



Enhancing smiles

From Direct to Indirect – Shaping smiles with
art and knowledge

Literature list

Therapeutic gradient

- Alyahya Y. **A narrative review of minimally invasive techniques in restorative dentistry.** Saudi Dent J. 2024 Feb;36(2):228-233. doi: 10.1016/j.sdentj.2023.11.005. Epub 2023 Nov 4. PMID: 38419994; PMCID: PMC10897608.
<https://pubmed.ncbi.nlm.nih.gov/38419994/>
"This narrative review aimed to provide a comprehensive overview of minimal invasive dentistry (MID) by synthesizing relevant articles obtained from various sources [...]The selected articles elucidate the characteristics of MID, the application of the ART, and the principles of minimum intervention in dentistry."
- Maniar, Dr & Mehta, Dr & Rajput, Dr & Patel, Dr. (2025). **Biomimetic and Digital Innovations in Aesthetic Dentistry: The Minimally Invasive Approach – A Literature Review.** Journal of Medical and Dental Science Research. 12. 10-13. 10.35629/076X-12031013.
https://www.researchgate.net/publication/390510855_Biomimetic_and_Digital_Innovations_in_Aesthetic_Dentistry_The_Minimally_Invasive_Approach_-_A_Literature_Review
"This review examines essential MIAD procedures, including resin infiltration, composite bonding, enamel microabrasion, injection molding, and laser-assisted treatments. It also explores the role of digital dentistry, CAD/CAM technology, and nanotechnology-enhanced restorative materials in improving treatment precision and durability."
- Pini NI, Sundfeld-Neto D, Aguiar FH, Sundfeld RH, Martins LR, Lovadino JR, Lima DA. **Enamel microabrasion: An overview of clinical and scientific considerations.** World J Clin Cases. 2015 Jan 16;3(1):34-41. doi: 10.12998/wjcc.v3.i1.34. PMID: 25610848; PMCID: PMC4295217.
<https://pubmed.ncbi.nlm.nih.gov/25610848/>
"Surface enamel alterations that result from microabrasion, such as roughness and microhardness, are easily restored by saliva. Clinical studies support the efficacy and longevity of this safe and minimally invasive treatment."



- Villalobos-Tinoco J, Jurado CA, Rojas-Rueda S, Citrin NS, Colvert S, Gutierrez-Quintero JL, Mekled S. **Micro- and Macroabrasion in the Esthetic Zone: A Narrative Review and Case Study.** Dent J (Basel). 2025 Apr 23;13(5):183. doi: 10.3390/dj13050183. PMID: 40422603; PMCID: PMC12110105.

<https://pubmed.ncbi.nlm.nih.gov/40422603/>

"Micro- and macroabrasion can be effective and minimally invasive methods for treating stained anterior teeth. Superficial stains can be treated with microabrasion, while deeper stains may require macroabrasion. In some clinical scenarios, tooth whitening can also be combined with these treatments."

- Singh S, Asthana G. **The rise of noninvasive esthetic dentistry: Myth or reality?** J Conserv Dent Endod. 2025 Mar;28(3):209-210. doi: 10.4103/JCDE.JCDE_139_25. Epub 2025 Mar 3. PMID: 40256698; PMCID: PMC12007737.

<https://pubmed.ncbi.nlm.nih.gov/40256698/>

"The pertinent question arises: Is the rise of noninvasive esthetic dentistry a tangible reality or merely an aspirational concept?"



