



Evidence-based Dentistry Newsletter

GCI AG, July 2023



G-CEM ONE

Self-adhesive
resin cement

Key Map

	Strong
	Durable
	Aesthetic
	Time-saving
	Cost-efficient



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Bonding property of resin cement to tooth without curing light.

New

Hirano K, Shinozaki Y. 2023. 101st General Session & Exhibition of the IADR. J Dent Res Vol 102 (Spec Iss B): 0424



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The mechanical and adhesive Properties of Three Self-Adhesive Resin Cements.

New

Ding H, Xuedong B, Yee-Man Lo K, Tsoi JK, Wang C, Zhang Y. 2023. 101st General Session & Exhibition of the IADR. J Dent Res Vol 102 (Spec Iss B): 1223.



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Bonding Strength for Lithium Disilicate Glass-Ceramics in Resin Cement System.

New

Kato H, Hirano K, Shinozaki Y. 2023. 52nd Annual Meeting & Exhibition of the AADOCR. J Dent Res Vol 102(Spec Iss A):0406.



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Bond Strength Testing of a Universal Cement System to Teeth.

New

Cowen M, Powers JM. DENTAL ADVISOR Biomaterials Research Center, number 165 – June 2023.



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Immediate Bonding Property of Dual-Cure Resin Cement in Light-Cure Mode

Sato K, Hirano K, Fusejima F. 2022. PER/IADR Oral Health Research Congress. J Dent Res 101 (Spec issue C): P301.

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Occlusal wear resistance of universal resin luting cement

Watanabe H, Barkmeier W, Kawashima S, Latta M, Tsujimoto A. 2022, International Dental Materials Congress (IDMC 2022, Taiwan), P-92.

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Impact of adhesive primer and light-curing on polymerization kinetics of self-adhesive resin cement in association with free radical reaction.

Ozaki A, Shishido S, Nakamura K, Harada A, Katsuda Y, Kanno T, Egusa H. Eur J Oral Sci. 2021 Dec;129(6):e12828.

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Post-Cure Development of the Degree of Conversion and Mechanical Properties of Dual-Curing Resin Cements

Carek A, Dukaric K, Miler H, Marovic D, Tarle Z, Par M. Polymers (Basel). 2022 Sep 2;14(17):3649.

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Influence of Dentin Surface Roughness, Drying Time, and Primer Application on Self-adhesive Composite-Cement Bond Strength

Son SA, Kim BN, Kim JH, Seo DG, Park JK. J Adhes Dent. 2022 Apr 13;24(1):137-146



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Evaluation of wear resistance of resin cements.

Sato K, Hirano K, Fusejima F. 2022. The 41st Annual Meeting of the Japanese Society of Adhesive Dentistry and the International Society of Adhesive Dentistry (IAD2022@Sapporo). Adhes Dent Vol. 40 No. 2 2022



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In-Vitro Wear of Resin Luting Cements

Latta M, Radniecki S, Jared L. 2022. 51st Annual Meeting & Exhibition of the AADOCR. 46th Annual Meeting of the CADR. J Dent Res Vol 101 (Spec Iss A):0197.



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Bond Strength to Implant Abutment Materials and Chemical Polymerization Property of Self-Adhesive Resin Cements

Kakinuma H, Sasaki K. 2022. 100th General Session & Exhibition of the IADR. J Dent Res 101 (Spec Iss B):1353.



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Shear bond strength to modern ceramics for restoration.

Irie M, Okada M, Taketa H, Torii Y, Yoshihara K, Matsumoto T. 2019. The 150th Meeting of the Japanese Society of Conservative Dentistry. P21. (available only in Japanese)



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Evaluation of Bonding Properties of Resin Cement in Self-cure Mode.

Sato K, Arita A, Kumagai T. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A):abstract number 1884.



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Shear bond strength of resin cements to saliva contaminated dentin.

Ishii R, Yokoyama M, Tamura T, Takamizawa T, Amari Y, Miyazaki M, Amano S. 2020. The 153rd Meeting of the Japanese Society of Conservative Dentistry. P24. (available only in Japanese)



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Novel Universal Cement Bond Strength to Multiple Substrates.

Cowen M, Joshi G, Heiss MA, Graham D , Powers JM. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A):abstract number 0934.



