Study uses bone marrow stem cells to regenerate skin

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A new study suggests that adult bone marrow stem cells can be used in the construction of artificial skin. The findings mark an advancement in wound healing and may be used to pioneer a method of organ reconstruction. The study is published in *Artificial Organs*, official journal of the International Federation for Artificial Organs (IFAO), the The International Faculty for Artificial Organs (INFA) and the International Society for Rotary Blood Pumps (ISRBP).

Source: Wiley

To investigate the practicability of repairing burn wounds with tissue-engineered skin combined with bone marrow stem cells, the study established a burn wound model in the skin of pigs, which is known to be anatomically and physiologically similar to human skin.

Engineering technology and biomedical theory methods were used to make artificial skin with natural materials and bone marrow derived stem cells. Once the artificial skin was attached to the patient and the dermal layer had begun to regenerate, stem cells were differentiated into skin cells. The cells are self-renewing and raise the quality of healing in wound healing therapy. When grafted to the burn wounds, the engineered skin containing stem cells showed better healing, less wound contraction and better development of blood vessels.

Skin, the human body's largest organ, protects the body from disease and physical damage, and helps to regulate body temperature. When the skin has been seriously damaged through disease or burns, the body often cannot act fast enough to repair them. Burn victims may die from infection and the loss of plasma. Skin grafts were originally developed as a way to prevent such consequences.

Artificial Organs: www3.interscience.wiley.com/journal/118539732/home.