Introducing Movement Variability In Training And Rehabilitation

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Outcome consistency is paramount in most sports. In that respect, movement consistency has always been understood to have some implications to the outcome goals. Earlier arguments from the cognitive motor control perspective generally project that consistent movement patterns lead to better performance whereby traditionally, variability was considered as undesirable system noise or error, and reduced with skill learning.

Alternately, ecological motor control advocates view variability as having a functional role in human movement whereby variability is seen as essential in giving flexibility to adapt effectively to changes in the environment. Recent studies have indicated that even the best athletes are not able to replicate the exact same movements when achieving good scores. There seem to be no such thing as a “standardized movement pattern” for the best performance, which supports the current belief that outcome consistency is not dependent on movement consistency.

More importantly, varied motor patterns have many potential benefits that include being able to facilitate changes in coordination when learning new motor skills, being able to adapt to changes in the environment by having a form of correction mechanism, and being able to modify tissue loads such as by using different muscle groups thereby reducing injury risks.

This presentation will look at some current and ongoing studies which have indicated that injury risks may be significantly reduced by changing certain training variables and therefore, introducing the notion of variability in movement patterns. Discussions will focus on how these changes can be easily incorporated into our current training regimes, and what sort of benefits can be expected from it.