



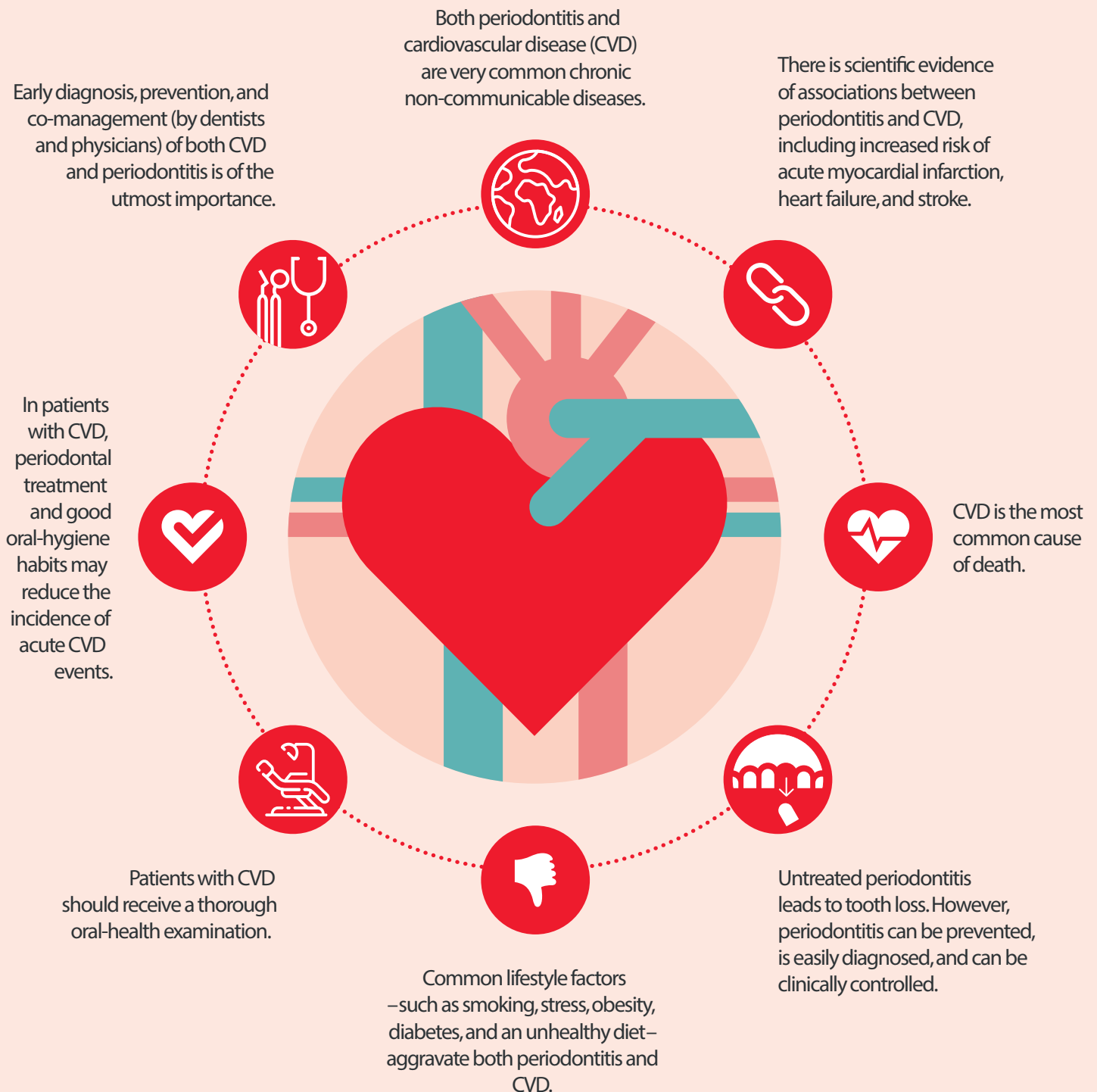
Perio  
& Cardio

Healthy gums for a healthy heart



# Recommendations for medical professionals and pharmacists

# Periodontitis & Cardiovascular Disease (CVD) at a glance



## Recommendations for medical professionals and pharmacists

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Periodontal diseases and cardiovascular diseases are widespread non-communicable diseases that have a significant impact on health and quality of life. Periodontal diseases (gingivitis and periodontitis) are probably the most common disease of mankind<sup>1</sup>: about 80% of people aged over 35 suffer from them and severe periodontitis is the sixth most prevalent disease worldwide, affecting about 800 million people (about 10% of the global population).<sup>2</sup> If untreated, periodontitis causes tooth loss and it is associated with poorer nutrition, speech, and self-confidence and a lower quality of life.

