



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Neonatal Intensive Care Unit (NICU)		
Document:	Departmental Policy and Procedure		
Title:	Sarnat and Thompson Scoring		
Applies To:	All NICU Staff		
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1. PURPOSE:

- 1.1 To enhance proper neurological clinical examination of the newborn to confirm the diagnosis of HIE.
- 1.2 It is used to assess status of a neonate following birth asphyxia.

2. DEFINITIONS:

- 2.1 **Birth asphyxia** is defined as a delay in establishing spontaneous breathing/crying immediately after birth of newborn. This results in impaired gas exchange, hypoxia and metabolic acidosis.
- 2.2 **Hypoxic Ischemic Encephalopathy (HIE)** is the term commonly used to describe the neurological syndrome that occur following perinatal asphyxia. It is usually by severe birth asphyxia with secondary cerebral ischemia.

3. POLICY:

- 3.1 It is recommended to use in a neonate following birth asphyxia.
- 3.2 Obtain arterial cord blood for analysis as per Physician order.

4. PROCEDURE:

- 4.1 Thompson score is based on features of HIE. In the scoring system, a score of 0 is normal and the maximum score is 22 which signifies the worst possible status of HIE.
 - 4.1.1 Infants with score 1-10 are considered to have mild HIE.
 - 4.1.2 Infants with score 11-14 have moderate HIE.
 - 4.1.3 Infants with score 15-22 are considered to have severe HIE.
- 4.2 A score of 15 or more has shown a positive predictive value of 92%, negative predictive value of 82%, sensitivity of 71% and specificity of 96% for abnormal outcome at 12 months of age.
- 4.3 **The Thompson HIE score:**

Sign	0	1	2	3
Tone	Normal	Hyper	Hypo	Flaccid
LOC	Normal	Hyperalert, stare	Lethargic	Comatose
Fits	None	<3/ day	>2/ day	-
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate
Moro	Normal	Partial	Absent	-
Grasp	Normal	Poor	Absent	-
Suck	Normal	Poor	Absent ± bites	-
Respiration	Normal	Hyperventilation	Brief apnea	IPPV(apnea)
Fontanelle	Normal	Full, no tense	Tense	-

- 4.4 **Sarnat staging**, Sarnat Classification or the Sarnat Grading Scale is a classification scale for hypoxic-ischaemic encephalopathy of the newborn (HIE).
- 4.5 Sarnat staging is used alongside electroencephalogram findings to provide information about the prognosis for the infant.
- 4.6 **Modified Sarnat classification:**

VARIABLE	Stage 1	Stage 2	Stage 3
LOC	Alert	Lethargic	Comatose
Muscle tone	Normal or hypertonic	Hypotonic	Flaccid
Tendon reflexes	Increased	Increased	Depressed or absent
Myoclonus	Present	Present	Absent
Seizures	Absent	Frequent	Frequent
Complex reflexes			
Suck	Active	Weak	Absent
Moro	Exaggerated	Incomplete	Absent
Grasp Oculocephalic	Normal to exaggerated	Exaggerated	Absent
(doll eye)	Normal	Overactive	Reduced or absent
Autonomic function			
Pupils	Dilated, reactive	Small, reactive	Variable/fixed
Respiration	Regular	Periodic	Ataxic, apnoeic
Heart rate	Normal or tachcardia	Bradycardia	Bradycardia
EEG	Normal	Low voltage, periodic or paroxysmal	Periodic or isoelectric

- 4.7 Prognosis : mild (stage1)-survival is expected.

5. MATERIAL AND EQUIPMENT:

- 5.1 Scoring card

6. RESPONSIBILITIES:

- 6.1 Physician
6.2 Nurse







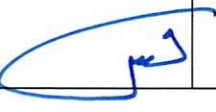
7. APPENDICES:

N/A

8. REFERENCES:

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- 8.3 Stoll BJ, Kliegman RM. Nelson Textbook of Pediatrics. 18th ed. Philadelphia: Saunders; 2007. Hypoxia ischemia; pp. 566–68.
- 8.4 Thompson CM, Puterman AS, Linley LL, Hann FM, van der Elst CW, Molteno CD, et al. The value of a scoring system for hypoxic ischaemic encephalopathy in predicting neurodevelopmental outcome. Acta Paediatric. 1997;86:757–61. [PubMed]

9. APPROVALS:

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