

CANDIDACY CHECKLIST FOR NEONATAL THERAPEUTIC HYPOTHERMIA (COOLING)

PATIENT'S NAME: _____ HOSP. NO: _____

TIME of BIRTH: _____:_____ hrs. CURRENT AGE in hours /minutes: _____ hrs. _____ mins.

If current age is greater than 6 hours, call tertiary cooling centre before proceeding.

Directions for the use of this checklist: Start at the top and work through each numbered component. When directed to proceed to the exam (neurological criteria), refer to the exam found on page 2. If there is missing data, (such as Apgar scores) and you are in doubt as to whether or not the patient qualifies for cooling, consult with the tertiary cooling centre promptly to discuss the patient.

Clinical Information	Criteria (place a tick in the box that corresponds to the patient information)	Instructions
Gestation	1 ≥ 36 weeks gestation <input type="checkbox"/>	Go to → 2 Weight
	= 35 weeks gestation <input type="checkbox"/>	May not be eligible Contact cooling centre
	< 35wks gestation <input type="checkbox"/>	Not Eligible
Weight	2 ≥ 1800 grams <input type="checkbox"/>	Go to → 3 Blood Gas
	< 1800 grams <input type="checkbox"/>	Not Eligible
Blood Gas pH = _____ Base Deficit = _____ Source: Cord <input type="checkbox"/> Or 1st infant blood gas at <1 hour of life <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Arterial Capillary Venous Time Obtained: _____:_____	3 pH < 7.0 or Base Deficit ≥ 16 <input type="checkbox"/>	Criteria met thus far. Go to EXAM*
	No gas obtained or pH ≥ 7.0 or Base Deficit < 16 <input type="checkbox"/>	May not be eligible; Go to → 4 History of acute perinatal event
Acute Perinatal Event (tick all that apply)	4 Variable / late foetal HR decelerations <input type="checkbox"/> Prolapsed / ruptured/tight nuchal cord <input type="checkbox"/> Uterine Rupture <input type="checkbox"/> Maternal haemorrhage / placental abruption <input type="checkbox"/> Maternal trauma (eg. vehicle accident) <input type="checkbox"/> Mother received CPR <input type="checkbox"/>	Any ticked, Go to → 5 Apgar score
	No perinatal event or Indeterminate what the event was because of home birth or missing information <input type="checkbox"/>	May not be eligible; Go to → 5 Apgar score
Apgar Score at 1 minute _____ 5 minute _____ 10 minute _____	5 Apgar ≤ 5 at 10 minutes <input type="checkbox"/>	Criteria met thus far. Go to EXAM*
	Apgar > 5 at 10 minutes <input type="checkbox"/>	May not be eligible; Go to → 6 Resuscitation after delivery
Resuscitation after Delivery (tick all that apply) _____ PPV/intubated at 10 minutes _____ CPR _____ Adrenaline administered	6 Continued need for PPV or Intubated at 10 minutes? <input type="checkbox"/>	Criteria met thus far. Go to EXAM*
	No PPV/not Intubated at 10 mins? <input type="checkbox"/>	Does not meet the current evidence based criteria for therapeutic hypothermia

Signature: _____ Professional No.: _____ Date of Exam: ____/____/____ Time of Exam: _____:

Circle findings for each domain
PATIENT IS ELIGIBLE FOR COOLING WHEN 3 OR MORE DOMAINS HAVE FINDINGS IN COLUMNS 2 OR 3

Neurological criteria to be assessed between 1 and 6 hours after birth (Assessment of encephalopathy may be less accurate if performed prior to 1 hour of age)

