

# Cooling may benefit children after cardiac arrest

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When the heart is stopped and restarted, the patient's life may be saved but their brain is often permanently damaged. Therapeutic hypothermia, a treatment in which the patient's body temperature is lowered and maintained several degrees below normal for a period of time, has been shown to mitigate these harmful effects and improve survival in adults.

Now, in the first large-scale multicenter study of its kind, physician-scientists are evaluating the effectiveness of the technique in infants and children. Offered exclusively in New York by Columbia University Medical Center researchers at NewYork-Presbyterian Morgan Stanley Children's Hospital, the [Therapeutic Hypothermia After Pediatric Cardiac Arrest](#) (THAPCA) trial is funded by the National Heart, Lung and Blood Institute (NHLBI), part of the National Institutes of Health (NIH).

"A tragedy no matter how it happens, cardiac arrest can occur in children either as a complication from a serious medical condition or due to an accident or sudden illness. While arrest in children is rare, currently no therapies have been shown to improve their chances of recovering," says Dr. Charles Schleien, a pediatrician and anesthesiologist at NewYork-Presbyterian Morgan Stanley Children's Hospital and executive vice chairman of pediatrics and professor of pediatrics and anesthesiology at Columbia University College of Physicians and Surgeons. "In this new study, we aim to show that therapeutic hypothermia can give these children a better chance at survival and long-term quality of life."

Study participants will be randomly selected to either have their body cooled through therapeutic hypothermia or maintained at normal body temperature. In both groups, body heat will be adjusted using special temperature-control blankets. Those receiving hypothermia will have their body temperature reduced to between 89.6° and 93.2° Fahrenheit (F) for two days, then slowly increased to a normal body temperature and maintained for another three days.

Co-led by Dr. Frank W. Moler at the University of Michigan C.S. Mott Children's Hospital and Dr. Michael Dean at the University of Utah, the six-year study involves a total of 16 study sites in North America.

## **Cardiac Arrest and Therapeutic Hypothermia**

During cardiac arrest, the body's blood supply is interrupted and cells are deprived of oxygen. This stresses the body, causing the release of toxic compounds that can overwhelm the organs and result in long-term brain injury. Therapeutic hypothermia slows the body's production of these compounds, reducing risk for brain injury. The therapy has been used successfully in adult cardiac arrest patients, and has been shown beneficial for newborns who have received insufficient oxygen at birth.

## **A Leader in Cooling for Cardiac Arrest Patients**

Beginning this year, New York City ambulances are taking cardiac arrest patients directly to hospitals that offer therapeutic hypothermia. Dr. Stephan Mayer of NewYork-Presbyterian Hospital/Columbia University Medical Center played a key role in establishing this policy by bringing the idea to a critical-care committee of the Greater New York Hospital Association and United Hospital Fund.

Source: New York- Presbyterian Hospital ([news](#) : [web](#))

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