

Technical Research Documents and Medical Publications for:

Damaged Bone and Cartilage

Stem cells from dental pulp have been shown to have the ability to differentiate into osteoblasts. Studies have shown that dental pulp stem cells are a promising tool for bone generation. Stem cells from teeth have been expanded, differentiated, and implanted into animal models and have repaired bone defects. Stem cells from dental pulp may one day be used to treat human bone disorders, like osteoporosis, bone injury, and bone deformation.

PAPER 1:

Three years after transplants in human mandibles, histological and in-line holotomography revealed that stem cells regenerated a compact rather than a spongy bone: biological and clinical implications.

Giuliani A, Manescu A, Langer M, Rustichelli F, Desiderio V, Paino F, De Rosa A, Laino L, d'Aquino R, Tirino V, Papaccio G. "Three years after transplants in human mandibles, histological and in-line holotomography revealed that stem cells regenerate a compact rather than a spongy bone: biological and clinical implications." *Stem Cells Transl Med* (2013). PMID: 23502599

<http://www.ncbi.nlm.nih.gov/pubmed/23502599>

PAPER 2:

Transplantation of human dental pulp stem cells: enhance bone consolidation in mandibular distraction osteogenesis.

Alkaisi A, Ismail AR, Mutum SS, Rifin Ahmad ZA, Masudi S, Razak NH. "Transplantation of human dental pulp stem cells: enhance bone consolidation in mandibular distraction osteogenesis." *J Oral Maxillofac Surg* (2013). PMID: 24040948

<http://www.ncbi.nlm.nih.gov/pubmed/24040948>

PAPER 3:

Fibroin Scaffold Repairs Critical-Size Bone Defects *In Vivo* Supported by Human Amniotic Fluid and Dental Pulp Stem Cells.

Riccio, Massimo, et al. "Fibroin Scaffold Repairs Critical-Size Bone Defects *In Vivo* Supported by Human Amniotic Fluid and Dental Pulp Stem Cells." *Tissue Engineering Part A* 18.9-10 (2012): 1006-1013.

<http://online.liebertpub.com/doi/abs/10.1089/ten.tea.2011.0542>

PAPER 4:

Osteogenic potential of effective bone engineering using dental pulp stem cells, bone marrow stem cells, and periosteal cells for osseointegration of dental implants.

Ito K, Yamada Y, Nakamura S, Ueda M. "Osteogenic potential of effective bone engineering using dental pulp stem cells, bone marrow stem cells, and periosteal cells for osseointegration of dental implants." *Int J Oral Maxillofac Implants* (2011). PMID: 22010075

<http://www.ncbi.nlm.nih.gov/pubmed/22010075>

PAPER 5:

Promising cell-based therapy for bone regeneration using stem cells from deciduous teeth, dental pulp, and bone marrow.

Yamada Y, Ito K, Nakamura S, Ueda M, Nagasaka T. "Promising cell-based therapy for bone regeneration using stem cells from deciduous teeth, dental pulp, and bone marrow" *Cell Transplant* (2011). PMID: 21054950

<http://www.ncbi.nlm.nih.gov/pubmed/21054950>

PAPER 6:

A feasibility of useful cell-based therapy by bone regeneration with deciduous tooth stem cells, dental pulp stem cells, or bone-marrow derived mesenchymal stem cells for clinical study using tissue engineering technology.

Yamada Y, Nakamura S, Ito K, Sugito T, Yoshimi R, Nagasaka T, Ueda M. "A feasibility of useful cell-based therapy by bone regeneration with deciduous tooth stem cells, dental pulp stem cells, or bone-marrow derived mesenchymal stem cells for clinical study using tissue engineering technology." *Tissue Eng Part A* (2010). PMID: 20067397

<http://www.ncbi.nlm.nih.gov/pubmed/20067397>

PAPER 7:

Human mandible bone defect repair by the grafting of dental pulp stem/progenitor cells and collagen sponge biocomplexes.

d'Aquino R, De Rosa A, Lanza V, Tirino V, Laino L, Graziano A, Desiderio V, Laino G, Papaccio G.

Eur Cell Mater. 2009 Nov 12;18:75-83. PMID: 19908196

<http://www.ncbi.nlm.nih.gov/pubmed/19908196>

PAPER 8:

Stem cells from deciduous tooth repair mandibular defect in swine.

Zheng Y, Liu Y, Zhang CM, Zhang HY, Li WH, Shi S, Le AD, Wang SL.

J Dent Res. 2009 Mar;88(3):249-54. PMID: 19329459

<http://www.ncbi.nlm.nih.gov/pubmed/19329459>

PAPER 9:

SHED repair critical-size calvarial defects in mice.

Seo BM, Sonoyama W, Yamaza T, Coppe C, Kikuri T, Akiyama K, Lee JS, Shi S.

Oral Dis. 2008 Jul;14(5):428-34. PMID: 18938268

<http://www.ncbi.nlm.nih.gov/pubmed/18938268>

PAPER 10:

Dental pulp stem cells: a promising tool for bone regeneration.

d'Aquino R, Papaccio G, Laino G, Graziano A.

Stem Cell Rev. 2008 Spring;4(1):21-6. PMID: 18300003

<http://www.ncbi.nlm.nih.gov/pubmed/18300003>

PAPER 11:

In vivo evaluation of human dental pulp stem cells differentiated towards multiple lineages.

Zhang W, Walboomers XF, Van Kuppevelt TH, Daamen WF, Van Damme PA, Bian Z, Jansen JA.

J Tissue Eng Regen Med. 2008 Mar-Apr;2(2-3):117-25. PMID: 18338838

<http://www.ncbi.nlm.nih.gov/pubmed/18338838>

PAPER 12:

Reconstruction of large cranial defects in nonimmunosuppressed experimental design with human dental pulp stem cells.

de Mendonça Costa A, Bueno DF, Martins MT, Kerkis I, Kerkis A, Fanganiello RD, Cerruti H, Alonso N, Passos-Bueno MR.

J Craniofac Surg. 2008 Jan;19(1):204-10. PMID: 18216690

<http://www.ncbi.nlm.nih.gov/pubmed/18216690>

PAPER 13:

Mesenchymal progenitor cells in adult human dental pulp and their ability to form bone when transplanted into immunocompromised mice.

Otaki S, Ueshima S, Shiraishi K, Sugiyama K, Hamada S, Yorimoto M, Matsuo O.

Cell Biol Int. 2007 Oct;31(10):1191-7. Epub 2007 Apr 14. PMID: 17524678

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www.bioeden.com

<http://www.ncbi.nlm.nih.gov/pubmed/17524678>

Stem cell knee injection shown to regenerate meniscus, reduce pain.

PAPER 14:

Stem cells were used for meniscal regeneration and the control of knee pain. Treatment was with allogeneic human mesenchymal stem cells.

<http://www.healio.com/orthopedics/biologics/news/online/%7B0cd61592-5eed-4b52-a868-e7576aab3fdf%7D/stem-cell-knee-injection-shown-to-regenerate-meniscus-reduce-pain>