

Einfluss der Ernährung auf chronische Entzündungen

Parodontitis, Adipositas und Diabetes mellitus Typ 2

1. American Diabetes Association, Bantle JP, Wylie-Rosett J, Albright AL, Apovian CM, Clark NG, Franz MJ, Hoogwerf BJ, Lichtenstein AH, Mayer-Davis E, Mooradian AD, Wheeler ML: Nutrition recommendations and interventions for diabetes: a position statement of the American Diabetes Association. *Diabetes Care*. 2008; 31(Suppl1): S61–S78.
2. Barutta F, Bellini S, Durazzo M, Gruden G. Novel Insight into the Mechanisms of the Bidirectional Relationship between Diabetes and Periodontitis. *Biomedicines*. 2022 Jan 16;10(1):178.
3. Beaudette JR, Fritz PC, Sullivan PJ, Ward WE. Oral Health, Nutritional Choices, and Dental Fear and Anxiety. *Dent J (Basel)*. 2017 Jan 21;5(1):8.
4. Casanova L, Hughes FJ, Preshaw PM. Diabetes and periodontal disease: a two-way relationship. *Br Dent J*. 2014 Oct;217(8):433-7.
5. Chen YF, Zhan Q, Wu CZ, Yuan YH, Chen W, Yu FY, Li Y, Li LJ. Baseline HbA1c Level Influences the Effect of Periodontal Therapy on Glycemic Control in People with Type 2 Diabetes and Periodontitis: A Systematic Review on Randomized Controlled Trials. *Diabetes Ther*. 2021 May;12(5):1249-1278.
6. Costa R, Ríos-Carrasco B, Monteiro L, López-Jarana P, Carneiro F, Relvas M. Association between Type 1 Diabetes Mellitus and Periodontal Diseases. *J Clin Med*. 2023 Feb 1;12(3):1147.
7. Deutsche Gesellschaft für Parodontologie (DG PARO), Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde (DGZMK). Die Behandlung von Parodontitis Stadium I bis III. https://www.awmf.org/uploads/tx_szleitlinien/083-043l_S3_Behandlung-von-Parodontitis-Stadium-I-III_2021-02_2.pdf (Zugriff am 12.03.2024).
8. de Mello RN, de Gois BP, Kravchychyn ACP, Dâmaso AR, Horst MA, Lima GC, Corgosinho FC. Dietary inflammatory index and its relation to the pathophysiological aspects of obesity: a narrative review. *Arch Endocrinol Metab*. 2023 Jun 19;67(6):e000631.
9. Demmer RT, Desvarieux M, Holtfreter B, et al. Periodontal status and A1C change: longitudinal results from the study of health in Pomerania (SHIP) *Diabetes Care*. 2010;33:1037–1043.
10. Flock MR, Rogers CJ, Prabhu KS, Kris-Etherton PM. Immunometabolic role of long-chain omega-3 fatty acids in obesity-induced inflammation. *Diabetes Metab Res Rev*. 2013 Sep;29(6):431-45.
11. Grossi SG, Genco RJ. Periodontal disease and diabetes mellitus: a two-way relationship. *Ann Periodontol*. 1998 Jul;3(1):51-61.
12. Hahn A, Ströhle A, Wolters M. Ernährung – Physiologische Grundlagen, Prävention, Therapie. 4. Auflage, Wissenschaftliche Verlagsgesellschaft, Stuttgart, 2023.
13. Hahn A, Jonas W, Behrendt I: Low-grade-Inflammation und chronisch-degenerative Erkrankungen. *Schw. Z. Ernährungsmed*. 2023;6:6-9.
14. Hahn A, Behrendt I: Ernährungsfaktoren und Inflammation. *Oralprophylaxe Kinderzahnmed*. 2024;46:19-22.
15. Hajishengallis G. Periodontitis: from microbial immune subversion to systemic inflammation. *Nat Rev Immunol*. 2015 Jan;15(1):30-44.
16. Hariharan R, Odjidja EN, Scott D, Shivappa N, Hébert JR, Hodge A, de Courten B. The dietary inflammatory index, obesity, type 2 diabetes, and cardiovascular risk factors and diseases. *Obes Rev*. 2022 Jan;23(1):e13349.
17. Hujoel P. Dietary carbohydrates and dental-systemic diseases. *J Dent Res*. 2009 Jun;88(6):490-502.
18. Ide R, Hoshuyama T, Wilson D, Takahashi K, Higashi T. Periodontal disease and incident diabetes: a seven-year study. *J Dent Res*. 2011;90:41–46.
19. Iwashita M, Hayashi M, Nishimura Y, Yamashita A. The Link Between Periodontal Inflammation and Obesity. *Curr Oral Health Rep*. 2021;8(4):76-83.

