Reduced carbohydrates may

Alleviate periodontal inflammation

Aiming to test the hypothesis that diet helps reduce inflammation lead author Dr Johan Wölber from the University of Freiburg and his colleagues designed a study to investigated the impact of an oral health-optimised diet on periodontal health in a group of patients with a history of gingivitis.

Of the 15 participants, ten were asked to follow a list of restricted and recommended foods and meals, such as omega-3 fatty acids, vitamins C and D, antioxidants and fibre. Five participants continued with their typical eating patterns. Apart



from not using interdental cleaners, participants were advised not to change their oral health routines throughout the study period.

After four weeks, participants in the low-carb group showed significantly reduced gingival and periodontal inflammation compared with the control group. According to the researchers, reducing carbohydrates in particular led to a significant improvement in the gingival index, bleeding on probing and the periodontal inflamed surface area. Although the study had its limitations, the results support the assumption that modern Western eating habits, including consumption of refined carbohydrates and a high omega-6 to omega-3 fatty acid ratio, promote inflammatory processes.

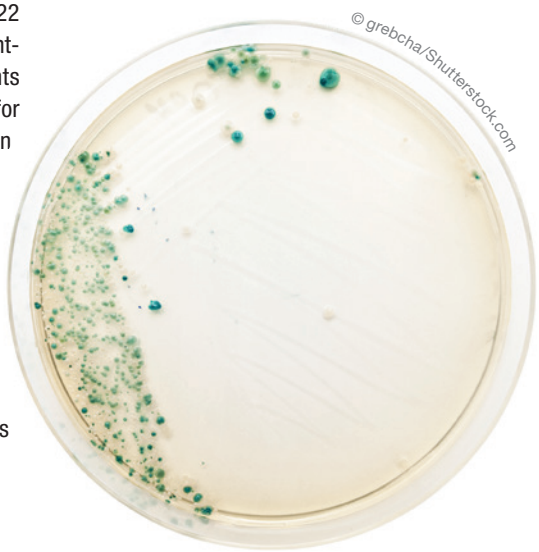
The study, titled "An oral health optimized diet can reduce gingival and periodontal inflammation in humans—A randomized controlled pilot study", was published online on 26 July in the *BMC Oral Health* journal.

Student develops

Artificial dental plaque

As part of a research project, a dentistry student from Germany has developed a new formula to synthesise dental plaque, which could help facilitate research on oral biofilm significantly in the future. As the first dental student ever to speak at the congress, she presented her findings at the 94th General Session and Exhibition of the International Association for Dental Research, which took place from 22 to 25 June in Seoul in South Korea. "Currently, researchers have to find study participants who are not allowed to brush their teeth for days," explained Ann-Kathrin Flad, who is an eighth-semester dental student at Witten/Herdecke University in Germany and has been involved in the project for three years already. "With the new formula for artificial dental plaque, however, this can be avoided, as it adheres to teeth like natural dental biofilm. It can be coloured in order to measure how much is being removed using manual and electric toothbrushes, as well as other oral hygiene tools."

Alongside her studies, Flad works at the ORMED—Institute for Oral Medicine at the university, a research and development organisation for scientific services with the focus on oral hygiene, robotic simulation of toothbrushing and medical plaque control. Flad's trip to Seoul was funded by the Fördergemeinschaft Zahnmedizin, a non-profit association of dentists.



Teeth reveal

Vitamin D deficiency

By analysing life traces in the teeth of six individuals who died hundreds of years ago, Canadian researchers have now been able to accurately backtrack episodes of vitamin D deficiency during these people's lifetime.

However, these episodes of abnormalities do not disappear in teeth, but are evident in the formation of characteristic interglobular dentin spaces. In the study, researchers from McMaster University in Hamilton examined a total of 12 teeth in individuals with skeletal evidence of a vitamin D deficiency. The teeth came from four women buried in a French cemetery between 1225 and 1798 and two people buried in rural Quebec between 1771 and 1860, a child believed to be 3 years old and a 24-year-old man. Based on the defects in the dentin, the analysis showed that all of the subjects had a vitamin D deficiency or rickets, a common childhood disorder caused by the condition that results in weakening of the bone and is often characterized by bowed legs and deformed hips. The study, titled "The rachitic tooth: A histological examination," was published online ahead of print on 30 June in the *Journal of Archaeological Science*.



