

Zurückhaltung ist gefragt!

Die Rolle der Eltern bei der zahnärztlichen Kinderbehandlung

Dr. Isabell von Gymnich

Literatur

- [1] American Academy of Pediatric Dentistry. Guideline on behavior guidance for the pediatric dental patient. Reference manual. *Pediatr Dent* 2011;36:179-191.
- [2] Arathi R, Ashwini R. Parental presence in the dental operatory – the parent's point of view. *J Indian Soc Pedod Prev Dent* 1999;17:150-155.
- [3] Bekes K. Füllungstherapie in der Kinderzahnheilkunde. *Quintessenz* 2016;67:309-315.
- [4] Chadwick BL, Hosey MT: *Child Taming: How to manage Children in Dental Practice*. Second edition, London: Quintessence Publishing, 2017.
- [5] Cox IC, Krikken JB, Veerkamp JS. Influence of parental presence on the child's perception of, and behaviour, during dental treatment. *Eur Arch Paediatr Dent* 2011;12:200-204.
- [6] D'Alessandro G, Alkhamis N, Mattarozzi K, Mazzetti M, Piana G. Fear of dental pain in Italian children: child personality traits and parental dental fear. *J Public Health Dent* 2016;67:179-183.
- [7] Feigal RJ. Guiding and managing the child dental patient: a fresh look at old pedagogy management in children. *J Dent Educ* 2001;65:1369-1377.
- [8] Fischer P. Kommunikation in der Kinderzahnarztpraxis. *ZWP* 2012;6:12-18.
- [9] Gymnich I von. „Ich find' das toll, wenn du mich bohrst!“. *Dental Tribune Austrian Edition* 2010;7+8:7.
- [10] Hansen E. Hypnotische Kommunikation – Eine Bereicherung im Umgang mit Patienten. *Zeitschrift für Hypnose und Hypnotherapie* 2010;5:51-67.
- [11] Keltner JR, Furst A, Fan C, Redfern R, Inglis B, Fields HL. Isolating the modulatory effect of expectation on pain transmission: a functional magnetic resonance imaging study. *J Neurosci* 2006;26:4437-4443.
- [12] Kossak H-C, Zehner G. Eltern. In: Kossak H-C, Zehner G. *Hypnose beim Kinder-Zahnarzt*. Berlin: Springer, 2011:99-110.
- [13] Lang EV, Hatsiopoulou O, Koch T et al. Can words hurt? Patient-provider interactions during invasive procedures. *Pain* 2005;114:303-309.

- [14] Marzo G, Campanella V, Albani F, Gallusi G. Psychological aspects in pediatric dentistry: parental presence. Eur J Paediatr Dent 2003;4:177-180.
- [15] Mendoza-Mendoza A, Perea MB, Yañez-Vico RM, Iglesias-Linares A. Dental fear in children: the role of previous negative dental experiences. Clin Oral Investig 2015;19:745-751.
- [16] Nathan JE, Rayman MS, Golden BE, Vargas KG. Discretionary parental presence in the dental operator: a survey of pediatric dentists and parents. Pediatr Neonatal Nurs 2015;2:50-61.
- [17] National Learning Consortium. Shared decision making. Fact sheet December 2013. Internet:
www.healthit.gov/sites/default/files/nlc_shared_decision_making_fact_sheet.pdf.
 Abruf: 04.06.2018.
- [18] Neumeyer A. „Fall nicht!“ Warum Kinder vom Klettergerüst fallen, obwohl wir ihnen immer wieder sagen, daß sie nicht herunterfallen sollen. Kindergarten heute 1995;25(11-12):40-43.
- [19] Pinkham JR. Personality development. Managing behavior of the precooperative preschool child. Dent Clin North Am 1995;39:771-787.
- [20] Prior M. MiniMax-Interventionen. 4. Aufl. Heidelberg: Carl-Auer Systeme, 2004.
- [21] Reese RG, Alexander M. Managing child behaviors in the dental setting. Clinical Update 2002;24(7): 14-15.
- [22] Shroff S, Hughes C, Mobley C. Attitudes and preferences of parents about being present in the dental operator. Pediatr Dent 2015;37:51-55.
- [23] Suprabha BS, Arathi R. Role of parent in behaviour guidance of children in dental operator: current trends. Int J Adv Res 2015;3:466-470.
- [24] Watzlawick P. Anleitung zum Unglücklichsein. München: Pieper, 1983

