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Informationsstelle für Kariesprophylaxe

Krankenkasse-Umfrage:

Kosten für frühkindliche Kariesprophylaxe werden nur selten erstattet

- [1] Umfrage der Informationsstelle für Kariesprophylaxe, 14 Teilnehmer im Zeitraum vom 13. Juli bis 18. August 2015. (siehe Infokasten).
- [2] GKV-Spitzenverband: Krankenkassenliste https://www.gkv-spitzenverband.de/service/versicherten_service/krankenkassenliste/krankenkassen.isp
- [3] DAK-Gesundheit, KZVH: Pressemitteilung Bessere Zahnvorsorge für Mutter und Kind, August 2015.
- [4] Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde: Deutsche Mundgesundheitsstudie – DMS VI – ein kurzer Überblick, 2006.
- [5] KZBV, Bundeszahnärztekammer: Frühkindliche Karies vermeiden. Ein Konzept zur zahnmedizinischen Prävention von Kleinkindern. Januar 2014.
- [6] Leserfrage IfK: Ab dem ersten Zahn regelmäßig zum Zahnarzt!
<http://www.kariesvorbeugung.de/pressemeldung/article/leserfrage-ab-dem-ersten-zahn-regelmaessig-zum-zahnarzt.html>
- [7] KZBV: Pünktlich zum 25. Tag der Zahngesundheit: Zahnärztliche Prävention für Kinder deutlich gestärkt. Pressemitteilung vom 25.09.2015.
<http://www.kzbv.de/pressemitteilung-vom-25-09-2015.967.de.html>

23. Cerec-Masterkurs der DGCZ zeigt Behandlungskonzept von A-Z

- [1] Dammaschke T, Nykiel K, Sagheri D, Schäfer E: Influence of coronal restorations on the fracture resistance of root canal-treated premolar and molar teeth – a retrospective study. *Aust Endod J* 2013; 39: 48–56.
- [2] Dammschke T, Stratmann U, Fischer RJ, Sagheri D, Schäfer E: A histologic investigation of direct pulp capping in rodents with dentin adhesives and calcium hydroxide. *Quintessence Int* 2010; 41: 62–71.
- [3] DGZMK: Aufbau endodontisch behandelter Zähne. Gemeinsame Stellungnahme der DGZMK, DGZPW, DGZ 2003.
- [4] Kishen A, Kumar GV, Chen NN: Stress-strain response in human dentine – rethinking fracture predilection in postcore restored teeth. *Dent Traumatol* 2004; 20: 90–100.
- [5] Krastl G, Lorch H, Zitzmann NU, Addison O, Dietrich T, Weiger R: Do oval posts improve fracture resistance of teeth with oval root canals? *Dent Traumatol* 2014; 30: 232–235.
- [6] Krastl G, Izquierdo A, Büttel L, Zitzmann NU, Schmitter M, Weiger R: Does an intracanal composite anchorage replace posts? *Clin Oral Investig* 2014; 18: 147–153.
- [7] Edelhoff D, Weber M, Spiekermann H, Marx R: PVD-layering for increased retention of glass fibre reinforced endodontic posts. *Schweiz Monatsschr Zahnmed* 2006; 116: 992–999.
- [8] Edelhoff D, Sorensen JA: Retention of selected core materials to zirconia posts. *Oper Dent* 2002; 27: 455–46.
- [9] Strub JR, Türp SC, Witkowski S, Hürzeler MB, Kern M: Curriculum Prothetik, Band 1 – Endodontische Aufbauten. Quintessenz Verlag Berlin, p 274–283.
- [10] Krastl G, Filippi A, Zitzmann NU, Walter C, Weiger R: Current aspects of restoring traumatically fractured teeth. *Eur J Esthet Dent* 2011; 6: 124–141.
- [11] Krastl G, Gugger J, Deyhle H, Zitzmann NU, Weiger R, Müller B: Impact of adhesive surface and volume of luting resin on fracture resistance of root filled teeth. *Int Endod J* 2011; 44: 432–439.
- [12] Krastl G, Weiger R, Filippi A: Grenzfälle der Zahnerhaltung. *Zahnmedizin* 2015; Up2date.
- [13] Schwendicke F, Doerfer CE, Paris S: Incomplete caries removal – a systematic review and meta-analysis. *J Dent Res* 2013; 92: 306–314.
- [14] Schwendicke F, Kern M, Meyer-Lueckel H, Boels A, Doerfer C, Paris S: Fracture resistance and cuspal deflection of incompletely excavated teeth. *J Dent* 2014; 42: 107–113.

