25. GAIT RESTORATION OF SPINAL CORD INJURED PATIENT USING FUNCTIONAL ELECTRICAL STIMULATION (FES) TECHNIQUES (THEORY AND PRACTICE)

A. AboAbat, PT, M. Al-Turaiki, PhD, L. Al-Falahi, PhD, J. Edwards*, PhD
The Joint Centre for Research in Prosthetics & Orthotics and Rehabilitation Programmes (JCRPO)
*Telford Research Institute, University of Salford; Rehabilitation Technology Unit, Southport Spinal Injury Centre

This poster reports the novel experience and contribution of JCRPO in the technology transfer and application of one of the most recent, internationally approved and highly advanced techniques and systems for the gait restoration of spinal cord injured Saudi patients. The (Parastep from Sigmedics, Inc., USA) FES system consists of microprocessor controlled muscle stimulators for stimulating different muscles/groups using surface electrodes combined with a Special Walker fitted with finger activated control switches that enable SCI patients to stand and walk. A comprehensive assessment including medical and physical examinations was carried out on over 80 SCI Saudi patients. Few suitable cases were selected according to FES programme criteria and were given full system instruction in addition to physical therapy and training through well defined structured sessions. For a number of carefully selected patients, a new stimulation profile, developed at the JCRPO for the first time, was implemented and found to reduce energy consumption and increase walking speed, hence distances ambulated by patients.

From such experience with FES at JCRPO it has been concluded that this modality, to be used for the first time in the region, is a useful tool for assisting SCI patients to stand and walk for limited distances and also for improving their physiological status and psychological condition.