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Retention of Ceramic Copings Luted With RMGI and Resin Cement.

Huang C, Joshi G, Heiss MA, Lawson NC. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A):abstract number 1238.

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Wear resistance of a new self-adhesive resin cement.

Horn Borter V, Hirano K, Fusejima F. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A):abstract number 1239

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Evaluation of Immediate Bonding Property of Resin Cement.

Sato K, Hirano K, Fusejima F. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B): abstract number 0202.

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Comparison of Immediate Bonding Strength to Dentin of Resin Cement.

Ishiwata K, Hirano K, Fusejima F. The International Academy for Adhesive Dentistry - 2021 Meeting.26



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Evaluation of Bonding Property to Tooth of Self-Adhesive Resin Cement with Optional Pretreatment Material.

Sato K. International College of Prosthodontic – 2021 Meeting



17

Immediate bond performance of resin composite luting systems to saliva contaminated enamel and dentin in different curing modes.

Ishii R, Takamizawa T, Katsuki S, Iwase K, Shoji M, Sai K, Tsukimoto A, Miyazaki M. Eur J Oral Sci. 2022;e12854



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Shear bond strengths of two newly marketed self-adhesive resin cements to different substrates: A light and scanning electron microscopy evaluation.



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Atalay C, Vural U, Miletic I, Gurgan S. 2021. Microsc Res Tech. 2021;1-9.

Curing Assessment of "Touch and cure" Resin Cements: In-situ Study.



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Eamsa-ard P, Alvarez-Iloret P, Matsumoto M, Sano H. 2020. 98th General Session & Exhibition of the IADR. 2467.

Effect of light irradiation and primer application on polymerization of self-adhesive resin cements monitored by ultrasonic velocity.



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Kurokawa H, Shiratsuchi K, Suda S, Nagura Y, Suzuki S, Moritake N, Yamauchi K, Miyazaki M. 2018. Dental Materials Journal. 37(4):534-541.



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

Abstracts

G-CEM ONE



New

TITLE	Bonding property of resin cement to tooth without curing light.
REFERENCE	Hirano K, Shinozaki Y. 2023. 101 st General Session & Exhibition of the IADR. J Dent Res Vol 102 (Spec Iss B): 0424. https://www3.aievolution.com/iadr/index.cfm?do=ev.viewFv&src=ext&ev=7224
	G-CEM ONE + AEP showed high shear bond strength to dentin at 24h and after 5.000 thermocycles.
	This study suggests that G-CEM ONE may have better clinical performance than those products tested.

New

TITLE	The Mechanical and Adhesive Properties of Three Self-Adhesive Resin Cements.
REFERENCE	Ding H, Xuedong B, Yee-Man Lo K, Tsoi JK, Wang C, Zhang Y. 2023. 101 st General Session & Exhibition of the IADR. J Dent Res Vol 102 (Spec Iss B): 1223. https://www3.aievolution.com/iadr/index.cfm?do=ev.viewFv&src=ext&ev=7347
	G-CEM ONE achieved the highest shear bond strength values and faster initial bond strength to dentin. It also showed high fracture toughness and the lowest wear depth among the tested groups.
	This study suggests that G-CEM ONE may have better clinical performance than those products tested.

New



TITLE	Bonding Strength for Lithium Disilicate Glass-Ceramics in Resin Cement System.
REFERENCE	Kato H, Hirano K, Shinozaki Y. 2023. 52nd Annual Meeting & Exhibition of the AADOCR. J Dent Res Vol 102(Spec Iss A):0406. https://iadr.abstractarchives.com/abstract/52am-3823948/bonding-strength-for-lithium-disilicate-glass-ceramics-in-resin-cement-system
	The combination G-CEM ONE+ G-Multi Primer+ Initial LiSi Block resulted in higher bond strength than other groups tested at both, 24h and 5.000 thermocycles.
	This study suggests that the combination of G-CEM ONE and Initial LiSi Block may result in long-term clinical success.



