

# New discovery may expand availability of bone marrow transplants by stopping fatal complications

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If a team of American scientists are right, bone marrow transplants may become safer and more available to people in need of donations. In a new research paper appearing in the February 2010 print edition of the *Journal of Leukocyte Biology*, they explain how an anti-inflammatory agent called "ATL146e" may significantly improve the likelihood of success for bone marrow transplants by preventing or halting the progression of graft-versus-host disease, a complication of bone marrow transplants in which the donor marrow attacks the host. Although very rare, graft-versus-host disease can also occur after blood transfusions.

"We hope that this study is the first step in the development and implementation of a new treatment for graft-versus-host disease," said Courtney M. Lappas, Ph.D., one of the scientists involved in the study. "This is important clinically because it could potentially minimize the risks associated with bone marrow transplantation, making these potentially curative transplants safer and more widely used in individuals with inherited immunodeficiency diseases."

Scientists performed bone marrow transplants using two genetically different strains of mice, causing graft-versus-host disease in the recipients. Some of recipient mice were then treated with ATL146e and others were given a [placebo](#). In mice treated before the disease took hold, the severity of graft-versus-host disease was reduced, leading to a significant decrease in [tissue damage](#) and an increase in survival. In mice

that already had graft-versus-host disease, treatment with ATL146e reversed the disease.

"Bone marrow transplants have saved thousands of lives, but for some this lifesaving therapy can become fatal," said John Wherry, Ph.D., Deputy Editor of the [Journal of Leukocyte Biology](#). "This research is very exciting because ultimately, it might improve the safety of bone marrow transplants and perhaps even open up new opportunities for this therapy in other diseases."

**More information:** Courtney M. Lappas, Po-Ching Liu, Joel Linden, Elizabeth M. Kang, and Harry L. Malech. Adenosine A2A receptor activation limits graft-versus-host disease after allogeneic hematopoietic stem cell transplantation. *J Leukoc Biol* 2010 87: 345-354.  
[www.jleukbio.org/cgi/content/abstract/87/2/345](http://www.jleukbio.org/cgi/content/abstract/87/2/345)

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