Kariesmanagement in der Kinderzahnheilkunde: Etappensiege sind wichtig

- [1] Bolin, AK.: Children's dental health in Europe. An epidemiological investigation of 5- and 12-year-old children from eight EU countries. *Swed Dent J Suppl* 122,1–88 (1997).
- [2] Deutsche Arbeitsgemeinschaft Jugendzahnpflege (DAJ): Begleituntersuchungen zur Gruppenprophylaxe 2009. Bonn: DAJ (2010).
- [3] Frankenberger et al. 2015, unpublished.
- [4] Gomez, SS., Basili, CP., Emilson, CG.: A 2-year clinical evaluation of sealed noncavitated approximal posterior carious lesions in adolescents. *Clin Oral Investig.* 2005 Dec;9(4):239–43.
- [5] Griffin, SO., Oong, E., Kohn, W., Vidakovic, B., Gooch, BF.; CDC Dental Sealant Systematic Review Work Group, Bader, J., Clarkson, J., Fontana, MR., Meyer, DM., Rozier, RG., Weintraub, JA., Zero, DT.: The effectiveness of sealants in managing caries lesions. *J Dent Res.* 2008 Feb;87(2):169–74.
- [6] Kidd, EA.: How 'clean' must a cavity be before restoration? *Caries Res.* 2004 May-Jun;38(3):305–13. Review.
- [7] Leitlinie der DGZMK. [Fissuren- und Grübchenversiegelung \(S3\)](http://www.dgzmk.de/uploads/tx_szdgzmkdocuments/20100300_Langfassung_Fissurenversiegelung.pdf) vom März 2010 http://www.dgzmk.de/uploads/tx_szdgzmkdocuments/20100300_Langfassung_Fissurenversiegelung.pdf
- [8] Martignon, S., Ekstrand, K.R., Ellwood, R.: Efficacy of sealing proximal early active lesions: An 18-month clinical study evaluated by conventional and subtraction radiography *Caries Res* 2006;40:382–38.
- [9] [Mertz-Fairhurst, EJ.](#), [Curtis, JW. Jr.](#), [Ergle, JW.](#), [Rueggeberg FA.](#), [Adair SM.](#): Ultraconservative and cariostatic sealed restorations: results at year 10. *J Am Dent Assoc.* 1998 Jan;129(1):55–66. [<http://www.ncbi.nlm.nih.gov/pubmed/?term=mertz-fairhurst+1998>].
- [10] Meyer-Lueckel, H., Bitter, K., Paris, S.: Three-year Randomized Trial on the Efficacy of Caries Infiltration. *Caries Res* 2012;46:544–48.
- [11] Paris, S., Bitter, K., Meyer-Lueckel, H.: Five Year Follow-Up of a Randomized Clinical Trial on the Efficacy of Proximal Caries Infiltration. *Caries Res* 2013;47 (in press).
- [12] Paris, S., Hopfenmuller, W., Meyer-Lückel, H.: Efficacy of caries infiltration: 18 months follow-up. *J Dent Res* 2010;89:823–26.
- [13] Schwendicke, F., Stolpe, M., Meyer-Lückel, H., Paris, S. & Dörfer, C.: Cost-effectiveness of One- and Two-step Incomplete and Complete Excavation. *Journal of Dental Research* 92(2013):880–887.

Lokalantibiotika als wirkungsvolle Hilfsmittel – Roundtablegespräch

- [1] Institut der Deutschen Zahnärzte (2006). Vierte Deutsche Mundgesundheitsstudie (DMS IV). Abruf am 08.10.2015:
<http://www.bzaek.de/fileadmin/PDF's/presse/dms/brosch.pdf>
- [2] Eickholz P, Kim TS, Bürklin T, Schacher B, Rengli HH, Schaecken MT, Holle R, Kubler A, Ratka-Krüger P (2002). Non-Surgical periodontal therapy with adjunctive topical doxycycline: a double-blind randomized controlled multicenter study. *J Clin Periodontol.* 2002; 29(2): 108–117.
- [3] Matesanz-Pérez P, García-Gargallo M, Figuero E, Bascones-Martínez A, Sanz M, Herrera DJ (2013). A systematic review on the effects of local antimicrobials as adjuncts to subgingival debridement, compared with subgingival debridement alone, in the treatment of chronic periodontitis. *Clin Periodontol.* 2013; 40(3): 227–241.

Innovatives Konzept zur adhäsiven Befestigung am Beispiel zweier IPS e.max-Kronen

- [1] Aboushelib MN, Sleem D. Microtensile bond strength of lithium disilicate ceramics to resin adhesives. *J Adhes Dent* 16:547–552 (2014).
- [2] Agustín-Panadero R, Mateos-Palacios R, Román-Rodríguez JL, Solá-Ruíz MF, Fons-Font A. Influence of surface preparation on fracture load of resin composite-based repairs. *J Clin Exp Dent* 7:80–83 (2015).
- [3] Bottino MA, Snellaert A, Bergoli CD, Özcan M, Bottino MC, Valandro LF. Effect of ceramic etching protocols on resin bond strength to a feldspar ceramic. *Oper Dent* 40:40–46 (2015).
- [4] Catel D, Koch S, Bock T. Novel Self-Etching Ceramic Primer: Influence on Substrate Mechanical Properties. Vortrag #298 auf der IADR/PER-Kongress in Dubrovnik, Kroatien, 12.9.2014.
<https://iadr.confex.com/iadr/per14/webprogram/Paper192029.html>.
- [5] Elsaka SE. Bond strength of novel CAD/CAM restorative materials to self-adhesive resin cement: the effect of surface treatments. *J Adhes Dent* 16:531–540 (2014).
- [6] Fraga S, Valandro LF, Bottino MA, May LG. Hard machining, glaze firing and hydrofluoric acid etching: Do these procedures affect the flexural strength of a leucite glass-ceramic? *Dent Mater* 31:131–140 (2015).
- [7] Frankenberger R. Korrektur zahnärztlicher Restaurationen. *Zahnärztliche Mitteilungen* 102:32–41 (2012).
- [8] Frankenberger R, Hartmann VE, Krech M, Krämer N, Reich S, Braun A, Roggendorf M. Adhesive luting of new CAD/CAM materials. *Int J Comput Dent* 18:9–20 (2015).
- [9] Gehrt M, Wolfart S, Rafai N, Reich S, Edelhoff D. Clinical results of lithium-disilicate crowns after up to 9 years of service. *Clinical Oral Investigations* 17:275–284 (2013).
- [10] Gehrt M, Wolfart S, Rafai N, Reich S, Edelhoff D. Clinical results of lithium-disilicate crowns after up to 9 years of service. *Clin Oral Investig* 17:275–284 (2013).
- [11] Gherlone E, Mandelli F, Cappare P, Pantaleo G, Traini T, Ferrini F. A 3 years retrospective study of survival for zirconia-based single crowns fabricated from intraoral digital impressions. *Journal of Dentistry* 42:1151–1155 (2014).
- [12] Huang BR, Wang XY, Gao XJ. Effects of different surface treatments on ceramic repairs with composite. *Chin J Dent Res* 16:111–117 (2013).
- [13] Kalavacharla VK, Lawson NC, Ramp LC, Burgess JO. Influence of etching protocol and silane treatment with a universal adhesive on lithium disilicate bond strength. *Oper Dent* 40:372–378 (2015).
- [14] Kerschbaum T, Faber FJ, Noll FJ, Keiner M, Hürther W, Schumacher S, Keller E. Komplikationen von Cercon-Restaurationen in den ersten fünf Jahren. *Deutsche Zahnärztliche Zeitschrift* 64:81–89 (2009).
- [15] Lise D, Perdigão J, Van Ende A, Zidan O, Lopes G. Microshear bond strength of resin cements to lithium disilicate substrates as a function of surface preparation. *Oper Dent* (2015). [Epub ahead of print].
- [16] Meyer G, Ahsbahs S, Kern M. Vollkeramische Kronen und Brücken – S3-Leitlinie (AWMF-Registernummer 083-012). <http://www.awmf.org/leitlinien/detail/II/083-012.html> (2015).
- [17] Meyer G, Kern M. Kronen und Brücken aus Vollkeramik. *Zahnärztliche Mitteilungen* 105: 123–132 (2015).
- [18] Menees TS, Lawson NC, Beck PR, Burgess JO. Influence of particle abrasion or hydrofluoric acid etching on lithium disilicate flexural strength. *J Prosthet Dent* 112:1164–1170 (2014).
- [19] Mohamed FF, Finkelman M, Zandparsa R, Hirayama H, Kugel G. Effects of surface treatments and cement types on the bond strength of porcelain-to-porcelain repair. *J Prosthodont* 23:618–625 (2014).
- [20] Moravej-Salehi E, Valian A. Surface topography and bond strengths of feldspathic

