edsa
European Dental Students' Association

NON-COMMUNICABLE DISEASES AND ORAL HEALTH

European Dental Students' Association

2026

European Dental Students' Association

International Office - Dublin Dental University Hospital

Trinity College Dublin, The University of Dublin

Lincoln Place Dublin 2

Ireland D02 F859

TABLE OF CONTENTS

European Dental Students' Association

International Office - Dublin Dental University Hospital

Trinity College Dublin, The University of Dublin

Lincoln Place Dublin 2

Ireland D02 F859

INTRODUCTION

Over a half of the adult population in the WHO European region is affected by at least one oral disease. Marking the highest prevalence among all WHO regions (1)**,** oral diseases afflict over half of the adult population in the European Region. What remains the most common non-communicable disease (NCD) in Europe? The answer is alarming - dental caries, undermining roughly one-third of the EU population. In addition, experiencing severe periodontitis requiring complex care occurs one in ten adults (2,3). Moreover, oral cancer still continues to pose a serious public health threat, accounting for nearly one-fifth of all malignant reports among this continent (1). The importance of increasing social awareness has never been as crucial as today.

Simultaneously, non communicable diseases such as diabetes (mainly Type II), cardiovascular disease (CVD), chronic kidney disease (CKD), and chronic obstructive pulmonary disease (COPD) represent a major burden for millions of European citizens. (4, 5). These conditions share behavioral and biological risk factors with oral diseases including tobacco use, harmful alcohol consumption, unhealthy diets, and social determinants of health (5).

It is clear that oral and systemic health have a strong bidirectional influence on each other: periodontal inflammation contributes to systemic inflammation and vascular dysfunction; chronic diseases such as diabetes or cancer therapy can worsen oral outcomes (6, 7). Emerging digital tools, including artificial intelligence AI (16, 17), enhance oral disease prevention and diagnosis while supporting, not replacing, clinical decisions. Nevertheless, these connections remain underrepresented in current policy, education, and prevention frameworks. Therefore, it becomes essential to integrate oral health into Europe's NCD strategies for achieving coherent, equitable, accessible, and person-centered healthcare.

BACKGROUND & PROBLEM

Raising awareness of how oral health influences systemic non-communicable diseases (NCDs) is essential for improving population health outcomes. Although the evidence linking oral and general health has grown considerably in recent

years, this relationship is still not adequately reflected in both: clinical care and public health policy (4, 5).

NCDs remain responsible for over 70% of all deaths (5.), which presents them as the leading cause of morbidity and mortality worldwide. Within the European Union, cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), and cancer cause the majority of premature mortality and healthcare expenditure (5). Tobacco use, unhealthy diet, physical inactivity, and harmful alcohol consumption are recognised as common modifiable risk factors. However, oral health remains an often-overlooked component of systemic disease prevention (4, 5).

Recent evidence emphasizes bidirectional influence between oral and systemic diseases. Periodontitis is associated with CVD and diabetes (6, 7), and reviews confirm its relationship with CKD and other systemic NCDs (8). Cohort studies show that periodontitis is linked to higher cardiovascular and respiratory mortality, where chronic inflammation and microbial dysbiosis contribute to vascular and metabolic dysfunction (9). Another example involves patients with CKD, who exhibit increased tooth loss and caries burden, while in respiratory diseases (COPD, pneumonia, and asthma), the oral microbiome is affected (10, 11). European data from the BRuSH Project indicate that improving oral hygiene can enhance lung function (12). Consensus recommendations by Herrera et al. (13) emphasize that oral care for patients with chronic respiratory diseases should include smoking cessation counseling and monitoring of oral side effects such as xerostomia and mucosal inflammation, which affect both oral and airway health.

Recent evidence emphasizes bidirectional influence between oral and systemic diseases. Periodontitis is associated with CVD and diabetes (6, 7), and reviews confirm its relationship with CKD and other systemic NCDs (8). Cohort studies show that periodontitis is linked to higher cardiovascular and respiratory mortality, where chronic inflammation and microbial dysbiosis contribute to vascular and metabolic dysfunction (9). Another example involves patients with CKD, who exhibit increased tooth loss and caries burden, while in respiratory diseases (COPD, pneumonia, and asthma), the oral microbiome is affected (10, 11). European data from the BRuSH Project — a European research initiative exploring

links between oral hygiene and respiratory outcomes — indicate that improving oral hygiene can enhance lung function (12). Consensus recommendations by Herrera et al. (13) emphasize that oral care for patients with chronic respiratory diseases should include smoking cessation counseling and monitoring of oral side effects such as xerostomia and mucosal inflammation, which affect both oral and airway health.

