

Implicit and explicit learning: Applications from basic research to sports for individuals with impaired movement dynamics

Purpose. Motor skills can be learned in an explicit or an implicit manner. Explicit learning places high demands on working memory capacity, but engagement of working memory is largely circumvented when skills are learned implicitly. We propose that individuals with impaired movement dynamics may benefit from implicit learning methods when acquiring sports-related motor skills.

Method. We discuss converging evidence that individuals with cerebral palsy and children born prematurely have compromised working memory capacity. This may in part explain the difficulties they encounter when learning motor and other skills. We also review tentative evidence that older people, whose movement dynamics deteriorate, can implicitly learn sports-related motor skills and that this results in more durable performance gains than explicit learning.

Results. Individuals with altered movement dynamics and compromised working memory can benefit from implicit motor learning.

Conclusion. We conclude with an appeal for more extensive evaluation of the merits of implicit motor learning in individuals with impaired movement dynamics.

Steenbergen, B., van der Kamp, J., Verneau, M., Jongbloed-Pereboom, M., & Masters, R.S.W. (2010). Implicit and explicit learning: Applications from basic research to sports for individuals with impaired movement dynamics. *Disability and Rehabilitation*, 32, 1509-1516.