- porcelain prepared using various sandblasting pressures. *J Investig Clin Dent* (2015). [Epub ahead of print].
- [21] Neis CA, Albuquerque NL, Albuquerque Ide S, Gomes EA, Souza-Filho CB, Feitosa VP, Spazzin AO, Bacchi A. Surface treatments for repair of feldspathic, leucite and lithium disilicate-reinforced glass ceramics using composite resin. *Braz Dent J* 26:152–155 (2015).
- [22] Neto DS, Naves LZ, Costa AR, Correr AB, Consani S, Borges GA, Correr-Sobrinho L. The effect of hydrofluoric acid concentration on the bond strength and morphology of the surface and interface of glass ceramics to a resin cement. *Oper Dent* (2015). [Epub ahead of print].
- [23] Ozcan M, Allahbeickaraghi A, Dündar M. Possible hazardous effects of hydrofluoric acid and recommendations for treatment approach: a review. *Clin Oral Investig* 16(1):15–23 (2012).
- [24] Spitznagel FA, Horvath SD, Guess PC, Blatz MB. Resin bond to indirect composite and new ceramic/polymer materials: a review of the literature. *J Esthet Restor Dent* 26:382–393 (2014).
- [25] Tian T, Tsoi JK, Matinlinna JP, Burrow MF. Aspects of bonding between resin luting cements and glass ceramic materials. *Dent Mater* 30:147–162 (2014).
- [26] Venturini AB, Prochnow C, May LG, Bottino MC, Felipe Valandro L. Influence of hydrofluoric acid concentration on the flexural strength of a feldspathic ceramic. *J Mech Behav Biomed Mater* 48: 241–248 (2015).
- [27] Vigolo P, Mutinelli S. Evaluation of zirconium-oxide-based ceramic single-unit posterior fixed dental prostheses (FDPs) generated with two CAD/CAM systems compared to porcelain-fused-to-metal single-unit posterior FDPs: a 5-year clinical prospective study. *Journal of Prosthodontics* 21: 265–269 (2012).
- [28] Vohra R, Velez LI, Rivera W, Benitez FL, Delaney KA. Recurrent life-threatening ventricular dysrhythmias associated with acute hydrofluoric acid ingestion: observations in one case and implications for mechanism of toxicity. *Clin Toxicol (Phila)* 46:79–84 (2008).
- [29] Xiaoping L, Dongfeng R, Silikas N. Effect of etching time and resin bond on the flexural strength of IPS e.max Press glass ceramic. *Dent Mater* 30:330–306 (2014).

Dr. Jan H. Koch

Schmelz bei Kindern regenerieren statt opfern – Neue Behandlungsmethode für Initialkaries imitiert natürliche Schmelzbildung

- [1] Kühnisch J, Heinrich-Weltzien R, Hickel R: Etablierte und neue Methoden zur Kariesdetektion und -diagnostik. *Oralprophylaxe & Kinderzahnheilkunde* 32, 106–112 (2010).
- [2] Jablonski-Momeni A: Klinische Kariesdiagnose – Eine Übersicht. *Quintessenz* 63, 7–16 (2012).
- [3] Zimmer S: Bestimmung des individuellen Kariesrisikos. Einfach und praxisgerecht. *Der Freie Zahnarzt*, 81–89 (2012).
- [4] Senneby A, Mejare I, Sahlin NE, Svensater G, Rohlin M: Diagnostic accuracy of different caries risk assessment methods. A systematic review. *Journal of dentistry* 2015.
- [5] Sheiham A, James WP: Diet and Dental Caries: The Pivotal Role of Free Sugars Reemphasized. *J Dent Res* 94, 1341–1347 (2015).
- [6] Vieira AR, Modesto A, Marazita ML: Caries: review of human genetics research. *Caries Res* 48, 491–506 (2014).
- [7] Hellwig E: Beeinflussung des Biofilm-Metabolismus. *Zahnärztliche Mitteilungen* 104, 1734–1737 (2014).
- [8] Bergman G, Lind PO: A quantitative microradiographic study of incipient enamel caries. *J Dent Res* 45, 1477–1484 (1966).
- [9] Meyer-Lueckel H, Paris S, Kielbassa AM: Surface layer erosion of natural caries lesions with phosphoric and hydrochloric acid gels in preparation for resin infiltration. *Caries Res* 41, 223–230 (2007).
- [10] Fejerskov O, Kidd EA: *Dental Caries. The Disease and its Clinical Management*: Blackwell Munksgaard, 2008.
- [11] Koch JH: Schmelz lässt sich mit geführter Regeneration wieder aufbauen. Expertenkonsens zur Kariestherapie. *Die Zahnarzt Woche* 2015.
- [12] Aggeli A, Bell M, Boden N, Keen JN, Knowles PF, McLeish TC et al: Responsive gels formed by the spontaneous self-assembly of peptides into polymeric beta-sheet tapes. *Nature* 386, 259–262 (1997).
- [13] Schlee M, Rathe F, Huck T, Schad T, Koch JH, Tjaden A, et al: Klinischer Effekt biomimetischer Mineralisation bei Approximalkaries. Halbjahresergebnisse einer klinischen Studie. *Stomatologie* 111, 175–181 (2014).
- [14] Kind L, Wuethrich A, Stevanovic S, Pieleles U, Hug M, Lysek DA: A self-assembling peptide with the potential of non-invasive regeneration of early caries lesion. Poster 747. *International Poster Journal of Dentistry and Oral Medicine* 16, (2014).

