

HIP SURVEILLANCE

Bottom Line 'Evidence-Informed' Recommendations for the Hip Surveillance in Individuals with Cerebral Palsy

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<http://www.aacpdm.org/publications/care-pathways/hip-surveillance>

DEFINITIONS:

Hip surveillance is defined as: "The process of monitoring and identifying the critical early indicators of hip displacement." Hip displacement refers to the displacement of the femoral head laterally out of the acetabulum and is measured using a migration percentage (MP). Hip subluxation refers to hip displacement where the femoral head is partially displaced from under the acetabulum while hip dislocation refers to hip displacement where the femoral head is completely displaced from under the acetabulum.

IMPACT: WHY IS HIP SURVEILLANCE IMPORTANT?

- Hip displacement and dislocation can lead to pain, reduced function and reduced quality of life.
- Children with cerebral palsy (CP) have an increased likelihood of hip displacement.
- Hip surveillance allows for early detection of hip displacement.
- Early detection enables referral for assessment and/or management.
- Hip surveillance for children with CP should be completed using a systematic approach.

TARGET POPULATION:

Pediatric/Children & Youth Population (age ≤ 19 years) diagnosed with CP or those children not yet diagnosed with CP but for whom there is a clinical suspicion of having CP.

TARGET CLINICAL PROVIDERS:

Pediatricians including Pediatric Sub-Specialists, Radiologists and Pediatric Orthopedic Surgeons, Therapists, Radiology Technicians, and Nurses providing musculoskeletal care for children/youth with CP.

ASSESSMENT

Hip surveillance involves a multi-step process for every child with CP. Surveillance consists of two components: a clinical examination and a radiographic examination which are completed at surveillance intervals which vary according to risk.

The clinical examination involves determining/re-confirming, age, Gross Motor Function Classification System (GM-FCS) level and Winters, Gage, Hicks (WGH) gait type at each surveillance interval in addition to inquiring re: pain during history taking. Hip abduction passive range of motion (PROM) is also measured with attention given to presence of pain on assessment.

Radiographic examination consists of measurement of migration percentage (MP) from a supine AP pelvis radiograph with standardized positioning.

FREQUENCY

Surveillance frequency is based on a child's age, GMFCS level, and WGH gait type. Surveillance is ideally initiated by 2 years of age, when a CP diagnosis is provided, or when CP is suspected. Surveillance frequency increases with increasing GMFCS level; frequency modifiers are based on absolute MP value and percentage change in MP.

Discharge criteria vary depending on GMFCS level and WGH gait type. Children at GMFCS levels III to V and those with a WGH Gait Type IV hemiplegia are discharged at skeletal maturity except those with a MP greater than 30% or those with pelvic obliquity in the presence of increasing scoliosis where continued surveillance is recommended. Children at GMFCS levels I and II are discharged earlier if MP is stable and under 30%.

