

Assessment prior to therapeutic hypothermia

Date of Birth: Time of Birth:
 Gestation: Weight: OFC:
 Apgar score at 10 minutes:
 Continued need for resuscitation at 10 minutes of age: Yes/No
 Gases: Cord arterial Cord venous Admission gas
 pH:
 BE:
 Lactate:

Name:
 DOB:
 Hosp number:
 NHS number:

Does the infant meet any exclusion criteria (see reverse page): Yes/No

		Documentation of Review			Sarnat scoring system		
		1 st hour	2 hours age	4-6 hours age	1	2	3
		Date: Time: Age:	Date: Time: Age:	Date: Time: Age:			
Sarnat scoring system (grade 1-3)	Seizures	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	None	Focal or multifocal seizures	Uncommon (excl. decerebration) Or frequent seizures
	Conscious level	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Normal Hyperalert	Lethargic Decreased activity Can be irritable	Stuporose/ comatose Unresponsive to external stimuli
	Activity	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Active Vigorous	Less than active Not vigorous	No activity
	Posture	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Moving, does not maintain only one position	Distal flexion, complete extension or frog-leg position	Decerebrate with/without stimulation
	Tone	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Normal, hypertonic, or jittery	Hypotonic, focal or general	Flaccid/rag doll
	Primitive reflexes	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Suck: vigorous Moro: normal	Suck: weak Moro: incomplete	Suck: absent Moro: absent
	Autonomic system	1 / 2 / 3	1 / 2 / 3	1 / 2 / 3	Pupils: normal size, reactive to light HR: normal >100 Resp - normal	Pupils: constricted <3mm but reactive HR: bradycardia (<100 up to 120) Resp: irregular	Pupils: fixed dilated, skew gaze, not reactive to light HR: variable, inconsistent Resp: apnoeic
	Agreed sarnat grade					Stage 2 or 3 encephalopathy is defined by seizures or the presence of signs in at least 3 of the remaining 6 categories	
aEEG (if available)	+ seizures? Y/N	+ seizures? Y/N	+ seizures? Y/N	Normal: Baseline >5µv, upper >10µv, sleep/wake cycle Discontinuous: Baseline <5µv, upper >10µv Burst suppression: Background 0-2µv with bursts >25µv Low Voltage: Baseline <5µv, upper <10µv Flat trace: All activity <5µv			
Decision to cool?	Y / N	Y / N	Y / N	For treatment criteria, see overleaf			
Reason for decision							
Name Signature Grade							

If cooled, date and time target temperature (33.5) reached:

A. Infants \geq 36 completed weeks gestation admitted to the neonatal unit with at least one of the following:

- Apgar score of ≤ 5 at 10 minutes after birth
- Continued need for resuscitation, including endotracheal or mask ventilation, at 10 minutes after birth
- Acidosis defined as occurrence of any:
 - pH ≤ 7.00
 - Base Deficit ≥ 16 mmol/L

in any cord or baby gas sample (venous, capillary or arterial) within 60 minutes of birth

Infants that meet criteria A should be assessed for whether they meet the neurological abnormality entry criteria (B):

B. Moderate to severe encephalopathy, consisting of:

- Altered state of consciousness (lethargy, stupor or coma)

AND at least one of the following:

- Hypotonia
- Abnormal reflexes including oculomotor or pupillary abnormalities
- Absent or weak suck
- Clinical seizures

Infants that meet criteria A & B will be ideally assessed by aEEG:

C. At least 30 minutes of amplitude integrated EEG recording that shows abnormal background aEEG activity or seizures. There must be one of the following:

- Normal background with some seizure activity
- Moderately abnormal activity
- Suppressed activity
- Continuous seizure activity

However, initiation of therapeutic hypothermia in infants who are clearly neurologically abnormal should not be prevented or delayed whilst awaiting aEEG data.

Exclusions for therapeutic hypothermia

Do not start therapeutic hypothermia infants if:

- Is likely to require surgery during first three days after birth
- Has other major congenital abnormalities indicative of poor long term outcome
- Is felt to be dying
- Has a significant intracranial bleed

Decision to cool infants of 33-35+6 weeks should be made by 2 NICU consultants.

Therapeutic hypothermia: daily assessment 1

Up to 24 hours of age

Date and time:

Age (hours):

Gestation:

Weight:

OFC:

Name:

DOB:

Hosp number:

NHS number:

Neurological Assessment – Sarnat Score

Domain	Stage 1 (mild)	Stage 2 (moderate)	Stage 3 (severe)
Seizures	None	Focal or multifocal seizures	Uncommon (excl. decerebration) Or frequent seizures
Level of consciousness	Normal Hyperalert	Lethargic Decreased activity in an infant who is aroused and responsive Can be irritable to external stimuli	Stuporose/ comatose Not able to rouse and unresponsive to external stimuli
Spontaneous activity when awake or aroused	Active Vigorous, does not stay in one position	Less than active Not vigorous	No activity whatsoever
Posture	Moving around and does not maintain only one position	Distal flexion, complete extension or frog-legged position	Decerebrate with or without stimulation (all extremities extended)
Tone	Normal – resists passive motion Hypertonic, jittery	Hypotonic or floppy, either focal or general	Completely flaccid like a rag doll
Primitive reflexes	Suck: vigorously sucks finger or ET tube Moro – Normal extension of limbs followed by flexion	Suck: weak Moro: incomplete	Suck: completely absent Moro: completely absent
Autonomic system	Pupil – normal size, reactive to light Heart rate normal >100 Respirations - normal	Pupils – constricted <3mm but react to light Heart rate: bradycardia (<100 variable up to 120) Respirations: periodic irregular breathing effort	Pupils: fixed dilated, skew gaze, not reactive to light Heart rate: variable inconsistent rate, irregular, may be bradycardic Respirations: completely apnoeic requiring positive pressure ventilation
Agreed Sarnat Score	Stage 2 or 3 encephalopathy is defined by seizures or the presence of signs in at least 3 of the remaining 6 categories		

