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Title: **Modern AI-driven acquisition to simplify fullarch cases management**

Authors: **Drs Enrique Jadad Bechara & Albéric Santamaría-Loisy, Colombia & France**

References

1. Revilla-León, M.; Gómez-Polo, M.; Vyas, S.; Barmak, B.A.; Gallucci, G.O.; Att, W.; Özcan, M.; Krishnamurthy, V.R. Artificial intelligence models for tooth-supported fixed and removable prosthodontics: A systematic review. J. Prosthet. Dent. 2023, 129, 276–292.

2. Joda, T, Ferrari, M, Gallucci, GO et al (2017) Digital technology in fixed implant prosthodontics. Periodontology 2000, 73 (1). pp. 178- 192," which has been published in final form at [https://doi.org/10.1111/prd.12164].

3. Abduo J, Lau D. Seating accuracy of implant immediate provisional prostheses fabricated by digital workflow prior to implant placement by fully guided static computer-assisted implant surgery: An in vitro study. Clin Oral Implants Res. 2021;32(5):608-618. doi:10.1111/clr.13731

4. Papaspyridakos P, Chen CJ, Singh M, Weber HP, Gallucci GO. Success criteria in implant dentistry: a systematic review. J Dent Res. 2012 Mar;91(3):242–8. doi: 10.1177/0022034511431252.

5. G. O. Gallucci, A. Hamilton, S. Akhondi, K. Pala, and J. F. Peña-Cardelles, “Current State of Evidence for Implant Placement and Loading in Partially Edentulous Patients: A Systematic Review,” Clinical Implant Dentistry and Related Research28, no. 1 (2026): e70120, https://doi.org/10.1111/cid.70120.

6. Papaspyridakos P, De Souza A, Finkelman M, Sicilia E, Gotsis S, Chen YW, Vazouras K, Chochlidakis K. Digital vs conventional full-arch implant impressions: a retrospective analysis of 36 edentulous jaws. J Prosthodont. 2023;32(4):325-330. doi:10.1111/jopr.13536.

7. Revilla-León M, Subramanian SG, Özcan M, Krishnamurthy VR. Clinical study of the influence of ambient light scanning conditions on the accuracy (trueness and precision) of an intraoral scanner. J Prosthodont. 2020;29(2):107-113. doi:10.1111/jopr.13135.

8. Ender A, Mehl A. Accuracy of complete-arch dental impressions: a new method of measuring trueness and precision. J Prosthet Dent. 2013;109(2):121-128. doi:10.1016/S0022-3913(13)60028-1. PMID: 23395338.

9. Alikhasi M, Alsharbaty MH, Moharrami M. Digital implant impression technique accuracy: a systematic review. Implant Dent. 2017;26(6):929-935. doi:10.1097/ID.0000000000000683. PMID: 29068869.

10. Paratelli A, Vania S, Gómez-Polo C .Techniques to improve the accuracy of complete arch implant intraoral digital scans: A systematic review The Journal of Prosthetic Dentistry, 2021; 129, 844-854.

11. Cheng J, Zhang H, Liu H, Li J, Wang HL, Tao X. Accuracy of edentulous full-arch implant impression: an in vitro comparison between conventional impression, intraoral scan with and without splinting, and photogrammetry. Clin Oral Implants Res. 2024;35(5):560-572. doi:10.1111/clr.14252. PMID: 38421115.

12. Amin S, Weber HP, Finkelman M, El Rafie K, Kudara Y, Papaspyridakos P. Digital vs. conventional full-arch implant impressions: a comparative study. Clin Oral Implants Res. 2017;28(11):1360-1367. doi:10.1111/clr.12994. PMID: 28039903.

13. Martins, J.; Rangel, J.; de Araújo Nobre, M.; Ferro, A.; Nunes, M.; Almeida, R.; Moura Guedes, C. A New Full Digital Workflow for Fixed Prosthetic Rehabilitation of Full-Arch Edentulism Using the All-on-4 Concept. Medicina 2024, 60, 720. https://doi.org/10.3390/medicina60050720.

14. Revilla-León M, Gómez-Polo M, Rutkunas V, Ntovas P, Kois JC. Classification of complete-arch implant scanning techniques recorded by using intraoral scanners. J Esthet Restor Dent. 2025 Jan;37(1):236–43. doi: 10.1111/jerd.13322.

