

# More children survive neuroblastoma

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Both the survival rate and the incidence of neuroblastoma have increased in recent years, as was shown by a study from the Princess Máxima Center. The improved chance of survival and the increase in the number of patients has been greatest in the high risk group; children older than 18 months with a stage 4 neuroblastoma.

In the early nineties, 6 percent of the [children](#) with high risk neuroblastoma survived five years after diagnosis. Nowadays, 43 percent survives. "The prognosis for the high risk has improved most significantly," says Michelle Tas. Together with her colleague Ardine Reedijk, she performed the study and wrote the article that was published in the scientific journal *European Journal of Cancer*. The study shows that the introduction of a high dose of chemotherapy followed by autologous stem cell transplantation and immunotherapy were responsible for the increased survival rate.

For this study, the research team used data from the Dutch Cancer Registry (NKR) which are collected nationwide since 1990. Besides the improved prognosis the researchers found that

more children were diagnosed with neuroblastoma in the last decennia. In 1990-1994, twenty patients were diagnosed per year. In 2010-2014 this increased to 26. "The increase is most prominent in the same [high risk group](#) of children above 18 months with a stage 4 [neuroblastoma](#)," says Max van Noesel, MD, Ph.D.

The increased incidence remains unexplained, so far. Conceivable influences, such as modern diagnostic tools and improved registration of tumors, were incorporated in the analysis. However, none of them explained the increase. "That is very frustrating," says Tas, "It seems possible that the Western lifestyle or [environmental factors](#) contributed to the increased incidence, these have changed with time. However, we don't have an indication which factors play a role."

"Fortunately, the outcome is positive in the end—more children survive this disease," stated Van Noesel, "that is the result of many (inter)national investments of oncologists and researchers in researching new treatment methods and adjusting the treatment strategies."

**More information:** M.L. Tas et al, Neuroblastoma between 1990 and 2014 in the Netherlands: Increased incidence and improved survival of high-risk neuroblastoma, *European Journal of Cancer* (2019). [DOI: 10.1016/j.ejca.2019.09.025](https://doi.org/10.1016/j.ejca.2019.09.025)

Provided by Princess Máxima Center for Pediatric Oncology

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