Literatur

- [1] Bratthall D, Hänsel-Petersson G, Sundberg H. Reasons for the caries decline: what do the experts believe? *Eur J Oral Sci.* 1996;104 (4(Pt 2)):416–22; discussion 423–5, 430–2.
- [2] Cooper AM, O'Malley LA, Elison SN, Armstrong R, Burnside G, Adair P, Dugdill L, Pine C. Primary school-based behavioural interventions for preventing caries. *Cochrane Database Syst Rev.* 2013;31:cd009378.
- [3] DAJ (Deutsche Arbeitsgemeinschaft für Jugendzahnpflege): Epidemiologische Begleituntersuchungen zur Gruppenprophylaxe 2009. Bonn 2010.
- [4] de Silva AM, Hegde S, Akudo Nwagbara B, Calache H, Gussy MG, Nasser M, Morrice HR, Riggs E, Leong PM, Meyenn LK, Yousefi-Nooraie R. Community-based population-level interventions for promoting child oral health. *Cochrane Database Syst Rev.* 2016;15:9:CD009837.
- [5] EAPD (European Academy of Paediatric Dentistry): Guidelines on the use of fluoride in children: an EAPD policy document. *Eur Arch Paediatr Dent.* 2009;10:129–35.
- [6] IDZ (Institut der Deutschen Zahnärzte): Fünfte Deutsche Mundgesundheitsstudie – DMS V. Köln 2016.
- [7] Kay EJ, Locker D. A systematic review of the effectiveness of health promoting aimed at improving oral health. *Community Dent Health.* 1998;15:132–144.
- [8] Koch G, Lindhe J. The state of the gingivae and caries increment in school children during and after withdrawal of various prophylactic measures. In: McHugh W D (Hrsg.). *Dental Plaque.* Livingstone, S. 271–281. Edinburgh 1970.
- [9] Marinho VC. Cochrane reviews of randomized trials of fluoride therapies for preventing dental caries. *Eur Arch Paediatr Dent.* 2009;10:183–91.
- [10] Masood M, Masood Y, Newton T. Impact of national income and inequality on sugar and caries relationship. *Caries Res.* 2012;46(6):581–8.
- [11] Sälzer S, Alkilzy M, Slot DE, Dörfer CE, Schmoeckel J, Splieth CH. Socio-behavioural aspects in the prevention and control of dental caries and periodontal diseases at an individual and population level. *J Clin Periodontol.* 2017;44:106–115.

- [12] Schwendicke F, Dörfer CE, Schlattmann P, Foster Page L, Thomson WM, Paris S. Socioeconomic Inequality and Caries: A Systematic Review and Meta-Analysis. *J Dent Res.* 2015;94:10–18.
- [13] Splieth C, Meyer G. Factors for changes of caries prevalence among adolescents in Germany. *Eur J Oral Sci.* 1996;104:444–51.
- [14] TEAM DAJ. Epidemiologische Begleituntersuchungen zur Gruppenprophylaxe 2016. Deutsche Arbeitsgemeinschaft für Jugendzahnpflege, Bonn 2017.
- [15] Trummel A, Weiss V. DMFT scores in 12-year-old school children in the city of St. Gallen. *Oralprophylaxe.* 2000;22:206–208.
- [16] Wagner Y, Heinrich-Weltzien R. Evaluation of a regional German interdisciplinary oral health programme for children from birth to 5 years of age. *Clin Oral Investig.* 2017;21:225–235.
- [17] Walsh T, Worthington HV, Glenny AM, Appelbe P, Marinho VC, Shi X. Fluoride toothpastes of different concentrations for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev.* 2010 Jan 20;(1):CD007868.
- [18] Watt RG, Sheiham A. Integrating the common risk factor approach into a social determinants framework. *Community Dent Oral Epidemiol.* 2012;40:289–96.

Weiterführende Literatur

Bader JD, Shugars DA, Bonito AJ. Systematic reviews of selected dental caries diagnostic and management methods. *J Dent Educ.* 2001;65:960–968.

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.* 1997;122:1–88.

Born C. Das Marburger Prophylaxemodell. Aktueller Stand und Umsetzung in die Praxis. *Oralprophylaxe & Kinderzahnheilkunde* 2008; 30:150–154.

Borutta A, Möbius S, Hufnagl S, Reuscher G. Kariesinhibierende Wirkung von Fluoridlacken bei Vorschulkindern mit erhöhtem Kariesrisiko – Ergebnisse nach zweijähriger Beobachtungszeit. *Oralprophylaxe und Kinderzahnheilkunde.* 2006;28:103–109.

Brunner-Strepp B. Intensive fluoridation in group prevention programs, a long term observation. *Community Dent Health.* 2001;18:199.

DAJ (Deutsche Arbeitsgemeinschaft für Jugendzahnpflege). Frühkindliche Karies: zentrale Inhalte der Gruppenprophylaxe für unter 3-jährige Kinder. Bonn 2016.

http://www.daj.de/fileadmin/user_upload/PDF_Downloads/PM_Empfehlungen_Expertise_2016/Longversion_DAJ_Empf_Expertise_2016.pdf

Ekstrand KR, Christiansen ME, Qvist V. Influence of different variables on the inter-municipality variation in caries experience in Danish adolescents. *Caries Res.* 2003;37:130–41.

Kassenzahnärztliche Bundesvereinigung (KZBV) Bundeszahnärztekammer (BZÄK): ECC-Ratgeber 2016. Praktischer Ratgeber für die zahnärztliche Praxis. https://www.kzv-bremen.de/downloads/ecc-ratgeber_2016.pdf

Guindy JS, Weber C, Meyer J. Die Zahngesundheit von 7- und 12-Jährigen Schülerinnen und Schülern im Kanton Solothurn. *Acta Me Dent Helv.* 2000;5:119–124.