Cardiovascular diseases (CVD) involve the heart or the blood vessels and include ischaemic heart disease, stroke, hypertension, rheumatic heart disease, cardiomyopathy, and atrial fibrillation. CVD are responsible for a third of all deaths globally (around 18 million per year) but for 45% of deaths in Europe (around four million per year). They are more common in developed countries with “Western” lifestyles because of an ageing population, sedentary lifestyles, and unhealthy diets.

The main risk factors for CVD include smoking, high blood pressure, high levels of cholesterol or triglycerides, altered glucose metabolism, and obesity. Some of these factors are also common to periodontitis. Fortunately, there are simple lifestyle changes that can reduce these risk factors.

Periodontitis is associated with several forms of cardiovascular disease and cardiovascular mortality and may be a preventable risk factor for CVD.

*While more research is needed on the effect of periodontal treatment on CVD and CVD risk factors, there is evidence that periodontal treatment and oral hygiene helps in the primary prevention of CVD. For instance, patients who brush their teeth twice a day and have a good oral-health routine may have less risk of acute CVD events. Periodontal treatment in CVD patients is safe, although in some cases – where patients receive anti-coagulant or anti-platelet therapy – safe haemostatic measures need to be taken.*

Cardiologists, doctors, and other healthcare professionals should advise patients with CVD that periodontitis may worsen their disease and increase the risk of CVD events. They should inform patients that periodontal therapy may have a positive impact on their cardiovascular health. They should also ask patients with CVD about signs and symptoms of periodontitis (such as bleeding gums and loose teeth) and, where appropriate, recommended a periodontal evaluation.

*If patients have been diagnosed with periodontitis, doctors should investigate if appropriate periodontal care and maintenance are being provided. Patients with newly diagnosed CVD should be referred for a periodontal examination.*

Furthermore, doctors should closely liaise with dental surgeons in the periodontitis management of CVD patients on anti-coagulant or anti-platelet therapy before any oral intervention or periodontal surgery, as it is very important to avoid excessive bleeding or the risk of ischaemic events.

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<sup>1</sup> Tim Footman (editor), Guinness World Records 2001 (London: Guinness World Records Ltd, 2000).

<sup>2</sup> Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017, The Lancet, Vol. 352 (November 2018), 1789–1858.

# Periodontitis and cardiovascular disease are both widespread conditions among the world's population

## General facts



### Cardiovascular disease

17.9 million deaths globally per year  
(1/3 of deaths)  
In Europe, 3.9 million deaths per year  
(45% of deaths)

Prevalence:  
Nearly 500 million people worldwide  
affected by CVD in 2017



### Periodontitis

50% of global population

Prevalence:  
Approx. 800 million people  
around the world with severe forms



Both cardiovascular disease (CVD) and periodontitis are non-communicable diseases (NCD) – i.e. diseases that are not transmissible directly from one person to another.



NCD account for €115 billion of healthcare costs in Europe per year.

## Periodontitis facts

- Periodontal diseases – gingivitis and periodontitis – are the most prevalent inflammatory diseases in humans.
- If untreated, periodontitis causes tooth loss and it is associated with poorer nutrition, speech, and self-confidence and a lower quality of life.
- Periodontitis is associated with higher levels of atherosclerosis, endothelial dysfunction, glycaemic levels, and systemic inflammation.
- Evidence exists to support associations between severe periodontitis and several NCD including diabetes, cardiovascular disease, chronic obstructive pulmonary disease, and chronic kidney disease.
- Periodontitis is easily diagnosed and it can be clinically controlled; with regular high-quality supportive treatment, clinical results can be maintained.
- Successful treatment of periodontitis is associated with a reduction of systemic inflammation, improvement of glucose metabolism, and better quality of life.

