

ORAL HEALTH SHOULD BE A KEY COMPONENT OF THE EU CARDIOVASCULAR HEALTH PLAN

Cardiovascular diseases (CVDs) remain the leading cause of death in the EU,¹ claiming 1.7 million lives annually and costing over €280 billion per year.² As the European Commission prepares its strategic response through the EU cardiovascular health plan, it is essential to recognise and address the interconnected nature of non-communicable diseases (NCDs) and embed oral health – particularly periodontal conditions – into the heart of this effort.

Despite their profound impact, oral diseases remain a neglected public health challenge. They are the most prevalent NCDs globally, affecting 3.7 billion people.³ In Europe alone, oral conditions cost €90 billion annually – ranking third in economic burden after diabetes (€119 billion) and cardiovascular diseases (€111 billion) – and first in terms of relative prevalence.⁴

Scientific evidence increasingly demonstrates that oral health is deeply interconnected with systemic health. Increased action at an EU level to improve oral health can not only help support improved CVD outcomes but also support wider health improvements across Europe, ultimately aiding Member States in reaching the World Health Organization's Sustainable Development Goal 3.4 to improve outcomes against non-communicable disease.

Oral health as a key driver of prevention

The first pillar of the EU Cardiovascular Health Plan – prevention – must include oral health promotion as a core strategy. Periodontitis, a chronic inflammatory disease affecting the gums and supporting structures of the teeth, is independently associated with a range of major NCDs, including cardiovascular diseases, diabetes, chronic obstructive pulmonary disease (COPD), obstructive sleep apnoea, and chronic kidney disease (CKD).⁵

¹ OECD/European Commission. (2024). *Health at a glance: Europe 2024: State of health in the EU cycle*. OECD Publishing. <https://doi.org/10.1787/b3704e14-en>

² Luengo-Fernandez, R., Walli-Attaei, M., Gray, A., Torbica, A., Maggioni, A. P., Huculeci, R., Bairami, F., Aboyans, V., Timmis, A. D., Vardas, P., & Leal, J. (2023). Economic burden of cardiovascular diseases in the European Union: A population-based cost study. *European Heart Journal*, 44(45), 4752–4767. <https://doi.org/10.1093/eurheartj/ehad583>

³ World Health Organization. (2025). *Oral health: Fact sheet*. <https://www.who.int/news-room/fact-sheets/detail/oral-health> (Retrieved 14 August 2025)

⁴ World Health Organization. Executive Board. (2021). *Oral health: Achieving better oral health as part of the universal health coverage and noncommunicable disease agendas towards 2030: Report by the Director-General* (No. EB148/8, pp. 1-6). <https://apps.who.int/iris/handle/10665/359533> (Retrieved 29 July 2025)

⁵ Herrera, D., Sanz, M., Shapira, L., Brotons, C., Chapple, I., Frese, T., Graziani, F., Hobbs, F. D. R., Huck, O., Hummers, E., Jepsen, S., Kravtchenko, O., Madianos, P., Molina, A., Urgan, M., Vilaseca, J., Windak, A., & Vinker, S. (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 Journal of General Practice*, 30(1), 2320120. DOI: <https://doi.org/10.1080/13814788.2024.2320120>

Mechanistically, the chronic entry of periodontal bacteria into the bloodstream triggers systemic inflammation, elevates inflammatory markers, and contributes to endothelial dysfunction and atherosclerosis^{6,7} – key drivers of cardiovascular pathology.

Promoting good oral hygiene and access to preventive oral healthcare can reduce systemic inflammation and microbial burden, thereby lowering cardiovascular risk. Oral health professionals are well-positioned to reinforce healthy behaviours as primordial and primary intervention strategies – such as tobacco cessation, improved nutrition, and hygiene practices – that align with broader NCD prevention goals. Integrating oral health into EU-wide public health campaigns would amplify the impact of initiatives like Europe’s Beating Cancer Plan and the EU Cardiovascular Plan.

Epidemiological studies show that individuals with periodontitis have a higher prevalence of subclinical cardiovascular disease, including increased carotid intima-media thickness and impaired endothelial function. Active periodontal inflammation has also been shown to have a causal relationship with major adverse cardiovascular events.⁸ Periodontal therapy has been shown to improve surrogate markers of cardiovascular risk and glycaemic control in diabetes patients, underscoring the therapeutic potential of integrated care.⁹

Oral health professionals in early detection and screening

The second pillar – early detection and screening – offers a unique opportunity to leverage oral healthcare professionals (OHPs) as frontline actors. During routine oral examinations, dentists and hygienists can identify early signs of systemic disease, including diabetes, cardiovascular risk indicators, and even oral or systemic cancers.¹⁰ For example, periodontal inflammation and mucosal changes may signal underlying metabolic or vascular dysfunction.¹¹

Oral healthcare professionals can support EU protocols for health checks and digital tools for personalised monitoring by referring patients for cardiovascular screening when oral indicators are present. Including oral health in screening strategies would enhance early intervention and reduce long-term disease burden.

