

Supplementary material

List of excluded studies with the reason for exclusion

Abukawa H, Zhang W, Young CS, Asrican R, Vacanti JP, Kaban LB, Troulis MJ, Yelick PC. Reconstructing mandibular defects using autologous tissue-engineered tooth and bone constructs. *J Oral Maxillofac Surg.* 2009 Feb;67(2):335-47. doi: 10.1016/j.joms.2008.09.002. PubMed PMID: 19138608.

Reason: Not related to the clinical question

Abu-Ta'a M. Adjunctive Systemic Antimicrobial Therapy vs Asepsis in Conjunction with Guided Tissue Regeneration: A Randomized, Controlled Clinical Trial. *J Contemp Dent Pract.* 2016 Jan 1;17(1):3-6. PubMed PMID: 27084855.

Reason: Not related to the clinical question

Afrashtehfar KI, Moshaverinia A. Five Things to Know About Regenerative Periodontal Therapies in Dental Medicine. *J N J Dent Assoc.* 2015 Spring;86(2):12-3. PubMed PMID: 26242103.

Reason: Not related to the clinical question

Agrali OB, Kuru BE. Periodontal treatment in a generalized severe chronic periodontitis patient: A case report with 7-year follow-up. *Eur J Dent.* 2015 Apr-Jun;9(2):288-92. doi: 10.4103/1305-7456.156844. PubMed PMID: 26038666; PubMed Central PMCID: PMC4439862.

Reason: Not related to the clinical question

Aimetti M, Ferrarotti F, Mariani G, Fratini A, Giraudo M, Romano F. Enamel Matrix Derivative Proteins in Combination with a Flapless Approach for Periodontal Regeneration of Intrabony Defects: A 2-Year Prospective Case Series. *Int J Periodontics Restorative Dent.* 2016 Nov/Dec;36(6):797-805. doi: 10.11607/prd.2842. PubMed PMID: 27740640.

Reason: Autologous bone wasn't used

Aimetti M, Pigella E, Romano F, Debernardi C. Treatment of mandibular class II furcation defects by the use of amelogenins and autologous bone. Two case reports. *Minerva Stomatol.* 2005 Oct;54(10):583-91. English, Italian. PubMed PMID: 16224378.

Reason: Not a RCT

Aimetti M, Romano F, Pigella E, Piemontese M. Clinical evaluation of the effectiveness of enamel matrix proteins and autologous bone graft in the treatment of mandibular Class II furcation defects: a series of 11 patients. *Int J Periodontics Restorative Dent.* 2007 Oct;27(5):441-7. PubMed PMID: 17990440.

Reason: Not a RCT

Ajwani H, Shetty S, Gopalakrishnan D, Kathariya R, Kulloli A, Dolas RS, Pradeep AR. Comparative evaluation of platelet-rich fibrin biomaterial and open flap debridement in the treatment of two and three wall intrabony defects. *J Int Oral Health.* 2015 Apr;7(4):32-7. PubMed PMID: 25954068; PubMed Central PMCID: PMC4409793.

Reason: Not related to the clinical question

Akdemir O, Lineaweaver WC, Celik S, Cinar C, Zhang F. Submandibular artery: bilobed platysma myocutaneous flap for total lower lip reconstruction. *J Craniomaxillofac Surg.* 2014 Dec;42(8):1861-7. doi: 10.1016/j.jcms.2014.07.004. Epub 2014 Aug 14. PubMed PMID: 25209383

Al-Dabbagh NN, Zahid TM. The impact of fatwas on patients' acceptance of enamel matrix derivatives for periodontal regeneration in Saudi Arabia. *Patient Prefer Adherence.* 2018 Nov 12;12:2405-2411. doi: 10.2147/PPA.S179629. eCollection 2018. PubMed PMID: 30519006; PubMed Central PMCID: PMC6239119.

Reason: Not related to the clinical question

Alexiou A, Vouras I, Menexes G, Konstantinidis A. Comparison of enamel matrix derivative (Emdogain) and subepithelial connective tissue graft for root coverage in patients with multiple gingival recession defects: A randomized controlled clinical study. *Quintessence Int.* 2017;48(5):381-389. doi: 10.3290/j.qi.a38058. PubMed PMID: 28396887.

Reason: Autologous bone wasn't used

Al-Hezaimi K, Al-Askar M, Al-Rasheed A. Characteristics of newly-formed cementum following Emdogain application. *Int J Oral Sci.* 2011 Jan;3(1):21-6. doi: 10.4248/IJOS11009. PubMed PMID: 21449212; PubMed Central PMCID: PMC3469871.

Reason: Autologous bone wasn't used

Alhezaimi K, Al-Shalan T, O'Neill R, Shapurian T, Naghshbandi J, Levi P Jr, Griffin T. Connective tissue-cementum regeneration: a new histologic regeneration following the use of enamel matrix derivative in dehiscence-type defects. A dog model. *Int J Periodontics Restorative Dent*. 2009 Aug;29(4):425-33. PubMed PMID: 19639063.

Reason: Animal study

Al-Hezaimi K, Al-Askar M, Al-Fahad H, Al-Rasheed A, Al-Sourani N, Griffin T, O'Neill R, Javed F. Effect of enamel matrix derivative protein on the healing of standardized epithelial wounds: a histomorphometric analysis in vivo. *Int Wound J*. 2012 Aug;9(4):436-41. doi: 10.1111/j.1742-481X.2011.00904.x. Epub 2011 Dec 19. PubMed PMID: 22182231.

Reason: Autologous bone wasn't used

Alkan EA, Tüter G, Parlar A, Yücel A, Kurtiş B. Evaluation of peri-implant crevicular fluid prostaglandin E(2) levels in augmented extraction sockets by different biomaterials. *Acta Odontol Scand*. 2016 Oct;74(7):532-538. Epub 2016 Aug 22. PubMed PMID: 27546095.

Reason: Not related to the clinical question

Al Machot E, Hoffmann T, Lorenz K, Khalili I, Noack B. Clinical outcomes after treatment of periodontal intrabony defects with nanocrystalline hydroxyapatite (Ostim) or enamel matrix derivatives (Emdogain): a randomized controlled clinical trial. *Biomed Res Int*. 2014;2014:786353. doi: 10.1155/2014/786353. Epub 2014 Feb 9. PubMed PMID: 24689056; PubMed Central PMCID: PMC3932837.

Reason: Biomaterial different from Autologous bone

Amin HD, Olsen I, Knowles JC, Dard M, Donos N. Effects of enamel matrix proteins on multi-lineage differentiation of periodontal ligament cells in vitro. *Acta Biomater*. 2013 Jan;9(1):4796-805. doi: 10.1016/j.actbio.2012.09.008. Epub 2012 Sep 14. PubMed PMID: 22985741.

Reason: Autologous bone wasn't used

Amin HD, Olsen I, Knowles JC, Donos N. Differential effect of amelogenin peptides on osteogenic differentiation in vitro: identification of possible new drugs for bone repair and regeneration. *Tissue Eng Part A*. 2012 Jun;18(11-12):1193-202. doi: 10.1089/ten.TEA.2011.0375. Epub 2012 Mar 28. PubMed PMID: 22320389.

Reason: Study in vitro without Autologous bone

Apicella A, Heunemann P, Dejace L, Marascio M, Plummer CJG, Fischer P. Scaffold requirements for periodontal regeneration with enamel matrix derivative proteins. *Colloids Surf B Biointerfaces*. 2017 Aug 1;156:221-226. doi: 10.1016/j.colsurfb.2017.05.013. Epub 2017 May 9. PubMed PMID: 28531879.

Reason: Autologous bone wasn't used

Araújo MG, Lindhe J. GTR treatment of degree III furcation defects following application of enamel matrix proteins. An experimental study in dogs. *J Clin Periodontol*. 1998 Jun;25(6):524-30. PubMed PMID: 9667487.

Reason: Animal study

Artzi Z, Sudri S, Platner O, Kozlovsky A. Regeneration of the Periodontal Apparatus in Aggressive Periodontitis Patients. *Dent J (Basel)*. 2019 Mar 8;7(1). pii: E29. doi: 10.3390/dj7010029. Review. PubMed PMID: 30857253.

Reason: Autologous bone wasn't used

Artzi Z, Tal H, Platner O, Wasersprung N, Weinberg E, Slutzkey S, Gozali N, Carmeli G, Herzberg R, Kozlovsky A. Deproteinized bovine bone in association with guided tissue regeneration or enamel matrix derivatives procedures in aggressive periodontitis patients: a 1-year retrospective study. *J Clin Periodontol*. 2015 Jun;42(6):547-56. doi: 10.1111/jcpe.12413. Epub 2015 May 30. PubMed PMID: 25950086.

Reason: Biomaterial different from Autologous bone

Aslan S, Buduneli N, Cortellini P. Entire Papilla Preservation Technique: A Novel Surgical Approach for Regenerative Treatment of Deep and Wide Intrabony Defects. *Int J Periodontics Restorative Dent*. 2017 Mar/Apr;37(2):227-233. doi: 10.11607/prd.2584. PubMed PMID: 28196163.

Reason: Autologous bone wasn't used

Aslan S, Buduneli N, Cortellini P. Entire papilla preservation technique in the regenerative treatment of deep intrabony defects: 1-Year results. J Clin Periodontol. 2017 Sep;44(9):926-932. doi: 10.1111/jcpe.12780. Epub 2017 Aug 23. PubMed PMID: 28727170.

Reason: Not related to the clinical question

Aspriello SD, Ferrante L, Rubini C, Piemontese M. Comparative study of DFDBA in combination with enamel matrix derivative versus DFDBA alone for treatment of periodontal intrabony defects at 12 months post-surgery. Clin Oral Investig. 2011 Apr;15(2):225-32. doi: 10.1007/s00784-009-0369-y. Epub 2010 Jan 7. PubMed PMID: 20054593.

Reason: Biomaterial used different from Autologous bone

Athanassiou-Papaefthymiou M, Papagerakis P, Papagerakis S. Isolation and Characterization of Human Adult Epithelial Stem Cells from the Periodontal Ligament. J Dent Res. 2015 Nov;94(11):1591-600. doi: 10.1177/0022034515606401. Epub 2015 Sep 21. PubMed PMID: 26392003.