aEEG/EEG	Normal Baseline >5 μ v, Upper >10 μ v Sleep/wake cycle	Discontinuous normal voltage Baseline <5 μ v Upper >10 μ v	Burst suppression Background 0-2 μ v with bursts >25 μ v	Low voltage Baseline <5 μ v Upper <10 μ v	Flat trace All activity <5 μ v
Seizures?	Yes / No				
Comments					

Anticonvulsants and sedatives given

Name	Date and time given

Signature:

Name:

Grade:

Therapeutic hypothermia: daily assessment 2

24 to 48 hours of age

Date and time:

Age (hours):

Name:
DOB:
Hosp number:
NHS number:

Neurological Assessment – Sarnat Score

Domain	Stage 1 (mild)	Stage 2 (moderate)	Stage 3 (severe)
Seizures	None	Focal or multifocal seizures	Uncommon (excl. decerebration) Or frequent seizures
Level of consciousness	Normal Hyperalert	Lethargic Decreased activity in an infant who is aroused and responsive Can be irritable to external stimuli	Stuperose/ comatose Not able to rouse and unresponsive to external stimuli
Spontaneous activity when awake or aroused	Active Vigorous, does not stay in one position	Less than active Not vigorous	No activity whatsoever
Posture	Moving around and does not maintain only one position	Distal flexion, complete extension or frog-legged position	Decerebrate with or without stimulation (all extremities extended)
Tone	Normal – resists passive motion Hypertonic, jittery	Hypotonic or floppy, either focal or general	Completely flaccid like a rag doll
Primitive reflexes	Suck: vigorously sucks finger or ET tube Moro – Normal extension of limbs followed by flexion	Suck: weak Moro: incomplete	Suck: completely absent Moro: completely absent
Autonomic system	Pupil – normal size, reactive to light Heart rate normal >100 Respirations - normal	Pupils – constricted <3mm but react to light Heart rate: bradycardia (<100 variable up to 120) Respirations: periodic irregular breathing effort	Pupils: fixed dilated, skew gaze, not reactive to light Heart rate: variable inconsistent rate, irregular, may be bradycardic Respirations: completely apnoeic requiring positive pressure ventilation
Agreed Sarnat Score	Stage 2 or 3 encephalopathy is defined by seizures or the presence of signs in at least 3 of the remaining 6 categories		

aEEG/EEG	Normal Baseline >5µv, Upper >10µv Sleep/wake cycle	Discontinuous normal voltage Baseline <5µv Upper >10µv	Burst suppression Background 0-2µv with bursts >25µv	Low voltage Baseline <5µv Upper <10µv	Flat trace All activity <5µv
Seizures?	Yes / No				
Comments					

Anticonvulsants and sedatives given

Name	Date and time given

Signature:

Name:

Grade:

Therapeutic hypothermia: daily assessment 3

48 to 72 hours of age

Date and time:

Age (hours):

Name:
DOB:
Hosp number:
NHS number:

Neurological Assessment – Sarnat Score

Domain	Stage 1 (mild)	Stage 2 (moderate)	Stage 3 (severe)
Seizures	None	Focal or multifocal seizures	Uncommon (excl. decerebration) Or frequent seizures
Level of consciousness	Normal Hyperalert	Lethargic Decreased activity in an infant who is aroused and responsive Can be irritable to external stimuli	Stuperose/ comatose Not able to rouse and unresponsive to external stimuli
Spontaneous activity when awake or aroused	Active Vigorous, does not stay in one position	Less than active Not vigorous	No activity whatsoever
Posture	Moving around and does not maintain only one position	Distal flexion, complete extension or frog-legged position	Decerebrate with or without stimulation (all extremities extended)
Tone	Normal – resists passive motion Hypertonic, jittery	Hypotonic or floppy, either focal or general	Completely flaccid like a rag doll
Primitive reflexes	Suck: vigorously sucks finger or ET tube Moro – Normal extension of limbs followed by flexion	Suck: weak Moro: incomplete	Suck: completely absent Moro: completely absent
Autonomic system	Pupil – normal size, reactive to light Heart rate normal >100 Respirations - normal	Pupils – constricted <3mm but react to light Heart rate: bradycardia (<100 variable up to 120) Respirations: periodic irregular breathing effort	Pupils: fixed dilated, skew gaze, not reactive to light Heart rate: variable inconsistent rate, irregular, may be bradycardic Respirations: completely apnoeic requiring positive pressure ventilation
Agreed Sarnat Score	Stage 2 or 3 encephalopathy is defined by seizures or the presence of signs in at least 3 of the remaining 6 categories		

aEEG/EEG	Normal Baseline >5µv, Upper >10µv Sleep/wake cycle	Discontinuous normal voltage Baseline <5µv Upper >10µv	Burst suppression Background 0-2µv with bursts >25µv	Low voltage Baseline <5µv Upper <10µv	Flat trace All activity <5µv
Seizures?	Yes / No				
Comments					

Anticonvulsants and sedatives given

Name	Date and time given

Signature:

Name:

Grade:

