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Interventions and Management

1. Cochrane Database Syst Rev. 2012 Nov 14;11:CD008624. doi: 10.1002/14651858.CD008624.pub3.

Interventions for drooling in children with cerebral palsy.

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BACKGROUND: Drooling is a common problem for children with cerebral palsy (CP). This can be distressing for these children as well as for their parents and caregivers. The consequences of drooling include risk of social rejection, damp and soiled clothing, unpleasant odour, irritated chapped skin, mouth infections, dehydration, interference with speech, damage to books, communication aids, computers, and the risk of social isolation (Blasco 1992; Van der Burg 2006). A range of interventions exist that aim to reduce or eliminate drooling. There is a lack of consensus regarding which interventions are most effective for children with CP. **OBJECTIVES:** (1) To evaluate the effectiveness and safety of interventions aimed at reducing or eliminating drooling in children with cerebral palsy. (2) To provide the best available evidence to inform clinical practice. (3) To assist with future research planning. **SEARCH METHODS:** We searched the following databases from inception to December 2010 : Cochrane Central Register of Controlled Trials (CENTRAL); Medline via Ovid; EMBASE; CINAHL; ERIC; Psych INFO; Web of Science; Web of Knowledge; AMED; SCOPUS; Dissertation Abstracts. We searched for ongoing clinical trials in the Clinical Trials web site (<http://clinicaltrials.gov>.) and in the Current Controlled Trials web site (<http://www.controlled-trials.com/>). We hand searched a range of relevant journals and conference proceeding abstracts. **SELECTION CRITERIA:** Only randomised controlled trials (RCTs) and controlled clinical trials (CCTs) were included. **DATA COLLECTION AND ANALYSIS:** Data were extracted independently by MW, MS and LP and differences resolved through discussion. **MAIN RESULTS:** Six studies were eligible for inclusion in the review. Four of these studies were trials using botulinum toxin-A (BoNT-A) and two were trials on the pharmacological interventions, benztropine and glycopyrrolate. No RCTs or CCTs were retrieved on surgery, physical, oro-motor and oro-sensory therapies, behavioural interventions, intra-oral appliances or acupuncture. In the studies eligible for review, there was considerable heterogeneity within and across interventions and a meta-analysis was not possible. A descriptive summary of each study is provided. All studies showed some statistically significant change for treatment groups up to 1 month post intervention. However, there were methodological flaws associated with all six studies. **AUTHORS' CONCLUSIONS:** It was not possible to reach a conclusion on the effectiveness and safety of either BoNT-A or the pharmaceutical interventions, benztropine and glycopyrrolate. There is insufficient evidence to inform clinical practice on interventions for drooling in children with CP. Directions for future research are provided.

[PMID: 23152263](#) [PubMed - in process]

2. Augment Altern Commun. 2012 Nov 13. [Epub ahead of print]**Communication Access to Businesses and Organizations for People with Complex Communication Needs.**

Collier B, Blackstone SW, Taylor A.

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Abstract

Human rights legislation and anti-discrimination and accessibility laws exist in many countries and through international conventions and treaties. To varying degrees, these laws protect the rights of people with disabilities to full and equal access to goods and services. Yet, the accessibility requirements of people with complex communication needs (CCN) are not well represented in the existing accessibility literature. This article describes the results of surveys completed by disability service providers and individuals with CCN due to cerebral palsy, developmental delay, and acquired disabilities. It identifies accessibility requirements for people with CCN for face-to-face communication; comprehension of spoken language; telephone communication; text and print-based communication; Internet, email, and social media interactions; and written communication. Recommendations are made for communication accessibility accommodations in regulations, guidelines, and practices.

