

Pediatric Cancer



Kids like Riley Cadiz deserve cancer treatments that preserve childhood. At VBRI, we're striving to provide them.

Riley's Story

Riley Cadiz was eating dinner with her family when she suddenly fell and started vomiting. Suspecting a concussion, her parents rushed her to the doctor. "As soon as the doctor told me, "You need to go to the ER to get full blood work," my stomach sank," recalls Stephanie Cadiz, Riley's mother. Two weeks later, Riley was diagnosed with high-risk B-cell acute lymphoblastic leukemia (ALL) at just two years old.

Thanks to chemotherapy and blood transfusions, Riley was able to fight her cancer, but like so many other young cancer patients, Riley experienced debilitating side effects of her treatment. She was exhausted, just wanted to stay in bed, and was "knocked out" from vomiting. There were times when the treatment even caused neuropathy in her limbs, making it difficult for her to walk.

Kids with Cancer Deserve Better

At VBRI, we aren't just searching for cures, we're pursuing breakthroughs in patient care. Pediatric cancer used to be a death sentence, but thanks to advancements in treatments, survival rates have soared, reaching up to 90% for ALL. But not all diseases have been met with similar effectiveness. Pediatric acute myeloid leukemia (AML) still has a survival rate sitting at 60-70%. Even for those who survive, like Riley, unmanageable side effects of current therapies prevent children from experiencing childhood while undergoing treatment.

"We treat a lot of kids and they're still not long-term survivors. If they are long-term survivors, they're dying of the consequences of the treatments, rather than of their disease. As a physician, that's painful to watch. Kids with leukemia deserve better." — Sid Rao, MD, PhD, Co-Chair Hematopoiesis and Immunology Program

"Riley was always our Spitfire. She had all the energy in the world, so it was really hard to see her struggle during chemo because of all the side effects"



Stephanie Cadiz
Riley's mother

A Need for Prevention as Well as for Cures

VBRI's collaborative, interdisciplinary environment allows researchers to **work together synergistically to develop groundbreaking treatments for childhood cancer** that have fewer side effects and allow our young patients to live fuller lives. And we aren't just working on cures – we also want to prevent these devastating diseases and stop them in their tracks.

Fueling Innovation in Pediatric Leukemia Research

Advancements in childhood cancer treatment still lag behind those for adult cancer. Today, a significant portion of childhood cancers are caused by acute leukemias, including acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) – one of the last remaining high-mortality rate childhood cancers.

Blood disorders, including cancers, present differently in children than adults, and are often more challenging to detect, diagnose, and treat. At VBRI, our investigators are working collaboratively across clinics and research labs to drive forward innovative research on the prevention, diagnosis, and treatment of childhood blood disorders.

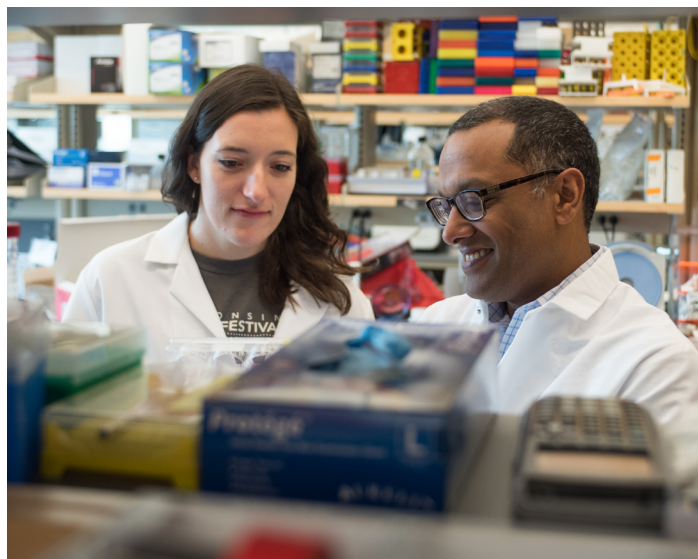
Our singular research focus on blood disorders allows us to bring in researchers from different disciplines to tackle the same problem, contributing different methods, approaches and conceptual backgrounds. This unique approach means that we can research not only new treatments for pediatric leukemia, but also the connection between this devastating disease and other childhood cancers and conditions such as blood clots.

The Search for a New Standard of Cancer Care

Sid Rao, MD, PhD is a physician-scientist working on the frontline of cancer care. His research zeroes in on a powerful but poorly understood player in AML: the **cohesin complex, a set of proteins mutated in up to 20% of AML cases**. These mutations act as “molecular switches” that disrupt normal genetic function and promote leukemia in ways scientists are just beginning to grasp.

Targeting these mutations is notoriously challenging, but if successful can unlock a new avenue for therapeutic intervention – and that is exactly why Dr. Rao is focused on them. His lab uses cutting-edge tools like CRISPR and single-cell sequencing to decode how these mutations work and identify pathways for treatment or even prevention of cancers like AML. Dr. Rao and his team’s goal is not only to extend life, but improve its quality for children facing this terrifying disease.

“We are the largest blood center in the midwest. Each year we treat thousands of children for AML, but survival rates remain low. For those who do survive the disease, long term survival is another hurdle, with many patients not surviving into adulthood due to complications from life-saving treatments prescribed to them as children. It’s time for a new standard of care.”



Dr. Rao in his lab at Versiti Blood Research Institute.

Contribute to Groundbreaking Advancements that Will Change Lives

BRI researchers are ideally positioned to bring their knowledge and connection with patients to inform their research and accelerate bold discoveries that save children's lives. **With your support, we research cures.**