Abstracts

G-CEM ONE



New



TITLE	Bond Strength Testing of a Universal Cement System to Teeth.
REFERENCE	<p>Cowen M, Powers JM. DENTAL ADVISOR Biomaterials Research Center, number 165 – June 2023.</p> <p>https://www.dentaladvisor.com/pdf-download/?pdf_url=wp-content/uploads/2023/06/RR-165-G-CEM-ONE-G-Premio-BOND_v2.pdf</p>
	<p>G-CEM ONE used in combination with G-Premio BOND resulted in high shear bond strength to enamel and dentin, and the bond strength was maintained after 10.000 thermocycles.</p>
	<p>This study suggests that the combination of G-CEM ONE and G-Premio BOND may result in long-term clinical success.</p>



Abstracts

G-CEM ONE



TITLE	Immediate Bonding Property of Dual-Cure Resin Cement in Light-Cure Mode
REFERENCE	Sato K, Hirano K, Fusejima F. 2022. Dent Res Vol 101 (Spec issue C): P301 https://iadr.abstractarchives.com/abstract/per-iadr2022-3758208/immediate-bonding-property-of-dual-cure-resin-cement-in-light-cure-mode
	G-CEM ONE showed high immediate bonding property even under insufficient light-curing.
	This study suggests that G-CEM ONE may have better clinical performance than those products tested.



TITLE	Occlusal wear resistance of universal resin luting cement.
REFERENCE	Watanabe H, Barkmeier W, Kawashima S, Latta M, Tsujimoto A. 2022, International Dental Materials Congress (IDMC 2022, Taiwan), P-92.
	G-CEM ONE showed lower volume loss and wear depth compared to other materials.
	Due to the high wear resistance, G-CEM ONE may be an excellent choice when the margins are exposed.





Full-paper

G-CEM ONE

TITLE	Impact of adhesive primer and light-curing on polymerization kinetics of self-adhesive resin cement in association with free radical reaction.
REFERENCE	Ozaki A, Shishido S, Nakamura K, Harada A, Katsuda Y, Kanno T, Egusa H. Eur J Oral Sci. 2021 Dec;129(6):e12828 https://onlinelibrary.wiley.com/doi/10.1111/eos.12828
	Adhesive Enhancing Primer, AEP, improved the polymerization and mechanical properties of G-CEM ONE and prevented the inhibition of polymerization that can be caused by water and/or air.
	This study suggests that AEP improved the properties of G-CEM ONE and can contribute to higher durability.



TITLE	Post-Cure Development of the Degree of Conversion and Mechanical Properties of Dual-Curing Resin Cements
REFERENCE	Carek A, Dukaric K, Miler H, Marovic D, Tarle Z, Par M. Polymers (Basel). 2022 Sep 2;14(17):3649. https://www.mdpi.com/2073-4360/14/17/3649
	G-CEM ONE showed the highest value of degree of conversion among all the products tested. Its flexural strength was maintained high even after aggressive aging.
	This study suggests that G-CEM ONE may have better clinical performance than those products tested.



TITLE	Influence of Dentin Surface Roughness, Drying Time, and Primer Application on Self-adhesive Composite-Cement Bond Strength
REFERENCE	Son SA, Kim BN, Kim JH, Seo DG, Park JK. J Adhes Dent. 2022 Apr 13;24(1):137-146 DOI: 10.3290/j.jad.b2916387
	Adhesive Enhancing Primer, AEP, improved the bond strength of G-CEM ONE to dentin. Fine surface roughness and lower drying time resulted in higher bond strength.
	This study suggests that AEP improved G-CEM ONE properties and can result in higher reliability. Moisture on the dentin surface may not have an effect on the adhesive performance of G-CEM ONE.





Abstracts

G-CEM ONE

TITLE	Evaluation of wear resistance of resin cements
REFERENCE	Sato K, Hirano K, Fusejima F. 2022. The 41st Annual Meeting of the Japanese Society of Adhesive Dentistry and the International Society of Adhesive Dentistry (IAD2022@Sapporo). Adhes Dent Vol. 40 No. 2 2022 https://www.adhesive-dent.com/publication/supplement.html
	G-CEM ONE showed significantly lower wear value in both, light-cure and self-cure modes.
	Due to the high wear resistance, G-CEM ONE may be an excellent choice when the margins are exposed.