Das Kariesrisiko frühzeitig erkennen

- [1] Giannoni M, D'Amario M, Gatto R, Barone A: Some tools for the identification of high risk individuals. A review. *Minerva Stomatol* 54, 111–127 (2005).
- [2] Featherstone JDB: The caries balance: The basis for caries management by risk assessment. *Oral Health Prev Dent* 2 (Suppl 1), 259–264 (2004).
- [3] Pienihäkkinen K, Jokela J, Alanen P: Risk-based early prevention in comparison with routine prevention of dental caries: a 7-year follow-up of a controlled clinical trial; clinical and economic aspects. *BMC Oral Health* 23; 5, 2 (2005).
- [4] Laurisch L: Strategies for caries risk diagnostics. *Quintessence Int* 45, 619–627 (2014).
- [5] Thenisch NL, Bachmann LM, Imfeld T, Leisebach Minder T, Steurer J: Are mutans streptococci detected in school children a reliable predictive factor for dental caries risk? A systematic review. *Caries Res* 40, 366–374 (2006).
- [6] Kneist S, Callaway A: Kariesätiopathogenese aus mikrobiologischer Sicht – Aktueller Stand. *ZWR* 124, 18–23 (2015).
- [7] Thibodeau EA, O`Sullivan DM: Salivary mutans streptococci and incidence of caries in preschool children. *Caries Res* 29, 148–153 (1995).
- [8] Parisotto TM, Steiner-Oliveira C, Silva CM, Rodrigues LK, Nobre-dos-Santos M : Early childhood caries and mutans streptococci: a systematic review. *Oral Health Prev Dent* 8, 59–70 (2010).
- [9] Gao X, Hsu CY, Loh T, Hwang B, Koh D: Role of the microbiological factors in predicting early childhood caries. *Pediatr Dent* 36, 348–354 (2014).
- [10] Kneist S, Stürcke R, Heinrich-Weltzien R: Möglichkeiten und Grenzen der Gruppenprophylaxe. *Oralprophylaxe & Kinderzahnheilkunde* 26, 157–161 (2004).
- [11] Kneist S, Chemnitius P, Borutta A: Die mikrobielle Mundhöhlenbesiedlung von Müttern in Beziehung zur frühkindlichen Karies ihrer Kinder. *Quintessenz* 57, 607–615 (2006).
- [12] Günay H, Dmoch-Bockhorn K, Günay Y, Geurtsen W: Effect on caries experience of a long-term preventive program for mothers and children starting during pregnancy. *Clin Oral Invest* 2, 137–142 (1998).

Mundgesundheit von Kindern mit geistigen und Mehrfachbehinderungen

- [1] Adeniyi AA, Ola BA, Edeh CE, Ogunbanjo O, Adewuya AO: Dental status of patients with mental disorders in a Nigerian teaching hospital: a preliminary survey. *Spec Care Dentist* 31, 134–137 (2011).
- [2] Al-Qahtani Z, Wyne AH: Caries experience and oral hygiene status of blind, deaf and mentally retarded female children in Riyadh, Saudi Arabia. *Odontostomatol Trop* 27, 37–40 (2004).
- [3] American Academy of Pediatric Dentistry. Definition of special health care needs. Revised 2012. http://www.aapd.org/media/Policies_Guidelines/D_SHCN.pdf
- [4] American Academy of Pediatric Dentistry. Guideline on management of dental patients with special health care needs. 2012. http://www.aapd.org/media/Policies_Guidelines/G_SHCN.pdf
- [5] American Academy of Pediatric Dentistry. Guideline on behavior guidance for the pediatric dental patient. 2011. http://www.aapd.org/media/Policies_Guidelines/D_DentalDisability.pdf
- [6] American Academy of Pediatric Dentistry. Symposium on lifetime oral health care for patients with special needs. *Pediatr Dent* 29, 92–152 (2007).
- [7] Anders PL, Davis EL: Oral health of patients with intellectual disabilities: a systematic review. *Spec Care Dentist* 30, 110–117 (2010).
- [8] Behindertengleichstellungsgesetz. www.behindertenbeauftragter.de
- [9] Bimstein E, Wilson J, Guelmann M, Primosch R: Oral characteristics of children with attention-deficit hyperactivity disorder. *Spec Care Dentist* 28, 107–110 (2008).
- [10] British Society for Disability and Health Care (BSDH). [Clinical guidelines and integrated care pathways for the oral health care of people with learning disabilities](http://www.bsdh.org.uk/guidelines.html). 2012. <http://www.bsdh.org.uk/guidelines.html>
- [11] British Society for Disability and Health Care (BSDH). [Clinical holding guidelines 2010](http://www.bsdh.org.uk/guidelines.html). <http://www.bsdh.org.uk/guidelines.html>
- [12] De Carvalho RB, Mendes RF, Prado RR, Neto JM: Oral health and oral motor function in children with cerebral palsy. *Spec Care Dentist* 31, 58–62 (2011).
- [13] Dos Santos MT, Masiero D, Simionato MR: [Risk factors for dental caries in children with cerebral palsy](http://www.speccare.com). *Spec Care Dentist* 22, 103–107 (2002)
- [14] Dougherty N: The dental patient with special needs: a review of indications for treatment under general anesthesia. *Spec Care Dentist* 29, 17–20 (2009).
- [15] Glassmann P, Caputo A, Dougherty N, Lyons R, Peltier B, Romer M: Special Care Dentistry Association consensus statement on sedation, anesthesia, and alternative techniques for people with special needs. *Spec Care Dentist* 29, 51–57 (2009).
- [16] Hempel A, Limberger K, Möller M, Heinrich-Weltzien R: Mundgesundheit von Erfurter Schülern mit einer geistigen Behinderung. *Gesundheitswesen* 74, 212–213 (2012).
- [17] Kassenzahnärztliche Bundesvereinigung und Bundeszahnärztekammer. Konzept zur vertragszahnärztlichen Versorgung von Pflegebedürftigen und Menschen mit Behinderungen. *Zm* 12, 42–49 (2010).
- [18] Khocht A, Janal M, Turner B: Periodontal health in Down syndrome: Contributions of mental disability, personal, and professional dental care. *Spec Care Dentist* 30, 118–123 (2010).
- [19] Kumar S, Dagli RJ, Mathur A, Jain M, Duraiswamy P, Kulkarni S: Oral hygiene status in relation to sociodemographic factors of children and adults who are hearing impaired, attending a special school. *Spec Care Dentist* 28, 258–264 (2008).
- [20] Izumi Y, Sugiyama S, Shinozuka O, Yamazaki T, Ohyama T, Ishikawa I: Defective neutrophil chemotaxis in Down's syndrome patients and its relationship to periodontal destruction. *J Periodontol* 60, 238–242 (1989).
- [21] Lewis CW: Dental care and children with special health care needs: A population-based perspective. *Acad Pediatr* 9, 420–426 (2009).