A fact that is often overlooked is that systemic NCDs and their treatments worsen oral outcomes: diabetes increases periodontal inflammation; cancer therapy causes xerostomia and mucositis; and CKD and CVD contribute to bone and soft-tissue changes (14, 15). An answer to one of the problems is the MASCC/ISOO clinical guidelines, which provide evidence-based recommendations for the prevention and management of oral mucositis and salivary dysfunction in oncology patients undergoing radiation or chemotherapy (15).

Systemic NCDs and their treatments are often overlooked contributors to poor oral outcomes: diabetes increases periodontal inflammation, cancer therapy induces xerostomia and mucositis, and CKD and CVD lead to bone and soft-tissue alterations (14, 15). An answer to one of the problems is the MASCC/ISOO clinical guidelines, which provide evidence-based recommendations for the prevention and management of oral mucositis and salivary dysfunction in oncology patients undergoing radiation or chemotherapy (15).

Artificial intelligence (AI) is increasingly recognised as a key innovation in healthcare, including dentistry. AI tools assist in clinical practice towards: early caries detection, management of periodontal diseases (17) and oral lesions at early stages, helping clinicians improve diagnostic accuracy and treatment efficiency. When integrated within NCD prevention frameworks, AI can help reduce inequalities in oral health by expanding the reach of preventive campaigns, enabling data-driven policymaking, and fostering collaboration between dental and medical sectors.

In conclusion, oral and systemic diseases contribute to escalating health expenditures, productivity losses, and health inequities across Europe. Integrating oral health into NCD prevention — through early detection in dental settings, the Common Risk Factor Approach (CRFA), and interprofessional collaboration — is

vital to reducing morbidity and mortality. Coordinated action between the dental and medical healthcare fields is essential to achieve truly integrated and equitable healthcare in Europe.

SCOPE

This policy applies to:

- Dental students at undergraduate and postgraduate levels across Europe.
- Student organisations, national dental and medical associations, and public health networks collaborating on advocacy, education, and community engagement related to oral and systemic NCD prevention.
- All EDSA member organisations, campaigns, and platforms that promote evidence-based policy, health equity, and student participation in European public health initiatives.

The scope includes curriculum design, interprofessional education, student research, outreach initiatives, data collection, and advocacy for systemic integration of oral health within NCD strategies at both national and European levels.

DEFINITIONS

- **Non-Communicable Diseases (NCDs):** chronic diseases that are not transmitted between people and tend to progress slowly. They include cardiovascular diseases, cancer, chronic respiratory diseases, diabetes, and chronic kidney disease.
- **Common Risk Factor Approach (CRFA):** a public-health strategy that targets behavioural and environmental factors (such as tobacco use, diet, alcohol, and physical inactivity) shared by multiple NCDs, including oral diseases.
- **Oral–Systemic Link:** the bidirectional relationship between oral health and systemic conditions, recognising that diseases such as periodontitis can

influence, and be influenced by, systemic inflammation and chronic disease processes.

- **Integrated Care:** a coordinated approach to health service delivery in which different health professions and sectors work together to provide continuous, person-centred care across disciplines and settings.
- **Brief Intervention:** a short, evidence-based conversation between a healthcare professional and a patient designed to motivate behaviour change — for example, reducing smoking, alcohol use, or improving diet. (Oxford English Dictionary; WHO, 2022)
- **Artificial Intelligence in Dentistry**: The use of computer-based systems to support diagnosis, treatment planning, and prevention of oral diseases through data-driven and evidence-based approaches. According to FDI (2023), AI should assist — not replace — professional clinical judgment. (FDI World Dental Federation, 2023; WHO, 2024)

POLICY STATEMENT

EDSA proposes the following actions:

1. Education and Curriculum Development

- Integrate teaching on the oral–systemic and systemic–oral links into undergraduate and postgraduate curricula, highlighting the bidirectional relationship between oral diseases and major NCDs such as CVD, diabetes, CRD, CKD, and cancer.
- Promote interprofessional education and collaboration through shared seminars, workshops, and joint case-based learning with medical, nursing, and public health students.
- Strengthen clinical-phase teaching on NCD prevention, screening, and patient counseling, ensuring that students are trained to deliver brief interventions and recognize early signs of systemic conditions during dental visits.
- Develop a unified educational framework for patient communication on NCDs and oral health, enabling students and practitioners to provide

consistent, evidence-based information about prevention, lifestyle modification, and risk factor management.

2. Student-Led Prevention and Community Initiatives

EDSA encourages dental and medical students to take an active role in promoting health equity and NCD prevention through volunteering, outreach, and research.

- Support student-led initiatives and volunteering projects that raise awareness of oral–systemic health links within local communities, schools, and vulnerable populations.
- Promote peer-to-peer and interprofessional collaboration, enabling dental and medical students to co-design and deliver educational campaigns on shared NCD risk factors such as tobacco, diet, and alcohol use.
- Encourage the collection and sharing of student-generated data or case findings (in line with ethical and institutional standards) to contribute to public health monitoring and policy development.

