
DOSSIER ON **PERIODONTAL DISEASE**

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Periodontal Health for a Better Life

FACTS & FIGURES: **IMPACT OF GUM DISEASE**

Oral health represents

- Between 0.5 to 1% of GDP.
- About 10% of medical expenses.

Periodontitis is the most common chronic inflammatory disease seen in humans

- 8 out of 10 people aged 35 and over suffer from some kind of gum complaint.
- Periodontal diseases are the most common conditions suffered by European populations, but are among the least acknowledged.
- Gum disease can cause tooth loss and affect the rest of the body.
- Periodontal diseases do not tend to cause pain or intense discomfort. The most frequent symptom is bleeding gums.
- Periodontal diseases represent a major cause of expenditure in the adult and geriatric population.

Evidence for how periodontal health improves general health and medical costs

“Periodontitis is significantly and independently associated with most chronic inflammatory diseases of ageing, including atherogenic cardiovascular disease, type 2 diabetes, rheumatoid arthritis, chronic kidney disease, obesity, and chronic obstructive pulmonary disease”.¹

- Severe Periodontitis adversely affects blood sugar levels in non-diabetes subjects & blood sugar control in diabetes patients.
- The worse the periodontitis, the worse the diabetes complications (heart & kidney).
- Overall, studies show that successful periodontal treatment improves diabetes outcomes.
- Severe periodontal disease imparts significantly elevated risk for coronary artery (heart) disease.
- Evidence from laboratory and animal research shows that periodontal therapy improves cardiovascular (heart) outcomes and in human studies biomarker outcomes of heart disease also improve.

1. Source: EFP/AAP workshop on periodontitis and systemic diseases. J Clin Periodontol 2013; 40(S14):20-3

“Cost-based results provide new, independent, and potentially valuable evidence that simple, noninvasive periodontal therapy may improve health outcomes”.²

- Treatment of periodontal disease reduced annual medical costs in patients diagnosed with:
 - Type 2 diabetes by 40%.
 - Heart disease (coronary artery disease) by 11%.
 - Stroke patients (cerebrovascular disease) by 41%.
- The corresponding reductions in hospital admissions were:
 - 39% in diabetes patients.
 - 29% in heart disease patients.
 - 21% in stroke patients.

2. Source: (Am J Prev Med 2014;47(2):166–174) & 2014 American Journal of Preventive Medicine. Impact of Periodontal Therapy on General Health. Evidence from Insurance Data for Five Systemic Conditions. Marjorie K. Jeffcoat, DMD, Robert L. Jeffcoat, PhD, Patricia A. Gladowski, RN, MSN, James B. Bramson, DDS, Jerome J. Blum, DDS

About diabetes³

In Europe:

- 52 million people were living with diabetes in 2014.
- There will be a projected 70 million people with diabetes in 2035.
- Prevalence: 7,9 % of the population
- 17 million people have undiagnosed cases.
- Total diabetes-related health expenditure in Europe: € 130 billion
- Projected expenditure for 2035: € 142 billion.

About Cardiovascular Disease⁴

Cardiovascular disease (CVD) is the main cause of death in the European Union, killing more than 2 million people per year. CVD costs the EU economy more than €192 billion annually.

3. Source: IDF. International Diabetes Federation. Diabetes Atlas 2014 Edition

4. Source: European Society of Cardiology

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Periodontal diseases are the most common conditions suffered by European populations, but are among the least acknowledged. In fact, few people seem to be aware that within dentistry, there is both a science and a practice dedicated to the study of the gums and tissues which support the teeth: Periodontology.

8 out of 10 over 35-year-olds suffer from some kind of gum complaint.

Global goals for oral health have been set for the year 2020 by the World Health Organisation (WHO), the International Association for Dental Research (IADR), and the International Dental Federation (FDI). This blueprint aims at reducing tooth loss (edentulism) and increasing the number of elderly people who retain a natural and functional dentition.

However, periodontal experts now have scientific reasons to believe that oral health has far greater transcendence in terms of general health than medical

institutions and the public have previously been aware of. The growing weight of evidence from some 30 years of research suggests that not only are there strong links between periodontal disease and systemic illnesses such as diabetes and cardiovascular disease, but that periodontal attention can aid in diagnosing and controlling a great number of these major systemic complaints.

