**Supplement 3**

Reasons for study’s exclusion (n = 120).

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| **Reason for exclusion** | **Excluded studies** |
| 1. Does not report on any clinical parameters and/or case definition for peri-implant diseases (n = 28)
 | 1 Bryant SR, Walton JN, MacEntee MI (2015).A 5-year randomized trial to compare 1 or 2 implants for implant overdentures. J Dent Res. 94(1):36-43. doi: 10.1177/0022034514554224. Epub 2014 Oct 27.PMID: 25348544 2 Fischer K, Stenberg T. (2015)Prospective 10-year cohort study based on a randomized, controlled trial (RCT) on implant-supported full-arch maxillary prostheses. part II: prosthetic outcomes and maintenance. Clin Implant Dent Relat Res.15(4):498-508. doi: 10.1111/j.1708-8208.2011.00383.x. 3 Naert IE, Hooghe M, Quirynen M, van Steenberghe D.(1997)The reliability of implant-retained hinging overdentures for the fully edentulous mandible. An up to 9-year longitudinal study. Clin Oral Investig.1(3):119-24. PMID: 9612151 4 Makkonen TA, Holmberg S, Niemi L, Olsson C, Tammisalo T, Peltola J.(1997) A 5-year prospective clinical study of Astra Tech dental implants supporting fixed bridges or overdentures in the edentulous mandible. Clin Oral Implants Res. 8(6):469-75. PMID: 9555206 5 Røynesdal AK, Amundrud B, Hannaes HR.(2001)A comparative clinical investigation of 2 early loaded ITI dental implants supporting an overdenture in the mandible. Int J Oral Maxillofac Implants. 16(2):246-51.PMID: 11324212 6 Mau J, Behneke A, Behneke N, Fritzemeier CU, Gomez-Roman G, d'Hoedt B, Spiekermann H, Strunz V, Yong M (2003)Randomized multicenter comparison of 2 IMZ and 4 TPS screw implants supporting bar-retained overdentures in 425 edentulous mandibles..Int J Oral Maxillofac Implants.18(6):835-47. 7 Ravald N, Dahlgren S, Teiwik A, Gröndahl K.(2012) Long-term evaluation of Astra Tech and Brånemark implants in patients treated with full-arch bridges. Results after 12-15 years. Clin Oral Implants Res. 2013 Oct;24(10):1144-51. doi: 10.1111/j.1600-0501.2012.02524.x. 8 Naert I, Gizani S, Vuylsteke M, Van Steenberghe D.(1999)A 5-year prospective randomized clinical trial on the influence of splinted and unsplinted oral implants retaining a mandibular overdenture: prosthetic aspects and patient satisfaction. J Oral Rehabil. 26(3):195-202. PMID: 10194726 9 Jemt T, Bergendal B, Arvidson K, Bergendal T, Karlsson LD, Linden B, Rundcrantz T, Wendelhag (2002)Implant-supported welded titanium frameworks in the edentulous maxilla: a 5-year prospective multicenter study. I.Int J Prosthodont. 15(6):544-8. 10 Cannizzaro G, Leone M, Torchio C, Viola P, Esposito M.(2008)Immediate versus early loading of 7-mm-long flapless-placed single implants: a split-mouth randomised controlled clinical trial. Eur J Oral Implantol. 1(4):277-92.11 Assad AS, Hassan SA, Shawky YM, Badawy MM.(2007) Clinical and radiographic evaluation of implant-retained mandibular overdentures with immediate loading. Implant Dent. 16(2):212-23. 12 Grandi T, Guazzi P, Samarani R, Garuti G, Grandi G.(2012) Immediate loading of two unsplinted implants retaining the existing complete mandibular denture in elderly edentulous patients: 1-year results from a multicentre prospective cohort study. Eur J Oral Implantol. 5(1):61-8. 13 Cannizzaro G, Felice P, Ippolito DR, Velasco-Ortega E, Esposito M.(2018) Immediate loading of fixed cross-arch prostheses supported by flapless-placed 5 mm or 11.5 mm long implants: 5-year results from a randomised controlled trial. Eur J Oral Implantol. 