

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: WOUND HEALING GEL LEAVES NO SCAR: MEDICINE'S NEXT BIG THING?
REPORT: MB #4868

BACKGROUND: It is estimated that chronic wounds affect around 6.5 million patients in the U.S. and is expected to increase as the population ages. Patients with chronic wounds may experience chronic pain, loss of function and mobility, increased social stress and isolation, depression and anxiety, prolonged hospitalization, increased financial burden, and increased morbidity and mortality. Chronic non-healing wounds are considered wounds that go through the wound healing process without restoring anatomic and functional results. There is some sort of physiologic impairment that slows or prevents it from healing. The Wound Healing Society classifies chronic wounds into four major categories: pressure ulcers, diabetic foot ulcers, venous ulcers, and arterial insufficiency ulcers.

(Source: https://www.facs.org/-/media/files/education/core-curriculum/nonhealing_wounds.ashx)

WOUND-HEALING GEL PROMOTES TISSUE REGENERATION: UCLA scientists along with colleagues at Duke University developed a wound-healing biomaterial that can reduce scar formation allowing skin tissue to regenerate. It's showing promising results in healthier and stronger skin. "When most biomaterials are placed in the body, they are either pushed out like a splinter or walled off by the immune system and degraded or destroyed, but in this study, the immune response to the gel induced a regenerative response in the healed tissue," said Dr. Philip Scumpia, an assistant professor in the division of dermatology at UCLA Health and the West Los Angeles VA Medical Center. The researchers determined that the amino acid they used, one not found naturally in the body, is the key behind the regenerative immune response and improved healing.

(Source: <https://www.uclahealth.org/new-wound-healing-biomaterials-reduce-scarring-and-promote-tissue-regeneration>)

NEW STUDY SHOWS BREAKTHROUGH: Research conducted at the University of California, Davis, is the first to demonstrate how a bioengineered scaffold made up of human mesenchymal stem cells (MSCs) combined with a drug commonly used to treat glaucoma, has improved healing and decreased inflammation in the wounds of diabetic mice by as much as 75 percent over the control groups. The research team seeded MSCs, collected from the bone marrow of healthy human donors, on circular matrix scaffolds. The scaffolds were incubated in timolol at 1 percent oxygen in the MSC culture medium and then applied to the wounds of a group of diabetic mice. "Overall, the combination of MSCs and timolol successfully improved wound healing and reduced inflammatory response in the mice," said Jan Nolte, PhD, director of the Stem Cell Program at UC Davis School of Medicine and its Institute for Regenerative Cures. "This suggests that this unique approach could potentially provide superior healing responses in humans with diabetic wounds."

(Source: <https://www.news-medical.net/news/20200728/Study-shows-promise-of-a-major-breakthrough-in-healing-chronic-diabetic-ulcers.aspx>)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com