



# Evidence-based Dentistry Newsletter

GCI AG, March 2021



# Initial LiSi Block

Lithium Disilicate  
Redefined for CAD/CAM

## Key Map

	Strong
	Durable
	Aesthetic
	Time-saving
	Cost-efficient



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## Chemical durability of CAD/CAM glass-ceramic blocks.

Hoshino T, Matsudate Y, Sasaki K. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A):abstract number 0100.



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## Mechanical properties and microstructure of novel Lithium disilicate glass ceramic block for CAD/CAM.

Nagaoka K, Kato K, Akiyama S, Kojima K, Miyake T, Azuma T, Shiraki K, Yamamoto K, Kumagai T. 2019. ICP and EPA Joint Meeting.



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## In vitro Surface Roughness of Novel Lithium Silicate CAD/CAM Material.

Valcanaia A, Neiva G. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A): abstract number 1827.



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## Edge Chipping Resistance of Glass Ceramic Block for CAD/CAM.

Kato K, Kumagai T, Akiyama, Kojima K, Miyake T, Azuma T, Nagaoka K, Shiraki K, Fujimoto A, Yamamoto K. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A):abstract number 0083.



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## Influence of Crystallization Firing on the Fit of Lithium Silicate Inlays

Niizuma Y, Kobayashi M, Sugai R, Mizukami H, Manabe A. 2021. 99th General Session & Exhibition of the IADR. 1578.



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## Wear properties of lithium silicate glass ceramic block for CAD/CAM

Kojima K, Kumagai T, Kato K, Akiyama S, Miyake T, Azuma T, Nagaoka K, Shiraki K, Yamamoto K, Sato T. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A): abstract number 1259.



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## Wear resistance of CAD/CAM glass ceramic blocks

Hoshino T, Matsudate Y, Sasaki K. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A): abstract number 1823.



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## Evaluation of Acid Resistance for Novel Lithium Disilicate Glass-Ceramic Block

Azuma T, Shigenori A, Fusejima F. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B): abstract number 0233.



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## Evaluation of shear bond strength of glass-ceramic CAD-CAM materials.

Vombrant T, D'haese R, Sabrosa E, Geber K, Vandeweghe S. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B):abstract number 0203.



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## Fitting evaluation after heat treatment of lithium disilicate glass ceramic block for CAD/CAM.

New

Murata Y, Yamamoto K, Nagaoka K, Azuma T, Kojima K, Akiyama S, Fusejima F. ICP 2021 Virtual Meeting.



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## CAD/CAM fabricated prosthetic accuracies of Lithium Disilicate Glass Ceramic Block.

New

Yamamoto K, Hokii Y, Fusejima F. 2021. ADM 2021 Virtual Meeting.



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## [A randomized controlled clinical trial on press and block lithium disilicate partial crowns: a pilot study.](#)

Kojima K, Ferrari Cagidiaco E, Keeling A, Ferrari M. 2020. J Osseointegr. 12(3):215-221.

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## [Fracture-behavior of CAD/CAM ceramic crowns before and after cyclic fatigue aging.](#)

Garoushi S, Säilynoja E, Vallittu PK, Lassila L. 2021. Int J Prosthodont.

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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.](#)

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

New



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# Abstracts

## Initial LiSi Block

<b>TITLE</b>	<b>Chemical durability of CAD/CAM glass-ceramic blocks</b>
<b>REFERENCE</b>	Hoshino T, Matsudate Y, Sasaki K. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A):abstract number 0100. <a href="https://iadr.abstractarchives.com/abstract/19iaqs-3168964/chemical-durability-of-cadcam-glass-ceramic-blocks">https://iadr.abstractarchives.com/abstract/19iaqs-3168964/chemical-durability-of-cadcam-glass-ceramic-blocks</a>
	Solubility of LiSi Block was much lower than that of the other products tested.
	<b>Low chemical solubility of LiSi may help in successful clinical outcome in the acidic environment of the oral cavity.</b>



<b>TITLE</b>	<b>Mechanical properties and microstructure of novel Lithium disilicate glass ceramic block for CAD/CAM</b>
<b>REFERENCE</b>	Nagaoka K, Kato K, Akiyama S, Kojima K, Miyake T, Azuma T, Shiraki K, Yamamoto K, Kumagai T. 2019. ICP and EPA Joint Meeting.
	The flexural strength of LiSi Block was 17% and 63% higher than Celtra Duo and Vita Enamic respectively.
	<b>Excellent values of flexural strength presented by LiSi Block may help support an outstanding clinical outcome even in the presence of high chewing forces.</b>