11(3):295-306. 14 Park JH, Shin SW, Lee JY.(2019) Bar versus ball attachments for maxillary four-implant retained overdentures: A randomized controlled trial. Clin Oral Implants Res. 2019 Nov;30(11):1076-1084. doi: 10.1111/clr.13521. 15 Jokstad A, Ellner S, Gussgard A.(2011) Comparison of two early loading protocols in full arch reconstructions in the edentulous maxilla using the Cresco prosthetic system: a three-arm parallel group randomized-controlled trial. Clin Oral Implants Res.22(5):455-63. doi: 10.1111/j.1600-0501.2010.02156.x. 16 Grunder, U. (2001). Immediate functional loading of immediate implants in edentulous arches: two-year results. Int J Periodontics Restorative Dent, 21(6), 545-551.17 Tealdo, T., Bevilacqua, M., Pera, F., Menini, M., Ravera, G., Drago, C., & Pera, P. (2008). Immediate function with fixed implant-supported maxillary dentures: a 12-month pilot study. J Prosthet Dent, 99(5), 351-360. doi:10.1016/s0022-3913(08)60082-718 Alves, C. C., Correia, A. R., & Neves, M. (2010). Immediate implants and immediate loading in periodontally compromised patients-a 3-year prospective clinical study. Int J Periodontics Restorative Dent, 30(5), 447-455.19 Barbier, L., Abeloos, J., De Clercq, C., & Jacobs, R. (2012). Peri-implant bone changes following tooth extraction, immediate placement and loading of implants in the edentulous maxilla. Clin Oral Investig, 16(4), 1061-1070. doi:10.1007/s00784-011-0617-920 Horwitz, J., & Machtei, E. E. (2012). Immediate and delayed restoration of dental implants in patients with a history of periodontitis: a prospective evaluation up to 5 years. Int J Oral Maxillofac Implants, 27(5), 1137-1143. 21 Malo, P., Nobre Mde, A., & Lopes, A. (2012). Immediate rehabilitation of completely edentulous arches with a four-implant prosthesis concept in difficult conditions: an open cohort study with a mean follow-up of 2 years. Int J Oral Maxillofac Implants, 27(5), 1177-1190.22 Tealdo, T., Menini, M., Bevilacqua, M., Pera, F., Pesce, P., Signori, A., & Pera, P. (2014). Immediate versus delayed loading of dental implants in edentulous patients' maxillae: a 6-year prospective study. Int J Prosthodont, 27(3), 207-214. doi:10.11607/ijp.356923. Bechara, S., Lukosiunas, A., Dolcini, G. A., & Kubilius, R. (2017). Fixed Full Arches Supported by Tapered Implants with Knife-Edge Thread Design and Nanostructured, Calcium-Incorporated Surface: A Short-Term Prospective Clinical Study. Biomed Res Int, 2017, 4170537. doi:10.1155/2017/417053724 Riemann, M., Wachtel, H., Beuer, F., Bolz, W., Schuh, P., Niedermaier, R., & Stelzle, F. (2019). Biologic and Technical Complications of Implant-Supported Immediately Loaded Fixed Full-Arch Prostheses: An Evaluation of Up to 6 Years. Int J Oral Maxillofac Implants, 34(6), 1482-1492. doi:10.11607/jomi.713325. Shigehara, S., Ohba, S., Nakashima, K., Takanashi, Y., & Asahina, I. (2015). Immediate Loading of Dental Implants Inserted in Edentulous Maxillas and Mandibles: 5-Year Results of a Clinical Study. J Oral Implantol, 41(6), 701-705. doi:10.1563/aaid-joi-D-14-0001826. Hug, S., Mantokoudis, D. & Mericske-Stern, R. (2006) Clinical evaluation of 3 overdenture concepts with tooth roots and implants: 2-year results. Int J Prosthodont 19, 236-243.27. Glibert, M., Vervaeke, S., Jacquet, W., Vermeersch, K., Ostman, P. O. & De Bruyn, H. (2018) A randomized controlled clinical trial to assess crestal bone remodeling of four different implant designs. Clin Implant Dent Relat Res 20, 455-462. doi:10.1111/cid.12604.28. Niedermaier, R., Stelzle, F., Riemann, M., Bolz, W., Schuh, P., & Wachtel, H. (2017). Implant-Supported Immediately Loaded Fixed Full-Arch Dentures: Evaluation of Implant Survival Rates in a Case Cohort of up to 7 Years. Clin Implant Dent Relat Res, 19(1), 4-19. doi:10.1111/cid.12421 |