15. Gómez-Polo M, Donmez MB, Çakmak G, Yilmaz B, Revilla-León M. Influence of implant scan body design (height, diameter, geometry, material, and retention system) on intraoral scanning accuracy: a systematic review. J Prosthodont. 2024;33(1):3-15. doi:10.1111/jopr.13774. PMID: 37771200.

16. Gómez-Polo M, Sallorenzo A, Cascos R, Ballesteros J, Barmak AB, Revilla-León M. Conventional and digital complete arch implant impression techniques: an in vitro study comparing accuracy. J Prosthet Dent. 2024;131(3):426-433. doi:10.1016/j.prosdent.2022.08.028. PMID: 36539313.

17. Revilla-León M, Gómez-Polo M, Sailer I, Kois JC, Rokhshad R. An overview of artificial intelligence based applications for assisting digital data acquisition and implant planning procedures. J Esthet Restor Dent. 2024;36(7):1533-1545. doi:10.1111/jerd.13249. PMID: 38757761.

18. Revilla-León M, Gómez-Polo M, Vyas S, Barmak BA, Gallucci GO, Att W, Krishnamurthy VR. Artificial intelligence applications in implant dentistry: a systematic review. J Prosthet Dent. 2023;129(2):293-300. doi:10.1016/j.prosdent.2021.05.008. PMID: 34144789.

19. Revilla-León M, Cascos R, Barmak AB, Kois JC, Gómez-Polo M. Influence of an artificial intelligence-based application on the accuracy of complete arch implant scans recorded by using an intraoral scanner. J Prosthet Dent. 2025;134(6):2471-2481. doi:10.1016/j.prosdent.2025.02.010. PMID: 40082186.

20. Revilla-León M, Ghunaim D, Barmak AB, Afshari FS, Fang Q, Prasad S. Accuracy of complete arch implant scans recorded by using calibrated scanning techniques: a systematic review and meta-analysis. Report of the Committee on Research in Fixed Prosthodontics of the American Academy of Fixed Prosthodontics. J Prosthet Dent. 2025. doi:10.1016/j.prosdent.2025.11.029. PMID: 41381262.

21. Revilla-León M, Gómez-Polo M, Drone M, Barmak AB, Kois JC, Alonso Pérez-Barquero J. Accuracy of complete arch implant scans recorded by using intraoral and extraoral photogrammetry systems. J Prosthet Dent. 2025;134(6):2508-2514. doi:10.1016/j.prosdent.2025.01.041.

22. Seth C, Bawa A, Gotfredsen K. Digital versus conventional prosthetic workflow for dental students providing implant-supported single crowns: a randomized crossover study. J Prosthet Dent. 2024;131(3):450-456. doi:10.1016/j.prosdent.2023.03.031.

23. Real Andrade N, Albanchez González MI, Mosaddad SA, Revilla-León M, Gómez-Polo M. Accuracy of complete-arch digital implant impressions using conventional scanbodies, ScanTransfers, and splinted ScanTransfers: an in vitro study. BMC Oral Health. 2026;26(1):532. doi:10.1186/s12903-026-07948-w. PMID: 41715052.

24. Revilla-León M, Smith Z, Methani MM, Zandinejad A, Özcan M. Influence of scan body design on accuracy of the implant position as transferred to a virtual definitive implant cast. J Prosthet Dent. 2021;125(6):921-927. doi:10.1016/j.prosdent.2020.03.019. PMID: 32493568.

25. Zailai A, Aldwyyan NF, Alsaedy MH, Alasiri A, Alharbi RK, Alothman AR, Metwaly AS. Clinical effectiveness and accuracy of fully digital workflows versus conventional methods in implant-supported restorations: a systematic review and meta-analysis. Cureus. 2026;18(2):e102864. doi:10.7759/cureus.102864. PMID: 41798445. PMCID: PMC12961569.

26. Orejas-Perez J, Gimenez-Gonzalez B, Ortiz-Collado I, Thuissard IJ, Santamaria-Laorden A. In vivo complete-arch implant digital impressions: comparison of the precision of three optical impression systems. Int J Environ Res Public Health. 2022 Apr 3;19(7):4300. doi: 10.3390/ijerph19074300.