

## Common late effects after transplant in very young children

### What were researchers trying to learn?

The researchers wanted to learn about late effects of blood or marrow transplant (BMT) for very young children. Late effects are health problems that can happen months or years after treatment.

In this study, researchers looked at more than 700 people who were alive and healthy at least 1 year after getting a BMT as a very young child. They studied children who had transplant when they were less than 3 years old. On average, children were followed-up for about 8 years, but some were followed-up for as many as 26 years.

### What did they find?

The researchers found that 10 years after transplant, almost 9 out of 10 (87%) children were alive. Fewer than 1 out of 10 children (5%) died from late effects of BMT.

3 out of 10 (30%) children had organ damage or another late effect a year or more after transplant.

- A little more than 2 out of 10 children (23%) had slower growth due to low levels of growth hormone.
- About 2 out of 10 children (18%) developed cataracts. This is when the normally clear lens in the eye gets cloudy.
- A little more than 1 out of 10 children (13%) had an underactive thyroid gland (hypothyroidism). The thyroid makes hormones, or natural chemicals, that control metabolism. An underactive thyroid gland can cause joint or muscle pain, weakness, and weight gain.

The researchers also found these top 3 late effects were more common in the children who had full-body radiation (also called total body irradiation, or TBI) before transplant.

The researchers said that doctors need to carefully watch young children who had full-body radiation and start treatment right away if they develop late effects.

#### Important Points:

- **30% of very young BMT recipients have organ damage or other late effects.**
- **Common late effects are delayed growth, cataracts, and hypothyroidism.**
- **Full-body radiation increases the chance of getting these late effects.**

### Why is this important?

Doctors and families can use this to talk about the potential side effects of BMT. This can also help doctors watch very young children for late effects after BMT. Keeping a young child healthy after transplant is a team effort that includes the child's family, the transplant team, and the child's primary care doctor. When everyone knows the late effects to watch out for, children can get treatment sooner if any develop.

### What else should I keep in mind about this study?

The results of research studies are always limited in what they can and can't tell you. Although this study found common late effects after transplant, there may be rare late effects the researchers didn't find. Also, this study looked at transplant results (outcomes) for 25 years. Because treatments for late effects have gotten better over time, this study may have overestimated BMT late effects.

### Questions to ask your doctor

If your child is about to have a transplant, or is recovering from a transplant, you may want to ask:

- Did, or will, my child receive full-body radiation before transplant? Why or why not?
- How does this hospital track a child's health 5-10 years or longer after transplant?
- Who do I contact if my child has a health problem after transplant?

### Learn more about

- [This research study](#)
- [Life after transplant](#)

### Source

Vrooman LM, Millard HR, Brazauskas R, et al. Survival and late effects after allogeneic hematopoietic cell transplantation for hematologic malignancy at less than three years of age. *Biology of Blood and Marrow Transplantation*. 2017 Aug 1; 23(8): 1327-1334. doi: 10.1016/j.bbmt.2017.04.017. Epub 2017 Apr 28. PMC5666571.

### About this research summary

Ground-breaking research into blood and marrow transplant is happening every day. That research is having a significant impact on the survival and quality of life of thousands of transplant patients. But the research is written by scientists for scientists. By providing research news in an easy-to-understand way, patients, caregivers, and families have access to useful information that can help them make treatment decisions.

This information is provided on behalf of the Consumer Advocacy Committee of the CIBMTR<sup>®</sup> (Center for International Blood and Marrow Transplant Research<sup>®</sup>). The CIBMTR is a research collaboration between the National Marrow Donor Program<sup>®</sup>/Be The Match<sup>®</sup> and the Medical College of Wisconsin.

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