

Fall 2018

SHINE



A glimpse of the lives impacted by the new facility in the last year

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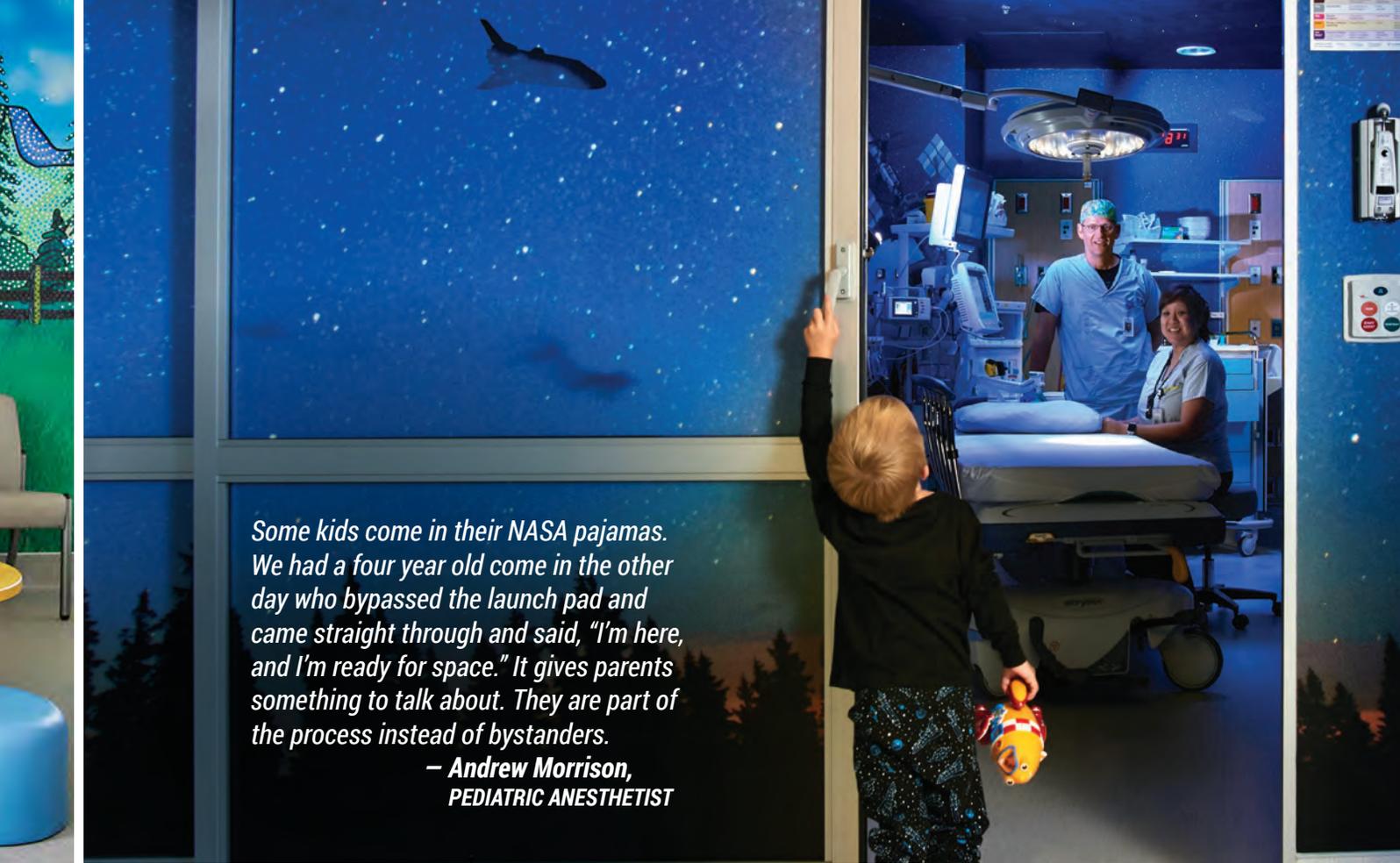
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Some kids come in their NASA pajamas. We had a four year old come in the other day who bypassed the launch pad and came straight through and said, "I'm here, and I'm ready for space." It gives parents something to talk about. They are part of the process instead of bystanders.

**– Andrew Morrison,
PEDIATRIC ANESTHETIST**

WE ARE BUILT TO HEAL

It's been just over one year since the Teck Acute Care Centre opened its doors. With every passing day, we are able to see the incredible impact of the new facility—whether it's a four year old excitedly running to the space-themed procedure suite or a mom who's able to enjoy a picnic with her child outside. In this issue, you can read more powerful stories that show what your support has made possible.