## Signs of gum disease

- ☒ Red or swollen gums
- ☒ Bleeding gums or blood in the sink after brushing teeth
- ☒ Foul taste in the mouth
- ☒ Calculus (tartar) on teeth
- ☒ Longer-looking teeth
- ☒ Increasing spaces between teeth or teeth moving apart
- ☒ Loose teeth

## Common lifestyle risk factors



Smoking



Stress / Hypertension



Poor diet



Lack of exercise



Obesity

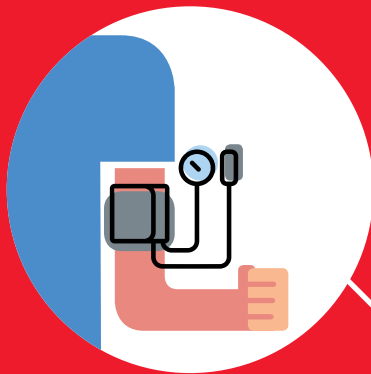
# The relationship between periodontitis and CVD

## Evidence

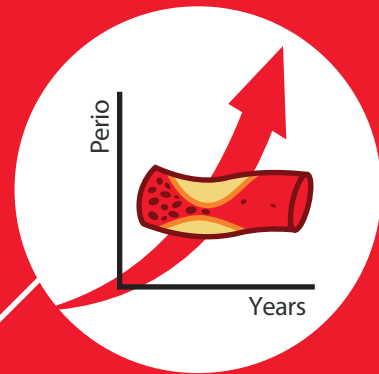
There is evidence that periodontitis is associated with various forms of cardiovascular disease, including: coronary artery disease, myocardial infarction, cerebrovascular disease, cardioembolic and thrombotic stroke, peripheral artery disease, atrial fibrillation, and heart failure.

There is also evidence that:

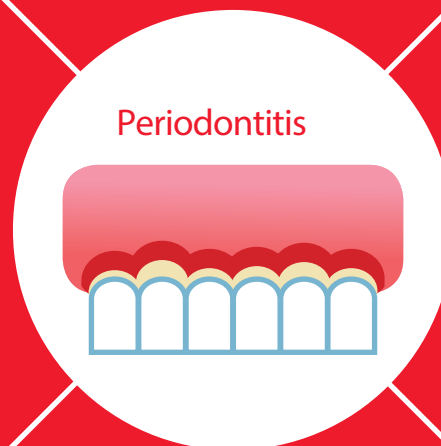
Periodontitis patients exhibit significant endothelial dysfunction.



Periodontitis leads to increased risk for future atherosclerosis (narrowing of the arteries).



**Periodontitis causes inflammation** that affects the development of atherothrombogenesis (detachment of atheromas in arteries).



Periodontitis appears to be a another, yet preventable, risk factor for CVD.

