

Too much of a good thing? Too many 'healing' cells delays wound healing

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Like most other things, you can have too much of a good thing when it comes to wound healing, and new research proves it. According to an article published in the July 2013 issue of the *Journal of Leukocyte Biology*, wound healing can be delayed because the body produces too many mast cells, which normally promote healing. An overabundance of these cells, however, also causes harm by leading to the overproduction of IL-10, which prevents certain white blood cells from reaching the wounded area. The work was conducted in mice with lymphedematous skin, and may one day provide better treatments for elderly individuals with skin ulcers in the lower extremities, for women with upper-extremity wounds following breast cancer surgery, and skin wounds of any type that are not healing as they should.

"Improvement of lymphedema is important for treatment of [skin ulcers](#)," said Makoto Sugaya, M.D., Ph.D., a researcher involved in the work from the Department of Dermatology at the University of Tokyo in Tokyo, Japan. "It is not just fluid retention, but inflammatory cells and cytokines that cause delayed wound healing."

To make this discovery, scientists used two groups of mice. The first group showed severe lymphatic dysfunction. The second group was normal. Researchers administered skin wounds and found that the mice with lymphatic dysfunction showed delayed wound healing as compared to the normal mice. Analysis showed that the delayed wound healing in the lymphedematous skin is the result of too many [mast cells](#) and elevated IL-10 expression, both of which can now be therapeutic targets

for future drug development.

"Wound healing is something most people take for granted until there's a problem," said John Wherry, Ph.D., Deputy Editor of the *Journal of Leukocyte Biology*. "However, wound healing is a complex process involving immune as well as non-immune cells and problems that arise can be very serious, even if it started as a minor wound. This report provides an immunological explanation for why some wound healing is delayed, and it ultimately may help set a course for therapies that accelerate wound healing."

More information: Takayuki Kimura, Makoto Sugaya, Andrew Blauvelt, Hitoshi Okochi, and Shinichi Sato. Delayed wound healing due to increased interleukin-10 expression in mice with lymphatic dysfunction. *J Leukoc Biol* July 2013 94:137-145;
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