Reason: Not related to the clinical question

Aydemir Turkal H, Demire S, Dolgun A, Keceli HG. Evaluation of the adjunctive effect of platelet-rich fibrin to enamel matrix derivative in the treatment of intrabony defects. Six-month results of a randomized, split-mouth, controlled clinical study. J Clin Periodontol. 2016 Nov;43(11):955-964. doi: 10.1111/jcpe.12598. Epub 2016 Sep 13. PubMed PMID: 27396428.

Reason: Autologous bone wasn't used

Azaripour A, Willershausen I, Kämmerer P, Willershausen B. Post-endodontic treatment periodontal surgery: a case report. Quintessence Int. 2013 Feb;44(2):123-6. doi: 10.3290/j.qi.a28931. PubMed PMID: 23444178.

Reason: Not related to the clinical question

Azim AA, Lloyd A, Huang GT. Management of longstanding furcation perforation using a novel approach. J Endod. 2014 Aug;40(8):1255-9. doi: 10.1016/j.joen.2013.12.013. Epub 2014 Jan 17. PubMed PMID: 25069944.

Reason: Autologous bone wasn't used

Azzi R, Etienne D, Takei H, Carranza F. Bone regeneration using the pouch-and-tunnel technique. Int J Periodontics Restorative Dent. 2009 Oct;29(5):515-21. PubMed PMID: 19888495.

Reason: Not related to the clinical question

Behdin S, Monje A, Lin GH, Edwards B, Othman A, Wang HL. Effectiveness of Laser Application for Periodontal Surgical Therapy: Systematic Review and Meta-Analysis. J Periodontol. 2015 Dec;86(12):1352-63. doi: 10.1902/jop.2015.150212. Epub 2015 Aug 13. Review. PubMed PMID: 26269936.

Reason: Not related to the clinical question

Baltacioglu E, Tasdemir T, Yuva P, Celik D, Sukuroglu E. Intentional replantation of periodontally hopeless teeth using a combination of enamel matrix derivative and demineralized freeze-dried bone allograft. Int J Periodontics Restorative Dent. 2011 Feb;31(1):75-81. PubMed PMID: 21365029.

Reason: Biomaterial different from autologous bone

Barrett EJ, Kenny DJ. Optimization of post-replantation healing for avulsed permanent teeth in children. Ont Dent. 1999 Oct;76(8):23-7. PubMed PMID: 10850271.

Reason: Not related to the clinical question

Barrett EJ, Kenny DJ, Tenenbaum HC, Sigal MJ, Johnston DH. Replantation of permanent incisors in children using Emdogain. Dent Traumatol. 2005 Oct;21(5):269-75. PubMed PMID: 16149922.

Reason: Not related to the clinical question

Berlucchi I, Francetti L, Del Fabbro M, Basso M, Weinstein RL. The influence of anatomical features on the outcome of gingival recessions treated with coronally advanced flap and enamel matrix derivative: a 1-year prospective study. J Periodontol. 2005 Jun;76(6):899-907. PubMed PMID: 15948683.

Reason: Autologous Bone wasn't used

Bertoldi C, Ferrari M, Giannetti L. The use of only enamel matrix derivative allows outstanding regeneration results in periodontal intrabony defect treatment: a retrospective study. J Biol Regul Homeost Agents. 2019 Mar-Apr;33(2):633-636. PubMed PMID: 30919609.

Reason: Autologous Bone wasn't used

Bertoldi C, Pellacani C, Lalla M, Consolo U, Pinti M, Cortellini P, Cossarizza A. Herpes Simplex I virus impairs regenerative outcomes of periodontal regenerative therapy in intrabony defects: a pilot study. J Clin Periodontol. 2012 Apr;39(4):385-92. doi: 10.1111/j.1600-051X.2012.01850.x. Epub 2012 Feb 1. PubMed PMID: 22292785.

Reason: Not related to the clinical question

Bhatavadekar NB, Paquette DW. Long-term follow-up and tomographic assessment of an intrabony defect treated with enamel matrix derivative. J Periodontol. 2008 Sep;79(9):1802-8. doi: 10.1902/jop.2008.070636. PubMed PMID: 18771385.

Reason: Autologous Bone wasn't used

Bhutda G, Deo V. Five years clinical results following treatment of human intra-bony defects with an enamel matrix derivative: a randomized controlled trial. Acta Odontol Scand. 2013 May-Jul;71(3-4):764-70. doi: 10.3109/00016357.2012.728245. Epub 2012 Oct 19. PubMed PMID: 23078573.

Reason: Autologous Bone wasn't used

Bizenjima T, Osuka Y, Tomita S, Saito A. Periodontal Regenerative Therapy with Enamel Matrix Derivative in Patient with Chronic Periodontitis: A 3.5-year Follow-up Report. Bull Tokyo Dent Coll. 2019 Mar 15. doi: 10.2209/tdcpub.2018-0048. [Epub ahead of print] PubMed PMID: 30880299.

Bokan I, Bill JS, Schlagenhauf U. Primary flap closure combined with Emdogain alone or Emdogain and Cerasorb in the treatment of intra-bony defects. J Clin Periodontol. 2006 Dec;33(12):885-93. PubMed PMID: 17092241.

Reason: Autologous Bone wasn't used

Bonnet N, Lesclois P, Saffar JL, Ferrari S. Zoledronate effects on systemic and jaw osteopenias in ovariectomized periostin-deficient mice. PLoS One. 2013;8(3):e58726. doi: 10.1371/journal.pone.0058726. Epub 2013 Mar 7. PubMed PMID: 23505553; PubMed Central PMCID: PMC3591374.

Reason: Not related to the clinical question

Bonta H, Llambes F, Moretti AJ, Mathur H, Bouwsma OJ. The use of enamel matrix protein in the treatment of localized aggressive periodontitis: a case report. Quintessence Int. 2003 Apr;34(4):247-52. PubMed PMID: 12731609.

Reason: Autologous Bone wasn't used

Bosshardt DD. Biological mediators and periodontal regeneration: a review of enamel matrix proteins at the cellular and molecular levels. J Clin Periodontol. 2008 Sep;35(8 Suppl):87-105. doi: 10.1111/j.1600-051X.2008.01264.x. Review. PubMed PMID: 18724844.

Reason: Autologous bone wasn't used

Bosshardt DD. Are cementoblasts a subpopulation of osteoblasts or a unique phenotype? J Dent Res. 2005 May;84(5):390-406. Review. PubMed PMID: 15840773.

Reason: Not related to the clinical question

Bosshardt DD, Sculean A, Donos N, Lang NP. Pattern of mineralization after regenerative periodontal therapy with enamel matrix proteins. Eur J Oral Sci. 2006 May;114 Suppl 1:225-31; discussion 254-6, 381-2. PubMed PMID: 16674690.

Reason: Autologous Bone wasn't used

Bosshardt DD, Sculean A, Windisch P, Pjetursson BE, Lang NP. Effects of enamel matrix proteins on tissue formation along the roots of human teeth. J Periodontol Res. 2005 Apr;40(2):158-67. PubMed PMID: 15733151.

Reason: Autologous Bone wasn't used

Boyan BD, Weesner TC, Lohmann CH, Andreacchio D, Carnes DL, Dean DD, Cochran DL, Schwartz Z. Porcine fetal enamel matrix derivative enhances bone formation induced by demineralized freeze dried bone allograft in vivo. J Periodontol. 2000 Aug;71(8):1278-86. PubMed PMID: 10972643.

Reason: Biomaterial different from Autologous Bone

Bratthall G, Lindberg P, Havemose-Poulsen A, Holmstrup P, Bay L, Söderholm G, Norderyd O, Andersson B, Rickardsson B, Hallström H, Kullendorff B, Sköld Bell H. Comparison of ready-to-use EMDOGAIN-gel and EMDOGAIN in patients with chronic adult periodontitis. J Clin Periodontol. 2001 Oct;28(10):923-9. PubMed PMID: 11686810.

Reason: Autologous Bone wasn't used

Bröseler F, Tietmann C, Hinz AK, Jepsen S. Long-term results of periodontal regenerative therapy: A retrospective practice-based cohort study. J Clin Periodontol. 2017 May;44(5):520-529. doi: 10.1111/jcpe.12723. Epub 2017 Apr 27.

PubMed PMID: 28303584.

Reason: Autologous Bone wasn't used

Caffesse RG, de la Rosa M, Mota LF. Regeneration of soft and hard tissue periodontal defects. Am J Dent. 2002 Oct;15(5):339-45. Review. PubMed PMID: 12537347.

Reason: Not related to the clinical question

Caffesse RG, Nasjleti CE, Morrison EC, Sanchez R. Guided tissue regeneration: comparison of bioabsorbable and non-bioabsorbable membranes. Histologic and histometric study in dogs. J Periodontol. 1994 Jun;65(6):583-91. PubMed PMID: 8083790.

Reason: Not related to the clinical question

Caglar E, Tanboga I, Süsal S. Treatment of avulsed teeth with Emdogain--a case report. Dent Traumatol. 2005 Feb;21(1):51-3. PubMed PMID: 15660758.

Reason: Autologous Bone wasn't used

Camargo PM, Lekovic V, Weinlaender M, Vasilic N, Kenney EB, Madzarevic M. The effectiveness of enamel matrix proteins used in combination with bovine porous bone mineral in the treatment of intrabony defects in humans. J Clin Periodontol. 2001 Nov;28(11):1016-22. PubMed PMID: 11686822.

Reason: Biomaterial different from Autologous Bone

Camelo M, Nevins ML, Schenk RK, Lynch SE, Nevins M. Periodontal regeneration in human Class II furcations using purified recombinant human platelet-derived growth factor-BB (rhPDGF-BB) with bone allograft. Int J Periodontics Restorative Dent. 2003 Jun;23(3):213-25. PubMed PMID: 12854772.

Reason: Not related to the clinical question

Cardaropoli G, Leonhardt AS. Enamel matrix proteins in the treatment of deep intrabony defects. J Periodontol. 2002 May;73(5):501-4. PubMed PMID: 12027251.

Reason: Autologous Bone wasn't used

Carinci F, Piattelli A, Guida L, Perrotti V, Laino G, Oliva A, Annunziata M, Palmieri A, Pezzetti F. Effects of Emdogain on osteoblast gene expression. Oral Dis. 2006 May;12(3):329-42. PubMed PMID: 16700745.

Reason: Autologous Bone wasn't used

Carnio J, Camargo PM, Kenney EB, Schenk RK. Histological evaluation of 4 cases of root coverage following a connective tissue graft combined with an enamel matrix derivative preparation. J Periodontol. 2002 Dec;73(12):1534-43. PubMed PMID: 12546106.

