoing cellular damage.

Conclusions: Both cigarette smoke and ENDS aerosol were found to negatively affect the regenerative functions of PDL-MSCs. Although the impact of ENDS was less severe, the findings highlight the need for comprehensive research to determine the long-term safety of ENDS and their influence on the regenerative potential of PDL-MSCs, especially in the context of chronic exposure and oral health preservation.

THE EFFECTS OF CYTISINICLINE FOR SMOKING CESSATION ON ARTERIAL STIFFNESS, ENDOTHELIAL FUNCTION AND MYOCARDIAL PERFOMANCE: A PILOT STUDY

Mylgnatios Ikonomidis, John Thymis, **Gavriela Kostelli,** Konstantinos Katogiannis, Eleni Gatourtzidou, Kallirhoe Kourea

PP08

2nd Cardiology Department National and Kapodistrian University of Athens, Attikon Hospital, Athens, Greece

Background: Cytisinicline is a partial agonist of nicotinic acetylcholine receptors (nAChRs), used for smoking cessation.

The purpose of this study was to evaluate the impact of cytisinicline on arterial stiffness, endothelial function, and cardiac performance.

Material and Methods: Sixty healthy smokers were enrolled in our smoking cessation clinic. Thirty initiated cytisinicline treatment, while thirty smokers unwilling to quit served as controls. Groups were matched for age, sex, and pack-years. Assessments were performed at baseline and 1-month follow-up, including: a) Smoking status: self-reported smoking burden and exhaled carbon monoxide (eCO), b) Arterial stiffness: carotid-femoral pulse wave velocity (PWV), central aortic and pulse pressure, c) Endothelial function: perfused boundary region (PBR) of the sublingual microvessels with diameter range 20-25 μm and brachial artery flow-mediated dilation (FMD), d) Cardiac Performance: by Doppler Echocardiography the E-wave, early diastolic velocity (E'), E/E' ratio, global longitudinal strain (GLS), and e) the PWV/GLS ratio, to assess Ventriculoarterial Interaction.

Results: Participants were 49 ± 8 years old, 57% male, with 28 ± 8 pack-years. Baseline measurements did not differ between groups. At 1-month, 29/30 cytisinicline users had quit smoking, confirmed by significantly reduced eCO levels ($p<0.001$). Compared to baseline, the cytisinicline group showed significant improvements in PWV, pulse pressure, central systolic BP, FMD, GLS, PWV/GLS ratio, E/E', and PBR20-25 (all $p<0.05$). No changes were observed in the control group, except for an increase in PBR20-25 ($p=0.045$).

Conclusions: The use of cytisinicline for one month in smokers resulted in amelioration of arterial stiffness, endothelial function, cardiac performance in conjunction with safe and effective smoking cessation.

IMPROVEMENT OF ENDOTHELIAL GLYCOCALYX THICKNESS AND ARTERIAL STIFFNESS IN STEMI PATIENTS AFTER SMOKING CESSATION

Ignatios Ikonomidis, John Thymis, **Eleni Gatourtzidou,** Gavriella Kostelli, Konstantinos Katogiannis, Kallirhoe Kourea

PP09

2nd Cardiology Department, National and Kapodistrian University of Athens, Attikon Hospital, Athens, Greece

Background: Smoking is a modifiable risk factor in patients with ST-Elevation Myocardial Infarction (STEMI). Smoking cessation after STEMI reduces cardiovascular risk and mortality by one-third within two years.

The purpose of this study was to assess whether STEMI smokers who quit after their index event differ in arterial stiffness and endothelial glycocalyx integrity compared to those who continue smoking.

Material and Methods: We enrolled 60 STEMI smokers from the Cardiology Department of Attikon University Hospital. Propensity score matching was applied for age, sex, and cardiovascular risk factors (diabetes, hypertension, smoking burden, hyperlipidemia). After discharge, 30 patients quit smoking while 30 continued. Assessments were performed at recruitment and at 4-month follow-up. We measured:

(a) Perfused boundary region (PBR) of sublingual microvessels (4–25 μm diameter) as a marker of endothelial glycocalyx thickness, and

(b) Carotid-femoral pulse wave velocity (PWV) and central systolic blood pressure (cSBP) as markers of arterial stiffness.

Results: Participants were 59 ± 8 years old, 70% male. Baseline values for PWV, cSBP, and PBR were similar between groups ($p>0.05$). At 4 months, quitters showed significant reductions in PBR across all vessel diameters (4–25 μm) and in PWV (all $p<0.05$). No significant changes were observed in continued smokers. While cSBP remained stable in quitters, it worsened in continued smokers ($p=0.039$). In quitters, the reduction in PBR 4–25 correlated with a decrease in PWV ($r=0.39$, $p=0.042$).

Conclusions: Smoking cessation after STEMI improves arterial stiffness and endothelial glycocalyx integrity within four months, supporting early and aggressive tobacco intervention in post-MI care.