<b>TITLE</b>	<b>In vitro Surface Roughness of Novel Lithium Silicate CAD/CAM Material</b>
<b>REFERENCE</b>	Valcanaia A, Neiva G. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A): abstract number 1827. <a href="https://iadr.abstractarchives.com/abstract/20iaqs-3324513/in-vitro-surface-roughness-of-novel-lithium-silicate-cadcam-material">https://iadr.abstractarchives.com/abstract/20iaqs-3324513/in-vitro-surface-roughness-of-novel-lithium-silicate-cadcam-material</a>
	Polishing resulted in the lowest surface roughness.
	<b>Not only does LiSi Block polishability saves time but it also may help reduce wear of opposing dentition or restoration.</b>





# Abstracts

## Initial LiSi Block

<b>TITLE</b>	<b>Edge Chipping Resistance of Glass Ceramic Block for CAD/CAM</b>
<b>REFERENCE</b>	Kato K, Kumagai T, Akiyama, Kojima K, Miyake T, Azuma T, Nagaoka K, Shiraki K, Fujimoto A, Yamamoto K. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A):abstract number 0083. <a href="https://iadr.abstractarchives.com/abstract/20iags-3315704/edge-chipping-resistance-of-glass-ceramic-block-for-cadcam">https://iadr.abstractarchives.com/abstract/20iags-3315704/edge-chipping-resistance-of-glass-ceramic-block-for-cadcam</a>
	LiSi Block presented higher resistance to edge chipping compared to e.max CAD
	<b>Excellent fit and reduced chipping may lead LiSi Block restorations to successful long-term outcomes.</b>

<b>TITLE</b>	<b>Influence of Crystallization Firing on the Fit of Lithium Silicate Inlays</b>
<b>REFERENCE</b>	Niizuma Y, Kobayashi M, Sugai R, Mizukami H, Manabe A. 2021. 99th General Session & Exhibition of the IADR. J Dent Res 100 (Spec Iss A):abstract number 1578. <a href="#">Influence of Crystallization Firing on Fit of Lithium Silicate Inlays IADR Abstract Archives</a>
	LiSi Block had less gaps at the occlusal and cervical margins compared to e.max CAD and Vita Suprinity.
	<b>Distortion or changes in dimension may lead to clinical failure. LiSi Block's technology helps to prevent distortions.</b>



<b>TITLE</b>	<b>Wear properties of lithium silicate glass ceramic block for CAD/CAM</b>
<b>REFERENCE</b>	Kojima K, Kumagai T, Kato K, Akiyama S, Miyake T, Azuma T, Nagaoka K, Shiraki K, Yamamoto K, Sato T. 2019. 97th General Session & Exhibition of the IADR. J Dent Res 98 (Spec Iss A): abstract number 1259. <a href="#">Wear properties of lithium silicate glass ceramic block for CAD/CAM IADR Abstract Archives</a>
	LiSi Block showed 90% less wear compared to e.max CAD and Celtra Duo. The chance of damaging the antagonist was also lower for LiSi Block , 25% and 75% compared to e.max and Celtra Duo respectively.
	<b>Not only does LiSi Block polishability saves time but it also may help reduce wear of opposing dentition or restoration.</b>








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<b>TITLE</b>	<b>Wear resistance of CAD/CAM glass ceramic blocks</b>
<b>REFERENCE</b>	Hoshino T, Matsudate Y, Sasaki K. 2020. 98th General Session & Exhibition of the IADR. J Dent Res 99 (Spec Iss A): abstract number 1823. <a href="https://iadr.abstractarchives.com/abstract/20iags-3294486/wear-resistance-of-cadcam-glass-ceramic-blocks">https://iadr.abstractarchives.com/abstract/20iags-3294486/wear-resistance-of-cadcam-glass-ceramic-blocks</a>
	LiSi Block showed 80% less wear than e.max CAD and 25% less chance to damage the antagonist.
	<b>Not only does LiSi Block polishability saves time but it also may help reduce wear of opposing dentition or restoration.</b>

<b>TITLE</b>	<b>Evaluation of Acid Resistance for Novel Lithium Disilicate Glass-Ceramic Block</b>
<b>REFERENCE</b>	Azuma T, Shigenori A, Fusejima F. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B): abstract number 0233. <a href="https://ced-iadr2021.com/wp-content/uploads/2021/09/Abstract-book_2021-9-20_Adjusted-version.pdf">https://ced-iadr2021.com/wp-content/uploads/2021/09/Abstract-book_2021-9-20_Adjusted-version.pdf</a> p.108
	<b>Low chemical solubility of LiSi Block may help result in successful clinical outcome in the acidic environment of the oral cavity.</b>