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3. Arch Phys Med Rehabil. 2012 Nov 10. pii: S0003-9993(12)01105-7. doi: 10.1016/j.apmr.2012.11.005. [Epub ahead of print]**Physical strain of walking relates to activity level in adults with cerebral palsy.**

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OBJECTIVE: To gain insight into underlying mechanisms of inactive lifestyles among adults with spastic bilateral CP with a focus on aerobic capacity, oxygen consumption, and physical strain during walking at preferred walking speed, as well as fatigue. **DESIGN:** Cross sectional **SETTING:** University hospital **PARTICIPANTS:** Thirty-six adults, aged 25-45 years, with spastic bilateral cerebral palsy, walking with (n=6) or without, (n=30) walking aids. **INTERVENTIONS:** Not applicable. **MAIN OUTCOME MEASURES:** Physical strain during walking was defined as oxygen uptake during walking, expressed as percentage of peak aerobic capacity. Participants with spastic bilateral CP walked their preferred walking speed while oxygen uptake was measured using a portable gas analyzer. Peak aerobic capacity was measured during maximal cycle ergometry. An accelerometry-based Activity Monitor measured total daily walking time. Regression analyses were performed to assess the relation between aerobic capacity, oxygen uptake and physical strain of walking on the one hand and total daily walking time on the other hand. **RESULTS:** Neither aerobic capacity nor oxygen uptake during walking was related to total daily walking time ($r^2=0.29$, $p=0.10$ and $r^2=0.27$, $p=0.16$). Physical strain of walking at preferred walking speed was inversely related to total daily walking time ($r^2=0.44$, $p<0.01$). **CONCLUSION:** Physical strain during walking is moderately related to total daily walking time, implying that people with high physical strain during walking at preferred walking speed likely walk less in daily life.

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4. J Pediatr Orthop. 2012 Dec;32(8):853-6. doi: 10.1097/BPO.0b013e31826ba7b2.**A comparison of hip dislocation rates and hip containment procedures after selective dorsal rhizotomy versus intrathecal baclofen pump insertion in nonambulatory cerebral palsy patients.**

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BACKGROUND: Spasticity is the major etiology for hip dislocation in nonambulatory cerebral palsy patients. Selective dorsal rhizotomy (SDR) was used to control lower extremity spasticity, but is now done infrequently in nonambulatory cerebral palsy. Current surgical treatment is usually intrathecal baclofen pump (ITBP) placement. A major theoretical difference between SDR and ITBP is the effect on the iliopsoas through the L1 nerve root. This study compares the rate of hip dislocation and the need for further hip surgeries in SDR and ITBP patients. **METHODS:** All nonambulatory cerebral palsy patients who had either an SDR or ITBP and had minimum follow-up of 2 years were retrospectively reviewed for demographic data and timing, total number, and type of hip procedures (soft tissue vs. bony), and occurrence of hip dislocation. χ test was used to assess for statistical significance. **RESULTS:** Sixty-nine patients who underwent SDR (40 males) and 50 patients who underwent ITBP (27 males) were included in the study. Average age at spasticity intervention was 6 years 11 months for SDR and 9 years 8 months for ITBP. In the SDR group, 25% of hips underwent reconstruction versus 32% of hips in the ITBP group. There were a total of 19 hip procedures in the SDR group and 20 in the ITBP group ($P=0.15$). Seventeen soft-tissue procedures were performed in both SDR and ITBP groups ($P=0.265$). Six bony procedures (0 salvage) were performed in the SDR group and 10 in the ITBP group (4 salvage; $P=0.075$). At final follow-up the hip dislocation rate was 10.6% in the SDR group and 7.4% in the ITBP group. **CONCLUSIONS:** There was no significant difference in the rate of secondary hip reconstructive surgery or dislocation between nonambulatory cerebral palsy patients who underwent SDR versus ITBP. Reconstruction was required for 25% to 32% of hips despite spasticity intervention with either procedure. This suggests that the L1 nerve root alone does not play a major role in the progression of hip dislocation.

LEVEL OF EVIDENCE: Level 3-therapeutic study.

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5. J Pediatr Orthop. 2012 Dec;32(8):792-8. doi: 10.1097/BPO.0b013e318273ab5a.

Outcome assessment in neuromuscular spinal deformity.

Bowen RE, Abel MF, Arlet V, Brown D, Burton DC, D'Ambra P, Gill L, Hoekstra DV, Karlin LI, Raso J, Sanders JO, Schwab FJ.

