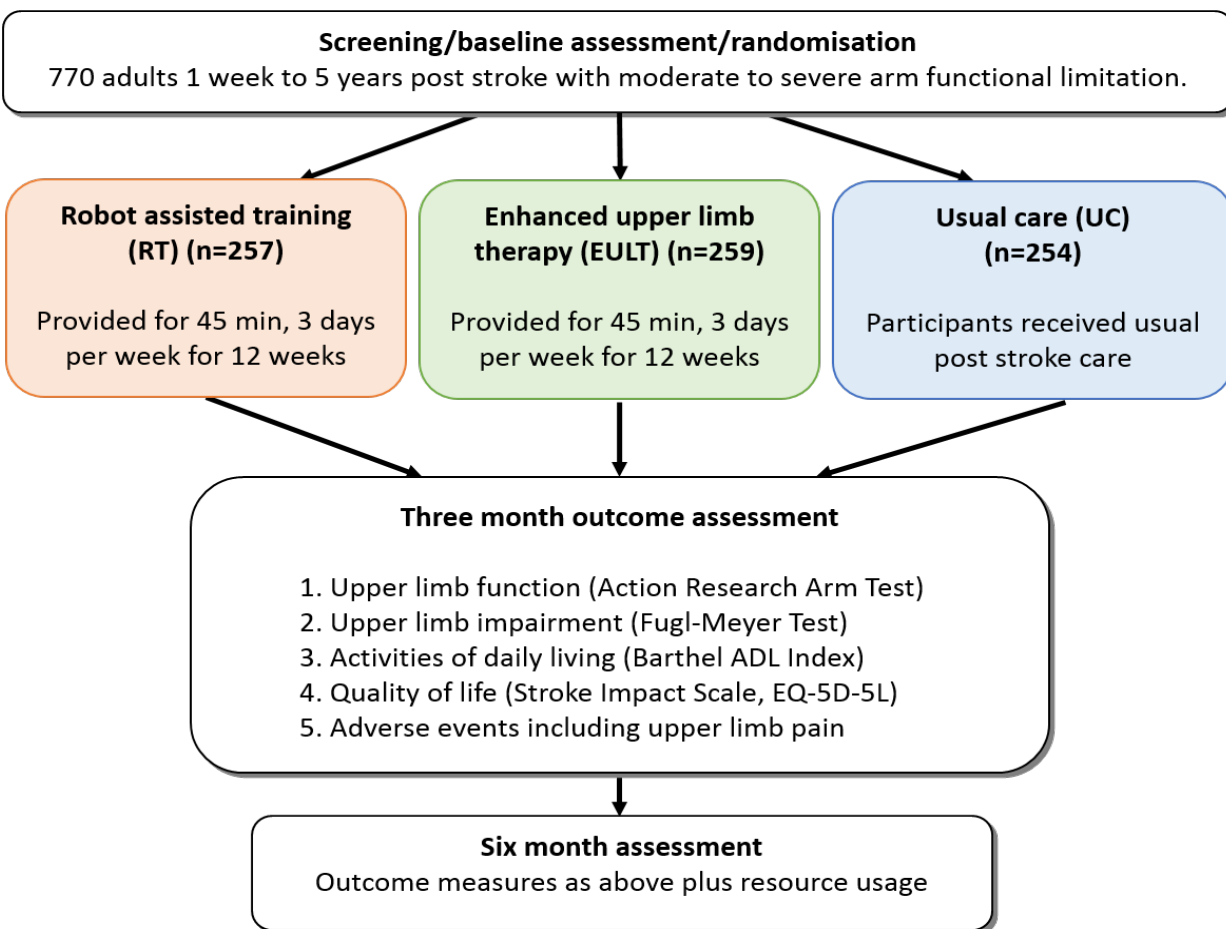


Robot Assisted Training for the Upper Limb after Stroke (RATULS): a multi-centre randomised controlled trial comparing robot-assisted training; an enhanced upper limb therapy programme; and usual care.