20. Kesavalu L, Bakthavatchalu V, Rahman MM, Su J, Raghu B, Dawson D, Fernandes G, Ebersole JL. Omega-3 fatty acid regulates inflammatory cytokine/mediator messenger RNA expression in *Porphyromonas gingivalis*-induced experimental periodontal disease. *Oral Microbiol Immunol*. 2007 Aug;22(4):232-9.
21. Kotronia E, Brown H, Papacosta AO, Lennon LT, Weyant RJ, Whincup PH, Wannamethee SG, Ramsay SE. Poor oral health and the association with diet quality and intake in older people in two studies in the UK and USA. *Br J Nutr*. 2021 Jul 14;126(1):118-130.
22. Ladeira LLC, Nascimento GG, Leite FRM, Alves-Costa S, Barbosa JMA, Alves CMC, Thomaz EBAF, Batista RFL, Ribeiro CCC. Obesity, Insulin Resistance, Caries, and Periodontitis: Syndemic Framework. *Nutrients*. 2023 Aug 9;15(16):3512.
23. Landgraf R, Aberle J, Birkenfeld AL, Gallwitz B, Kellerer M, Klein H, Müller-Wieland D, Nauck MA, Reuter HM, Siegel E: Therapie des Typ-2-Diabetes. *Diabetologie&Stoffwechsel*. 2019;14(S02):S167-187.
24. Levine RS. Obesity, diabetes and periodontitis--a triangular relationship? *Br Dent J*. 2013 Jul;215(1):35-9.
25. Loe H. Periodontal disease. The sixth complication of diabetes mellitus. *Diabetes Care*. 1993 Jan;16(1):329-34.
26. Lula EC, Ribeiro CC, Hugo FN, Alves CM, Silva AA. Added sugars and periodontal disease in young adults: an analysis of NHANES III data. *Am J Clin Nutr*. 2014 Oct;100(4):1182-7.
27. Marruganti C, Suvan JE, D'Aiuto F. Periodontitis and metabolic diseases (diabetes and obesity): Tackling multimorbidity. *Periodontol 2000*. 2023 Oct 16.
28. Mealey BL, Ocampo GL. Diabetes mellitus and periodontal disease. *Periodontol 2000*. 2007;44:127-53.
29. Metin ZE, Tengilimoglu-Metin MM, Oğuz N, Kizil M. Is inflammatory potential of the diet related to oral and periodontal health? *Food Sci Nutr*. 2023 Aug 28;11(11):7155-7159
30. Mirzaei A, Shahrestanaki E, Daneshzad E, Heshmati J, Djalalinia S, Asayesh H, Mahdavi-Gorabi A, Heshmat R, Qorbani M. Association of hyperglycaemia and periodontitis: an updated systematic review and meta-analysis. *J Diabetes Metab Disord*. 2021 Aug 11;20(2):1327-1336.
31. Muniz FW, Nogueira SB, Mendes FL, Rösing CK, Moreira MM, de Andrade GM, Carvalho Rde S. The impact of antioxidant agents complimentary to periodontal therapy on oxidative stress and periodontal outcomes: A systematic review. *Arch Oral Biol*. 2015 Sep;60(9):1203-14.
32. Naqvi AZ, Buettner C, Phillips RS, Davis RB, Mukamal KJ. n-3 fatty acids and periodontitis in US adults. *J Am Diet Assoc*. 2010 Nov;110(11):1669-75.
33. Naqvi AZ, Hasturk H, Mu L, Phillips RS, Davis RB, Halem S, Campos H, Goodson JM, Van Dyke TE, Mukamal KJ. Docosahexaenoic Acid and Periodontitis in Adults: A Randomized Controlled Trial. *J Dent Res*. 2014 Aug;93(8):767-73.
34. Nielsen SJ, Trak-Fellermeier MA, Joshipura K, Dye BA. Dietary Fiber Intake Is Inversely Associated with Periodontal Disease among US Adults. *J Nutr*. 2016 Dec;146(12):2530-2536
35. Reis RA, Stolf CS, de Carvalho Sampaio HA, da Costa Silva BY, Özlü T, Kenger EB, Miguel MMV, Santamaria MP, Monteiro MF, Casati MZ, Casarin RCV. Impact of dietary inflammatory index on gingival health. *J Periodontol*. 2024 Jun;95(6):550-562. doi: 10.1002/JPER.23-0292.
36. Ryan ME, Raja V. Diet, Obesity, Diabetes, and Periodontitis: a Syndemic Approach to Management. 2016. *Curr Oral Health Rep* 3, 14–27.
37. Saito T, Shimazaki Y, Sakamoto M. Obesity and periodontitis. *N Engl J Med*. 1998 Aug 13;339(7):482-3.
38. Sedghi LM, Bacino M, Kapila YL. Periodontal Disease: The Good, The Bad, and The Unknown. *Front Cell Infect Microbiol*. 2021 Dec 7;11:766944.
39. Shi J, Liang Z, Zhang X, Ren S, Cheng Y, Liu Y, Zhang M. Association of physical activity and dietary inflammatory index with overweight/obesity in US adults: NHANES 2007-2018. *Environ Health Prev Med*. 2023;28:40.
40. Sinha S, Haque M, Lugova H, Kumar S. The Effect of Omega-3 Fatty Acids on Insulin Resistance. *Life (Basel)*. 2023 Jun 5;13(6):1322.

