

REFERENCES

1. Bax M, Goldstein M, Rosenbaum P, Leviton A, Paneth N, Dan B, et al.
Proposed definition and classification of cerebral palsy. *Dev Med Child Neurol.* 2005; 47: 571-6.
2. Rajanukul Institute. 2009. "Statistics." [Online].
Available http://www.rajanukul.com/service_our.htm (20 September 2009).
3. National Statistical Office of Thailand. 2009. "Statistical Data on Disability Profile." [Online]. Available
http://service.nso.go.th/nso/nso_center/project/search_center/23project-th.htm
(26 September 2009).
4. Rosenbaum, P. The definition and classification of cerebral palsy: Are we any further ahead in 2006? *Neo Reviews.* 2006; 7: 569-74.
5. Dodd KJ, Taylor NF, Graham HK. A randomized clinical trial of strength training in young people with cerebral palsy. *Dev Med Child Neurol.* 2003; 45: 652-7.
6. Gage JR. Treatment Principle for Crouch Gait. In: Gage JR, editor. *The Treatment of Gait Problems in Cerebral Palsy.* London: Mac Keith Press; 2004.
7. Damiano DL, Kelly LE, Vaughn CL. Effects of quadriceps femoris muscle strengthening on crouch gait in children with spastic diplegia. *Phys Ther.* 1995; 75: 658-67.

8. Rodda J. Classification of gait patterns in spastic hemiplegia and spastic diplegia: a basis for a management algorithm. *Eur J Neurol.* 2001; 8: 98-108
9. Sojka AM, Stuberger WA, Knutson LM, Karst GM. Kinematic and electromyographic characteristics of children with cerebral palsy who exhibit genu recurvatum. *Arch Phys Med Rehabil.* 1995; 76: 558-65
10. Wiley ME, Damiano DL. Lower extremity strength profiles in spastic cerebral palsy. *Dev Med Child Neurol.* 1998; 40: 100-7.
11. Damiano DL, Martellotta TL, Sullivan DJ, Granata KP. Muscle force production and function performance in spastic cerebral palsy: relationship of cocontraction. *Arch Phys Med Rehabil.* 2000; 81:895-900.
12. Damiano DL, Vaughan CL, Abel MF. Muscle response to heavy resistance exercise in children with spastic cerebral palsy. *Dev Med Child Neurol.* 1995; 37: 731-9.
13. Damiano DL, Abel MF. Functional outcomes of strength training in spastic cerebral palsy. *Arch Phys Med Rehabil.* 1998; 79: 119-25.
14. Dodd KJ, Taylor NF, Damiano DL. A systematic review of the effectiveness of strength-training programs for people with cerebral palsy. *Arch Phys Med Rehabil.* 2002; 83: 1157-64.
15. Daichman J, Johnston TE, Evan K, Tecklin JS. The effects of neuromuscular electrical stimulation home program on impairments and functional skills of a child with spastic diplegic cerebral palsy: a case report. *Pediatr Phys Ther.* 2003; 15: 153-8.
16. Kerr C, McDowell B, Cosgrove A, Walsh D. Electrical stimulation in cerebral palsy: a randomized controlled trial. *Dev Med Child Neurol.* 2006; 48: 870-6.

17. Combined Sections Meeting 2003. "Strengthening in individuals with cerebral palsy." [Online]. Available <http://www.pediatricapta.org/csm2003/4501> (20 September 2009).
18. Kerr C, McDowell B, McDonough S. Electrical stimulation in cerebral palsy : a review of effects on strength and motor function. *Dev Med Child Neurol.* 2004; 46: 205-13.
19. Dodd KJ, Taylor NF, Larkin H. Progressive resistance exercise for adults with athetoid cerebral palsy: A single subject research design. *Physiotherapy Singapore.* 2005; 8: 3-12.
20. Laughman RK, Youdas JW, Garrett TR, Chao EYS. Strength changes in the normal quadriceps femoris muscle as a result of electrical stimulation. *Phys Ther.* 1983; 63: 494-509.
21. Dehail P, Duclos C, Barat M. Electrical stimulation and muscle strengthening. *Ann Readapt Med Phys.* 2008; 51: 441-51.
22. Givon U. Muscle weakness in cerebral palsy. *Acta Orthop Traumatol Turc.* 2009; 43: 87-93.
23. Pawielski KM, O'Hearn M. The effect of a neuromuscular electrical stimulation and an isometric strengthening home program on a child with spastic hemiplegic cerebral palsy: a single system design [abstract]. *Pediatr Phys Ther.* 2005; 17: 100.
24. Delitto A, Snyder-Mackler L. Two theories of muscle strength augmentation using percutaneous electrical stimulation. *Phys Ther.* 1990; 70: 158-64.
25. Advance physical therapy. [Online]. Available <http://jant.tistory.com/1798> (26 August 2009).