- [22] Lyons RA: Understanding basic behavioral support techniques as an alternative to sedation and anesthesia. *Spec Care Dentist* 29, 39–50 (2009).
- [23] Messieha Z: Risks of general anesthesia for special needs dental patients. *Spec Care Dentist* 29, 21–25 (2009).
- [24] Romer M: Consent, restraint, and people with special needs: a review. *Spec Care Dentist* 29, 58–66 (2009).
- [25] Santos MT, Biancardi M, Guare RO, Jardim J: Caries prevalence in patients with cerebral palsy and the burden of caring for them. *Spec Care Dentist* 30, 206–210 (2010).
- [26] Schmied K, Heinrich-Weltzien R: Mundgesundheit von Kindern und Jugendlichen mit psychischen Störungen. *Kinder- und Jugendmedizin* 9, 480–483 (2009).
- [27] Silvestre-Rangli J, Silvestre FJ, Puente-Sandoval A, Requeni-Bernal J, Simo-Ruiz M: Clinical-therapeutic management of drooling: review and update. *Med Oral Patol Oral Cir Bucal* 16, e763–e766 (2011).
- [28] Statistisches Bundesamt. <http://www.destatis.de>
- [29] UN-Konvention über die Rechte von Menschen mit Behinderungen. <http://www.behindertenbeauftragter.de>
- [30] Weiß N: Die neue UN-Konvention über die Rechte von Menschen mit Behinderungen – weitere Präzisierung des Menschenrechtsschutzes. *MenschenRechtsMagazin* 293–300 (2002). http://opus.kobv.de/ubp/volltexte/2007/1170/pdf/weiss_mrm_11.pdf
- [31] Winter K, Baccaglini L, Tomar S: A review of malocclusion among individuals with mental and physical disabilities. *Spec Care Dentist* 28, 19–26 (2008).

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Prävention und noninvasive Therapie von (Initial-)Karies – eine besondere Herausforderung bei Kindern unter drei Jahren

