**How Their Transplants Led to Modern Love (SickKids VS Organ Failure)**

**Hannah** This is a tale of two teenagers. It starts in the year 2011, when Regan and Brad were just a couple of strangers living on the opposite side of Toronto.

**Regan** I had like close friends that I would hang out with, but I wasn't a very outgoing person. I was super into sports, though. I was like a competitive sprinter. I did mixed martial arts as well.

**Brad** I was just the run-of-the-mill, happy-go-lucky kid. Didn't take life too seriously. Spent most of my time in the auto shop or playing hockey or doing something with my hands to try and keep active.

**Hannah** For the most part, Brad and Regan felt sporty and healthy, just like their friends. But in hindsight, something wasn't right.

**Brad** I was feeling tired, but we just chalked that up to puberty. I was tired, I was falling asleep in class. I was getting in trouble for not paying attention, because I was falling asleep. With playing sports, I would push through, but I would be more tired than anybody else at the end of a game.

**Hannah** One day, Brad joined his brother during a visit to their family doctor. It turned out Brad's brother had an ear infection, so they went to a pharmacy for medication.

**Brad** For the fun of it, I decided to take my blood pressure in the automated blood pressure machine. So I was sitting there, and it was in the range that like a 50- or 60-year-old should have. Meanwhile, I'm 15. So I, I was like, wait, that's not right. It came up red on the screen. So I did it again. It was the same. So I went back to the family doctor, got blood work done, so he said, ah, I'll send you for an ultrasound. He called my mom and said, “I'm going to have to refer him to Humber River Regional, because I believe he has kidney failure and I can't help him.” I went into Humber River Regional and, basically, as soon as we walked into the office, he said, “Listen. You have to go to SickKids because your kidneys are about 85% gone.”

**Hannah** Our kidneys are supposed to be our body's filtering system. They take blood and push out toxins and waste. But Brad's kidneys couldn't keep up on their own. So, at SickKids, he started dialysis to clean his blood. And he was going to need a new kidney. Around the same time, Regan was learning about her own health issues. Hers involved muscle waste called creatinine.

**Regan** I did notice that I would start feeling tired, and my sprint times would go down, and I wasn't sure why at the time. I just went to my family doctor, and we just did a regular, routine blood work. They noticed that my creatinine was really high for what is normal for a 15-year-old, and my family doctor decided to refer me to the local hospital, and they tested it again there. And I could tell people were starting to get worried. They weren't telling me exactly what was going on, but I could feel the tension with the nurses and doctors around me. And they referred me to SickKids almost immediately.

**Hannah** So, just like Brad, Regan's kidneys are starting to fail. She was put on a really strict diet, and she was given medication, and she was giving supplements.

**Regan** I wasn't allowed to eat potatoes unless they were boiled and washed in a certain way that there was less potassium in them. And potatoes are my favorite food, so I remember being really upset about that at the time. I was able to kind of manage it with the nephrology team at SickKids for a good seven to eight months. And towards the end of that is when it deteriorated a little quicker.

**Hannah** Regan's situation became worrisome. She got admitted to SickKids for surgery. She needed a dialysis tube inserted into her body. Meanwhile, Brad underwent a kidney transplant, and both teens moved into recovery. Welcome to ward 6A. It's a place where questions can swirl in silence. What if my new kidney stops working? How can I get better faster? Will a transplant really heal me? On the ward was a nurse who took care of both Brad and Regan. She had an idea that would help answer some of their questions and alter the course of their lives in the process.

You're listening to SickKids VS. Where we take you behind the scenes of big breakthroughs to help heal the future. I'm Hannah Bank, and this is SickKids VS Organ Failure.

Picture six iron cots inside a rented home. That's how SickKids started 150 years ago. Generous donors helped grow the humble hospital. And by 1969, the same year that man stepped onto the moon, SickKids pioneered the first pediatric kidney transplant in Canada. Most of us don't think much about our kidneys, or at least I don't. Maybe that's because they're hidden or make up less than 1 per cent of our body weight. Yet every minute, about a quarter of the blood pumped by our heart flows through our kidneys.