We're also highlighting some of the exciting accomplishments from the Research Institute. You'll learn about a website that prevents sport-related injuries, a tool that demystifies food allergies, and a study that's exploring the deeper impact of our early

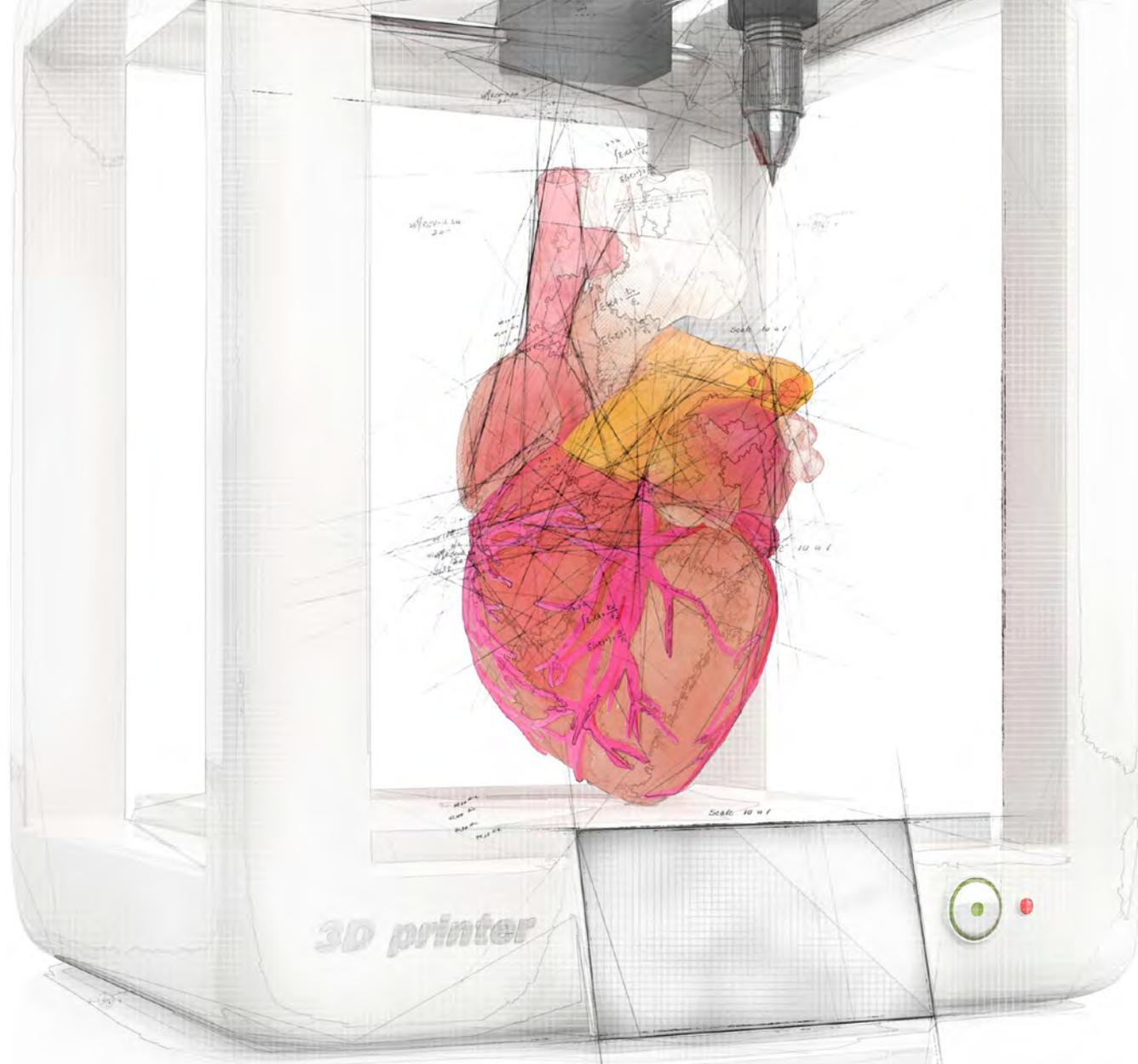
experiences. We also share the hospital's plan to use 3D technology to revolutionize care for kids and their families in the coming months.

It's truly remarkable how far we've come. So, we couldn't think of a better way to round out our issue than by celebrating our donors—people like you—who are helping to write this next chapter in children's health care.

Thank you for your continued support.

Teri Nicholas

Teri Nicholas, MSW, RSW
President & CEO
BC Children's Hospital Foundation



HEALTH CARE'S NEXT FRONTIER

**Western Canada's first pediatric 3D technology
program comes to BC Children's Hospital**

These days, you can 3D print just about anything. From sweaters to coasters, it's hard to miss the ubiquity of products in everyday life. And now, that same technology will be used to save lives and improve care at BC Children's Hospital. Thanks to a transformative gift from Kirmac Collision & Autoglass

and the McIntosh family through their charitable program, Kirmac Cares for Kids, health care providers have the ability to 3D print a patient's organs—and in doing so, to revolutionize how care is delivered.