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WHAT IS **PERIODONTAL DISEASE ?**

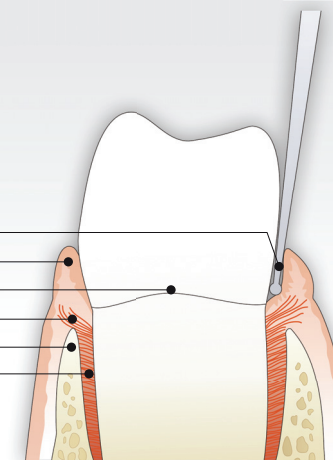
Periodontal diseases are conditions which affect the periodontium, i.e. the tissues that support teeth. There are many different forms, but the most frequent are "gingivitis" and "chronic periodontitis". Periodontitis is an inflammatory disease initiated by bacteria which, in susceptible people cause severe inflammation and loss of bone around the teeth.

There are two major groups of periodontal disease. When only the soft gum is affected, causing a reversible inflammatory process, this is known as gingivitis.

If gingivitis goes untreated and is compounded by other factors (genetic, environmental, local...), then periodontitis results in susceptible people. In addition to the aforementioned inflammation, a deeper destructive process begins which will affect other tissues of the periodontium, namely the alveolar bone, the

cementum around the tooth, and the periodontal ligament. This destruction is irreversible and leads to a progression of the disease since it creates a space below the gum which we call a periodontal pocket, an area where a greater quantity of bacteria can go on accumulating, thus threatening the survival of the teeth.

Periodontal pocket
Gums
Cementoenamel junction
Periodontal ligament
Alveolar bone
Cementum



GIN- GIVI- TIS.

Superficial infection of the gum. The main warning sign is bleeding (but not in smokers). If this is not correctly treated, it can lead to periodontitis.

PERIO- DON- TIS.

Profound inflammation of the gum and the other tissues supporting the tooth. This can lead to tooth loss. It may affect general health: an increase in the risk of cardiovascular disease, diabetes, or adverse pregnancy outcomes.

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PERIODONTAL DISEASE IN EUROPE

The most recent statistics and epidemiological studies on periodontal disease (see figures in this dossier) point to the UK, Spain, Sweden, and Switzerland as being the healthiest ranked European countries in terms of low tooth loss and low prevalence of moderate to severe periodontal pocketing. There is encouraging data to support the role of dental hygienists in countries where the right medico-legal framework exists to allow for and foster their inclusion in approaches to effective periodontal care. Nevertheless, in some countries dental hygienists are not allowed to practise.

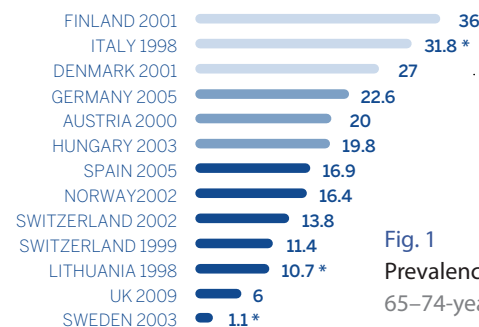
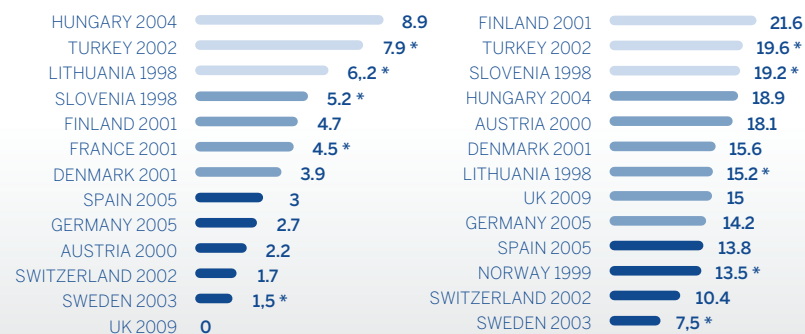


Fig. 1

Prevalence of edentulism in 65–74-year-old subjects in Europe by country and according to national and some regional surveys. Severity is represented in different shades of blue, the darker the colour, the lower the prevalence.

Figures 2 (a) and 2 (b)

Tooth loss in 35- to 44- and 65- to 74-year-olds in Europe by country and according to national and some regional surveys. Severity represented in different shades of blue, the darker the colour, the lower the number of missing teeth.