SMOKING CESSATION INTERVENTIONS, A TOPIC OF EVER-INCREASING INTEREST TO MEDICAL PERSONNEL

Adrian Hoxha[1,2], Roland Shuperka[3], Alba Agaraj[4,2], Bukurie Hyseni[2]

PP10

[1]University of Medicine Tirana, Albania
[2]National Association of Public Health, Albania
[3]NGO "For Albania without smoking"
[4]QSUNT

Background: The topics "Interventions for smoking cessation" as well as "embracing harm reduction through alternative nicotine products" were presented to family doctors and nurses across various districts in 2024, as part of ongoing professional development initiatives.

Material and Methods: Several activities have been organized, both online and in person, focusing on reducing the risk from smoking. These activities were conducted during 2024 for health personnel in the districts of Korçe, Durrës, Lushnje, Berat and Vlora. The level of knowledge obtained was evaluated through the forms filled in by the participants. Pre-Test and Post-Test were two important mechanisms through which personnel were evaluated for the knowledge they had before and after training.

Results: A total of 288 doctors and nurses participated in the training activities focused on addressing smoking as a public health issue. Among the participants, 68% were women and 32% were men. The training attracted significant engagement from both rural (44%) and urban (56%) areas. Evaluation results indicated that 70% of participants reported an improvement in their knowledge and expressed confidence in their ability to provide counseling and support to individuals seeking to quit smoking ($p<0.01$). The proportion of health professionals who answered knowledge-based questions correctly ranged from 32% to 56%.

Conclusions: It is imperative to strengthen the knowledge and understanding of healthcare professionals regarding harm reduction strategies, as these play a critical role in decreasing smoking prevalence within the populations they serve. Harm reduction not only supports individuals who have successfully quit smoking but also provides viable alternatives for those who are unwilling or unable to quit, through the use of less harmful nicotine delivery products. Smoking cessation and harm reduction should be regarded as mutually reinforcing components of a comprehensive tobacco control strategy.

ABSTRACT BOOK

NICOTINE ALTERNATIVES AND IMPACT ON HEALTH IN CARDIAC PATIENTS

Julianna Gabzdilová[1], Viola Vargová[2]

PP11

[1]Department of Hematology and Oncohematology, UPJŠ LF and UNLP Košice, Košice, Slovakia
[2]1st Department of Internal Medicine, UPJŠ LF and UNLP Košice, Košice, Slovakia

Smoking is a problem in the population and especially in cardiology patients. Currently 4.8 million people die from smoking-related diseases every year. Quitting smoking is one of the most effective preventable risk factors. Nicotine, although addictive and not without risk, is not the primary cause of smoking-related diseases.

Smoking contributes to the development of ischemic heart disease, atherosclerosis and other cardiovascular diseases. Passive smoking has negative impact on health, contributing to inflammation of the upper respiratory tract and other respiratory problems.

Currently, there are over 1600 independent studies in Pubmed.

T. Munzel et al. compared a population of smokers undergoing PCI using a large, representative population database. The primary objective was to understand how different smoking behaviors after PCI-stopping smoking, continuing to smoke commercial cigarettes, or switching to e-cigarettes entirely or as a dual user affect the risk of MACE in a high-risk population. The authors found that successful smoking cessation after PCI, as expected, was associated with a significantly lower risk of MACE (defined as the sum of all-cause death, spontaneous myocardial infarction, or repeat revascularization) compared with continuing to smoke commercial cigarettes. They concluded that continued smoking leads to negative short- and long-term effects, and that switching to e-cigarettes or dual use shows positive short-term effects but uncertain long-term outcomes. Quitting smoking completely has positive short- and long-term health outcomes.

Vaping is generally considered less harmful than smoking (including according to the ESC conclusions in London 2024), but it is not completely risk-free. Switching smokers from traditional cigarettes to nicotine alternatives could therefore represent a breakthrough way to significantly reduce health risks.

The best option for health is to completely quit nicotine in any form.

8th Summit
Tobacco
Harm Reduction
Novel products, Research & Policy
by SCHRE

30 SEPTEMBER - 1 OCTOBER 2025 ∫ ATHENS
Basil & Elise Goulandris Foundation

AUTHORS' INDEX

AUTHORS' INDEX

A

ACHEVSKI BLAGOJ **PP02**
AGARAJ ALBA **PP10**
ALANAZI AMER M. **OP13**
AMOIRADOU MARTHA **OP21**
AMORINI ANGELA MARIA **OP12, OP13**
ARAS IVANA **OP06**
ARSENIJEVIC ALEKSANDAR **OP12**

B

BARSUKOV ANTON **OP15**
BATAGIANNI MARIA **OP04**
BELLOSTA STEFANO **OP17**
BISHOP EMMA **OP09**
BORISOVA EKATERINA **OP15**

