


**Asymmetrical limited hip flexion**  
 Its effect on sitting posture and the deformities of the body



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**Biomechanics of contracture**

*Wolff's law states that bone (tissue) in a person will adapt to the loads under which it is placed.*

**Biomechanics of contracture**






**Habitual posture**




**Seating**

- 90-90-90 seating

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**Clinical Picture**




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## Asymmetrical limited hip flexion

- Pope 1997 Evaluation of postures in non-ambulant adults with cerebral palsy. Presentation at the 1st International Conference Posture and Mobility group, 8-12 September 1997, Dundee, Scotland
- Pope P. 2007 Severe and complex neurological disability : management of the physical condition. 1 ed. Edinburgh: Butterworth-Heinemann/Elsevier
- Porter D, Michael S, Kirkwood C. 2007 Patterns of postural deformity in non-ambulant people with cerebral palsy: ..... Clin Rehabil.,21(12):1087-96.

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## Aim

- The prevalence of asymmetrical limited hip flexion less than 90° (ALHF < 90°)
- Evaluate the association between ALHF < 90°
  - asymmetrical seating posture
  - scoliosis
  - windswept hip deformity.

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## Methods

- CPUP database (cpup.se)
- cross-sectional study
- 714 adults with CP
- Measured values:
  - GMFCS - level
  - Posture and Postural Ability Scale (PPAS)
  - Scoliosis
  - Hip range of movement: Flexion, Abduction, Internal/external rot

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	Level I	Level II	Level III	Level IV	Level V	Total
<b>Asymmetrical limited hip flexion</b>	N=159 2 (1%)	N=150 5 (3%)	N=114 7 (6%)	N=121 11 (9%)	N=170 38 (22%)	714 63 (9%)
<b>Oblique pelvis (PPAS)</b>						(OR 2.6, 95% CI:1.6–2.1)
<b>Asymmetrical trunk (PPAS)</b>						(OR 2.1, 95% CI:1.1–4.2)
<b>Scoliosis</b>						(OR 3.7, 95% CI:1.3–9.7)
<b>Windswept hip</b>						(OR 2.6, 95% CI:1.2–5.4)

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## Lesson to be learn

- 22% individual at GMFCS level V have asymmetrical limited hip flexion (<90°)
- Indicates the importance of a proper interpretation of the mat examination results

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