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PERIODONTAL DISEASE IN EUROPE



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The shortcomings of available epidemiological data on the provision and success of periodontal care in Europe means that uniformly designed national representative studies have been strongly urged. One excellent systematic review, by König, Holtfreter and Kocher, published in The European Journal of Dental Education, is regarded as the most authoritative source for periodontal data in Europe currently, and this dossier features data from this paper, updated with the 2009 UK data (excluding Scotland).

While the aforementioned study concludes that optimal prevention and treatment strategies in European Periodontology will be boosted by "more comparable and representative

data", there are obviously other dynamics within the speciality that will increase its influence on general health, notably the ongoing scientific research into the connections between periodontal health and life-threatening illnesses. After decades of work in this direction, dental researchers are moving ever closer to consensus and to pinning down the evidence that periodontal attention can aid not only in the diagnosis of conditions such as diabetes and cardiovascular disease, but also in contributing to their control.

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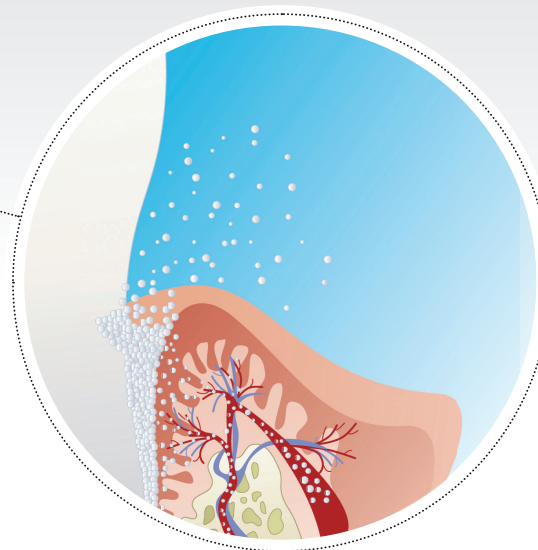
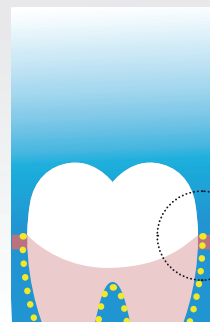
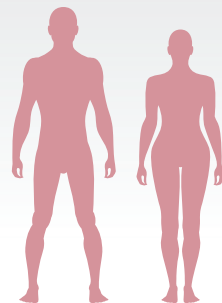
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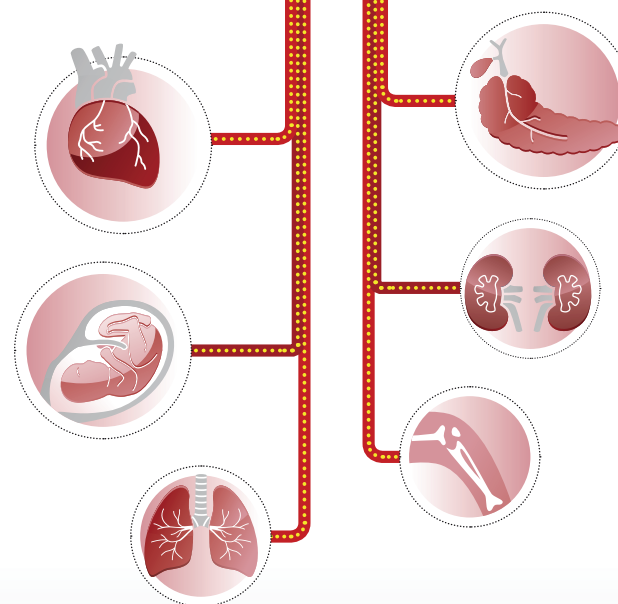
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"PERIODONTAL DISEASE
CAN CAUSE TOOTH
LOSS AND AFFECT THE
REST OF THE BODY."

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THE CONSEQUENCES OF **PERIODONTAL DISEASE**

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PERIO- DON- TITIS.

Periodontitis can have two kinds of consequences: at a local level (in the mouth) and at a systemic level (in the rest of the body).

At the local level, the most serious consequence is tooth loss, and this has an aesthetic effect as well as on functions such as mastication and speech. It can also cause bleeding gums, bad breath, gingival retraction, tooth movement, and pain (although pain is not common).

In the rest of the body, the presence of a vast quantity of bacteria under the gums means such bacteria can pass into the bloodstream and, either directly or indirectly (due to the systemic inflammation it may cause), affect other parts of the body: it can increase the risk of suffering cardiovascular disease, adversely affect diabetes control and complications, and may also raise the risk of premature birth in pregnant women from some specific populations.