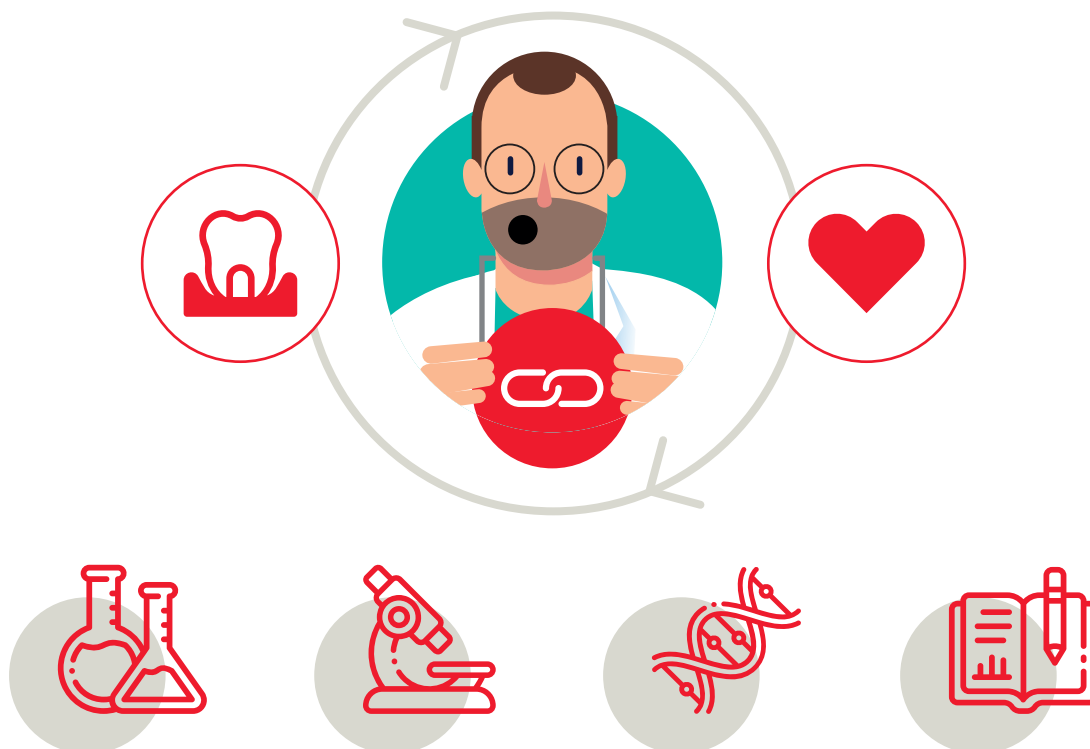


Periodontitis presence is associated with increased risk of future major cardiovascular events, including acute myocardial infarction, heart failure, and stroke.

## Reasons for the associations

Possible reasons for these associations include:

- A higher incidence of bacteraemia that enter the bloodstream in patients with gingivitis or periodontitis, potentially causing various effects systemically.
- More virulent bacteria are present in periodontitis patients, resulting in greater inflammation, which may trigger events with an adverse effect on general health.
- Periodontitis pathogens (e.g. *Porphyromonas gingivalis*) promote atheroma formation and accelerate atherosclerosis.
- Periodontal pathogens generate antibodies (anticardiolipin antibodies) that might eventually cross-react with the cardiovascular system of the patient, possibly contributing to the onset of CVD.
- Compared to people without the disease, periodontitis patients present:
  - A higher level of cytokines and inflammatory mediators, which have been associated with a higher incidence of CVD.
  - A higher level of fibrinogen (thrombotic factors).
  - Higher levels of traditional CVD risk factors such as cholesterol, LDL, triglycerides, VLDL, oxidised LDL, etc.
- Periodontitis and CVD share the same genetic factors. There is a specific area on chromosome 9 – in which multiple expressions have been noted – that also links to Type-2 diabetes and Alzheimer's Disease.



## What you need to do

01

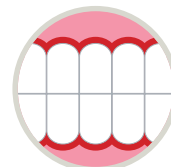
Advise patients with CVD that periodontitis may have a negative impact on their disease and may also increase the risk of CVD events.



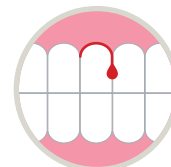
02

Patients with CVD should be asked about any signs and symptoms of periodontitis.

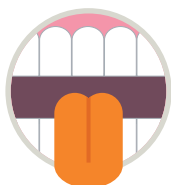
Signs of gum disease include:



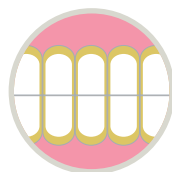
Red or swollen gums



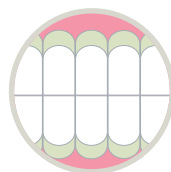
Bleeding gums or blood in the sink after brushing teeth



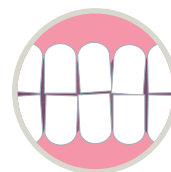
Foul taste in the mouth



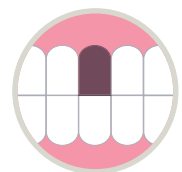
Calculus (tartar) on teeth



Longer-looking teeth



Increasing spaces between teeth or teeth moving apart



Loose teeth

03

In the presence of any of these symptoms, a prompt periodontal evaluation should be recommended.



