Abstract

BACKGROUND: Classification systems (Nagi, International Classification for Function [ICF]) have become popular for categorizing the level of ability (ICF) or disability (Nagi) associated with movement disorders. Nevertheless, these classifications do not explore the ways in which one level may influence other levels. For example, how might the weakness and stiffness associated with some cases of cerebral palsy result in a stereotypical toe-gait? In this overview we describe a dynamic systems/constraints (DS/C) approach to understand relationships between levels, and how the approach can be used to rationalize a novel process for the evaluation and treatment of movement disorders. OBJECTIVES: There are three specific aims in this paper: first to present a general systems approach to understanding behavior at different levels; second to present tools of, and the results of empirical work using the DS/C approach; third to discuss the clinical implications and results of clinical interventions motivated by DS/C analysis for children with cerebral palsy, and individuals with Parkinson disease.

Keywords
Nagi, ICF classification systems, dynamic systems, biomechanics, coordination dynamics, dynamic resources