**Dr. Armando Lorenzo** You can see over the years how we do the transplants in younger and younger patients, in patients with a lot more complex medical conditions.

**Hannah** That's Dr. Armando Lorenzo. He leads the Division of Urology at SickKids. He's also Surgical Director of its Kidney Transplant Program.

**Armando** We've had tiny little kids with fairly big adult kidneys to the point that you wonder, you know, am I going to be able to fit that in there and to be able to close up the wound and get the kidney to stay there? Every time I do one of those, I feel that, you know, we're truly being able to do something quite unique and extraordinary.

**Hannah** Over the past half century, the SickKids Kidney Transplant Program has grown to become the largest in Canada and among the biggest in the world. More than 1,000 patients have undergone a kidney transplant here. And part of the program's success comes from the collaborations between highly accomplished teams and leaders like Armando and Dr. Chia Wei Teo. Chia Wei is a pediatric nephrologist. In other words, a kidney doctor. He's also Medical Director of the Kidney Transplant Program here at SickKids and has worked closely with Armando for more than a decade.

**Dr. Chia Wei Teoh** We've worked together and collaborated on various research projects that, you know, look at how we can improve the care and outcomes for our patients. And I think it's a very precious relationship that we have.

**Armando** It is indeed. You know, when we do a transplant, I text him, I say, “You know, everything went well.” And I can't imagine this program without Chia Wei. I truly — I am very grateful to have him as a colleague and as a friend and as a researcher. We try to always come up with things that will make the care for patients better.

**Hannah** One of the most important steps in the transplant process is finding a strong donor match for a patient. Here's Chia Wei to elaborate.

**Chia Wei** The likelihood of closer match is higher if it was someone who might be related compared to someone who is not related or more distantly related. But it doesn't mean that you won't find a good match with someone who's not related at all. Most of the time a living donor comes from a very close family member, so mom or dad or a relative. But sometimes we may have to go out of that circle to find a potential a living donor. And when that doesn't happen for whatever reason, then we would consider putting the child on the deceased donor waitlist.

**Armando** When the source of the kidneys is somebody who, unfortunately, will be deceased, time is of the essence, and we need to make those decisions in the middle of the night or in a bit of a hurry. And then consider the impact that that has on a family that's just literally there waiting by the phone to hear, you know, there's a kidney available, run to the hospital. It truly is a very stressful moment.

**Hannah** Regan has a really big family. Here's how she found the right match.

**Regan** Everyone was suddenly jumping up to, to be this donor for me, and it was really heartwarming to hear that and see that happening. Obviously I didn't want to ask anyone to do that because that's a huge thing to ask of someone. So I didn't. I just kind of sat it out and waited to see who would decide, I guess, and it turned out to be both of my parents. They were both good matches for me. So they both actually went through the initial testing before I was on dialysis, and my mom turned out to be the best match for me.

**Hannah** In Brad's case, his cousin Stephanie stepped to help.

**Brad** We lived around the corner from each other our entire lives. We were sick at the same time, had the same viruses, eat the same food — just going through life stages with somebody in similar age helps a lot. She ended up being a great match.

**Hannah** You'll remember that when Brad and Regan ended up on the ward at the same time, Brad was recovering from transplant surgery, while Regan was starting dialysis with help from their nurse.

**Regan** She's recently retired from SickKids, but she was the one who kind of teaches you about dialysis and how to do it. And she thought it was a good idea to have our families meet each other and just have someone to relate to on what it's like living with kidney disease and doing dialysis at home. Our parents spoke to each other right away. They had a good lengthy conversation about what it was like, and they found it really helpful. And then they decided to kind of convince both of us to speak to each other too, just so we would have that experience as well. I, being the shy teenage girl I was, I really didn't like the idea of talking to a random boy in the hospital. I think it was about three weeks that I was admitted and I said no the entire time — until the day of discharge. We met on the ward on 6A. And we left for a walk around the hospital, and we didn't come back for a good three hours. We just couldn't stop talking to each other.

