

- [1] Ng, Y.-L. et al., „A prospective study of the factors affecting the outcome of nonsurgical endodontic treatment: part 1: periodical health“ Int Endod.J. 2011.
- [2] Kratchman S, Kim S „Modern Endodontic Surgery Concepts and Practice: A Review“ J Endod 2006; 32,7 601-623.
- [3] Setzer et al. „Outcome of Endodontic Surgery: A Meta-Analysis of the Literature Part1: Comparison of Traditional Root-end Surgery and Endodontic Microsurgery“ J Endod 2010;36: 1757-1765.
- [4] Ray H.A., Trope M. „Periapical status of endodontically treated teeth in relation of the technical quality of the root filling and the coronal restauration“ Int. Endodont. J 1995;28: 12-18.
- [5] Engstrom B. „The correlation between positive culture and the prognosis of the therapy after pulpectomy“ Odontol Rev. 1965; 193-203.
- [6] Gorni F., Gagliani M. „The outcome of endodontic treatment: a 2 year follow up“ J Endod 2004; 30(1), 1-4.
- [7] Nair et al.: „On the causes of persistent apical periodontitis“ Int. Endod. J 2004.
- [8] Bornstein M. M.: „Comparison between Radiographic (2-dimensional and 3-dimensional) and Histologic Findings of Periapical Lesions Treated with Apical Surgery“ J Endod 2015; 01, 015.
- [9] Riis A.: „Tooth Survival after Surgical or Nonsurgical Endodontic Retreatment: Long-term Follow-up of a Randomized Clinical Trial“ J Endod 2018; 06, 019.
- [10] Kim S., Pecora G., Rubinstein R. A.: „Color Atlas Microsurgery in Endodontics“ Elsevier 2000.
- [11] Kim, E. „Prospective Clinical Study Evaluating Endodontic Microsurgery Outcomes for Cases with Lesions of Endodontic Origin Compared with Cases with Lesions of Combined Periodontal-Endodontic Origin“ J Endod. 2008; 03.
- [12] Safi S.: „Outcome of Endodontic Microsurgery Using Mineral Trioxide Aggregate or Root Repair Material as Root-end Filling Material: A Randomized Controlled Trial with Cone-beam Computed Tomographic Evaluation“ J Endod 2019; 03, 014
- [13] Khayat B., Jouanny G.: „Microsurgical Endodontics“ 2019, Quintessence Publishing
- [14] Zuhr O., Hürzeler M.: „Plastisch-ästhetische Parodontal- und Implantatchirurgie: Ein mikrochirurgisches Konzept“ 2015, Quintessence Publishing.

Interdentalraumreinigung ist individuell (Waterpik)

ZMK 10 (35), 681

[1] Sbordone, L. & Bortolaia, Oral microbial biofilms and plaque-related diseases: microbial communities and their role in the shift from oral health to disease: C. Clin Oral Invest (2003) 7: 181.
<https://doi.org/10.1007/s00784-003-0236-1>

[2] Syrjanen J. et al: Dental infection in association with cerebral infarction in young and middle-aged men. J Intern Med 225 (1989), 179-184.

[3] Mattila KJ, et al: Association between dental health and acute myocardial infarction. Brit Med J 298: (1989) 779-782.

[4] Magnuson B, Harsono M, Stark PC, Lyle D, Kugel G, Perry R. Comparison of the effect of two interdental cleaning devices around implants on the reduction of bleeding: a 30-day randomized clinical trial. Compend Contin Educ Dent (2013); 34 Spec No 8:2-7.

[5] Sharma NC, Lyle DM, Qaqish JG, et al. Effect of a dental water jet with orthodontic tip on plaque and bleeding in adolescent patients with fixed orthodontic appliances. Am J Orthod Dentofacial Orthop. 2008;133:565-571.
<https://www.ncbi.nlm.nih.gov/pubmed/18405821>.

[6] Sharma NC, Lyle DM, Qaqish JG, et al. Effect of a dental water jet with orthodontic tip on plaque and bleeding in adolescent patients with fixed orthodontic appliances. Am J Orthod Dentofacial Orthop. (2008);133: 565-571. <https://www.ncbi.nlm.nih.gov/pubmed/18405821>.

