

What's the Evidence?

Physiotherapy and Occupational Therapy for children with neurodisability

Key findings

- Physiotherapy is a key element of the treatment offered to children with a physical disability.
- The evidence regarding the effectiveness of different doses (duration or frequency) of physiotherapy is very limited.
- From the evidence that exists it appears that the question 'how much and how often should physiotherapy be offered' cannot be answered without further research.

PLEASE NOTE: This summary was produced more than 4 years ago. Information provided may be out of date. We will endeavour to update this summary in due course. If you would be interested in an updated summary please contact us at pen cru@exeter.ac.uk

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What were we asked?

We were asked whether different amounts of physiotherapy and occupational therapy result in different outcomes for children with neurodisability.

What did we find?

Physiotherapy is a key element of the treatment offered to children with a physical disability. The amount of physiotherapy that a child receives can be variable, and there are often long breaks in therapy during school holidays. We looked for research about the 'intensity' of physiotherapy, i.e. the number or duration

of therapy sessions within a set time period. The research that we found focused specifically on Cerebral Palsy rather than on physical disability in general, which should be borne in mind when reading this summary.

A Randomised Controlled Trial (RCT) in 2001 reported that there was no statistically significant difference in the development of movement ability between children who had received routine amounts of physiotherapy, compared with those who had received intensive amounts.¹

In 2007, another RCT investigated whether a physiotherapy assistant or family support

worker improved several child and family outcomes. The study found no evidence to suggest that an extra hour of physiotherapy per week for six months improved movement ability or any child outcomes.²

A further study in 2008 compared a programme of 4 physiotherapy sessions a week for four weeks followed by a six week treatment break, with a programme of continuous treatment once or twice a week.³ Both regimens were carried out for 30 weeks. The researchers concluded that: *'organising physiotherapy in two markedly different ways yields identical outcome measures for children with CP.'*

In 2008, a consensus conference of the International Society for Prosthetics and Orthotics (ISPO) concluded that: *'the dose [of physiotherapy] is seldom evidence based and therefore the optimal dosage is not known...Research is required to establish the optimum frequency, duration, intensity and timing of physiotherapy interventions'.⁴*

However, the report recommends that, despite the lack of evidence, parents generally value regular contact with therapists and the support that they provide. Recent guidance from NICE does not stipulate how frequently therapy should be provided but does suggest:

'When undertaking task-focused active-use therapy consider an intensive programme over a short time period (for example, 4–8 weeks)'.⁵

In 2010, a meta-analysis comparing the efficacy of intensive versus non-intensive physiotherapy concluded that there was

limited evidence to support additional physiotherapy⁶. However the authors suggest that their results may not be clinically significant and list a number of limitations with the studies that were included in the meta-analysis. They state that their research has been useful in identifying areas where additional research is needed.

One incidental finding from our own appraisal of the evidence for constraint-induced movement therapy was that intensive therapy of any kind appeared to improve the manual ability of children with hemiplegia. This incidental finding must be interpreted cautiously as this was not what the research studies were designed to assess.

What do we think?

The evidence regarding the effectiveness of different doses (duration or frequency) of physiotherapy is very limited. From the evidence that exists it appears that the question 'how much and how often should physiotherapy be offered' cannot be answered without further research. Nor can we say for sure whether there is an adverse effect of not having physiotherapy during the school holidays.

Signposts to other information

The NICE guidance on spasticity in children and young people published in 2012 has

more information about physiotherapy.⁵

We would like to hear your feedback on this summary – please email us at penclu@exeter.ac.uk if you have any comments or questions.

References

1 Bower, E., et al. (2001) Randomised controlled trial of physiotherapy in 56 children with cerebral palsy followed for 18 months. *Developmental Medicine and Child Neurology*. 43: 4-15

2 Weindling, A.M., et al. (2007) Additional therapy for young children with spastic cerebral palsy: a randomised controlled trial. *Health Technology Assessment*. 11: (16)

3 Christianson, A.S., & Lange, C. (2008) Intermittent versus continuous physiotherapy in children with cerebral palsy. *Developmental Medicine and Child Neurology*. 50: 290-293

4 Morris, C., & Condie, D. (Eds). (2009) Recent Developments in Healthcare for Cerebral Palsy: Implications and Opportunities for Orthotics. *International Society for Prosthetics and Orthotics*.

5 National Institute for Health & Clinical Excellence (NICE) (2012) Spasticity in children and young people. [Online] Available at <http://guidance.nice.org.uk/CG145>

6 Arpino, C., et al. (2010) Efficacy of intensive versus nonintensive physiotherapy in children with cerebral palsy: a meta-analysis. *International Journal of Rehabilitation Research*. 33 (2): 165-171

Note: the views expressed here are those of the Peninsula Cerebra Research Unit (PenCRU) at the University of Exeter Medical School and do not represent the views of the Cerebra charity, or any other parties mentioned. We strongly recommend seeking medical advice before undertaking any treatments/therapies not prescribed within the NHS.