

CTN Hip Surveillance Recommendations for Children with Cerebral Palsy

Hip displacement refers to the displacement of the femoral head laterally out of the acetabulum and is measured using migration percentage. Hip displacement has been known to cause difficulties with pain, function, and quality of life. Hip surveillance has become the standard of practice to monitor and identify the critical early indicators of hip displacement for children with cerebral palsy (CP). The goal of surveillance is to ensure children are referred to orthopedics at the appropriate time to allow for optimal management.

The American Academy of Cerebral Palsy and Developmental Medicine has created a Care Pathway for Hip Surveillance. CTN has chosen to adopt this pathway as our recommended surveillance guidelines.

Children's Treatment Network Hips Surveillance Recommendations – Quick Guide

Classification	Age in Years												
	2 or at ID	2.5	3	3.5	4	5	6	7	8	9	10	11	12 to 16 or Skeletal maturity
 GMFCS I													
 GMFCS II	 						 		 		 		
 GMFCS III	 		 		 	 	 	 	 	 	 		 Bi-Annually
 GMFCS IV & V	 	 	 	 	 	 	 	 	 	 	 	 	 Annually
 Winters Gage Hicks Type IV Gait (any GMFCS)	 						 		 		 		 Bi-Annually

Quick Guide Used with permission of www.childhealthbc.ca/hips



* Amendments made to Quick Guide to match the American Academy of Cerebral Palsy and Developmental Medicine Hip Surveillance Pathway <http://www.aacpdm.org/publications/care-pathways/hip-surveillance>

Legend

GMFCS: Gross Motor Function Classification System
ID: Identification/Diagnosis of cerebral palsy or gross motor delay



Clinical Exam



Anterior-Posterior Pelvic Radiograph

Gross Motor Functional Classification System (GMFCS)



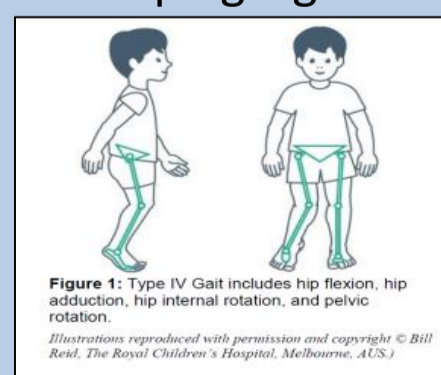
- LEVEL I - Walks without Limitations
- LEVEL II - Walks with Limitations
- LEVEL III - Walks Using a Hand-Held Mobility Device
- LEVEL IV - Self-Mobility with Limitations; May Use Powered Mobility
- LEVEL V - Transported in a Manual Wheelchair

For the full version of the GMFCS please visit: <https://canchild.ca/en/resources/42-gross-motor-function-classification-system-expanded-revised-gmfcs-e-r>

Winters Gage Hicks Gait Type IV Hemiplegia

Winters, Gage and Hicks (WGH) (1987) described the classification of hemiplegic gait into four gait patterns. Type IV hemiplegic gait involves more marked proximal involvement with:

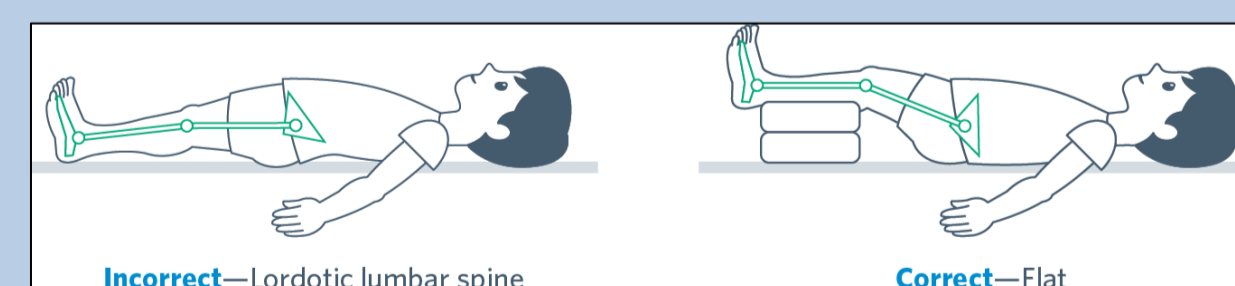
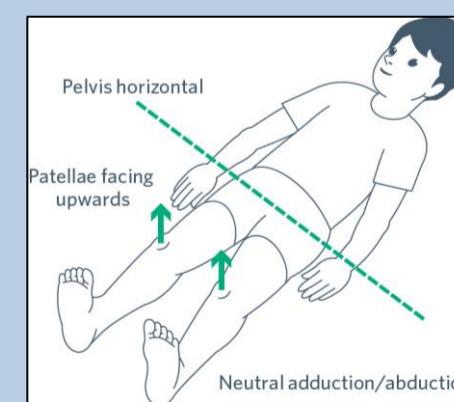
- hip flexion,
- hip adduction,
- hip internal rotation, and
- pelvic retraction