Injection Moulding Technique

Injection Moulding Technique

- Liaropoulou YM, Jiménez AK, Chierico F, Blatz MB. **The Multilayer Flowable Injection Technique for Highly Esthetic Restorations.** J Esthet Restor Dent. 2025 Jun 27. doi: 10.1111/jerd.13500. Epub ahead of print. PMID: 40574665.
<https://pubmed.ncbi.nlm.nih.gov/40574665/>
"The multilayer injection technique facilitates predictable transfer of the digitally planned dentin and enamel tooth structure shapes and volumes to the patient's mouth to fabricate highly esthetic and minimally invasive direct restorations with flowable resin-based composites."
- Kılıç, Vahti & Baktir, Seda. (2024). **A CONTEMPORARY REVIEW OF INJECTION MOLDING TECHNIQUE AND MATERIALS USED.**
https://www.researchgate.net/publication/391469802_A_CONTEMPORARY_REVIEW_OF_INJECTION_MOLDING_TECHNIQUE_AND_MATERIALS_USED
- Kouri V, Moldovani D, Papazoglou E. **Accuracy of Direct Composite Veneers via Injectable Resin Composite and Silicone Matrices in Comparison to Diagnostic Wax-Up.** J Funct Biomater. 2023 Jan 5;14(1):32. doi: 10.3390/jfb14010032. PMID: 36662079; PMCID: PMC9864032.
<https://pubmed.ncbi.nlm.nih.gov/36662079/>
"Conclusions: (1) Use of one or two matrices and the injection of flowable composite were accurate techniques. (2) Use of a matrix for each tooth combined with a pre-heated composite was the most inaccurate technique, but the use of the clear tray in combination with the matrix improved the accuracy."
- Cortés-Bretón Brinkmann J, Albánchez-González MI, Lobato Peña DM, García Gil I, Suárez García MJ, Peláez Rico J. **Improvement of aesthetics in a patient with tetracycline stains using the injectable composite resin technique: case report with 24-month follow-up.** Br Dent J. 2020 Dec;229(12):774-778. doi: 10.1038/s41415-020-2405-x. Epub 2020 Dec 18. PMID: 33339923.
<https://pubmed.ncbi.nlm.nih.gov/33339923/>
"Composite veneers realised with injected flowable resin composites are an effective treatment, with minimally invasive possibilities, providing the case selection protocol is correct. In addition, it can be considered as a more economical treatment option."
- Mathew, Anjana & Neela, Shiva & Sivakumar, Murali. (2024). **Restoring with flowables: An injection moulding technique – A report of two cases.** IP Indian Journal of Conservative and Endodontics. 9. 202-206. 10.18231/j.ijce.2024.044
https://www.researchgate.net/publication/387071966_Restoring_with_flowables_An_injection_moulding_technique_-_A_report_of_two_cases
"This efficient method resulted in optimal, aesthetically pleasing outcomes, leading to high patient and dentist satisfaction. Direct veneers made from injectable flowable resin composites provide a minimally invasive treatment option, given that the case selection criteria are appropriately followed. Furthermore,



this approach can be viewed as a more cost-effective alternative. However, additional follow-ups are essential to thoroughly assess the clinical longevity of both the restorations and the materials utilised."

- Vulović S, Stašić JN, Ilić J, Todorović M, Jevremović D, Milić-Lemić A. **Effect of different finishing and polishing procedures on surface roughness and microbial adhesion on highly-filled composites for injectable mold technique.** J Esthet Restor Dent. 2023 Sep;35(6):917-926. doi: 10.1111/jerd.13045. Epub 2023 Apr 11. PMID: 37039335.
<https://pubmed.ncbi.nlm.nih.gov/37039335/>

"The smoothest surfaces possess GUI and GUF, among materials and SLD and SLS, among F/P procedures. GUI adhered the lowest amount of Strep. mutans, due to the smoothest surfaces. FSF and GUF revealed the highest amount of Strep. mutans, due to bis-GMA, bis-MEPP and TEGDMA in their composition."

- Peumans M, Gestakovski D, Mattiussi J, Karagiannopoulos K. **Injection moulding technique with injectable composites: quick fix or long-lasting solution.** Int Dent-African ed. 2023;13:14-22.
[ID-AE 13-1 Peumans.pdf](#)

- Elsahn NA, El-Damanhoury HM, Shirazi Z, Saleh ARM. **Surface Properties and Wear Resistance of Injectable and Computer-Aided Design/Computer Aided Manufacturing-Milled Resin Composite Thin Occlusal Veneers.** Eur J Dent. 2023 Jul;17(3):663-672. doi: 10.1055/s-0042-1750769. Epub 2022 Oct 11. PMID: 36220115; PMCID: PMC10569885.
<https://pubmed.ncbi.nlm.nih.gov/36220115/>

"The effect of TMC on the surface properties and wear resistance of the investigated TOV is material dependent. GU injectable TOV are less influenced by TMC than CS milled TOV. In contrast, BF and SF demonstrated significant VW and Ra which might limit their clinical use as TOV."