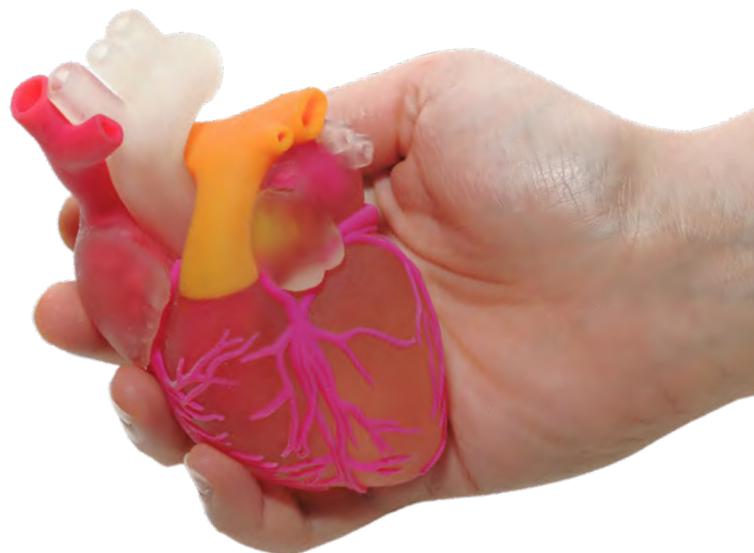
The 3D Technology Program will have applications across the entire hospital campus—but its first use will be to improve outcomes for kids with complex heart defects. At BC Children’s, the cardiac team sees and treats kids with a range of conditions, performing everything from minimally invasive procedures to open-heart surgeries. In complex procedures, surgeons are often required to rebuild tiny blood vessels, close holes and open narrowed heart valves.

They will now be able to prepare for these procedures in ways never before possible. The 3D Technology Program will allow health care providers to create three-dimensional models of hearts using images from CT or MRI scans obtained in the Department of Radiology. The process—which can take less than a day—involves printing an exact replica of a patient’s organ using layers of materials that most closely resemble the tissue.

Having a physical model of an organ will allow surgeons to gain a deeper understanding of a patient’s anatomy. In remarkable detail, they will be able to study the heart—including the smallest arteries, veins and valves—to plan the best procedure possible. They can even perform simulated surgeries, to better understand how a planned procedure will go before ever having to lift a scalpel.

“When there’s a question between different surgical avenues, the 3D model can help us choose the most optimal, and model the procedure ahead of time,” explained Dr. Kevin Harris, a pediatric cardiologist at BC Children’s Hospital. “For patients, that will hopefully mean faster procedures, less time under anesthesia and ultimately, shorter recoveries.”

THE TECHNOLOGY WILL BE INVALUABLE IN TRAINING THE NEXT GENERATION OF MEDICAL EXPERTS.



The technology will also be invaluable in training the next generation of medical experts. “It’ll give students and residents tangible learning experiences that otherwise weren’t available before due to patient risks,” Dr. Harris added.

It is poised to improve care for families, too. Being able to see and hold a replica of their child’s organ—to truly understand what’s going on inside their body—can help families feel more comfortable and in control. What’s more, surgeons can use it to show them the planned procedures so families have a deeper understanding of the care that’s being provided.

The benefits of 3D printing won’t be limited to Cardiology. Orthopedic surgeons plan to use printed organs to prepare for bone surgery and urologists will use it to plan for complex kidney operations.

The 3D Technology Program is expected to be ready for clinical and research use within the next few months. Once fully functional, it’s expected that up to 200 kids and their families will benefit each year through this incredible program made possible by Kirmac Cares for Kids.

CARTER'S STORY **The practice of using 3D technology to improve care isn't entirely new to BC Children's Hospital. Before the program, BC Children's would partner with hospitals like SickKids in Toronto to commission 3D printed models for its patients. Carter Dieno is one of them.**

When she was almost nine months pregnant, Ashley Dieno learned at a routine ultrasound that there was something wrong with her son's heart. Shortly after, he was diagnosed with double outlet right ventricle—a rare congenital heart disease where the heart's two major arteries both connect to the right ventricle.

