

2017 Kids Walk: The Important Impact

Kids Walk is committed to beating pediatric cancers. Every dollar raised goes to the Department of Pediatrics at Memorial Sloan Kettering Cancer Center (MSK) to find new and better treatments for kids with cancer.

2017 was a record-breaking year! Over \$1.2 million was raised for pediatric cancer research — totaling more than \$5 million since 2001, with more than \$2 million in the last two years. This wouldn't have been possible without the entire Kids Walk community of participants, donors, patients, doctors, and researchers.

MSK Pediatrics

MSK Pediatrics is home to a game-changing precision oncology program. MSK treats more children with cancer than any other hospital in the United States, and its researchers are now offering to sequence the genomes of every one of them.

More precise treatments can then be created for children based on their DNA, which promise to be more effective and have fewer side effects — and that's the goal! Kids Walk's funding for the precision oncology program will give doctors the ability to better understand and target pediatric cancers on a DNA level.

Here are the areas that received funding from 2017 Kids Walk:

Precision Medicine

WHAT IS PRECISION MEDICINE?

Scientists are getting more precise when they diagnose and treat cancer! By looking at the DNA of tumors and comparing it to kids' healthy cells, they try to find the genetic mutations that caused the cancer in the first place. By targeting these mutations with the right drugs, doctors can fight cancer more accurately — and avoid harming healthy cells. This means kids will experience fewer side effects than they would from chemotherapy.

WHY IS THIS IMPORTANT?

Precision medicine is unlocking the secrets of cancer cell biology and some of the causes of pediatric cancers. Kids Walk is driving this progress by funding MSK Pediatrics' Precision Medicine Program — an initiative that promises to deliver targeted therapies to more children battling cancer than ever before. By looking at the DNA of patients' tumors for answers, researchers expect to make increasing strides in battling pediatric cancers.

WHAT'S THE LATEST?

MSK's Precision Medicine Program relies on MSK-IMPACT, a system that identifies the 468 mutations (changes to the DNA) that are known to cause cancer. Moving beyond this, MSK Pediatrics is pushing the envelope to fully assess all 25,000 genes for kids with cancer. Kids Walk funding helps doctors search through all of those genes to find the cancer-causing mutations and match patients with the most effective drugs available.

Thanks to ever-changing technologies and new findings, doctors may soon be able to spot cancer cell DNA in a patient's blood before it's detectable by today's traditional tests. Because of these new approaches — including a liquid biopsy test that has held great potential for young people in both early detection and treatment monitoring — MSK is now pursuing ways for it to benefit patients of all ages.

In 2017, the FDA approved a new immunotherapy approach, using a patient's own infection-fighting T cells against cancer. First, doctors remove the patient's T cells, then insert new DNA into the cells and put them back into the patient. This new class of immune cell therapy, called CAR T cells, can target and attack cancer. It's especially important for kids because it's a more powerful, and less toxic, treatment with longer-lasting effects. CAR T cells are currently used to treat a form of childhood leukemia at MSK.

Leukemia

WHAT IS LEUKEMIA?

Leukemia is the most common type of pediatric cancer. It begins in the blood, making white blood cells — which normally help your body fight infection — grow out of control and change into cancer cells.

WHY IS THIS IMPORTANT?

Doctors at MSK pioneered new chemotherapy regimens that have dramatically increased long-term survival for children and young adults with leukemia. However, some patients develop a resistance to these drugs over time, which makes the chemotherapy stop working. For these patients, new approaches are needed.

WHAT'S THE LATEST?

Kids Walk is funding a clinical trial that aims to keep chemotherapy working for the long-term, lowering the chance of resistance. Another promising study funded by Kids Walk is testing better ways to use a child's immune system to fight cancer.

When chemotherapy stops working, children may need a stem cell or bone marrow transplant to replace cancer blood cells with healthy ones. Kids Walk is supporting efforts to improve how MSK approaches bone marrow transplants in children.

Neuroblastoma

WHAT IS NEUROBLASTOMA?

Neuroblastoma is a rare cancer that causes solid tumors in the nerves that carry messages from the brain to the rest of your body. When this disease becomes aggressive, it can spread to the brain and become very hard to treat.

WHY IS THIS IMPORTANT?

Doctors at MSK have developed new treatments, bringing the survival rate for children with the worst forms of neuroblastoma from under five percent to nearly 50 percent. But doctors are still learning how neuroblastoma develops in the first place. Researchers at MSK are working hard to figure this out — the first step to developing better therapies and cures.

WHAT'S THE LATEST?

The money raised through Kids Walk funds new and promising initiatives in pediatric cancer research. The shared goal of all doctors and researchers at MSK is to improve outcomes for kids while decreasing side effects of treatment. This sometimes involves developing entirely new strategies for fighting cancer.

An exciting example is a new drug developed by researchers at MSK Pediatrics, which was granted Breakthrough Therapy Designation by the FDA in 2017. This means that the treatment was so effective for some kids who otherwise had no chance of survival that the FDA prioritized its approval and rushed its availability to patients worldwide.

MSK Pediatrics' successful research efforts are powered by the Kids Walk community — and would not be possible without the funding participants and donors provide. MSK Pediatrics continues to invest in the best training for its doctors, nurses, researchers, and technicians to improve the chances of a child battling neuroblastoma.

Medulloblastoma

WHAT IS MEDULLOBLASTOMA?

Medulloblastoma is the most common type of brain tumor in children. Although 70% to 80% of young patients are cured, this success leaves them with long-term, disabling side effects as a result of chemotherapy and other treatments.

WHY IS THIS IMPORTANT?

The drugs that are currently used to treat medulloblastoma can't tell the difference between cancer cells and healthy cells, leading to unwanted side effects. Precision medicine could change this. It's already led to targeted treatments that show great improvements for adults with medulloblastoma, but the approach hasn't been tested for children yet.

WHAT'S THE LATEST?

Kids Walk is providing funding to change this. Using donations from Kids Walk, researchers plan to advance treatments that can target certain tumor cells in the brain and central nervous system and deliver potent drugs directly to the tumor — while minimizing damage to the healthy surrounding cells.

Precise, targeted treatments will make a significant difference in our ability to improve outcomes for the youngest patients at MSK — and around the world. They hold great potential to cure more kids, and let them live long, healthy lives after cancer. Kids Walk plays an important role in developing these targeted treatments by giving doctors the ability to diagnose and treat children as early and effectively as possible.