[7] Cobb CM, Rodgers RL, Killoy WJ. Ultrastructural examination of human periodontal pockets following the use of an oral irrigation device in vivo. J Periodontol. (1988); 59: 155-163.
<https://www.ncbi.nlm.nih.gov/pubmed/3162980>.

Karies vorbeugen: Zähneputzen oder die richtige Ernährung? Was ist wichtiger?

PD Dr. Christian Tennert

ZMK 10 (35), 670-680

1. GBD, Disease and Injury Incidence and Prevalence Collaborators: Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet* 388, 1545–1602 (2016).
2. Edelstein BL: The dental caries pandemic and disparities problem. *BMC Oral Health* 6 (Suppl 1), S2 (2006).
3. Featherstone JD: The continuum of dental caries – evidence for a dynamic disease process. *J Dent Res* 83 (Spec No C), C39–42 (2004).
4. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C: The global burden of oral diseases and risks to oral health. *Bull World Health Organ* 83 (9), 661–669 (2005).
5. Raoult D, Foti B, Aboudharam G: Historical and geographical parallelism between the incidence of dental caries, *Streptococcus mutans* and sugar intake. *Eur J Epidemiol* 28 (8), 709–710 (2013).
6. Bernabe E, Sheiham A: Age, period and cohort trends in caries of permanent teeth in four developed countries. *Am J Public Health* 104 (7), e115–121 (2014).
7. Broadbent JM, Thomson WM, Poulton R: Trajectory patterns of dental caries experience in the permanent dentition to the fourth decade of life. *J Dent Res* 87 (1), 69–72 (2008).

8. Paris SM-LH: Paradigmenwechsel. In: Meyer-Lückel HPS, Ekstrand KR (Eds.), Karies, Wissenschaft und klinische Praxis. Stuttgart: Thieme, 70–75 (2012).
9. DGE: Deutsche Gesellschaft für Ernährung. 12. Ernährungsbericht. Bonn, 427 (2012).
10. Humphrey LT, De Groote I, Morales J, Barton N, Colcutt S, Bronk Ramsey C, Bouzouggar A: Earliest evidence for caries and exploitation of starchy plant foods in Pleistocene hunter-gatherers from Morocco. *Proc Natl Acad Sci USA* 111 (3), 954–959 (2014).
11. Hublin JJ, Ben-Ncer A, Bailey SE, Freidline SE, Neubauer S, Skinner MM, Bergmann I, Le Cabec A, Benazzi S, Harvati K, Gunz P: New fossils from Jebel Irhoud, Morocco and the pan-African origin of *Homo sapiens*. *Nature* 546 (7657), 289–292 (2017).
12. Grine FE, Gwinnett AJ, Oaks JH: Early hominid dental pathology: interproximal caries in 1.5 million-year-old *Paranthropus robustus* from Swartkrans. *Arch Oral Biol* 35 (5), 381–386 (1990).
13. Tayles N, Domett K, Halcrow S: Can dental caries be interpreted as evidence of farming? The Asian experience. *Front Oral Biol* 13, 162–166 (2009).
14. Marsh PD: Microbiologic aspects of dental plaque and dental caries. *Dent Clin North Am* 43 (4), 599–614, v–vi (1999).
15. Marsh PD: Are dental diseases examples of ecological catastrophes? *Microbiology* 149 (Pt 2), 279–294 (2003).