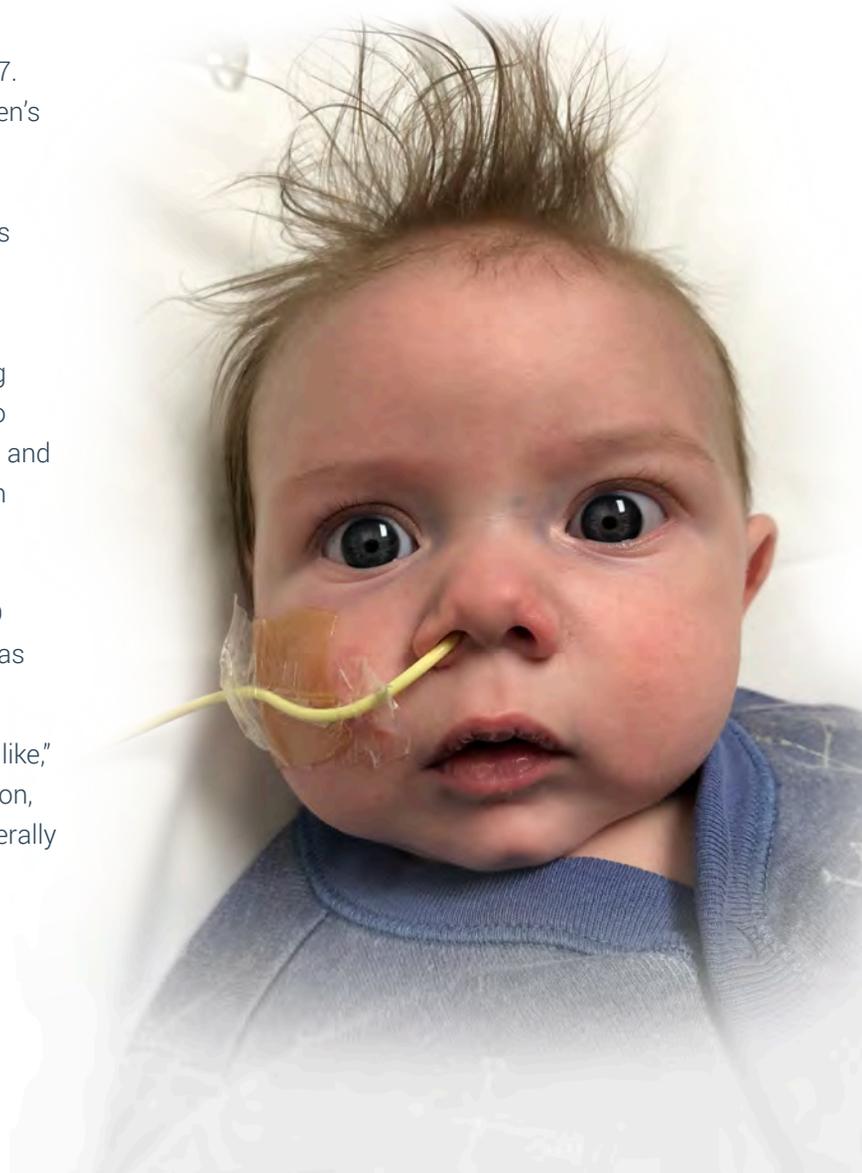
"I was absolutely terrified," Ashley said. "We had already went through a heart surgery with our first born. It was scary to know our second child would have to do the same thing."

Ashley gave birth to Carter in December of 2017. Minutes after, the cardiology team at BC Children's took him away for testing. They decided that surgery wasn't needed immediately—but he would need to be closely monitored. The Dienes were able to return to their home in Penticton on Christmas day.

Over the next week, however, Carter was having trouble breathing. The family was flown back to BC Children's Hospital. Carter had several tests and scans and was given a feeding tube to help him gain weight. A few months later, he had a stent procedure. Because of the complexity of his condition, doctors decided to commission a 3D model of his heart. A few weeks later, Ashley was able to see an exact replica of her son's heart.

"It was really cool to see what it actually looked like," she said. "The doctors told us about his condition, but you really can't understand it until you're literally holding it in your hands."

The cardiology team at BC Children's was also able to use the model to assess different treatment options. With the model, they evaluated three possible scenarios for Carter's heart treatments and he recently underwent his first surgery. Now Carter is at home with his family and being followed up with appointments every three months—which the family is able to do in their home community thanks to the Heart Centre's outreach clinics.



EXPERTS AT BC CHILDREN'S HOSPITAL GO BEYOND CARING FOR KIDS WHEN THEY'RE SICK OR HURT—THEY ALSO HELP PREVENT THEM FROM HAVING TO VISIT A HOSPITAL IN THE FIRST PLACE. ONE OF THE REASONS WHY THE HOSPITAL HAS BECOME SO SUCCESSFUL AT THAT IS BECAUSE OF THE WORK OF DR. DAVID SCHEIFELE.



A REMARKABLE LEGACY

A pediatric infectious disease specialist, Dr. Scheifele came to BC Children's Hospital in 1977. Eleven years later, he co-founded the Vaccine Evaluation Center (VEC)—which was the first of its kind in Canada.

"We recognized the need for an academic vaccine research unit, which was quite a novel undertaking," Dr. Scheifele said. "There wasn't anything like it in Canada. So we needed start-up funding to be in a position to hire people. The Foundation helped to secure that."

Within a year, the VEC secured its first substantial grant—which was followed by many more shortly after. The funding helped advance innovative research that contributed to new vaccines and improved vaccine safety. That included research into a vaccine for Haemophilus influenzae type B—a leading cause of meningitis and sepsis in kids under five years of age. As a result of that work, new vaccine programs were able to reduce the rate of disease to the point where there haven't been any cases at BC Children's Hospital in the last decade.

