

# The **link** between oral disease and **oxidative stress**



“The link between oral disease and oxidative stress is still not that widely known.”

**Dr Lenka Banasova** runs her own dental centre, Pearl Dental, in the Slovakian capital of Bratislava, where she focusses on periodontics and implant dentistry. Most importantly, however, she is one of the few dentists to touch on the largely neglected topic of oxidative stress and its relevance to the fields of periodontology and implantology. In this interview, she explains how natural antioxidants—as contained in CURAPROX Perio Plus+—can improve therapy.

**Dr Banasova, could you explain to our readers what oxidative stress is?**

Oxidative stress is an imbalance of free radicals and antioxidants in the body, which can lead to cell and tissue damage. On the one hand, this occurs naturally and plays a role in the ageing process. The body's natural immune response can trigger oxidative stress temporarily. This type of oxidative stress causes mild inflammation that goes away after the immune system fights off an infection or repairs an injury. On the other hand, a large body of scientific evidence suggests that long-term oxidative stress contributes to the development of a range of chronic conditions. Such conditions include cancer, diabetes, heart disease, atherosclerosis, Parkinson's disease, periodontitis and many other diseases.

**Are there ways to avoid or reduce oxidative stress?**

Several risk factors contribute to oxidative stress and excess free radical production. These can include diet,

lack of exercise, smoking, alcohol consumption, certain conditions, such as obesity, medications, and environmental factors, such as pollution and radiation. While you can't completely avoid exposure to free radicals, you can make lifestyle choices regarding your diet, exercise, environment and so on to help keep your body in balance and prevent damage and disease. And this includes your oral health as well—and, I would say, patients are still not aware enough of how important oral health is for their general health. During recent years, we have seen a rise in oral disease related to oxidative stress.

**How familiar is the average dental professional with oxidative stress, though? Is it considered during diagnosis or treatment?**

All dentists know that oral health is an important aspect of overall well-being and that numerous systemic conditions and diseases have oral origins, but I think the link between oral disease and oxidative stress is still not that widely known. To give you an example: saliva acts as the first line of defence against free radicals through antioxidants, and in the event of an infection, increased generation of free radicals means they outnumber antioxidants to initiate oxidative stress. However, I have noticed that there are more and more studies and articles in the area of medicine and also in the field of dentistry that are mentioning oxidative stress. During diagnosis, patients' general condition and potential oxidative stress causes should be considered. Smoking for example is regarded

as one of the most significant risk factors for the development of periodontitis, as it can affect the alveoli, resulting in tooth loss, but it can also increase oxidative stress. And in the end, it is a risk factor that can be eliminated.

**Are you familiar with bioflavonoids and the role they can play in oral health?**

Bioflavonoids are natural sources of medicine and have antibacterial and anti-inflammatory or antioxidant properties. They neutralise viruses by stimulating white blood cells and lymphocytes and produce interferon, thereby stimulating the immune system. They are widely used in dentistry as an additional treatment after professional care, and they have many clinical benefits in other medical fields too.

**Perio Plus+ for instance contains CITROX, which is a mix of different bioflavonoids that act as antioxidants. Do you see potential for CITROX or other antioxidants in oral health products?**

CITROX is an antimicrobial whose components consist of soluble bioflavonoids derived from citrus fruits. Many recent studies have demonstrated that CITROX is effective in inhibiting the growth of a range of bacteria, such as *Aggregatibacter actinomycetemcomitans* and *Porphyromonas gingivalis*, the main actors in pathogenic flora in patients with periodontitis.

I see CITROX's potential as an addition to oral health products, and it is already being used in this way. However, it does not replace professional care. There has to be a proper protocol on treating the periodontitis by a dental professional first. Products containing chlorhexidine with other antioxidants are the best supplements to help patients reduce oral bacteria at home—of course, according to the dentist's instructions. When we treat periodontitis properly and the patient is compliant at home, the combination of providing optimal oral hygiene and these antimicrobial agents allows for a massive decrease in harmful bacteria in the oral cavity, an improvement of periodontal status and the stabilisation of oral health. As such, markers of oxidative stress can be reduced rapidly.

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