⁶ Sanz, M., et al. (2020). Periodontitis and cardiovascular diseases: Consensus report. *Global Heart*, 15(1), 1. <https://doi.org/10.5334/gh.400>

⁷ Tonetti, M. S., Van Dyke, T. E., & Working Group 1 of the Joint EFP/AAP Workshop. (2013). Periodontitis and atherosclerotic cardiovascular disease: Consensus report of the Joint EFP/AAP Workshop on Periodontitis and Systemic Diseases. *Journal of Clinical Periodontology*, 40(Suppl. 14), S24-S29. <https://doi.org/10.1111/jcpe.12089>

⁸ Van Dyke, T. E., Kholy, K. E., Ishai, A., Takx, R. A. P., Mezue, K., Abohashem, S. M., Ali, A., Yuan, N., Hsue, P., Osborne, M. T., & Tawakol, A. (2021). Inflammation of the periodontium associates with risk of future cardiovascular events. *Journal of periodontology*, 92(3), 348–358. <https://doi.org/10.1002/JPER.19-0441>

⁹ Sanz et al., 2020

¹⁰ Fu, D., Shu, X., Zhou, G., Ji, M., Liao, G., & Zou, L. (2025). Connection between oral health and chronic diseases. *MedComm*, 6(1), e70052. <https://doi.org/10.1002/mco2.70052>

¹¹ Martínez-García, M., & Hernández-Lemus, E. (2021). Periodontal Inflammation and Systemic Diseases: An Overview. *Frontiers in physiology*, 12, 709438. <https://doi.org/10.3389/fphys.2021.709438>

Oral health in management, care, and rehabilitation

The third pillar of the EU CVD Plan – **management, care, and rehabilitation** – must also integrate oral health to improve health outcomes and reduce costs on health systems. Periodontal therapy can improve glycaemic control in diabetes patients and reduce systemic inflammation, which benefits cardiovascular health and improves endothelial function.¹² In CKD patients, periodontitis is linked to reduced survival, driven by inflammatory and oxidative stress mechanisms.¹³

Beyond cardiovascular health to wider NCDs, the bidirectional relationship between periodontitis and diabetes is well-established. Hyperglycaemia exacerbates periodontal inflammation and impairs healing, while untreated periodontitis worsens glycaemic control and increases systemic inflammation.¹⁴ Similarly, oral bacteria aspirated into the lungs can aggravate respiratory conditions such as COPD, independent of smoking status or socioeconomic factors.^{15,16} Moreover, periodontitis has been shown to be causally related to chronic kidney disease via systemic oxidative stress.¹⁷

In rehabilitation settings, maintaining oral health is essential for nutritional intake, quality of life, and infection prevention – particularly among older adults and those recovering from cardiovascular events. Collaborative care models that include oral healthcare professionals can enhance patient outcomes and reduce healthcare costs. Moreover, oral health is a critical component of cancer survivorship and recovery, reinforcing the need for integrated care pathways that champion the role of oral healthcare professionals can play.

Conclusion

As part of the forthcoming EU Cardiovascular Health Plan, as well as throughout the EU's NCD agenda for 2024-2029, a holistic approach must be adopted to recognise oral health as a central pillar of systemic health. Integrating oral healthcare into prevention, screening, and management strategies for cardiovascular and other chronic diseases will not only improve outcomes but also enhance equity, resilience, and sustainability across European health systems.

¹² Tonetti et al., 2013

¹³ Sanz et al., 2020

¹⁴ Sanz, M., Ceriello, A., Buyschaert, M., et al. (n.d.). *Scientific evidence on the links between periodontal diseases and diabetes: Consensus report and guidelines of the joint workshop on periodontal diseases and diabetes by the International Diabetes Federation and the European Federation of Periodontology*. National Institute of Diabetes and Digestive and Kidney Diseases. <https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/gum-disease-dental-problems>

¹⁵ Herrera et al., 2024

¹⁶ Sanz et al., 2020

¹⁷ Sharma, P., Fenton, A., Dias, I. H. K., Heaton, B., Brown, C. L. R., Sidhu, A., Rahman, M., Griffiths, H. R., Cockwell, P., Ferro, C. J., Chapple, I. L., & Dietrich, T. (2021). Oxidative stress links periodontal inflammation and renal function. *Journal of clinical periodontology*, 48(3), 357–367. <https://doi.org/10.1111/jcpe.13414>



About the Platform for Better Oral Health:

The Platform for Better Oral Health in Europe is a joint initiative of the Association for Dental Education in Europe, the Council of European Chief Dental Officers, the European Association of Dental Public Health, the European Federation of Periodontology, the Oral Health Foundation, and the Pan-European Region of the International Association for Dental Research.

In addition to this core group of organisations, the Platform collaborates with 19 European oral health and health associations, which advocate as part of the oral health community on a variety of issues.

As the 'go-to' umbrella representative of leading oral health organisations, our shared goal is to create a common European approach towards improved oral health outcomes through policy, research, education, promotion, and access to care.

To find out more about us, check our website: <https://www.oralhealthplatform.eu/>