Tecotherm Neo

Thermoregulation and Monitoring

Total Body Cooling for infants suffering from Hypoxic Ischaemic Encephalopathy (HIE)

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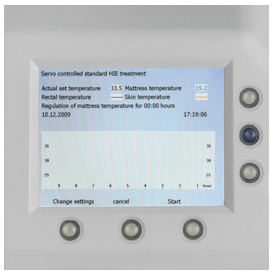
Total Body Cooling is a therapy for infants suffering from Hypoxic Ischaemic Encephalopathy (HIE) after Birth Asphyxia. The original Tecotherm was used in the biggest Randomised Control Trial for cooling infants with HIE, which showed improved neurologic outcomes for the cooled group[1]. Now building on from that success, the Tecotherm Neo takes Total Body Cooling to the next level.

The innovative servo controlled design has instant feedback monitoring the infant's temperature every 2 seconds and making minute changes to the fluid to ensure that the infant's temperature remains stable. Simple alarms are on hand should the temperature deviate more than 0.5˚C from the set temperature. The large colour display shows the temperature clearly and colour changes alert nursing staff to any problem.

The Tecotherm Neo can be programmed for a complete treatment cycle, the user can set the target temperatures, duration and even the rate of re-warming / cooling making it easy and simple to set up and use. Changes can be made at any time and all changes, set and measured parameters are recorded on to a memory card every minute for later analysis.

Stand by screen is easy to see across the room.



Clinician can set the duration of treatment, the rate of cooling / warming as well as the target temperature.

A lightweight and portable device, the Tecotherm Neo is the gold standard in Total Body Cooling.

Modes of Operation

The Tecotherm Neo has 3 modes of operation:

Servo-Control Complete Treatment Mode

Clinician can set the duration of treatment, the rate of cooling / warming as well as the target temperature. The Tecotherm Neo will complete the whole cycle without interruption and then maintain the final temperature.

Servo-Control Mode (Constant Rectal Temperature)

Clinician can set the target temperature, the time to get to target temperature and the length of time to maintain the target temperature. The Tecotherm Neo will complete the whole cycle without interruption.

Constant Mattress Temperature Mode

No Servo Control, useful for research work and where control of the mattress needs to be stable, or where experienced staff are available to monitor the patient.

The Tecotherm Neo takes Total Body Cooling to the next level

Flexible

- Clinician can set and adjust parameters at the start and throughout the treatment
- Customise and store treatment profiles (up to nine can be stored)
- Compatible with reusable and disposable accessories
- Optional use of skin probes

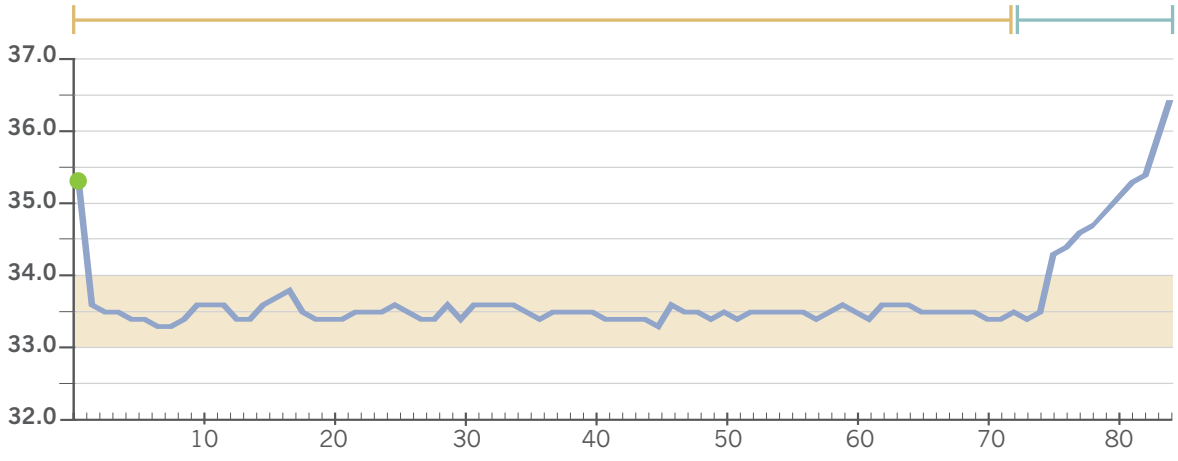
Easy to Use

- Large colour screen is easy to see across the room
- Small lightweight portable device
- The device restarts from the same settings in the event of power failure
- Maintains normothermia after rewarming

Compatible

- Data storage for allowing simple analysis of temperature profiles
- Export individual patient records to USB

Example of patient data collected from Tecotherm Neo



Infant transfer temperature 35.3˚C

Target temperature range 33.5˚C (+/- 0.5˚C)

Target temperature 33.5˚C (72 hours)

Target rewarming temperature 37˚C (12 hours/0.29˚C per hour)

Technical Description and Specifications

Options	Cooling & Warming
Patient weight max.	<50kg
Dimensions	375mm (width) x 190mm / 215mm (height) x 310mm (depth)
Weight without accessories	approx. 7.2kg
Central cooling module	Thermoelectrically based module
Treatment temperature control ranges	Mattress + 12°C to + 39°C Rectal BCT + 30°C to + 38°C

Hydraulic circulation system

System pressure max.	0,5 bar
Flow rate without / with mattress	500 ml / min (shorted) / up to 300 in use
Internal fluid reservoir capacity	approx. 250 ml
Circulating fluid	Sterile Water
Connectors / Couplings	Quick Disconnect Couplings
Fill up / Refill	Fill up set

Electrical parameters

Supply voltage / Mains	100-130V and 200-240V, 50-60 Hz
Power consumption	max. 350 W

Patient safety / alarms

Lower temperature alarm limit	+10°C
Upper temperature alarm limit	+41°C
Set temperatures, lower limit	+12°C
Set temperatures, upper limit	+39°C

Ambient conditions

Operation / Treatment Ambient Temperatures	+ 5°C to + 27°C
Operation / Treatment Relative Humidity	10% to 75%, not condensating

System safety

Protection class	Class 1, Risk Class II b, Type BF
Standards	DIN EN 60601-1 DIN EN 60601-1-2 DI 60601-1-6 DIN EN 60601-1-8 DIN EN 60601-1-10 DIN EN 60601-2-35 E/F

References

1. Azzopardi et al (2009) Moderate Hypothermia to Treat Perinatal Asphyxial Encephalopathy, N Engl J Med 2009; 361:1349-1358

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