Helen Rodgers, Helen Bosomworth, Hermano I Krebs, Frederike van Wijck, Denise Howel, Nina Wilson, Lydia Aird, Natasha Alvarado, Sreeman Andole, David L Cohen, Jesse Dawson, Cristina Fernandez-Garcia, Tracy Finch, Gary A Ford, Richard Francis, Steven Hogg, Niall Hughes, Christopher I Price, Laura Ternent, Duncan L Turner, Luke Vale, Scott Wilkes and Lisa Shaw.

Trial design

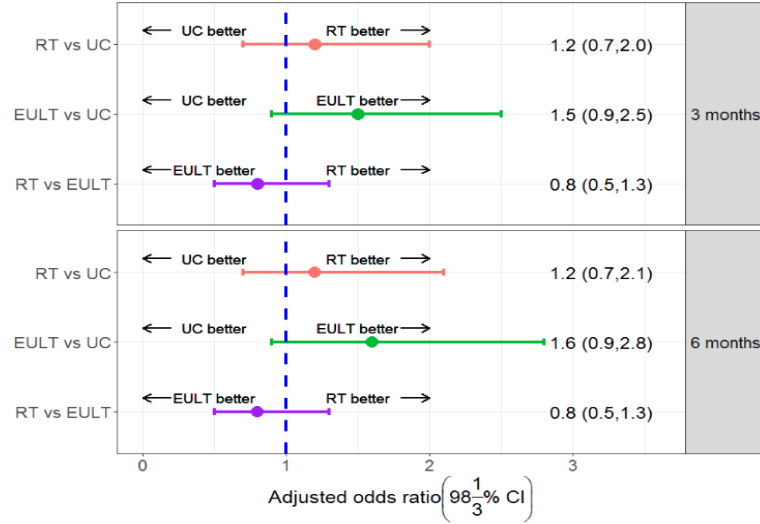
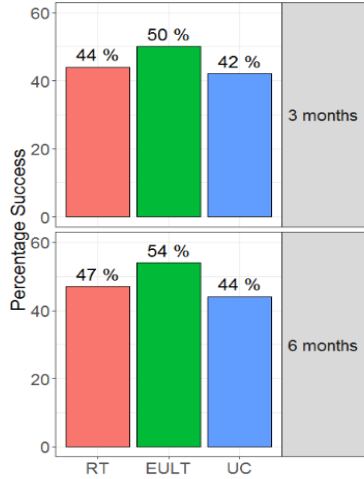


Study centres

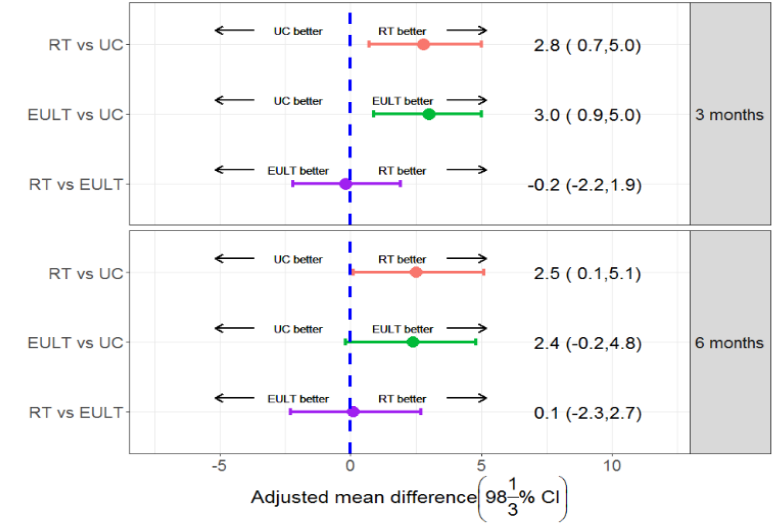
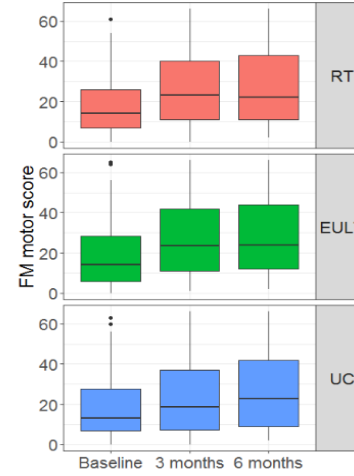