Hausen H, Karkkainen S, Seppä L. Application of the high risk strategy to control dental caries. *Community Dent Oral Epidemiol.* 2000;28:26–34.

Hellwig E, Buchalla W, Attin T. Hängt die Wirksamkeit einer Zahnpasta von der Fluoridkonzentration ab? *Oralprophylaxe.* 1999; Sonderheft: 28–31.

Lösler K. Langzeiteffekte des Präventionsprogramms GeKoKidS auf die Kariesentwicklung von Greifswalder SchülerInnen. *Med Diss, Greifswald* 2015.

Meyer-Lückel H, Schiffner U. Effektivität und Effizienz verhaltensmodifizierender gruppenprophylaktischer Maßnahmen bei Kindern. *Dtsch Zahnärztl Z* 2009;64:152–167.

Micheelis W, Schroeder E. Sozialwissenschaftliche Daten und Analysen der drei Alterskohorten. In: Institut der Deutschen Zahnärzte (Hrsg.). Dritte Deutsche Mundgesundheitsstudie (DMS III). Ergebnisse, Trends und Problemanalysen auf der Grundlage bevölkerungsrepräsentativer Stichproben S. 433–455. Deutscher Ärzteverlag. Köln 1999.

Momeni A, Hartmann T, Born C, Heinzl-Gutenbrunner M, Pieper K. Association of caries experience in adolescents with different preventive measures. *Int. J. Public Health.* 2007;52:393–401.

Pieper K, Weber K, Stein S, Jablonski-Momeni A, Heinzl-Gutenbrunner M, Margraf-Stiksrud J: Evaluation eines zahnmedizinischen Präventionsprogramms für Kinder mit erhöhtem Kariesrisiko. *Gesundheitswesen.* 2015;77,suppl 1:s70–1.

Public Health England. Local authorities improving oral health: commissioning better oral health for children and young people. An evidence-informed toolkit for local authorities. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/357838/DBOHv3SEP2014SummaryTables.pdf. London 2013.

RKI (Robert-Koch-Institut). KiGGs-Studie. Mundhygiene und Kariesprophylaxe: Erkennen – bewerten – handeln: zur Gesundheit von Kindern und Jugendlichen in Deutschland. 3.2 Mundhygiene und Kariesprophylaxe. Berlin 2008.

Schenk L, Knopf H. Mundgesundheitsverhalten von Kindern und Jugendlichen in Deutschland. Erste Ergebnisse aus dem Kinder- und Jugendgesundheitsurvey (KiGGS). Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz. 2007;50:653–658.

Schüler E, Splieth CH. Zahnärztlicher Gesundheitsbericht 2015. Greifswald.

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. 2004;26:106–109.

Weiß, A. Interventionsprogramm zur Prävention frühkindlicher Karies (ECC). Med Diss, Greifswald 2007.

Wong MCM, Clarkson J, Glenny AM, Lo ECM, Marinho VCC, Tsang BWK, Walsh T, Worthington HV. Cochrane Reviews on the Benefits/Risks of Fluoride Toothpastes. J Dent Res. 2011;90:573–579.

ZIMKid. Aktion der Zahnärzte Initiative Mönchengladbach ZIM und der Mönchengladbacher Kinder- und Jugendärzte zur Verbesserung der Mundgesundheit von Kindern und Jugendlichen unserer Stadt <http://www.zimkid.de/> 2016.

Ätiologie und Therapie der Molaren-Inzisiven-Hypomineralisation

Therapieempfehlungen für die Praxis

Prof. Dr. Jan Kühnisch

Literatur

- [1] Alaluusua S: Aetiology of molar-incisor hypomineralisation: a systematic review. *Eur Arch Paediatr Dent* 11, 53–58 (2010).
- [2] Alaluusua S, Lukinmaa PL, Torppa J, Tuomisto J, Vartiainen T: Developing teeth as biomarker of dioxin exposure. *Lancet* 353 (9148), 206 (1999).
- [3] Alaluusua S, Lukinmaa PL, Vartiainen T, Partanen M, Torppa J, Tuomisto J: Polychlorinated dibenzo-p-dioxins and dibenzofurans via mother's milk may cause developmental defects in the child's teeth. *Environ Toxicol Pharmacol* 15 (1), 193–197 (1996).
- [4] Baroni C, Marchionni S: MIH supplementation strategies: prospective clinical and laboratory trial. *J Dent Res* 90, 371–376 (2011).
- [5] Baroudi K, Ibraheem SN: Assessment of chair-side computer-aided design and computer-aided manufacturing restorations: a review of the literature. *J Int Oral Health* 7, 96–104 (2015).
- [6] Bekes K, Heinzelmann K, Lettner S, Schaller HG: Efficacy of desensitizing products containing 8% arginine and calcium carbonate for hypersensitivity relief in MIH-affected molars: an 8-week clinical study. *Clin Oral Investig* 21, 2311–2317 (2017).
- [7] Crombie F, Manton D, Kilpatrick N: Aetiology of molar-incisor hypomineralization: a critical review. *Int J Paediatr Dent* 19, 73–83 (2009).
- [8] Feierabend S, Halbleib K, Klaiber B, Hellwig E: Laboratory-made composite resin restorations in children and adolescents with hypoplasia or hypomineralization of teeth. *Quintessence Int* 43, 305–311 (2012).
- [9] Jälevik B, Klingberg GA: Dental treatment, dental fear and behaviour management problems in children with severe enamel hypomineralization of their permanent first molars. *Int J Paediatr Dent* 12, 24–32 (2002).
- [10] Jälevik B, Norén JG, Klingberg G, Barregård L: Etiologic factors influencing the prevalence of demarcated opacities in permanent first molars in a group of Swedish children. *Eur J Oral Sci* 109, 230–234 (2001).

