



**UNIVERSITY OF WEST ATTICA  
SCHOOL OF HEALTH AND CARE SCIENCES  
DEPARTMENT OF PHYSIOTHERAPY**

## **SUMMARY OF DOCTORAL DISSERTATION**

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## **TITLE OF DOCTORAL DISSERTATION:**

Dynamic model of Physiotherapeutic Assessment of the Static Trunk Control with the integration of the development of the sensory systems during the learning of the seated position

Movement is mostly a sensorimotor experience, because sensory stimuli contribute significantly to development. Learning any motor activity presupposes a sense of movement (Peterson, Christou, & Rosengren, 2006; Sakellari et al., 2020). Most of the activities that a child acquires in the first years of his life are associated with the process of organizing the senses in the nervous system in order to develop adaptive reactions (Silveira et al., 2018). However, in pathological conditions such as cerebral palsy (CP) there is significant dysfunction in the sensorimotor development of the infant due to primary damage to the central nervous system.

An infant with cerebral palsy due to developmental deficits and the persistence of reflex activity exhibits abnormal movement patterns. These patterns are especially evident in the sitting position. Primitive reflexes (which appear as a response to vestibular, tactile, or receptive stimuli) as well as deficits in the processing of sensory stimuli significantly affect the development of the infant's motor skills. Learning the independent sea is a difficult task due to the biomechanical and nerve complexity that required to control the trunk. It is therefore necessary to conduct research in order to develop valid and reliable tools for the evaluation of trunk control in the sitting position and for accurate identification of deficits observed in children with CP. At the same time, disturbances that may be present in the sensory systems and affect the acquisition and maintenance of the sitting position should be taken into account.

Based on the above, the purpose of this doctoral dissertation will be to create a Dynamic model of Physiotherapeutic Assessment of Static Trunk Control during the development of the sitting position in infancy and consequently to detect the differences observed in infants with cerebral palsy. The research protocol will be formulated from the perspective of the integration of the development of the sensory systems in order to determine their impact on the development of the sitting position. The development of such an evaluation model will contribute significantly to a holistic sensory approach in physiotherapy assessment but also with a prospect for its integration into an interdisciplinary assessment plan for static control in infancy.

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