

LITERATUR ZMK 7-8 2026

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Prof. Dr. Claus-Peter Ernst

Was man innerhalb eines Jahres doch alles lernen kann...

[1] https://de.wikipedia.org/wiki/Karl_Lauterbach

[2] Antonini M, Costa-Font J, Marchi N, and Winberg D. *Do Medical Health Ministers Make Different Health System Choices?* *Governance* 2026; 39 (3): e70135. <https://doi.org/10.1111/gove.70135>.

[3] https://www.google.com/search?client=safari&rls=en&q=Linnemann+6.+Mai+2025+im+Interview+mit+dem+Sender+Phoenix&ie=UTF-8&oe=UTF-8#fpstate=ive&vld=cid:98c965b0-bead-407e-921f-8c989695a84d_5491c64e,vid:j12llnrCvzk,st:168

[4] <https://www.n-tv.de/politik/Jetzt-faellt-Linnemann-sein-eigenes-Zitat-auf-die-Fuesse-id31123538.html>

[5] Schwendicke F, Kosan E, Banerjee A, Baysan A, Bjørndal L, Ceballos L, Duncan HF, Herbst S, Neuhaus KW, O'Connell AC, Paris S, Dujic H. Deep Caries Management: EFCD-ESE-ORCA S3-Level Clinical Practice Guideline. *Caries Res* 2026; 22: 1-19. / *Int Endod J* 2026; 59: 1298-1315. / *Clin Oral Investig* 2026; 30: 186.

[6] Hsu TL, Ring ME. Driving out the 'toothworm' in today's China. *J Hist Dent*. 1998 Nov;46(3):111-5. PMID: 10388453.

[7] Gallagher JE. The perception of dental diseases prior to the advent of modern dentistry needs re-appraisal. *Br Dent J*. 1998 Apr 25;184(8):388. doi: 10.1038/sj.bdj.4809640. PMID: 9604508.

[8] Gerabek WE. The tooth-worm: historical aspects of a popular medical belief. *Clin Oral Investig*. 1999 Mar;3(1):1-6. doi: 10.1007/s007840050070. PMID: 10522185.

[9] Rastekar F, Alaei Kakhki N, Aliabadian M, Monfared M. A practical and safe alternative method for skeletal cleaning for museum specimens using superworms (*Zophobas morio*). *PLoS One*. 2026 Jul 1;21(7):e0349669. doi: 10.1371/journal.pone.0349669. PMID: 42384618; PMCID: PMC13322520.

[10] <https://www.n-tv.de/wissen/Superwuermer-fressen-ganze-Skelette-blank-id31038337.html>