- [1] Acevedo AM, Montero M, Rojas-Sanchez F, Machado C, Rivera LE, Wolff M, Kleinberg I: Clinical evaluation of the ability of CaviStat in a mint confection to inhibit the development of dental caries in children. *J Clin Dent* 19, 1–8 (2008).
- [2] Aiello AE, Marshall B, Levy SB, Della-Latta P, Lin SX, Larson E: Antibacterial cleaning products and drug resistance. *Emerg Infect Dis* 11, 1565–1570 (2005).
- [3] Altenburger M: Magie oder Wirklichkeit – Aktuelle Konzepte der Remineralisation. *Oralprophylaxe und Kinderzahnheilkunde* 37, 32–39 (2015).
- [4] Bundesministerium der Justiz und für Verbraucherschutz. Lebensmittel- und Futtermittelgesetzbuch in der Fassung der Bekanntmachung vom 3. Juni 2013 (BGBl. I S. 1426), geändert durch Artikel 67 der Verordnung vom 31. August 2015 (BGBl. I S. 1474), www.gesetze-im-internet.de/bundesrecht/lfgb/gesamt.pdf.
- [5] Buzalaf MA, Pessan JP, Honório HM, ten Cate JM: Mechanism of action of fluoride for caries control. *Monogr Oral Sci* 22, 97–114 (2011).
- [6] Chu CH, Lo EC, Lin HC: Effectiveness of silver diamine fluoride and sodium fluoride varnish in arresting dentin caries in Chinese preschool children. *J Dent Res* 81, 767–770 (2002).
- [7] Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde et al.: S2k-Leitlinie "Fluoridierungsmaßnahmen zur Kariesprophylaxe". AWMF Register-Nr. 083–001 (2013).
- [8] EFSA Panel on Dietetic Products, Nutrition, and Allergies (NDA). Opinion of the Scientific Panel on Dietetic Products, Nutrition and Allergies on a request from the Commission related to the tolerable upper intake level of fluoride. *The EFSA Journal* 192, 1–65 (2005).
- [9] Feldens CA, Giugliani ER, Duncan BB, Drachler ML, Vitolo MR: Long-term effectiveness of a nutritional program in reducing early childhood caries: a randomized trial. *Community Dent Oral Epidemiol* 38, 324–332 (2010).
- [10] Gesetz zur Stärkung der Gesundheitsförderung und der Prävention (Präventionsgesetz – PräVG). *Bundesgesetzblatt Teil 1 Nr. 31*, 1368–1379 (2015).
- [11] Hellwig E, Altenburger M, Attin T, Lussi A, Buchalla W: Remineralization of initial carious lesions in deciduous enamel after application of dentifrices of different fluoride concentrations. *Clin Oral Investig* 14, 265–269 (2010).
- [12] Hiraishi N, Yiu CK, King NM, Tagami J, Tay FR: Antimicrobial efficacy of 3.8 % silver diamine fluoride and its effect on root dentin. *J Endod* 36, 1026–1029 (2010).
- [13] Marinho VC, Worthington HV, Walsh T, Chong LY: Fluoride gels for preventing dental caries in children and adolescents (review). *Cochrane Database Syst Rev*. 15, 6:CD002280 (2015).
- [14] Mascarenhas AK: Risk factors for dental fluorosis: A review of the recent literature. *Pediatr Dent* 22, 269–277 (2000).
- [15] Milgrom P, Ly KA, Roberts MC, Rothen M, Mueller G, Yamaguchi DK: Mutans streptococci dose response to xylitol chewing gum. *J Dent Res* 85, 177–181 (2006).
- [16] Moberg Sköld U, Petersson LG, Lith A, Birkhed D: Effect of school-based fluoride varnish programmes on approximal caries in adolescents from different caries risk areas. *Caries Res* 39, 273–279 (2005).
- [17] Momeni A, Neuhäuser A, Renner N, Heinzel-Gutenbrunner M, Abou-Fidah J, Rasch K, Kröplin M, Fejerskov O, Pieper K: Prevalence of dental fluorosis in German schoolchildren in areas with different preventive programmes. *Caries Res* 41, 437–444 (2007).
- [18] Nyvad B: Role of oral hygiene. The clinical effect of tooth cleaning. In: Fejerskov O, Kidd E (Hrsg.): *Dental caries. The disease and its clinical management*. 2nd ed. Oxford, Blackwell Munksgaard, 259–262 (2008).

- [19] Pahel BT, Rozier RG, Stearns SC, Quinonez RB: Effectiveness of preventive dental treatment by physicians for young medicaid enrollees. *Pediatrics* 127, e682–e689 (2011).
- [20] Petersson LG, Birkhed D, Gleerup A, Johansson M, Jonsson G: Caries-preventive effect of dentifrices containing various types and concentrations of fluorides and sugar alcohols. *Caries Res* 25, 74–79 (1991).
- [21] Pieper K, Winter J, Krutisch M, Völkner-Stetefeld P, Jablonski-Momeni A: Prevention in kindergartens with 500 ppm fluoride toothpaste – a randomized clinical trial. *Clin Oral Investig* [Epub ahead of print] (2015).
- [22] Raphael S, Blinkhorn A: Is there a place for Tooth Mousse® in the prevention and treatment of early dental caries? A systematic review. *BMC Oral Health* 15, 113 (2015).
- [23] Rekola M: Changes in buccal white spots during 2-year consumption of dietary sucrose or xylitol. *Acta Odontol Scand* 44, 285–290 (1986).
- [24] Rekola M: Approximal caries development during 2-year total substitution of dietary sucrose with xylitol. *Caries Res* 21, 87–94 (1987).
- [25] Rekola M: Acid production from xylitol products in vivo and in vitro. *Proc Finn Dent Soc* 84, 39–44 (1988).
- [26] Ricketts DN, Pitts NB: Novel operative treatment options. *Monogr Oral Sci* 21, 174–187 (2009).
- [27] Rieben AS, Zimny B, Noetzel J, Neumann K, Kielbassa AM: Influence of chlorhexidine on fluoride uptake by bovine dentin in vitro. *Am J Dent* 21, 351–355 (2008).
- [28] Schlüter N, Winterfeld T, Ganß C: Mechanische und chemische Kontrolle des upragingivalen Biofilms – Stand der Wissenschaft aus kariologischer Sicht. *Der Freie Zahnarzt* 10, 66–80 (2015).
- [29] Schwendicke F, Paris S: Mikro-invasive Kariesbehandlung: Wirksam – aber lohnt es sich auch? *Oralprophylaxe und Kinderzahnheilkunde* 37, 40–46 (2015).
- [30] Soderling E, Isokangas P, Pienihakkinen K, Tenovuo J, Alanen P: Influence of maternal xylitol consumption on mother-child transmission of mutans streptococci: 6-year follow-up. *Caries Res* 35, 173–177 (2001).
- [31] Splieth Ch, Schwahn Ch, Hölzel C, Nourallah A, Pine C: Prävention nach Maß? Mundhygienegewohnheiten bei 3- bis 4-jährigen Kindern mit und ohne kariöse Defekte. *Oralprophylaxe & Kinderzahnheilkunde* 26, 106–109 (2004).
- [32] Städter A, Thumeyer A: Betreuung von unter 3-Jährigen in der Gruppenprophylaxe, *Prophylaxe Impuls* 12, 78–89 (2008).
- [33] Standing Committee on the Scientific Evaluation of Dietary Reference Intakes. Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride. www.nap.edu/catalog/5776.html (1997).
- [34] Strippel H: Gesundheitsaufklärung bei Kinderarzt und Zahnarzt: Interventionsstudie zur Effektivität der Primärprävention von Nuckelflaschenkaries. Baltz Juventa Verlag (2004).
- [35] Tanzer JM, Thompson A, Wen ZT, Burne RA: Streptococcus mutans: fructose transport, xylitol resistance, and virulence. *J Dent Res* 85, 369–373 (2006).
- [36] Thumeyer A: Aus KAI wird KAIplus: Kinder üben – Eltern putzen Zähne sauber. *zm* 09, 50–51 (2013).
- [37] Thumeyer A, Buschmann C: Die KAI-Zahnputz-Systematik, Ein der Entwicklung von Kindern angepasstes Mundpflegekonzept, *Oralprophylaxe & Kinderzahnheilkunde* 34, 124–128 (2012).
- [38] Thumeyer A, Makuch A: Mundpflege bei Kindern unter drei Jahren spielend leicht. In: Textor MR (Hrsg.): *Das Kita-Handbuch*, www.kindergartenpaedagogik.de/2215.pdf (2011).
- [39] Thumeyer A, Thumeyer H, Thumeyer M: Zahnputz-Zauberlied 3 Versionen www.jugendzahnpflege.hzn.de/medien/I00BC368A.1/Zahnputz-Zauberlied_TEXT_dt_DIN%20A4.pdf.