By seeing first-hand the difference that community support makes, Dr. Scheifele was inspired to become a donor of BC Children's Hospital 30 years ago—and he's continued to give to this day. "I can attest from personal experience that this is a great institution," he said. "It was an easy decision for me to put BC Children's Hospital Foundation at the top of my charity list."

Now, he will leave an even greater legacy. This year, Dr. Scheifele and his wife Carolyn made the decision to leave a legacy gift in his Will to BC Children's Hospital Foundation. The gift will go to the VEC endowment, which supports initiatives aimed at ensuring the next generation of VEC medical leaders can continue making progress.

Dr. Scheifele says that leaving his legacy was a straightforward process. "It was helpful to discuss my plans with my financial advisor, who was able to show me that I was in a position to leave a legacy. It's very satisfying to complete the arrangements, and it offers peace of mind.

A legacy allows you to give a gift in the future that you might not be able to provide in your lifetime."

THE TECK ACUTE CARE CENTRE ONE YEAR LATER

After a decade in development, BC Children's Hospital opened the doors to an extraordinary facility on October 29, 2017—the Teck Acute Care Centre. The benefits are remarkable: all private patient rooms, the most advanced equipment, natural light, ample gardens and spaces to play. But what has that all really meant for kids, families and health care providers? Here are thoughts and memories from the people who have been impacted by the facility over the last year.

TECK ACUTE CARE CENTRE



"The artwork provides distraction and cheers people up in clinical areas. Families and patients ask to have photos taken of themselves in the room with the art. That's never happened before. They have conversations about the artwork—what they like and why. It's really changed the focus of conversations and the atmosphere."

"The family lounge now provides a gathering space, a place to gather for birthdays and other milestones. There is even a 'kitchen fairy' who regularly leaves home cooked food for families."

- **Analyn Perez,**
Clinical Nurse Coordinator



1982 BC CHILDREN'S HOSPITAL BUILDING

"The Teck Acute Care Centre has made such a difference in how families cope with the stress of a sick child. The size of the operating rooms allow us to bring our large complex care teams to the bedside of the patient with nothing in the way"

— Dr. Erik Skarsgard
Chief of Surgery



"For a patient and their family, coming to the hospital for surgery is scary and stressful. Having a private room with natural light for every patient allows the team to create a calm environment for the children in our care. The private rooms have greatly reduced the noise and stress of our busy surgical department. Children now have their own room when they wake up from surgery, and this means that parents can be reunited with them faster than ever before."

Trish Page, Program Manager,
Procedures



"Having a quiet room with a beautiful view and a place for me to sleep next to my daughter while she was going through treatment made this feel even more special and less like a hospital. I didn't have to worry about anything because I knew she was receiving the best of everything."

Teri, mom of patient

LATEST SCIENTIFIC

Every day, researchers at BC Children's Hospital work tirelessly to push the boundaries of knowledge and find new ways to improve lives here and around the world. Here are some of their latest discoveries and developments—made possible because of donors like you.

GETTING OUR HEADS IN THE GAME

New website aims to tackle sport injuries in kids

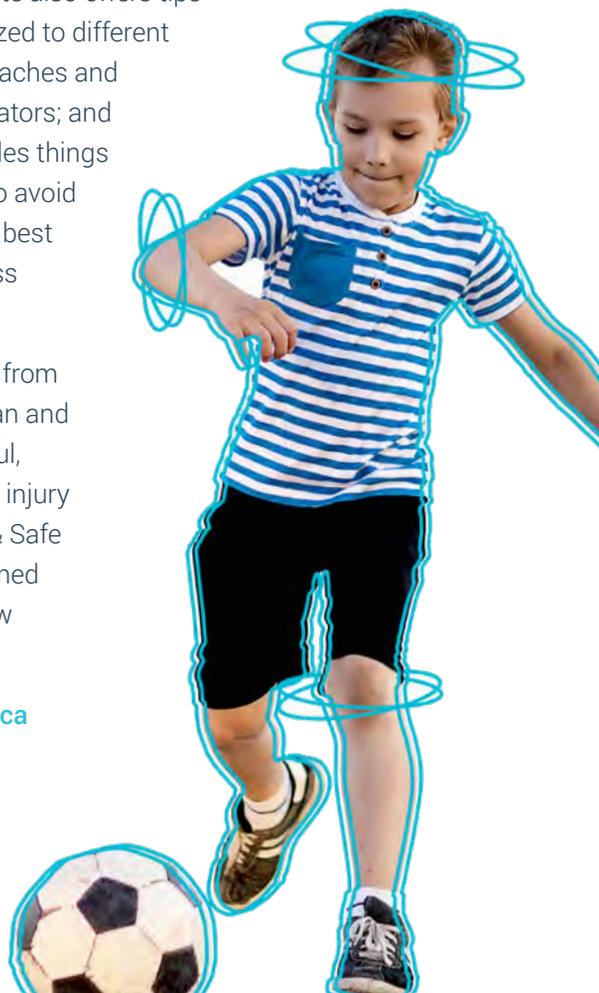
It's no surprise that sports bring countless benefits to kids. They promote physical health and teach invaluable skills like teamwork—not to mention they're just a fun time. But each year, sports-related injuries hospitalize an average of 900 kids and teens in BC. Researchers here are on the frontlines of changing that.

