



Insights from the Network



Patient Spotlight: Karen's Fight Against Diabetes and the Cell Therapy that Changed Her Life

In the early afternoon of June 1991, Karen Peat found herself overwhelmed with fatigue after vacuuming all morning. She was four months pregnant with her third child. She lay down for a nap. It would be one month before her eyes opened again, and little did she know that an innovative cell therapy would change her life.

At age 11, Karen Peat had developed type 1 diabetes and was faced with the lifelong challenges of managing the disease. As she matured, Karen struggled with increasingly unstable blood sugars. After completing a Bachelor of Arts, Karen intended to pursue a master's degree, but her poor health continued to cast shadows over her aspirations. Juggling the demanding roles of maintaining two apartment buildings and caring for two preschool daughters, all while carrying her third child during pregnancy, life seemed an insurmountable series of responsibilities. Her husband, Doug, was studying social work alongside a full-time job, adding to the whirlwind of their young lives.



As a young couple, through the advice of a diabetic specialist, Karen and Doug chose to have their children early in their marriage. Her third pregnancy had been difficult so far, and Karen's rush to the hospital was merely the beginning of an unexpected turn that would redefine their journey together.

"I don't remember waking up," said Karen. "Regaining consciousness is a slow and messy process. Time has no relevance. There were fragments of memories, like tubes being pulled out, monitors beeping day and night, and slow-moving shadows on a dark screen."

Shortly after slowly coming out of her coma, while still in the hospital, Karen found a cheque with 'Karen and Doug Peat' written on it. She did not remember who Doug was and why their names were together on a cheque. When Doug returned to the hospital, Karen angrily waved the cheque in his face.

Karen remembers telling Doug, "I understand that we are married, but I have to tell you, I do not remember ever meeting you in my life." Doug had just been there a few hours before. Memories resurfaced slowly, but not all returned. Karen and Doug began rebuilding their relationship.

Their baby, Aaron, had been delivered and was not breathing on his own, for his lungs were underdeveloped. He was immediately intubated and was rushed into the Neonatal Intensive Care Unit.



"I was overwhelmed with emotions of when I could finally hold my baby," said Karen. "But my heart sank, for we feared that due to the impact of my coma, he might not live long. It took over a month, but Aaron came home."

Karen's healing came in increments of months, then years. The coma left her with significant short-term memory disability. Early in her recovery, this meant she needed assistance caring for their three young children. Slowly, Karen and Doug reshaped their marriage and focused on raising their young family.



Karen worked hard to create a home where friends were always welcome. Neighbourhood children would arrive at their door for snacks after school and help with their homework.

Over time, Karen became increasingly sensitive to insulin, making it difficult for her to control her blood sugar levels. Her memory disability, combined with her inability to feel the symptoms of low blood sugar (i.e., hypoglycemic unawareness), resulted in her suddenly finding herself in a heap on the floor, overcome by a seizure.

“During this time, my husband later shared he did not know whether he would wake up one day to find that I had died in the night,” said Karen.

Karen’s struggles had a traumatic impact on their children. One morning, their nine-year-old woke to find Karen unconscious and seizing on the kitchen floor. This was not the last time she would have to dial 9-1-1.

As the seizures became more frequent, Karen’s endocrinologist told her she may not live to see her children graduate from high school. Karen and Doug grew desperate and sought the help of one specialist after another.



An Innovative Cell Therapy Offered Hope

“One summer afternoon in 2004, we entered the cluttered, book-laden office of a white-haired, wizened endocrinologist,” said Karen. “Slowly, he told us about a promising experimental procedure that I may be eligible for. My husband and I accepted the offer on the spot to participate. I remember us thinking that our nightmare was ending.”

“In 2004, I was honoured to receive an experimental procedure coined ‘the Edmonton Protocol’ developed by James Shapiro and colleagues, which, not only saved my life, but allowed me to enjoy life once again.”

- Karen Peat

The experimental procedure, called the ‘Edmonton Protocol’, was developed by a team of researchers at the University of Alberta, led by Dr. James Shapiro. The revolutionary protocol involves taking donor islet cells from the part of the pancreas responsible for producing insulin and transplanting them into the patient’s liver where they can function normally. Patients are required to take immunosuppressive therapies to prevent rejection.

When Karen was first considered as a recipient, Karen and Doug travelled to Edmonton for a month of tests before being accepted into the trial. Then they were told to wait.

The Edmonton Protocol

In 2000, a revolutionary protocol, termed the Edmonton Protocol, was developed by a team of researchers at the University of Alberta, led by Dr. James Shapiro. The foundations of the protocol were established over 28 years of research. The procedure involves taking donor islet cells from the part of the pancreas responsible for producing insulin and transplanting them into the patient’s liver where they can function normally. Patients are required to take immunosuppressive therapies to prevent rejection. Research over the years has led to modifications and improvements to the Edmonton Protocol, as well as adoption of the procedure around the globe. Since that time, researchers have also been avidly seeking other avenues to functionally cure diabetes, tackling two major issues: creating an unlimited source of islet cells and reducing or eliminating the need for anti-rejection medications. Several studies are underway in British Columbia and across Canada, including a clinical trial that is studying the use of an under-the-skin transplanted device to regulate blood glucose and eliminate the need for insulin injections.





A few days before Christmas in 2004, Karen and Doug were notified that a donor had been found. They had only a few hours to get to Edmonton. They quickly threw some things together and flew to Edmonton for the procedure. Aaron, now 13 years old, went with them.

Karen received her islet cell transplant the following day but had to remain in Edmonton for several weeks for medical appointments before they could return home to the rest of their family.

“Receiving this medical intervention saved my life,” said Karen. “The staff were so compassionate and the attention and follow-up during those first days was intense.”

Initially, the anti-rejection medication wreaked havoc on Karen’s digestive system causing severe pain. Her only relief was found in going for long walks with her canine companion, a beautiful Hovawart named Meeka. After switching anti-rejection medications, the pain disappeared.

Karen shares that for the first time in 13 years, “I could now exercise freely, without fear of collapse or seizure. I could vary my diabetic diet without constantly monitoring carbohydrates. Dara, my eldest daughter could relax her vigilance over my behaviour and food consumption. It has been said that hardships either break up families or bring them closer. We have a close-knit family who is endlessly grateful for my continued good health, and I have been able to expand my interests.”

Karen treasures every day, using her gift of health to help others through having taught children and working alongside women in the downtown Vancouver east side as they have sought relief from their struggles escaping the sex trade. She has celebrated with pride her children’s graduations, held, hugged, and played with her grandchildren, and danced at her children’s weddings. She has camped, savoured live symphonies, walked her husky, hiked and enjoyed so many other life-giving experiences.

“Now, when I hear of research or experimental procedures, I know first-hand what research means,” said Karen. “It means the lifting of burdens that are too heavy to bear. It means hope.”

Now having been married for 35 years, Doug and Karen are still holding hands.

Read more about the SCN-funded diabetes research and clinical trials happening across the country [here](#).