"PERIODONTITIS CAN AFFECT BOTH THE MOUTH (YOU CAN LOSE YOUR TEETH) AND THE REST OF THE BODY (CARDIOVASCULAR DISEASE, PREMATURE BIRTH, DIABETES CONTROL AND COMPLICATIONS)."



Risk factors

- Poor tooth cleaning (oral hygiene)
- Smoking
- Stress
- Illness or low defences: diabetes, osteoporosis, HIV, herpes, transplants, etc...
- Hormonal changes: pregnancy, menopause.
- Personal medical conditions (rare) and associated medications
- Family medical history

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CAUSES OF **PERIODONTAL DISEASE**

Periodontal diseases are complex diseases with no single cause. They are initiated by bacteria located under the gums, specifically between the gum and the tooth. The accumulation of bacteria under the gum, in the form of bacterial plaque (now known as dental biofilm), leads to inflammation of the surrounding tissues, i.e. to gingivitis (gum inflammation). Wherever there is biofilm, there will be some degree of gingivitis.

If this biofilm is not removed, it may initiate an immune and inflammatory response which, in susceptible subjects, may lead to periodontitis; the immune response and the inflammatory reaction causes the majority of the tissue damage that manifests as periodontitis. For periodontitis to progress there must be several factors at work:

- Pathogenic (disease causing) bacteria within the biofilm.
- Limited oral hygiene habits and the absence of professional care.
- A susceptible person (genetic factors).
- Wrongly positioned teeth or fillings, that locally trap and retain the biofilm.
- Stress, alcohol consumption, being overweight and, above all, smoking.
- Illnesses affecting the rest of the body, such as diabetes and osteoporosis, or frequent viral infections may also play a role.
- Certain drugs leading to an increase in the volume of inflammation or the inflammatory response of the gums.



"WHEREVER DENTAL PLAQUE ACCUMULATES IN THE GUMS, GINGIVITIS IS PRODUCED. HOWEVER, FOR GINGIVITIS TO PROGRESS TO PERIODONTITIS, OTHER FACTORS MUST BE INVOLVED: GENETIC, ENVIRONMENTAL, (SMOKING, STRESS...), MEDICINES, LOCAL FACTORS, INADEQUATE ORAL HYGIENE..."

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DIAGNOSIS OF **PERIODONTITIS**



Periodontal diseases do not tend to cause pain or intense discomfort. The most frequent symptom is bleeding, either spontaneous or during tooth brushing, though it is less evident in smokers. The bleeding normally appears as redness (blood) in the saliva when rinsing or spitting out toothpaste after brushing. The list of possible symptoms also includes pus in the gums, bad tastes or a bad smelling mouth, reddening of the gums, gingival retraction and teeth appearing longer, the appearance of spaces between teeth or change of tooth position, hypersensitivity to temperature changes (above all to cold), pain, and tooth movement.

A reliable diagnosis can only be arrived at by a dentist or periodontist (dentist specialising in treating gum conditions).

Through the use of a measuring instrument called a probe, an evaluation is made as to whether the periodontal tissues are superficially inflamed (gingivitis) and whether there has been deeper loss of supporting tissue (periodontitis). The taking of x-rays may also be required to confirm the findings.

Alarm signs

- Bleeding or redness of the gums
- Bad breath
- Tooth hypersensitivity
- Tooth mobility
- Tooth migration
- Tooth loss

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PREVENTION OF **PERIODONTAL DISEASES**

The best way to prevent periodontitis is to keep up correct oral hygiene in order to control dental biofilm levels, and to have regular check-ups. In very susceptible patients, however, periodontal disease may occur despite correct oral hygiene being observed. Personal oral hygiene should be accompanied by regular visits to the dentist, periodontist or hygienist so that early diagnosis of any disease present can be made.

To control dental biofilm in the mouth, there are two methods:

- Mechanical methods. These include normal manual brushing or powered brushing, and use of interdental brushes or dental floss.
- Chemical methods. Rinsing with mouthwashes, use of toothpaste or gels, sprays...antiseptic products can be applied alongside mechanical methods in order to control bacterial plaque.