| 1. Does not specify the prosthetics design when reporting the outcomes in different investigation groups (n = 4)
 | 1 Gotfredsen K, Holm B.(2000) Implant-supported mandibular overdentures retained with ball or bar attachments: a randomized prospective 5-year study. Int J Prosthodont..13(2):125-30. 2 Ferrigno N, Laureti M, Fanali S, Grippaudo G.(2002) A long-term follow-up study of non-submerged ITI implants in the treatment of totally edentulous jaws. Part I: Ten-year life table analysis of a prospective multicenter study with 1286 implants. Clin Oral Implants Res. 13(3):260-73. 3 Abd El-Dayem MA, Assad AS, Eldin Sanad ME, Mahmoud Mogahed SA (2009) Comparison of prefabricated and custom-made bars used for implant-retained mandibular complete overdentures..Implant Dent.18(6):501-11. doi: 10.1097/ID.0b013e3181b4f8574 Malo, P., de Araujo Nobre, M., & Rangert, B. (2007). Implants placed in immediate function in periodontally compromised sites: a five-year retrospective and one-year prospective study. J Prosthet Dent, 97(6 Suppl), S86-95. doi:10.1016/s0022-3913(07)60012-2 |
| 1. Includes patients with fixed and removable prostheses, and does not specify the prostheses design in the reported outcomes (n = 1)
 | 1 Heschl A, Payer M, Platzer S, Wegscheider W, Pertl C, Lorenzoni M.(2011). Immediate rehabilitation of the edentulous mandible with screw type implants: results after up to 10 years of clinical function. Clin Oral Implants Res. 2012 Oct;23(10):1217-23. doi: 10.1111/j.1600-0501.2011.02292.x.  |
| 1. No information on prosthetic design provided (n = 4)
 | 1 Raes M, D'hondt R, Teughels W, Coucke W, Quirynen M.(2018). A 5-year randomized clinical trial comparing minimaly with moderately rough implants in patients with severe periodontitis. J Clin Periodontol. 2018 Jun;45(6):711-720. doi: 10.1111/jcpe.12901. 2 Raghoebar GM, Friberg B, Grunert I, Hobkirk JA, Tepper G, Wendelhag I.(2003).3-year prospective multicenter study on one-stage implant surgery and early loading in the edentulous mandible. Clin Implant Dent Relat Res. 2003;5(1):39-46. 3 Ferrigno N, Laureti M, Fanali S, Grippaudo G.(2002).A long-term follow-up study of non-submerged ITI implants in the treatment of totally edentulous jaws. Part I: Ten-year life table analysis of a prospective multicenter study with 1286 implants. Clin Oral Implants Res.13(3):260-73. 4 Deporter D, Watson P, Pharoah M, Levy D, Todescan R. (1999). Five- to six-year results of a prospective clinical trial using the ENDOPORE dental implant and a mandibular overdenture. Clin Oral Implants Res. 10(2):95-102.  |
| 5 Includes only partially edentulous dental arches (n = 1) | 1 Chiapasco M, Ferrini F, Casentini P, Accardi S, Zaniboni M.(2006).Dental implants placed in expanded narrow edentulous ridges with the Extension Crest device. A 1-3-year multicenter follow-up study. Clin Oral Implants Res.17(3):265-72.PMID: 16672021  |
