

**arctic heat**  
**MEDI+COOL™**

**BACKGROUND** Recent published studies indicate Mild Induced Hypothermia (32° - 34°) may be beneficial in reducing severe neurological impairment following Cerebral Ischaemia during Cardiac Arrest. (N. Eng.J. Med. Vol. 346:549-556 Feb.21 2002 No. 8) The exact mechanism of this cerebral protection is not clear, Hypothermia decreases metabolic demand. Neurotoxic transmitters and extracellular glutamate release decreases; the inflammatory process is suppressed and cell membrane stabilized.



## COOLING WITH ICE

### PROBLEMS INCURRED IMPLEMENTING THE COOLING PROTOCOLS.

- Intensive Care had 2 small ice trays.
- The hospital had only one ice machine located on the opposite side of the campus from Intensive Care.
- If sufficient ice was available it had to be carried in heavy buckets across the grounds.
- Staff often had to leave the hospital to purchase bags of ice.
- Ice melts, especially in the Australian summer, resulting in sopping wet beds, puddles on the floor creating hazards for the staff
- These critically ill patients require a lot of nursing time. The ice related issues greatly increased the nursing burden.

### DISADVANTAGES OF COOLING WITH ICE

- Sufficient quantities of ice are difficult to find and store.
- Ice melts, especially in the Australian summer soaking linen and creating puddles on the floor.
- Frequent linen changes are necessary, often requiring 3 or more members of staff to undertake the procedure safely.
- Occupational Health and Safety issues are a concern. Electrical cables dangling on wet floors, weight of ice bags (5kg+) and staff having to leave hospital campus to purchase ice.
- Relatives become stressed watching loved ones packed in ice.
- Patient needs protection from ice burns.

### ADVANTAGES OF COOLING WITH ICE

- It actually works.

## THERE HAD TO BE A BETTER WAY

# MEDI+COOL

### ABOUT THE COOLING KIT

**Kit comprises: 2 Blankets (shoulder to thigh length)  
2 Caps 4 Grain Pads  
4 Axilla Pads**

- Each item is manufactured from a polyester mesh fabric impregnated with a special non-toxic, biodegradable crystal which when activated in water becomes a viscose gel capable of retaining temperature for a long period.
- To use, the items are soaked in cold water for 5 - 15 minutes, towel dried and placed in a freezer to cool. Maximum cold is reached after 2 hours.
- One set is then placed on the patient. After 2 hours the set on the patient has absorbed body heat so it is removed and placed back in the freezer, the set from the freezer being placed on the patient. With this rotation, cooling can continue for as long as desired.

After completion of cooling, the kit can be sanitized and reused or discarded according to Infection Control Protocols.

### ADVANTAGES OF THE COOLING KIT

- It is sufficient.
- Easy to use.
- No mess.
- Relative and patient friendly.
- Cost effective as it is reusable.
- Non Toxic and latex free.
- No O.H.&S issues.
- Pack is easily transportable and stored.
- Has a wide range of uses
- Can be washed, soaked or sanitized to current Infection Control Standards.

### EFFECTIVE TEMPERATURE REDUCTION

Temperatures were reduced from 40°C in some cases to 32°C in 4-6 hours.

Temperatures reduction was faster if the patient was also fanned.

Obese patients were difficult to cool with the kit or with ice.



### OTHER USES:

- Cooling can commence immediately in the field thus providing greater neurological protection.
- Treatment of Heat Exhaustion in many situations.
- Rescue.
- Malignant Hypothermia.
- All febrile conditions.
- Healed burns when temperature control becomes a problem.
- Mobile hospitals when electrical alternatives are not possible.



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## MEDICAL COOLING KITS



### THE HORNSBY COOLING KIT

#### Contents:

- 2 Blankets with plastic covers
- 2 hats with plastic covers
- 4 Axilla Pads with plastic covers
- 4 Groin pads with plastic covers



### THE HORNSBY TRAVEL KIT

#### Contents:

- 1 Blanket with plastic cover
- 1 Hat with plastic cover
- 2 Axilla pads with plastic covers
- 2 Groin Pads with plastic covers



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