Reason: Autologous Bone wasn't used

Casarin RC, Ribeiro Edel P, Nociti FH Jr, Sallum AW, Ambrosano GM, Sallum EA, Casati MZ. Enamel matrix derivative proteins for the treatment of proximal class II furcation involvements: a prospective 24-month randomized clinical trial. J Clin Periodontol. 2010 Dec;37(12):1100-9. doi: 10.1111/j.1600-051X.2010.01614.x. Epub 2010 Aug 24. PubMed PMID: 20735795.

Reason: Autologous Bone wasn't used

Casarin RC, Ribeiro Edel P, Ribeiro FV, Nociti FH Jr, Sallum AW, Sallum EA, Casati MZ. Influence of anatomic features on the effectiveness of enamel matrix derivative proteins in the treatment of proximal Class II furcation involvements. Quintessence Int. 2009 Oct;40(9):753-61. PubMed PMID: 19862402.

Reason: Autologous Bone wasn't used

Casati MZ, Sallum EA, Nociti FH Jr, Caffesse RG, Sallum AW. Enamel matrix derivative and bone healing after guided bone regeneration in dehiscence-type defects around implants. A histomorphometric study in dogs. J Periodontol. 2002 Jul;73(7):789-96. PubMed PMID: 12146539.

Reason: Animal study

Chambrone D, Pasin IM, Chambrone L, Pannuti CM, Conde MC, Lima LA. Treatment of intrabony defects with or without enamel matrix proteins: a 24-month follow-up randomized pilot study. Quintessence Int. 2010 Feb;41(2):125-34. PubMed PMID: 20165744.

Reason: Autologous bone wasn't used

Chambrone D, Pasin IM, Conde MC, Panutti C, Carneiro S, Lima LA. Effect of enamel matrix proteins on the treatment of intrabony defects: a split-mouth randomized controlled trial study. Braz Oral Res. 2007 Jul-Sep;21(3):241-6.

PubMed PMID: 17710290.

Reason: Autologous bone wasn't used

Chambrone L, Sukekava F, Araújo MG, Pustiglioni FE, Chambrone LA, Lima LA. Root coverage procedures for the treatment of localised recession-type defects. Cochrane Database Syst Rev. 2009 Apr 15;(2):CD007161. doi: 10.1002/14651858.CD007161.pub2. Review. Update in: Cochrane Database Syst Rev. 2018 Oct 02;10:CD007161. PubMed PMID: 19370675.

Reason: not related to the clinical question

Chambrone L, Sukekava F, Araújo MG, Pustiglioni FE, Chambrone LA, Lima LA. Root-coverage procedures for the treatment of localized recession-type defects: a Cochrane systematic review. J Periodontol. 2010 Apr;81(4):452-78. doi: 10.1902/jop.2010.090540. Review. PubMed PMID: 20367089.

Reason: not related to the clinical question

Chano L, Tenenbaum HC, Lekic PC, Sodek J, McCulloch CA. Emdogain regulation of cellular differentiation in wounded rat periodontium. J Periodontol. 2003 Apr;38(2):164-74. PubMed PMID: 12608911.

Reason: Animal study

Chen L, Cha J, Ho CH. A three-point-translation technique for root coverage with 4-year follow-up. Dent Today. 2002 Oct;21(10):112-5. PubMed PMID: 12382500.

Reason: not related to the clinical question

Chen FM, Zhang J, Zhang M, An Y, Chen F, Wu ZF. A review on endogenous regenerative technology in periodontal regenerative medicine. Biomaterials. 2010 Nov;31(31):7892-927. doi: 10.1016/j.biomaterials.2010.07.019. Epub 2010 Aug 4. Review. PubMed PMID: 20684986.

Reason: not related to the clinical question

Chitsazi MT, Mostofi Zadeh Farahani R, Pourabbas M, Bahaeddin N. Efficacy of open flap debridement with and without enamel matrix derivatives in the treatment of mandibular degree II furcation involvement. Clin Oral Investig. 2007 Dec;11(4):385-9. Epub 2007 Jul 11. PubMed PMID: 17623113.

Reason: Autologous bone wasn't used

Cho AR, Kim JH, Lee DE, Lee JS, Jung UW, Bak EJ, Yoo YJ, Chung WG, Choi SH. The effect of orally administered epigallocatechin-3-gallate on ligature-induced periodontitis in rats. J Periodontol. 2013 Dec;48(6):781-9. doi: 10.1111/jre.12071. Epub 2013 Apr 15. PubMed PMID: 23581513.

Reason: not related to the clinical question

Chong CH, Carnes DL, Moritz AJ, Oates T, Ryu OH, Simmer J, Cochran DL. Human periodontal fibroblast response to enamel matrix derivative, amelogenin, and platelet-derived growth factor-BB. J Periodontol. 2006 Jul;77(7):1242-52. PubMed PMID: 16805689.

Reason: Autologous bone wasn't used

Cochran DL, Jones A, Heijl L, Mellonig JT, Schoolfield J, King GN. Periodontal regeneration with a combination of enamel matrix proteins and autogenous bone grafting. J Periodontol. 2003 Sep;74(9):1269-81. PubMed PMID: 14584859.

Reason: Animal study

Cochran DL, King GN, Schoolfield J, Velasquez-Plata D, Mellonig JT, Jones A. The effect of enamel matrix proteins on periodontal regeneration as determined by histological analyses. J Periodontol. 2003 Jul;74(7):1043-55. PubMed PMID: 12931768.

Reason: Autologous bone wasn't used

Cochran DL, Wozney JM. Biological mediators for periodontal regeneration. Periodontol 2000. 1999 Feb;19:40-58. Review. PubMed PMID: 10321215.

Reason: Not related to the clinical question

Corbella S, Alberti A, Calciolari E, Taschieri S, Francetti L. Enamel matrix derivative for the treatment of partially contained intrabony defects: 12-month results. Aust Dent J. 2019 Mar;64(1):27-34. doi: 10.1111/adj.12654. Epub 2018 Oct 15. PubMed PMID: 30257036.

Reason: Autologous bone wasn't used

Corrêa MG, Campos ML, Benatti BB, Marques MR, Casati MZ, Nociti FH Jr, Sallum EA. The impact of cigarette smoke inhalation on the outcome of enamel matrix derivative treatment in rats: histometric analysis. J Periodontol. 2010 Dec;81(12):1820-8. doi: 10.1902/jop.2010.100200. Epub 2010 Jul 14. PubMed PMID: 20629543.

Reason: Animal study not related to the clinical question

Corrêa MG, Gomes Campos ML, Marques MR, Ambrosano GM, Casati MZ, Nociti FH Jr, Sallum EA. Alcohol intake may impair bone density and new cementum formation after enamel matrix derivative treatment: histometric study in rats. J Periodontol. 2016 Feb;51(1):60-9. doi: 10.1111/jre.12279. Epub 2015 May 9. PubMed PMID: 25959998.

Reason: Animal study not related to the clinical question

Corrêa MG, Gomes Campos ML, Marques MR, Bovi Ambrosano GM, Casati MZ, Nociti FH Jr, Sallum EA. Outcome of enamel matrix derivative treatment in the presence of chronic stress: histometric study in rats. J Periodontol. 2014 Jul;85(7):e259-67. doi: 10.1902/jop.2013.130383. Epub 2013 Nov 28. PubMed PMID: 24283657.

Reason: Autologous bone wasn't used

Corrêa MG, Gomes Campos ML, Marques MR, Casati MZ, Nociti FH Jr, Sallum EA. Histometric analysis of the effect of enamel matrix derivative on the healing of periodontal defects in rats with diabetes. J Periodontol. 2013 Sep;84(9):1309-18. doi: 10.1902/jop.2012.120354. Epub 2012 Nov 3. PubMed PMID: 23121457.

Reason: Animal study not related to the clinical question

Cortellini P. Minimally invasive surgical techniques in periodontal regeneration. J Evid Based Dent Pract. 2012 Sep;12(3 Suppl):89-100. doi: 10.1016/S1532-3382(12)70021-0. Review. Pub Med PMID: 23040341.

Reason: not related to the clinical question

Cortellini P, Nieri M, Prato GP, Tonetti MS. Single minimally invasive surgical technique with an enamel matrix derivative to treat multiple adjacent intra-bony defects: clinical outcomes and patient morbidity. J Clin Periodontol. 2008 Jul;35(7):605-13. doi: 10.1111/j.1600-051X.2008.01242.x. Epub 2008 May 11. PubMed PMID: 18476997.

Reason: Autologous bone wasn't used

Cortellini P, Pini-Prato G, Nieri M, Tonetti MS. Minimally invasive surgical technique and enamel matrix derivative in intrabony defects: 2. Factors associated with healing outcomes. Int J Periodontics Restorative Dent. 2009 Jun;29(3):257-65. PubMed PMID: 19537465.

Reason: Autologous bone wasn't used

Cortellini P, Stalpers G, Mollo A, Tonetti MS. Periodontal regeneration versus extraction and prosthetic replacement of teeth severely compromised by attachment loss to the apex: 5-year results of an ongoing randomized clinical trial. J Clin Periodontol. 2011 Oct;38(10):915-24. doi: 10.1111/j.1600-051X.2011.01768.x. Epub 2011 Jul 21. PubMed PMID: 21777268

Reason: Not related to the clinical question

Cortellini P, Tonetti MS. A minimally invasive surgical technique with an enamel matrix derivative in the regenerative treatment of intra-bony defects: a novel approach to limit morbidity. J Clin Periodontol. 2007 Jan;34(1):87-93. PubMed PMID: 17243998.

Reason: Autologous bone wasn't used

Cortellini P, Tonetti MS. Clinical and radiographic outcomes of the modified minimally invasive surgical technique with and without regenerative materials: a randomized-controlled trial in intra-bony defects. J Clin Periodontol. 2011 Apr;38(4):365-73. doi: 10.1111/j.1600-051X.2011.01705.x. Epub 2011 Feb 8. PubMed PMID: 21303402.

Reason: Not related to the clinical question

Cortellini P, Tonetti MS. Clinical performance of a regenerative strategy for intrabony defects: scientific evidence and clinical experience. J Periodontol. 2005 Mar;76(3):341-50. PubMed PMID: 15857066.