Domain	1	2	3
Seizures	No Seizures	Focal or Multifocal Seizures (Multifocal: clinical activity involving > one site which is asynchronous and usually migratory) Note: If the patient is < 6 hours old and meets the gestation, weight and blood gas criteria and has a witnessed seizure, patient is eligible for cooling regardless of the rest of this exam	Severe, Generalised Seizures (Often resistant to conventional treatment) Note: If the patient is < 6 hours old and meets the gestation, weight and blood gas criteria and has a witnessed seizure, patient is eligible for cooling regardless of the rest of this exam
Level of Consciousness	Normal or Hyperalert	Lethargic Decreased activity in an infant who is aroused and responsive Definition of Lethargic: <ul style="list-style-type: none"> • Sleeps excessively with occasional spontaneous eye opening • Responses are delayed but complete • Threshold for eliciting such responses increased • Can be irritable when disturbed 	Stuporous / Comatose Demonstrates no spontaneous eye opening and is difficult to arouse with external stimuli Definition of Stuporous: <ul style="list-style-type: none"> • Aroused only with vigorous and continuous stimulation Definition of Comatose: <ul style="list-style-type: none"> • No eye opening or response to vigorous stimulation <p>In both stupor and coma, the infant may respond to stimulation by grimacing/ stereotyped withdrawal / decerebrate posture</p>
Spontaneous activity when awake or aroused	Active Vigorous, doesn't stay in one position	Less than active, not vigorous	No activity
Posture	Moving around and does not maintain only one position	Distal flexion, complete extension or "frog-legged" position Term infants with HIE often exhibit <ul style="list-style-type: none"> • Weakness in hip-shoulder distribution (eg proximal part of extremities) • Distal joints, fingers and toes often exhibit strong flexion • Thumbs strongly flexed and adducted. • Wrists often flexed • Above postures are enhanced by any stimulation 	Decerebrate with or without stimulation (all extremities extended)
Tone	Normal • Resists passive motion Hypertonic, jittery <ul style="list-style-type: none"> • Lowered threshold to all types of minimal stimuli eg light touch, sudden noises • Infant may even respond to his/her own sudden movements 	Hypotonic or floppy, <ul style="list-style-type: none"> • Axial hypotonia and/or limb hypotonia 	Completely flaccid
Primitive reflexes	Suck: Vigorously sucks finger or ETT Moro: Normal: Limb extension followed by flexion with stimulus	Suck: Weak Moro: Incomplete	Suck: Completely absent Moro: Completely absent
Autonomic system	General Activation of Sympathetic nervous system Pupils: <ul style="list-style-type: none"> • Normal size (-1/3 of iris diameter) • Reactive to Light Heart Rate: <ul style="list-style-type: none"> • Normal, > 100bpm Respirations: <ul style="list-style-type: none"> • Regular spontaneous breathing 	General Activation of Parasympathetic nervous system Pupils: <ul style="list-style-type: none"> • Constricted (< 3mm estimated) • but reactive to light Heart Rate: <ul style="list-style-type: none"> • Bradycardia (< 100bpm, variable up to 120) Respirations: <ul style="list-style-type: none"> • Periodic, irregular breathing effort • Often have more copious secretions and require frequent suctioning 	Pupils: <ul style="list-style-type: none"> • Skew gaze, fixed, dilated, • not reactive to light Heart Rate: <ul style="list-style-type: none"> • Variable, inconsistent heart rate, irregular, may be bradycardic Respirations: <ul style="list-style-type: none"> • Completely apnoeic, requiring PPV & / or ET intubation and ventilation

Signature: _____ **Professional No.:** _____ **Date of Exam:** ____/____/____ **Time of Exam:** ____ :

This checklist, adapted from the 'STABLE Program', 6th edition, 2013, has been produced by the National Neonatal Transport Programme (NNTP) and endorsed by the Faculty of Paediatrics, Royal College of Physicians, Ireland. 1st edition, March 2014. This 2nd edition, July 2017. Also referenced: 1. *The TOBY Study. Whole body hypothermia for the treatment of perinatal asphyxial encephalopathy: A randomised controlled trial.* Dennis Azzopardi and The TOBY Study Group. BMC Pediatrics 2008, 8:17
2. *Optimizing Therapeutic Hypothermia for Neonatal Encephalopathy.* Steven L. Olsen et al. Pediatrics Feb 2013, 131 (2) e591-e603