

Scientists discover possible treatment to reduce scarring

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Whether from surgery or battle wounds, ugly scars can affect body and mind. Now a new research report appearing online in the *FASEB Journal* offers a new strategy to reduce or eliminate scars on the skin.

Specifically, scientists from NYU describe how agents that block receptors for adenosine (a molecule generated from ATP which is used by the body to provide energy to muscles) can be applied topically to healing wounds to reduce scar size, yielding skin that feels more like the original, unscarred skin.

"Scars can be disfiguring and, if extensive enough, can lead to diminished function and quality of life," said Bruce N. Cronstein, M.D., a researcher involved in the work from the Division of Translational Medicine in the Department of Medicine at New York University School of Medicine in New York, NY. "We hope that our findings may lead to new agents that diminish scarring and disfigurement following burns, wounds, or even illnesses that destroy skin and lead to a better quality of life for victims of these [traumas](#)."

When the skin or other tissues are wounded, ATP leaks from the damaged cells and is then converted to adenosine which promotes healing. Scars form when adenosine continues to be produced at the wound site after the injury is healed, leading to larger, thicker scars than what may have otherwise been there. To study the possibility of reducing scar sizes, Cronstein and colleagues studied wounds on the backs of mice. After the wound closed, the adenosine A2A [receptor antagonist](#) was applied. They found that the adenosine A2A receptor agonist

prevented excessive [scar tissue](#) in the treated mice.

"The vast majority of scars are hardly noticeable, if they can be seen at all," said Gerald Weissmann, M.D., Editor-in-Chief of the [FASEB Journal](#), "but for some, scars can severely disfigure not only the body, but the mind. Finding ways to prevent scarring after wounds or surgery has the potential to improve the quality of life for those who suffer the slings and arrows of outrageous fortune, now and for generations to come."

More information: Miguel Perez-Aso, Luis Chiriboga, and Bruce N. Cronstein. Pharmacological blockade of adenosine A2A receptors diminishes scarring. *FASEB J* doi:10.1096/fj.12-209627

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