- [11] Jedeon K, De la Dure-Molla M, Brookes SJ, Liodice S, Marciano C, Kirkham J, Canivenc-Lavier MC, Boudalia S, Bergès R, Harada H, Berdal A, Babajko S: Enamel defects reflect perinatal exposure to bisphenol A. *Am J Pathol* 183, 108–118 (2013).
- [12] Jordan R, Micheelis W: Fünfte Deutsche Mundgesundheitsstudie (DMS V). Materialienreihe Band 35. Köln: Deutscher Ärzte Verlag (2016).
- [13] Koch MJ, García-Godoy F: The clinical performance of laboratory-fabricated crowns placed on first permanent molars with developmental defects. *J Am Dent Assoc* 131, 1285–1290 (2000).
- [14] Kotsanos N, Kaklamanos EG, Arapostathis K: Treatment management of first permanent molars in children with molar-incisor hypomineralisation. *Eur J Paediatr Dent* 6, 179–184 (2005).
- [15] Kühnisch J, Lauenstein A, McGlynn G, Staskiewicz A, Hickel R, Grupe G: Was molar incisor hypomineralisation (MIH) present in ancient populations? *Clin Oral Invest* 20, 2387–2393 (2016).
- [16] Kühnisch J, Thiering E, Kratzsch J, Heinrich-Weltzien R, Hickel R, Heinrich J for the GINI-10 plus study group and LISA-10 plus study group: Elevated serum 25(OH)-vitamin D levels are negatively correlated with MIH. *J Dent Res* 94, 381–387 (2015).
- [17] Kühnisch J, Heitmüller D, Thiering E, Brockow I, Hoffmann U, Neumann C, Heinrich-Weltzien R, Bauer CP, von Berg A, Koletzko S, Garcia-Godoy F, Hickel R, Heinrich J: Proportions and extent of manifestation of molar-incisor-hypomineralisations according to different phenotypes. *J Public Health Dent* 74, 42–49 (2014).
- [18] Kühnisch J, Mach D, Thiering E, Brockow I, Hoffmann U, Neumann C, Heinrich-Weltzien R, Bauer CP, Berdel D, von Berg A, Koletzko S, Garcia-Godoy F, Hickel R, Heinrich J and the GINI plus 10 study group: Respiratory diseases are associated with molar-incisor hypomineralizations. *Swiss Dent J* 124, 286–293 (2014).
- [19] Laisi S, Ess A, Sahlberg C, Arvio P, Lukinmaa PL, Alaluusua S: Amoxicillin may cause molar incisor hypomineralization. *J Dent Res* 88, 132–136 (2009).
- [20] Lygidakis NA, Wong F, Jälevik B, Vierrou AM, Alaluusua S, Espelid I: Best Clinical Practice Guidance for clinicians dealing with children presenting with Molar-Incisor-Hypomineralisation (MIH): An EAPD Policy Document. *Eur Arch Paediatr Dent* 11, 75–81 (2010).
- [21] Lygidakis NA, Chaliasou A, Siounas G: Evaluation of composite restorations in hypomineralised permanent molars: a four year clinical study. *Eur J Paediatr Dent* 4, 143–148 (2003).