| 6 Reports on peri-implant disease without clear disease definition (n = 1) | 1 Schwarz S, Gabbert O, Hassel AJ, Schmitter M, Séché C, Rammelsberg P.(2010).Early loading of implants with fixed dental prostheses in edentulous mandibles: 4.5-year clinical results from a prospective study. Clin Oral Implants Res. 2010 Mar;21(3):284-9. doi: 10.1111/j.1600-0501.2009.01843.x.  |
| 7 Has a follow-up period of less than 1 year (n = 2) | 1 Bernard JP, Belser UC, Martinet JP, Borgis SA.(1995). Osseointegration of Brånemark fixtures using a single-step operating technique. A preliminary prospective one-year study in the edentulous mandible. Clin Oral Implants Res.6(2):122-9. 2 Payne AG, Tawse-Smith A, Thompson WM, Kumara R.(2003).Early functional loading of unsplinted roughened surface implants with mandibular overdentures 2 weeks after surgery. Clin Implant Dent Relat Res.5(3):143-53.PMID: 14575630  |
| 8 Periodontally compromised patients were excluded (n = 1) | 1Gibreel, M., M. Fouad, F. El-Waseef, N. El-Amier and H. Marzook (2017). "Clips vs Resilient Liners Used With Bilateral Posterior Prefabricated Bars for Retaining Four Implant-Supported Mandibular Overdentures." J Oral Implantol 43(4): 273-281. |
| 9 Clinical outcomes of interest presented only graphically (n = 3) | 1 Batenburg RH, Meijer HJ, Raghoebar GM, Van Oort RP, Boering G. (1998).Mandibular overdentures supported by two Brånemark, IMZ or ITI implants. A prospective comparative preliminary study: one-year results. Clin Oral Implants Res. 1998 Dec;9(6):374-83.PMID: 114299392 Kutkut A, Rezk M, Zephyr D, Dawson D, Frazer R, Al-Sabbagh M.(2019).Immediate Loading of Unsplinted Implant Retained Mandibular Overdenture: A Randomized Controlled Clinical Study. J Oral Implantol. 2019 Oct;45(5):378-389. doi: 10.1563/aaid-joi-D-18-00202. Epub 2019 Aug 7.PMID: 31389755 3 Krennmair G, Seemann R, Weinländer M, Piehslinger E.(2011).Comparison of ball and telescopic crown attachments in implant-retained mandibular overdentures: a 5-year prospective study. Int J Oral Maxillofac Implants. 26(3):598-606. |
| 10 No eligible outcomes for this review (n = 1) | 1 Zitzmann NU, Marinello CP. (2000). Treatment outcomes of fixed or removable implant-supported prostheses in the edentulous maxilla. Part II: clinical findings.J Prosthet Dent. 83(4):434-42. |
| 11 Follow-up period of some patients < 1 year (n = 1) | 1 Testori, T., M. Del Fabbro, M. Capelli, F. Zuffetti, L. Francetti and R. L. Weinstein (2008). Immediate occlusal loading and tilted implants for the rehabilitation of the atrophic edentulous maxilla: 1-year interim results of a multicenter prospective study.Clin Oral Implants Res 19(3): 227-232 |
| 12 Does not provide any information on the periodontal status and/or reasons for tootk loss (n = 73) |  Agliardi, E., S. Panigatti, M. Clerico, C. Villa and P. Malo (2010). Immediate rehabilitation of the edentulous jaws with full fixed prostheses supported by four implants: interim results of a single cohort prospective study. Clin Oral Implants Res 21(5): 459-465.Agliardi, E. L., A. Pozzi, C. F. Stappert, R. Benzi, D. Romeo and E. Gherlone (2014). Imme-diate fixed rehabilitation of the edentulous maxilla: a prospective clinical and radiological study after 3 years of loading. Clin Implant Dent Relat Res 16(2): 292-302.Akoglu, B., M. Ucankale, Y. Ozkan and Y. Kulak-Ozkan (2011). Five-year treatment out-comes with three brands of implants supporting mandibular overdentures. Int J Oral Maxillo-fac Implants 26(1): 188-194.Al-Nawas, B., U. Bragger, H. J. Meijer, I. Naert, R. Persson, A. Perucchi, M. Quirynen, G. M. Raghoebar, T. E. Reichert, E. Romeo, H. J. Santing, M. Schimmel, S. Storelli, C. ten