

## Applications

- Improvement of current therapeutic hypothermia methods
- Treatment of heart attack, stroke, sepsis, other global perfusion abnormalities

## Advantages

- Measures temperature, oxygen extraction ratio, metabolism, and blood pressure
- Allows for Goal Directed Therapy and personalized therapeutic hypothermia

## Inventors

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## Market Need

Recirculation or reperfusion of blood to ischemic cells after a heart attack can lead to further injury, such as inflammation and oxidative damage. Therapeutic hypothermia (TH) can significantly attenuate this injury and improve survival. The methods of inducing TH, however, are rather primitive and warrant improvement. One of the major problems with TH is that it is induced with catheters that block the *vena cava* from other uses, such as drug delivery or medical tests.

## Technology Summary

This is a method and apparatus for optimizing temperature control of TH. This method involves adding additional measurement capabilities, such as oximetric and blood pressure, to the temperature catheters. This could have a number of benefits. For one, these additional measurements allow the procedure to be tailored to the patient. Second, this allows the catheter to be used to perform goal directed therapy (GDT) simultaneously with temperature modulation. GDT may play a critical role in optimizing global and end-organ outcomes during therapeutic temperature manipulation or vice versa. Furthermore, certain measurements, such as oximetric, could be particularly helpful in cases of trauma, sepsis, or other global perfusion abnormalities where oxygen consumption is also linked to coagulation-inflammatory responses.

## Technology Status

Patents pending: U.S. and foreign rights are available.

This technology is available for licensing to industry for further development and commercialization.