

ABSTRACT

METHOD AND SYSTEM FOR INTERPRETING NEURAL INTERPLAY INVOLVING PROPRIOCEPTIVE ADAPTATION DURING A DUAL TASK PARADIGM

Collision avoidance and postural stability adjustment may provide an effective dual task paradigm to interpret the effect of proprioceptive adaptation on balance control. However, conventionally tasks are physical tasks performed under supervision in specific set up environments. Embodiments of the present disclosure provide methods and systems for interpreting neural interplay involving proprioceptive adaptation in a lower limb during a dual task paradigm. The disclosed method provides a better interpreting of the neuronal mechanisms underlying adaptation and learning of skilled motor movement and to determine the relationship of lower limb proprioceptive sense and postural stability by simulating integration of a Single Limb Stance (SLS) functionality test for postural stability and a single limb collision avoidance task, in an adaptive Virtual Reality (VR) environment provided to a subject.

[To be published with FIG. 2]