04

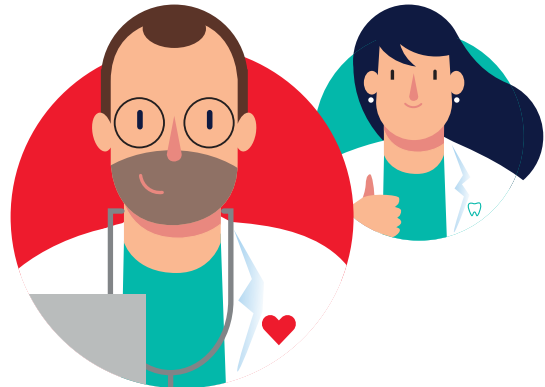
Advise patients with CVD that effective periodontal therapy may have a positive impact on their cardiovascular health.



05

Ask people with CVD if they have had a prior diagnosis of periodontitis.

If they have, try to find out if appropriate periodontal care and maintenance are being provided.



06

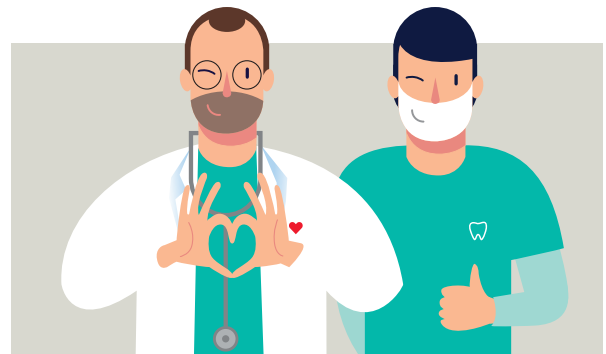
Refer patients with newly diagnosed CVD for a periodontal examination as part of the continuing management of their CVD.

An annual check-up – oral, dental, periodontal – is recommended.



07

Liaise with dental surgeons over periodontitis management in CVD patients on anti-coagulant/anti-platelet therapy before any oral intervention and/or periodontal surgery, to avoid excessive bleeding or the risk of ischaemic events.



08

In the absence of any of these symptoms, patients should be advised to remain vigilant and if any symptom appears to visit their dentist – whom they should see at least once a year in any case.





*The European Federation of Periodontology (EFP) is a non-profit organisation dedicated to promoting awareness of periodontal science and the importance of gum health. Its guiding vision is "periodontal health for a better life."*

*Founded in 1991, the EFP is a federation of 37 national periodontal societies that represents more than 16,000 periodontists, dentists, researchers and oral-health professionals in Europe and around the world. It pursues evidence-based science and the general interest, promoting events and campaigns aimed at both professionals and the public.*

*Through events such as the triennial EuroPerio congress, its scientific publication the Journal of Clinical Periodontology, its accredited programme for postgraduate education, and the annual Gum Health Day awareness initiative, the EFP is at the forefront of promoting periodontal science and gum health.*

[www.efp.org](http://www.efp.org)



*The World Heart Federation is the principal representative body for the global cardiovascular community, representing more than 200 heart foundations, scientific societies, civil society, and patient organisations from over 100 countries.*

*Together with our members, we are working to end needless deaths and build global commitment for improved cardiovascular health at the global, regional, national, and community levels.*

*We believe in a world where heart health for everyone is a fundamental human right and a crucial element of global health justice.*

[www.worldheart.org](http://www.worldheart.org)