- Rajabi H, Denny M, Karagiannopoulos K, Petridis H. **Comparison of Flexural Strength and Wear of Injectable, Flowable and Paste Composite Resins.** Materials (Basel). 2024 Sep 27;17(19):4749. doi: 10.3390/ma17194749. PMID: 39410319; PMCID: PMC11477787. <https://pubmed.ncbi.nlm.nih.gov/39410319/>
"Highly filled flowable composite resins with nano filler particles outperformed a conventional flowable and a paste composite resin in terms of wear resistance and flexural strength, and may be suitable to use in occlusal, load-bearing areas."
- Hançer Sarıca S, Arslan S, Balkaya H. **Comparison of the 2-year clinical performances of class II restorations using different restorative materials.** Clin Oral Investig. 2025 Feb 13;29(2):128. doi: 10.1007/s00784-025-06207-6. PMID: 39945899; PMCID: PMC11825547. <https://pubmed.ncbi.nlm.nih.gov/39945899/>
"High-filler flowable composite and bulk-fill composite exhibited better clinical properties regarding surface gloss compared to conventional composite. It was observed that the marginal adaptation property of the conventional composite were similar to the bulk-fill composite and lower than the high-filler flowable composite."
- Vulović S, Blatz MB, Bukorović J, Živković N, Todorović A, Vencel A, Milić Lemić A. **Effect of acidic media on surface characteristics of highly filled flowable resin-based composites: An in vitro study.** J Esthet Restor Dent. 2025 Feb;37(2):465-476. doi: 10.1111/jerd.13301. Epub 2024 Aug 20. PMID: 39165048. <https://pubmed.ncbi.nlm.nih.gov/39165048/>
"GUI revealed lower Surface Roughness (SR) and higher Surface Hardness (SH) compared to GUF and FSF both before and after exposure to acidic media. The presence of acidic media, especially GJ, significantly increases SR and decreases SH of tested materials."
- Tüter Bayraktar E, Kızıl Öztürk E, Saygılı CC, Türkmen C, Korkut B. **Fluorescence and color adjustment potentials of paste-type and flowable resin composites in cervical restorations.** Clin Oral Investig. 2024 Nov 21;28(12):649. doi: 10.1007/s00784-024-06054-x. PMID: 39567390. <https://pubmed.ncbi.nlm.nih.gov/39567390/>
"Color adjustment level and fluorescence adjustment level were considered coherent for particular composite brands. At the same time, both were better for the paste-type composites than the flowable composites on A2 base shade class V restorations. Fluorescence adjustment potential as well as the color adjustment potential varied among different composite brands regarding paste-type and flowable composites."
- Farghal NS, Awadalkreem F, Dasnadi SP, Habush S, Hatab NA, Harhash A. **Staining susceptibility and the effect of different stain removal techniques on the optical properties of injectable composite resins.** Front Oral Health. 2025 Feb 28;6:1556155. doi: 10.3389/froh.2025.1556155. PMID: 40092145; PMCID: PMC11908588. <https://pubmed.ncbi.nlm.nih.gov/40092145/>



"Injectable composites exhibited lower staining susceptibility than the sculptable nanofilled composite. No stain-removing method restored the color for all composites to the clinically acceptable threshold. In-office bleaching with Opalescence Boost 40% effectively maintained optimal surface gloss, while polishing alone or after bleaching is not recommended due to its negative impact on gloss."

- Chen Y, Bai X, Xu M, Zhou T, Loh YM, Wang C, Pow EHN, Tsoi JKH. **The mechanical, wear, antibacterial properties and biocompatibility of injectable restorative materials under wet challenge.** J Dent. 2024 Jul;146:105025. doi: 10.1016/j.jdent.2024.105025. Epub 2024 May 1. PMID: 38697507.

