



## Selection of key clinical evidence supporting Labrida BioClean®

Labrida BioClean® is recommended by EFP as one single mode to clean implants with peri-implant mucositis, -

[https://www.efp.org/fileadmin/uploads/efp/Documents/Other\\_publications/Clinical\\_guidelines/peri-implantitis-guideline-02-mucositis.pdf](https://www.efp.org/fileadmin/uploads/efp/Documents/Other_publications/Clinical_guidelines/peri-implantitis-guideline-02-mucositis.pdf)

| Efficient implant maintenance             | Significant reduction of bleeding on probing and pockets depths after debridement of dental implants with Labrida Bioclean®                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                                           | <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of Peri-Implant mucositis using a resorbable chitosan brush- a pilot clinical study EAO 22nd, annual scientific meeting, poster presentation, Dublin 2013</li> <li>2. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of peri-implant mucositis with a chitosan brush-A pilot randomized clinical trial. Int J Dent Hyg 2019;17:170-176.</li> <li>3. Wohlfahrt JC, Evensen BJ, Zeza B, Jansson H, Pilloni A, Roos-Jansaker AM, Di Tanna GL, Aass AM, Klepp M, Koldslund OC: A novel non-surgical method for mild peri-implantitis- a multicenter consecutive case series. Int J Implant Dent 2017;3:38.</li> </ol> |
| Effective cleaning of the implant surface | Larsen et al: Labrida BioClean®, a titanium curette and an Er:YAG laser showed a similar potential to remove <i>P. gingivalis</i> from the surface of titanium implants                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                           | <p><b>Reference:</b></p> <ol style="list-style-type: none"> <li>4. Larsen et al. 2017. Antimicrobial effects of three different treatment modalities on dental implant surfaces, J of Oral Implantology, Vol. XLIII/No. Six/2017,429-436</li> <li>5. Varghese et al. 2024. Injectable Platelet-Rich Fibrin and Advanced Platelet-Rich Fibrin Demonstrate Enhanced Anti-Biofilm Effect Compared to Enamel Matrix Derivatives on Decontaminated Titanium Surfaces, Dent. J., 12, 175-185</li> <li>6. Ramenzoni et al. 2024. Effect of i-PRF, A-PRF+, and EMD on Osteogenic Potential of Osteoblasts on</li> </ol>                                                                                                                      |

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|                                                                 | <p>Titanium, Clinical Implant Dentistry and Related Research, 0:1-11</p> <p>7. Alabbad et al. 2024. Effect of mechanical instrumentation on titanium implant surface properties, Dental Materials 41 (2025), 383-390</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Gentle to implant surface (demonstrated <i>in vitro</i>)</b> | <p><b>Neither Labrida BioClean® nor an Er:YAG laser altered the implant surface micro-texture significantly when cleaning titanium implants, whereas a titanium curette did</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                 | <p><b>References:</b></p> <p>4. Larsen et al. 2017. Antimicrobial effects of three different treatment modalities on dental implant surfaces, J of Oral Implantology, Vol. XLIII/No. Six/2017,429-436</p> <p>5. Varghese et al. 2024. Injectable Platelet-Rich Fibrin and Advanced Platelet-Rich Fibrin Demonstrate Enhanced Anti-Biofilm Effect Compared to Enamel Matrix Derivatives on Decontaminated Titanium Surfaces, Dent. J., 12, 175-185</p> <p>6. Ramenzoni et al. 2024. Effect of i-PRF, A-PRF+, and EMD on Osteogenic Potential of Osteoblasts on Titanium, Clinical Implant Dentistry and Related Research, 0:1-11</p> <p>7. Alabbad et al. 2024. Effect of mechanical instrumentation on titanium implant surface properties, Dental Materials 41 (2025), 383-390</p> <p>8. Wohlfahrt et al. 2012. A SEM analysis of titanium implant surfaces after instrumentation with BioClean or titanium curette, unpublished data (included in Labrida's Technical File)</p> |
| <b>Treatment of peri-implant mucositis</b>                      | <p><b>Significant reduction of bleeding on probing and pockets depths after debridement of dental implants with Labrida Bioclean®</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                 | <p><b>References:</b></p> <p>1. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of Peri-Implant mucositis using a resorbable chitosan brush- a pilot clinical study EAO 22nd, annual scientific meeting, poster presentation, Dublin 2013</p> <p>2. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of peri-implant mucositis with a chitosan brush-A pilot</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|                                       | <p>randomized clinical trial. Int J Dent Hyg 2019; 17:170-176.</p> <p>9. Bahçeci K et al. 2025: Efficacy of an Oscillating Chitosan Brush Versus an Air Abrasive Device in the Management of Peri-Implant Mucositis: A Randomized Clinical Trial, J. Funct. Biomater, 16, 387</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Prevention of peri-implantitis</b> | <b>Significant reduction of bleeding on probing and pockets depths after debridement of dental implants with Labrida Bioclean®</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                       | <p><b>References:</b></p> <p>3. Wohlfahrt JC, Evensen BJ, Zeza B, Jansson H, Pilloni A, Roos-Jansaker AM, Di Tanna GL, Aass AM, Klepp M, Koldslund OC: A novel non-surgical method for mild peri-implantitis- a multicenter consecutive case series. Int J Implant Dent 2017; 3:38</p> <p>10. Kahn et al. 2022: Non-surgical treatment of mild to moderate peri-implantitis using an oscillating chitosan brush or a titanium curette—A randomized multicentre controlled clinical trial. Clin Oral Impl Res. 2022; 00:1–11</p> <p>11. Kahn et al. 2022. Non-surgical treatment of mild to moderate peri-implantitis using an oscillating chitosan brush or a titanium curette—12-month follow-up of a multicentre randomized clinical trial, Clin Ora Impl Res.2023;00:1-14</p> |
| <b>Supports peri-implant health</b>   | <b>Labrida BioClean® is a documented and efficient device for maintaining dental implants. Infection control is proven in clinical studies</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                       | <p><b>References:</b></p> <p>1. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of Peri-Implant mucositis using a resorbable chitosan brush- a pilot clinical study EAO 22nd, annual scientific meeting, poster presentation, Dublin 2013</p> <p>2. Wohlfahrt JC, Aass AM, Koldslund OC: Treatment of peri-implant mucositis with a chitosan brush-A pilot randomized clinical trial. Int J Dent Hyg 2019;17:170-176.</p> <p>3. Wohlfahrt JC, Evensen BJ, Zeza B, Jansson H, Pilloni A, Roos-Jansaker AM, Di Tanna GL, Aass AM,</p>                                                                                                                                                                                                                                               |