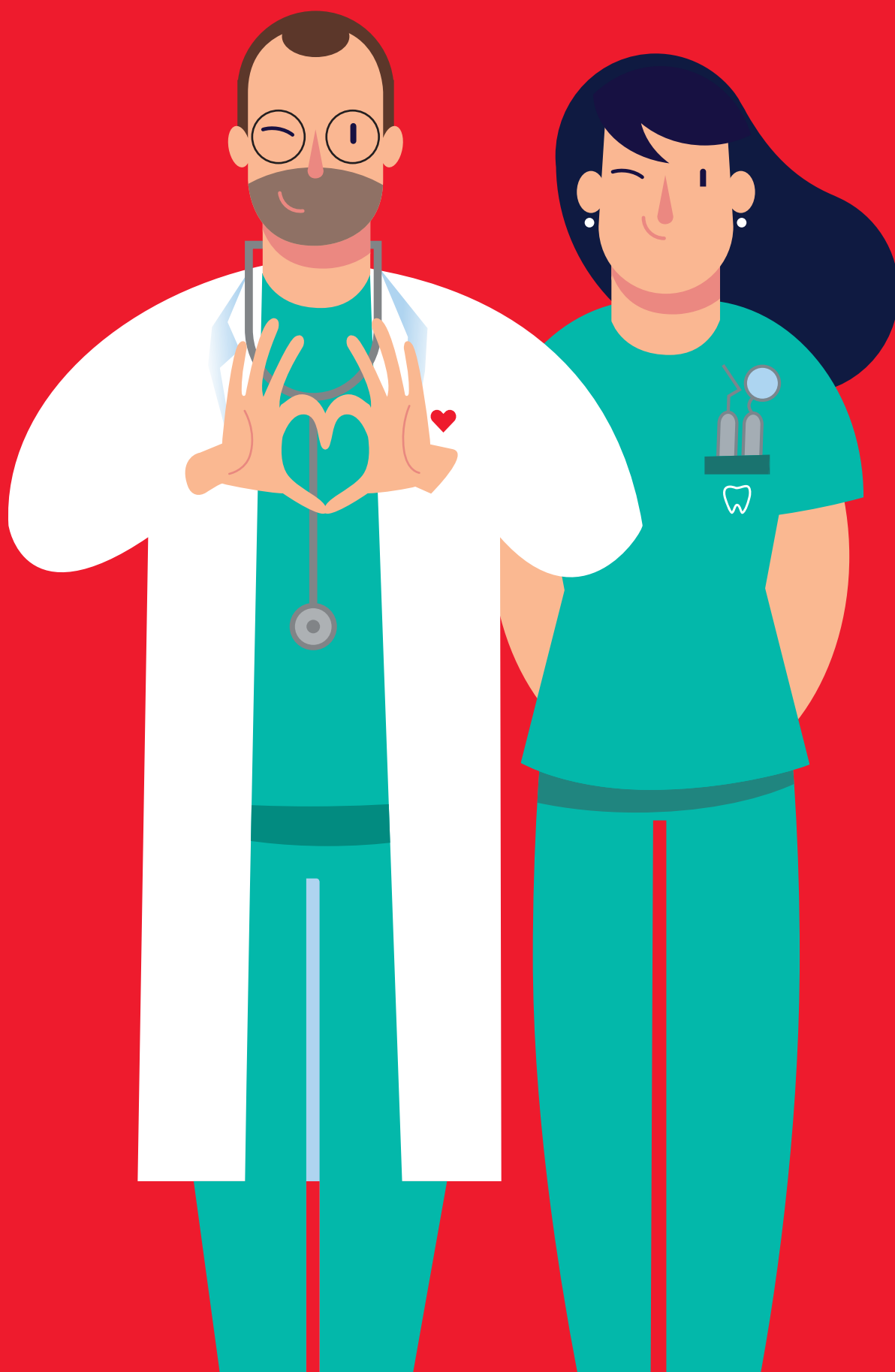
*DENTAID is a multinational company devoted to the research, development, manufacture and marketing of oral health products founded with a clear mission: improving people's oral health. The company's spirit of innovation and commitment to society has granted its leadership in this field.*

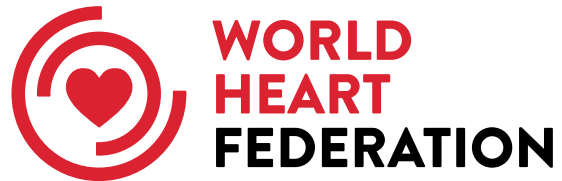
*DENTAID offers a wide range of solutions for the prevention, diagnosis, and treatment of diseases caused by oral biofilm.*

*Moreover, DENTAID promotes education, quality training for professionals, and continued support in their daily practice. Currently, it has 9 subsidiaries and is present in over 70 countries around the world. The brands Vitis®, Perio-Aid®, Interprox®, Halita®, and Dentaaid Xeros® are distributed internationally.*

[www.dentaid.com](http://www.dentaid.com)

Healthy gums  
for a healthy heart





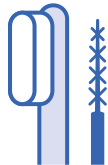
The EFP thanks Dentaïd for its support  
and its unrestricted grant.



## Healthy gums for a healthy heart



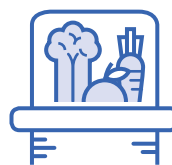
visit your doctor and  
dentist regularly



clean your teeth  
twice a day



stay active,  
exercise



eat healthy foods,  
watch your weight



do not smoke