

# Hammersmith Infant Neurological Examination (HINE): Scoring Examples



**Holland Bloorview**  
Kids Rehabilitation Hospital



McMaster  
Children's  
Hospital  
HAMILTON HEALTH SCIENCES



**Sunnybrook**  
HEALTH SCIENCES CENTRE



**kids**  
brain health  
network



**Holland Bloorview**  
Kids Rehabilitation Hospital

**Dr. Darcy Fehlings**  
Developmental Pediatrician



**Sunnybrook**  
HEALTH SCIENCES CENTRE

**Dr. Rudaina Banihani**  
Developmental Pediatrician  
and Neonatologist



**Sunnybrook**  
HEALTH SCIENCES CENTRE

**Dr. Paige Church**  
Developmental Pediatrician  
and Neonatologist



**Sunnybrook**  
HEALTH SCIENCES CENTRE

**Maureen Luther**  
Occupational Therapist



**Holland Bloorview**  
Kids Rehabilitation Hospital

**Sophie Lam-Damji**  
Occupational Therapist



**Holland Bloorview**  
Kids Rehabilitation Hospital

**Dr. Amber Makino**  
Developmental Pediatrician



**McMaster**  
Children's Hospital

**Dr. Karen Thomas**  
Developmental Pediatrician  
and Neonatologist



**Holland Bloorview**  
Kids Rehabilitation Hospital

**Bisman Mangat (MSc)**  
Research Coordinator

# Head

## Head

Posture in sitting (assess sitting independently or with slight support at the hips)

Score 3

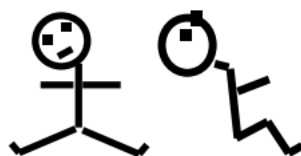


Straight; in midline



Score 2

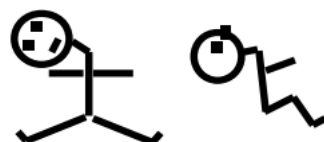
Score 1



Slightly to side *or* backward *or* forward



Score 0








Markedly to side *or* backward *or* forward



# Trunk

## Trunk

Posture in sitting (assess sitting independently or with slight support at the hips)

<p><b>Score 3</b></p>  <p><b>Straight</b></p>
<p><b>Score 2</b></p>
<p><b>Score 1</b></p>  <p><b>Slightly curved or bent to side</b></p>
<p><b>Score 0</b></p>  <p><b>Very rounded</b></p>  <p><b>rocketing back</b></p>  <p><b>bent sideway</b></p>





# Arms

## Arms

Posture at rest (observe and score the most prevalent spontaneous arm posture)

### Score 3

In a neutral position, central, straight, or slightly bent.



### Score 2

### Score 1

**Slight** internal rotation or external rotation.

**Intermittent** dystonic posture.



### Score 0

**Marked** internal rotation or external rotation or

Dystonic posture, hemiplegic posture



# Hands

## Hands

(Observe and score the most prevalent spontaneous hand position)

### Score 3

Hands open.



### Score 2

### Score 1

**Intermittent** adducted thumb or fisting

### Score 0

**Persistent** adducted thumb or fisting.



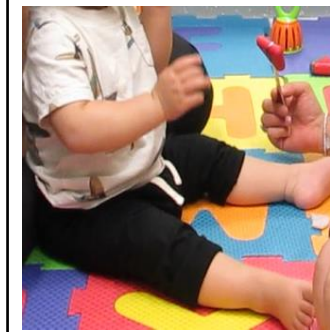
# Legs

## Legs (Sitting)

In Sitting (Assess the leg posture in long sitting. Assess how straight the back is, as well as the degree of flexion of the knees)

### Score 3

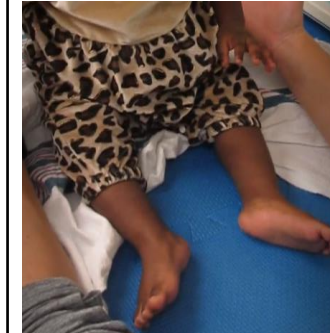
Able to sit with a straight back and legs straight or slightly bent (long sitting)