Reason: Not related to the clinical question

Cortellini P, Tonetti MS. Improved wound stability with a modified minimally invasive surgical technique in the regenerative treatment of isolated interdental intrabony defects. J Clin Periodontol. 2009 Feb;36(2):157-63. doi: 10.1111/j.1600-051X.2008.01352.x. PubMed PMID: 19207892.

Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Biomaterial different from Autologous Bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Biomaterials different from autologous bone

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous wasn't used

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Reason: EMD evaluated alone

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Reason: the effects of Autologous bone weren't evaluated

Reason: EMD evaluated alone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Case series

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

Giannobile WV, Somerman MJ. Growth and amelogenin-like factors in periodontal wound healing. A systematic review. Ann Periodontol. 2003 Dec;8(1):193-204. Review. PubMed PMID: 14971254.

Reason: Autologous bone effect weren't evaluated

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Reason: Not related to the clinical question

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Reason: Autologous bone effect weren't evaluated

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Reason: Autologous bone effect weren't evaluated

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Reason: Autologous bone effect weren't evaluated

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Reason: Autologous bone effect weren't evaluated

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Guo Y, Guo W, Chen J, Chen G, Tian W, Bai D. Are Hertwig's epithelial root sheath cells necessary for periodontal formation by dental follicle cells? *Arch Oral Biol*. 2018 Oct;94:1-9. doi: 10.1016/j.archoralbio.2018.06.014. Epub 2018 Jun 18. PubMed PMID: 29929068.

Reason: Not related to the clinical question

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Reason: Autologous bone effect weren't evaluated

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Reason: Biomaterial different from autologous bone

Hägewald S, Spahr A, Rompola E, Haller B, Heijl L, Bernimoulin JP. Comparative study of Emdogain and coronally advanced flap technique in the treatment of human gingival recessions. A prospective controlled clinical study. *J Clin Periodontol*. 2002 Jan;29(1):35-41. PubMed PMID: 11846847.

Reason: Autologous bone wasn't used

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Reason: Animal study

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Reason: Animal study

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Reason: Autologous bone effects not evaluated

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Autologous bone effects not evaluated

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Reason: Autologous bone effects not evaluated

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Reason: Biomaterials different from Autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone effects not evaluated

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone effects not evaluated

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Reason: Biomaterial different from Autologous bone

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Reason: Autologous bone effects not evaluated

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Case report without use of autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone effects weren't evaluated

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone effects weren't evaluated

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

King GN. New regenerative technologies: rationale and potential for periodontal regeneration: 2. Growth factors. Dent Update. 2001 Mar;28(2):60-5. Review. PubMed PMID: 11819959.
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Reason: Not related to the clinical question

Kinoshita A, Oda S, Takahashi K, Yokota S, Ishikawa I. Periodontal regeneration by application of recombinant human bone morphogenetic protein-2 to horizontal circumferential defects created by experimental periodontitis in beagle dogs. J Periodontol. 1997 Feb;68(2):103-9. PubMed PMID: 9058326.
Reason: Not related to the clinical question

Kinumatsu T, Umehara K, Nagano K, Saito A. Periodontal therapy for severe chronic periodontitis with periodontal regeneration and different types of prosthesis. Bull Tokyo Dent Coll. 2014;55(4):217-24. PubMed PMID: 25477039.
Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Kitamura M, Akamatsu M, Kawanami M, Furuichi Y, Fujii T, Mori M, Kunimatsu K, Shimauchi H, Ogata Y, Yamamoto M, Nakagawa T, Sato S, Ito K, Ogasawara T, Izumi Y, Gomi K, Yamazaki K, Yoshie H, Fukuda M, Noguchi T, Takashiba S, Kurihara H, Nagata T, Hamachi T, Maeda K, Yokota M, Sakagami R, Hara Y, Noguchi K, Furuuchi T, Sasano T, Imai E, Ohmae M, Koizumi H, Watanuki M, Murakami S. Randomized Placebo-Controlled and Controlled Non-Inferiority Phase III Trials Comparing Trafermin, a Recombinant Human Fibroblast Growth Factor 2, and Enamel Matrix Derivative in Periodontal Regeneration in Intrabony Defects. J Bone Miner Res. 2016 Apr;31(4):806-14. doi: 10.1002/jbmr.2738. Epub 2015 Dec 6. PubMed PMID: 26547659.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

Kuru B, Yilmaz S, Argin K, Noyan U. Enamel matrix derivative alone or in combination with a bioactive glass in wide intrabony defects. Clin Oral Investig. 2006 Sep;10(3):227-34. Epub 2006 May 16. PubMed PMID: 16703336.

Reason: Biomaterial different from autologous bone

Lam K, Sae-Lim V. The effect of Emdogain gel on periodontal healing in replanted monkeys' teeth. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2004 Jan;97(1):100-7. PubMed PMID: 14716264.

Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

Lekovic V, Camargo PM, Weinlaender M, Kenney EB, Vasilic N. Combination use of bovine porous bone mineral, enamel matrix proteins, and a bioabsorbable membrane in intrabony periodontal defects in humans. *J Periodontol*. 2001 May;72(5):583-9. PubMed PMID: 11394392.

Reason: Biomaterial different from autologous bone

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Reason: Biomaterial different from autologous bone

Lekovic V, Camargo PM, Weinlaender M, Vasilic N, Djordjevic M, Kenney EB. The use of bovine porous bone mineral in combination with enamel matrix proteins or with an autologous fibrinogen/fibronectin system in the treatment of intrabony periodontal defects in humans. *J Periodontol*. 2001 Sep;72(9):1157-63. PubMed PMID: 11577946.

Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not a RCT

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Autologous bone effects weren't evaluated

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Biomaterials different from autologous bone

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Reason: Biomaterials different from autologous bone

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Reason: Not related to the clinical question

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Reason: Autologous bone effects weren't evaluated

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Biomaterials different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Biomaterial different from autologous bone

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Biomaterial different from autologous bone

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Reason: Biomaterial different from autologous bone

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Reason: Biomaterial different from autologous bone

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Case report no autologous bone was used

Núñez J, Sanz-Blasco S, Vignoletti F, Muñoz F, Caffesse RG, Sanz M, Villalobos C, Núñez L. 17beta-estradiol promotes cementoblast proliferation and cementum formation in experimental periodontitis. J Periodontol. 2010 Jul;81(7):1064-74. doi: 10.1902/jop.2010.090678. PubMed PMID: 20214440.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Ogihara S, Tarnow DP. Efficacy of forced eruption/enamel matrix derivative with freeze-dried bone allograft or with demineralized freeze-dried bone allograft in infrabony defects: A randomized trial. Quintessence Int. 2015 Jun;46(6):481-90. doi: 10.3290/j.qi.a33936. PubMed PMID: 25918759.

Reason: Not related to the clinical question

Ogihara S, Tarnow DP. Efficacy of enamel matrix derivative with freeze-dried bone allograft or demineralized freeze-dried bone allograft in intrabony defects: a randomized trial. J Periodontol. 2014 Oct;85(10):1351-60. doi: 10.1902/jop.2014.130520. Epub 2014 Mar 24. PubMed PMID: 24660759.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Okuda K, Momose M, Miyazaki A, Murata M, Yokoyama S, Yonezawa Y, Wolff LF, Yoshie H. Enamel matrix derivative in the treatment of human intrabony osseous defects. J Periodontol. 2000 Dec;71(12):1821-8. PubMed PMID: 11156038.
Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Animal study not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Palioto DB, de O Macedo G, Queiroz AC, Taba M Jr, Souza SL, Grisi MF, Novaes

AB Jr. Enamel matrix derivative and transforming growth factor-beta1 in Class III furcation defects. A histomorphometric study in dogs. J Int Acad Periodontol. 2012 Jul;14(3):69-75. PubMed PMID: 22908536.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Parashis A, Andronikaki-Faldami A, Tsiklakis K. Clinical and radiographic comparison of three regenerative procedures in the treatment of intrabony defects. Int J Periodontics Restorative Dent. 2004 Feb;24(1):81-90. PubMed PMID: 14984149.

Reason: No data about the use of EMD and AB in association

Parashis AO, Polychronopoulou A, Tsiklakis K, Tatakis DN. Enamel matrix derivative in intrabony defects: prognostic parameters of clinical and radiographic treatment outcomes. J Periodontol. 2012 Nov;83(11):1346-52. doi: 10.1902/jop.2012.110551. Epub 2012 Jan 16. PubMed PMID: 22248222.

Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Animal study not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

Petinaki E, Nikolopoulos S, Castanas E. Low stimulation of peripheral lymphocytes, following in vitro application of Emdogain. J Clin Periodontol. 1998

Sep;25(9):715-20. PubMed PMID: 9763326.

Reason: Not related to the clinical question

Pietruska MD. A comparative study on the use of Bio-Oss and enamel matrix derivative (Emdogain) in the treatment of periodontal bone defects. *Eur J Oral Sci.* 2001 Jun;109(3):178-81. PubMed PMID: 11456348.

Reason: Biomaterial different from autologous bone

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Reason: Biomaterial different from autologous bone

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Reason: Autologous bone wasn't used

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Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

Poi WR, Carvalho RM, Panzarini SR, Sonoda CK, Manfrin TM, Rodrigues Tda S. Influence of enamel matrix derivative (Emdogain) and sodium fluoride on the healing process in delayed tooth replantation: histologic and histometric analysis in rats. *Dent Traumatol.* 2007 Feb;23(1):35-41. PubMed PMID: 17227379. Pontoriero R, Wennström J, Lindhe J. The use of barrier membranes and enamel matrix proteins in the treatment of angular bone defects. A prospective controlled clinical study. *J Clin Periodontol.* 1999 Dec;26(12):833-40. PubMed PMID: 10599912.

Reason: Not related to the clinical question

Popowics T, Foster BL, Swanson EC, Fong H, Somerman MJ. Defining the roots of cementum formation. *Cells Tissues Organs.* 2005;181(3-4):248-57. PubMed PMID: 16612090.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Prata CA, Lacerda SA, Brentegani LG. Autogenous bone graft associated with enamel matrix proteins in bone repair. *Implant Dent.* 2007 Dec;16(4):413-20. PubMed PMID: 18091170.

Reason: Animal study

Queiroz LA, Casarin RCV, Dabdoub SM, Tatakis DN, Sallum EA, Kumar PS. Furcation Therapy With Enamel Matrix Derivative: Effects on the Subgingival Microbiome. *J Periodontol.* 2017 Jul;88(7):617-625. doi: 10.1902/jop.2017.160542. Epub 2017 Mar 17. PubMed PMID: 28304211.

