



# On Cancer: Memorial Sloan-Kettering's One-Year Survival Rate after Allogeneic Bone Marrow Transplant Exceeds Expectations

By [Memorial Sloan-Kettering](#) | Monday, March 26, 2012

An [independent study conducted by the US National Marrow Donor Program](#) (NMDP) found that Memorial Sloan-Kettering Cancer Center significantly exceeded its predicted rate of one-year survival for patients undergoing an [allogeneic bone marrow transplantation](#). The NMDP found that 75 percent of patients undergoing this procedure at Memorial Sloan-Kettering survived through the first year. The predicted rate of survival was 62 percent.

In allogeneic bone marrow transplantation, a person's blood-forming stem cells are eliminated and then replaced with new, healthy ones obtained from a donor or from donated umbilical cord blood. The procedure is used as a treatment for certain forms of cancer (including [leukemia](#), [lymphoma](#), [multiple myeloma](#), and myelodysplastic syndrome), as well as other blood disorders.



Sergio Giralt, Adult Bone Marrow Transplantation Service Chief

In an interview, [Sergio Giralt](#), Chief of Memorial Sloan-Kettering's [Adult Bone Marrow Transplantation Service](#), discusses the significance of the findings, and some of the advances that have made transplantation an effective treatment for a growing number of patients.

## Why is one-year survival such an important factor for evaluating the effectiveness of allogeneic transplantation?

The first year is critically important because it's the period when complications of a stem cell transplant are most likely to happen. Before the stem cells are transplanted, a patient undergoes intensive chemotherapy and radiation therapy. In addition to killing diseased cells, this treatment also eliminates the immune system. This leaves the patient at high risk of infection during the first year after transplantation.

Another complication that can occur following an allogeneic transplant is [graft-versus-host disease](#) (GVHD). GVHD occurs when the transplanted cells from a bone marrow donor recognize the patient's own cells as foreign and produce an inflammatory reaction. This can produce a range of serious side effects.

One year after the transplant, patients are typically able to get back to their daily lives with a decreased chance of transplant-associated medical complications.

## What do the National Marrow Donor Program findings tell us?

Statistics from the US National Marrow Donor Program (NMDP) compare Memorial Sloan-Kettering's actual one-year outcomes with outcomes predicted by the NMDP, based on many aspects of our patient population including age and the types of disease that we treat.

The NMDP predicted that 62 percent of our patients would survive the first year after a transplant. In our actual results, 75 percent of patients — that's three out of every four — survived that critical period, and now they're working toward recovery and becoming long-term transplant survivors.

This is great news for our patients. If you were to receive a transplant at a typical center, your chances of being alive at one year would be 60 percent. When you receive a transplant at Memorial Sloan-Kettering, your chance of success is much better than average.

## What does Memorial Sloan-Kettering do that has led to this improvement in survival after a transplant?

Because patients are at such a high risk of infection, we use very sensitive tests to detect viral infections early. [Richard O'Reilly](#), Chief of Memorial Sloan-Kettering's [Pediatric Bone Marrow Transplant Service](#), has pioneered research that uses donor-specific immune-fighting cells against viruses. This is a new way of treating viral infection in patients who are severely immune compromised.

We've also pioneered an approach called T cell depletion therapy, which is a powerful way of preventing graft-versus-host disease. We know that T cells, a type of white blood cells, in the donor graft can cause GVHD. By removing those T cells from the donor's cells

before a patient receives the transplant, we can significantly reduce the occurrence of graft-versus-host disease.

**In allogeneic transplantation, it's important to find a donor whose cells are a good match to a patient's. Are there any options for people who cannot find a match?**

The ideal donor for someone who needs an allogeneic stem cell transplant is a sibling. When it is not possible to find a good match within a patient's family, we look to bone marrow registries to find another donor whose profile matches the patient's closely.

Because family size is getting smaller in North America, it is becoming more challenging to find suitable donors within a patient's family. And, unfortunately, volunteer donors from mixed ethnic or minority backgrounds are not well represented in national registries.

Another approach for patients who need an allogeneic transplant is to use stem cells from donated umbilical cord blood. Cord blood has a much lower risk of causing graft-versus-host disease, and can be transplanted successfully in many patients.

[Juliet Barker](#), one of our transplantation experts at Memorial Sloan-Kettering, has been a leader in improving cord blood transplantation. Her results are among the very best in the world, and she's developed a number of new approaches. This means that in our clinical trials, we can often offer unique stem cell transplantation techniques for patients who do not have a donor in their family or in the volunteer registries.

**How else do staff at Memorial Sloan-Kettering support patients through the challenges of that first year?**

What many patients notice when they receive a transplant at Memorial Sloan-Kettering is our team approach. Everyone here cares for patients undergoing transplantation in the same way, so it doesn't matter who your attending physician is or who your nurse practitioner is — you will receive the same expert care.

Our doctors and nurses are also committed to managing patients' symptoms. We want patients to feel as healthy as possible throughout the procedure, both physically and psychologically. Our social workers, psychologists, and psychiatrists are available to make this as easy as possible, both for our patients and their family members.

In everything we do, we are focused on our patients, and we are relentless in our dedication to getting them back to health.



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**-Sergio Giral, Adult Bone Marrow Transplantation Service Chief**

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