TITLE	In-Vitro Wear of Resin Luting Cements
REFERENCE	Latta M, Radniecki S, Jared L. 2022. 51st Annual Meeting & Exhibition of the AADOCR. 46th Annual Meeting of the CADR. J Dent Res Vol 101 (Spec Iss A): 0197. https://iadr.abstractarchives.com/abstract/51am-3663024/in-vitro-wear-of-resin-luting-cements
	G-CEM ONE showed significantly lower volume loss and mean depth values.
	Due to the high wear resistance, G-CEM ONE may be an excellent choice when the margins are exposed.


TITLE	Bond Strength to Implant Abutment Materials and Chemical Polymerization Property of Self-Adhesive Resin Cements
REFERENCE	Kakinuma H, Sasaki K. 2022. 100th General Session & Exhibition of the IADR. J Dent Res 101 (Spec Iss B):1353. https://iadr.abstractarchives.com/abstract/22iaqs-3718767/bond-strength-to-implant-abutment-materials-and-chemical-polymerization-property-of-self-adhesive-resin-cements
	G-CEM ONE showed the highest flexural strength and shear bond strength.
	This study suggests that G-CEM ONE may have long-term clinical success with different implant abutment materials.









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G-CEM ONE

TITLE	Shear bond strength to modern ceramics for restoration
REFERENCE	Irie M, Okada M, Taketa H, Torii Y, Yoshihara K, Matsumoto T. 2019. The 150th Meeting of the Japanese Society of Conservative Dentistry. P21. (available only in Japanese)
	Bond strength of G-CEM ONE with either hydrofluoric etched lithium disilicate or feldspar surface may help to have a reliable clinical performance.



TITLE	Evaluation of Bonding Properties of Resin Cement in Self-cure Mode
REFERENCE	Sato K, Arita A, Kumagai T. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A):abstract number 1884. https://iadr.abstractarchives.com/abstract/19iags-3163131/evaluation-of-bonding-properties-of-resin-cement-in-self-cure-mode
	Tensile bond strength against bovine dentin of G-CEM ONE in the self-adhesive mode was 31% and 53% higher than RelyX Unicem and Maxcem Elite respectively. When AEP was used, 49% and 89% higher than RelyX Ultimate and NX3 Nexus respectively.
	This study suggests that G-CEM ONE may have better clinical performance than those products tested.



TITLE	Shear bond strength of resin cements to saliva contaminated dentin.
REFERENCE	Ishii R, Yokoyama M, Tamura T, Takamizawa T, Amari Y, Miyazaki M, Amano S. 2020. The 153rd Meeting of the Japanese Society of Conservative Dentistry. P24. (available only in Japanese)
	G-CEM ONE showed the highest shear bond strength against bovine dentin among all the tested groups, and it was not affected by saliva contamination.
	Even in the presence of saliva contamination, G-CEM ONE may have better clinical results than those products tested.





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G-CEM ONE

TITLE	Novel Universal Cement Bond Strength to Multiple Substrates
REFERENCE	Cowen M, Joshi G, Heiss MA, Graham D , Powers JM. 2021. 99th General Session & Exhibition of the IADR. . J Dent Res 100 (Spec Iss A):abstract number 0934. Novel Universal Cement Bond Strength to Multiple Substrates IADR Abstract Archives
	In the self-adhesive mode, G-CEM ONE showed the highest or equivalent shear-bond strength to the other groups tested. G-CEM ONE+AEP had the highest bond strength dentin after 10 min, without significant drop after aging.
	This study suggests that G-CEM ONE may have long-term clinical success with different restorative materials.



TITLE	Retention of Ceramic Copings Luted With RMGI and Resin Cement
REFERENCE	Huang C, Joshi G, Heiss MA, Lawson NC. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A): abstract number 1238. https://iadr.abstractarchives.com/abstract/21iaqs-3574537/retention-of-ceramic-copings-luted-with-rmqi-and-resin-cement
	G-CEM ONE showed excellent retentive strength with lithium disilicate. AEP significantly increased the retention.
	This study suggests that due to the high retentive tensile strength of G-CEM ONE, clinical success may be achieved.



