Perio & Diabetes

# Recommendations for policymakers

EFP
European Federation of Periodontology

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

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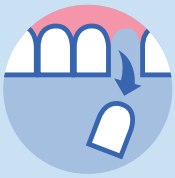
# Periodontitis & diabetes mellitus **at a glance**

Diabetes and periodontitis are **chronic non-communicable diseases**, whose prevalence increases with age.

There is a **bidirectional (two-way) relationship** between periodontitis and diabetes.



If untreated, periodontitis causes **tooth loss**.

Periodontitis **is easily diagnosed** and **clinically controlled**. With regular high-quality supportive treatment, clinical results can be maintained.

People with sub-optimally controlled diabetes (both type 1 and 2) suffer from increased periodontal **inflammation/destruction/ breakdown**.


People with periodontitis **have an elevated risk** of pre-diabetes or developing type 2 diabetes.

People with both diabetes and periodontitis have a **greater likelihood of more severe medical complications** (affecting eyes and kidneys) **and even death** than people with diabetes alone.

Periodontal treatment in people with diabetes **results in a significant reduction in glycated haemoglobin (HbA1c) levels** three months after periodontal therapy, with emerging evidence available also for six months.

**Early diagnosis, prevention, and co-management (dentists and physicians)** of both diabetes and periodontitis is of utmost importance.

Successful periodontal treatment has a **clinically significant effect on general health** and should have a place in the treatment of people with diabetes.

# Recommendations for policymakers

*Periodontal (gum) diseases and diabetes are both chronic diseases that become more common as people get older. About 80% of people aged over 35 suffer from some kind of gum complaint and about 7% of the population suffers from diabetes, although in many cases this goes undiagnosed.*

*There are strong associations between the two diseases. Indeed, there is a two-way (bidirectional) relationship between periodontal disease and diabetes. This means that people with periodontitis have a higher risk of diabetes and patients with diabetes are three times more likely to develop periodontal disease.*

*On top of that, controlling diabetes is more complicated when a patient also has periodontitis, and people who have both diabetes and periodontitis are at greater risk of suffering some severe medical complications – including heart disease, chronic kidney disease, and retinopathy – than people who have diabetes alone.*

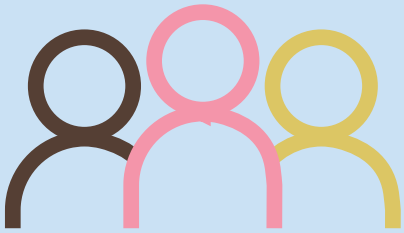
*Governments, legislators, and health administrators should recognise the burden that periodontitis and diabetes impose on both individuals and society. For instance, 12% of global health expenditure is spent on diabetes and the global burden of periodontal diseases equates to 3.5 million years lived with disability, US$54billion per year in lost productivity, and a major portion of the total US$442 billion cost of oral diseases.*

*There should be an emphasis on primary prevention through the promotion of healthy lifestyles – nutrition, exercise, and smoking cessation – and recommendations on oral health should play a more prominent role in health policy.*

*Nutritional policies – particularly in relation to reducing sugar intake – are crucial to both diabetes and oral health. Oral health should also be included in the education curriculum for early years.*

*Legislators and administrators should acknowledge how prevention, screening, and early detection of periodontal diseases and diabetes can lead to substantial reductions in healthcare costs. To this end, governments should support screening in high-risk populations and encourage annual periodontal examinations and reviews for people with diabetes. Periodontal treatment can reduce medical costs, so it should be endorsed by national healthcare and insurance schemes.*

## **Periodontitis** and **diabetes mellitus** are **both widespread conditions** among the **world's population**



### Diabetes mellitus

**Approx. 415 million people**

**Prevalence:**
constantly **rising**

### Periodontitis

**Western countries, more than 50% of the population**

**750**

**Prevalence:**
**750 million** people around the world with **severe forms**

## Diabetes general facts

- Diabetes is now a global epidemic.
- In 2017, diabetes caused an estimated 4 million deaths worldwide.
- There are an estimated 212 million people with undiagnosed diabetes.

