

# Risk of Cancer in Children Conceived by Assisted Reproductive Technology

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## Abstract

**BACKGROUND AND OBJECTIVE:** An increasing number of children are born after assisted reproductive technology (ART), and monitoring their long-term health effects is of interest. This study compares cancer risk in children conceived by ART to that in children conceived without.

**METHODS:** The Medical Birth Registry of Norway contains individual information on all children born in Norway (including information of ART conceptions). All children born between 1984 and 2011 constituted the study cohort, and cancer data were obtained from the Cancer Registry of Norway. Follow-up started at date of birth and ended on the date of the first cancer diagnosis, death, emigration, or December 31, 2011. A Cox proportional hazards model was used to calculate hazard ratios (HR) and 95% confidence intervals (CI) of overall cancer risk between children conceived by ART and those not. Cancer risk was also assessed separately for all childhood cancer types.

**RESULTS:** The study cohort comprised 1 628 658 children, of which 25 782 were conceived by ART. Of the total 4554 cancers, 51 occurred in ART-conceived children. Risk of overall cancer was not significantly elevated (HR 1.21; 95% CI 0.90–1.63). However, increased risk of leukemia was observed for children conceived by ART compared with those who were not (HR 1.67; 95% CI 1.02–2.73). Elevated risk of Hodgkin's lymphoma was also found for ART-conceived children (HR 3.63; 95% CI 1.12–11.72), although this was based on small numbers.

**CONCLUSIONS:** This population-based cohort study found elevated risks of leukemia and Hodgkin's lymphoma in children conceived by ART.