Reason: Autologous bone wasn't used

Queiroz LA, Santamaria MP, Casati MZ, Ruiz KS, Nociti F Jr, Sallum AW, Sallum EA. Enamel matrix protein derivative and/or synthetic bone substitute for the treatment of mandibular class II buccal furcation defects. A 12-month randomized clinical trial. *Clin Oral Investig.* 2016 Sep;20(7):1597-606. doi: 10.1007/s00784-015-1642-x. Epub 2015 Nov 10. PubMed PMID: 26556577.

Reason: Biomaterial different from autologous bone

Queiroz LA, Santamaria M, Casati M, Silverio K, Nociti-Junior F, Sallum E. Enamel matrix protein derivative plus synthetic bone substitute for the treatment of mandibular Class II furcation defects: a case series. *Quintessence Int.* 2015 Mar;46(3):199-205. doi: 10.3290/j.qi.a32988. PubMed PMID: 25386635.

Reason: Biomaterial different from autologous bone

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Reason: Autologous bone wasn't used

Rasperini G, Acunzo R, Barnett A, Pagni G. The soft tissue wall technique for the regenerative treatment of non-contained infrabony defects: a case series. Int J Periodontics Restorative Dent. 2013 May-Jun;33(3):e79-87. doi: 10.11607/prd.1628. PubMed PMID: 23593632.

Reason: Not related to clinical question

Rasperini G, Ricci G, Silvestri M. Surgical technique for treatment of infrabony defects with enamel matrix derivative (Emdogain): 3 case reports. Int J Periodontics Restorative Dent. 1999 Dec;19(6):578-87. PubMed PMID: 10815596.

Reason: Autologous bone wasn't used

Rasperini G, Silvestri M, Ricci G. Long-term clinical observation of treatment of infrabony defects with enamel matrix derivative (Emdogain): surgical reentry. Int J Periodontics Restorative Dent. 2005 Apr;25(2):121-7. PubMed PMID: 15839588.

Reason: Autologous bone wasn't used

Rathva VJ. Enamel matrix protein derivatives: role in periodontal regeneration. Clin Cosmet Investig Dent. 2011 Dec 1;3:79-92. doi: 10.2147/CCIDEN.S25347. Print 2011. PubMed PMID: 23674918; PubMed Central PMCID: PMC3652362.

Reason: Autologous bone wasn't used

Regazzini PF, Novaes AB Jr, de Oliveira PT, Palioto DB, Taba M Jr, de Souza SL, Grisi MF. Comparative study of enamel matrix derivative with or without GTR in the treatment of class II furcation lesions in dogs. Int J Periodontics Restorative Dent. 2004 Oct;24(5):476-87. PubMed PMID: 15506029.

Reason: Animal study

Rethman MP. Treatment of a palatal-gingival groove using enamel matrix derivative. Compend Contin Educ Dent. 2001 Sep;22(9):792-7. PubMed PMID: 11692401.

Reason: Autologous bone wasn't used

Reynolds MA, Aichelmann-Reidy ME. Protein and peptide-based therapeutics in periodontal regeneration. J Evid Based Dent Pract. 2012 Sep;12(3 Suppl):118-26. doi: 10.1016/S1532-3382(12)70023-4. Review. PubMed PMID: 23040343.

Reason: Not related to clinical question

Reynolds MA, Kao RT, Camargo PM, Caton JG, Clem DS, Fiorellini JP, Geisinger ML, Mills MP, Nares S, Nevins ML. Periodontal regeneration - intrabony defects: a consensus report from the AAP Regeneration Workshop. J Periodontol. 2015 Feb;86(2 Suppl):S105-7. doi: 10.1902/jop.2015.140378. Epub 2014 Oct 15. PubMed PMID: 25315019.

Reason: Not related to clinical question

Ribeiro FV, Casarin RC, Júnior FH, Sallum EA, Casati MZ. The role of enamel matrix derivative protein in minimally invasive surgery in treating intrabony defects in single-rooted teeth: a randomized clinical trial. J Periodontol. 2011 Apr;82(4):522-32. doi: 10.1902/jop.2010.100454. Epub 2010 Nov 8. PubMed PMID: 21054224.

Reason: Autologous bone wasn't used

Ribeiro FV, Nociti Júnior FH, Sallum EA, Sallum AW, Casati MZ. Use of enamel matrix protein derivative with minimally invasive surgical approach in intra-bony periodontal defects: clinical and patient-centered outcomes. Braz Dent J. 2010 Jan;21(1):60-7. PubMed PMID: 20464323.

Reason: Autologous bone wasn't used

Rincon JC, Xiao Y, Young WG, Bartold PM. Production of osteopontin by cultured porcine epithelial cell rests of Malassez. J Periodontol. 2005 Oct;40(5):417-26. PubMed PMID: 16105095

Reason: Not related to the clinical question

Rincon JC, Xiao Y, Young WG, Bartold PM. Enhanced proliferation, attachment

and osteopontin expression by porcine periodontal cells exposed to Emdogain. Arch Oral Biol. 2005 Dec;50(12):1047-54. PubMed PMID: 16342405.
Reason: Not related to the clinical question

Rodrigues TL, Marchesan JT, Coletta RD, Novaes AB Jr, Grisi MF, Souza SL, Taba M Jr, Palioto DB. Effects of enamel matrix derivative and transforming growth factor-beta1 on human periodontal ligament fibroblasts. J Clin Periodontol. 2007 Jun;34(6):514-22. PubMed PMID: 17509092.
Reason: Not related to the clinical question

Röllke L, Schacher B, Wohlfeil M, Kim TS, Kaltschmitt J, Krieger J, Krigar DM, Reitmeir P, Eickholz P. Regenerative therapy of infrabony defects with or without systemic doxycycline. A randomized placebo-controlled trial. J Clin Periodontol. 2012 May;39(5):448-56. doi: 10.1111/j.1600-051X.2012.01861.x. Epub 2012 Mar 4. PubMed PMID: 22385260.
Reason: Not related to the clinical question

Rosen PS, Reynolds MA. A retrospective case series comparing the use of demineralized freeze-dried bone allograft and freeze-dried bone allograft combined with enamel matrix derivative for the treatment of advanced osseous lesions. J Periodontol. 2002 Aug;73(8):942-9. PubMed PMID: 12211505.
Reason: Biomaterials different from autologous bone

Rösing CK, Aass AM, Mavropoulos A, Gjermo P. Clinical and radiographic effects of enamel matrix derivative in the treatment of intrabony periodontal defects: a 12-month longitudinal placebo-controlled clinical trial in adult periodontitis patients. J Periodontol. 2005 Jan;76(1):129-33. PubMed PMID: 15830647.
Reason: Autologous bone wasn't used

Rossmann JA, McQuade MJ, Turunen DE. Retardation of epithelial migration in monkeys using a carbon dioxide laser: an animal study. J Periodontol. 1992 Nov;63(11):902-7. PubMed PMID: 1280679.
Reason: Animal study

Sakaguchi K, Katagiri W, Osugi M, Kawai T, Sugimura-Wakayama Y, Hibi H. Periodontal tissue regeneration using the cytokine cocktail mimicking secretomes in the conditioned media from human mesenchymal stem cells. Biochem Biophys Res Commun. 2017 Feb 26;484(1):100-106. doi: 10.1016/j.bbrc.2017.01.065. Epub 2017 Jan 16. PubMed PMID: 28104393.
Reason: Not related to the clinical question

Sakallioğlu U, Açıkgöz G, Ayas B, Kirtiloğlu T, Sakallioğlu E. Healing of periodontal defects treated with enamel matrix proteins and root surface conditioning--an experimental study in dogs. Biomaterials. 2004 May;25(10):1831-40. PubMed PMID: 14738847.
Reason: Animal study

Saida H, Fukuba S, Miron R, Shirakata Y. Efficacy of flapless intentional replantation with enamel matrix derivative in the treatment of hopeless teeth associated with endodontic-periodontal lesions: A 2-year prospective case series. Quintessence Int. 2018;49(9):699-707. doi: 10.3290/j.qi.a40782. PubMed PMID: 30027173.
Reason: Not related to the clinical question

Saito A, Hayakawa H, Ota K, Fujinami K, Nikaido M, Makiishi T. Treatment of periodontal defects with enamel matrix derivative: clinical evaluation at early healing stages. Bull Tokyo Dent Coll. 2010;51(2):85-93. PubMed PMID: 20689239.
Reason: Autologous bone wasn't used

Saito K, Konishi I, Nishiguchi M, Hoshino T, Fujiwara T. Amelogenin binds to both heparan sulfate and bone morphogenetic protein 2 and pharmacologically suppresses the effect of noggin. Bone. 2008 Aug;43(2):371-6. doi: 10.1016/j.bone.2008.03.029. Epub 2008 Apr 18. PubMed PMID: 18515207.
Reason: Not related to the clinical question

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Saito M, Tsuji T. Extracellular matrix administration as a potential therapeutic strategy for periodontal ligament regeneration. Expert Opin Biol Ther. 2012 Mar;12(3):299-309. doi: 10.1517/14712598.2012.655267. Epub 2012 Jan 26. Review. PubMed PMID: 22276595.
Reason: Not related to the clinical question

Sajjadian A, Song AY, Khorsandi CA, Deleyiannis FW, VanSwearingen JM, Henkelmann TC, Hui K, Manders EK. One-stage reanimation of the paralyzed face using the rectus abdominis neurovascular free flap. *Plast Reconstr Surg*. 2006 Apr 15;117(5):1553-9. PubMed PMID: 16641724.

Reason: Not related to the clinical question

Sallum EA, Casati MZ, Caffesse RG, Funis LP, Nociti Júnior FH, Sallum AW. Coronally positioned flap with or without enamel matrix protein derivative for the treatment of gingival recessions. *Am J Dent*. 2003 Oct;16(5):287-91. PubMed PMID: 14677605.

Reason: Autologous bone wasn't used

Sallum EA, Pimentel SP, Saldanha JB, Nogueira-Filho GR, Casati MZ, Nociti FH, Sallum AW. Enamel matrix derivative and guided tissue regeneration in the treatment of dehiscence-type defects: a histomorphometric study in dogs. *J Periodontol*. 2004 Oct;75(10):1357-63. PubMed PMID: 15562913.

Reason: Animal study

Sallum EA, Ribeiro FV, Ruiz KS, Sallum AW. Experimental and clinical studies on regenerative periodontal therapy. *Periodontol* 2000. 2019 Feb;79(1):22-55. doi: 10.1111/prd.12246. Review. PubMed PMID: 30892759.

