

HAMMERSMITH INFANT NEUROLOGICAL EXAMINATION

Name

Date of birth

Gestational age

Date of examination

Chronological age / Corrected age

Head circumference

SUMMARY OF EXAMINATION	
Global score (max 78)	
Number of asymmetries	
Behavioural score	



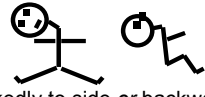






Cranial nerve function	score	(max 15)
Posture	score	(max 18)
Movements	score	(max 6)
Tone	score	(max 24)
Reflexes and reactions	score	(max 15)
COMMENTS		

NEUROLOGICAL EXAMINATION

ASSESSMENT OF CRANIAL NERVE FUNCTION

	score 3	2	score 1	score 0	score	Asymmetry
Facial appearance (at rest and when crying or stimulated)	Smiles or reacts to stimuli by closing eyes and grimacing		Closes eyes but not tightly, poor facial expression	Expressionless, does not react to stimuli		
Eye movements	Normal conjugate eye movements		Intermittent Deviation of eyes or abnormal mvts.	Continuous Deviation of eyes or abnormal mvts.		
Auditory response Test the response to a rattle	Reacts to stimuli from both sides		Doubtful reaction to stimuli or asymmetry of response	No response		
Visual response test ability to follow a black/white target	Follows the target in a complete arc		Follows the target in an incomplete or asymmetrical arc	Does not follow the target		
Sucking/swallowing Watch infant suck on breast or bottle. If older, ask about feeding, assoc. cough, excessive dribbling	Good suck and swallowing		Poor suck and/or swallow	No sucking reflex, no swallowing		

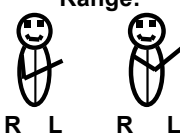

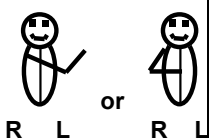



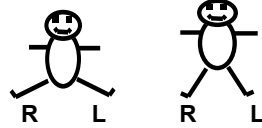
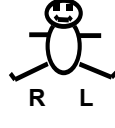
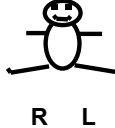



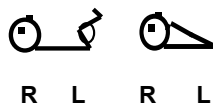
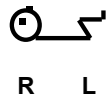


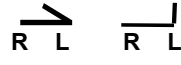







ASSESSMENT OF POSTURE (note any asymmetries)

	score 3	score 2	score 1	score 0	sc	Comment / asymmetry
Head in sitting	 Straight; in midline		 Slightly to side or backward or forward	 Markedly to side or backward or forward		
Trunk in sitting	 Straight		 Slightly curved or bent to side	 Very rounded rocketing back bent sideways		
Arms at rest	In a neutral position, central straight or slightly bent		Slight internal rotation or external rotation Intermittent dystonic posture	Marked internal rotation or external rotation or dystonic posture hemiplegic posture		
Hands	Hands open		Intermittent adducted thumb or fisting	Persistent adducted thumb or fisting		
Legs in sitting	able to sit with a straight back and legs straight or slightly bent (long sitting) 		sit with straight back but knees bent at 15-20 ° 	unable to sit straight unless knees markedly bent (no long sitting)  marked internal rotation or external rotation or fixed extension or flexion or contractures at hips and knees		
in supine and standing	legs in neutral position straight or slightly bent	Slight internal rotation or external rotation	Internal rotation or external rotation at the hips			
Feet in supine and standing	Central in neutral position Toes straight midway between flexion and extension		Slight internal rotation or external rotation Intermittent Tendency to stand on tiptoes or toes up or curling under	Marked internal rotation or external rotation at the ankle Persistent Tendency to stand on tiptoes or toes up or curling under		




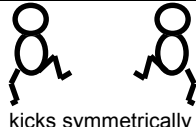
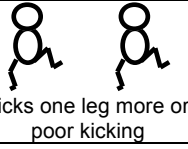
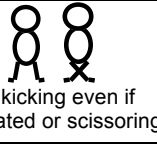






ASSESSMENT OF MOVEMENTS

	Score 3	Score 2	Score 1	Score 0	sc	asymmetry
Quantity Watch infant lying in supine	Normal		Excessive or sluggish	Minimal or none		
Quality Observe infant's spontaneous voluntary motor activity during the course of the assessment	Free, alternating, and smooth		Jerky Slight tremor	<ul style="list-style-type: none"> • Cramped & synchronous • Extensor spasms • Athetoid • Ataxic • Very tremulous • Myoclonic spasm • Dystonic movement 		





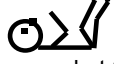


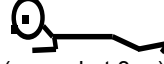
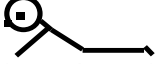

