

## Oral Infection/Inflammation as a Risk Factor for Systemic Diseases [1]

August, 2013    Istanbul    Turkey

*Merging of 'Association between oral, cardiovascular and cerebrovascular health (2002)' and 'Dentistry and General Health (1998)'*

*Revised version "The association between oral health and general health" adopted by the General Assembly: 4th September 2009, Singapore*

---

During the past 15 years, a large body of literature has identified oral/periodontal infection and inflammation as a risk factor for the development and/or severity of certain systemic diseases and disorders. This research has focused on the influence of periodontal disease on diabetes mellitus, cardiovascular disease, adverse birth outcomes and respiratory diseases. Other associations have been reported (e.g. dementia, chronic kidney disease and certain forms of cancer), but the literature on these topics is not robust. In addition to the significance of such research for the general health and oral health of patients seen by oral healthcare professionals (OHCP), this research has important implications for the future of oral healthcare in the context of healthcare, interprofessional education and practice.

### Statement

- The literature examining the relationship of periodontitis to certain chronic diseases and disorders (e.g. diabetes mellitus, cardiovascular disease, adverse pregnancy outcomes and respiratory diseases) is substantial, including *in vitro* analyses, studies in animal models, clinical trials, and epidemiological analyses of large population databases.
- These associations are biologically plausible. There may be direct effects of oral microorganisms on distant tissues and organs, as well as the systemic effects of inflammatory mediators produced in the periodontal tissues in response to the microflora. It is also important to note that there are common cofactors in periodontitis and many chronic diseases.
- Meta-analyses and systematic reviews suggest that conservative treatment of periodontal disease in patients with diabetes mellitus may reduce levels of HbA1c for at least three months. Intervention studies in patients at risk for atherosclerotic cardiovascular disease have focused on surrogate markers (e.g. endothelial cell function) with promising effects but not on specific clinical outcomes (e.g. myocardial infarction). Clinical studies examining the effect of periodontal therapy on adverse pregnancy outcomes have yielded conflicting results.
- Interventional studies do not necessarily prove causation. Additional, longer-term, properly powered clinical trials are needed to define the effect of periodontal therapy on clinical outcomes of chronic diseases.
- All healthcare professionals should understand the clinical implications of oral disease on systemic health.
- An emphasis on optimal oral health and control of oral/periodontal infection and inflammation should be an important part of any therapeutic strategy that seeks to reduce the local and systemic effects of periodontal disease.
- FDI National Dental Associations and OHCP must assume a central advisory role in translating science into public awareness and policy.
- FDI, working in collaboration with WHO, must strongly advocate for inclusion of oral health in government policy concerning health, and promote access to oral healthcare.

---

### References

- Gomes-Fihlo IS, Passos JS, Seixas da Cruz S. Respiratory disease and the role of oral bacteria. *J Oral Micro* 2:5811, 2010.
- Lalla E, Papapanou PN. Diabetes mellitus and periodontitis: a tale of two common interrelated diseases. *Nat Rev Endocrinol* 2011; 7:738-748.
- Lockhart PB, Bolger AF, Papapanou PN, et al. Periodontal disease and atherosclerotic vascular disease: does the evidence support an independent association? A scientific statement from the American Heart

## Oral Infection/Inflammation as a Risk Factor for Systemic Diseases

Published on FDI World Dental Federation (<https://www.fdiworlddental.org>)

---

Association. *Circulation* 2012; 125: 2520-2544.

- Pihlstrom BL, Michalowicz BS, Johnson NW. Periodontal diseases. *Lancet* 2005; 366:1809-1820.
- Stein PM, Desrosiers M, Donegan SJ, Yepes JF, Kryscio RJ. Tooth loss, dementia and neuropathology in the Nun study. *J Am Dent Assoc* 2007; 138: 1314-1322.
- Tonetti M, Kornman, KS (editors). Special Issue: Periodontitis and Systemic Diseases – Proceedings of a Workshop Jointly Held by the European Federation of Periodontology and American Academy of Periodontology. *J Clin Periodontol* 2013; 40 (Issue Supplement s14): S1- S209.

[Science Committee](#) [2] **Classification:** [Infection](#) [3]

[Noncommunicable diseases \(NCDs\)](#) [4]

[Periodontal](#) [5]

[Risk factors](#) [6]

[Systemic diseases](#) [7]

**Source URL:** <https://www.fdiworlddental.org/resources/policy-statements-and-resolutions/oral-infectioninflammation-as-a-risk-factor-for-systemic>

### Links

[1] <https://www.fdiworlddental.org/resources/policy-statements-and-resolutions/oral-infectioninflammation-as-a-risk-factor-for-systemic>

[2] <https://www.fdiworlddental.org/standing-committees/science-committee>

[3] <https://www.fdiworlddental.org/policy-statement-classification/infection>

[4] <https://www.fdiworlddental.org/policy-statement-classification/noncommunicable-diseases-ncds>

[5] <https://www.fdiworlddental.org/policy-statement-classification/periodontal>

[6] <https://www.fdiworlddental.org/policy-statement-classification/risk-factors>

[7] <https://www.fdiworlddental.org/policy-statement-classification/systemic-diseases>