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REDESIGN OF THE EXTRAVEHICULAR MOBILITY UNIT TO PREVENT LOSS OF PROPRIOCEPTION

Abstract

Several studies have reported that astronauts who come back to earth face loss of proprioception. Purpose of this study is to find solution for this health issue faced by the majority of astronauts. Proprioception is the ability to sense movement , without it you wouldn't be able to move without voluntary thought. It results from sensory receptors in the nervous system and body, majority being located at muscles and tendons. Neuromuscular Electrical stimulation is used as a methodical approach to treat loss of proprioception. By integrating voltage control stimulator to design and modify the already existing Extravehicular Mobility Unit, we will provide stimulation required and this could potentially lead to a permanent solution. Use of transcutaneous electrodes will provide electric stimulation at regular intervals of time. On conclusion the newly modified EMU will enable the astronaut to keep himself healthy throughout his/her space journey.