26. Wangjam K, Singh AJ, Singh LN. Management of crouch in cerebral palsy diplegia. *IJPMR*. 2005; 1: 5-12.
27. Arnold AS, Schwartz MH, Thelen DG, Delp SL. Contributions of muscles to terminal swing knee motions vary with walking speed. *J Biomech*. 2007; 40: 3660-71.
28. Valvano J, Carollo JJ, Lutz B, Chang F. Oral presentations: knee extension at terminal swing: a missing critical gait even for children with spastic cerebral palsy. *Gait Posture*. 2006.
29. Arnold AS, Anderson FC, Pandy MG, Delp SL. Muscular contributions to hip and knee extension during the single limb stance of normal gait: a framework for investigating the causes of crouch gait. *J Biomech*. 2005; 38: 2181-9.
30. Kerrigan DC, Deming LC, Holden MK. Knee recurvatum in gait: a study of associated knee biomechanics. *Arch Phys Med Rehabil*. 1996; 77: 645-50
31. Arnold AS, Liu MQ, Schwartz MH, Ounpuu S, Delp SL. The role of estimating muscle tendon lengths and velocities of the hamstrings in the evaluation and treatment of crouch gait. *Gait Posture*. 2006; 23: 273-81.
32. Jessica R. Selective motor control in spastic cerebral palsy. *Dev Med Child Neurol*. 2009; 51: 578-89.
33. Eek MN, Beckung E. Walking ability is related to muscle strength in children with cerebral palsy. *Gait Posture*. 2008; 28: 366-71.
34. Howe JA, Inness EL, Venturini A, Williams JI, Verrier MC. The community balance and mobility scale-a balance measure for individuals with traumatic brain injury. *Clin Rehabil*. 2006; 20: 885-95.

35. Perumal R, Wexler A, Ding J, Binder-Macleod S. Modeling the length dependence of isometric force in human quadriceps muscles. *J Biomech.* 2002; 35: 919-30.
36. Palisano RJ, Hanna SE, Rosenbaum PL, Russell DJ, Walter SD, Wood EP, et al. Validation of a model of Gross Motor Function for children with cerebral palsy. *Phys Ther.* 2000; 80: 974-85.
37. Bodkin A, Robinson C, Perales F. Reliability and validity of the gross motor function classification system for cerebral palsy. *Pediatr Phys Ther.* 2003; 15: 247-52.
38. Taylor NF, Dodd KJ, Graham HK. Test-retest reliability of hand-held dynamometric strength testing in young people with cerebral palsy. *Arch Phys Med Rehabil.* 2004; 85: 77–80.
39. Berry ET, Guiliani CA, Damiano DL. Intrasession and intersession reliability of handheld dynamometry in children with cerebral palsy. *Pediatr Phys Ther.* 2004; 16: 191-8.
40. Ansari NN, Naghdi S, Hasson S, Mousakhani A, Nouriyar A, Omidvar Z. Inter-rater reliability of the modified ashworth scale as a clinical tool in measurements of post-stroke elbow flexor spasticity. *Neuro Rehab.* 2009; 24: 225-39.
41. Mutlu A, Livanelioglu A, Gunel M. Reliability of ashworth and modified ashworth scales in children with spastic cerebral palsy. *BMC Muscoskel Disord.* 2008; 9: 44.
42. Stillman B. Physiological quadriceps lag: its nature and clinical significance. *Aust J Physiother.* 2004; 50: 237-41.

