



**TECHNICAL RESEARCH DOCUMENTS
AND MEDICAL PUBLICATIONS FOR:
BURNS AND
TISSUE REPAIR**

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Wound healing requires a complex bimolecular process including cell migration, proliferation, angiogenesis, and extracellular matrix remodelling. Angiogenesis or new blood vessel formation is one of the most important aspects of early wound healing. There have been several reports that indicate that mesenchymal stem cells are critical for new blood vessel formation to occur.

Paper 1:

Human deciduous teeth dental pulp cells with basic fibroblast growth factor enhance wound healing of skin defect.

Nishino Y, Ebisawa K, Yamada Y, Okabe K, Kamei Y, Ueda M. J Craniofac Surg (2011). PMID: 21403563

<http://www.ncbi.nlm.nih.gov/pubmed/21403563>

Paper 2:

Mesenchymal stem cells improve wound healing in vivo via early activation of matrix metalloproteinase-9 and vascular endothelial growth factors.

Kim CH, Lee JH, Won JH, Cho MK. J Korean Med Sci (2011). PMID: 21655056

<http://www.ncbi.nlm.nih.gov/pubmed/21655056>

**This research was performed using bone marrow MSCs, which function similarly to dental pulp stem cells in other studies.

Paper 3:

Tissue-engineered skin containing mesenchymal stem cells improves burn wounds.

Liu P, Deng Z, Han S, Liu T, Wen N, Lu W, Geng X, Huang S, Jin Y. Artif Organs (2008). PMID: 19133020

<http://www.ncbi.nlm.nih.gov/pubmed/19133020>

**This research was performed using bone marrow MSCs, which function similarly to dental pulp stem cells in other studies.

MSC's are used to grow replacement cartilage for damaged shoulders in humans

Paper 4:

Adult Stem Cells for Shoulder Injuries

On Target

<http://blog.targethealth.com/?p=3802>

MSC's are used for difficult wound healing and skin growth in human patients.

Paper 5:

New Study Using Combination of Bioengineered Skin and Stem Cells Shows Promise in Treatment of Non-Healing Wounds

By: PR Newswire

<http://uk.sys-con.com/node/866081>