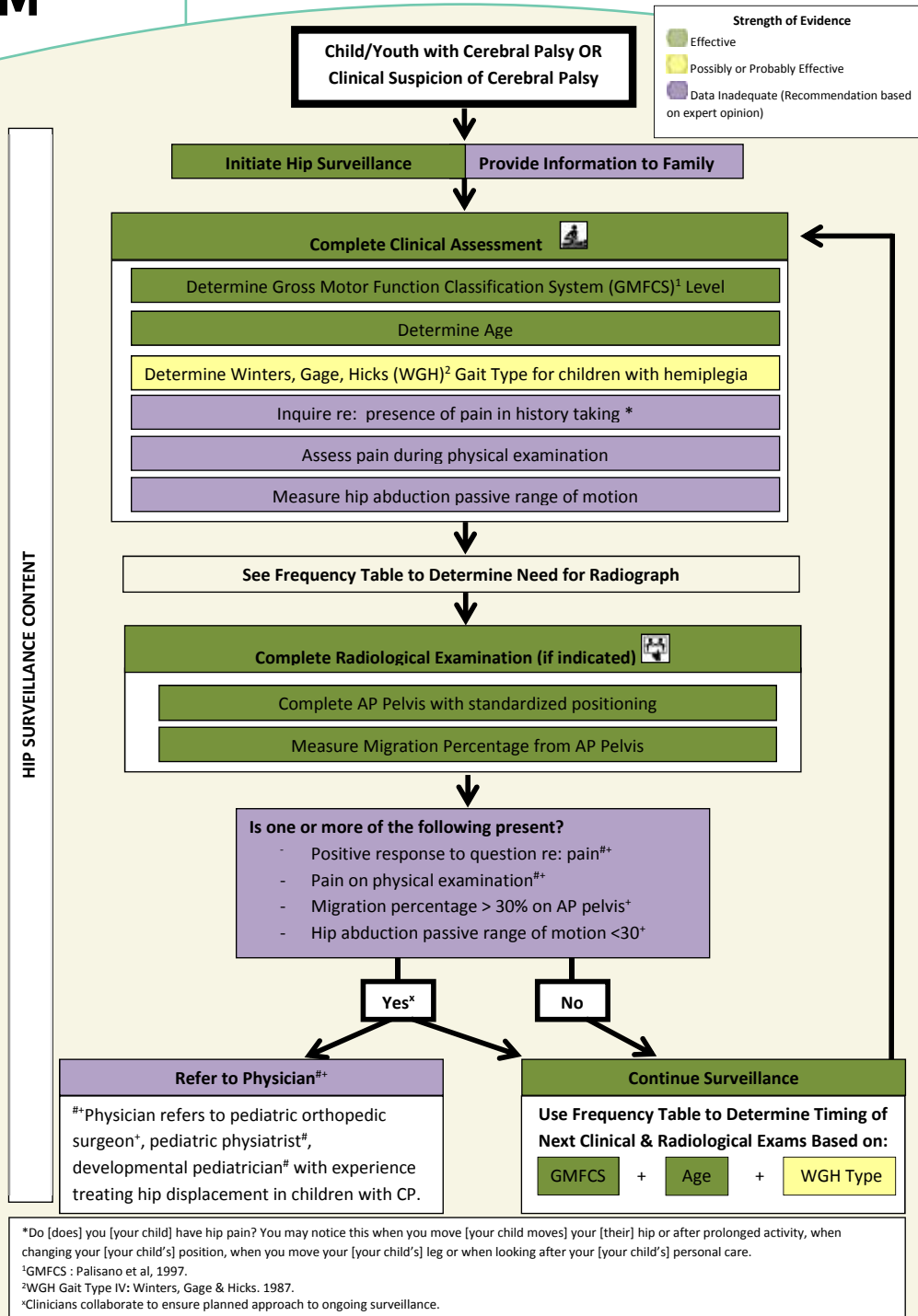
REFERRAL

Referral to a pediatric physiatrist, developmental pediatrician or pediatric orthopedic surgeon with experience treating hip displacement in children with CP is recommended when there is presence of hip pain on history and/or physical examination. When the migration percentage is greater than 30% and/or there is less than 30 degrees of hip abduction with or without other findings, referral to a pediatric orthopaedic surgeon is recommended.





CARE PATHWAYS



HIP SURVEILLANCE CONTENT

The purpose of this document is to provide health care professionals with recommendations for hip surveillance of children and youth with cerebral palsy. This summary was produced by the AACPD Hip Surveillance Care Pathway Team (M O'Donnell (team lead), T Mayson (project manager and clinical examination sub-group leader), S Miller (radiology sub-group leader), R Cairns, K Graham, S Love, F Miller, K Mulpuri, U Narayanan, H Read, B Shore, K Stannage, P Thomason, J Vargus-Adams, L Wiggins, K Willoughby, M Wynter). The summary is based on current evidence and expert consensus when evidence was insufficient. The care pathway and the methodology used to create it will be submitted for peer-reviewed publication. However, health care professionals should continue to use their own judgement and take into account additional relevant factors and context. The AACPD is not liable for any damages, claims, liabilities, or costs arising from the use of these recommendations including loss or damages arising from any claims made by a third party.





CARE PATHWAYS

Age (Years)	GMFCS I	GMFCS II	GMFCS III	GMFCS IV & V		Any GMFCS Level with Winters Gage Hicks Gait Type IV		
2.0 years or at ID	#							
2.5								
3								
3.5								
4								
5								
6								
7								
8								
9								
10								
11								
12 to 16 or Skeletal Maturity (SM)			Bi-Annually to SM†	Bi-Annually to SM†	Annually to SM†	Annually to SM†	Bi-Annually to SM†	
Notes re: Initiation	If CP is diagnosed or suspected after age 2 but before 4 years, begin surveillance immediately. Do not wait until 4 years of age.		If CP is diagnosed or suspected after age 2, immediately begin 12-monthly schedule for a minimum of 24 months.		If CP is diagnosed or suspected after age 2, immediately begin 6-monthly schedule and continue for a minimum of 24 months at that frequency.		If CP diagnosed or suspected after age 2 but before age 4, begin surveillance immediately.	
Frequency Modifiers	* Do not reduce from previous higher frequency if: (1) 24 months of surveillance have not yet been completed based on a child's surveillance start date; (2) stability is not yet achieved over a period of 2 years. Stability is defined as < 10% change in MP over a 12 month period; OR (3) MP > 30%.							
Discharge		Discharge if MP ≤30% at age 10 (unless WGH Gait Type IV).	Discharge if skeletally mature and MP ≤30%.					† In the presence of pelvic obliquity associated with clinical or radiographic evidence of increasing scoliosis, the hip/s continue to be at risk and should ideally be monitored even beyond skeletal maturity.

Legend: : Clinical Examination : AP Pelvis Radiograph
 GMFCS: Gross Motor Function Classification System (Palisano et al, 1997. Illustrations reproduced with permission and copyright © Bill Reid, The Royal Children's Hospital, Melbourne, AUS.)
 WGH Gait Type IV: Winters, Gage, Hicks Gait Type IV Hemiplegia (Winters, Gage & Hicks. 1987; Rodda & Graham. 2001. Illustrations reproduced with permission and copyright © Bill Reid, The Royal Children's Hospital, Melbourne, AUS.)

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