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## Australian researchers help uncover genetic cause of childhood leukaemia

Australian researchers at the Children's Cancer Institute Australia (CCIA) and Sydney Children's Hospital are part of an international research collaboration that has discovered a genetic link specific to the risk of childhood leukaemia for the first time.

The paper has been published in [Nature Genetics](#) and is the first study to find an inheritable gene that can cause acute lymphoblastic leukaemia, the most common childhood cancer.

Undertaken by a worldwide team of researchers and supported in Australia by the **Sovereign Hospitaller Order of Saint John of Jerusalem, Knights of Malta**, the study observes families in which multiple cases of acute lymphoblastic leukaemia have been diagnosed.

Dr David Ziegler, Clinical Research Fellow at CCIA, paediatric oncologist at Sydney Children's Hospital and lead Australian author of the paper, says the discovery has identified an important genetic cause of acute lymphoblastic leukaemia and will ultimately help find better ways to treat it.

"Leukaemia cells often contain many different genetic mutations, making it difficult to detect which ones actually cause the leukaemia," says Dr Ziegler.

"We approached this study differently by looking for mutations carried by individuals who came from rare families in which there were multiple cases of childhood leukaemia. The genetic mutation that was discovered is a critical driving factor and can be used as a fresh goal for the development of new therapies.

"This discovery unveils the possibility of a genetic test for acute lymphoblastic leukaemia, similar to that conducted for breast cancer, which could allow affected families to prevent childhood leukaemia in future generations," continues Dr Ziegler.

Dr Ziegler hopes that ongoing research will identify other genes that cause acute lymphoblastic leukaemia and reveal how these inherited factors can be targeted, allowing for the development of improved therapies and higher cure rates.

## **Background**

*Children's Cancer Institute Australia (CCIA)* [www.ccia.org.au](http://www.ccia.org.au)

Children's Cancer Institute Australia for Medical Research (CCIA) is the only independent medical research institute in Australia devoted to research into the causes, better treatments, prevention and cure of childhood cancer. Our vision is to save the lives of all children with cancer and eliminate their suffering. Founded in 1976 by a dedicated group of parents and doctors who wanted to do something more in the fight against children's cancer, CCIA opened its first laboratory in 1984. The Institute, located at the Lowy Cancer Research Centre at the University of New South Wales, now employs just under 200 staff and students, including nearly 150 scientists. Research at CCIA comprises a multifaceted approach to improving the outcome of childhood cancer sufferers. Our research programs focus on translational research aimed at defining and achieving improved treatment and survival rates for children with cancer.

CCIA is affiliated with the University of New South Wales (UNSW) and Sydney Children's Hospital, Randwick, and is a member of the Kids Cancer Alliance.