

Ausgabe: dentalfresh 2/18

Thema: Upcycling extrahierter Zähne zu autologem Knochenersatzmaterial

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Literatur

Andreasen JO, Hjorting-Hansen E. Replantation of teeth. I. Radiographic and clinical study of 110 human teeth replanted after accidental loss. *Acta Odontol Scand* 1966; 24:263-286.

Andersson L, Blomlof L, Lindskog S, Feiglin B, Hammarstrom L. Tooth ankylosis. Clinical, radiographic and histological assessments. *Int J Oral Surg* 1984; 13:423-431.

Aubeux D, Beck L, Weiss P, Guicheux J, Enkel B, Perez F, Simon S. Assessment and Quantification of Noncollagenic Matrix Proteins Released from Human Dentin Powder Incorporated into a Silated Hydroxypropylmethylcellulose Biomedical Hydrogel. *J Endod* 2016; 42:1371-1376.

Avila-Ortiz G, S. Elangovan, K.W.O. Kramer, D. Blanchette, D.V. Dawson. Effect of Alveolar Ridge Preservation after Tooth Extraction. A Systematic Review and Meta-analysis- *J Dent Res*. 2014 Oct; 93(10): 950–958.

Bakhshalian N, Hooshmand S, Campbell SC, Kim JS, Brummel-Smith K, Arjmandi BH. Biocompatibility and microstructural analysis of osteopromotive property of allogenic demineralized dentin matrix. *Int J Oral Maxillofac Implants* 2013; 28:1655-1662.

Bäumer D, Zuhr O, Rebele S, Hürzeler M. Socket Shield Technique for immediate implant placement - clinical, radiographic and volumetric data after 5 years. *Clin Oral Implants Res*. 2017 Mar 23. doi: 10.1111/clr.13012. [Epub ahead of print]

Hammarström L, Blomlöf L, Lindskog S. Dynamics of dentoalveolar ankylosis and associated root resorption. *Endod Dent Traumatol*. 1989 Aug; 5(4):163-75.

Hassan AH, Evans CA, Zaki AM, George A. Use of bone morphogenetic protein-2 and dentin matrix protein-1 to enhance the osteointegration of the Onplant system. *Connect Tissue Res* 2003;44:30-41.

Hellwig E, Klimek J, Attin T. Einführung in die Zahnerhaltung. München: Elsevier, Urban und Fischer, 2007.

Ike M, Urist MR. Recycled dentin root matrix for a carrier of recombinant human bone morphogenetic protein. *J Oral Implantol* 1998; 24:124-132.

Kim YK, Kim SG, Byeon JH, Lee HJ, Um IU, Lim SC, Kim SY. Development of a novel bone grafting material using autogenous teeth. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2010 Apr; 109(4):496-503. doi: 10.1016/j.tripleo.2009.10.017. Epub 2010 Jan 8.

Kim YK, Lee J, Um IW, Kim KW, Murata M, Akazawa T, Mitsugi M. Toothderived bone graft material. *J Korean Assoc Oral Maxillofac Surg* 2013; 39:103-111.

Levi I, Halperin-Sternfeld M, Horwitz J, Zigdon-Giladi H, Machtei EE. Dimensional changes of the maxillary sinus following tooth extraction in the posterior maxilla

with and without socket preservation. *Clin Implant Dent Relat Res*. 2017 Jul 26. doi: 10.1111/cid.12521. [E-Pub ahead of print]

Murata M, Akazawa T, Mitsugi M, Um, IW, Kim, KW & Kim, YK (2011) Human Dentin as Novel Biomaterial for Bone Regeneration, *Biomaterials - Physics and Chemistry*, Rosario Pignatello, ISBN: 978-953-307-418-4, INTECK Publisher, Croatia. P.127-140.

Murata M, Akazawa T, Mitsugi M, Kabir MA, Um IW, Minamida Y, Kim KW, Kim YK, Sun Y, Qin C. Autograft of Dentin Materials for Bone Regeneration. In: Pignatello R (Hrsg) *Advances in Biomaterials Science and Biomedical Applications*. InTech, 2013. <http://www.intechopen.com/books/advances-in-biomaterials-science-and-biomedical-applications> [5.07.2017].

Nampo T, Watahiki J, Enomoto A, Taguchi T, Ono M, Nakano H, Yamamoto G, Irie T, Tachikawa T, Maki K. A new method for alveolar bone repair using extracted teeth for the graft material. *J Periodontol* 2010; 81:1264-1272.

Pang KM, Um IW, Kim YK, Woo JM, Kim SM, Lee JH. Autogenous demineralized dentin matrix from extracted tooth for the augmentation of alveolar bone defect: a prospective randomized clinical trial in comparison with anorganic bovine bone. *Clin Oral Implants Res* 2016.

Reis-Filho CR, Silva ER, Martins AB, Pessoa FF, Gomes PVN, de Araújo MSC, Miziara MN, Alves JB. Demineralised human dentine matrix stimulates the expression of VEGF and accelerates the bone repair in tooth sockets of rats. *Archives of Oral Biology* 2012; 57:469-476.

Schmidt-Schultz TH, Schultz M. Intact growth factors are conserved in the extracellular matrix of ancient human bone and teeth: a storehouse for the study of human evolution in health and disease. *Biol Chem*. 2005 Aug; 386(8):767-76.

Schropp L, Wenzel A, Kostopoulos L, Karring T. Bone healing and soft tissue contour changes following single-tooth extraction: a clinical and radiographic 12-month prospective study. *Int J Periodontics Restorative Dent*. 2003 Aug; 23(4):313-23.

Tabatabaei FS, Tatari S, Samadi R, Moharamzadeh K. Different methods of dentin processing for application in bone tissue engineering: A systematic review. *J Biomed Mater Res A* 2016; 104:2616-2627.

Yeomans JD, Urist MR. Bone induction by decalcified dentine implanted into oral, osseous and muscle tissues. *Arch Oral Biol* 1967; 12:999-1008.