



صنایع پزشکی

سرما بهبود

سپنتا

SBS Medical Ind.



دانش بنیان

Knowledge Enterprise

MANA
Neonate Cooling
سردهکننده نوزادان

مانا

Model : SBNeo

Total body cooling device for treatment of neonates suffering hypoxic ischemic encephalopathy (HIE)

The first and only
holder of the license to manufacture from
the Ministry of Health in Iran

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IMED
National Medical
Device Directorate IR.IRAN



The mechanism of the device's effect



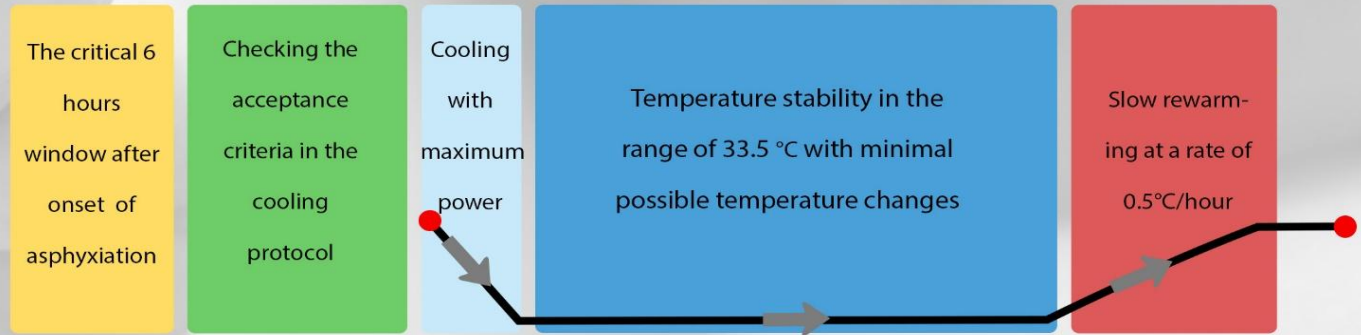
By placing the baby on a cold mattress, the core temperature will decrease to 33.5 degrees Celsius

The core temperature is maintained in this range for 72 hours

A decrease in temperature slows down the metabolic rate

Brain cells and tissue are able to recover, which ultimately reduces or stops further brain damage

Total Body Cooling Timeline



Functional Features

Modes of Operations

a) Single point temperature control mode

In this mode, the clinician can set the rectal target temperature and the device will automatically performs cooling or heating operations at the set rate or at the maximum power, depending on user's choice. The SBNeo will maintain the target temperature without interruption. This operation mode effectively transforms the device into a temperature stabilization system that can be used for hypothermia, hyperthermia, or normothermia treatments.

b) Multi-point temperature control mode

This operation mode is based on the standard protocol of asphyxiation treatment. The user determines the target rectal temperature (by default 33.5 degrees Celsius), and the device cools the baby in the shortest possible time. The baby's temperature is then maintained for the user's set time, which is 72 hours in the standard mode. Finally, the device gradually rewarms the neonate at a set rate (by default, 0.5°C/hour) until reaching the natural temperature of 37 degrees or any other requested temperature

Simultaneous reading and display of surface and core body temperature using skin and rectal sensors

The temperature display accuracy is 0.1°C, the maximum temperature stabilization error is 0.5°C, and temperature sampling is done every 1 second

The possibility of viewing changes in rectal temperature during the entire treatment period as a graph with various graphic capabilities

Easy and safe use with the design of the device's accessories storage space inside the device body

Advanced and adaptive temperature control algorithm with self-tuning capability

The possibility of immediate rewarming during treatment at the discretion of the treatment staff

Multi-layer hardware and software temperature protection systems

Technical Specifications

Model : **SBNeo**

Dimensions

50*40* 98 CM

Weight **52 Kg**

Coolant Temp

16-42 °C

Noise intensity

53db at 1 meter

Filling Jar volume

0.5 Lit

Power supply

220 Volt 50 Hz

Power consume

520 Watt

Coolant tank volume

3.5 Lit



Sensors

- Reusable paediatric rectal probe
- Disposable paediatric rectal probe
- Reusable paediatric skin probe
- Disposable paediatric skin probe

Connecting pipes

- Silicone hoses with flex insulation
- Protected with fabric cover

Cooling System

- Thermoelectric modules

Structure

- Metal structure with electrostatic heat treated paint

User interface

- 7-inch touch LCD

Heating system

- Electric element heaters

Connectors

- Non-spill quick couplings

Controller

- PID Dual mode

Coolant

- Pure water

Mattress

- Biocompatible
- Washable
- Uniform heat treatment

Approvals and Certificates