16. Paes Leme AF, Bellato CM, Bedi G, Cury AA, Koo H, Cury JA: Effects of sucrose on the extracellular matrix of plaque-like biofilm formed in vivo, studied by proteomic analysis. *Caries Res* 42 (6), 435–443 (2008).
17. Paes Leme AF, Koo H, Bellato CM, Bedi G, Cury JA: The role of sucrose in cariogenic dental biofilm formation – new insight. *J Dent Res* 85 (10), 878–887 (2006).
18. Vale GC, Tabchoury CP, Arthur RA, Del Bel Cury AA, Paes Leme AF, Cury JA: Temporal relationship between sucrose-associated changes in dental biofilm composition and enamel demineralization. *Caries Res* 41 (5), 406–412 (2007).
19. Karpinski TMS: Microbiology of dental caries. *Journal of Biology and Earth Sciences* 3 (1), M21–M24 (2013).
20. Stephan RM: Intro-oral hydrogen-ion concentrations associated with dental caries activity. *J Dent Res* 23, 257–266 (1944).
21. Bowen WH: The Stephan Curve revisited. *Odontology* 101 (1), 2–8 (2013).
22. Delgado AJ, Olafsson VG, Donovan TE: pH and erosive potential of commonly used oral moisturizers. *J Prosthodont* 25 (1), 39–43 (2016).
23. Sung YH, Son HH, Yi K, Chang J: Elemental analysis of caries-affected root dentin and artificially demineralized dentin. *Restor Dent Endod* 41 (4), 255–261 (2016).
24. Garcia-Godoy F, Hicks MJ: Maintaining the integrity of the enamel surface: the role of dental biofilm, saliva and preventive agents in enamel demineralization and remineralization. *J Am Dent Assoc* 139 (Suppl), 25S–34S (2008).

25. Hicks J, Garcia-Godoy F, Flaitz C: Biological factors in dental caries: role of saliva and dental plaque in the dynamic process of demineralization and remineralization (part 1). *J Clin Pediatr Dent* 28 (1), 47–52 (2003).
26. Gustafsson BE, Quensel CE, Lanke LS, Lundqvist C, Grahnen H, Bonow BE, Krasse B: The Vipeholm dental caries study; the effect of different levels of carbohydrate intake on caries activity in 436 individuals observed for five years. *Acta Odontol Scand* 11 (3–4), 232–264 (1954).
27. Krasse B: The Vipeholm Dental Caries Study: recollections and reflections 50 years later. *J Dent Res* 80 (9), 1785–1788 (2001).
28. Aizawa S, Miyasawa-Hori H, Nakajo K, Washio J, Mayanagi H, Fukumoto S, Takahashi N: Effects of alpha-amylase and its inhibitors on acid production from cooked starch by oral streptococci. *Caries Res* 43 (1), 17–24 (2009).
29. Kashket S, Van Houte J, Lopez LR, Stocks S: Lack of correlation between food retention on the human dentition and consumer perception of food stickiness. *J Dent Res* 70 (10), 1314–1319 (1991).
30. Lingstrom P, van Houte J, Kashket S: Food starches and dental caries. *Crit Rev Oral Biol Med* 11 (3), 366–380 (2000).
31. Kumar PS, Mason MR: Mouthguards: does the indigenous microbiome play a role in maintaining oral health? *Front Cell Infect Microbiol* 5, 35 (2015).
32. Naumova EA, Kuehnl P, Hertenstein P, Markovic L, Jordan RA, Gaengler P, Arnold WH: Fluoride bioavailability in saliva and plaque. *BMC Oral Health* 12, 3 (2012).

33. Vogel GL: Oral fluoride reservoirs and the prevention of dental caries. *Monogr Oral Sci* 22, 146–157 (2011).
34. Marsh PDMMV: *Oral Microbiology*. 5. Aufl. München: Elsevier, 222 (2009).
35. Dunne WM, Jr: Bacterial adhesion: seen any good biofilms lately? *Clin Microbiol Rev* 15 (2), 155–166 (2002).
36. Flemming HC, Neu TR, Wozniak DJ: The EPS matrix: the "house of biofilm cells". *J Bacteriol* 189 (22), 7945–7947 (2007).
37. Koo H, Falsetta ML, Klein MI: The exopolysaccharide matrix: a virulence determinant of cariogenic biofilm. *J Dent Res* 92 (12), 1065–1073 (2013).
38. Petchiappan A, Chatterji D: Antibiotic resistance: current perspectives. *ACS Omega* 2 (10), 7400–7409 (2017).
39. Marsh PD: Microbial ecology of dental plaque and its significance in health and disease. *Adv Dent Res* 8 (2), 263–271 (1994).
40. Islam B, Khan SN, Khan AU: Dental caries: from infection to prevention. *Med Sci Monit* 13 (11), RA196–203 (2007).
41. Rugg-Gunn A: Dental caries: strategies to control this preventable disease. *Acta Med Acad* 42 (2), 117–130 (2013).
42. Lingstrom P, Holm J, Birkhed D, Bjorck I: Effects of variously processed starch on pH of human dental plaque. *Scand J Dent Res* 97 (5), 392–400 (1989).