Gingivale Rezessionen und deren Prävention

- [1] Amid R, Kadkhodazadeh M, Moscowchi A, Tavakol Davani S, Soleimani M, Dehghani Soltani A, Al-Shuhayeb M. Effect of gingival biotype on orthodontic treatment-induced periodontal complications: A systematic review. *J Adv Periodontol Implant Dent.* 2020 Apr 14; 12 (1): 3-10. doi: 10.34172/japid.2020.003.
- [2] Chambrone L, Tatakis DN. Long-Term Outcomes of Untreated Buccal Gingival Recessions: A Systematic Review and Meta-Analysis. *J Periodontol.* 2016; 87 (7): 796-808. doi: 10.1902/jop.2016.150625.
- [3] Checchi L, Daprile G, Gatto MR, Pelliccioni GA. Gingival recession and toothbrushing in an Italian School of Dentistry: a pilot study. *J Clin Periodontol.* 1999; 26 (5): 276-80. doi: 10.1034/j.1600-051x.1999.260502.x.
- [4] Carreno RES, Salazar V CR; Paz de Gudiño M. Factores precipitantes en el desarrollo de recesión gingival. *Acta Odontol Venezolana* 2002; 40, 129–136.
- [5] Cairo F, Nieri M, Cincinelli S, Mervelt J, Pagliaro U. The interproximal clinical attachment level to classify gingival recessions and predict root coverage outcomes: an explorative and reliability study. *J Clin Periodontol.* 2011; 38: 661–666.
- [6] Dörfer CE, Staehle HJ, Wolff D. Three-Year Randomized Study of Manual and Power Toothbrush Effects on Pre-Existing Gingival Recession. *J Clin Periodontol.* 2016; 43: 512–519. doi: 10.1111/jcpe.12518.
- [7] Janusz K, Nelson B, Bartizek RD, Walters PA, Biesbrock AR. Impact of a novel power toothbrush with SmartGuide technology on brushing pressure and thoroughness. *J Contemp Dent Pract.* 2008; 1; 9 (7): 1-8.
- [8] Jepsen S, Caton JG, Albandar JM, Bissada NF, Bouchard P, Cortellini P, Demirel K, de Sanctis M, Ercoli C, Fan J, Geurs NC, Hughes FJ, Jin L, Kantarci A, Lalla E, Madianos PN, Matthews D, McGuire MK, Mills MP, Preshaw PM, Reynolds MA, Sculean A, Susin C, West NX, Yamazaki K. Periodontal manifestations of systemic diseases and developmental and acquired conditions: Consensus report of workgroup 3 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. *J Clin Periodontol.* 2018; 45 (Suppl 20): S219–S229.
- [9] Kapferer I, Benesch T, Gregoric N, Ulm C, Hienz SA. Lip piercing: prevalence of associated gingival recession and contributing factors. A cross-sectional study. *J Periodontol Res.* 2007; 42 (2): 177-83. doi: 10.1111/j.1600-0765.2006.00931.x.
- [10] Kapferer I, Beier US, Persson RG. Tongue piercing: the effect of material on microbiological findings. *J Adolesc Health.* 2011; 49 (1): 76-83. doi: 10.1016/j.jadohealth.2010.10.008.
- [11] Laursen MG, Rylev M, Melsen B. The role of orthodontics in the repair of gingival recessions. *Am J Orthod Dentofacial Orthop.* 2020; 157 (1): 29-34. doi: 10.1016/j.ajodo.2019.01.023.
- [12] Marschner F, Lechte C, Kanzow P, Hraský V, Pfister W. Systematic review and meta-analysis on prevalence and risk factors for gingival recession. *J Dent.* 2025; 155: 105645. doi: 10.1016/j.jdent.2025.105645.
- [13] McCracken GI, Heasman L, Stacey F, Swan M, Steen N, de Jager M, Heasman PA. The impact of powered and manual toothbrushing on incipient gingival recession. *J Clin Periodontol.* 2009; 36 (11): 950-7.

- [14] Needleman I, Nibali L, Di Iorio A. Professional mechanical plaque removal for prevention of periodontal diseases in adults--systematic review update. *J Clin Periodontol*. 2015; 42 Suppl 16: S12-35. doi: 10.1111/jcpe.12341.
 - [15] Renkema AM, Fudalej PS, Renkema A, Bronkhorst E, Katsaros C. Gingival recessions and the change of inclination of mandibular incisors during orthodontic treatment. *Am J Orthod Dentofacial Orthop*. 2013; 143 (2): 206-12. doi: 10.1016/j.ajodo.2012.09.018.
 - [16] Tavelli L, Barootchi S, Cairo F, Rasperini G, Shedden K, Wang HL. The Effect of Time on Root Coverage Outcomes: A Network Meta-analysis. *J Dent Res*. 2019 ;98 (11): 1195-1203. doi: 10.1177/0022034519867071.
 - [17] Tezel A, Canakçi V, Çiçek Y, Demir T. Evaluation of gingival recession in left- and right-handed adults. *Int J Neurosci*. 2001; 110 (3-4): 135-46. doi: 10.3109/00207450108986541.
 - [18] Van der Weijden FA, Campbell SL, Dörfer CE, González-Cabezas C, Slot DE. Safety of oscillating-rotating powered brushes compared to manual toothbrushes: a systematic review. *J Periodontol*. 2011; 82 (1): 5-24. doi: 10.1902/jop.2010.100393.
 - [19] Yadav VS, Gumber B, Makker K, Gupta V, Tewari N, Khanduja P, Yadav R. Global prevalence of gingival recession: A systematic review and meta-analysis. *Oral Dis*. 2023; 29 (8): 2993-3002. doi: 10.1111/odi.14289.
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PD Dr. Amely Hartmann, Dr. Marcus Seiler MSc. MSc., Dr. Moritz Grosse-Lege, Dr. Alexander Volkmann, Dr. Dr. Markus Tröltzsch, PD Dr. Dr. Mathias Tröltzsch