<b>TITLE</b>	<b>Evaluation of shear bond strength of glass-ceramic CAD-CAM materials</b>
<b>REFERENCE</b>	Vombrat T, D'haese R, Sabrosa E, Geber K, Vandeweghe S. 2021. CED-IADR/NOF Oral Health Research Congress. J Dent Res 100 (Spec Iss B):abstract number 0203. <a href="https://ced-iadr2021.com/wp-content/uploads/2021/09/Abstract-book_2021-9-20_Adjusted-version.pdf">https://ced-iadr2021.com/wp-content/uploads/2021/09/Abstract-book_2021-9-20_Adjusted-version.pdf</a> p.99
	The shear bond strength of LiSi Block was increased after 5,000 thermocycles.
	<b>Increased value of shear bond strength presented by LiSi Block may help support outstanding clinical outcomes.</b>





# Abstracts

## Initial LiSi Block

New

TITLE	<b>Fitting evaluation after heat treatment of lithium disilicate glass-ceramic block for CAD/CAM</b>
REFERENCE	Murata Y , Yamamoto K, Nagaoka K, Azuma T, Kojima K, Akiyama S, Fusejima F ICP 2021 Virtual Meeting. <i>link not available</i>
 LiSi block showed the smallest gap among the products tested, and gap size of these specimens was not affected by heating treatment.	
 <b>Distortion or changes in dimension may help to clinical failure. LiSi Block’s technology may help to prevent distortions.</b>	



New



TITLE	<b>CAD/CAM fabricated prosthetic accuracies of Lithium Disilicate Glass Ceramic Block</b>
REFERENCE	Yamamoto K, Hokii Y, Fusejima F. 2021. ADM 2021 Virtual Meeting. <i>link not available</i>
 LiSi block showed the highest accuracy compared to e.max and CEREC Tessera.	
 <b>LiSi Block does not need firing, not only saving time , but also contributing to an accurate restoration. Distortion or changes in dimension may lead to clinical failure. LiSi Block’s technology may help to prevent distortions</b>	





# Full Paper

## Initial LiSi Block

<b>TITLE</b>	<b>A randomized controlled clinical trial on press and block lithium disilicate partial crowns: a pilot study</b>
<b>REFERENCE</b>	Ferrari Cagidiaco E, Keeling A, Ferrari M. 2020. J Osseointegr. 12(3):215-221. <a href="https://doi.org/10.23805/JO.2020.12.03.1">https://doi.org/10.23805/JO.2020.12.03.1</a>
	After 1 year of clinical service, LiSi Press and LiSi Block presented similar clinical outcome and effectiveness, with 100% success rate.
	<b>Randomized clinical trial protocols are one of highest level of evidence-based dentistry. Therefore, results presented here, with 100% success rate of LiSi Block, are outstanding.</b>

<b>TITLE</b>	<b>Fracture-behavior of CAD/CAM ceramic crowns before and after cyclic fatigue aging</b>
<b>REFERENCE</b>	Garoushi S, Säilynoja E, Vallittu PK, Lassila L. 2021. Int J Prosthodont. <a href="https://doi.org/10.11607/ijp.7207">doi: 10.11607/ijp.7207</a>
	Without the need of firing, LiSi Block presented similar load bearing capacity to that presented by e.max CAD.
	<b>LiSi Block does not require firing. Its high load bearing capacity may help to prevent catastrophic failure even in the presence of high masticatory forces.</b>

New

<b>TITLE</b>	<b>Shear bond strengths of two newly marketed self-adhesive resin cements to different substrates: A light and scanning electron microscopy evaluation</b>
<b>REFERENCE</b>	Atalay C, Vural U, Miletic I, Gurgan S. 2021. Microsc Res Tech. 2021;1–9. <a href="https://pubmed.ncbi.nlm.nih.gov/36111111/">Shear bond strengths of two newly marketed self-adhesive resin cements to different substrates: A light and scanning electron microscopy evaluation - PubMed (nih.gov)</a>
	LiSi Block performed as good as RelyX Universal when bonding to LiSi Block.
	<b>The combination G-CEM ONE &amp; LiSi Block resulted in high bond strength after 24-h storage period. This may help in producing clinical success.</b>