TITLE	Wear resistance of a new self-adhesive resin cement
REFERENCE	Horn Borter V, Hirano K, Fusejima F. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A):abstract number 1239. Wear Resistance of a new Self-Adhesive Resin Cement IADR Abstract Archives
	G-CEM ONE showed lower volume loss than the other groups in both, light-cure and self-cure modes.
	Thanks to the high wear resistance, G-CEM ONE can maintain an invisible cement line, enabling high aesthetic indirect restorations.





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TITLE	Evaluation of Immediate Bonding Property of Resin Cement
REFERENCE	Sato K, Hirano K, Fusejima F. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B): abstract number 0202. https://iadr.abstractarchives.com/abstract/ced-iadr2021-3579621/evaluation-of-immediate-bonding-property-of-resin-cement
	At 5 min, the SBS of G-CEM ONE +AEP to dentin was much higher compared to RelyX Universal+ ScotchBond Universal Plus and PANAVIA V5+ tooth primer. The superiority was maintained after 24hours.
	This study suggests that G-CEM ONE may have netter clinical performance than those products tested.



TITLE	Comparison of Immediate Bonding Strength to Dentin of Resin Cement
REFERENCE	Ishiwata K, Hirano K, Fusejima F. The International Academy for Adhesive Dentistry - 2021 Meeting. Abstract id 26. http://adhesivedentistry.org/2021abstractid/26/
	G-CEM ONE in combination with AEP showed the highest bond strength at 5 min. and 24-h.
	This study suggests that G-CEM ONE may have netter clinical performance than those products tested.



TITLE	Evaluation of Bonding Property to Tooth of Self-Adhesive Resin Cement with Optional Pretreatment Material
REFERENCE	Sato K. International College of Prosthodontic – 2021 Meeting. <i>Link not available</i>
	G-CEM ONE in combination with AEP showed the highest bond strength at 24-h.
	This study suggests that G-CEM ONE may have netter clinical performance than those products tested.



Full Paper

G-CEM ONE



TITLE	Immediate bond performance of resin composite luting systems to saliva-contaminated enamel and dentin in different curing modes
REFERENCE	Ishii R, Takamizawa T, Katsuki S, Iwase K, Shoji M, Sai K, Tsukimoto A, Miyazaki M. Eur J Oral Sci. 2022;e12854. https://doi.org/10.1111/eos.12854
	G-CEM ONE in combination with AEP showed a high bond strength to enamel and dentin and it was not affected by saliva contamination.
	This study suggests that G-CEM ONE may have netter clinical performance than those products tested.

TITLE	Shear bond strengths of two newly marketed self-adhesive resin cements to different substrates: A light and scanning electron microscopy evaluation
REFERENCE	Atalay C, Vural U, Miletic I, Gurgan S. 2021. Microsc Res Tech. 2021;1-9. https://doi.org/10.1002/jemt.24031
	G-CEM ONE+AEP demonstrated superior SBS to dentin compared to RelyX Universal+Scotchbond
	Universal Plus. Both cements had similar SBS to enamel and LiSi Block. This study suggests that G-CEM ONE may have long-term clinical success with different restorative materials.



Abstracts


G-CEM ONE Paste Pak

TITLE	Curing Assessment of "Touch and cure" Resin Cements: In-situ Study
REFERENCE	Eamsa-ard P, Alvarez-Iloret P, Matsumoto M, Sano H. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A): abstract number 2467. https://iadr.abstractarchives.com/abstract/20iags-3328173/curing-assessment-of-touch-and-cure-resin-cements-in-situ-study
	Conversion degree of G-CEM ONE was 10% and 7% higher than PANAVIA V5 and RelyX Ultimate respectively.
	High degree of conversion leads to more durable bonding in clinical cases.



Full Paper

G-CEM ONE Paste Pak

TITLE	Effect of light irradiation and primer application on polymerization of self-adhesive resin cements monitored by ultrasonic velocity
REFERENCE	Kurokawa H, Shiratsuchi K, Suda S, Nagura Y, Suzuki S, Moritake N, Yamauchi K, Miyazaki M. 2018. Dental Materials Journal. 37(4):534-541. https://doi.org/10.4012/dmj.2017-215
	This study demonstrated that G-CEM ONE is less technique sensitive as compared to RelyX Ultimate. Adhesive performance of G-CEM ONE will not be affected by insufficient light source.