

What’s the Evidence?

Stem cell trials for cerebral palsy

Key findings

* Stem cell therapy uses stem cells to replace or repair damaged cells or tissues.
* We are only in the early stages of understanding how and whether stem cell therapy might benefit children with cerebral palsy.

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**What were we asked?**

We were asked whether there were any stem cell trials for children with cerebral palsy taking place in the UK.

**What did we do?**

To find out more about stem cell therapy for cerebral palsy we searched the TRIP database, the Cochrane Library, NHS Evidence, PubMed, and NICE guidelines. We also wanted to know whether there were any clinical trials currently underway but not yet published, to answer this we searched the EU Clinical Trials Register and the UK Clinical Trials Gateway.

**What did we find?**

Stem cells are cells which can ‘self-renew,’ (i.e. divide into more stem cells of the same kind) and mature into specialized cells that carry out a specific function (i.e. in the skin, muscle, or blood). Stem cell therapy uses stem cells to replace or repair damaged cells or tissues. Stem cells are put into the patient’s blood, or sometimes transplanted directly into damaged tissue.1

Stem cell therapy is emerging as a scientifically plausible treatment for cerebral palsy. However, it is currently unproven. There remain many questions over the effectiveness of the therapy, the best type of stem cells to use, and the optimal timing of the therapy.2,3

A systematic review of stem cell therapies for people with cerebral palsy was published in 2016. The authors found some evidence to suggest that stem cell therapy caused small short term improvements in movement ability. However, more high quality randomised controlled trials are required to determine whether stem cell therapy may be a useful addition to the range of treatments currently offered to people with cerebral palsy.2

We are unable to find details of any clinical trials evaluating stem cell treatment in the UK at present. A review published in 2018 found there to be 21 clinical trials currently underway investigating the use of umbilical cord blood stem cells as a treatment for cerebral palsy, or brain injury in neonates. The majority of this research is taking place in the USA (in particular Duke University) and Korea.3

**What do we think?**

There are no stem cell therapies for cerebral palsy that have been proven to be safe and effective. Research is still in the early stages but the evidence so far suggests stem cell treatment may offer some promise for the future of cerebral palsy therapy.

**Signposts to other information**

* www.closerlookatstemcells.org

An online resource from the International Society for Stem Cell Research. The website is designed to help patients and their families make informed decisions about stem cell treatments.

* www.ukctg.nihr.ac.uk

The UK Clinical Trials Gateway website. Provides details of trials running in the UK, guidance on how trials work and what to expect if you participate in a trial.

* www.clinicaltrialsregister.eu

The European Union clinical trials register.

* www.clinicaltrials.gov

A database of privately and publicly funded clinical studies conducted around the world.

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

**References**

1. International Society for Stem Cell Research. (2008) Patient Handbook on Stem Cell Therapies. p.3. [Online] Available at: <http://www.closerlookatstemcells.org/patient-resources/#handbook>
2. Novak, I., Walker, K., Hunt, R. et al. (2016) Concise Review: Stem Cell Interventions for People With Cerebral Palsy: A Systematic Review With Meta-Analysis. *Stem Cells Translational Medicine.* 5: 1014-25.
3. McDonald, C., Fahey, M., Jenkin, G., et al. (2018) Umbilical cord blood cells for treatment of cerebral palsy; timing and treatment options. *Pediatric Research*. 83(1): 333-44.

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.