

Bone marrow-derived stem cells offer blood transplant patients better quality of life

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A large, nationwide study published in the journal *JAMA Oncology* found that people who received transplants of cells collected from a donor's bone marrow the original source for blood stem cell transplants, developed decades ago had better self-reported psychological well-being, experienced fewer symptoms of a common post-transplant side effect called graft-vs.-host disease and were more likely to be back at work five years after transplantation than those whose transplanted cells were taken from the donor's bloodstream.

"We're hoping that once we provide information about long-term quality of life and recovery, patients and their doctors can take this into account when they're planning their transplants," said lead author Dr. Stephanie Lee of Fred Hutchinson Cancer Research Center. She noted that the results would only be applicable to transplant patients who are similar to those enrolled in the trial.

The study also showed that there was no difference in overall survival, treatment-related death or relapse between the two groups of study participants. Lee said that this result would reassure the many patients for whom survival is the top concern.

"There are many ways to do a transplant. Choosing a source of [stem cells](#) is just one decision. But anything that improves the success of transplant can help future patients," she said.

The study included 551 people between age 16 and 66 with leukemia or certain other blood malignancies who needed to receive a transplant of [blood-forming stem cells](#) from an unrelated donor. The patients were randomly assigned to one of the two types of transplants. From 6 months to five years after the transplant, study researchers called the participants periodically to assess how they were doing.

The researchers found that people whose transplanted cells were derived from their donor's bone marrow were more likely to report better [psychological well-being](#) others than those assigned to receive the stem cells from circulating, or peripheral, blood. They were also much more likely to have returned to at least part-time work than their counterparts in the [bone marrow transplant](#) group.

"Results of this study set bone marrow as the standard source of stem cells for transplantation from unrelated donors" said Dr. Claudio Anasetti, senior author of the study and chair of the Department of Blood and Marrow Transplantation at Moffitt Cancer Center.

The researchers suspected, but could not confirm, that these patients had better emotional well-being because they also experienced fewer self-reported symptoms of chronic [graft-vs.-host disease](#), or GVHD, and had fewer side effects from GVHD treatment. Chronic GVHD is a common transplant complication in which transplanted immune cells turn against the patient's healthy cells, causing symptoms such as a debilitating thickening of the skin and permanent loss of lung function.

This condition is a major focus of Lee's research as research director of Fred Hutch's Long-Term Follow-Up Program, which provides lifelong monitoring and care of transplant patients, and as leader of a national research consortium on chronic GVHD.

The study led by Lee is the latest example of the decades of research by many scientists that has continued to improve [bone marrow](#) transplantation and related forms of blood stem cell transplantation by boosting the therapy's success rates and decreasing toxicity.

"When both your disease and the recommended treatment are life-threatening, I don't think people are necessarily asking 'which treatment is going to

give me better quality of life years from now?" Lee said. "Yet, if you're going to make it through, as many [patients](#) do, you want to do it with good quality of life. That's the whole point of having the [transplant](#). It's not just to cure your disease but also to try to get back to as normal of lifestyle as you can."

Provided by Fred Hutchinson Cancer Research Center

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