Brug-genkate, B. Vandekerckhove, W. Wagner, D. Wismeijer and F. Muller (2012). A double-blind randomized controlled trial (RCT) of Titanium-13Zirconium versus Titanium Grade IV small-diameter bone level implants in edentulous mandibles--results from a 1-year observation peri-od. Clin Implant Dent Relat Res 14(6): 896-904.Arvidson, K., O. Esselin, E. Felle-Persson, G. Jonsson, J. I. Smedberg and U. Soderstrom (2008). Early loading of mandibular full-arch bridges screw retained after 1 week to four to five Monotype((R)) implants: 3-year results from a prospective multicentre study. Clin Oral Implants Res 19(7): 693-703.Assad, A. S., M. A. Abd El-Dayem and M. M. Badawy (2004). Comparison between mainly mucosa-supported and combined mucosa-implant-supported mandibular overdentures. Im-plant Dent 13(4): 386-394.Behneke, A., N. Behneke and B. d'Hoedt (2002). A 5-year longitudinal study of the clinical effectiveness of ITI solid-screw implants in the treatment of mandibular edentulism. Int J Oral Maxillofac Implants 17(6): 799-810.Bergkvist, G., K. Nilner, S. Sahlholm, U. Karlsson and C. Lindh (2009). Immediate loading of implants in the edentulous maxilla: use of an interim fixed prosthesis followed by a perma-nent fixed prosthesis: a 32-month prospective radiological and clinical study. Clin Implant Dent Relat Res 11(1): 1-10.Bernard, L., M. Vercruyssen, J. Vanderveken, W. Coucke, M. Quirynen and I. Naert (2019). Randomized controlled trial comparing immediate loading with conventional loading using cone-anchored implant-supported screw-retained removable prostheses: A 2-year follow-up clinical trial. J Prosthet Dent 121(2): 258-264.Boerrigter, E. M., R. P. van Oort, G. M. Raghoebar, B. Stegenga, P. J. Schoen and G. Boering (1997). A controlled clinical trial of implant-retained mandibular overdentures: clinical as-pects. J Oral Rehabil 24(3): 182-190.Boven, G. C., H. J. A. Meijer, A. Vissink and G. M. Raghoebar (2020). Maxillary implant overdentures retained by use of bars or locator attachments: 1-year findings from a random-ized controlled trial. J Prosthodont Res 64(1): 26-33.Buttel, A. E., D. A. Gratwohl, P. Sendi and C. P. Marinello (2012). Immediate loading of two unsplinted mandibular implants in edentulous patients with an implant-retained overdenture: an observational study over two years. Schweiz Monatsschr Zahnmed 122(5): 392-397.Cepa, S., B. Koller, B. C. Spies, S. Stampf and R. J. Kohal (2017). Implant-retained prosthe-ses: ball vs. conus attachments - A randomized controlled clinical trial. Clin Oral Implants Res 28(2): 177-185.Cooper, L. F., J. D. Moriarty, A. D. Guckes, L. B. Klee, R. G. Smith, C. Almgren and D. A. Felton (2008). Five-year prospective evaluation of mandibular overdentures retained by two microthreaded, TiOblast nonsplinted implants and retentive ball anchors. Int J Oral Maxillofac Implants 23(4): 696-704.Cune, M. S., J. W. Verhoeven and G. J. Meijer (2004). A prospective evaluation of Frialoc implants with ball-abutments in the edentulous mandible: 1-year results. Clin Oral Implants Res 15(2): 167-173.de Araujo Nobre, M., A. Mano Azul, E. Rocha and P. Malo (2015). Risk factors of peri-implant pathology. Eur J Oral Sci 123(3): 131-139.Degidi, M., D. Nardi and A. Piattelli (2010). Immediate definitive rehabilitation of the eden-tulous patient using an intraorally welded titanium framework: a 3-year prospective study. Quintessence Int 41(8): 651-659.Degidi, M., D. Nardi