**Brad** She was looking at me with these big eyes, hopefully wishing she had talked to me sooner. But just asking questions, asking about the whole process, asking me how I felt, how I was doing. And I was asking her questions about her and her family and her upbringing. Meanwhile, I had already talked to her mom and her dad and her grandfather and her grandmother and everybody else that was close to her before actually speaking to her. But it was nice to have a connection with somebody. It was nice feel like I was helping somebody go through the process.

**Hannah** And, Regan, you said you were leaving that day. So can you tell us a little bit about, you know, that time after you left and what were you dealing with in sort of at the same time as maintaining a connection with Brad?

**Regan** I remember essentially having to go home with everything I learned about dialysis and basically try to apply it in my own bedroom instead of in the hospital room. We were on what's called peritoneal dialysis. It kind of pulls all the impurities from your blood and then flushes it out using the peritoneal dialysis machine. I was able to go to school and still do my normal activities, but I was stuck to the machine every single night at home. So it was a lot to take in, a lot to remember. But I was also super excited about the fact that I had this new friend that I could message anytime I wanted if I had any questions about it because they'd gone through the exact same thing that I did.

**Hannah** Can you talk a little bit about the kidney transplant itself?

**Regan** I remember the nephrology team and the transplant team telling me that we finally had a date that we could do the surgery and I was really excited about it. It was June 19th. It was three days after my 17th birthday and I was like, what a great birthday present this is to finally be able to get a transplant and live a normal life. I remember being really excited, but then as the date came closer to it, I remember feeling really nervous and anxious about it — and, oh my gosh, this is a huge surgery that's going to happen. I don't know what the outcome will be, like what if I don t make it out of the surgery. There was all kinds of things going through my mind, especially because I also knew my mom was going to be in surgery at the same time. So I was worried about both of us.

And then I remember waking up from transplant and feeling so good. It feels like such a relief as well to wake up after a major surgery like that and know you're still there, know you are well taken care of, especially at sick kids. After transplant, I was up and at him and running around pretty quickly afterwards, so it felt really good.

**Hannah** That's amazing. And how is your mom?

**Regan** She's great. She still does get regular checkups like I do. She's functioning perfectly good with one kidney. I just remember feeling so in awe and amazed by her, like she gave me life once when she gave birth to me. And she was essentially giving me a second chance at life again by donating her kidney to me. So I'm really grateful for her for that.

**Hannah** And, Regan, you did deal with some issues around rejection. And so can you talk a little bit about what that was like?

**Regan** I think it was about a year or just under a year after transplant when my creatinine just started jumping up a little too high for my physician's liking. So they did a few tests and they realized that I was having a rejection episode.

**Hannah** I really wanted to know why a rejection episode might happen, so I asked kidney specialist Chia Wei.

**Chia Wei** Rejection is a condition that happens to transplanted organs because our own body's immune system is trained over, you know, hundreds and thousands of years to recognize foreign material to our own body to try to keep us safe, to fight bugs and organisms that try to make us sick. But it doesn't quite recognize that this person needs that organ to survive. And so it would try to sort of attack the transplanted organ and cause rejection.

**Hannah** Here at SickKids and other hospitals transplant rejection is handled through a combination of ways. First, there's finding a good donor match for a patient, there's ongoing surveillance, and then there's using treatments or medication that will suppress the immune system, so it actually won't reject a new kidney. It's really a delicate balancing act and one that Regan knows all about.

**Regan** I ended up having to spend some extra time at SickKids to kind of stop the rejection essentially from happening and I remember suddenly having to stop going to school and I was in grade 12 at the time — suddenly having to drop everything and go back to the hospital again. After finally thinking I was home free, I suddenly wasn't. So there was a lot to process at the time. I remember feeling really kind of sad about it and wondering if my kidney would even keep functioning.

**Hannah** Through everything that Regan went through, from dialysis and transplant to recovery and even the rejection episode, she was still keeping in touch with Brad.

**Brad** The physical aspect is tangible. You see everything that's going on. But the mental aspect, as a young boy growing up, you are trying to find an identity for yourself that suits you. But then when you start going through a chronic illness and transplant and stuff, it's very hard for you to sort of figure that out, because then all you know is your kidney disease and your transplant dialysis. So when the mental aspect of that, for me, was very hard to get over until I met someone like Regan who had the same issues and health concerns as me. Having somebody honestly that you can relate to be open with was very helpful for me as a kid going through that.