43. Venugopal T, Kulkarni VS, Nerurker RA, Damle SG, Patnekar PN: Epidemiological study of dental caries. *Indian J Pediatr* 65 (6), 883–889 (1998).
44. Beighton D, Brailsford SR, Gilbert SC, Clark DT, Rao S, Wilkins JC, Tarelli E, Homer KA: Intra-oral acid production associated with eating whole or pulped raw fruits. *Caries Res* 38 (4), 341–349 (2004).
45. Staufenbiel I, Adam K, Deac A, Geurtsen W, Gunay H: Influence of fruit consumption and fluoride application on the prevalence of caries and erosion in vegetarians – a controlled clinical trial. *Eur J Clin Nutr* 69 (10), 1156–1160 (2015).
46. Kashket S, DePaola DP: Cheese consumption and the development and progression of dental caries. *Nutr Rev* 60 (4), 97–103 (2002).
47. Konig KG: Diet and oral health. *Int Dent J* 50 (3), 162–174 (2000).
48. Ahmed SH, Guillem K, Vandaele Y: Sugar addiction: pushing the drug-sugar analogy to the limit. *Curr Opin Clin Nutr Metab Care* 16 (4), 434–439 (2013).
49. Gordon EL, Ariel-Donges AH, Bauman V, Merlo LJ: What is the evidence for "food addiction?" A systematic review. *Nutrients* 10 (4), pii: E477 (2018).
50. Hujoel P: Dietary carbohydrates and dental-systemic diseases. *J Dent Res* 88 (6), 490–502 (2009).
51. Hujoel PP, Lingstrom P: Nutrition, dental caries and periodontal disease: a narrative review. *J Clin Periodontol* 44 (Suppl 18), S79–S84 (2017).

52. Mozaffarian D: Dietary and policy priorities for cardiovascular disease, diabetes, and obesity: a comprehensive review. *Circulation* 133 (2), 187–225 (2016).
53. Woelber JP, Bremer K, Vach K, König D, Hellwig E, Ratka-Krüger P, Al-Ahmad A, Tennert C: An oral health optimized diet can reduce gingival and periodontal inflammation in humans – a randomized controlled pilot study. *BMC Oral Health* 17 (1), 28 (2016).
54. Geurtsen W, Hellwig E, Klimek J: S2k-Leitlinie (Kurzversion) Kariesprophylaxe bei bleibenden Zähnen – grundlegende Empfehlungen. AWMF Online-Portal der wissenschaftlichen Medizin (2017).
55. Axelsson P, Lindhe J, Nystrom B: On the prevention of caries and periodontal disease. Results of a 15-year longitudinal study in adults. *J Clin Periodontol* 18 (3), 182–189 (1991).
56. Von der Fehr FR, Loe H, Theilade E: Experimental caries in man. *Caries Res* 4 (2), 131–148 (1970).
57. Zickert I, Lindvall AM, Axelsson P: Effect on caries and gingivitis of a preventive program based on oral hygiene measures and fluoride application. *Community Dent Oral Epidemiol* 10 (6), 289–295 (1982).
58. Peters MC: Strategies for noninvasive demineralized tissue repair. *Dent Clin North Am* 54 (3), 507–525 (2010).
59. Meyer-Lueckel H, Paris S: When and how to intervene in the caries process. *Oper Dent* 41 (S7), S35–S47 (2016).