<https://pubmed.ncbi.nlm.nih.gov/38697507/>

"Injectable nanocomposites outperformed the compomer regarding mechanical properties, wear resistance, and biocompatibility. The tested materials presented comparable antibacterial behaviours. Flowable resin-based composites' performances are affected by multiple factors, and their compositions can be attributed."



Indirect Veneers & Crown

Preparation

- Tafur-Zelada CM, Carvalho O, Silva FS, Henriques B, Özcan M, Souza JCM. **The influence of zirconia veneer thickness on the degree of conversion of resin-matrix cements: an integrative review.** Clin Oral Investig. 2021 Jun;25(6):3395-3408. doi: 10.1007/s00784-021-03904-w. Epub 2021 Mar 30. PMID: 33783593.
<https://pubmed.ncbi.nlm.nih.gov/33783593/>
- Taylor A, Burns L. **Deep margin elevation in restorative dentistry: A scoping review.** J Dent. 2024 Jul;146:105066. doi: 10.1016/j.jdent.2024.105066. Epub 2024 May 12. PMID: 38740249.
<https://pubmed.ncbi.nlm.nih.gov/38740249/>
"DME is a technique that can be used with motivated patients with good oral hygiene if rubber dam isolation is achieved, if there is no invasion of the connective tissue space, and if a strict restorative protocol is adhered to."

Material selection

- Karalar B, Karalar O, Yanıkoğlu N. **Effect of intraoral polishing on the surface property, phase change, and color stainability of monolithic zirconia.** J Prosthet Dent. 2025 Apr;133(4):1090.e1-1090.e8. doi: 10.1016/j.prosdent.2024.12.025. Epub 2025 Feb 1. PMID: 39894698.
<https://pubmed.ncbi.nlm.nih.gov/39894698/>
"The increase in zirconia veneer thickness negatively affects the degree of conversion of resin-matrix cements. Also, shade and microstructure are key factor to improve the light curing of resin cements."
- Verniani, Giulia & Ferrari, Marco & Manfredini, Daniele & Cagidiaco, Edoardo. (2024). **A Randomized Controlled Clinical Trial on Lithium Disilicate Veneers Manufactured by the CAD–CAM Method: Digital Versus Hybrid Workflow.** Prosthesis. 6. 329-340.
10.3390/prosthesis6020025.
https://www.researchgate.net/publication/379563987_A_Randomized_Controlled_Clinical_Trial_on_Lithium_Disilicate_Veneers_Manufactured_by_the_CAD-CAM_Method_Digital_Versus_Hybrid_Workflow
"Milled lithium disilicate veneers showed a good clinical outcome after 2 years of clinical service. No difference was found between fully digital or hybrid workflow."
- Ferrari-Cagidiaco E, Verniani G, Keeling A, Zarone F, Sorrentino R, Manfredini D, Ferrari M. **A randomized controlled clinical trial on press and block lithium disilicate partial crowns: A 4-year recall.** Am J Dent. 2024 Apr;37(2):85-90. PMID: 38704851.
<https://pubmed.ncbi.nlm.nih.gov/38704851/>
"No difference was found between traditional and digital procedure to fabricate the crowns. The two lithium disilicate materials showed similar results after 4 years of clinical service."



- Cebi Tuysuz, C.; Demir, N.; Yuzbasioglu, E. **Does Repolishing Affect the Gloss and Roughness of Lithium Disilicate and Monolithic Zirconia Ceramics?** *Appl. Sci.* **2025**, *15*, 4622.
<https://doi.org/10.3390/app15094622>
"Surface finishing procedures significantly influenced the gloss and roughness of monolithic lithium disilicate and zirconia ceramics. Mechanical polishing systems performed similarly or better than glazing. However, selecting an appropriate polishing system for each material is essential."

