Validation of an evaluation protocol to describe and quantify the therapeutic content performed during neurodevelopmental physical therapy (NDT) sessions of children with cerebral palsy

In this guest blog post, researcher Sébastien Vanderlinden from Belgium writes about his study around the effectiveness of physical therapy for children with cerebral palsy.
Cerebral palsy is a developmental disorder and is caused by damage to the motor cortex of the brain. This is the part of the brain that affects muscle control and coordination. Children with cerebral palsy frequently struggle with walking and fine motor skills.

**VanderLinden is searching for other physical therapists and Ph.D.'s who are willing to participate in his study.**

In recent years, an intensification of studies that document the effectiveness of physical therapy for children with cerebral palsy (CP) resurfaced. According to a recent systematic review of Novak [1], which focuses on therapeutic interventions, it seems that the recommendation not to practice neurodevelopmental therapy (NDT, of which the terminology is based on the Bobath Concept - <http://www.bobath.be/fr/Info/Worldwide> and had been used in research for many years) needs to be considered.

Evidence regarding the effectiveness of this therapy is still developing today. This systematic review thoroughly details the limits and motivating arguments of this point of view, and to a certain extent, encourages the content of this pilot study.

Analyzing therapy sessions with The Observer XT

The main goal of our study is to validate an evaluation protocol including [the use of a measurement tool, The Observer XT](https://www.noldus.com/human-behavior-research/products/the-observer-xt), that could be used to describe and quantify the therapeutic content performed during a NDT session for a child with CP and its associated procedures. As Novak mentions it, there is a lack of published scientific data that describes which and how long physical therapy skills are performed during NDT sessions.

Neurodevelopmental therapy has been medically prescribed and practiced worldwide for nearly half a century by physical therapists as well as occupational therapists and speech therapists, who have completed its regulated NDT basic 8 weeks course.

Within the clinical settings, if its main indication has always been cerebral palsy, it also remains a therapy of choice for the (re)habilitation and parental guidance of newborns and children under 24 months with developmental neuromotor delay.

A problem-solving approach

In addition to this target population, this therapy seems to provide relevant clinical benchmarks for clinical assessment and rehabilitation of the children who suffer from a multiple handicap, from a progressive disease of the central nervous system, or from other related medical conditions. It is relevant to be reminded that NDT fits within a broader "concept" (sometimes called "approach") facing the child suffering with cerebral palsy.

The NDT concept could be defined as "a problem-solving approach to the assessment and treatment of individuals following a lesion of the central nervous system that offers therapists a framework for their clinical practice" or therapeutic content performed during a neurodevelopmental physical therapy session of a child with cerebral palsy.

**Sébastien Vanderlinden
Belgium**

Research in PT & Neurorehabilitation
Sebastien.Vanderlinden@ulb.ac.be