Reason: Not related to the clinical question

Sandhu GK, Khinda PK, Gill AS, Kalra HS. Surgical re-entry evaluation of regenerative efficacy of bioactive Gengigel(®) and platelet-rich fibrin in the treatment of grade II furcation: A novel approach. *Contemp Clin Dent*. 2015 Oct-Dec;6(4):570-3. doi: 10.4103/0976-237X.169855. PubMed PMID: 26681869; PubMed Central PMCID: PMC4678562.

Reason: Not related to the clinical question

Sanz M, Jepsen K, Eickholz P, Jepsen S. Clinical concepts for regenerative therapy in furcations. *Periodontol* 2000. 2015 Jun;68(1):308-32. doi: 10.1111/prd.12081. PubMed PMID: 25867991.

Reason: Not related to the clinical question

Sanz M, Tonetti MS, Zabalegui I, Sicilia A, Blanco J, Rebelo H, Rasperini G, Merli M, Cortellini P, Suvan JE. Treatment of intrabony defects with enamel matrix proteins or barrier membranes: results from a multicenter practice-based clinical trial. *J Periodontol*. 2004 May;75(5):726-33. PubMed PMID: 15212355.

Reason: Not related to the clinical question

Scheyer ET, Velasquez-Plata D, Brunsvold MA, Lasho DJ, Mellonig JT. A clinical comparison of a bovine-derived xenograft used alone and in combination with enamel matrix derivative for the treatment of periodontal osseous defects in humans. *J Periodontol*. 2002 Apr;73(4):423-32. PubMed PMID: 11990444.

Reason: Biomaterial different from autologous bone

Schjøtt M, Andreasen JO. Emdogain does not prevent progressive root resorption after replantation of avulsed teeth: a clinical study. *Dent Traumatol*. 2005 Feb;21(1):46-50. PubMed PMID: 15660757.

Reason: Not related to the clinical question

Schmidlin PR, Hauri D, Krähenmann MA, Puhon MA, Attin T. [Residual pocket depth after periodontal regenerative procedures. Clinical relevance and interpretation of meta-analyses data]. *Schweiz Monatsschr Zahnmed*. 2009;119(3):224-31. Review. German. PubMed PMID: 19408526.

Reason: Not related to the clinical question

Schmidlin PR. Regenerative Treatment of a Cemental Tear Using Enamel Matrix Derivatives: a Ten-Year Follow-up. *Open Dent J*. 2012;6:148-52. doi: 10.2174/1874210601206010148. Epub 2012 Sep 20. PubMed PMID: 23056160; PubMed Central PMCID: PMC3465863.

Reason: Autologous bone wasn't used

Schröen O, Sahrman P, Roos M, Attin T, Schmidlin PR. A survey on regenerative surgery performed by Swiss specialists in periodontology with special emphasis on the application of enamel matrix derivatives in infrabony defects. *Schweiz Monatsschr Zahnmed*. 2011;121(2):136-42. PubMed PMID: 21394687.

Reason: Not related to the clinical question

Schwarz F, Sculean A, Georg T, Becker J. Clinical evaluation of the Er:YAG laser in combination with an enamel matrix protein derivative for the treatment of intrabony periodontal defects: a pilot study. *J Clin Periodontol*. 2003

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Sculean A, Barbé G, Chiantella GC, Arweiler NB, Berakdar M, Brex M. Clinical evaluation of an enamel matrix protein derivative combined with a bioactive glass for the treatment of intrabony periodontal defects in humans. *J Periodontol*. 2002 Apr;73(4):401-8. PubMed PMID: 11990441.

Reason: Biomaterial different from autologous bone

Sculean A, Berakdar M, Donos N, Auschill TM, Arweiler NB. The effect of postsurgical administration of a selective cyclo-oxygenase-2 inhibitor on the healing of intrabony defects following treatment with enamel matrix proteins. *Clin Oral Investig*. 2003 Jun;7(2):108-12. Epub 2003 Apr 25. PubMed PMID: 12720115.

Reason: Not related to the clinical question

Sculean A, Berakdar M, Windisch P, Remberger K, Donos N, Brex M. Immunohistochemical investigation on the pattern of vimentin expression in regenerated and intact monkey and human periodontal ligament. *Arch Oral Biol*. 2003 Jan;48(1):77-86. PubMed PMID: 12615145.

Reason: Not related to the clinical question

Sculean A, Berakdar M, Pahl S, Windisch P, Brex M, Reich E, Donos N. Patterns of cytokeratin expression in monkey and human periodontium following regenerative and conventional periodontal surgery. *J Periodontal Res*. 2001 Aug;36(4):260-8. PubMed PMID: 11519700.

Reason: Animal study

Sculean A, Berakdar M, Willershausen B, Arweiler NB, Becker J, Schwarz F. Effect of EDTA root conditioning on the healing of intrabony defects treated with an enamel matrix protein derivative. *J Periodontol*. 2006 Jul;77(7):1167-72. PubMed PMID: 16805678.

Reason: Not related to the clinical question

Sculean A, Blaes A, Arweiler N, Reich E, Donos N, Brex M. The effect of postsurgical antibiotics on the healing of intrabony defects following treatment with enamel matrix proteins. *J Periodontol*. 2001 Feb;72(2):190-5. PubMed PMID: 11288792.

Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

Sculean A, Chiantella GC, Miliauskaitė A, Brex M, Arweiler NB. Four-year results following treatment of intrabony periodontal defects with an enamel matrix protein derivative: a report of 46 cases. *Int J Periodontics Restorative Dent*. 2003 Aug;23(4):345-51. PubMed PMID: 12956478.

Reason: Autologous bone effect weren't evaluated

Sculean A, Chiantella GC, Windisch P, Donos N. Clinical and histologic evaluation of human intrabony defects treated with an enamel matrix protein derivative (Emdogain). *Int J Periodontics Restorative Dent*. 2000 Aug;20(4):374-81. PubMed PMID: 11203577.

Reason: Autologous bone wasn't used

Sculean A, Chiantella GC, Windisch P, Gera I, Reich E. Clinical evaluation of an enamel matrix protein derivative (Emdogain) combined with a bovine-derived xenograft (Bio-Oss) for the treatment of intrabony periodontal defects in humans. *Int J Periodontics Restorative Dent*. 2002 Jun;22(3):259-67. PubMed PMID: 12186348.

Reason: Biomaterial different from autologous bone

Sculean A, Cosgarea R, Stähli A, Katsaros C, Arweiler NB, Miron RJ, Deppe H. Treatment of multiple adjacent maxillary Miller Class I, II, and III gingival recessions with the modified coronally advanced tunnel, enamel matrix derivative,

and subepithelial connective tissue graft: A report of 12 cases. Quintessence Int. 2016;47(8):653-9. doi: 10.3290/j.qi.a36562. PubMed PMID: 27446995.
Reason: Not related to the clinical question

Sculean A, Cosgarea R, Stähli A, Katsaros C, Arweiler NB, Brex M, Deppe H. The modified coronally advanced tunnel combined with an enamel matrix derivative and subepithelial connective tissue graft for the treatment of isolated mandibular Miller Class I and II gingival recessions: a report of 16 cases. Quintessence Int. 2014 Nov-Dec;45(10):829-35. doi: 10.3290/j.qi.a32636. PubMed PMID: 25191672.
Reason: Not related to the clinical question

Sculean A, Donos N, Blaes A, Lauermann M, Reich E, Brex M. Comparison of enamel matrix proteins and bioabsorbable membranes in the treatment of intrabony periodontal defects. A split-mouth study. J Periodontol. 1999 Mar;70(3):255-62. PubMed PMID: 10225541.
Reason: Not related to the clinical question

Sculean A, Donos N, Brex M, Karring T, Reich E. Healing of fenestration-type defects following treatment with guided tissue regeneration or enamel matrix proteins. An experimental study in monkeys. Clin Oral Investig. 2000 Mar;4(1):50-6. PubMed PMID: 11218516.
Reason: Animal study

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Reason: Not related to the clinical question

Sculean A, Donos N, Miliauskaite A, Arweiler N, Brex M. Treatment of intrabony defects with enamel matrix proteins or bioabsorbable membranes. A 4-year follow-up split-mouth study. J Periodontol. 2001 Dec;72(12):1695-701. PubMed PMID: 11811505.
Reason: Autologous bone wasn't used

Sculean A, Donos N, Reich E, Karring T, Brex M. Regeneration of oxytalan fibres in different types of periodontal defects: a histological study in monkeys. J Periodontol Res. 1998 Nov;33(8):453-9. PubMed PMID: 9879518.
Reason: Animal study

Sculean A, Donos N, Schwarz F, Becker J, Brex M, Arweiler NB. Five-year results following treatment of intrabony defects with enamel matrix proteins and guided tissue regeneration. J Clin Periodontol. 2004 Jul;31(7):545-9. PubMed PMID: 15191590.
Reason: Autologous bone wasn't used

Sculean A, Donos N, Windisch P, Brex M, Gera I, Reich E, Karring T. Healing of human intrabony defects following treatment with enamel matrix proteins or guided tissue regeneration. J Periodontol Res. 1999 Aug;34(6):310-22. PubMed PMID: 10633886.
Reason: Autologous bone wasn't used

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Reason: Animal study

Sculean A, Junker R, Donos N, Windisch P, Brex M, Dünker N. Immunohistochemical evaluation of matrix molecules associated with wound healing following treatment with an enamel matrix protein derivative in humans. Clin Oral Investig. 2003 Sep;7(3):167-74. Epub 2003 Jun 21. PubMed PMID: 12827455.
Reason: Not related to the clinical question

Sculean A, Kiss A, Miliauskaite A, Schwarz F, Arweiler NB, Hannig M. Ten-year results following treatment of intra-bony defects with enamel matrix proteins and guided tissue regeneration. J Clin Periodontol. 2008

Sep;35(9):817-24. doi: 10.1111/j.1600-051X.2008.01295.x. Epub 2008 Jul 21. PubMed PMID: 18647201.

Reason: Autologous bone effect weren't evaluated

Sculean A, Nikolidakis D, Nikou G, Ivanovic A, Chapple IL, Stavropoulos A. Biomaterials for promoting periodontal regeneration in human intrabony defects: a systematic review. Periodontol 2000. 2015 Jun;68(1):182-216. doi: 10.1111/prd.12086. Review. PubMed PMID: 25867987.