The BC Injury Research & Prevention Unit (BCIRPU) recently rolled out a website called Active & Safe Central. Drawing on research conducted at the hospital and around the world, it offers quick and helpful information on how to prevent injuries for over 50 sports and activities, like volleyball and swimming.

Visitors can do a quick search for their sport or activity of choice—which brings up types of injuries and risk factors associated with it. The site also offers tips to prevent injury that's personalized to different audiences—kids and parents; coaches and teachers; officials and administrators; and health professionals. That includes things like strength training exercises to avoid ankle injuries when hiking or the best type of golf clubs to reduce stress on the body.

"Despite our best efforts, injuries from sport and recreational activity can and do happen," said Dr. Shelina Babul, an associate director and sports injury specialist with BCIRPU. "Active & Safe Central helps parents stay informed about the risks for injury and how kids can stay safe."

Check out the site at activesafe.ca



WONDERING IF IT'S A FOOD ALLERGY?

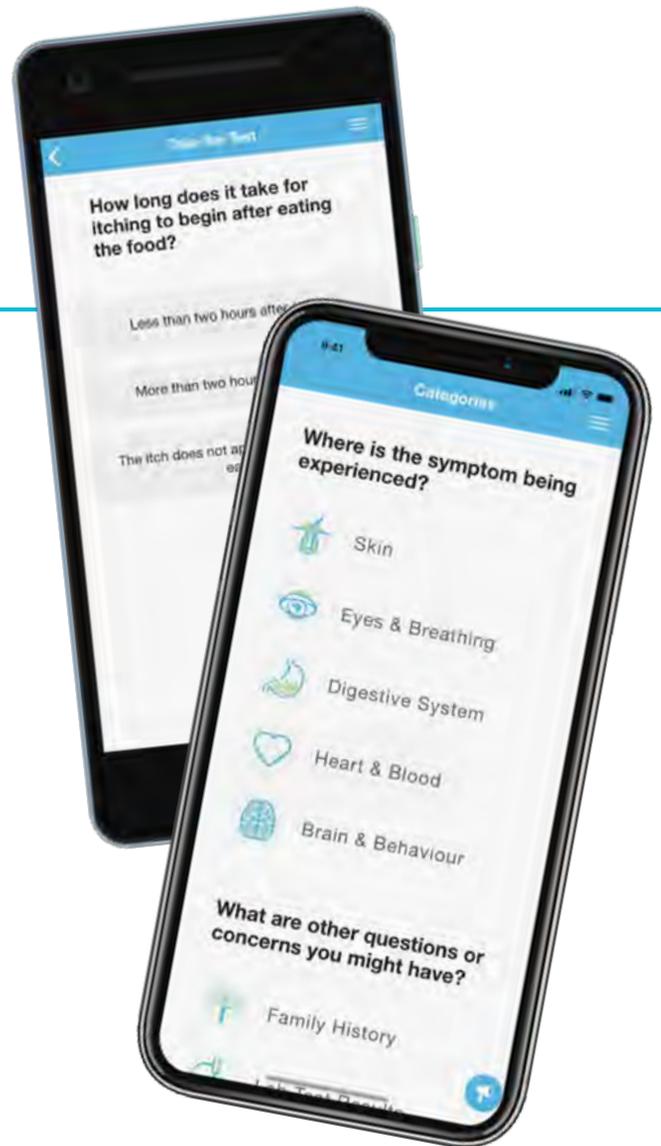
There's an 'app' for that

Food allergies are on the rise. As a result, countless kids and families live in fear over potentially serious reactions such as anaphylaxis. And because it can be hard to tell whether a symptom is due to a food allergy or something else, many of them make unnecessary appointments to allergy clinics, trips to the emergency department, or avoid certain foods altogether.

The Division of Allergy & Immunology and BC Children's Hospital's Digital Lab—a unit that develops digital health solutions to improve care—joined forces to help. They've launched a mobile e-health tool that's unlike any other, called Allergy Check. With just a few clicks, it tells parents and families the likelihood that their child is dealing with a potentially severe food allergy.

"We saw in our clinic that there was often confusion between the symptoms of a potentially life-threatening food allergy and a food sensitivity," said Dr. Edmond Chan, head of the Division of Allergy & Immunology and the Colonel Harland Sanders Allergy Clinic at BC Children's Hospital. "So we developed an easy-to-use web-based tool to help kids and families understand when they should be concerned."