3D-Druck in der Implantologie: Vom Datensatz zur Operation – wie der digitale Workflow den Praxisalltag verändert

- [1] Gawali N, Shah PP, Gowdar IM, Bhavsar KA, Giri D, Laddha R. The Evolution of Digital Dentistry: A Comprehensive Review. *J Pharm Bioallied Sci*. 2024;16(Suppl 3):S1920-s2.
- [2] Abduo J, Rasaie V. Digital Workflows in Prosthodontics. *Aust Dent J*. 2025;70 Suppl 1(Suppl 1):S146-s58.
- [3] Abad-Coronel C, Ruiz D, Quelal M, Estrada D, Mena Córdova N, Aliaga P. Comparative Evaluation of Conventional and Digital Workflow Impressions for Implant-Supported Restorations. *Dent J (Basel)*. 2026;14(2).
- [4] Mangano F, Gandolfi A, Luongo G, Logozzo S. Intraoral scanners in dentistry: a review of the current literature. *BMC Oral Health*. 2017;17(1):149.
- [5] Prasher P, Tuteja A, Amin F, Sopaj R, Tuteja D, Eddin HS. Advancing precision: The role of digital workflows in modern implant dentistry. *Bioinformation*. 2025;21(8):2490-5.
- [6] Kafedzhieva A, Vlahova A, Chuchulska B. Digital Technologies in Implantology: A Narrative Review. *Bioengineering (Basel)*. 2025;12(9).
- [7] Chen CS, Hsu H, Kuo YW, Kuo HY, Wang CW. Digital Workflow and Guided Surgery in Implant Therapy-Literature Review and Practical Tips to Optimize Precision. *Clin Implant Dent Relat Res*. 2025;27(3):e70038.
- [8] Michelinakis G, Apostolakis D, Kamposiora P, Papavasiliou G, Özcan M. The direct digital workflow in fixed implant prosthodontics: a narrative review. *BMC Oral Health*. 2021;21(1):37.