60. Meyer-Lueckel H, Balbach A, Schikowsky C, Bitter K, Paris S: Pragmatic RCT on the efficacy of proximal caries infiltration. *J Dent Res* 95 (5), 531–536 (2016).
61. Jafar N, Edriss H, Nugent K: The effect of short-term hyperglycemia on the innate immune system. *Am J Med Sci* 351 (2), 201–211 (2016).
62. O’Keefe JH, Gheewala NM, O’Keefe JO: Dietary strategies for improving post-prandial glucose, lipids, inflammation, and cardiovascular health. *J Am Coll Cardiol* 51 (3), 249–255 (2008).
63. van Woudenberg GJ, Theofylaktopoulou D, Kuijsten A, Ferreira I, van Greevenbroek MM, van der Kallen CJ, Schalkwijk CG, Stehouwer CD, Ocke MC, Nijpels G, Dekker JM, Blaak EE, Feskens EJ: Adapted dietary inflammatory index and its association with a summary score for low-grade inflammation and markers of glucose metabolism: the Cohort study on Diabetes and Atherosclerosis Maastricht (CODAM) and the Hoorn study. *Am J Clin Nutr* 98 (6), 1533–1542 (2013).
64. Giugliano D, Maiorino MI, Bellastella G, Esposito K: More sugar? No, thank you! The elusive nature of low carbohydrate diets. *Endocrine* (2018).
65. Kotsakis GA, Chrepa V, Shivappa N, Wirth M, Hebert J, Koyanagi A, Tyrovolas S: Diet-borne systemic inflammation is associated with prevalent tooth loss. *Clin Nutr* (2017).
66. Franki J, Hayes MJ, Taylor JA: The provision of dietary advice by dental practitioners: a review of the literature. *Community Dent Health* 31 (1), 9–14 (2014).

67. Kelly SA, Moynihan PJ: Attitudes and practices of dentists with respect to nutrition and periodontal health. *Br Dent J* 205 (4), E9; discussion 196–197 (2008).
68. Augustin LS, Kendall CW, Jenkins DJ, Willett WC, Astrup A, Barclay AW, Bjorck I, Brand-Miller JC, Brighenti F, Buyken AE, Ceriello A, La Vecchia C, Livesey G, Liu S, Riccardi G, Rizkalla SW, Sievenpiper JL, Trichopoulou A, Wolever TM, Baer-Sinnott S, Poli A: Glycemic index, glycemic load and glycemic response: An International Scientific Consensus Summit from the International Carbohydrate Quality Consortium (ICQC). *Nutr Metab Cardiovasc Dis* 25 (9), 795–815 (2015).
69. Sleeth ML, Thompson EL, Ford HE, Zac-Varghese SE, Frost G: Free fatty acid receptor 2 and nutrient sensing: a proposed role for fibre, fermentable carbohydrates and short-chain fatty acids in appetite regulation. *Nutr Res Rev* 23 (1), 135–145 (2010).
70. Tuohy KM, Gougoulas C, Shen Q, Walton G, Fava F, Ramnani P: Studying the human gut microbiota in the trans-omics era – focus on metagenomics and metabonomics. *Curr Pharm Des* 15 (13), 1415–1427 (2009).
71. Lin Y, Huybrechts I, Vereecken C, Mouratidou T, Valtuena J, Kersting M, Gonzalez-Gross M, Bolca S, Warnberg J, Cuenca-Garcia M, Gottrand F, Toti E, Gomez-Martinez S, Grammatikaki E, Labayen I, Moreno LA, Sjostrom M, Van Camp J, Roccaldo R, Patterson E, Manios Y, Molnar D, Kafatos A, Widhalm K, De Henauw S: Dietary fiber intake and its association with indicators of adiposity and serum biomarkers in European adolescents: the HELENA study. *Eur J Nutr* 54 (5), 771–782 (2015).

72. Paris SM-LH: Paradigmenwechsel. In: Meyer-Lückel HPS, Ekstrand KR (Eds.), Karies, Wissenschaft und klinische Praxis. Stuttgart: Thieme, (2012).

