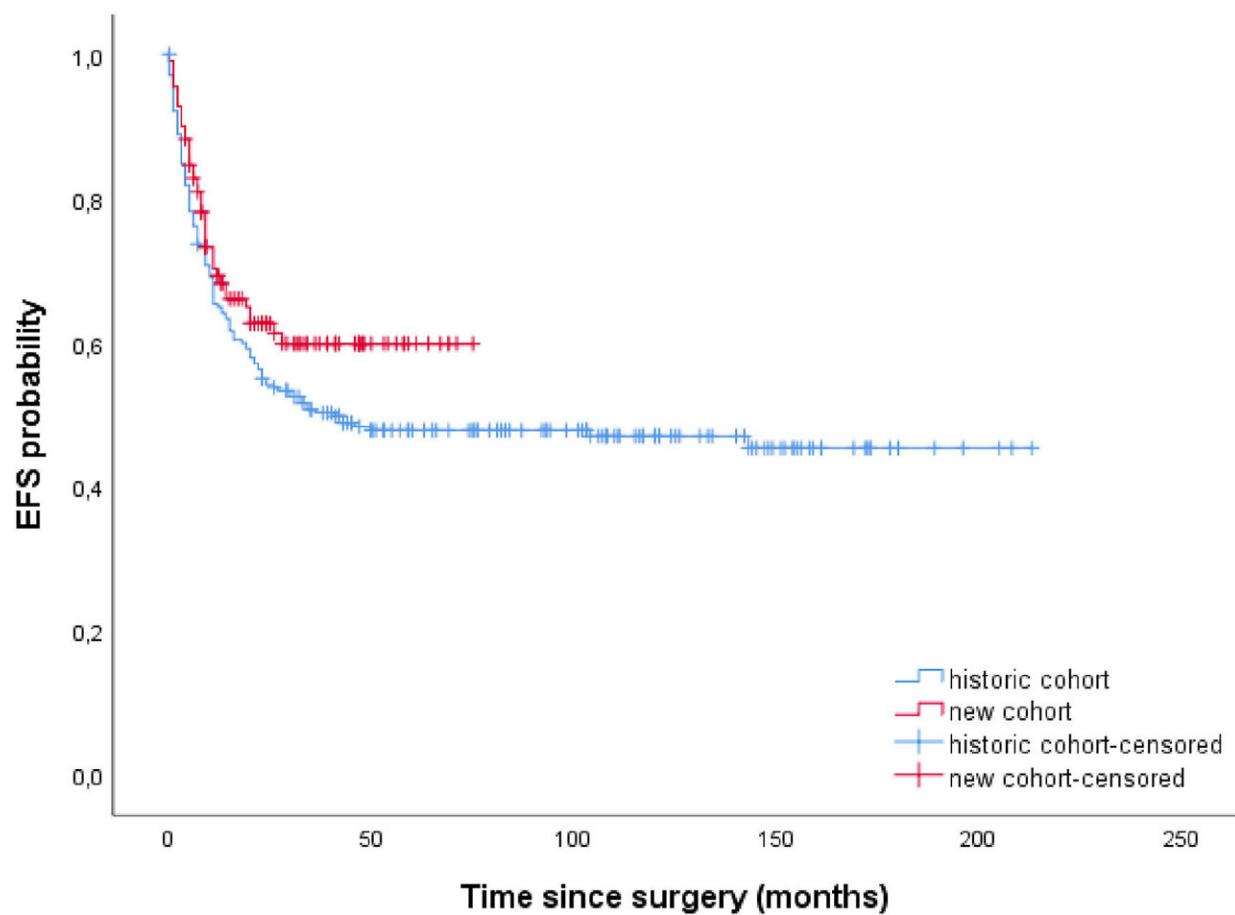


Concentration of surgical care to one research hospital shown to improve operations for childhood cancer

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Estimated event-free survival (EFS) for neuroblastoma provided by Kaplan Meier's methodology (log rank 0.260). Credit: European Journal of Surgical Oncology (2022). DOI: 10.1016/j.ejso.2022.10.005

Neuroblastoma is a tumor of the sympathetic nervous system that occurs mainly in young children. Every year, 25 children in the Netherlands receive this diagnosis. Surgery to remove the tumor tissue forms an important part of the treatment plan.

Since November 2014, care for children in the Netherlands with a solid tumor, including neuroblastoma, has been concentrated in one national research hospital, the Princess Máxima Center for pediatric [oncology](#) in Utrecht.

To investigate the effect of concentrating surgery for children with neuroblastoma, researchers from the Princess Máxima Center looked at the [medical records](#) of 244 children who had undergone surgery in the five former pediatric oncology centers in the Netherlands between 1998 and 2014. They compared this data with that of the 111 children whose surgery was performed in the Princess Máxima Center between 2014 and 2021. The research was published in the *European Journal of Surgical Oncology*.

The researchers saw that operations took 40% less time after the concentration of care: the procedure took an average of two hours and forty-five minutes, an hour and forty-five minutes less than before. In addition, the amount of blood loss during the operation was strongly reduced, from an average of 450 milliliters to just 50 milliliters.

The number of side effects in the first month after surgery remained the same, the researchers found, but the severity of the side effects decreased. Before the concentration of surgery, there were more frequent side effects of the operation that required repeat surgery, and which in some cases were life-threatening.

The researchers also found tentative evidence of an improvement in [survival rates](#) for children operated on for neuroblastoma, but further

research is needed to establish this difference with more certainty.

Prof. Dr. Marc Wijnen, pediatric oncology surgeon and research group leader at the Princess Máxima Center for pediatric oncology, led the study. He says, "With this analysis we show concrete results of bringing together all care and research for children with cancer. Less damage was done to the healthy tissue during the operation, resulting in fewer complications for the child.

"As a general rule, the more experience a surgeon has, the better the results. The outcome of the investigation did not surprise me. It shows that we can now offer children with cancer the best possible treatment."

Prof. Dr. Rob Pieters, medical director and co-initiator of the Princess Máxima Center for [pediatric oncology](#), was also involved in the research. He says, "Our main starting point when establishing a single national research hospital for childhood cancer was that as a parent you want the very best care for your child. What we already knew from practice, we now see expressed in numbers: by treating a [rare disease](#) more often, doctors become increasingly better at that treatment. And that leads to better outcomes for our children.

"In this study, we focus on the outcomes of [surgery](#) in children with neuroblastoma. I expect that now—almost five years after the opening of the Princess Máxima Center—the benefits of concentrated care and research will become clear for more and more forms of [childhood cancer](#)."

More information: Alida F.W. van der Steeg et al, The results of concentration of care: Surgical outcomes of neuroblastoma in the Netherlands, *European Journal of Surgical Oncology* (2022). [DOI: 10.1016/j.ejso.2022.10.005](https://doi.org/10.1016/j.ejso.2022.10.005)

Provided by Princess Máxima Center for Pediatric Oncology

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