



Periodontal Disease & Nutritional Supplementation

Susan Meade Huff RDH*

Corresponding Author: Susan Meade Huff RDH, Dental Hygienist at Crestview Dental, Knoxville Metropolitan Area.

Copy Right: © 2021 Susan Meade Huff. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received Date: November 23, 2021

Published Date: December 01, 2021

Periodontal Disease is a problematic culprit in approximately 2 out of 5 Americans. Up to 50% of the population over the age of thirty have some form of periodontal disease. Globally 40 to 90% of people are affected. (1)

Periodontal Disease is a breakdown of the periodontal ligament that holds the tooth in the alveolar bone located in the maxilla and mandible. When the ligament is damaged, atrophy of the area results in a risk of tooth loss and diseased tissue in the mouth. There is a plethora of different issues that can cause ligament damage and periodontium destruction. (2)

At any stage, it is important to investigate strong risk factors when diagnosed with periodontal disease. Stressors linked can be genetic, systemic and or emotional. Systematically noting medications, medical diagnosis, emotional stress, dietary and environmental stressors should all be examined. (6)

Bodily organs are at risk of disease and damage when this breakdown occurs. There have been studies linking periodontal disease to the heart, brain, vascular and connective tissues as well as diabetes mellitus, autoimmune diseases, and premature birth for pregnant women.

(3, 4, 5, 8, 9)

While undergoing therapy for periodontal disease with your dental care provider, getting a baseline blood panel is a good place to start to see where you may be lacking in nutrients. This will allow the patient to become more familiar with the importance of nutrients and how they work together to keep one healthy. Often the first sign of nutrient deficiencies shows up in the mouth. Getting your nutritional values through dietary foods daily is optimal, but when they are lacking, supplementation is needed to ensure healthy homeostasis (8)

For connective tissue and healthy immune function, considerations levels of vitamins A, C, D, E, and zinc (along with others) should be evaluated. They possess antioxidant properties. Which help with oxidative stresses, they scavenge for free radicals and help with inflammation. (9, 10)

Vitamin A deficiencies have been known to cause xerostomia, hyperkeratosis, and oral leukoplakia. Vitamin A aids in immune function and is a crucial antioxidant. (10)

Vitamin C helps with the production of collagen. Collagen is an essential part of healthy periodontal tissue. Deficiencies of vitamin C can cause bleeding and inflamed gum tissue called ascorbic acid gingivitis. (6, 9, 10)

Studies have shown that people with periodontal disease have lower levels of vitamin D. Vitamin D benefits from anti-inflammatory properties cellular growth. Vitamin D is a Hormone produced by the body when the skin is exposed to UV rays by the sun. This hormone is fat soluble, meaning what your body does not use it is stored in fat cells in the body for later use. Without proper vitamin D circulating the bloodstream you cannot absorb calcium properly. (6, 9, 10)

Calcium is necessary for the formation of teeth and bones. For calcium deficiency supplementation improves outcomes of non- surgical periodontal therapy. (9)

Magnesium is beneficial for cell metabolism and bone formation as well as regulating calcium levels. Bones store more than 50% magnesium in the body determining bone density. Studies have also shown the magnesium can also reduce inflammation. (9)

Iron has an antioxidant effect on the periodontium. Iron is stored in the muscles, spleen, liver and bone marrow. Anaemia occur when you are chronically deficient in iron. Red blood cells are affected, not allowing oxygen to where it is needed. Glossitis, periodontal disease and tooth decay are risk. (9)

Zinc has antioxidant properties on the periodontium and lessens the impact of diabetes-induced periodontitis. Zinc helps fight inflammation and improve immunity. (9, 10)

Omega-3s exhibit anti-inflammatory and antibacterial effects. A 2020 review of six studies

shows that people that took omega-3 had healthy improvement in the measurements of periodontal disease pockets. (10)

CoQ10 deficiency has been associated with periodontal disease. While receiving periodontal therapy treatment and supplementing with CoQ10 showed a reduction in inflammation more than just periodontal therapy alone. Co10 gels also have resulted in reduced gingival bleeding and elevated levels of antioxidant enzymes in the gingiva of people with periodontal disease. (10)

Curcumin has been known to inhibit the growth of P. Gingivalis, a harmful bacteria found in periodontal infections. (10)

The use of probiotics aids with gut health and digestion. Having a healthy gut promotes health and immunity throughout the whole body. Probiotics have been known to help with the overgrowth of bacteria levels that aid in the progression of periodontal disease. Along with therapy, there have been significant drops of the bacteria P. gingivalis to just receiving therapy alone. (10)

Melatonin is a hormone the body makes naturally and is available in supplement form. Melatonin aids in the sleep-wake rhythm, immune system, and blood pressure regulation. Known properties are anti-inflammatory, antioxidant and anti-swelling. Studies have shown patients with periodontal disease have lower levels of melatonin in their saliva than healthy periodontal patients. (6, 7)

Finding a Certified Nutritional Counsellor at your dental provider is a good place to start to help guide you in the right direction for a healthy outcome of periodontal therapy. Once diagnosed with periodontal disease getting your immune system strong will help with your prognosis of treatment.

References

- (1) National Institute of Dental and Craniofacial Research. NIH, Periodontal Disease in Adults (Ages 30 or Older).
- (2) MedicineNet. Medical Definition of Periodontal Disease. Medical Editor Charles Patrick Davis, MD PhD.
- (3) WebMD. Plaque and Your Teeth
- (4) PubMed.gov. National Library of Medicine. The Relationship Between periodontal disease (pd) and cardiovascular disease (cvd).

- (5) PubMed.gov. Inflammation in Periodontal Disease: Possible Link to Vascular Disease.
- (6) MDPI Nutrients. The Role of Nutrition in Periodontal Health: an update. Shariq Najeeb, Muhammad Sohail Zafar, Zohaib Khurshid, Sana Zohaib and Khalid Almas.
- (7) PubMed.gov National Library of Medicine. The Impact of Diet, Nutrition and Nutraceuticals on Oral and Periodontal Health. Gatano Isola.

- (8) Healthline, Health News. Elizabeth Pratt updated 9-13-2017. Dental Exams can Detect Signs of Disease Elsewhere in the body.
- (9) Kiranjit Kaur, Dean Sculley, Janet Wallace, Alexandria Turner, Celeste Farraris, Martine Veysey, Mark Lucock, Emma L. Beckett Micronutrients and Bioactive Compounds in oral Inflammatory Diseases
- (10) www.healthline.com/health/dental-and-oral-health/ways-to-keep-gums-healthy. Healthline 10 Vitamins and Supplements for Gum Health and Gum Disease