- [22] Manhart J, Chen H, Hamm G, Hickel R: Buonocore Memorial Lecture. Review of the clinical survival of direct and indirect restorations in posterior teeth of the permanent dentition. *Oper Dent* 29, 481–508 (2004).
- [23] Mejare I, Bergman E, Grindefjord M: Hypomineralized molars and incisors of unknown origin: treatment outcome at age 18 years. *Int J Paediatr Dent* 15, 20–28 (2005).
- [24] Millet et al 2015 – bitte ergänzen
- [25] Norrisgaard P, Bonnelykke K, Haubek D, Kühnisch J, Bisgaard H: Vitamin D3 high-dose supplementation in pregnancy reduces molar incisor hypomineralisation (MIH) in off-spring. 14th EAPD Congress. Lugano June 20–23 (2018).
- [26] Pfisterer J, Kessler A, Kühnisch J: Einzeitige CAD/CAM-Seitenzahnrestauration bei einem 8-Jährigen mit Molaren-Inzisiven-Hypomineralisation (MIH). *Quintessenz* 68, 7–16 (2016).
- [27] van der Tas JT, Elfrink MEC, Heijboer AC, Rivadeneira F, Jaddoe VWW, Tiemeier H, Schoufour JD, Moll HA, Ongkosuwito EM, Wolvius EB, Voortman T: Foetal, neonatal and child vitamin D status and enamel hypomineralization. *Community Dent Oral Epidemiol* 2018; doi: 10.1111/cdoe.12372.
- [28] Wittneben JG, Wright RF, Weber HP, Gallucci GO: A systematic review of the clinical performance of CAD/CAM single-tooth restorations. *Int J Prosthodont* 22, 466–471 (2009).
- [29] Wuollet E, Laisi S, Salmela E, Ess A, Alaluusua S: Molar-incisor hypomineralization and the association with childhood illnesses and antibiotics in a group of Finnish children. *Acta Odontol Scand* 74, 416–422 (2016).
- [30] Zagdwon AM, Fayle SA, Pollard MA: A prospective clinical trial comparing preformed metal crowns and cast restorations for defective first permanent molars. *Eur J Paediatr Dent* 4, 138–142 (2003).
- [31] Zimmermann M, Koller C, Hickel R, Kühnisch J: Chairside treatment of amelogenesis imperfecta, including establishment of a new vertical dimension with resin nanoceramic and intraoral scanning. *J Prosthet Dent* 116, 309–313 (2016).

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Prof. Dr. Claus-Peter Ernst

**Selbstkonditionierender Glaskeramik-Primer: eine 1. Metaanalyse zu
Monobond Etch&Prime**

[1] Aboushelib MN, Sleem D: Microtensile bond strength of lithium disilicate ceramics to resin adhesives. J Adhes Dent 16, 547–552 (2014).

[2] Al-Harathi AA, Aljoudi MH, Almaliki MN, El-Banna KA: Laboratory study of micro-shear bond strength of two resin cements to leucite ceramics using different ceramic primers. J Contemp Dent Pract 19, 918–924 (2018).

[3] Alsobiyl H, Alshabib A, Sartori N, Duarte S, Phark JH: Influence of a novel self-priming etchant on bond strength to glass-ceramics. J Adhes Dent 19, 439 (2017) (Abstract des 2. Jahrestreffens der Internat. Academy of Adhesive Dentistry [IAAD], 16.–17.6.2017, Philadelphia, Pennsylvania, USA).

[4] 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).

[5] 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, 8.00 Uhr Elafiti 4 (Valamar Lacroma Hotel),
<https://iadr.confex.com/iadr/per14/webprogram/Paper192029.html> (2014).

[6] El-Damanhoury HM, Gaintantzopoulou MD: Self-etching ceramic primer versus hydrofluoric acid etching: Etching efficacy and bonding performance. J Prosthodont Res 62, 75–83 (2018).

[7] 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).

[8] Ernst CP: Innovatives Konzept zur adhäsiven Befestigung am Beispiel zweier IPS e.max-Kronen. ZMK 31, 833–839 (2015).

[9] Ernst CP: Glaskeramik vorbehandeln ohne Flusssäure? Dental Magazin 34, 86–90 (2016).

[10] 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).

[11] Heleba A, Hill T, Singhal S, McCabe P, Tysowsky G: Effect of storage on shear-bond strength of self-etch ceramic primer. AADR-Jahrestagung, Los Angeles, CA, USA, 18.3.2016 Abstract #1067 (2016).

- [12] Ivoclar Vivadent. Monobond Etch&Prime Scientific Report. Ausgabe 1/2018.
<http://www.ivoclarvivadent.com/en/download-center/scientific-documentations/#M>.
- [13] Kalavacharla VK, Lawson NC, Ramp LC, Burgess JO: Influence of etching protocol and silane treatment with an universal adhesive on lithium disilicate bond strength. *Oper Dent* 40, 372–378 (2015).
- [14] Kim RJ, Woo JS, Lee IB, Yi YA, Hwang JY, Seo DG: Performance of universal adhesives on bonding to leucite-reinforced ceramic. *Biomater Res* 19, 11 (2015).
- [15] Lemoy C, Jacomine I, Favier D, Gauthier C, Etienne O: Evolution of a new self-etching glass ceramic primer. CED-IADR/NOF-Jahrestagung 2017, Wien, Österreich, 22.9.2017. Abstract #0307 (2017).
- [16] 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* 40, E40–46 (2015).
- [17] Lopes GC, Perdigão J, Baptista D, Ballarin A: Does a self-etching ceramic primer improve bonding to lithium disilicate ceramics? Bond strengths and FESEM analyses. *Oper Dent* 2018 Aug 14. doi: 10.2341/17–355-L. [Epub ahead of print]
- [18] Lyann SK, Takagaki T, Nikaido T, Uo Motohiro, Ikeda M, Sadr A, Tagami J: Effect of different surface treatments on the tensile bond strength to lithium disilicate glass ceramics. *J Adhes Dent* 20, 261–268 (2018).
- [19] 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).
- [20] Meyer G, Kern M: Kronen und Brücken aus Vollkeramik. *Zahnärztliche Mitteilungen* 105, (2015).
- [21] Mitchell J C, Brownstein S, Tang A, Assar S, Do L, Pulido M: Self-etching glass-ceramic primer: shear bond strength with Monobond Etch & Prime. IADR-Jahrestagung 25.3.2017, San Francisco, CA, USA, Abstract #3862 (2017).
- [22] Murillo-Gómez F, Palma-Dibb RG, De Goes MF: Effect of acid etching on tridimensional microstructure of etchable CAD/CAM materials. *Dent Mater* 34, 944–955 (2018).
- [23] 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* 40, 470–479 (2015).