- Keskin DE, Sağlam G, Geduk ŞE. **Effect of conventional and digital fabrication techniques on marginal and internal fit of lithium disilicate endocrowns.** *BMC Oral Health.* 2025 Mar 21;25(1):416. doi: 10.1186/s12903-025-05775-z. PMID: 40119390; PMCID: PMC11927280.
<https://pubmed.ncbi.nlm.nih.gov/40119390/>
"It is concluded that all endocrowns had a clinically acceptable marginal and internal fit. The use of digitally generated patterns, CAD-CAM milled or 3D printed, in the fabrication of endocrowns can be effective in producing restorations with improved marginal and internal adaptation."

- Baradee, Ahmad Amro & Spies, Benedikt & Rothlauf, Severin & Vach, Kirstin & Seidenstuecker, Michael & Lüchtenborg, Jörg. (2025). **Effect of environmental conditions on wear resistance of lithium silicate glass-ceramic materials.** *Dental Materials.* 41. 621-630.
10.1016/j.dental.2025.03.004.
https://www.researchgate.net/publication/389940432_Effect_of_environmental_conditions_on_wear_resistance_of_lithium_silicate_glass-ceramic_materials
"Environmental conditions play a major role in the wear performance of LSGCs. Fully crystallized LSGC materials show similar susceptibility to environmental changes compared to LSGC materials requiring crystallization firing. "

- Olcer Us Y, Tuncelli B. **Evaluation of the effects of thermal changes on the bond strength between zirconia framework and veneering ceramic during the firing process.** *Eur Oral Res.* 2023 May 4;57(2):108-114. doi: 10.26650/eor.2023978293. PMID: 37525861; PMCID: PMC10387139.
<https://pubmed.ncbi.nlm.nih.gov/37525861/>
"The main effects of veneering ceramics on shear bond strength were found to be significant ($p=0.042$). The mean shear bond strength values differ according to the cooling process ($p<0.001$). The monoclinic phase ratio increased in groups with fast cooling process."

- Lu Y, Dal Piva AMO, Nedeljkovic I, Tribst JPM, Feilzer AJ, Kleverlaan CJ. **Effect of glazing technique and firing on surface roughness and flexural strength of an advanced lithium disilicate.** *Clin Oral Investig.* 2023 Jul;27(7):3917-3926. doi: 10.1007/s00784-023-05014-1. Epub 2023 May 13. PMID: 37178172; PMCID: PMC10329577.
<https://pubmed.ncbi.nlm.nih.gov/37178172/>
"Two-step crystallization and glazing improved ALD strength compared to the one-step protocol. Refiring and one-step glazing do not increase LD's strength, while two-step glazing has a negative effect."



Material pretreatment

- Ramos RQ, Mercelis B, Ahmed MH, Peumans M, Lopes GC, Van Meerbeek B. **Bonding of Composite Cements Containing 10-MDP to Zirconia Ceramics Without Dedicated Ceramic Primer.** J Adhes Dent. 2024 May 21;26:135-145. doi: 10.3290/j.jad.b5362103. PMID: 38771025; PMCID: PMC11740775.

<https://pubmed.ncbi.nlm.nih.gov/38771025/>

"Adequate bonding to zirconia requires the functional monomer 10-MDP either contained in the composite cement, in which case a separate 10-MDP primer is no longer needed, or in the separately applied primer/adhesive."

- Sukcheep C, Thammajarak P, Guazzato M. **Investigating the impact of different cleaning techniques on bond strength between resin cement and zirconia and the resulting physical and chemical surface alterations.** J Prosthodont. 2024 Aug 26. doi: 10.1111/jopr.13932. Epub ahead of print. PMID: 39188017.

<https://pubmed.ncbi.nlm.nih.gov/38771025/>

"The application of MDP primer before and after contamination is a promising cleaning protocol for removing saliva and silicone disclosing agent contaminants from zirconia surfaces. This approach achieved the highest bond strength and maintained it even after artificial aging through thermocycling."

- Tsuda F, Yoshida K, Sawase T. **Effects of primer components of silane and 10-methacryloyloxydecyl dihydrogen phosphate on resin bonding to tribochemical silica-coated highly translucent zirconia.** Clin Oral Investig. 2024 Nov 12;28(12):638. doi: 10.1007/s00784-024-06024-3. PMID: 39528735.