ZMK 10 (35) 2019, S. 666-669

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Christoph Benz**

100 Jahre intraligamentäre Anästhesie (ILA) – 20 Jahre Dosierradspritze

- [1] Benz C, Prothmann M, Taubenheim L: Die intraligamentäre Anästhesie – Primäre Methode der dentalen Lokalanästhesie. Köln: Deutsch Zahnärzte Verlag (2016).
- [2] Betz W, Taubenheim L: Injektionssysteme sind jetzt standardisiert. Zahnärztl Mitt 105 (13A), 50 (2015).
- [3] Csides M, Taubenheim L, Glockmann E: Intraligamentäre Anästhesie: Grenzen und Komplikationen. Dtsch Zahnärztl Z 8 (68), 561–569 (2011).
- [4] Csides M, Taubenheim L, Glockmann E: Intraligamentäre Anästhesie – Systembedingte Nebenwirkungen. ZWR Deutsch ZÄBI 118 (4), 158–166 (2009).
- [5] Dirnbacher T, Glockmann E, Taubenheim L: Welche Anästhesie ist die richtige? Zahnärztl Mitt 23, 44–51 (2003).
- [6] Dirnbacher T, Schulz D, Taubenheim L: Die intraligamentäre Injektion – interstitiellen Widerstand adäquat überwinden. Dtsch Zahnärztl Z (68) 12, 737–742 (2013).
- [7] Einwag J: Klinische Erfahrungen mit der intraligamentären Anästhesie. Dtsch Zahnärztl Z 37, 946–948 (1982).
- [8] Einwag J: Die intraligamentäre Anästhesie. Zahnärztl Mitt 75, 693–695 (1985).
- [9] Faulkner RK: The high-pressure periodontal ligament injection. Br Dent J 154, 103–105 (1983).
- [10] Glockmann E, Weber M, Taubenheim L: Schmerzausschaltung vor Vitalexstirpationen. Endodontie 16 (3), 197–204 (2007).
- [11] Gray RJM, Lomax AM, Rood JP: Periodontal ligament injection: with or without a vasoconstrictor? Br Dent J 162, 263–265 (1987).
- [12] Hassebrauck S: Histologie der parodontalen Gewebe des Beagle-Hundes nach intraligamentärer Injektion. Inaugural-Dissertation, Marburg (1987).
- [13] Heizmann R: Die intraligamentale zahnärztliche Lokalanästhesie im Vergleich zu den üblichen Anästhesieformen bei der Zahnextraktion. Inaugural-Dissertation Freie Universität Berlin (1987).
- [14] Heinzmann R, Gabka J: Nutzen und Grenzen der intraligamentären Anästhesie. Zahnärztl Mitt 84, 46–50 (1994).
- [15] Huber HP, Wilhelm-Höf C: Auswirkungen der intraligamentären Anästhesie auf die Zahnbeweglichkeit. Dtsch Zahnärztl Z 43, 313–316 (1988).
- [16] Langbein A, Taubenheim L, Benz C: Die intraligamentäre Anästhesie – primäre Methode der Schmerzausschaltung? ZWR Deutsch ZÄBI 121 (7–8), 334–342 (2012).