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|                                                                             | <p>Klepp M, Koldsland OC: A novel non-surgical method for mild peri-implantitis- a multicenter consecutive case series. Int J Implant Dent 2017;3:38.</p> <p>10. Kahn et al. 2022: Non-surgical treatment of mild to moderate peri-implantitis using an oscillating chitosan brush or a titanium curette—A randomized multicentre controlled clinical trial. Clin Oral Impl Res. 2022;00:1–11</p> <p>11. Kahn et al. 2022: Non-surgical treatment of mild to moderate peri-implantitis using an oscillating chitosan brush or a titanium curette—12-month follow-up of a multicentre randomized clinical trial, Clin Ora Impl Res.2023;00:1-14</p> <p>12. Samuelsson R, Wohlfahrt JC: Samuelsson and Wohlfahrt, Non-surgical treatment of peri-implantitis using a chitosan brush with adjunctive chemical decontaminants – a retrospective case series, IJOMI, 37(6), 2022, 1261-1267</p> <p>13. Kuka et al. 2024 Reconstructive surgical treatment of peri-implantitis with use of a chitosan brush for decontamination – case series with 1-year follow up, Intl. Journal of Implant Dentistry, 10:60</p> <p>20. Tunkel J, 2025 Saving the implant and the prosthesis: Regenerative treatment of peri-implantitis. Implants – international magazine of oral implantology, vol.26, 3/25; 10-14</p> |
| <b>More comfortable for patients compared to treatment with Ti-curettes</b> | <b>The use of Labrida BioClean™ is perceived as a less painful treatment as compared to Ti-Curettes, measured in a VAS-scale</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                             | <p><b>Reference:</b></p> <p>1. Wohlfahrt JC, Aass AM, Koldsland OC: Treatment of peri-implant mucositis with a chitosan brush-A pilot randomized clinical trial. Int J Dent Hyg 2019;17:170-176.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Supports periodontal health</b>                                          | <b>Significant reduction of bleeding on probing and pockets depths after debridement of residual periodontal pockets with Labrida BioClean®</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                             | <p><b>Reference:</b></p> <p>14. Hussain et al: Treatment of residual pockets using an oscillating chitosan device versus regular curettes alone—A randomized, feasibility parallel-arm clinical trial. J Periodontol. 2021;1–10.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|                              | 15. Klein et al. 2026 Treatment of Stage III and IV periodontitis using an oscillating chitosan device with or without a chitosan gel – a randomized parallel arm clinical trial, Journal of Clinical Periodontology,0:1–13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Supportive literature</b> | <b>Preventive maintenance contributes to infection control as described in the literature</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                              | <p><b>References:</b></p> <p>16. Costa FO, Takenaka-Martinez S, Cota LO, Ferreira SD, Silva GL, Costa JE. Peri-implant disease in subjects with and without preventive maintenance: a 5-year follow-up. J Clin Periodontol. 2012 Feb;39(2):173-81. doi: 10.1111/j.1600-051X.2011.01819.x. Epub 2011 Nov 2</p> <p>17. Roccuzzo M, Layton DM, Roccuzzo A, Heitz-Mayfield LJ. Clinical outcomes of peri-implantitis treatment and supportive care: A systematic review. Clin Oral Implants Res. 2018 Oct;29 Suppl 16:331-350. doi: 10.1111/clr.13287. 8.</p> <p>18. Monje A, Aranda L, Diaz KT, Alarcón MA, Bagramian RA, Wang HL, Catena A. Impact of Maintenance Therapy for the Prevention of Peri-implant Diseases: A Systematic Review and Meta-analysis. J Dent Res. 2016 Apr;95(4):372-9. doi: 10.1177/0022034515622432. Epub 2015 Dec 23. 9.</p> <p>19. Jepsen S, Berglundh T, Genco R, Aass AM, Demirel K, Derks J, Figuero E, Giovannoli JL, Goldstein M, Lambert F, Ortiz-Vigon A, Polyzois I, Salvi GE, Schwarz F, Serino G, Tomasi C, Zitzmann NU. Primary prevention of peri-implantitis: managing peri-implant mucositis. J Clin Periodontol. 2015 Apr;42 Suppl 16:S152- 7. doi: 10.1111/jcpe.12369</p> |