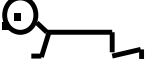
ASSESSMENT OF TONE

	Score 3	Score 2	Score 1	Score 0	sc	comment
Scarf sign Take the infant's hand and pull the arm across the chest until there is resistance. Note the position of the elbow in relation to the midline.	Range:  R L R L		 R L	 R L or R L		
Passive shoulder elevation Lift arm up alongside infant's head. Note resistance at shoulder and elbow.	Resistance overcomeable  R L	Resistance difficult to overcome R L	No resistance  R L	Resistance, not overcomeable  R L		
Pronation/supination Steady the upper arm while pronating and supinating forearm, note resistance	Full pronation and supination, no resistance		Resistance to full pronation / supination overcomeable	Full pronation and supination not possible, marked resistance		
Adductors With both the infant's legs extended, abduct them as far as possible. The angle formed by the legs is noted.	Range: 150-80°  R L R L	150-160°  R L	>170°  R L	<80°  R L		
Popliteal angle Keep the infant's bottom on the bed, flex both hips onto the abdomen, then extend the knees until there is resistance. Note the angle between upper and lower leg.	Range: 150°-100°  R L R L	150-160°  R L	~90° or > 170°  R L R L	<80°  R L		
Ankle dorsiflexion With knee extended, dorsiflex the ankle. Note the angle between foot and leg.	Range: 30°-85°  R L R L	20-30°  R L	<20° or 90°  R L R L	> 90°  R L		
Pull to sit Pull infant to sit by the wrists. (support head if necessary)						
Ventral suspension Hold infant horizontally around trunk in ventral suspension; note position of back, limbs and head.						

REFLEXES AND REACTIONS

	Score 3	Score 2	Score 1	Score 0	sc	comment
Tendon Reflexes	easily elicitable biceps knee ankle	mildly brisk bicep knee ankle	brisk biceps knee ankle	clonus or absent biceps knee ankle		
Arm protection Pull the infant by one arm from the supine position (steady the contralateral hip) and note the reaction of arm on opposite side.	 arm & hand extend R L		 arm semi flexed R L	 arm fully flexed R L		
Vertical suspension hold infant under axilla making sure legs do not touch any surface – you may "tickle" feet to stimulate kicking.	 kicks symmetrically		 kicks one leg more or poor kicking	 no kicking even if stimulated or scissoring		
Lateral tilting (describe side up). Hold infant up vertically near to hips and tilt sideways towards the horizontal. Note response of trunk, spine, limbs and head.	 R L	 L R	 R L	 R L		
Forward parachute Hold infant up vertically and quickly tilt forwards. Note reaction /symmetry of arm responses.	 (after 6 months)		 (after 6 months)			

SECTION 2 MOTOR MILESTONES (not scored; note asymmetries)

Head control	Unable to maintain head upright normal up to 3m	Wobbles normal up to 4m	Maintained upright all the time normal from 5m			Please note age at which maximum skill is achieved
Sitting	Cannot sit	With support at hips  normal at 4m	Props  normal at 6m	Stable sit  normal at 7-8m	Pivots (rotates)  normal at 9m	Observed: Reported (age):
Voluntary grasp – note side	No grasp	Uses whole hand	Index finger and thumb but immature grasp	Pincer grasp		Observed: Reported (age):
Ability to kick in supine	No kicking	Kicks horizontally but legs do not lift	Upward (vertically)  normal at 3m	Touches leg  normal at 4-5m	Touches toes  normal at 5-6m	Observed: Reported (age):
Rolling	No rolling	Rolling to side (normal at 4m)	Prone to supine (normal at 6 m)	Supine to prone (normal at 6 m)	Note through which sides	Observed: Reported (age):
Crawling (C), or bottom shuffling (BS)	Does not lift head	On elbow  (normal at 3 m)	On outstretched hand  (normal at 4m)	Crawling flat on abdomen  (normal at 8m)	Crawling on hands and knees  (normal at 10m)	Observed: Reported (age):
Standing	Does not support weight	Supports weight (normal at 4m)	Stands with support (normal at 7m)	Stands unaided (normal at 12m)		Observed: Reported (age):
Walking		Bouncing (normal at 6m)	Cruising (walks holding on) (normal at 12m)	Walking independently (normal by 15m)		Observed: Reported (age):

SECTION 3 BEHAVIOUR (not scored)

	1	2	3	4	5	6	Comment
Conscious state	Unrousable	Drowsy	Sleep but wakes easily	Awake but no interest	Loses interest	Maintains interest	
Emotional state	Irritable, not consolable	Irritable, carer can console	Irritable when approached	Neither happy or unhappy	Happy and smiling		
Social orientation	Avoiding, withdrawn	Hesitant	Accepts approach	Friendly			