and A. Piattelli (2010). Prospective study with a 2-year follow-up on immediate implant loading in the edentulous mandible with a definitive restoration using in-tra-oral welding. Clin Oral Implants Res 21(4): 379-385.Eliasson, A., F. Blomqvist, A. Wennerberg and A. Johansson (2009). A retrospective analysis of early and delayed loading of full-arch mandibular prostheses using three different implant systems: clinical results with up to 5 years of loading. Clin Implant Dent Relat Res 11(2): 134-148.Elsyad, M. A., Y. F. Al-Mahdy and M. M. Fouad (2012). Marginal bone loss adjacent to con-ventional and immediate loaded two implants supporting a ball-retained mandibular overden-ture: a 3-year randomized clinical trial. Clin Oral Implants Res 23(4): 496-503.ElSyad, M. A., H. E. Alameldeen and E. A. Elsaih (2019). Four-implant-supported fixed prosthesis and milled bar overdentures for rehabilitation of the edentulous mandible: A 1-year randomized controlled clinical and radiographic study. Int J Oral Maxillofac Implants 34(6): 1493-1503.ElSyad, M. A., B. A. Denewar and E. A. Elsaih (2018). Clinical and Radiographic Evaluation of Bar, Telescopic, and Locator Attachments for Implant-Stabilized Overdentures in Patients with Mandibular Atrophied Ridges: A Randomized Controlled Clinical Trial. Int J Oral Max-illofac Implants 33(5): 1103-1111.Elsyad, M. A., E. A. Elsaih and A. S. Khairallah (2014). Marginal bone resorption around immediate and delayed loaded implants supporting a locator-retained mandibular overden-ture. A 1-year randomised controlled trial. J Oral Rehabil 41(8): 608-618.Elsyad,, E. L., Shaheen, N.H., and Ashmawy, T.A. (2017). Long-term clinical and prosthetic outcomes of soft liner and clip attachments for bar/implant overdentures: a randomised con-trolled clinical trial. J Oral Rehabil 44(6): 472-480.Elsyad, M. A., F. F. Mahanna, M. A. Elshahat and A. H. Elshoukouki (2016). Locators versus magnetic attachment effect on peri-implant tissue health of immediate loaded two implants retaining a mandibular overdenture: a 1-year randomised trial. J Oral Rehabil 43(4): 297-305.Elsyad, M. A. and A. H. Shoukouki (2010). Resilient liner vs. clip attachment effect on peri-implant tissues of bar-implant-retained mandibular overdenture: a 1-year clinical and radio-graphical study. Clin Oral Implants Res 21(5): 473-480.Fartash, B. and K. Arvidson (1997). Long-term evaluation of single crystal sapphire implants as abutments in fixed prosthodontics. Clin Oral Implants Res 8(1): 58-67.Fischer, K. and T. Stenberg (2004). Early loading of ITI implants supporting a maxillary full-arch prosthesis: 1-year data of a prospective, randomized study. Int J Oral Maxillofac Im-plants 19(3): 374-381.Fischer, K. and T. Stenberg (2012). Prospective 10-year cohort study based on a randomized controlled trial (RCT) on implant-supported full-arch maxillary prostheses. Part 1: sandblasted and acid-etched implants and mucosal tissue. Clin Implant Dent Relat Res 14(6): 808-815.Fischer, K., T. Stenberg, M. Hedin and L. Sennerby (2008). Five-year results from a random-ized, controlled trial on early and delayed loading of implants supporting full-arch prosthesis in the edentulous maxilla. Clin Oral Implants Res 19(5): 433-441.Francetti, L., E. Agliardi, T. Testori, D. Romeo, S. Taschieri and M. Del Fabbro (2008). Im-mediate rehabilitation of the mandible with fixed full prosthesis supported by axial and tilted implants: interim results of a single