- [24] 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).
- [25] Passia N, Lehmann F, Freitag-Wolf S, Kern M: Tensile bond strength of different universal adhesive systems to lithium disilicate ceramic. *J Am Dent Assoc* 146, 729–734 (2015).
- [26] Prado M, Prochnow C, Marchionatti AME, Baldissara P, Valandro LF, Wandscher VF: Ceramic surface treatment with a single-component primer: resin adhesion to glass ceramics. *J Adhes Dent* 20, 99–105 (2018).
- [27] Román-Rodríguez JL, Perez-Barquero JA, Gonzalez-Angulo E, Fons-Font A, Bustos-JL: Bonding to silicate ceramics: conventional technique compared with a simplified technique. *J Clin Exp Dent* 9, 384–386 (2017).
- [28] Siqueira FS, Alessi RS, Cardenas AF, Kose C, Souza Pinto SC, Bandeca MC, Loguercio AD, Gomes JC: New single-bottle ceramic primer: 6-month case report and laboratory performance. *J Contemp Dent Pract* 17, 1033–1039 (2016).
- [29] 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).
- [30] Strasser T, Preis V, Behr M, Rosentritt M: Roughness, surface energy, and superficial damages of CAD/CAM materials after surface treatment. *Clin Oral Investig* 2018; Feb 5. doi: 10.1007/s00784-018-2365-6. [Epub ahead of print]
- [31] Takimoto M, Kurokawa H, Miyazaki M: Influence of new ceramic surface conditioner on bonding performance of resin cements. *JSAD Abstract*. 34. Jahrestagung der Japan Society for Adhesive Dentistry (2015).
- [32] 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).
- [33] Tribst J, Anami LC, Özcan M, Bottino MA, Melo RM, Saavedra G: Self-etching primers vs acid conditioning: impact on bond strength between ceramics and resin cement. *Oper Dent* 43, 372–379 (2018).
- [34] 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).
- [35] 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).

[36] Wille S, Lehmann F, Kern M: Durability of resin bonding to lithium disilicate and zirconia ceramic using a self-etching primer. J Adhes Dent 19, 491–496 (2017).

[37] Yoshida F, Tsujimoto A, Ishii R, Nojiri K, Takamizawa T, Miyazaki M, Latta MA: Influence of surface treatment of contaminated lithium disilicate and leucite glass ceramics on surface free energy and bond strength of universal adhesives. Dent Mater J 34, 855–862 (2015).

[38] Yoshihara K, Nagaoka N, Sonoda A, Maruo Y, Makita Y, Okihara T, Irie M, Yoshida YV, Meerbeek B: Effectiveness and stability of silane coupling agent incorporated in ‘universal’ adhesives. Dent Mater 32, 1218–1225 (2016).

[39] 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, 330–336 (2014).

Alicia Mandl

PD Dr. rer. biol. hum. Dipl. Ing. (FH) Bogna Stawarczyk, M.Sc.

Dr. med. dent. Anja Liebermann M.Sc.

**Einfluss der adhäsiven Befestigung auf die ästhetischen Eigenschaften
monolithischer Glaskeramikrestaurationen – ein Literaturüberblick**

