

# Die Teilkrone – materialwissenschaftliche Aspekte

## Wie stark sind Glaskeramiken wirklich und wie lassen sie sich befestigen?

Ein Beitrag von PD Dr. Bogna Stawarczyk und Dr. Timea Wimmer, beide München

### Literaturliste

1. Baader K, Hiller KA, Buchalla W, Schmalz G, Federlin M: Self-adhesive Luting of Partial Ceramic Crowns: Selective Enamel Etching Leads to Higher Survival after 6.5 Years In Vivo. *The journal of adhesive dentistry* 2016; 18: 69-79.
2. Bindl A, Richter B, Mormann WH: Survival of ceramic computer-aided design/manufacturing crowns bonded to preparations with reduced macroretention geometry. *Int J Prosthodont* 2005; 18: 219-24.
3. Borges GA, Caldas D, Taskonak B, Yan J, Sobrinho LC, de Oliveira WJ: Fracture loads of all-ceramic crowns under wet and dry fatigue conditions. *J Prosthodont* 2009; 18: 649-55.
4. Buonocore MG: A simple method of increasing the adhesion of acrylic filling materials to enamel surfaces. *J Dent Res* 1955; 34: 849-53.
5. Edelhoff D, Sorensen JA: Tooth structure removal associated with various preparation designs for posterior teeth. *The International journal of periodontics & restorative dentistry* 2002; 22: 241-9.
6. Fischer J, Stawarczyk B, Hammerle CH: Flexural strength of veneering ceramics for zirconia. *J Dent* 2008; 36: 316-21.
7. 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* 2013; 17: 275-84.
8. Guess PC, Selz CF, Steinhart YN, Stampf S, Strub JR: Prospective clinical split-mouth study of pressed and CAD/CAM all-ceramic partial-coverage restorations: 7-year results. *Int J Prosthodont* 2013; 26: 21-5.
9. Guess PC, Zavanelli RA, Silva NR, Bonfante EA, Coelho PG, Thompson VP: Monolithic CAD/CAM lithium disilicate versus veneered Y-TZP crowns: comparison of failure modes and reliability after fatigue. *Int J Prosthodont* 2010; 23: 434-42.
10. Heintze SD, Rousson V: Survival of zirconia- and metal-supported fixed dental prostheses: a systematic review. *Int J Prosthodont* 2010; 23: 493-502.
11. Li RW, Chow TW, Matinlinna JP: Ceramic dental biomaterials and CAD/CAM technology: state of the art. *Journal of prosthodontic research* 2014; 58: 208-16.
12. Nam SJ, Yoon MJ, Kim WH, Ryu GJ, Bang MK, Huh JB: Marginal and Internal Fit of Conventional Metal-Ceramic and Lithium Disilicate CAD/CAM Crowns. *Int J Prosthodont* 2015; 28: 519-21.
13. Ng J, Ruse D, Wyatt C: A comparison of the marginal fit of crowns fabricated with digital and conventional methods. *J Prosthet Dent* 2014; 112: 555-60.
14. Owen CP: Retention and resistance in preparations for extracoronal restorations. Part II: Practical and clinical studies. *J Prosthet Dent* 1986; 56: 148-53.
15. Piwowarczyk A, Bender R, Ottl P, Lauer HC: Long-term bond between dual-polymerizing cementing agents and human hard dental tissue. *Dent Mater* 2007; 23: 211-7.
16. Song TJ, Kwon TK, Yang JH, Han JS, Lee JB, Kim SH, et al.: Marginal fit of anterior 3-unit fixed partial zirconia restorations using different CAD/CAM systems. *The journal of advanced prosthodontics* 2013; 5: 219-25.
17. Stawarczyk B, Beuer F, Ender A, Roos M, Edelhoff D, Wimmer T: Influence of cementation and cement type on the fracture load testing methodology of anterior crowns made of different materials. *Dent Mater J* 2013; 32: 888-95.
18. Stawarczyk B, Hristova E, Sener B, Roos M, Edelhoff D, Keul C: Effect of hydrofluoric acid etching duration on fracture load and surface properties of three CAD/CAM glass-ceramics. *Oral health and dental management* 2014; 13: 1131-9.
19. Stawarczyk B, Ozcan M, Trottmann A, Hammerle CH, Roos M: Evaluation of flexural strength of hippped and presintered zirconia using different estimation methods of Weibull statistics. *Journal of the mechanical behavior of biomedical materials* 2012; 10: 227-34.
20. Trushkowsky RD: Ceramic inlay fabrication with three-dimensional copy milling technology--Celay. *Compendium of continuing education in dentistry (Jamesburg, NJ : 1995)* 1998; 19: 1077-80, 82-4 passim; quiz 86.
21. Valenti M, Valenti A: Retrospective survival analysis of 261 lithium disilicate crowns in a private general practice. *Quintessence Int* 2009; 40: 573-9.

Ernst CP, Wenzl N, Stender E, Willershausen B. Retentive strengths of cast gold crowns using glass ionomer, compomer, or resin cement. *J Prosthet Dent* 1998; 79: 472-476

Palacios RP, Johnson GH, Phillips KM, Raigrodski AJ. Retention of zirconium oxide ceramic crowns with three types of cement. . J Prosthet Dent 2006; 96:104-114.

Stawarczyk B, Hartmann L, Hartmann R, Roos M, Ender A, Özcan M, Sailer I, Hämmerle CHF. Impact of Gluma Desensitizer on the tensile strength of zirconia crowns: An in-vitro study. Clin Oral Investig 2012; 16: 201-213

Keul C, Kohen D, Eichberger M, Roos M, Gernet W, Stawarczyk B. The effect of different pretreatment methods of PM-MA-based crowns on the long-term tensile bond strength to dentin abutments: Clin Oral Investig. 2015;19(1):35-43.

Stawarczyk B, Stich N, Eichberger M, Edelhoff D, Roos M, Gernet W, Keul C. Long-term tensile bond strength of differently cemented nanocomposite CAD/CAM crowns on dentin abutment. Dent Mater 2014;30(3):334-42.

Uhrenbacher J, Schmidlin PR, Keul C, Eichberger M, Roos M, Gernet W, Stawarczyk B. The effect of surface modification on the retention strength of PEEK crowns adhesively bonded to dentin abutments. J Prosthet Dent 2014;112:1489-1497.