What is BASIC³?

The BASIC³ study will use the latest genetic technology performed in a clinical laboratory for children newly diagnosed with cancer. This genetic testing will be provided free of cost to families who meet the study criteria.

The study hopes to learn:

- The role genetic changes play in both the treatment and screening of children with cancer and their families.
- The best use of new genetic technologies to provide meaningful and useful information to physicians and families.
- The optimal way for physicians to communicate this new information to families.
- How often this large-scale testing will also give us information about the risks for diseases other than cancer.

Who is eligible?

Patients ages 18 and younger who meet all of the following:

- Recently diagnosed with a brain tumor or solid tumor elsewhere in the body. Leukemia and lymphoma patients are currently not a part of the study.
- Patients undergoing surgery and receiving cancer care at Texas Children's Hospital.
- English and Spanish speaking families.

This study is funded by a grant from the National Human Genome Research Institute of the National Institutes of Health.

Texas Children's Hospital®

BCM®
Baylor College of Medicine

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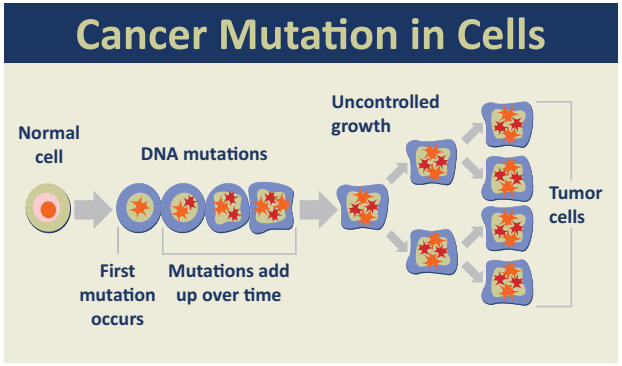
Baylor College of Medicine

Advancing Sequencing in Childhood Cancer Care
The BASIC³ Study

Texas Children's Hospital®

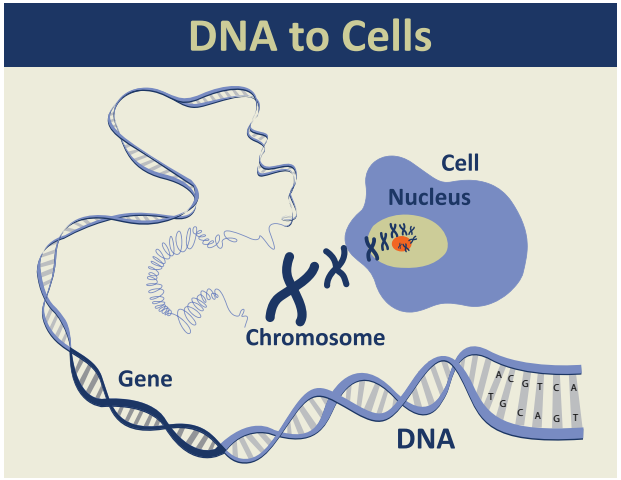
How do genetics and the BASIC^3 study relate to my child's cancer?

Cancer is a genetic disease. Genes are our body's instructions on how to grow and develop. These instructions are written in a four letter alphabet: A, T, C and G. As we grow, the cells in our body continue to re-copy our genes each time we make new cells. Sometimes a mistake or "typo" occurs and a mutation, or change, is found in a gene that can lead to disease. Cancer occurs when mutations add up over time, causing the cells to grow out of control.



In some people, the first mutation or genetic change that causes cancer is inherited. It can be passed down from a parent or first happen when the egg or sperm are made. From that point on, this change is in every cell of their body. This can lead to an increased chance of developing cancer in childhood or as an adult. In other people, the genetic changes occur only in the tumor or as the tumor develops. It can be important when caring for children with cancer to learn about both inherited and tumor genetic changes or mutations.

In this study we will use exome sequencing. We will read through the genetic instructions in both the tumor and the blood, letter by letter, looking for any changes that may have occurred. This is currently one of the most comprehensive tests used to "read" the genes. However, it is important to note that this test does not detect all types of genetic changes that can lead to the development of tumors.



Things you may learn from this study:

- Genetic changes in the tumor that your child's oncologist may consider if a different treatment is needed in the future.
- Inherited changes related to your child's risk of developing cancer. This may cause your child's doctor to suggest additional cancer screening tests and for other members of the family to have genetic testing.
- Inherited changes found in your child's blood related to diseases other than cancer.

When you meet with study staff, the different types of information you may learn will be reviewed.

What will happen if we decide to join the BASIC^3 study?

- You will only decide about joining the study after meeting with a staff member to review study details and the consent form and have your questions answered.
- There is no cost to joining the study, having the DNA sequencing performed, or for any extra doctor visits.
- A sample of your child's tumor from his or her original surgery will be sent to the lab to be studied. No additional surgery is needed.
- A blood sample will be drawn for the study.
- Whenever possible, samples of blood from both parents will be sent to the clinical lab to help us better understand the results of your child's DNA test.
- When the testing is completed, you will meet with your child's oncologist and a genetic counselor to review the results. These sessions will be recorded to learn how best to share this new type of information with families.
- You may be asked to participate in more detailed interviews to hear your opinions, suggestions and what you hope to learn from this study.