- [9] Massuda CKM, de Carvalho MR, de Moraes JB, Pallos D, Kim YJ. Accuracy of guided dental implant surgery using a fully digital workflow: A case series. *J Prosthet Dent.* 2024;132(5):973-80.
- [10] Zailai A, Aldwyyan NF, Alsaedy MH, Alasiri A, Alharbi RK, Alothman AR, Metwaly AS. Clinical Effectiveness and Accuracy of Fully Digital Workflows Versus Conventional Methods in Implant-Supported Restorations: A Systematic Review and Meta-Analysis. *Cureus.* 2026;18(2):e102864.
- [11] Mello WM, Dutra V, Liedke GS. 3D Printing in Dental Education: A Scoping Review. *Med Princ Pract.* 2026;35(2):114-25.
- [12] Beyer M, Scheller L, Burde AV, Abazi S, Sommacal A, Seifert L, et al. Comparative Evaluation of SLA and DLP 3D Printing in Dental Implant Guides: Impact on Fabrication Accuracy, Speed, and Resin Usage. *Dent J (Basel).* 2025;13(10).
- [13] Vlasa A, Bocanet VI, Muntean MH, Bud A, Dragomir BR, Rosu SN, et al. Accuracy of Three-Dimensional Printed Dental Models Based on Ethylene Di-Methacrylate-Stereolithography (SLA) vs. Digital Light Processing (DLP). *Applied Sciences.* 2023;13(4):2664.
- [14] Tsolakis IA, Papaioannou W, Papadopoulou E, Dalampira M, Tsolakis AI. Comparison in Terms of Accuracy between DLP and LCD Printing Technology for Dental Model Printing. *Dent J (Basel).* 2022;10(10).
- [15] Le V, Keßler A, Folwaczny M. Influence of DLP and SLA printer technology on the accuracy of surgical guides for implant dentistry in free-end situations. *Int J Comput Dent.* 2023;26(3):217-26.
- [16] Jeong M, Radomski K, Lopez D, Liu JT, Lee JD, Lee SJ. Materials and Applications of 3D Printing Technology in Dentistry: An Overview. *Dent J (Basel).* 2023;12(1).
- [17] Hassanpour M, Narongdej P, Alterman N, Moghtadernejad S, Barjasteh E. Effects of Post-Processing Parameters on 3D-Printed Dental Appliances: A Review. *Polymers (Basel).* 2024;16(19).
- [18] Cabrol A, Chuy V, Fron-Chabouis H, Naveau A. Effectiveness of postprocessing on 3D printed resin biocompatibility in prosthodontics: A systematic review. *J Prosthet Dent.* 2025;134(5):1688-700.
- [19] Cao J, Liu X, Cameron A, Aarts J, Choi JJE. Influence of different post-processing methods on the dimensional accuracy of 3D-printed photopolymers for dental crown applications - A systematic review. *J Mech Behav Biomed Mater.* 2024;150:106314.
- [20] Piedra-Cascón W, Krishnamurthy VR, Att W, Revilla-León M. 3D printing parameters, supporting structures, slicing, and post-processing procedures of vat-polymerization additive manufacturing technologies: A narrative review. *J Dent.* 2021;109:103630.
- [21] Pradíes G, Morón-Conejo B, Martínez-Rus F, Salido MP, Berrendero S. Current applications of 3D printing in dental implantology: A scoping review mapping the evidence. *Clin Oral Implants Res.* 2024;35(8):1011-32.
- [22] Morón-Conejo B, Berrendero S, Salido MP, Zarauz C, Pradíes G. Accuracy of surgical guides manufactured with four different 3D printers. A comparative in vitro study. *J Dent.* 2024;148:105226.
- [23] Alghauli MA, Almuzaini SA, Aljohani R, Alqutaibi AY. Impact of 3D printing orientation on accuracy, properties, cost, and time efficiency of additively manufactured dental models: a systematic review. *BMC Oral Health.* 2024;24(1):1550.
- [24] Kaya S, Barcellos BM, Fan S, Azaripour A, Walter C, Hartmann A, Sagheb K. Risk factors for dehiscence in alveolar ridge augmentation using patient-specific titanium mesh: a retrospective analysis. *Int J Implant Dent.* 2025;11(1):42.

- [25] Tahmaseb A, Wu V, Wismeijer D, Coucke W, Evans C. The accuracy of static computer-aided implant surgery: A systematic review and meta-analysis. *Clin Oral Implants Res.* 2018;29 Suppl 16:416-35.
 - [26] Shi Y, Wang J, Ma C, Shen J, Dong X, Lin D. A systematic review of the accuracy of digital surgical guides for dental implantation. *Int J Implant Dent.* 2023;9(1):38.
-