Here's how it works: visitors are asked to identify their symptoms (each one includes a photo for good measure) and then answer a few quick questions. An algorithm then takes those responses and provides a personalized result that explains the likelihood that they have a food allergy. Not only that, it offers suggestions on whether to see an allergist and provides links to helpful resources. Stakeholder partners include Food Allergy Canada and the Canadian Society of Allergy & Clinical Immunology.



"While we've designed the tool to be simple and intuitive for our families to use, behind-the-scenes is a complex set of algorithms that have gone through rigorous validation and testing," said John Jacob, senior director of the Digital Lab.

The ultimate goal of the tool is to reduce the need for unnecessary appointments and to help kids with true food allergies get the care they need sooner. It also allows kids around the province and the world to gain allergy education from the experts at BC Children's Hospital.

Visit the site at allergycheck.ca

EARLY EXPERIENCES

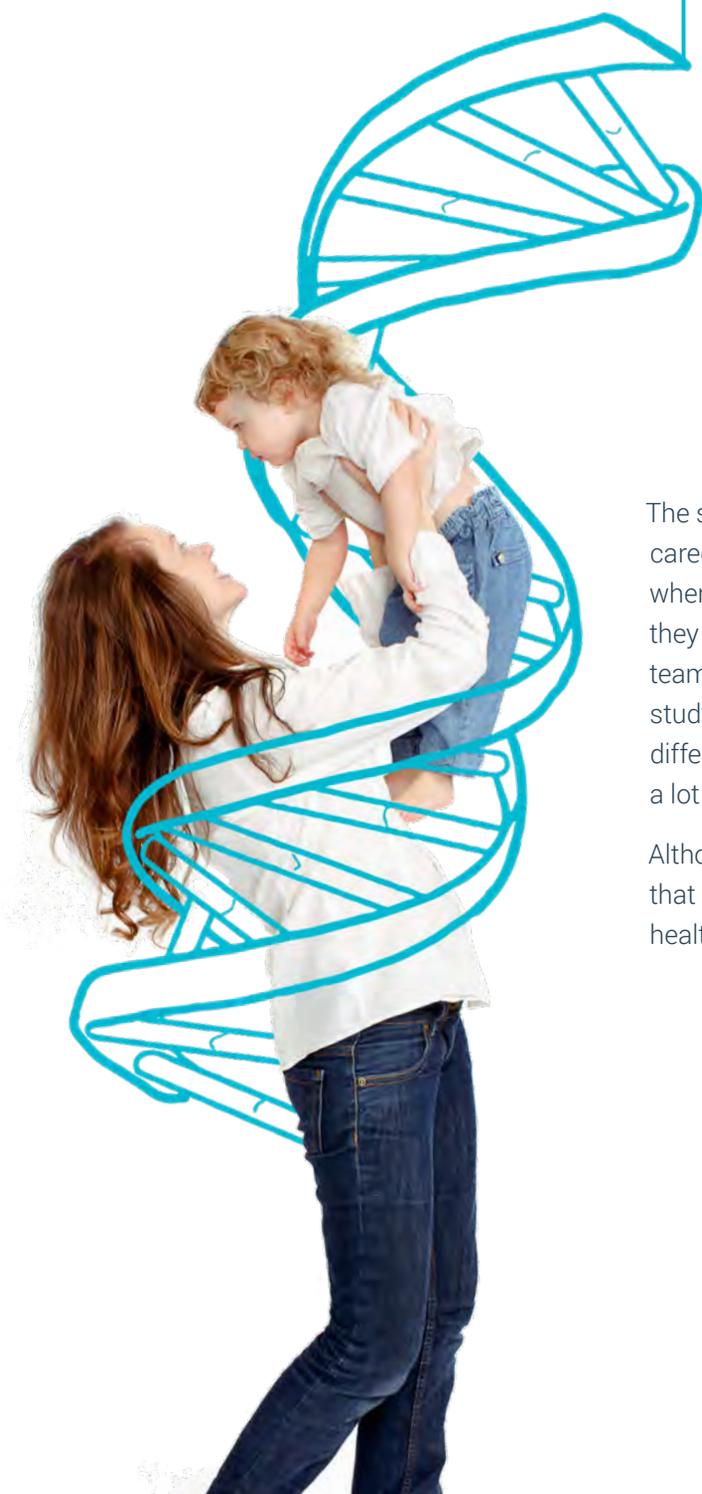
Cuddling babies could have a deeper impact

DNA—which we get from our parents—is the genetic material that makes up who we are. And while this genetic code doesn't itself change throughout our lives, the way our cells use it isn't always set in stone. In other words, certain factors can switch genes 'on' or 'off'—determining whether they are expressed or silenced.

