



Neurodevelopmental Therapy (NDT) – What is it and Does It Work?

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In a recently released article in *Pediatrics*, Anna te Velde and colleagues describe a meta-analysis conducted to determine the efficacy of neurodevelopmental therapy (NDT) for any outcome in children and infants with cerebral palsy (CP) or high risk of CP ([10.1542/peds.2021-055061](https://doi.org/10.1542/peds.2021-055061)). The authors screened 361 studies, of which 34 met their inclusion criteria: 75% or more of participants were less than 18-years-old; the study was published in English; and NDT was compared to any other therapy in a randomized clinical trial with any outcome. The authors hypothesized that NDT was no more effective in improving outcomes in children and infants with CP than no intervention or any of several other therapies.

I learned a lot from this article. I confess I did not know what NDT is and I had not appreciated that there are several unique approaches to physical therapy to which it can be compared. NDT was developed in the 1940's by a neuropsychiatrist, Dr. Karel Bobath, and a physical therapist, Berta Bobath. It is practiced worldwide, though with country-to-country variation in uptake, is espoused by several esteemed institutions including the Kennedy Krieger Institute, and has a dedicated professional organization, the [Neurodevelopmental Therapy Association](#). NDT is characterized by hands-on “therapist-guided” facilitation of movement to provide sensory input and improve postural control; the goal is to regain typical motor behaviors and minimize atypical ones. Beginning in the 1990's, with earlier diagnoses of CP and greater neuroplasticity due to young age, and a paradigm change toward child-centered real-life activity goals and away from the therapist-facilitated approach of NDT, serious questions were raised about the efficacy of NDT.

In this article you will read about comparator therapies also. These include “activity-based therapies,” which are intensive approaches to rehabilitation using task-specific training focused on “neurorecovery”¹ and “body function and structures-based approaches” which focus on directly treating the patient’s activity limitation.² In a beautifully comprehensive figure (Figure 3) the authors provide a color-coded comparison of effect size and comparative effectiveness of different therapy types for CP: the conclusion is clear that NDT is not effective, and the authors conclude that NDT should be phased out as a treatment. Kudos to the authors for conducting this comprehensive meta-analysis which uses careful scientific methodology to examine a real-world question: they have provided evidence to debunk the widespread claim of NDT effectiveness so that hopefully other more helpful therapies can be routinely utilized.

References:

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2. Jiandani MP, Mhatre BS. Physical therapy diagnosis: How is it different? *J Postgrad Med*. 2018;64(2):69-72. doi:10.4103/jpgm.JPGM_691_17