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Dr. Matthias Roßberg

Ernährung als Schlüsselfaktor für orale Gesundheit und Prävention

- [1] Chapple ILC, Bouchard P, Cagetti MG et al. Interaction of lifestyle, behaviour or systemic diseases with dental caries and periodontal diseases: consensus report of Group 2 of the Joint EFP/ORCA Workshop. *J Clin Periodontol.* 2017;44(Suppl 18):S39–S51.
- [2] Marsh PD. Dental plaque as a biofilm and a microbial community – implications for health and disease. *BMC Oral Health.* 2006;6(Suppl 1):S14.
- [3] Hajishengallis G. Periodontitis: from microbial immune subversion to systemic inflammation. *Nat Rev Immunol.* 2015;15(1):30–44.
- [4] Hajishengallis G, Chavakis T. Local and systemic mechanisms linking periodontal disease and inflammatory comorbidities. *Nat Rev Immunol.* 2021;21(7):426–440.
- [5] Tonetti MS, Van Dyke TE. Periodontitis and atherosclerotic cardiovascular disease. *J Periodontol.* 2013;84(4 Suppl):S24–S29.
- [6] Chapple ILC, Genco R. Diabetes and periodontal diseases. *J Periodontol.* 2013;84(4 Suppl):S106–S112.
- [7] Simpson TC, Weldon JC, Worthington HV et al. Treatment of periodontal disease for glycaemic control in people with diabetes mellitus. *Cochrane Database Syst Rev.* 2022;4:CD004714.
- [8] Eberhard J, Grote K, Luchtefeld M et al. Experimental gingivitis induces systemic inflammatory markers in young healthy individuals. *PLoS One.* 2013;8(2):e55265.
- [9] Moynihan PJ, Kelly SAM. Effect on caries of restricting sugars intake. *J Dent Res.* 2014;93(1):8–18.
- [10] World Health Organization. Guideline: Sugars Intake for Adults and Children. Geneva: WHO; 2015.
- [11] Moynihan P, Makino Y, Petersen PE, Ogawa H. Implications of WHO guideline on sugars for dental health professionals. *Community Dent Oral Epidemiol.* 2018;46(1):1–7.
- [12] Baumgartner S, Imfeld T, Schicht O, Rath C, Persson RE, Persson GR. The impact of the stone age diet on gingival conditions in the absence of oral hygiene. *J Periodontol.* 2009;80(5):759–768.
- [13] Woelber JP, Bremer K, Vach K et al. An oral health optimized diet can reduce gingival and periodontal inflammation in humans. *BMC Oral Health.* 2017;17:28.

- [14] Woelber JP, Gärtner M, Breuninger L et al. The influence of an anti-inflammatory diet on gingivitis. *J Clin Periodontol*. 2019;46(4):481–490.
- [15] Bartha V, Exner M, Delaney C et al. Interventional effects of a Mediterranean diet on gingivitis. *J Clin Periodontol*. 2022;49(11):1119–1132.
- [16] Naqvi AZ, Buettner C, Phillips RS, Davis RB, Mukamal KJ. n-3 fatty acids and periodontitis in US adults. *J Am Diet Assoc*. 2010;110(11):1669–1675.
- [17] Serhan CN. Pro-resolving lipid mediators are leads for resolution physiology. *Nature*. 2014;510(7503):92–101.
- [18] Shakibaei M, John T, Schulze-Tanzil G, Lehmann I, Mobasheri A. Suppression of NF-kappaB activation by curcumin. *Biochem Pharmacol*. 2007;73(9):1434–1445.
- [19] Gruner D, Paris S, Schwendicke F. Probiotics for managing caries and periodontitis. *J Dent*. 2016;48:16–25.
- [20] Laleman I, Teughels W. Probiotics in the dental practice: a review. *Quintessence Int*. 2015;46(3):255–264.
- [21] Kapil V, Haydar SMA, Pearl V et al. Physiological role for nitrate-reducing oral bacteria in blood pressure control. *Free Radic Biol Med*. 2013;55:93–100.
- [22] Lundberg JO, Weitzberg E. NO generation from inorganic nitrate and nitrite. *Arch Pharm Res*. 2009;32(8):1119–1126.
- [23] Calder PC. Nutrition, immunity and inflammation. *Proc Nutr Soc*. 2020;79(1):1–13.
- [24] Sheiham A, Watt RG. The common risk factor approach. *Community Dent Oral Epidemiol*. 2000;28(6):399–406.
- [25] Ferreira RO, et al. *Physical Activity Reduces the Prevalence of Periodontal Disease: Systematic Review and Meta-Analysis*. *Front Physiol*. 2019;10:234.
- [26] Das A, Menon I, Kumar G, Singh A, Jha K. *Impact of physical activity on oral health: A systematic review*. *J Fam Med Prim Care*. 2025;14:1161–1168.
- [27] Hamada Y, Hayashi N. *Chewing increases postprandial diet-induced thermogenesis*. *Scientific Reports*. 2021;11:23714.
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