### Score 2

### Score 1

Sit with straight back but knees bent at 15 – 20°



### Score 0

Unable to sit straight unless knees markedly bent (no long sitting)



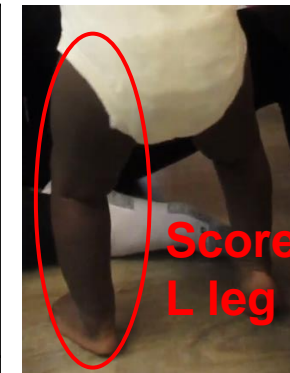
# Legs

## Legs

In supine and in standing

### Score 3

Legs in neutral position, straight or slightly bent.



### Score 2

**Slight** internal rotation or external rotation.

### Score 1

Internal rotation or external rotation at the hips.



### Score 0

**Marked** internal rotation or external rotation or fixed extension or flexion or contractures at hips and knees.





# Feet

## Feet

In supine and in standing

**Score 3**

Central in neutral position.

Toes straight midway between flexion and extension.



**Score 2**

**Score 1**

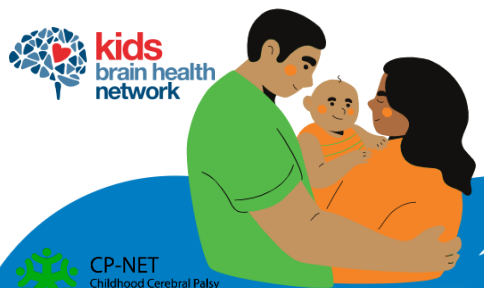
**Slight** internal rotation *or* external rotation.

**Intermittent** tendency to stand on tiptoes or toes up or curling under.

**Score 0**

**Marked** internal rotation *or* external rotation at the ankle.

**Persistent** tendency to stand on tiptoes *or* toes up or curling under



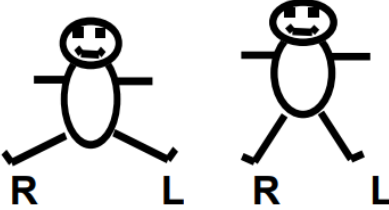
# Hip Adductors

## Hip Adductors

With both the infant's legs extended, gently abduct them as far as possible. The angle formed by the legs is noted.

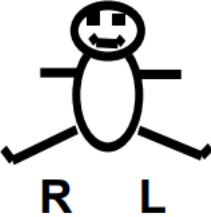
Note: testing for velocity dependent tone/spastic catches elicited by fast stretches is not part of the HINE

**Score 3**  
Range: 150-80°



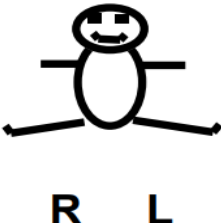
R L R L

**Score 2**  
150-160°




R L

**Score 1**  
>170°



R L

**Score 0**  
<80°



R L



# Pull to Sit

## Pull to Sit

Pull infant to sit by the wrists  
(support head if necessary).

Score evaluating the position of  
the head in relation to the trunk.

Score 3



Score 2

Score 1



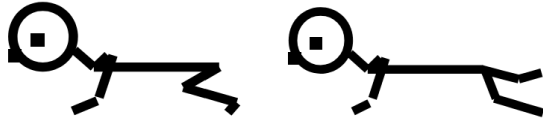
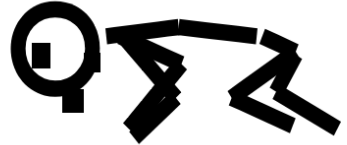

