STUDY PARTICIPANTS - Diagnoses

- TBI - Traumatic Brain Injury
- SCI - Spinal Cord Injury
- H-Stroke - Ischemic
- H-Stroke - Hemorrhagic

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Study Groups

- A - PEGs Intervention (only)
- B - PEGs Intervention & Rehabilitation
- C - Rehabilitation (only)

INTERVENTION - PreMotor Exercise Games (PEGs)

(Video Game-Like Survivor Controls of Virtual Extremities)

METHODOLOGY

Magnetic Resonance Imaging was performed PRE- and POST- Intervention phases of PreMotor Exercise Games (PEGs) on a subsample (n=13) of 40 survivors of stroke and/or Traumatic Brain Injury (TBI) survivors. Anatomical MRI scans (1 mm isotropic voxel, T1 MPAGE, Siemens Skyra, Erlangen DE) were processed in SPMB VBM8 toolbox, correlating gray matter fraction with AROM and grip power. Results are p<0.005 non-stationary smoothness corrected and expected cluster threshold.

RESULTS

Improved AROM Shoulder

- % Increase in Volumetric Brain Change - Regions of Statistical Significance

- Depth of Central Sclerosis

CONCLUSIONS

- PEGs contribute to improvements in brain-motor control by patients’ non-invasive autodidactic brain engagement.
- Collaborations are invited.
- What’s next are individual patient profiles, patient rewards, adding ADL context games (thanks to MADE, NHTV Univ., Breda, NL.)
- Contact VJM@VinceMaceri.us

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