

Pulse

THE BIG CHILL

DID YOU KNOW...

Cooling a person following cardiac arrest can mean the difference between life and death?

Sudden cardiac arrest is when the heart stops beating. It happens suddenly with no warning. About 95 percent of people do not survive a cardiac arrest, and most die within minutes.

Patients who do survive usually sustain serious injury to the brain – about 60 percent of cardiac arrest survivors regain consciousness, but one-third have irreversible cognitive disabilities.

Now research is offering hope to cardiac arrest patients in a chilling way. Recent clinical studies show that cooling patients when being resuscitated after cardiac arrest increases their chance of survival. It also reduces the effects of severe brain injuries like dementia and memory loss.

The process of cooling cardiac arrest patients is called therapeutic hypothermia. Here's how it works. When a sudden cardiac arrest occurs, the body produces substances that are harmful to it. Cooling the body down prevents these toxins from being produced and attacking the body.

St. Michael's Hospital is only one of two hospitals in Canada to trial a ThermoSuit, which cools patients following cardiac arrest.

To do this, paramedics and emergency room teams must quickly apply ice packs (sometimes up to 50 at a time) to the patient's head, neck and groin to maintain a core body temperature of 32°C–34°C for 12–24 hours. But the problem is putting this therapy into practice has been slow. Results from a study conducted by the University of Chicago

indicate that many physicians are still not using cooling techniques after cardiac arrest. The survey results suggest

that a better means of cooling is needed. That's why the big news at St. Michael's Hospital was the recent clinical trial of a special suit that rapidly cools the body.

This was especially great news for Bill McDonald. He was having a routine outpatient procedure when his heart stopped beating. Under normal circumstances, Bill would have had a 30 to 40 percent chance of living to tell his story. But when Bill went into cardiac arrest and the Code Blue sounded at St. Michael's Hospital, Bill took part in a research trial using a ThermoSuit, which cooled his body to 32°C to 34°C in 20 minutes instead of hours.

"If the trial had not been going on, I might not have made it," says Bill. "I am so grateful that St. Michael's was testing the suit at the time and the cardiac unit was able to respond so quickly."

St. Michael's Hospital cardiologist Dr. Paul Dorian is renowned for his research in heart rhythm disturbances called arrhythmia. He was chosen to trial the ThermoSuit system because of his interest in the area and St. Michael's Hospital's reputation for effectively carrying out clinical studies of this nature. St. Michael's is only one of two hospitals in Canada to take part and the only one in the Toronto area.

"The full benefits of cooling patients are still being understood and many researchers are still investigating the best ways to cool patients following cardiac arrest," says Dr. Dorian. "That's why we were pleased to participate in this study, as a way of finding an innovative solution to rapidly cool patients to save lives." 

