

Compares the effects of adding NMES to a post-ACL repair rehabilitation program.

The study comprised three groups:

- 1 Control Group (CO) received standard PT therapy
- 2 NMES Group (PS) received standard PT therapy + standard NMES
- 3 Kneehab Group (KH) received standard PT therapy + Kneehab XP



Standard NMES



Kneehab XP

Study leveraged post-surgical protocol:

- + An accelerated rehabilitation protocol was initiated post-surgically for all subjects
- + The two NMES groups
 - began NMES therapy on the 3rd or 4th day following surgery
 - NMES sessions conducted 3 x 20-minute sessions daily, 5 times per week for 12 weeks
 - Subjects were instructed to perform voluntary quadriceps contractions during the sessions
- + The control group was instructed to perform quadriceps contractions on the same time schedule
- + Post-surgical checks were conducted at 6, 12 and 24 weeks

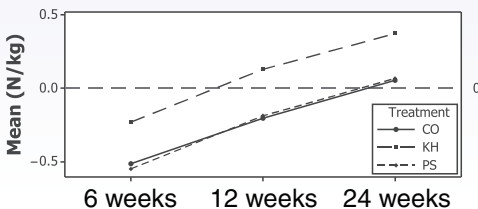
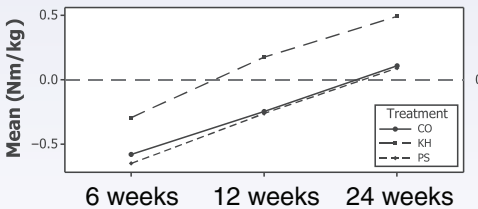
Objective & subjective measures were used to evaluate the subject's progress.

Measures were in alignment with rehabilitation therapy goals:

- + Restore ROM
- + Increase extensor strength
- + Enhance functional ability
- + Reintegrate in to every day activities

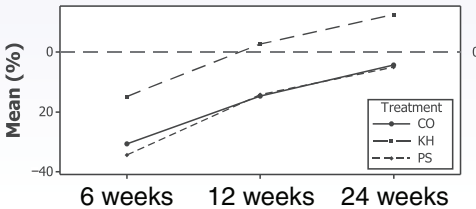
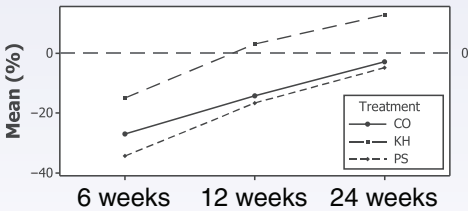
Kneehab restored knee extensor strength twice as fast as other treatment protocols:

- + Measuring 90-45° extension range of motion at 90°/sec & 180°/sec
- + Kneehab restored knee extension strength before Week 12
- + Standard NMES & control groups not to pre-operative strength until Week 24



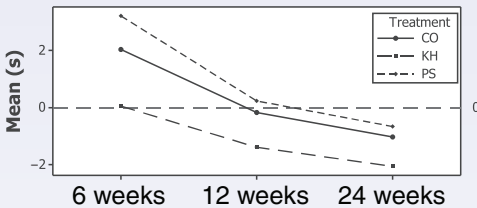
Kneehab group returned to strength of unaffected leg within 12 weeks:

- + Measuring 90-45° extension range of motion at 90°/sec & 180°/sec
- + Kneehab group at equal strength by Week 12
- + Standard NMES & control groups do not reach equal strength

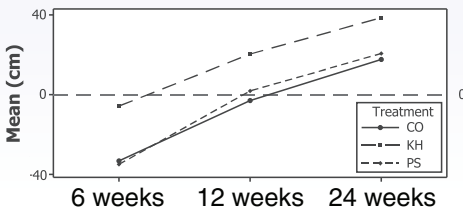


Kneehab group returned to pre-operative levels twice as fast as other two groups:

- + The Kneehab group attained pre-operative speed in the shuttle run by Week 6 whereas the other groups did not attain pre-operative speed until Week 12 or later.



- + The Kneehab group also attained pre-operative distance shortly after Week 6 in the one-leg hop test, twice as fast as the other groups.



Difference in test performance between standard NMES & the Control group was not significant in any test measure:

- + Difference between Kneehab & other interventions was significant/better in every test measure $P < 0.05$

Kneehab group showed higher compliance along with a faster return to work:

- + Patient diaries showed a higher rate of compliance with Kneehab than with standard NMES
- + Diaries also showed that the Kneehab group returned to work a full week faster than the other groups. Return to week time:
 - Control group: 3.67 weeks
 - NMES group: 3.88 weeks
 - Kneehab group: 2.7 weeks



Full text of this study
is available at

www.neurotechgroup.com



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