Reason: Autologous bone wasn't used

Sculean A, Pietruska M, Arweiler NB, Auschill TM, Nemcovsky C. Four-year results of a prospective-controlled clinical study evaluating healing of intra-bony defects following treatment with an enamel matrix protein derivative alone or combined with a bioactive glass. J Clin Periodontol. 2007 Jun;34(6):507-13. Epub 2007 Apr 23. PubMed PMID: 17451415.

Reason: Biomaterial different from Autologous bone

Sculean A, Rathe F, Junker R, Becker J, Schwarz F, Arweiler N. [The use of Emdogain in periodontal and osseous regeneration]. Schweiz Monatsschr Zahnmed. 2007;117(6):598-606. Review. German. PubMed PMID: 17691421.

Reason: Autologous bone wasn't used

Sculean A, Reich E, Chiantella GC, Brex M. Treatment of intrabony periodontal defects with an enamel matrix protein derivative (Emdogain): a report of 32 cases. Int J Periodontics Restorative Dent. 1999 Apr;19(2):157-63. PubMed PMID: 10635181.

Reason: Autologous bone wasn't used

Sculean A, Schwarz F, Becker J, Brex M. The application of an enamel matrix protein derivative (Emdogain) in regenerative periodontal therapy: a review. Med Princ Pract. 2007;16(3):167-80. Review. PubMed PMID: 17409750.

Reason: Autologous bone wasn't used

Sculean A, Schwarz F, Berakdar M, Windisch P, Arweiler NB, Romanos GE. Healing of intrabony defects following surgical treatment with or without an Er:YAG laser. J Clin Periodontol. 2004 Aug;31(8):604-8. PubMed PMID: 15257735.

Reason: Not related to the clinical question

Sculean A, Schwarz F, Chiantella GC, Arweiler NB, Becker J. Nine-year results following treatment of intrabony periodontal defects with an enamel matrix derivative: report of 26 cases. Int J Periodontics Restorative Dent. 2007 Jun;27(3):221-9. PubMed PMID: 17694945.

Reason: Autologous bone wasn't used

Sculean A, Schwarz F, Miliauskaitė A, Kiss A, Arweiler N, Becker J, Brex M. Treatment of intrabony defects with an enamel matrix protein derivative or bioabsorbable membrane: an 8-year follow-up split-mouth study. J Periodontol. 2006 Nov;77(11):1879-86. PubMed PMID: 17076614.

Reason: Not related to the clinical question

Sculean A, Stavropoulos A, Berakdar M, Windisch P, Karring T, Brex M. Formation of human cementum following different modalities of regenerative therapy. Clin Oral Investig. 2005 Mar;9(1):58-64. Epub 2005 Jan 6. PubMed PMID: 15635476.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

Sculean A, Windisch P, Chiantella GC, Donos N, Brex M, Reich E. Treatment of intrabony defects with enamel matrix proteins and guided tissue regeneration. A prospective controlled clinical study. J Clin Periodontol. 2001 May;28(5):397-403. PubMed PMID: 11350501.

Reason: Not related to the clinical question

Sculean A, Windisch P, Döri F, Keglevich T, Molnár B, Gera I. Emdogain in regenerative periodontal therapy. A review of the literature. Fogorv Sz. 2007 Oct;100(5):220-32, 211-9. Review. English, Hungarian. PubMed PMID: 18078142.

Reason: Autologous bone wasn't used

Sculean A, Windisch P, Keglevich T, Chiantella GC, Gera I, Donos N. Clinical

and histologic evaluation of human intrabony defects treated with an enamel matrix protein derivative combined with a bovine-derived xenograft. Int J Periodontics Restorative Dent. 2003 Feb;23(1):47-55. PubMed PMID: 12617368.
Reason: Biomaterial different from autologous bone

Sculean A, Windisch P, Keglevich T, Fabi B, Lundgren E, Lyngstadaas PS. Presence of an enamel matrix protein derivative on human teeth following periodontal surgery. Clin Oral Investig. 2002 Sep;6(3):183-7. Epub 2002 Aug 13. PubMed PMID: 12271353.
Reason: Not related to the clinical question

Sculean A, Windisch P, Keglevich T, Gera I. Clinical and histologic evaluation of an enamel matrix protein derivative combined with a bioactive glass for the treatment of intrabony periodontal defects in humans. Int J Periodontics Restorative Dent. 2005 Apr;25(2):139-47. PubMed PMID: 15839590.
Reason: Biomaterial different from autologous bone

Sculean A, Windisch P, Keglevich T, Gera I. Histologic evaluation of human intrabony defects following non-surgical periodontal therapy with and without application of an enamel matrix protein derivative. J Periodontol. 2003 Feb;74(2):153-60. PubMed PMID: 12666702.
Reason: Not related to the clinical question

Sculean A, Windisch P, Szendrői-Kiss D, Horváth A, Rosta P, Becker J, Gera I, Schwarz F. Clinical and histologic evaluation of an enamel matrix derivative combined with a biphasic calcium phosphate for the treatment of human intrabony periodontal defects. J Periodontol. 2008 Oct;79(10):1991-9. doi: 10.1902/jop.2008.080009. PubMed PMID: 18834256.
Reason: Biomaterial different from autologous bone

Seshima F, Aoki H, Takeuchi T, Suzuki E, Irokawa D, Makino-Oi A, Sugito H, Tomita S, Saito A. Periodontal regenerative therapy with enamel matrix derivative in the treatment of intrabony defects: a prospective 2-year study. BMC Res Notes. 2017 Jul 6;10(1):256. doi: 10.1186/s13104-017-2572-2. PubMed PMID: 28683765; PubMed Central PMCID: PMC5501118.
Reason: Autologous bone wasn't used

Seshima F, Kigure T, Saito A. Periodontal Regenerative Therapy Using Enamel Matrix Derivative for Treatment of Generalized Severe Chronic Periodontitis: A 2-year Case Report. Bull Tokyo Dent Coll. 2019 Mar 15. doi: 10.2209/tdcpublish.2018-0026. [Epub ahead of print] PubMed PMID: 30880297.
Reason: Autologous bone wasn't used

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Reason: Not related to the clinical question

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Reason: Animal study

Shimizu E, Saito R, Nakayama Y, Nakajima Y, Kato N, Takai H, Kim DS, Arai M, Simmer J, Ogata Y. Amelogenin stimulates bone sialoprotein (BSP) expression through fibroblast growth factor 2 response element and transforming growth factor-beta1 activation element in the promoter of the BSP gene. J Periodontol. 2005 Sep;76(9):1482-9. PubMed PMID: 16171436.
Reason: Not related to the clinical question

Shinohara H, Iwasawa M, Kitazawa T, Kushima H. Functional lip reconstruction with a radial forearm free flap combined with a masseter muscle transfer after wide total excision of the chin. Ann Plast Surg. 2000 Jul;45(1):71-3. PubMed PMID: 10917103.
Reason: Not related to the clinical question

Shirakata Y, Eliezer M, Nemcovsky CE, Weinreb M, Dard M, Sculean A, Bosshardt DD, Moses O. Periodontal healing after application of enamel matrix derivative in surgical supra/infrabony periodontal defects in rats with streptozotocin-induced diabetes. J Periodontal Res. 2014 Feb;49(1):93-101. doi: 10.1111/jre.12084. Epub 2013 Apr 24. PubMed PMID: 23611485.
Reason: Animal study

Shirakata Y, Miron RJ, Nakamura T, Sena K, Shinohara Y, Horai N, Bosshardt DD, Noguchi K, Sculean A. Effects of EMD liquid (Osteogain) on periodontal healing in class III furcation defects in monkeys. J Clin Periodontol. 2017 Mar;44(3):298-307. doi: 10.1111/jcpe.12663. Epub 2017 Feb 6. PubMed PMID: 27978604.

Reason: Animal study

Shirakata Y, Miron RJ, Shinohara Y, Nakamura T, Sena K, Horai N, Bosshardt DD, Noguchi K, Sculean A. Healing of two-wall intra-bony defects treated with a novel EMD-liquid-A pre-clinical study in monkeys. J Clin Periodontol. 2017 Dec;44(12):1264-1273. doi: 10.1111/jcpe.12825. Epub 2017 Nov 10. PubMed PMID: 28965367.

Reason: Animal study

Shirakata Y, Nakamura T, Shinohara Y, Nakamura-Hasegawa K, Hashiguchi C, Takeuchi N, Imafuji T, Sculean A, Noguchi K. Split-mouth evaluation of connective tissue graft with or without enamel matrix derivative for the treatment of isolated gingival recession defects in dogs. Clin Oral Investig. 2018 Dec 1. doi: 10.1007/s00784-018-2750-1. [Epub ahead of print] PubMed PMID: 30506228.

Reason: Animal study

Shirakata Y, Sculean A, Shinohara Y, Sena K, Takeuchi N, Bosshardt DD, Noguchi K. Healing of localized gingival recessions treated with a coronally advanced flap alone or combined with an enamel matrix derivative and a porcine acellular dermal matrix: a preclinical study. Clin Oral Investig. 2016 Sep;20(7):1791-800. doi: 10.1007/s00784-015-1680-4. Epub 2015 Nov 27. PubMed PMID: 26612398.

Reason: Not related to the clinical question

Shirakata Y, Takeuchi N, Yoshimoto T, Taniyama K, Noguchi K. Effects of enamel matrix derivative and basic fibroblast growth factor with μ -tricalcium phosphate on periodontal regeneration in one-wall intrabony defects: an experimental study in dogs. Int J Periodontics Restorative Dent. 2013 Sep-Oct;33(5):641-9. doi: 10.11607/prd.0989. PubMed PMID: 23998160.

Shirakata Y, Taniyama K, Yoshimoto T, Miyamoto M, Takeuchi N, Matsuyama T, Noguchi K. Regenerative effect of basic fibroblast growth factor on periodontal healing in two-wall intrabony defects in dogs. J Clin Periodontol. 2010 Apr;37(4):374-81. doi: 10.1111/j.1600-051X.2010.01539.x. PubMed PMID: 20447261

Reason: Animal study

Shirakata Y, Yoshimoto T, Goto H, Yonamine Y, Kadomatsu H, Miyamoto M, Nakamura T, Hayashi C, Izumi Y. Favorable periodontal healing of 1-wall infrabony defects after application of calcium phosphate cement wall alone or in combination with enamel matrix derivative: a pilot study with canine mandibles. J Periodontol. 2007 May;78(5):889-98. PubMed PMID: 17470023.