SIROLaser Blue wins

Red Dot Award



The SIROLaser Blue handpiece has once again won over international design experts. It was presented the Red Dot Award in the category "Life Science and Medicine" for, according to the jury, "the elegant feel of its flowing, elongated shape and stainless steel finish". This is the second design prize this year for the Dentsply Sirona Instruments laser for surgical dentistry. In February, the SIROLaser Blue handpiece was presented with the iF Design Award. The Red Dot Award is an internationally recognized quality seal that has been awarded to products, design concepts and communication designs since 1954. This year, 41 jury members (made up of independent designers), design professors and specialist journalists assessed a record number of 5,214 products from 57 nations in 31 categories. The award ceremony was held on 4 July 2016, at the Red Dot Gala in the Aalto Theater in Essen, Germany.

Source: Dentsply Sirona

Frequent dental scaling to reduce

Infection risk after knee replacement

Oral bacteria that enter and spread through the bloodstream have been found to cause about 10 per cent of peri-prosthetic joint infections after total knee arthroplasty (TKA).

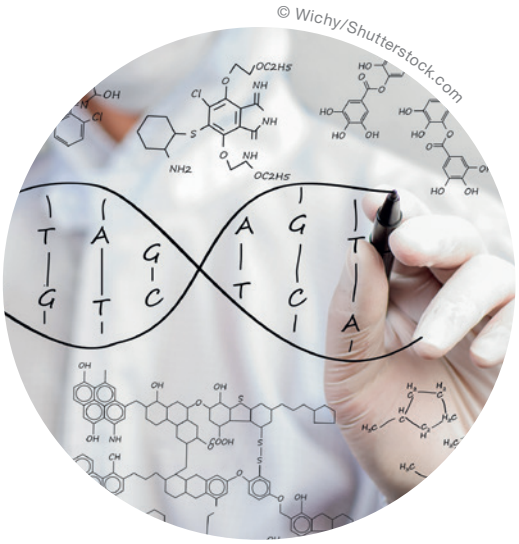
A team of Asian researchers analysed 1,291 patients who had undergone TKA between 1999 and 2002 and needed revision surgery within five years after the initial operation owing to a peri-prosthetic infection. They compared these cases to a control group of age- and sex-matched TKA patients who had not had any peri-prosthetic infection. The researchers concluded that regular dental scaling can improve oral health and thereby reduce the risk of transient bacteraemia caused by oral bacteria. The study, titled "Frequent dental scaling is associated with a reduced risk of periprosthetic infection following total knee arthroplasty: A nationwide population-based nested case–control study", was published online in the *PLOS ONE* journal on 23 June.


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Genetics affecting obesity's impact on

Periodontal disease progression

Studies have indicated that individuals with a high body mass index are more prone to developing periodontal disease than other people are. Being overweight or obese might also negatively affect one's response to nonsurgical periodontal therapy. In order to evaluate whether specific patterns of interleukin-1 (IL-1) gene variants, which are known to affect periodontitis severity, influenced the association between obesity and subsequent periodontitis progression, DNA was collected from 292 men (aged 29–64 at entry) in a recently published study. The participants had dental and anthropometric endpoints collected over multiple examinations, approximately every three years for up to 27 years.


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The analysis showed significant interactions between IL-1 genetic variations and obesity-related traits in predicting periodontal disease progression. Participants who were both obese and IL-1-positive were 70 per cent more likely to experience periodontal disease progression than those without these risk factors. The study was conducted at the Boston University Henry M. Goldman School of Dental Medicine in collaboration with Interleukin Genetics. The study, titled "Influence of obesity on periodontitis progression is conditional on IL-1 inflammatory genetic variation," was published online on 19 August in the *Journal of Periodontology*, an official publication of the American Academy of Periodontology.

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