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New Procedure Promises Acceleration of Bone Healing

[Rosemont, IL, June 1, 2014] Approximately 6.3 million bone fractures occur each year in the United States. University of Pittsburgh bioengineers and oral-maxillofacial surgeon researchers report in the June issue of the *Journal of Oral and Maxillofacial Surgery* details of a promising procedure with the potential for accelerating bone healing.

Authors of the article, entitled “Regeneration of Periosteum by Human Bone Marrow Stromal Cell Sheets,” describe the utilization of BMSCs (bone marrow derived cells) as a source of tissue that resembles the covering of bones (periosteum) that supplies it with blood and protects it from injury.

The innovative use of cell sheet technology, a process by which cells can be grown in the laboratory, enabled the authors to produce adult stem cells with the ability to regrow tissue. Those cells, in turn, had the capacity to produce bone.

The cell sheets were wrapped around calcium phosphate pellets and implanted. Subsequent microscopic comparisons between those pellets and pellets without BMSC sheet wraps revealed that the wrapped pellets formed a bone-like tissue, while the latter did not.

Based on these data, the authors concluded that cell sheet technology has the potential for regenerating a functional periosteum-like tissue able to accelerate bone healing.

Read the complete study findings at [J Oral Maxillofac Surg 72:1078-1083, 2014](#).

The Journal of Oral and Maxillofacial Surgery is published monthly by the American Association of Oral and Maxillofacial Surgeons to present to the dental and medical communities comprehensive coverage of new techniques, important developments and innovative ideas in oral and maxillofacial surgery. Practice-applicable articles help develop the methods used to handle dentoalveolar surgery, facial injuries and deformities, TMJ disorders, oral cancer, jaw reconstruction, anesthesia and analgesia. The journal also includes specifics on new instruments and diagnostic equipment and modern therapeutic drugs and devices.

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