<https://pubmed.ncbi.nlm.nih.gov/39528735/>

"No significant difference in tensile bond strength was observed between aging conditions for MDP-containing resin cements bonded to tribochemical silica-coated zirconia primed with S + MDP."

Tooth pretreatment

- Uğur M, Kavut İ, Tanrikut ÖÖ, Cengiz Ö. **Effect of ceramic primers with different chemical contents on the shear bond strength of CAD/CAM ceramics with resin cement after thermal ageing.** BMC Oral Health. 2023 Apr 11;23(1):210. doi: 10.1186/s12903-023-02909-z. PMID: 37041493; PMCID: PMC10091622.

<https://pubmed.ncbi.nlm.nih.gov/37041493/>

"The positive combined effects of the 10-MDP and γ -MPTS agents resulted in a significant increase in the bonding strength of the resin cement to the CAD/CAM ceramics. In addition, the increase in the amount of inorganic filler provided a favourable effect on durable adhesion."



Luting (bonding)

- Canatan S, Oz FD, Bolay S. **A randomized, controlled clinical evaluation of two resin cement systems in the adhesion of CAD/CAM-fabricated resin nanoceramic restorations: 18-month preliminary results.** J Esthet Restor Dent. 2022 Oct;34(7):1005-1014. doi: 10.1111/jerd.12910. Epub 2022 Apr 7. PMID: 35388956.
<https://pubmed.ncbi.nlm.nih.gov/35388956/>
"The two resin cement systems showed acceptable clinical performance for the cementation of resin nanoceramic CEREC Omnicam inlay/onlay restorations."
- Kariper E, Cilingir A. **Bond strength of different resin-based cements to 3D-printed permanent restorations.** Am J Dent. 2025 Feb;38(1):39-45. PMID: 40000006.
<https://pubmed.ncbi.nlm.nih.gov/40000006/>
"The GCO groups exhibited significantly higher SBS values than the PF groups in the bonding of the tested 3D-printed restorations. [...] A control group of PF cement showed significantly higher SBS values than the 5,000 and 10,000 cycling of PF groups. [...]"
- van Dijken JW. **A randomized controlled 5-year prospective study of two HEMA-free adhesives, a 1-step self etching and a 3-step etch-and-rinse, in non-carious cervical lesions.** Dent Mater. 2013 Nov;29(11):e271-80. doi: 10.1016/j.dental.2013.08.203. Epub 2013 Sep 1. PMID: 24001950.
<https://pubmed.ncbi.nlm.nih.gov/24001950/>
"The durability in non-carious cervical lesions of the HEMA-free adhesives was successful after 5 years. Despite concerns which have been raised, showed the 1-step SEA one of the best reported clinical dentin bonding effectiveness."
- Karadas M, Bedir F. **Does extended air-drying time improve bond strength of universal adhesives to enamel?** J Esthet Restor Dent. 2023 Oct;35(7):1113-1120. doi: 10.1111/jerd.13050. Epub 2023 Apr 11. PMID: 37039512.
<https://pubmed.ncbi.nlm.nih.gov/37039512/>
"Extended air-drying times increased solvent evaporation but did not contribute to the bonding effectiveness of the adhesives, regardless of the etching mode."
- Miletic, Vesna & Pour Ronagh, Asana. (2025). **Staining Analysis of Resin Cements and Their Effects on Colour and Translucency Changes in Lithium Disilicate Veneers.** Polymers. 17. 362. 10.3390/polym17030362.
https://www.researchgate.net/publication/388514692_Staining_Analysis_of_Resin_Cements_and_Their_Effects_on_Colour_and_Translucency_Changes_in_Lithium_Disilicate_Veneers
"RelayX had the highest sorption, and Variolink showed the highest solubility, though neither correlated with colour changes. Resin cements influenced colour changes in veneer restorations post-staining, with colour differences associated with initial cement translucency but independent of sorption and solubility."