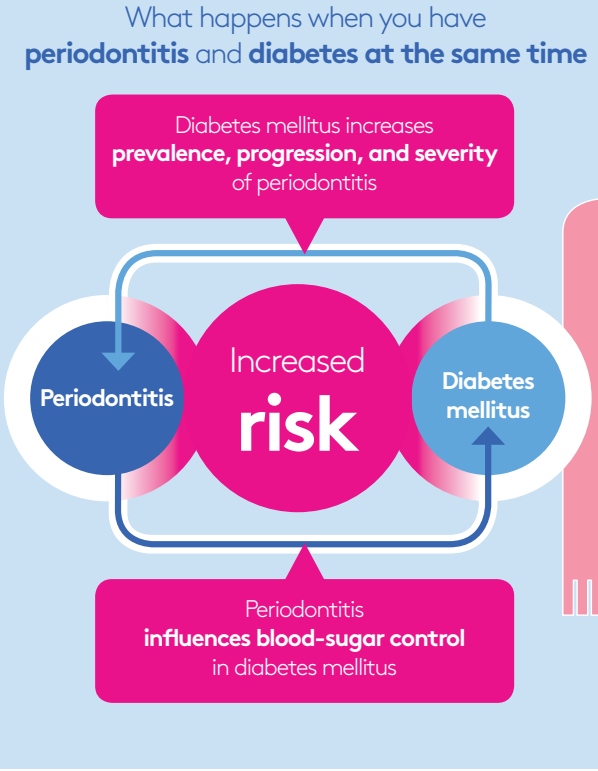
## Periodontitis general facts

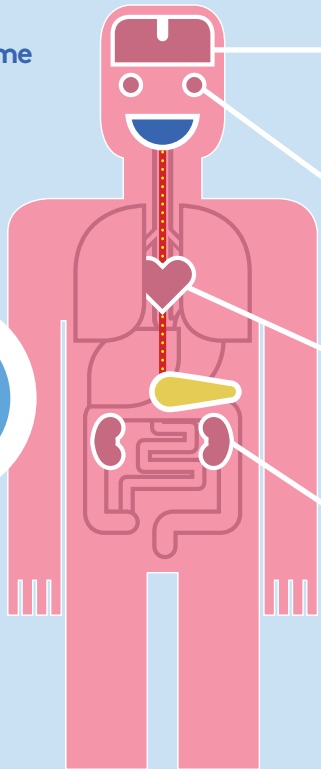
- Periodontal diseases, i.e. gingivitis and periodontitis, are the most prevalent inflammatory diseases of mankind.
- If untreated, periodontitis causes tooth loss.
- If left untreated, people with periodontitis have poorer nutrition, speech, and self-confidence and a lower quality of life.
- Periodontitis is associated with a higher level of atherosclerosis, endothelial dysfunction, and higher levels of systemic inflammation.
- Periodontitis is easily diagnosed and clinically controlled; with regular high-quality supportive treatment, clinical results can be maintained.

**Gum disease and diabetes require lifelong attention and professional care**

## Periodontitis and diabetes mellitus, a **two-way relationship**

What happens when you have **periodontitis** and **diabetes at the same time**



**Complications** of diabetes

**Stroke**
Higher rate of cerebrovascular complications.

**Retinopathy**
Increased risk for larger retinal venular diameter and general diabetes-associated retinopathy.

**Cardiovascular complications**
Increased risk for coronary heart disease and dying from a heart attack (22% in 10 years.).

**Kidney failure** and **macroalbuminuria**
Increased all-cause mortality risk (41% in 10 years).

## Evidence of associations between both diseases

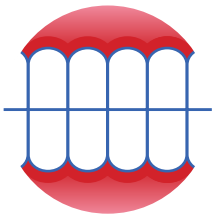
### Impact of diabetes on periodontitis

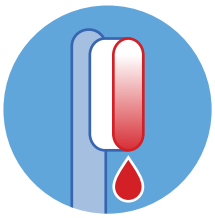
- Hyperglycaemia is associated with an increased risk and severity of periodontitis.
- There is a dose-dependent relationship between glycaemia and periodontal destruction.
- Patients with diabetes are three times more likely to develop gum disease.
- The control of diabetes is more complicated when periodontitis is also present in a patient (co-morbidity).
- People with diabetes who have good glycaemic control experience no more periodontitis than people without diabetes.

