

Study uses stem cells to boost red blood cell production

August 7 2012



New method could dramatically increase transfusion blood supply, researchers say.

(HealthDay) -- Using human stem cells, scientists have developed methods to boost the production of red blood cells, according to a new study.

Their discovery could significantly increase the [blood supply](#) needed for blood transfusions, the researchers said, and their methods can be used to produce any blood type.

"Being able to produce red blood cells from [stem cells](#) has the potential to overcome many difficulties of the current system, including sporadic shortages," Dr. Anthony Atala, editor of the journal *Stem Cells Translational Medicine*, in which the study appeared, said in a journal

news release.

"This team has made a significant contribution to scientists' quest to produce red blood cells in the lab," said Atala, who is also director of the Wake Forest Institute for Regenerative Medicine.

How does the new process work?

"We combined different cell-expansion protocols into a 'cocktail' that increased the number of cells we could produce by 10- to 100-fold," said researcher Eric Bouhassira, of the Albert Einstein College of Medicine in New York City.

Currently, the blood needed for life-saving transfusions is obtained only through donations. As a result, blood can be in short supply, particularly for those with rare blood types. The researchers produced a higher yield of red [blood cells](#) by using stem cells from cord blood and circulating blood as well as [embryonic stem cells](#), according to the release.

"The ability of scientists to grow large quantities of [red blood cells](#) at an industrial scale could revolutionize the field of [transfusion medicine](#)," Bouhassira said. "Collecting blood through a donation-based system is serving us well but it is expensive, vulnerable to disruption and insufficient to meet the needs of some people who need ongoing transfusions. This could be a viable long-term alternative."

The study, which appeared online Aug. 2, was partially supported by the funding agency of the New York State Empire Stem Cell Board.

More information: Visit the U.S. National Institutes of Health to learn more about [stem cells](#).

Copyright © 2012 [HealthDay](#). All rights reserved.

Citation: Study uses stem cells to boost red blood cell production (2012, August 7) retrieved 3 May 2024 from <https://medicalxpress.com/news/2012-08-stem-cells-boost-red-blood.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.