- [40] Van Strydonck DA, Slot DE, Van der Velden U, Van der Weijden F: Effect of a chlorhexidine mouthrinse on plaque, gingival inflammation and staining in gingivitis patients: a systematic review. *J Clin Periodontol* 39, 1042–1055 (2012).
- [41] Wegehaupt FJ, Tauböck TT, Sener B, Attin T: Retention of KOH-soluble fluoride formed after application of a SnCl₂/AmF/NaF containing mouth rinse under erosive conditions. *Acta Odontol Scand* 70, 272–278 (2012).
- [42] Weintraub JA, Ramos-Gomez F, Jue B, Shain S, Hoover CI, Featherstone JD, Gansky SA: Fluoride varnish efficacy in preventing early childhood caries. *J Dent Res* 85, 172–176 (2006).
- [43] Wijeyeweera RL, Kleinberg I: Acid-base pH-curves in vitro with mixtures of pure cultures of human oral microorganisms. *Arch Oral Biol* 34, 55–64 (1989).
- [44] Winterfeld T, Schlüter N, Ganß C: Zähneputzen – Wissen, Empfehlungen und Realität. *Prophylaxe Impuls*, 129–137 (2015).
- [45] Winterfeld T, Schlueter N, Harnacke D, Illig J, Margraf-Stiksrud J, Deinzer R, Ganss C: Toothbrushing and flossing behaviour in young adults – a video observation. *Clin Oral Investig* 19, 851–858 (2015).
- [46] Winterfeld T, Schlueter N, Winterfeld K, Ganß C: Effect of systematic toothbrushing on changes of toothbrushing behaviour and relation to plaque. *Caries Res* 48, 412–413 (2014).
- [47] Zero DT, Raubertas RF, Fu J, Pedersen AM, Hayes AL, Featherstone JD: Fluoride concentrations in plaque, whole saliva, and ductal saliva after application of home-use topical fluorides. *J Dent Res* 71, 1768–1775 (1992).

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- [1] Ashley PF, Attrill DC, Ellwood RP, Worthington HV, Davies RM: Toothbrushing habits and caries experience. *Caries Res* 33, 401–402 (1999).
- [2] Beals D, Ngo T, Feng Y, Cook D, Grau DG, Weber DA: Development and laboratory evaluation of a new toothbrush with a novel brush head design. *Am J Dent* 13(spec iss) 5A–13A (2000).
- [3] Buzalaf MAR, Pessan JP, Honorio AM, ten Cate JM: Mechanism of action of fluoride for Caries control. In: Buzalaf M A R (Hrsg.). *Fluoride and the oral environment*. Basel: Karger, 97–114 (2011).
- [4] Carvalho FG, Negrini Tde C, Sacramento LV, Hebling J, Spolidorio DM, Duque C: The in vitro antimicrobial activity of natural infant fluoride-free toothpastes on oral micro-organisms. *J Dent Child (Chic)* 78 (1), 3–8 (2011).
- [5] Chestnut IG, Schafer F, Jacobsen APM, Stephen KW: The influence of toothbrushing frequency and post-brushing rinsing on caries experience in a clinical trial. *Community Dent Oral Epidemiol* 26, 406–411 (1998).
- [6] Den Besten P, Ko HS: Fluoride levels in whole saliva of preschool children after brushing with 0.25 g (pea-sized) as compared to 1.0 g (full-brush) of a fluoride dentifrice. *Pediatr Dent* 18, 277–280 (1996).
- [7] Duckworth RM, Morgan SM, Burchell CK: Fluoride in plaque following use of dentifrices containing NaMFP. *J Dent Res* 68, 130–133 (1998).
- [8] Duke SA, Forward GC: The conditions occurring in vivo when brushing with toothpastes. *Br Dent J* 152, 52–54 (1982).
- [9] Emling RC, Flickinger KC, Cohen DW, Yankell SL: Comparison of estimated versus actual brushing time. *Pharmacol Ther Dent* 6, 93–98 (1991).
- [10] Evans A, Leishman SJ, Walsh LJ, Seow WK: Inhibitory effects of children's toothpastes on *Streptococcus mutans*, *Streptococcus sanguinis* and *Lactobacillus acidophilus*. *Eur Arch Paediatr Dent* 16 (2), 219–26 (2015). doi: 10.1007/s40368-014-0159-3. Epub 2014 Nov 18.
- [11] Gebelein K: In-vitro-Studie zur antibakteriellen Wirkung von Mundspüllösungen im Agar-Hemmhof-Test. [Dissertation]. Jena: Friedrich-Schiller-Universität (2012).
- [12] Geiger AM, Gorelick L, Gwinnett AJ, Benson BJ: Reducing white spot lesions in orthodontic populations with fluoride rinsing. *Am J Orthod Dentofacial Orthop* 101 (5), 403–407 (1992).
- [13] Kilian M, Larsen MJ, Fejerskov O, Thystrup A: Effects of fluoride on the initial colonization of teeth in vivo. *Caries Res* 13, 319–329 (1979a).
- [14] Kilian M, Thystrup A, Fejerskov O: Predominant plaque flora of Tanzanian children exposed to high and low water fluoride concentrations. *Caries Res* 13, 330–343 (1979b).
- [15] Kneist S: Chlorhexidin in der zahnärztlichen Praxis – Möglichkeiten und Grenzen. *ZMK* 22 (11), 720–730 (2006).
- [16] Kneist S: Plaquekontrolle mit Chlorhexidin. Spüllösungen, Gele, Lacke, Chips. *ZWR* 120, 156–167 (2011).
- [17] Kneist S, Sieckmann C, Küpper H: Zur antimikrobiellen Wirkung von NaF-haltigen Zahnpasten. *ZWR* 121 (3), 78–88 (2012).
- [18] Kneist S, Gebelein K, Küpper H: Zur antimikrobiellen Wirkung von Mundspüllösungen. *ZWR* 122 (1+2), 8–15 (2013).
- [19] Kneist S, Gebelein K: Studie: Die antimikrobielle Wirksamkeit von Mundspüllösungen mit und ohne Chlorhexidin. *ZMK* 31 (6), 382–391 (2015).
- [20] Koga H, Yamagishi A, Takayanagi A, Maeda K, Matsukubo T: Estimation of optimal amount of fluoride dentifrice for adults to prevent caries by comparison between fluoride uptake into enamel in vitro and fluoride concentration in fluid in vivo. *Bull Tokyo Dent Coll* 48, 119–128 (2007).