### Impact of periodontitis on diabetes

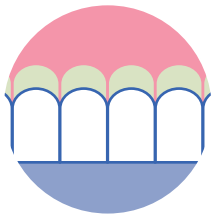
- Healthy patients with periodontitis exhibit a higher chance of developing pre-diabetes and diabetes.
- People with severe periodontitis have an increased risk of developing type 2 diabetes.
- Periodontitis is significantly associated with poorer glycaemic control (HbA1C) and higher blood-glucose levels (glycaemia) both in people with diabetes and in those without the disease.
- There are higher levels of insulin resistance in people with periodontitis.
- People with periodontitis and type 1 or 2 diabetes, when compared to patients with just diabetes, have higher:
  - ocular complications (retinopathy);
  - renal complications (chronic kidney disease);
  - cardiovascular complications (heart disease, cerebrovascular events);
  - risk of mortality.

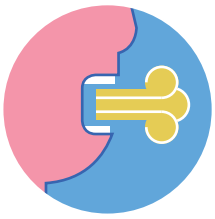
## Signs and symptoms of periodontitis

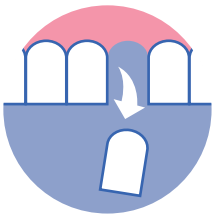

Red or swollen gums

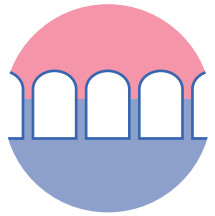

Bleeding from the gums or blood in the sink after you brush your teeth

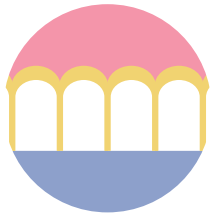

Bad taste

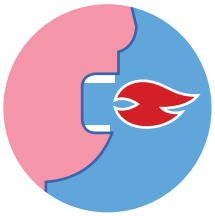

Longer-looking teeth


Bad breath (halitosis)


Loose teeth


Increasing spaces between your teeth


Calculus (tartar) on your teeth


Dry and/or burning mouth

## How to prevent gum disease

- ✔ Seek advice from your dental-care professional twice a year.
- ✔ Brush your teeth twice a day (minimum two minutes).
- ✔ Clean in between the teeth every day: use interdental brushes – or floss if the gaps between your teeth are too tight.
- ✔ Live a healthy life (low refined sugars and high antioxidant nutrition, physical activity, reduced stress) and avoid smoking.

## Benefits of periodontal therapy

- ✔ Successful periodontal therapy will arrest disease progression, stabilise bone levels, diminish symptoms, and lengthen the life expectancy of teeth.
- ✔ Successful periodontal treatment reduces circulating levels of inflammatory molecules in people with diabetes.
- ✔ In people with diabetes, periodontal care (therapy) is safe and effective.
- ✔ Periodontal therapy significantly reduces HbA1c and glycaemia both in people with diabetes and in those without the disease.
- ✔ Successful gum treatment reduces blood-sugar (HbA1c) levels and could help you avoid having to take extra medication.
- ✔ May contribute to reduced diabetes-associated morbidity and mortality.

## What should be done:

- Institutions should recognise the burden that periodontitis and diabetes impose on the individual and on society (e.g. the health economy).
- Projects and programmes focusing on primary prevention should be endorsed: promotion of healthy lifestyles (nutrition, exercise, and tobacco cessation) should include recommendations on oral health.
- Oral health should play a more prominent part in overall health policies.
- Nutritional policies (i.e. sugar management) are critical to both diabetes and oral care, and should be encouraged.
- Oral health should be part of the educational curriculum for early years (as soon as the first primary teeth erupt).
- Governing institutions should acknowledge the potentially substantial benefit of prevention, screening, and early-detection programmes in terms of healthcare cost reduction.
- Governments should support risk-targeted screening in high-risk populations, possibly involving the dental community in diabetes screening to reduce costs.
- Annual periodontal examinations and reviews for people with diabetes should be encouraged and potentially supported financially, especially in high-risk populations.
- Institutions should acknowledge the staggering direct medical costs of diabetes and diabetes complications, as well as the indirect costs in terms of reduced productivity of those affected (12% of global health expenditure is spent on diabetes, according to the Diabetes Atlas, www.diabetesatlas.org).
- Medical costs can be reduced through periodontal treatment in various healthcare systems. National healthcare and insurance schemes should endorse this.

Perio & Diabetes

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# Take care of **your gums**, control **diabetes**.

visit your doctor regularly

visit your dentist regularly

control your diabetes

clean your teeth twice a day

watch your weight

eat healthy foods, do not smoke

visit:

**perio**and**diabetes**.efp.org