Score 0

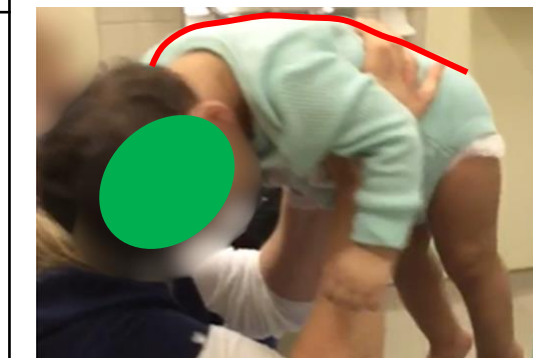
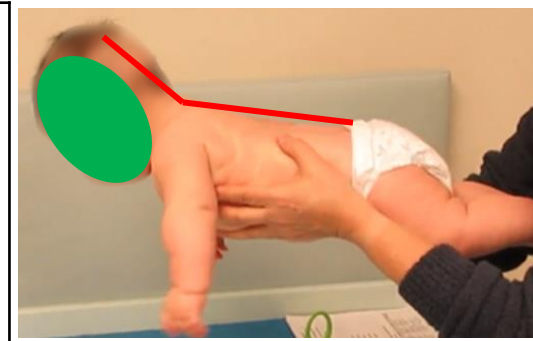


# Ventral Suspension

## Ventral Suspension

Hold infant horizontally around trunk in ventral suspension; note position of back, limbs, and heads.

<p><b>Score 3</b></p> 
<p><b>Score 2</b></p>
<p><b>Score 1</b></p> 
<p><b>Score 0</b></p> 



**kids** brain health network

CP-NET Childhood Cerebral Palsy Discovery Network

Holland Bloorview Kids Rehabilitation Hospital

McMaster Children's Hospital HAMILTON HEALTH SCIENCES

Sunnybrook HEALTH SCIENCES CENTRE

# Arm Protection

## 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.

Score 3



Arm & hand extend  
R L



Score 2

R L



Hand remains closed

Score 1



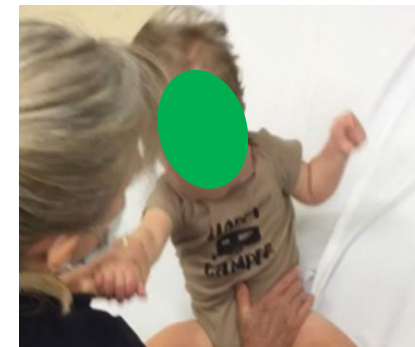
Arm semi-flexed  
R L



Score 0



Arm fully flexed  
R L

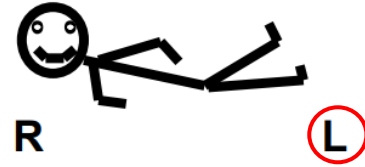




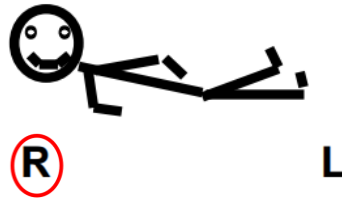
# Lateral Tilting

**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.

Score 3



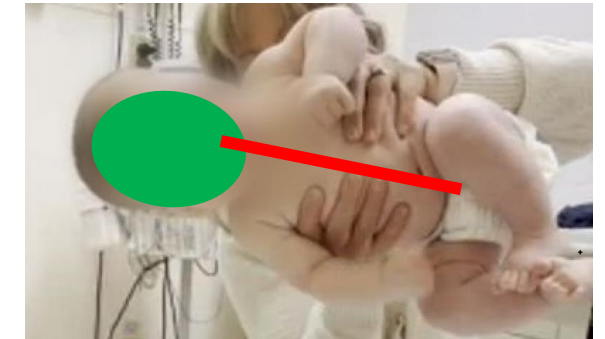
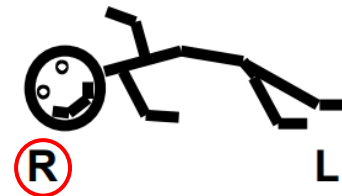
Score 2



Score 1



Score 0



# References

## HINE Scoring Proforma

1. <https://www.mackeith.co.uk/hammersmith-neurological-examinations/hammersmith-neurological-examinations-subscriber-content/recording-and-scoring-proformas/>

## HINE Administration Instructions

2. <https://www.mackeith.co.uk/wp-content/uploads/2024/01/Hammersmith-Infant-Neurological-Examination-HINE-Guidance-notes-update-20.12.2023-v2.pdf>