- [21] Lindner L: Zur antimikrobiellen Wirkung von Zahnpasten und Mundspüllösungen – Eine In-vitro-Studie. [Dissertation]. Jena: Friedrich-Schiller-Universität (2015). (Promotionsverfahren eröffnet)
- [22] Lynch RJ, Navada R, Walia R: Low-levels of fluoride in plaque and saliva and their effects on the demineralisation and remineralisation of enamel; role of fluoride toothpastes. *Int Dent J* 54, 304–309 (2004).
- [23] Macgregor IDM, Rugg-Gunn AJ: Toothbrushing duration in 60 uninstructed young adults. *Community Dent Oral Epidemiol* 13, 121–122 (1985).
- [24] Macgregor IDM, Rugg-Gunn AJ: Effect of filming on toothbrushing performance in uninstructed adults in north-east England. *Community Dent Oral Epidemiol* 14, 320–322 (1986).
- [25] Nordstrom A, Mystikos C, Ramberg P, Birkhed D: Effect on de novo plaque formation of rinsing with toothpaste slurries and water solutions with a high fluoride concentration (5.000 ppm). *Eur J Oral Sci* 117 (5), 563–567 (2009).
- [26] Nossek H, Dobl P: The effect of zinc chloride mouthwashes on caries-inducing plaque streptococci. 1. In vitro research on the antimicrobial efficacy of zinc chloride on reference strains of *Streptococcus mutans* (BHT), *Streptococcus sanguis* (HKop) and *Streptococcus salivarius*. *Zahn Mund Kieferheilkd Zentralbl* 78 (4), 325–328 (1990).
- [27] Olsson J, Odham G: Effect of inorganic ions and surface active organic compounds on the adherence of oral streptococci. *Scand J Dent Res* 86, 108–117 (1978).
- [28] Prasanth M: Antimicrobial efficacy of different toothpastes and mouthrinses: an in vitro study. *Dent Res J (Isfahan)* 8 (2), 85–94 (2011).
- [29] Randall J, Seow W, Walsh L: Antibacterial activity of fluoride compounds and herbal toothpastes on *Streptococcus mutans*: An in vitro study. *Aust Dent*, doi:10.1111/adj.12247 (2014).
- [30] Saxer UP, Barbakow J, Yankell SL: New studies on estimated and actual toothbrushing times and dentifrice use. *J Clin Dent* 9, 49–51 (1998).
- [31] Sälzer S, Rosema NAM, Martin ECJ, Slot DE, Timmer CJ, Dörfer CE, van der Weijden GA: The effectiveness of dentifrices without and with sodium lauryl sulfate on plaque, gingivitis and gingival abrasion – a randomized clinical trial. *Clin Oral Invest* Doi 10.007/s00784-015-1535-z (2015).
- [32] Sieckmann C: Zur antimikrobielle Wirkung von Zahnpasten. [Dissertation]. Jena: Friedrich-Schiller-Universität (2013).
- [33] Sjögren K, Birkhed D: Factors related to fluoride retention after toothbrushing and possible connection to caries activity. *Caries Res* 27, 474–477 (1993).
- [34] Sjögren K, Birkhed D, Rangmar S, Reinhold AC: Fluoride in the interdental area after two different post-brushing rinsing procedures. *Caries Res* 30, 194–199 (1996).
- [35] Watson PS, Pontefract HA, Devine DA, Shore RC, Nattress BR, Kirkham J, Robinson C: Penetration of fluoride into natural plaque biofilms. *J Dent Res* 84, 451–455 (2005).
- [36] Weijden van der FA, Timmermann MF, Snoek IM, Reijerse E, Velden van der U: Toothbrushing duration and plaque removing efficacy of electric toothbrushes. *Am J Dent* 9, 31–36 (1996).
- [37] Zeedyk MS, Longbottom C, Pitts NB: Tooth-brushing practices of parents and toddlers: A study of home-based videotaped sessions. *Caries Res* 39, 27–33 (2005).
- [38] Zero DT, Raubertas RF, Fu J, Pedersen AM, Hayes AL, Featherstone JD: Fluoride concentrations in plaque, whole saliva, and ductal saliva after application of home-use topical fluorides. *J Dent Res* 71, 1768–1775 (1992).
- [39] Zero DT, Creeth JE, Bosma ML, Butler A, Guibert RG, Karwal R, Lynch RJM, Martinez-Mier EA, González-Cabezas C, Kelly SA: The effect of brushing time and dentifrice quantity on fluoride delivery in vivo and enamel surface microhardness in situ. *Caries Res* 44, 90–100 (2010).