

Can visual stimulus induce proprioceptive drift in the upper arm using virtual reality?

D Willis, V Powell, B Stevens, W Powell

School of Creative Technologies, University of Portsmouth
Winston Churchill Avenue, Portsmouth, UK

{dion.willis, vaughan.powell, brett.stevens, wendy.powell}@port.ac.uk

www.port.ac.uk

ABSTRACT

Sustained isometric contractions (SIC), such as holding an arm stationary in a space, are often used in upper limb rehabilitation exercises, particularly where it is important to protect the joints and tendons or to reduce patient fatigue. However, visual cues within a virtual environment may have an unanticipated effect on the ability to maintain SIC. This study investigated the influence of background motion within a virtual environment on the ability to maintain a fixed position during an upper limb task. It was found that introducing directional movement had a significant differential effect on the ability to maintain SIC.

Full papers will be published in the Conference Proceedings and will be freely available to delegates at the conference and online on September 20, 2016.