C

CANTALI MIRIANA **OP12**
CAROTA GIUSEPPE **OP12**
CARUSO MASSIMO **OP12, OP13**
CATENA EMANUELE **OP17**
CATENA GABRIELE **OP17**
CHESTER OLIVIA **OP09**
CORSINI ALBERTO **OP17**

D

DAPONTE MYRTO AIKATERINI **PP06**
DENARO SIMONA **OP13**
DEREKA XANTHIPPI **PP06**
DIGARD HELENA **OP09**
DISTEFANO ALFIO **OP13**
DOHERTY LYDIA **OP09**
DRAGAN INGRID **OP11**
DRMIĆ STIPE **OP06**
DYDYSHKO VLADISLAV **OP15**

E

EMMA ROSALIA **OP12, OP13**

F

FARSALINOS KONSTANTINOS **PP06**
FERNANDEZ BUENO FERNANDO **OP16**

G

GABZDILOVÁ JULIANNA **PP11**
GATOURTZIDOU ELENI **PP08, PP09**
GEORGAKOPOULOS ANGELOS **OP21**
GIARDINA CHIARA **OP12**
GIORDANO ANTONIO **OP12, OP13**
GLEBOVA SVETLANA **OP15**
GOENAWAN HANNA **OP12**

H

HADLEY SIMONE **OP09**
HENOIN CHRISTIAN HEINRICH **PP03**
HOXHA ADRIAN **PP10**
HUMAN DELON **PP05**
HYSENI BUKURIE **PP10**

I

IDRIZI MEREME **PP02**
IKONOMIDIS IGNATIOS **PP08, PP09**
INTAN BARLIANA MELISA **OP12**
IQBAL QAMAR **OP19**

J

JEFFERY JANA **OP09**

K

KASTRATOVIC NIKOLINA **OP12, PP07**
KATOGIANNIS KONSTANTINOS **PP08, PP09**
KAWAGUCHI MASAKI **OP08**
KOSTELLI GAVRIELA **PP08, PP09**
KOUREA KALLIRHOE **PP08, PP09**
KOZIAK KATARZYNA **PP04**
KYRIAKIDOU KYRIAKI **PP06**

AUTHORS' INDEX

L

LESMANA RONNY **OP12**
LI VOLTI GIOVANNI **OP12, OP13**
LONGHITANO LUCIA **OP13**
LUCKHURST JAROD **OP03**

M

MASSER ANNA **OP01**
MCADAM KEVIN **OP09**
MEREDITH STUART **OP09**
MESIAKARIS KONSTANTINOS **PP06**
MIAZZI FABIO **OP09**
MITIK KRISTINA **PP02**
MUCHAMETOVA VARVARA **PP01**
MURPHY MARINA **OP18**

N

NENASHEVA NATALYA **PP01**
NGUYEN YEN **OP09**

O

ORLANDO LAURA **OP13**

P

PARTSINEVELOS KONSTANTINOS **OP12, OP13**
PEJOV LJUPCO **PP02**
PEREDELSKAYA MARINA **PP01**
PEREIRA LUCIANE LUCIO **OP11**
PÉREZ LEAL SUSANA LIZETH **PP03**
PERKINS JESSICA **PP05**
PERSON OSMAR CLAYTON **OP11**
PITTALÀ ALESSANDRA **OP12**
POLOSA RICCARDO **OP12**
POULAS KONSTANTINOS **PP06**

Q

QUAYE BENEDICTA **OP03**

R

REGUSHEVSKAIA DARIA **OP20**
RODRIGUES CINTIA LECI **OP11**
ROZANOV ALEXSANDR **OP02**
RUST SONJA **OP12**

S

SDOGKOS EVANGELOS **OP21**
SEKINE YOSHIKA **OP08**
SHUPERKA ROLAND **PP10**
SMART DAVID **OP09**
SPASIC BOGDAN **OP12**
STEVANOVIĆ RANKO **OP06**
SUN ANG **OP12, OP13**
SYPSA VANA **OP04**
SZTERK ARKADIUSZ **PP04**

T

TARICANO MARINA **OP11**
TAYUTINA TATYANA **OP07**
THYMIS JOHN **PP08, PP09**
TOMASELLO BARBARA **OP13**
TONIKJ RIBARSKA JASMINA **PP02**

V

VARDAKOU IOANNA **OP09**
VARGOVÁ VIOLA **PP11**
VICARIO NUNZIO **OP13**
VOGIATZIS IOANNIS **OP21**
VOLAREVIC VLADISLAV **OP12, PP07**
VOLAREVIC ANA **PP07**

W

WIERZBICKI MACIEJ **PP04**
WISSAM SAAB MIRIAM **OP12**

Y

YUDIN ALEXANDER **PP01**
YUFEREVA YULIA **OP20**

Z

ZONNESTEIN BELINDA **OP09**