Luting (durability)

- Yazigi C, Alawi S, Wille S, Lehmann F, Kern M. **Durability of Resin Bonding to Dental 3Y-TZP Zirconia Using Different Adhesive Systems.** Materials (Basel). 2024 Jan 15;17(2):424. doi: 10.3390/ma17020424. PMID: 38255594; PMCID: PMC10820740.
<https://pubmed.ncbi.nlm.nih.gov/38255594/>
"Artificial aging had a significantly negative effect on all test groups. The chosen adhesive-resin system had a significant effect on the resulting TBS values. The highest TBS values were achieved for the self-adhesive luting resin G-Cem One but were statistically comparable to the results obtained for the dual-cure luting resin G-Cem LinkForce."
- Yazigi C, Alawi S, Wille S, Kern M. **Influence of different primers and adhesive system combinations on the durability of resin bonding to lithium disilicate.** J Prosthet Dent. 2025 Apr 11:S0022-3913(25)00265-3. doi: 10.1016/j.prosdent.2025.03.019. Epub ahead of print. PMID: 40221272.
<https://pubmed.ncbi.nlm.nih.gov/40221272/>
"Artificial aging had a negative effect on the bond strength of all groups except 2. After 150 days, the adhesive system significantly influenced the resulting TBS. The use of freshly mixed silane resulted in higher bond strength for all systems after 150 days than the use of the system-specific primer or adhesive monomer, although the increase was not statistically significant for all systems."



Luting (Others)

- Abdel-Gawad S, Dursun E, Ceinos R, Le Goff S, Fasham T, Attal JP, Francois P. **Touch-cure activation by marketed universal resin luting cements of their associated primer to dentin.** J Oral Sci. 2024 Jul 16;66(3):139-144. doi: 10.2334/josnurd.24-0019. Epub 2024 May 3. PMID: 38710613.
<https://pubmed.ncbi.nlm.nih.gov/38710613/>
"Universal" resin luting cements have variable efficacy when used in self-curing mode. The touch-curing mode is also of concern but may show high potential for some formulations."
- D'Alessandro C, Baena E, Josic U, Maravic T, Mancuso E, Ceballos L, Mazzoni A, Blatz MB, Breschi L, Mazzitelli C. **Tack-cure vs conventional polymerization methods: A systematic review on resin composite cements' properties.** J Dent. 2025 Jun 18;160:105917. doi: 10.1016/j.jdent.2025.105917. Epub ahead of print. PMID: 40541918.
<https://pubmed.ncbi.nlm.nih.gov/40541918/>
"TC can provide mechanical properties and interface quality comparable or superior to conventional polymerization methods, while facilitating excess cement removal."
- Shely A, Nissan J, Lugassy D, Rosner O, Zenziper E, Egbaria T, Ben-Izhack G. **Three Self-Adhesive Resin Cements and Their Influence on the Marginal Adaptation of Zirconia-Reinforced Lithium Silicate Single Crowns: An In Vitro Scanning Electron Microscope Evaluation.** J Clin Med. 2024 Jun 5;13(11):3330. doi: 10.3390/jcm13113330. PMID: 38893040; PMCID: PMC11173126.
<https://pubmed.ncbi.nlm.nih.gov/38893040/>
"All four groups showed a clinically acceptable marginal gap (<120 microns). Although all three groups of self-adhesive resin cement showed a significant increase in the marginal gap compared to the temp-bond control group, they were within the limits of clinical acceptability. Regarding the marginal gap, in everyday dentistry, it is acceptable to use all three self-adhesive resin cements, although the G-cem ONE group exhibited the lowest marginal gap for ZLS single crowns."
- Al-Chalabi ZS, Tuna SH. **The effect of thermomechanical aging on the retention of a conometric system in a chewing simulator.** J Prosthodont. 2023 Dec;32(9):838-845. doi: 10.1111/jopr.13638. Epub 2023 Jan 13. PMID: 36600594.
<https://pubmed.ncbi.nlm.nih.gov/36600594/>
"The retention force of the conometric system increased significantly following thermomechanical aging. No crown separation occurred during the thermomechanical aging of the conometric system. There was no significant difference in the retention of the conometric and cemented systems after thermomechanical aging."

