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[Intervention Review]

# Speech and language therapy to improve the communication skills of children with cerebral palsy

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## ABSTRACT

### Background

The production of speech, language and gesture for communication is often affected by cerebral palsy. Communication difficulties associated with cerebral palsy can be multifactorial, arising from motor, intellectual and sensory impairments. Children with this diagnosis can experience mild to severe difficulties in expressing themselves. They are often referred to speech and language therapy (SLT) services to maximise their communication skills and help them to take as independent a role as possible in interaction activities. Therapy can include introducing augmentative and alternative communication (AAC) systems, such as symbol charts or communication aids with synthetic speech, as well as treating children's natural forms of communication. Various strategies have been used to treat the communication disorders associated with cerebral palsy, but evidence of their effectiveness is limited.

### Objectives

To determine the effectiveness of SLT that focuses on the child or their familiar communication partners, as measured by change in interaction patterns.

To determine if individual types of SLT intervention are more effective than others in changing interaction patterns.

### Search methods

Searches were conducted of MEDLINE, CINAHL, EMBASE, PsycINFO, LLBA, ERIC, WEB of SCIENCE, Scopus, NRR, BEI, SIGLE (to January 2011). A previous version of this review included studies up to the end of 2002. References from identified studies were examined and relevant journals and conference reports were handsearched.

### Selection criteria

Any experimental study containing an element of a control was included in this review. This includes non-randomised group studies and single case experimental designs in which two interventions were compared or two communication processes were examined.

### Data collection and analysis

All authors searched for and selected studies for inclusion. L Pennington (LP) assessed all papers for inclusion, J Goldbart (JG) and J Marshall (JM) independently assessed separate random samples, each comprising 25% of all identified studies. Two review authors independently abstracted data from each selected study. Disagreements were settled by discussion between the three review authors.

## **Main results**

Sixteen studies were included in the review. Nine studies evaluated treatment given directly to children, seven investigated the effects of training for communication partners. Participants in the studies varied widely in age, type and severity of cerebral palsy, cognitive and linguistic skills. Studies focusing directly on children suggest that this model of therapy delivery has been associated with increases in treated speech and communication skills by individual children. However, methodological flaws and small sample sizes prevent firm conclusions being made about the effectiveness of the therapy. In addition, maintenance of these skills was not investigated thoroughly. The studies targeting communication partners used small exploratory group designs which often contained insufficient detail to allow replication, although more recent studies have improved in this area. Overall, the studies of indirect intervention have very low power and cannot provide evidence of effectiveness of this type of treatment.

## **Authors' conclusions**

Firm evidence of the positive effects of SLT for children with cerebral palsy has not been demonstrated by this review. However, positive trends in communication change were shown. No change in practice is recommended from this updated review. Further research is needed to describe this client group, and its possible clinical subgroups, and the methods of treatment currently used in SLT. Research is also needed to investigate the effectiveness of new and established interventions and their acceptability to families. Rigour in research practice needs to be extended to enable firm associations between therapy and the communication change to be made. There are now sufficient data to develop randomised controlled studies of dysarthria interventions and group parent training programmes. Such research is urgently needed to ensure clinically effective provision for this group of children, who are at severe risk of social and educational exclusion.

## **PLAIN LANGUAGE SUMMARY**

**Speech and language therapy for children with cerebral palsy might improve their communication skills, but more research is needed.**

Cerebral palsy (CP) is a movement disorder caused by damage to the brain before, during or soon after birth. The ability for people with CP to communicate effectively is often impaired by problems with speech and also gestures usually used in communication. Speech and language therapy aims to help people with CP maximise their communication skills. This can include ways of enhancing natural forms of communication, introducing aids such as symbol charts or devices with synthetic speech, and training communication partners. The review found some weak evidence that speech and language therapy might help children with CP, but more research is needed.