

Title: Rex robot assisted rehabilitation to enhance balance and mobility for people with Multiple Sclerosis, RAPPER IV clinical trial

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Exoskeleton devices have the potential to enable people with mobility impairments to exercise safely.

This study aims to explore benefits of using a Rex robot to assist in a neuro-rehabilitation program focused on improving balance with supervision from a specialist clinician.

Ethics: REC reference: 18/SC/0337 Protocol number: 1 IRAS project ID: 240267
South Central - Oxford C Research Ethics Committee, UK

Study design:

Prospective, open label, single arm, non-randomized feasibility study of Rex robot assisted training to improve balance for people with MS.
N= 20 , aged 18 to 80 years , with EDSS 4 to 6.5.

Mixed methodology – quantitative and qualitative interview.

Primary Endpoint

- Completion of a transfer into the device, sit to stand in device and 1 robotic rehabilitation session
- Serious Adverse Event/s

Secondary Endpoints

- Completion of robotic balance rehabilitation program over 5 weeks Screening Loss Analysis
- Timed up and Go
- Berg Balance Scale
- Modified Ashworth Scale

- EQ-5D Health State Questionnaire
- Goal Attainment Scale
- ABC confidence scale
- Modified Falls Efficacy Scale
- MS Impact Scale

Results:

Berg Balance: Pre (30.6 ± 16.1), Post (36.8 ± 15.3), P value **0.01**

EQ-5d: Pre (0.14 ± 0.29), Post (0.32 ± 0.31), P value **0.01**

There was a significant increase in the Berg balance, ABC, EQ-5d and EQVAS at the post-intervention timepoint. There was a mean increase of 6 units in the Berg balance score, 17 units in the ABC score and 0.2 units for the EQ-5d health index.

Conclusion: Rex Robot assisted exercise of core abdominal muscle increased balance in people with MS.

Biography:

Dr Mohamed Sakel (FRCP, UK) is the Director and Consultant Physician of a Specialist Neuro-Rehabilitation Service in a University

Hospital in UK. He led 2 clinical research trials assesing the feasibility, safety and effectiveness of “Rex” robotic device for rehabilitation purposes in Spinal Injury and MS (EDSS >6). He led >10 multi-national clinical research projects on Spasticity, Neuro-modulation, dementia. He spoke in numerous international Conferences and published >50 peer-reviewed papers in Neuro-rehabilitation. He was elected member of Medical Academic Staff committee of British Medical Association. He was director of R & D of a University hospital 2008-2012.

Presenting author details

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