- [1] Azer SS et al.: Effect of esthetic core shades on the final color of IPS Empress all-ceramic crowns. *Journal of Prosthetic Dentistry* 96 (6), 397–401 (2006).
- [2] Baader K et al.: Self-adhesive luting of partial ceramic crowns: selective enamel etching leads to higher survival after 6.5 years in vivo. *Journal of Adhesive Dentistry* 18 (1), 69-79 (2016).
- [3] Balderamos LP, O’Keefe KL, Powers JM: Color accuracy of resin cements and try-in pastes. *International Journal of Prosthodontics* 10 (2), 111-115 (1997).
- [4] Begum Z et al.: Effect of ceramic thickness and luting agent shade on the color masking ability of laminate veneers. *Journal of Indian Prosthodontic Society* 14 (1), 46–50 (2014).
- [5] Bindl A, Lüthy H, Mörmann WH: Strength and fracture pattern of monolithic CAD/CAM-generated posterior crowns. *Dental Materials* 22 (1), 29–36 (2006).
- [6] Calgaro PAM et al.: Post-cementation colorimetric evaluation of the interaction between the thickness of ceramic veneers and the shade of resin cement. *American Journal of Dentistry* 27 (4), 191–194 (2014).
- [7] Chang J et al.: The optical effect of composite luting cement on all ceramic crowns. *Journal of Dentistry* 37 (12), 937–943 (2009).
- [8] Chen X-D et al.: The influence of resin cements on the final color of ceramic veneers. *Journal of Prosthodontic Research* 59 (3), 172–177 (2015).
- [9] de Azevedo Cubas GB et al.: The effect of luting agents and ceramic thickness on the color variation of different ceramics against a chromatic background. *European Journal of Dentistry* 5 (3), 245 (2011).
- [10] De Goes M, Murillo-Gómez F: Long-term bond strength of glass-ceramic treated with acid ceramic primer. *Dental Materials* 33, e24 (2017).
- [11] Dede DÖ, Ceylan G, Yilmaz B: Effect of brand and shade of resin cements on the final color of lithium disilicate ceramic. *Journal of Prosthetic Dentistry* 117 (4), 539–544 (2017).
- [12] Edelhoff D: Vollkeramische Restaurationen. *Der Freie Zahnarzt* 61 (10), 84–93 (2017).
- [13] Ferracane JL, Stansbury JW, Burke FJT: Self-adhesive resin cements – chemistry, properties and clinical considerations. *Journal of Oral Rehabilitation* 38 (4), 295–314 (2011).
- [14] Harada K et al.: A comparative evaluation of the translucency of zirconias and lithium disilicate for monolithic restorations. *Journal of Prosthetic Dentistry* 116 (2), 257–263 (2016).
- [15] Höland W et al.: A comparison of the microstructure and properties of the IPS Empress® 2 and the IPS Empress® glass-ceramics. *Journal of Biomedical Materials Research Part A* 53 (4), 297–303 (2000).
- [16] Jordan AR, Micheelis W: Fünfte Deutsche Mundgesundheitsstudie-(DMS V). Köln: Deutscher Zahnärzte Verlag DÄV (2016).
- [17] Kampouropoulos D et al.: Colour matching of composite resin cements with their corresponding try-in pastes. *Eur J Prosthodont Restor Dent* 22 (2), 84–88 (2014).
- [18] Klosa K et al.: The effect of storage conditions, contamination modes and cleaning procedures on the resin bond strength to lithium disilicate ceramic. *Journal of Adhesive Dentistry* 11 (2), (2009), 127-135.

- [19] Liebermann A, Kieschnick A, Stawarczyk B: Selbstadhäsive Befestigungskomposite – ein aktueller Überblick. *Quintessenz Zahntech* 43 (11), 1494–1502 (2017).
- [20] Lohbauer U, Zorzin JI: Silikatkeramiken und adhäsive Befestigungskonzepte. *Quintessenz Zahntech* 44 (11), 1474–1491 (2017).
- [21] Micheelis W: Vierte Deutsche Mundgesundheitsstudie (DMS IV): neue Ergebnisse zu oralen Erkrankungsprävalenzen, Risikogruppen und zum zahnärztlichen Versorgungsgrad in Deutschland 2005. Köln: Deutscher Zahnärzte Verlag DÄV (2006).
- [22] Mourouzis P: Color match of luting composites and try-in pastes: the impact on the final color of CAD/CAM lithium disilicate restorations. *Int J Esthet Dent* (2018); 13 (1): 98-109.
- [23] Özcan M, Vallittu PK: Effect of surface conditioning methods on the bond strength of luting cement to ceramics. *Dental Materials* 19 (8), 725–731 (2003).
- [24] Prado M et al.: Ceramic surface treatment with a single-component primer: resin adhesion to glass ceramics. *Journal of Adhesive Dentistry* 20 (2), 99-105 (2018).
- [25] Ramakrishnaiah R et al.: The effect of hydrofluoric acid etching duration on the surface micromorphology, roughness, and wettability of dental ceramics. *International Journal of Molecular Sciences* 17 (6), 822 (2016).
- [26] Roelf B et al.: Vollkeramische Kronen und Brücken (S3). 2016.
- [27] Shimada Y, Yamaguchi S, Tagami J: Micro-shear bond strength of dual-cured resin cement to glass ceramics. *Dental Materials* 18 (5), 380–388 (2002).
- [28] Stawarczyk B et al.: Influence of cementation and cement type on the fracture load testing methodology of anterior crowns made of different materials. *Dental Materials Journal* 32 (6), 888–895 (2013).
- [29] Stawarczyk B, Rosentritt M: Glossar der Verbundmechanismen und Oberflächenvorbehandlung. *Quintessenz Zahntech* 43 (11), 1405–1407 (2017).
- [30] Stawarczyk B, Wimmer T: Die Teilkrone – materialwissenschaftliche Aspekte. *teamwork J CONT DENT EDUC* 2, 128–137 (2016).
- [31] Trushkowsky RD: Ceramic inlay fabrication with three-dimensional copy milling technology – Celay. *Compendium of Continuing Education in Dentistry* (Jamesburg, NJ: 1995) 19 (11), 1077–1080 (1998).
- [32] Turgut S, Bagis B: Effect of resin cement and ceramic thickness on final color of laminate veneers: an in vitro study. *Journal of Prosthetic Dentistry* 109 (3), 179–186 (2013).
- [33] Vichi A, Ferrari M, Davidson CL: Influence of ceramic and cement thickness on the masking of various types of opaque posts. *Journal of Prosthetic Dentistry* 83 (4), 412–417 (2000).
- [34] Villarroel M et al.: Direct esthetic restorations based on translucency and opacity of composite resins. *Journal of Esthetic and Restorative Dentistry* 23 (2), 73–87 (2011).
- [35] Volpato CAM et al.: Optical influence of the type of illuminant, substrates and thickness of ceramic materials. *Dental Materials* 25 (1), 87–93 (2009).
- [36] Xu B et al.: Agreement of try-in pastes and the corresponding luting composites on the final color of ceramic veneers. *Journal of Prosthodontics* 23 (4), 308–312 (2014).
- [37] Yoshihara K et al.: Effectiveness and stability of silane coupling agent incorporated in 'universal' adhesives. *Dental Materials* 32 (10), 1218–1225 (2016).