3. Advocacy and Student Engagement

EDSA and EMSA commit to strengthening the student voice in European health policy by:

- Raising awareness of oral–systemic health links through campaigns, conferences, and digital communication led by students.
- Using the EDSA Policy Café and other initiatives to gather input, share evidence, and build consensus on student priorities for NCD prevention.
- Organizing joint interprofessional seminars and workshops to support dialogue between future medical and dental professionals.
- Representing students in European discussions on NCDs, oral health integration, and health equity.
- Encouraging national student associations to collaborate in advocating for oral health inclusion in EU NCD frameworks, educational reforms, and research funding.

European Dental Students' Association

International Office - Dublin Dental University Hospital

Trinity College Dublin, The University of Dublin

Lincoln Place Dublin 2

Ireland D02 F859

ROLES AND RESPONSIBILITIES

- EDSA Board and Policy Officers: coordinate student engagement and interprofessional collaboration on oral–systemic health; represent dental students in European and WHO consultations on NCD prevention and oral health integration.
- Faculties and Clinical Staff: promote interprofessional learning, patient communication, and evidence-based preventive care.
- Students and Unions: participate in community initiatives, volunteering, and research on oral–systemic links; contribute to curriculum discussions and raise awareness of NCD prevention among peers and patients.
- Health Policy and Education Stakeholders: promote the responsible integration of digital tools and artificial intelligence in oral health services and curricula.

STRATEGIC ALIGNMENT

1. World Health Organization (WHO) Regional Office for Europe. (2023, April 20). *WHO/Europe calls for urgent action on oral disease as highest rates globally are recorded in European Region.* Copenhagen: WHO Regional Office for Europe.
2. FDI World Dental Federation. (2021). *Vision 2030: Delivering optimal oral health for all*. Geneva: FDI World Dental Federation.
3. Platform for Better Oral Health in Europe. (2022). *State of Oral Health in Europe: 2022 Report.* Brussels: Platform for Better Oral Health in Europe.
4. World Health Organization (WHO). (2022). *Global oral health status report: Towards universal health coverage for oral health by 2030*. Geneva: World Health Organization.
5. World Health Organization (WHO). (2023*). Global report on the epidemiology and burden of noncommunicable diseases*. Geneva: World Health Organization.
6. Herrera, D., Sanz, M., et al. (2024). *Periodontal diseases and cardiovascular diseases: Mechanistic and clinical insights*. Journal of Clinical Periodontology, 51(Suppl 24), S1–S22.

7. Botelho, J., Machado, V., & Mendes, J. J. (2022). *An umbrella review of the evidence linking oral health and systemic noncommunicable diseases.* Frontiers in Oral Health, 3, 9734115.
8. Heikkilä, P., et al. (2022*). Oral health associated with incident diabetes but not other chronic diseases: A cohort study*. Frontiers in Oral Health, 3, 956072.
9. Kotronia, E., et al. (2021). *Oral health and all-cause, cardiovascular, and respiratory mortality.* Scientific Reports, 11, 95865.
10. Dong, Y., et al. (2022). *Relationships between oral microecosystem and respiratory diseases.* Frontiers in Molecular Biosciences, 8, 718222.
11. European Commission (CORDIS). (2023). *Strong lungs start with good oral health – The BRuSH Project.* Brussels: European Commission.
12. Öçbe, S., et al. (2025). *An overlooked connection: Oral health status in patients with chronic diseases*. BMC Oral Health, 25, 56.
13. Fu, Y., et al. (2025). *Connection between oral health and chronic diseases: A systematic review.* Journal of Clinical Medicine, 14(5), 11731113.
14. Herrera, D., Sanz, M., et al. (2024). *Periodontal diseases and cardiovascular diseases, diabetes, and respiratory diseases: Summary of the consensus report by the European Federation of Periodontology and WONCA Europe*. European Federation of Periodontology.
15. Lalla, R. V., Bowen, J., Bossi, P., et al. (2024). *MASCC/ISOO clinical practice guidelines for the management of oral mucositis and salivary gland dysfunction in cancer therapy.* Multinational Association of Supportive Care in Cancer / International Society of Oral Oncology.
16. FDI POLICY STATEMENT Artificial intelligence in dentistry 2024. *https://www.fdiworlddental.org/sites/default/files/2024-11/DPS4-Artificial-Intelligence-in-Dentistry_0.pdf*
17. Clinical Applications of Artificial Intelligence in Periodontology: A Scoping Review: Georgios S. Chatzopoulos, Vasiliki P. Koidou, Lazaros Tsalikis, . Eleftherios G, Kaklamanos. *https://pmc.ncbi.nlm.nih.gov/articles/PMC12195203/*

European Dental Students' Association
International Office - Dublin Dental University Hospital
Trinity College Dublin, The University of Dublin
Lincoln Place Dublin 2
Ireland D02 F859