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Patient-based outcome measures are important tools quantifying the disease-specific and/or global quality of life (QOL) effects of spinal deformity treatment. In patients with neuromuscular disorders such as cerebral palsy, muscular dystrophy, and myelomeningocele, treatment effects must be differentiated from underlying disease functional impairments. In general, the goals of spinal surgery in these patients are to improve QOL by enhancing sitting balance and posture, improving lung and gastrointestinal function, and reducing pain and deformity. In selected patients, improving ambulation and hand function may also be realistic surgical goals. QOL measures specific to both the neuromuscular diagnosis and spinal deformity provide higher quality information on treatment outcomes for a particular patient than standard radiographic measures. This article reviews patient-based outcome measures in spinal deformity patients with neuromuscular disorders, including their development and use in comparative outcome studies in the recent literature.

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6. Diabetes Metab Syndr. 2012 Apr;6(2):70-6. doi: 10.1016/j.dsx.2012.08.006. Epub 2012 Aug 24.

Clinical profile of coexisting conditions in type 1 diabetes mellitus patients.

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AIMS: Type 1 diabetes mellitus (T1DM) is associated with various genetic and autoimmune diseases implicated in its etiopathogenesis. We hereby profile the clinical association of such diseases among patients from our center. METHODS: Consecutive patients of T1DM presenting to department of Endocrinology from May 1997 to December 2011 were retrospectively analyzed in context of associated clinical profile. RESULTS: Among 260 patients diagnosed as T1DM, 21 (8%) had hypothyroidism, 4 (1.5%) had hyperthyroidism and 2 (0.7%) had primary adrenal insufficiency. Eighteen patients (7%) had celiac disease, 9 (3.5%) had Turner's syndrome, 5 patients (1.9%) had Klinefelter's syndrome, whereas Down's syndrome and Noonan's syndrome was present in 2 and 1 patients (0.7%) respectively. One patient had Wolframs' syndrome and 1 patients had myasthenia gravis. Systemic lupus erythematosus and rheumatoid arthritis were present in 3 and 1 patients respectively. Total of 5 patients with cerebral palsy, 4 cases with deaf mutism, 4 cases with acute psychosis and 16 patients with depression were noted. Mean age of study patients was 20.8±9.8 years (range, 3-23 years). CONCLUSION: Various conditions including genetic (Down, Turner, Noonan, and Klinefelter's), autoimmune (thyroid and adrenal disorders, myasthenia gravis, SLE, rheumatoid arthritis) and central nervous system diseases were the associated diseases encountered in our patients. Routine screening is required for early diagnosis and treatment of associated co morbidities.

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Prevention and Cure

7. Arch Dis Child Fetal Neonatal Ed. 2012 Nov 15. [Epub ahead of print]

Neurodevelopmental outcomes of extremely premature infants conceived after assisted conception: a population based cohort study.

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OBJECTIVE: To compare neurodevelopmental outcomes of extremely preterm infants conceived after assisted conception (AC) compared with infants conceived spontaneously (non-AC). DESIGN: Population-based retrospective cohort study. SETTING: Geographically defined area in New South Wales and the Australian Capital Territory, Australia served by a network of 10 neonatal intensive care units. PATIENTS: Infants <29 weeks' gestation born between 1998 and 2004. INTERVENTION: At 2-3 years corrected age, 1473 children were assessed with either the Griffiths Mental Developmental Scales or the Bayley Scales of Infant Development. MAIN OUTCOME MEASURE: Moderate/severe functional disability defined as developmental delay (Griffiths General Quotient or Bayley Mental Developmental Index >2 SD below the mean), cerebral palsy (unable to walk without aids), deafness (bilateral hearing aids or cochlear implant) or blindness (visual acuity <6/60 in the better eye). RESULTS: Mortality and age at follow-up were comparable between the AC and non-AC groups. Developmental outcome was evaluated in 217 (86.5%) AC and 1256 (71.7%) non-AC infants. Using multivariate adjusted analysis, infants born after in-vitro fertilisation at 22-26 weeks' gestation (adjusted OR 1.79, 95% CI 1.05 to 3.05, p=0.03) but not at 27-28 weeks' gestation (adjusted OR 0.81, 95% CI 0.37 to 1.77; p=0.59) had higher rate of functional disability than those born after spontaneous conception. CONCLUSIONS: AC is associated with adverse neurodevelopmental outcome among high risk infants born at 22-26 weeks' gestation. This finding warrants additional exploration.

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