41. Staufenbiel I, Weinspach K, Förster G, Geurtsen W, Günay H. Periodontal conditions in vegetarians: a clinical study. *Eur J Clin Nutr.* 2013 Aug;67(8):836-40
42. Staufenbiel I, Adam K, Hahn A, Kerlikowsky F, Flohr M, Schlueter N, Vach K. Influence of Nutrition and Physical Activity on Local and Systemic Inflammatory Signs in Experimentally Induced Gingivitis. *Nutrients.* 2023 Jul 27;15(15):3344.
43. Swarnamali H, Medara N, Chopra A, Spahr A, Jayasinghe TN. Role of Dietary Fibre in Managing Periodontal Diseases. A Systematic Review and Meta-Analysis of Human Intervention Studies. *Nutrients.* 2023 Sep 18;15(18):4034.
44. Tsai C, Hayes C, Taylor GW. Glycemic control of type 2 diabetes and severe periodontal disease in the US adult population. *Community Dent Oral Epidemiol.* 2002 Jun;30(3):182-92.
45. Vivekananda L, Faizuddin M. Effect of Weight Reduction on the Serum Adiponectin and Tumor Necrosis Factor- α Levels and the Clinical Parameters of Obese Patients with and without Periodontal Disease. *J Int Soc Prev Community Dent.* 2019 Mar-Apr;9(2):166-171.
46. Vo TTT, Chu PM, Tuan VP, Te JS, Lee IT. The Promising Role of Antioxidant Phytochemicals in the Prevention and Treatment of Periodontal Disease via the Inhibition of Oxidative Stress Pathways: Updated Insights. *Antioxidants (Basel).* 2020 Dec 1;9(12):1211.
47. Yokoyama Y, Barnard ND, Levin SM, Watanabe M. Vegetarian diets and glycemic control in diabetes: a systematic review and meta-analysis. *Cardiovasc Diagn Ther.* 2014 Oct;4(5):373-82.
48. Zhou Q, Gao Y, Guo Y, Zhu G. Relationship between Dietary Inflammatory Index and Blood Glucose Changes in Patients with Pre-diabetes Mellitus. *Altern Ther Health Med.* 2024 Apr 12:AT9354. Epub ahead of print.
49. Zuza EC, Pires JR, de Almeida AA, Toledo BEC, Guimaraes-Stabili MR, Junior CR, Barroso EM. Evaluation of recurrence of periodontal disease after treatment in obese and normal weight patients: Two-year follow-up. *J Periodontol.* 2020 Sep;91(9):1123-1131.