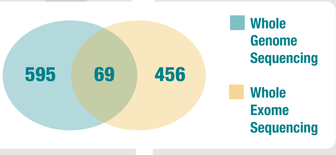
CHILDHOOD CANCER & GENOMICS

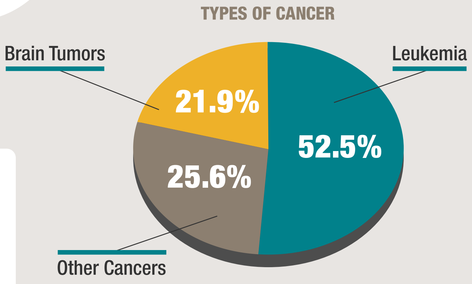
Looking Beyond Family History

IN 2010 the Pediatric Cancer Genome Project is launched as an unprecedented effort by St. Jude and Washington University in St. Louis to identify the genomic changes that give rise to some of the world's toughest childhood cancers.

IN 2015 a landmark study from the Pediatric Cancer Genome Project is published in the *New England Journal of Medicine*.

1,120
children with cancer had their DNA sequenced





The paper completes the most comprehensive analysis yet of the role genes associated with cancer predisposition play in childhood cancer.

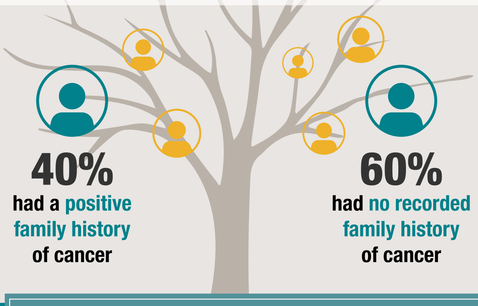
FINDINGS

>8.5%
of patients carry a mutation in a gene that likely increases their cancer risk

genetic predisposition:
An increased chance to develop a certain condition because a change (mutation) is present in one or more genes within the body's cells.

AND

Out of the 58 patients with a predisposing mutation and available family history



40%
had a positive family history of cancer

60%
had no recorded family history of cancer

CONCLUSION

"Family history should not be used as the sole indication to guide the provision of genetic testing."

Next Steps

IN 2015 St. Jude launched ***Genomes for Kids***, a clinical research study looking at using genomic sequencing to understand the similarities and differences between tumor cells and healthy cells in children.

Researchers hope to **learn***:*

- more about childhood tumors
- how genomic sequencing might help predict tumor response to treatment
- best ways to share genomic sequencing results with families

IN 2015 the ***St. Jude Hereditary Cancer Predisposition Clinic*** continues to expand to help evaluate & care for children, and their families, who are at increased risk of cancer.

The clinic team includes:

Sources: Zhang, et al. Germline Mutations in Predisposition Genes in Children with Cancer. *N Engl J Med*, 2015. doi:10.1056/NEJMoa1508054; www.stjude.org/pcgp