ASSESSMENT

- Clinical examination:
 - Age
 - Gross Motor Function Classification System (GMFCS) level and Winters, Gage, Hicks (WGH) gait type
 - Inquiring re: pain
 - Hip abduction passive range of motion (PROM) measured with attention given to presence of pain on assessment.

- Radiographic examination: measurement of migration percentage (MP) from a supine **AP pelvis radiograph** with standardised positioning

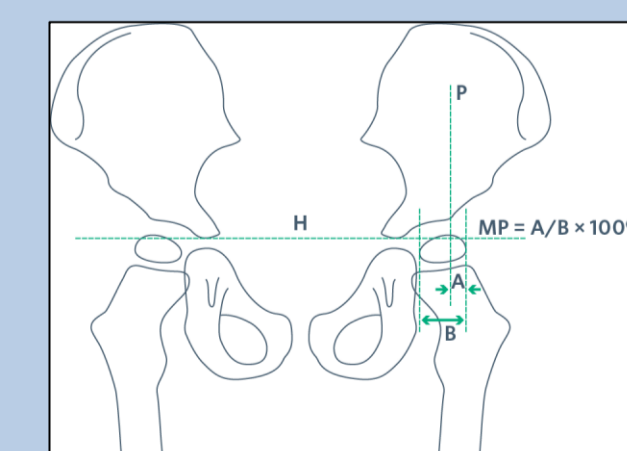


Reproduced with permission from AusACPDM and the Australian Hip Surveillance Guidelines <https://www.ausacpdm.org.au/resources/australian-hip-surveillance-guidelines/>

Migration Percentage

Reimer's migration percentage (MP) is the recommended measurement to assess hip displacement. MP represents the portion of the ossified femoral head that is not covered by the ossified acetabular roof.

Reproduced with permission from AusACPDM and the Australian Hip Surveillance Guidelines <https://www.ausacpdm.org.au/resources/australian-hip-surveillance-guidelines/>



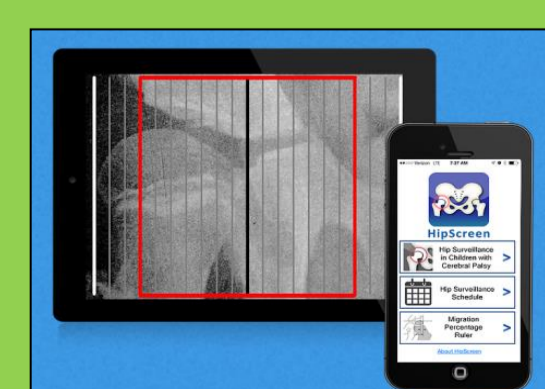
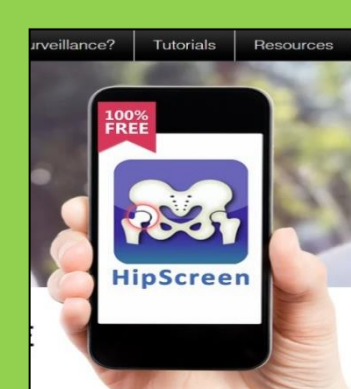
Referral to Orthopedics

Referral to an orthopedic surgeon with experience treating hip displacement in children with CP is recommended if any of the following are present:

- Hip pain on history and/or physical examination.
- Migration percentage is greater than 30%
- Less than 30 degrees of hip abduction with or without other findings

Within CTN, referrals can be made to: Holland Bloorview Orthopaedic Clinic <http://hollandbloorview.ca/programsandservices/referrals>

Hip Surveillance at your fingertips: HipScreen App



The HipScreen can help show you the surveillance schedule, explain the background information on hip displacement and measure MP