**Regan** Experiencing a big health concern like this as a teenager is much different than experiencing it as a as a baby or as a child at SickKids. When you think of SickKids, you always think of like the really young babies and newborns that you see all the time. But there's tons of teenagers that are going through this as well and it's a really different experience and lots of other things to think about — like school and where you want your future to go and, and things like that.

**Hannah** I wanted to know what became of Regan's rejection episode, and I was curious about her relationship with Brad. We'll hear about that after this brief break.

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**Hannah** Regan ended up spending a good chunk of her final year of high school at SickKids. But her medical team was able to stabilize her rejection episode.

**Regan** It worked out. All the treatments were great, and they went really well, and I haven't had an issue since.

**Hannah** During Regan's time at SickKids, she learned that the underlying cause of her kidney failure was most likely an autoimmune disorder. Sometimes it can be triggered by an infection. But Brad's diagnosis remains a mystery. Patients like him don't always get a definitive answer, which can be frustrating. That's why more kidney experts at SickKids are researching and collaborating on how to diagnose faster, predict better, and treat smarter.

**Armando** They're finding some prenatal ultrasounds that make us fairly certain that we're going to be facing chronic kidney disease after birth. So with better prenatally diagnosis and improvement in technology, we're seeing more and more of these patients that we can detect very early on in life, and then they don't present all of a sudden with symptoms or with a problem, but we know that they're getting there.

**Hannah** This precision child health approach to medicine will help more patients who come to SickKids. And the approaches here have already done wonders for Regan and Brad. Both ended up finishing high school and going to university. That's when they finally started dating each other. As the couple grew more serious, so did Regan's interest in science and biology. She even chose the life sciences stream at the University of Toronto.

**Regan** I eventually decided to go back to school and do a master's degree in health care quality. And through that degree, I learned about making health care systems better for the future and for future patients and better for the staff. It made me really think about potentially making SickKids a better place. It would be perfect to be able to work there and essentially give back to the place that gave so much to me. So I did purposely decide to work at SickKids. I work in cardiovascular surgery, so the surgery aspect is similar to what I experienced at SickKids, and I get to kind of see the other side of that from my position. I like to do a lot of different things as hobbies. I play video games, I like read a lot fantasy novels.

**Hannah** Brad's also into hobbies, like reading and the Raptors, and the financial analyst is still really into Regan.

**Regan** So Brad took me to a lake called Lake Apopka in Florida.

**Brad** As soon as we pulled into the conservation area — saw the parking lot absolutely jam-packed with cars — I was rummaging through my backpack trying to find the ring. And I grabbed the ring. I was very nervous. I got down on my knee and I said, “Regan I love you. We have so much in common, and I would love if you could be my forever partner.”

**Regan** I like to say, in typical Brad fashion, he decided to get ahead of himself and propose right in the parking lot when we arrived instead of making it out onto the trail. I think it's because he knows I'm a quiet person and I don't like attention, so it was the perfect time. And, of course, I said yes. We got married just this past August.

**Brad** We had SickKids at the wedding. We tried to invite a lot of nurses, but a lot them were busy and working.

**Regan** We did invite the one who introduced us to each other. She was really grateful that we invited her.

**Brad** As a former patient, when you look at it, SickKids gave me almost everything that I have now. It gave me my health. It gave me my life. It gave me a new lease at life that I otherwise wouldn't have had without SickKids being there and the donations that go towards SickKids. It means a lot. I almost cry thinking about it.

**Hannah** From SickKids Foundation, I'm Hannah Bank. Thanks for listening. To support breakthrough research and care at SickKids, please visit [SickKidsFoundation.com/Podcast](https://www.sickkidsfoundation.com/podcast/raredisease). And if you like this episode, subscribe and rate us wherever you listen to podcasts. SickKids VS is produced by me, Liz Surani, Neil Parmar, Jasmine Budak, Charlotte D’Arcy, and Rebecca Ostroff. This episode was written by Neil Parmar. Sound design and editing by Quill. Check out our show notes for related links and resources. Until next time.