- [17] Langbein A, Prothmann M, Taubenheim L: Schmerzausschaltung vor Behandlung von Parodontopathien. ZWR Deutsch ZÄBI 126, 284–292 (2017).
- [18] Malamed SF: The periodontal ligament (PDL) injection: An alternative to inferior alveolar nerve block. Oral Surgery 53, 117–121 (1982).
- [19] Marshall M: Die intraligamentäre Anästhesie mit dem Soft-Ject. Dissertation München (2001).
- [20] Plagmann H-Chr, Jagenow U: Tierexperimentelle Studie zur Reaktion der desmodontalen Gewebe auf intraligamentäre Injektion. Dtsch Zahnärztl Z 39, 677–682 (1984).
- [21] Prothmann M, Claußnetzer N, Taubenheim L, Rossaint R: Systematische Behandlung von Parodontopathien unter intraligamentärer Anästhesie. Parodontologie 2 (20), 139–148 (2009).
- [22] Prothmann M, Taubenheim L, Benz C: Die intraligamentäre Anästhesie in der zahnärztlichen Praxis – Metaanalyse der klinischen Erfahrungen von 1976 bis 2014. Dtsch Zahnärztl Z 2 (71), 136–145 (2016).
- [23] Simon DE, Jacobs TL, Senia ES, Walker WA: Intraligamentary anesthesia as an aid in endodontic diagnosis. Oral Surgery 54, 77–78 (1982).
- [24] Smith GN, Walton RE, Abbott BJ: Clinical evaluation of periodontal ligament anesthesia using a pressure syringe. J Am Dent Assoc 107, 953–956 (1983).
- [25] Staatsberger I, Tobien V: Voraussetzung ist die langsame und sensible Injektion ins Desmodont. DZW Spezial 8–9, 12–15 (2001).
- [26] Stoll P, Bührmann K: Die intraligamentäre Anästhesie bei der Zahnextraktion von Patienten mit hämorrhagischer Diathese. Zahnärztl Welt/Reform 92, 54–55 (1983).
- [27] Tobien V, Schulz D: Veränderte intradesmontale Injektion. ZMK 16, 332–333 (2000).
- [28] Torabinejad M, Peters DL, Peckham N, Rentschler LR, Richardson J: Electron microscopic changes in human pulps after intraligamental injection. Oral Surg Oral Med Oral Pathol 76, 219–224 (1993).
- [29] Walton RE, Abbott BJ: Periodontal ligament injection: a clinical evaluation. J Am Dent Assoc 103, 571–575 (1981).
- [30] Walton RE, Garnick JJ: The periodontal ligament injection: histologic effects on the periodontium in monkeys. J Endod 8, 22–26 (1982).
- [31] Walton RE, Torabinejad M: Managing local anaesthesia problems in the endodontic patient. J Am Dent Assoc 123, 97–102 (1992).
- [32] Weber M, Taubenheim L, Glockmann E: Schmerzausschaltung vor indizierten endodontischen Behandlungen. ZWR deutsch Zahnärztebl 115 (10), 421–433 (2006).
- [33] Weber M, Taubenheim L: Schmerzausschaltung vor endodontischen Behandlungen. ZWR Deutsch Zahnärztebl 3 (125), 70–77 (2016).

[34] Zugal W: Die intraligamentäre Anästhesie in der zahnärztlichen Praxis. Zahnärztl Mitt 6 (91), 46–52 (2001).

[35] Zugal W, Taubenheim L, Schulz D: Triade des Anästhesie-Erfolgs: Instrumente – Anästhetika – Methoden-Beherrschung. Z Stomatol 1, 9–14 (2005).

Linda Daume

Kardiale Risikopatienten in der Zahnarztpraxis

- [1] Baddour LM, Epstein AE, Erickson CC et al.: Update on cardiovascular implantable electronic device infections and their management: a scientific statement from the American Heart Association. *Circulation* 121 (3), 458–477 (2010).
- [2] Brand HS, Entjes ML, Amerongen AN et al.: Interference of electrical dental equipment with implantable cardioverter-defibrillators. *Br Dent J* 203 (10), 577 (2007).
- [3] Brieger D, Eagle KA, Goodman SG et al.: Acute coronary syndrome without chest pain, an underdiagnosed and undertreated high-risk group: inside from the Global Registry of Acute Coronary Events. *Chest* 126, 461–469 (2004).
- [4] Chugh SS, Blackshear JL, Shen WK et al.: Epidemiology and natural history of atrial fibrillation: clinical implications. *J Am Coll Cardiol* 37 (2), 371–378 (2001).
- [5] Daubländer M: Aktuelle Aspekte der zahnärztlichen Lokalanästhesie. *ZWR* 120 (11), 560–572 (2011).
- [6] de Oliveira C, Watt R, Hamer M: Toothbrushing, inflammation, and risk of cardiovascular disease: results from Scottish Health Survey. *BMJ* 340, c2451 (2010).
- [7] Deppe H, Wolff KD, Pistner H et al.: Leitlinienreport. Empfehlungen zur zahnärztlich-chirurgischen Sanierung vor Herzklappenersatz. *Der MKG-Chirurg* 5 (3), 227–230 (2012).
- [8] Figueroa JJ, Basford JR, Low PA: Preventing and treating orthostatic hypotension: as easy as A, B, C. *Cleveland Clinic Journal of Medicine* 77 (5), 298 (2010).
- [9] Figuero E, Sánchez-Beltrán M, Cuesta-Frechoso S et al.: Detection of periodontal bacteria in atheromatous plaque by nested polymerase chain reaction. *J Periodontol* 82 (10), 1469–1477 (2011).
- [10] Fisher JD: New York Heart Association classification. *Archives of Internal Medicine* 129 (5), 836–836 (1972).
- [11] Gaetti-Jardim Jr E, Marcelino SL, Feitosa AC et al.: Quantitative detection of periodontopathic bacteria in atherosclerotic plaques from coronary arteries. *J Med Microbiol* 58 (12), 1568–1575 (2009).
- [12] Haass M: Inzidenz der Herzinsuffizienz rückläufig? *Kardio Up* 12 (01), 4–8 (2016).
- [13] Hermann WW, Ferguson HW: Dental care for patients with heart failure: an update. *J Am Dent Assoc* 141, 845–853 (2010).
- [14] Lambrecht T, Filippi A, Arrigoni J: Cardiovascular monitoring and its consequences in oral surgery. *Ann Maxillofac Surg* 1 (2) 102–106 (2011).
- [15] Lockhart PB, Brennan MT, Thornhill M et al.: Poor oral hygiene as a risk factor for infective endocarditis-related bacteremia. *J Am Dent Assoc* 140 (10), 1238–1244 (2009).
- [16] Löwel H, Meisinger C, Heier M: Epidemiologie der arteriellen Hypertonie in Deutschland. *DMW* 131 (46), 2586–2591 (2006).