"PREVENTION IS BASED ON CONTROL OF DENTAL PLAQUE, AVOIDING ITS ACCUMULATION IN GUMS, MAKING CLEANING TEETH AND IN BETWEEN TEETH (WITH MINI-INTERDENTAL BRUSHES OR FLOSSING) A NECESSITY. AND REGULAR CHECK-UPS ARE FUNDAMENTAL IN ORDER TO MAINTAIN GUM HEALTH."

Correct oral hygiene must be carried out after every meal. It is also necessary to have a check-up by the dentist or periodontist in order to establish your health situation and to take measures for any problems found. Early detection of periodontal conditions simplifies their treatment and dramatically increases the likelihood of tooth retention.

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TREATMENT OF PERIODONTAL DISEASES

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In gingivitis cases, accumulated bacteria must be cleaned away, and this is achieved through elimination of dental plaque and dental calculus (also known as tartar, which is plaque that has mineralised). This treatment, known as professional dental prophylaxis (or supragingival scaling, or tooth cleaning) is carried out by oral health professionals, either by the dental hygienist, or by the actual dentist or periodontist. Furthermore, there is a basic need for professionals to explain how teeth and gums should be brushed to keep them clean, so that gingivitis will not reappear.

Treatment of periodontitis is organised in two phases. In the first phase, also called the basic treatment phase, bacteria are removed from periodontal pockets using scaling and root surface debridement (otherwise known as conventional periodontal therapy, non-surgical periodontal therapy, deep

cleaning), the aim of which is to clean away bacteria, plaque and calculus, from the roots of the teeth. Antibiotics may be used to complement this therapy, but only in specific cases, such as aggressive forms of the disease.

When it comes to aggressive or advanced diseases, however, a second treatment phase is called for, and this involves creating access to these deep periodontal pockets. This phase is called periodontal surgery. Occasionally, periodontal surgery involves localised application of periodontal regeneration techniques.

When active treatment ends, the disease should be under control. This is when the maintenance (or supportive) phase begins, and this is a fundamental stage in periodontal treatment and the only way to achieve control of periodontitis in the long term. The basic and surgical phases are very effective in



Simple treatment

- Improvement of oral hygiene.
- Deep cleaning of bacterial plaque in the gums.
- Evaluation of periodontal health.
- Control of plaque and bacteria under the gums (scaling and root surface debridement/root planing).
- In advanced cases, minor surgery.

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TREATMENT OF **PERIODONTAL DISEASES**

controlling bacteria and achieving periodontal health, but the bacteria tend to recolonise periodontal pockets from other oral reservoirs and, if preventive action is not taken, the disease reappears some months later.

At each maintenance visit, the dentist, periodontist, or dental hygienist will carry out a protocol of consistent actions in line with the following points: verifying the clinical situation tooth by tooth; evaluation of oral health; analysis of plaque levels; and individualised elimination of calculus and bacteria according to the state of different areas of the mouth. It is important to stress that periodontal maintenance is not just a question of carrying out a professional dental prophylaxis (tooth cleaning) but individualised medical treatment adjusted to the needs of each patient.

The frequency of maintenance depends on each particular case, but it generally means a visit every three, four or six months, depending upon each individual person's risks and needs analysis.

"GINGIVITIS IS TREATED EASILY THROUGH PROFESSIONAL DENTAL PROPHYLAXIS ("CLEANING") AND CORRECT HYGIENE. PERIODONTITIS REQUIRES SEVERAL PHASES OF TREATMENT WHICH MUST INVOLVE LIFE-LONG MAINTENANCE."

**GIN-
GIVI-
TIS.**

— **PROFESSIONAL
PROPHYLAXIS
OR CLEANING** + **MAINTENANCE**

**PERIO-
DON-
TIS.**

**SCALING AND
ROOT SURFACE
DEBRIDEMENT** + **PERIODONTAL
SURGERY** + **MAINTENANCE**

**SCALING AND
ROOT SURFACE
DEBRIDEMENT** + **MAINTENANCE**

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look after your gums

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2 to 3 times a day, do:



1 Brush gums and teeth with toothpaste



2 Use mini-interdental brushes between the teeth daily. If these brushes do not fit, floss may be used (less effective)



3 If indicated, rinse with the correct mouthwash



Every 3 months:

4 Renew your toothbrush



Once or twice a year:

5 Visit your dentist or periodontist: have a gum check-up and a cleaning

See a hygienist for professional prophylaxis (or "tooth cleaning") and reinforcement of your tooth cleaning method*

*This is especially relevant in the prevention of periodontal disease recurrence.

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