Results

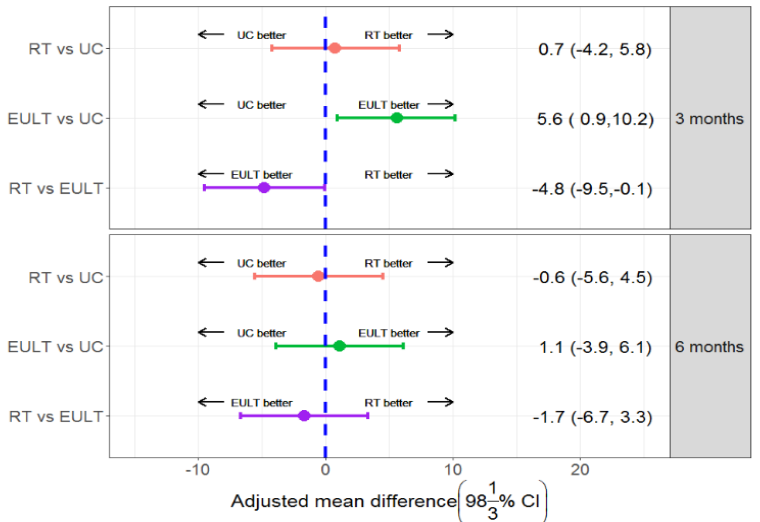
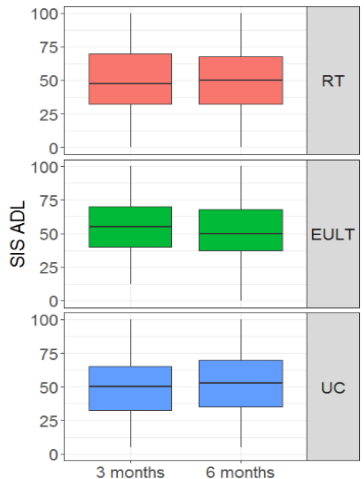
Upper limb function: ARAT success (primary outcome)



Upper limb impairment: Fugl-Meyer motor score

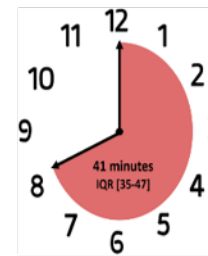


Activities of daily living: Stroke Impact Scale



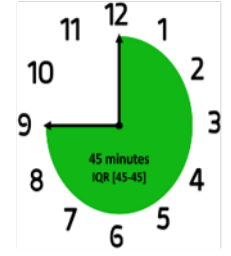
Intervention adherence

Median time on robot within RT sessions



RT
87% sessions attended
Median number of sessions: 35 [IQR 31-36]

Median therapy time within EULT sessions



EULT
84% sessions attended
Median number of sessions: 34 [IQR 29-36]

Total duration on robot for RT programme:
Median 23 hr 28 min
[IQR 18hr 53min-25hr 46min]

Total duration of therapy for EULT programme:
Median 24 hr 40 min
[IQR 20hr 24min-26hr 15min]

Conclusions

Primary outcome: ARAT success at 3 months

- RT using the MIT-Manus robotic gym (shoulder-elbow, wrist and hand modules) did not improve upper limb function when compared to EULT or UC
- EULT did not improve upper limb function when compared to UC

Upper limb impairment: Fugl-Meyer motor score

- RT and EULT led to improvement in upper limb impairment compared to UC

Activities of daily living: Stroke Impact Scale

- EULT led to improvements in ADL compared to RT or UC

Further information

- For more information please visit: <http://research.ncl.ac.uk/ratuls/>
- Trial results to be published in The Lancet on 22nd May 2019