- [17] Mader SL, Josephson KR, Rubenstein LZ: Low prevalence of postural hypotension among community-dwelling elderly. *Jama* 258 (11), 1511–1514 (1987).
- [18] Mathers FG, Walgenbach G, Koll U et al.: Die häufigsten medizinischen Notfälle in der Zahnarztpraxis – Teil 1: Grundsätze, Medikamente, Ausrüstung. *ZWR* 125 (05), 210–214 (2016).
- [19] Meinertz T, Hamm C, Schlensak C: Deutscher Herzbericht 2016: 28. Bericht/Sektorenübergreifende Versorgungsanalyse zur Kardiologie, Herzchirurgie und Kinderherzmedizin in Deutschland. Deutsche Herzstiftung (2017).
- [20] Mozaffarian D, Benjamin EJ, Go AS et al.: Heart disease and stroke statistics 2016 update – a report from the American Heart Association. *Circulation* 133 (4), e38–e48 (2016).
- [21] Nishimura RA, Otto CM, Bonow RO et al.: ACC/AHA Task Force Members. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation* 129 (23), e521–e643 (2014).
- [22] Nkenke E: Systemische Antibiotikaphylaxe bei Patienten ohne Systemerkrankungen zur Vermeidung postoperativer Wundinfektionen. *Dtsch Zahnärztl Zeitschr* 63, 102–109 (2008).
- [23] Nonzee V, Manopatanakul S, Khovidhunkit SOP: Xerostomia, hyposalivation and oral microbiota in patients using antihypertensive medications. *J Med Assoc Thai* 95 (1), 96 (2011).
- [24] Persson GR, Imfeld T: Parodontitis und Herz-Kreislaufkrankheiten. *Therapeutische Umschau* 65 (2), 121–126 (2009).
- [25] Wagner H, Fischereder M (Eds.): Innere Medizin für Zahnmediziner: mit Beiträgen zur Neurologie und Psychiatrie. Georg Thieme Verlag, Stuttgart (2011).
- [26] Wilson W, Taubert KA, Gewitz M: Prevention of infective endocarditis: guidelines from the American heart association: a guideline from the American Heart Association rheumatic fever, endocarditis, and Kawasaki disease committee, council on cardiovascular disease in the young, and the council on clinical cardiology, council on cardiovascular surgery and anesthesia, and the quality of care and outcomes research interdisciplinary working group. *Circulation* 116 (15), 1736–1754 (2007).
- [27] Yagiela JA, Haymore TL: Management of the hypertensive dental patient. *J Cal Dent Assoc* 35 (1), 51–59 (2007).