But, what exactly controls these changes? Researchers at BC Children's Hospital are one step closer in their understanding of just that. In a field known as epigenetics, Drs. Michael Kobor and Sarah Moore are pioneering research that explores whether the amount of physical contact babies receive early in life could have an impact on their genes.

The study is complex, but in a nutshell: parents and caregivers of healthy 5-week old babies kept diaries of when infants cried, fed, slept and fussed and how often they held them. When the kids were 4.5 years old, the team took their DNA samples—and then analyzed that to study an epigenetic mark called methylation. They found differences in methylation between babies who received a lot of physical contact and those who received less.

Although the research is in its early days, it could show that early experiences have a lasting impact on a child's health and development.



SEEN & HEARD

APPLAUSE WORTHY

Each year, countless people from across the province come together to ensure kids have access to the best health care imaginable. Recently, several of them received accolades and special recognition for making an impact within the community and at BC Children's Hospital.

DONALD R. LINDSAY is the recipient of the Association of Fundraising Professional's Giving Hearts Award for Outstanding Volunteer.

This award recognizes individuals and organizations who exemplify the true spirit of philanthropy.

For the past 12 years, Mr. Lindsay, with the support of his family, tirelessly devoted his time and energy to BC Children's Hospital Foundation. He served as Chair of the Campaign for BC's Kids—the largest campaign of its kind in the Foundation's history—helping to raise \$200-million to support the opening of the new Teck Acute Care Centre and the creation of Child Health BC.

Mr. Lindsay recently completed his tenure as Chair of the Foundation's Board of Directors and he continues to serve as a Director today.



The Giving Hearts Awards also recognized the DARE TO DREAM (D2D) DESTINY FOUNDATION with the Outstanding Youth Fundraiser award—which BC Children's Hospital Foundation co-nominated with the VGH & UBC Hospital Foundation.

Founded in 2014, D2D is led by Arthur Chan, a survivor of childhood leukaemia who received treatment at BC Children's. Arthur, along with a team of youth between the ages of 17-23, work to raise funds and pool their talents, passion and creativity to help organizations that support other youth. To date, they've raised over \$400,000 and have even launched and managed Canada's first e-Philanthropy store.

TERI NICHOLAS received the YWCA Women of Distinction Award for the Nonprofit category, as well as Business in Vancouver's BC CEO of the Year Award for the Not for Profit Community Category.

Teri has always been driven by a desire to help other people. And throughout her career in the nonprofit sector, that's exactly what she's done. As President & CEO of BC Children's Hospital Foundation, Teri has

been instrumental in pushing the limits of what's possible in children's health care.



MARKING MILESTONES

One of the reasons BC Children's Hospital has been able to make so much progress over the years is because of the continued support of donors. Here are two remarkable groups that just reached monumental milestones.

MINING FOR MIRACLES, the BC mining community's fundraising campaign in support of BC Children's Hospital, has helped bring about extraordinary progress. Since its inception in 1988, Mining for Miracles has raised a remarkable \$30-million to help transform health care for kids in BC and the Yukon.

They've done that in a variety of ways—including employee and corporate fundraising and events like Jeans Day™, Diamond Draw, the Hooked on Miracles fishing tournament, and the Teck Celebrity Pie Throw. From ensuring BC Children's has access to the most advanced equipment and technologies, to helping



researchers pursue new discoveries, the impact on children and families has been profound.



Created in 2000 to support kids with cancer and blood disorders, **BALDING FOR DOLLARS** reached a whopping \$5-million in total funds raised this May.

From helping ease the financial toll an illness takes on families to supporting ground-breaking research initiatives, this support has made an incredible difference in the lives of so many oncology patients and families.

Get in the holiday spirit at Festival of Trees events in Vancouver, Victoria and various communities across the province. Tour the beautifully decorated trees and donate to vote for your favourite. Visit bcchf.ca/fot to find a location near you.



SUPPORTING TOMORROW'S MEDICAL SUPERSTARS

HSBC BANK CANADA employees voted, and the results are in: children's health is a top priority for charitable giving in Canada. Over the years, HSBC has provided unwavering support to the province's kids through funding research and care at BC Children's Hospital.

Thanks to their latest donation, funding will support programs aimed at introducing hundreds of youth to the possibility of working in pediatric medicine and research.

That includes a health science outreach program for high school students called **Mini Med School**.

It will also support **Discovery Talks**, a seminar series featuring influential research leaders from around the globe.

And it will help fund the **Summer Student Research Program**, which attracts undergraduate and medical students from academic institutions and exposes them to research in children's health.



Liam,
8 months old

THIS HOLIDAY, HELP KIDS GET BACK TO BEING KIDS.

Join the Big BC Snowball Fight for Kids and show that, together, we are built to heal. Every donation made from November 13, 2018 to January 6, 2019 counts as a snowball thrown.

Donate at SnowballFightForKids.ca