



Prof. Bruno G. Loos

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Bruno G. Loos is a professor in periodontology at the Academic Center for Dentistry Amsterdam (ACTA, the joint faculty of dentistry of the University of Amsterdam and the Vrije Universiteit Amsterdam). In addition, Loos is director of research at ACTA. Loos received his dental degree in Amsterdam and his MSc degree in periodontology at Loma Linda University, CA, USA. Thereafter Loos received a Ph.D. degree in Oral Biology at the University at Buffalo, NY, USA. Previously, he served as chairman of the department of Periodontology and director of the ACTA's MSc program in Oral Health Sciences. He is Director of the EFP-accredited postgraduate periodontology program. Loos is involved in fundamental research-questions related to the immunobiology of periodontal and peri-implant diseases and oral health. His clinical research focusses on relationships between oral health and systemic health, as well as clinical studies in the treatment of peri-implant diseases.

Periodontal medicine: Past, Present and Future

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The Past. In a landmark symposium in 1997 in Chapel Hill, North Carolina, USA, Steven Offenbacher, James Beck and many of their colleagues proposed that there is more than just circumstantial evidence that periodontitis is associated with some systemic diseases and/or conditions, and the term “periodontal medicine” was introduced into the periodontal arena. Today we can look back at more than 100 years recognition that oral infectious and inflammatory conditions can have systemic consequence.

The Present. Currently, the number of medical conditions being researched in relation to periodontal diseases and/or poor oral health continues to grow. A search through trial registries with clinical research *in progress* reported a total of 57 different systemic conditions now being investigated to be linked with periodontitis. This suggests that many medical conditions, including periodontitis, are part of certain inflammatory biotypes. This concept describes pleiotropic effects of host immune responses with different manifestations depending on the complex interactions between genes, environment, lifestyle and epigenetic changes. The relationships between periodontitis and cardiovascular diseases appear to be increasingly evident. Reports have found similar genetic risk variants between periodontitis and cardiovascular diseases; the impairment of the regulatory pathways by genetic factors may be a common pathogenic denominator of at least coronary artery disease and periodontitis. Thus, the shared genes could suggest that both conditions are sequelae of similar (the same?) aberrant inflammatory pathways. Nevertheless, and highly intriguing, the treatment of periodontitis gives positive effects on the cardiovascular system: periodontal therapy not only results in improvement of the periodontal status, but also results in significant improvements of important and relevant clinical and molecular biomarkers of the cardiovascular system.

Periodontitis may be one the first symptoms of diabetes and as such it has been hypothesized that the periodontal office could be a place for screening on diabetes. In a recent study it was found that among referred patients with severe periodontitis, one in four were suspected to have (pre) diabetes, based on a validated HbA1c measurement in a drop of blood through finger stick analysis. Importantly, it is now well established that the treatment of periodontitis improves the metabolic state in the diabetic patient.

The Future. We see that the medical profession is more and more aware of the importance of oral health: subjects with diabetes in the medical offices will be screened for periodontitis, by the use of a simple questionnaire in an App, without an oral examination which is for physicians and nurse practioners too cumbersome in daily general practice. The future will bring increasingly close collaborations between dentists and physicians. The dental offices – where we already work in a preventative manner and of which the population is used to visit at least once a year – can expand to become “health check offices” where each individual will come for his/her yearly oral and body health check.