43. Stout JL, Gage JR, Schwartz MH, Novacheck TF. Distal femoral extension osteotomy and patellar tendon advancement to treat persistent crouch gait in cerebral palsy. *J Bone Joint Surg.* 2008; 90: 2470-84.
44. Giuliani CA. Dorsal rhizotomy for children with cerebral palsy: support for concepts of motor control. *Phys Ther.* 1991; 71: 248-59.
45. American Association of Intensive Pediatric Physical Therapy. "Strength training and CP." [Online]. Available <http://www.aaippt.org/STRENGTHTRAINING.html> (5 October 2009).
46. Fowler EG, Ho TW, Nwigwe AI, Dorey FJ. The effect of quadriceps femoris muscle strengthening exercises on spasticity in children with cerebral palsy. *Phys Ther.* 2001; 81: 1215-23.
47. Unger M, Faure M, Frieg A. Strength training in adolescent learners with cerebral palsy: a randomized controlled trial. *Clin Rehabil.* 2006; 20: 469-77.
48. Andersson C, Grooten W, Hellsten M, Kaping K, Mattsson E. Adults with cerebral palsy: walking ability after progressive strength training. *Dev Med Child Neurol.* 2003; 45: 220-8.
49. MacPhail HEA. Effect of isokinetic strength – training of functional ability and walking efficiency in adolescents with cerebral palsy. *Dev Med Child Neurol.* 1995; 37: 763-75.
50. Morton JF, Brownlee M, McFadyen AK. The effects of progressive resistance training for children with cerebral palsy. *Clin Rehabil.* 2005; 19: 283-9.
51. Damiano DL, Dodd K, Taylor NF. Should we be testing and training muscle strength in cerebral palsy? *Dev Med Child Neurol.* 2002; 44: 68-72.

52. Pucci AR, Griffin L, Cafarelli E. Maximal motor unit firing rates during isometric resistance training in men. *Exp Physiol.* 2006; 91: 171-8.
53. Stackhouse SK, Binder-Macleod SA, Stackhouse CA, McCarthy JJ, Prosser LA, Lee SCK. Neuromuscular electrical stimulation versus volitional isometric strength training in children with spastic diplegic cerebral palsy: A Preliminary study. *Neurorehabil Neural Repair.* 2007; 21: 475-85.
54. Verschuren O, Ketelaar M, Takken T, Helders PJM, Gorter JW. Exercise programs for children with cerebral palsy: A systematic review of the literature. *Am J Phys Med Rehab.* 2008; 87: 404-17.
55. Kamper DG, Yasukawa AM, Barrett KM, Gaebler-Spira DJ. Effects of neuromuscular electrical stimulation treatment of cerebral palsy on potential impairment mechanisms: A pilot study. *Pediatr Phys Ther.* 2006; 18: 31-8.
56. McCarthy J, Finson RL, Betz RR. The use of neuromuscular electrical stimulation (NMES) in the treatment of children with cerebral palsy. *Pediatric Gait.* 2000; 24: 39-45.
57. Gregory MC, Bicket SC. Recruitment patterns in human skeletal muscle during electrical stimulation. *Phys Ther.* 2005; 85: 358-64
58. Paillard T. Combined application of neuromuscular electrical stimulation and voluntary muscular contractions. *Sports Med* 2008; 38: 161-77
59. Paillard T, No'e F, Passelergue P, Dupui P. Electrical stimulation superimposed onto voluntary muscular contraction. *Sports Med* 2005; 35: 951-

60. Della Croce U, Cappozzo A, Kerrigan C, Lucchetti L. Bone position and orientation errors: pelvis and lower limb anatomical landmark identification reliability. *Gait Posture*. 1997; 5: 156-67.
61. van der Salm A, Veltink PH, Ijzerman MJ, Groothuis-Oudshoorn KC, Nene AV, Hermens HJ. Comparison of electric stimulation methods for reduction of triceps surae spasticity in spinal cord injury. *Arch Phys Med Rehabil*. 2006; 87: 222-8.
62. McDonough S. Neuromuscular and muscular electrical stimulation. In: Watson T, editor. *Electrotherapy: evidence based practice*. 12th ed. New York: Churchill Livingstone Elsevier, 2008.
63. Burtner PA, Qualls C, Woollacott MH. Muscle activation characteristics of stance balance control in children with spastic cerebral palsy. *Gait Posture*. 1998; 8: 163-74.