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Title **Intensive Training/Habilitation of Children with Congenital and Acquired Brain Damage**

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Aim

To determine what the research shows regarding the effectiveness of intensive training/rehabilitation in children with brain damage.

Conclusions and results

We summarized results from 7 systematic reviews and 20 separate studies. According to the summary, Constraint Induced (Movement) Therapy (CIMT/CI) may be better than usual treatment at improving upper-limb function in children with spastic unilateral cerebral palsy (CP). There is uncertainty related to this result. Early intervention in infants at risk for brain damage, or with acquired brain damage, may also improve motor and cognitive development better than usual treatment. The quality of the evidence ranged from moderate to low according to GRADE. Since heterogeneity, sparse data, and methodological flaws characterize the rest of the included reviews and studies, our evidence does not show whether other intensive training interventions are better than usual training. Meta-analysis was not possible due to heterogeneity in population, interventions, and outcome measurements.

We did not find evidence (that met our inclusion criteria) on programs such as Advanced Bio-Mechanical Rehabilitation, Doman, Family Hope, and the Kozijavkin method. Only evidence of CIMT/CI and early intervention showed possible promising effects.

Methods

We systematically searched for systematic reviews, randomized controlled trials, and controlled before-and-after studies in the Cochrane Database of Systemic Reviews (CDSR), Database of Abstracts of Reviews of Effects (DARE Cochrane), Health Technology Assessment Database (HTA), MEDLINE, EMBASE, Pedro, Cochrane Central, CINAHL, ERIC, PsycINFO, and Swemed. Two people independently selected studies that fulfilled the inclusion criteria.

We critically appraised relevant articles that met our inclusion criteria (below) for quality of method, and described the included reviews and studies in text and tables. As the participants, interventions, and outcome measures were too heterogeneous to assimilate in a meta-analysis, we summarized the results descriptively.

Inclusion criteria for the report were:

Population: Children and young people aged 0 through 18 years with acquired and congenital brain damage.

Intervention: Systematic and focused training and habilitation with a minimum range of 3 times/week up to several times/day for 1 or more periods. Focused interventions that contribute to the child's development of movements' functions and social, mental, and communication skills.

Child-related outcome: Quality of life, language/communication, ability to care for themselves, ability to move around, social, cognitive, and, executive functioning, motor abilities, ADL, and general health.

Family-related outcomes: Quality of life, sense of coherence, parent competence, satisfaction with services, compliance, parents' physical and mental health, economy, stress, and optimism.

Further research/reviews required

Fully achieving the aim requires further and rigorous research.

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