cohort prospective study. Clin Implant Dent Relat Res 10(4): 255-263.Gadallah, A. A., H. G. Youssef and Y. M. Shawky (2012). A comparative study between early occlusal loading at 1 and 6 weeks in implant-retained mandibular overdentures. Implant Dent 21(3): 242-247.Gallucci, G. O., C. B. Doughtie, J. W. Hwang, J. P. Fiorellini and H. P. Weber (2009). Five-year results of fixed implant-supported rehabilitations with distal cantilevers for the edentu-lous mandible. Clin Oral Implants Res 20(6): 601-607.Giannakopoulos, N. N., K. Ariaans, L. Eberhard, A. L. Klotz, K. Oh and S. Kappel (2017). Immediate and delayed loading of two-piece reduced-diameter implants with locator-analog attachments in edentulous mandibles: One-year results from a randomized clinical trial exam-ining clinical outcome and patient expectation. Clin Implant Dent Relat Res 19(4): 643-653.Hegazy, S., N. Elmekawy and R. M. Emera (2016). Peri-implant Outcomes with Laser vs Nanosurface Treatment of Early Loaded Implant-Retaining Mandibular Overdentures. Int J Oral Maxillofac Implants 31(2): 424-430.Heydenrijk, K., G. M. Raghoebar, H. J. Meijer, W. A. Van Der Reijden, A. J. Van Win-kelhoff and B. Stegenga (2002). Two-part implants inserted in a one-stage or a two-stage pro-cedure. A prospective comparative study. J Clin Periodontol 29(10): 901-909.Karabuda, C., T. Tosun, E. Ermis and T. Ozdemir (2002). Comparison of 2 retentive systems for implant-supported overdentures: soft tissue management and evaluation of patient satis-faction. J Periodontol 73(9): 1067-1070. Karoussis, IK., Salvi, GE., Heitz‐Mayfield, LJ., Bragger, U., Hammerle, CH., Lang, NP (2003). Long‐term implant prognosis in patients with and without a history of chronic perio-dontitis: a 10‐year prospective cohort study of the ITI Dental Implant System. Clin Oral Im-plants Res 14:329–339.Kern, M., W. Att, E. Fritzer, S. Kappel, R. G. Luthardt, T. Mundt, D. R. Reissmann, M. Ra-del, M. Stiesch, S. Wolfart and N. Passia (2018). Survival and Complications of Single Dental Implants in the Edentulous Mandible Following Immediate or Delayed Loading: A Random-ized Controlled Clinical Trial. J Dent Res 97(2): 163-170.Krennmair, G., M. Krainhöfner and E. Piehslinger (2007). Implant-supported mandibular overdentures retained with a milled bar: a retrospective study. Int J Oral Maxillofac Implants 22(6): 987-994.Krennmair, G., R. Seemann, A. Fazekas, R. Ewers and E. Piehslinger (2012). Patient prefer-ence and satisfaction with implant-supported mandibular overdentures retained with ball or locator attachments: a crossover clinical trial. Int J Oral Maxillofac Implants 27(6): 1560-1568.Krennmair, G., R. Seemann, M. Weinlander and E. Piehslinger (2011). Comparison of ball and telescopic crown attachments in implant-retained mandibular overdentures: a 5-year pro-spective study. Int J Oral Maxillofac Implants 26(3): 598-606.Krennmair, G., D. Suto, R. Seemann and E. Piehslinger (2012). Removable four implant-supported mandibular overdentures rigidly retained with telescopic crowns or milled bars: a 3-year prospective study. Clin Oral Implants Res 23(4): 481-488.Krennmair, G., M. Weinlander, M. Krainhofner and E. Piehslinger (2006). Implant-supported mandibular overdentures retained with ball or telescopic crown attachments: a 3-year prospec-tive study. Int J Prosthodont 19(2): 164-170.Maniewicz, S., R. Buser, E. Duvernay, L. Vazquez, A. Loup, T. V. Perneger, M. 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