Reason: Animal study

Shirakata Y, Yoshimoto T, Takeuchi N, Taniyama K, Noguchi K. Effects of EMD in combination with bone swaging and calcium phosphate bone cement on periodontal regeneration in one-wall intrabony defects in dogs. J Periodontol Res. 2013 Feb;48(1):37-43. doi: 10.1111/j.1600-0765.2012.01499.x. Epub 2012 Jul 8. PubMed PMID: 22775137.

Reason: Animal study

Shu R, Liu Z, Ge L. [Influences of porcine enamel matrix proteins on MC3T3-E1 osteoblast proliferation and differentiation]. Hua Xi Kou Qiang Yi Xue Za Zhi. 2000 Aug;18(4):226-8. Chinese. PubMed PMID: 12539527.

Reason: Not related to the clinical question

Shujaa Addin A, Akizuki T, Matsuura T, Hoshi S, Ikawa T, Maruyama K, Ono W, Fukuba S, Izumi Y. Histological healing after nonsurgical periodontal treatment with enamel matrix derivatives in canine experimental periodontitis. Odontology. 2018 Jul;106(3):289-296. doi: 10.1007/s10266-018-0347-4. Epub 2018 Feb 10. PubMed PMID: 29429056.

Reason: Animal study

Siciliano VI, Andreuccetti G, Siciliano AI, Blasi A, Sculean A, Salvi GE. Clinical outcomes after treatment of non-contained intrabony defects with enamel matrix derivative or guided tissue regeneration: a 12-month randomized controlled clinical trial. J Periodontol. 2011 Jan;82(1):62-71. doi: 10.1902/jop.2010.100144. Epub 2010 Sep 1. PubMed PMID: 20809859.

Reason: Autologous bone wasn't used

Silvestri M, Rasperini G, Euwe E. Enamel matrix derivative in treatment of infrabony defects. Pract Periodontics Aesthet Dent. 1999 Jun-Jul;11(5):615-6, 618. PubMed PMID: 10635246.

Reason: Autologous bone wasn't used

Silvestri M, Rasperini G, Milani S. 120 infrabony defects treated with regenerative therapy: long-term results. J Periodontol. 2011 May;82(5):668-75. doi: 10.1902/jop.2010.100297. Epub 2010 Nov 16. PubMed PMID: 21080788.
Reason: Not related to the clinical question

Silvestri M, Ricci G, Rasperini G, Sartori S, Cattaneo V. Comparison of treatments of infrabony defects with enamel matrix derivative, guided tissue regeneration with a nonresorbable membrane and Widman modified flap. A pilot study. J Clin Periodontol. 2000 Aug;27(8):603-10. PubMed PMID: 10959787.
Silvestri M, Sartori S, Rasperini G, Ricci G, Rota C, Cattaneo V. Comparison of infrabony defects treated with enamel matrix derivative versus guided tissue regeneration with a nonresorbable membrane. J Clin Periodontol. 2003 May;30(5):386-93. PubMed PMID: 12716329.
Reason: Autologous bone wasn't used

Siqueira SJ, Ribeiro FV, Villalpando KT, Cirano FR, Pimentel SP. Maintenance periodontal therapy after systemic antibiotic and regenerative therapy of generalized aggressive periodontitis. A case report with 10-year follow-up. Dent Update. 2015 May;42(4):385-6, 389-90, 392-3. PubMed PMID: 26062264.
Reason: Not related to the clinical question

Sipos PM, Loos BG, Abbas F, Timmerman MF, van der Velden U. The combined use of enamel matrix proteins and a tetracycline-coated expanded polytetrafluoroethylene barrier membrane in the treatment of intra-osseous defects. J Clin Periodontol. 2005 Jul;32(7):765-72. PubMed PMID: 15966884.
Reason: Not related to the clinical question

Song AM, Shu R, Xie YF, Song ZC, Li HY, Liu XF, Zhang XL. A study of enamel matrix proteins on differentiation of porcine bone marrow stromal cells into cementoblasts. Cell Prolif. 2007 Jun;40(3):381-96. PubMed PMID: 17531082.
Reason: Not related to the clinical question

Song ZC, Shu R, Zhang XL. Cellular responses and expression profiling of human bone marrow stromal cells stimulated with enamel matrix proteins in vitro. Cell Prolif. 2010 Feb;43(1):84-94. doi: 10.1111/j.1365-2184.2009.00656.x. Epub 2009 Nov 17. PubMed PMID: 19922487.
Reason: Not related to the clinical question

Spahr A, Haegewald S, Tsoulfidou F, Rompoli E, Heijl L, Bernimoulin JP, Ring C, Sander S, Haller B. Coverage of Miller class I and II recession defects using enamel matrix proteins versus coronally advanced flap technique: a 2-year report. J Periodontol. 2005 Nov;76(11):1871-80. PubMed PMID: 16274306.
Reason: Not related to the clinical question

St George G, Darbar U, Thomas G. Inflammatory external root resorption following surgical treatment for intra-bony defects: a report of two cases involving Emdogain and a review of the literature. J Clin Periodontol. 2006 Jun;33(6):449-54. Review. PubMed PMID: 16677335.
Reason: Not related to the clinical question

Suárez-López Del Amo F, Monje A, Padial-Molina M, Tang Z, Wang HL. Biologic Agents for Periodontal Regeneration and Implant Site Development. Biomed Res Int. 2015;2015:957518. doi: 10.1155/2015/957518. Epub 2015 Oct 5. Review. PubMed PMID: 26509173; PubMed Central PMCID: PMC4609805.
Reason: Not related to the clinical question

Sugai K, Sato S, Suzuki K, Ito K. Intentional reimplantation of a tooth with severe periodontal involvement using enamel matrix derivative in combination with guided tissue regeneration and bone grafting: a case report. Int J Periodontics Restorative Dent. 2008 Feb;28(1):89-94. PubMed PMID: 18351207.
Reason: Not related to the clinical question

Sugawara A, Sato S. Application of dedifferentiated fat cells for periodontal tissue regeneration. Hum Cell. 2014 Jan;27(1):12-21. doi: 10.1007/s13577-013-0075-6. Epub 2013 Sep 26. PubMed PMID: 24068600.
Reason: Not related to the clinical question

Suphanantachat S, Iwata T, Ishihara J, Yamato M, Okano T, Izumi Y. A role for c-Kit in the maintenance of undifferentiated human mesenchymal stromal cells. Biomaterials. 2014 Apr;35(11):3618-26. doi: 10.1016/j.biomaterials.2014.01.031. Epub 2014 Jan 24. PubMed PMID: 24462355.
Reason: Not related to the clinical question

Svensson Bonde J, Bulow L. One-step purification of recombinant human amelogenin and use of amelogenin as a fusion partner. PLoS One. 2012;7(3):e33269. doi: 10.1371/journal.pone.0033269. Epub 2012 Mar 19. PubMed PMID: 22442680; PubMed Central PMCID: PMC3307724.

Reason: Not related to the clinical question

Swedish Council on Health Technology Assessment. Chronic Periodontitis – Prevention, Diagnosis and Treatment: A Systematic Review [Internet]. Stockholm: Swedish Council on Health Technology Assessment (SBU); 2004 Oct. Available from <http://www.ncbi.nlm.nih.gov/books/NBK447960/> PubMed PMID: 28876734.

Reason: Not related to the clinical question

Szatmári P, Gera I. [Treatment of localized intrabony periodontal defects with enamel matrix derivative (Emdogain). Case series]. Fogorv Sz. 2014 Mar;107(1):15-28. Hungarian. PubMed PMID: 24812749.

Reason: Autologous bone wasn't used

Takayanagi K, Osawa G, Nakaya H, Cochran DL, Kamoi K, Oates TW. Effects of enamel matrix derivative on bone-related mRNA expression in human periodontal ligament cells in vitro. J Periodontol. 2006 May;77(5):891-8. PubMed PMID: 16671883.

Reason: Not related to the clinical question

Takeda K, Mizutani K, Matsuura T, Kido D, Mikami R, Noda M, Buranasin P, Sasaki Y, Izumi Y. Periodontal regenerative effect of enamel matrix derivative in diabetes. PLoS One. 2018 Nov 15;13(11):e0207201. doi: 10.1371/journal.pone.0207201. eCollection 2018. PubMed PMID: 30439990; PubMed Central PMCID: PMC6237339.

Reason: Patients with systemic diseases, Autologous bone wasn't used

Taniguchi Y, Aoki A, Sakai K, Mizutani K, Meinzer W, Izumi Y. A Novel Surgical Procedure for Er:YAG Laser-Assisted Periodontal Regenerative Therapy: Case Series. Int J Periodontics Restorative Dent. 2016 Jul-Aug;36(4):507-15. doi: 10.11607/prd.2515. PubMed PMID: 27333008.

Reason: Not related to the clinical question

Tartakovsky Y, Goldstein A, Goldstein M. Radiographic outcomes following treatment of intrabony defects by freeze-dried bone allograft combined with enamel matrix derivative: A retrospective study. Quintessence Int. 2015 Oct;46(9):773-80. doi: 10.3290/j.qi.a34457. PubMed PMID: 26159211.

Reason: Biomaterial different from autologous bone

Taylor AL, Haze-Filderman A, Blumenfeld A, Shay B, Dafni L, Rosenfeld E, Leiser Y, Fermon E, Gruenbaum-Cohen Y, Deutsch D. High yield of biologically active recombinant human amelogenin using the baculovirus expression system. Protein Expr Purif. 2006 Jan;45(1):43-53. Epub 2005 Jun 21. PubMed PMID: 16055347.

Reason: Not related to the clinical question

Terada C, Komasa S, Kusumoto T, Kawazoe T, Okazaki J. Effect of Amelogenin Coating of a Nano-Modified Titanium Surface on Bioactivity. Int J Mol Sci. 2018 Apr 24;19(5). pii: E1274. doi: 10.3390/ijms19051274. PubMed PMID: 29695118; PubMed Central PMCID: PMC5983616.

Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone effects weren't evaluated

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Reason: Not related to the clinical question

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Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Animal study

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Reason: Autologous bone wasn't used

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Reason: Biomaterial different from autologous bone

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Not related to the clinical question

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Reason: Autologous bone effect weren't evaluated

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Reason: Animal study

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Reason: Biomaterial different from autologous bone

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