Schnittstellen zwischen Logopädie und Zahnmedizin

Myofunktionelle Störungen erkennen und interdisziplinär behandeln

- [1] Bartolome G, Schröter-Morasch H: Schluckstörungen: Diagnostik und Rehabilitation. Elsevier. München (2014).
- [2] Deutscher Bundesverband für Logopädie (dbl): Funktionelle orofaziale Störungen (Myofunktionelle Störungen). <https://www.dbl-ev.de/kommunikation-sprache-sprechen-stimme-schlucken/stoerungen-bei-kindern/stoerungsbereiche/schlucken/funktionelle-orofaziale-stoerungen-myofunktionelle-stoerungen.html> [Zugriff: 06.10.2018].
- [3] Deutscher Bundesverband für Logopädie (dbl): Myofunktionelle Störungen und Logopädie: Kooperationsvereinbarung zur interdisziplinären Zusammenarbeit in Niedersachsen. <https://www.dbl-v.de/service/meldungen/einzelansicht/article/myofunktionelle-stoerungen-und-logopaedie-kooperationsvereinbarung-zur-interdisziplinaeren-zusammen.htm.l> [Zugriff: 06.10.2018].
- [4] Furtenbach M: Prävention orofazialer Dysfunktionen im Spannungsfeld von Kieferorthopädie und Logopädie - Anregung zur vermehrten Zusammenarbeit. Inf Orthod Kieferorthop 45, 209-219 (2013).
- [5] Furtenbach M: Myofunktionelle Therapie (MFT) im Spannungsfeld von Kieferorthopädie und Logopädie – Möglichkeiten der Zusammenarbeit. Inf Orthod Kieferorthop 46, 241-253 (2014).
- [6] Furtenbach M, Adamer I: Myofunktionelle Therapie KOMPAKT II: Diagnostik und Therapie. Praesens. Wien (2016).
- [7] Furtenbach M, Adamer I, Specht-Moser B: Myofunktionelle Therapie KOMPAKT I: Prävention. Praesens. Wien (2013).
- [8] Grabowski R, Stahl F: Die offene Mundhaltung im Kindesalter – Häufigkeit und Folgewirkungen. Inf Orthod Kieferorthop 40, 101–109 (2008).
- [9] Kassenzahnärztliche Bundesvereinigung (KZBV): Basismaterialien zur zahnärztlichen Heilmittel-Richtlinie. <https://www.kzbv.de/zahnarztliche-heilmittel-richtlinie.1147.de.html> [Zugriff 10.10.2018].
- [10] Kittel A: Myofunktionelle Therapie. Schulz-Kirchner. Idstein (2011).
- [11] Kittel A, Förster N: Myofunktionelle Diagnostik und Therapie: Effektive Zusammenarbeit zwischen Logopädie und Zahnmedizin. Der Freie Zahnarzt 04, 76-86 (2016).
- [12] Million A, Million N: Kieferorthopädische Risikokinder. Manuelle Medizin 54, 227-234 (2016).
- [13] N N: Heilmittelerbringer fordern Direktzugang des Patienten. <https://www.aerzteblatt.de/nachrichten/98189/Heilmittelerbringer-fordern-Direktzugang-des-Patienten> [Zugriff: 06.10.2018].
- [14] Ruben L, Wittich C: Evidenzbasierte Behandlung Myofunktioneller Störungen. Forum Logopädie 28, 22-29 (2014).
- [15] Stahl de Castrillon F, Grabowski R: Gebissanomalien und orofaziale Dysfunktionen. Zahnmedizin up2date 5, 287-303 (2011).
- [16] Tränkmann J: Kieferorthopädische Misserfolge nach übersehenen orofazialen Dyskinesien. Fortschr Kieferorthop 49, 388-399 (1988).

- [17] Tränkmann J, Rixe K: Nachuntersuchung dyskinesiebedingter Dysgnathien nach myofunktioneller Therapie. Fortschr Kieferorthop 56, 67-76 (1997).
- [18] Warnecke T, Dziewas R: Neurogene Dysphagien: Diagnostik und Therapie. Kohlhammer. Stuttgart (2018).