ATTENDING TO THE TASK: FACTORS WHICH INFLUENCE GAIT, FUNCTIONAL ACTIVITY AND CUE USE IN THE HOME

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Impaired walking is a typical problem in Parkinson’s disease (PD) and is associated with an increased risk of falls and loss of independence (1). Additional motor and cognitive tasks can have marked effects on gait in individuals with PD (2, 3). It has been suggested that subjects with PD may have an over reliance on cortically mediated attentional mechanisms when executing movements due to defective basal ganglia functioning accounting for difficulties performing two tasks at once (4). Furthermore, reported decreases in executive functions in people with PD may place additional loads on available processing resources (5) adding to the difficulty of performing multiple tasks in a complex environment. Studies have shown that the use of cues can improve gait parameters in people with PD (1, 6). It has been proposed that directing attention to the task may be the mechanism by which cues achieve their result (1). The effect of both additional tasks and cue use has largely been tested in the laboratory. Studies (which form part of a European multi-centre project - RESCUE) have evaluated the effects of functional activities and cue use in a complex environment on walking. Performance of additional tasks resulted in significantly slower gait speed and reduced step amplitude in PD subjects, possibly due to their interference with attention needed to maintain safe and efficient walking. The use of cues during the performance of functional activities resulted in improved gait parameters. Cues may increase the ability to attend to the task of walking by freeing up some attentional resources, even in people with executive dysfunction. Furthermore, people with cognitive difficulties involving executive functions may benefit from a predictable rule to apply to walking in clearly defined circumstances. The implications are that evaluation of performance during complex functional activities in an appropriate environment should be a focus of therapeutic assessment. In addition, the ability to perform multiple tasks should be the focus of rehabilitation and evaluation and where frontal lobe difficulties exist, strategies should also be incorporated into therapy.
References:


