Supervised Rehabilitation for Lateral Ankle Sprains Yields Successful Six-Month Follow-Up Outcomes: A Multi-Site Randomized Controlled Trial

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INTRODUCTION

- Supervised rehabilitation for acute lateral ankle sprains (A-LAS) is often underutilized, leading to increased potential for re-injury and development of chronic ankle instability (CAI).
- Critical sensorimotor deficits identified in CAI populations are often not addressed in the standard of care (SOC) rehabilitation protocol for an A-LAS.

PURPOSE

The purpose of this study was to examine outcomes that may inform mitigation of CAI development in patients with A-LAS six months after completing either SOC or a sensorimotor ankle rehabilitation treatment (SMART).

PARTICIPANTS

- All participants were required to be between 18-45 years of age and sustained an isolated acute LAS within the previous 72 hours.
- Male and female civilians (n=24) and active-duty service members (n=8) presenting with A-LAS were randomly allocated to either SOC or SMART treatment groups.

Table 1. Participant demographics

	SOC (n = 17)	SMART (n = 15;
Sex (M/F)	7/10	5/10
Age (year)	28.70 ± 9.3	26.47 ± 7.75
Height (cm)	173.32 ± 8.3	167.39 ± 10.32
Mass (kg)	78.97 ± 14.31	74.12 ± 13.61

METHODS

- Participants completed supervised rehabilitation with specific milestones according to group assignment (SOC vs SMART).
- The SOC addressed ROM, strength, and static and dynamic balance (Figure 1).
- The SMART protocol consisted of elements added to SOC (Figure 2).

METHODS CONT.

Figure 1: SOC protocol components

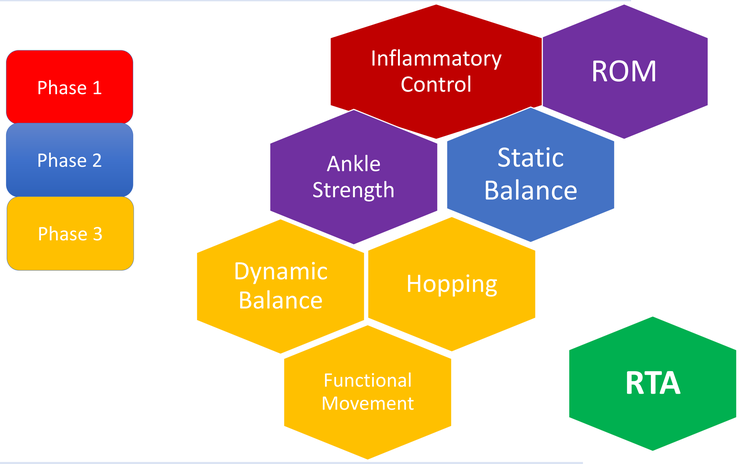


Figure 2: SMART protocol add-on examples

Both groups completed a 6-month follow-up (F/U):

- **<u>Primary outcomes:</u>** Self-reported incidence of recurrent A-LAS and episodes of ankle giving way.
  - Chi-square analyses
- **<u>Secondary outcomes/ankle region-specific patient reported outcomes</u>**: Cumberland Ankle Instability Tool (CAIT), Foot and Ankle Disability Index (FADI), and Fear Avoidance Belief Questionnaire (FABQ).
  - FADI and FABQ, repeated measures ANOVA models compared scores between groups at Intake, Return to Activity (RTA) and 6-Month F/U.
  - For CAIT, an independent t-test compared scores between groups at the 6-Month F/U.

RESULTS

Table 2. Self-reported rates of LAS re-injury and giving way

	SOC	SMART	Chi-Square	P-value
Re-Injury	0/17 (0%)	0/15 (0%)	-	-
Giving Way	6/17 (35%)	5/15 (33%)	0.01	0.91

Figure 3: FABQ at Intake, RTA, and 6-Month F/U

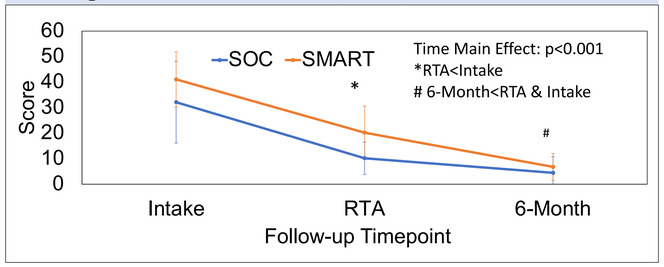
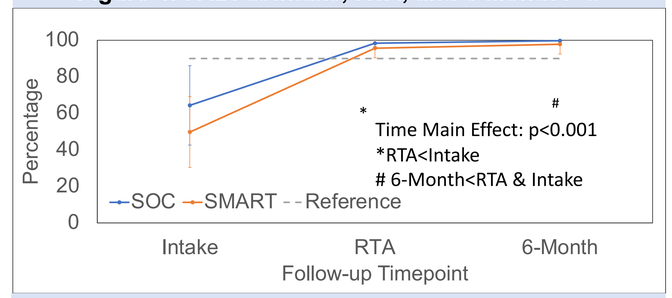
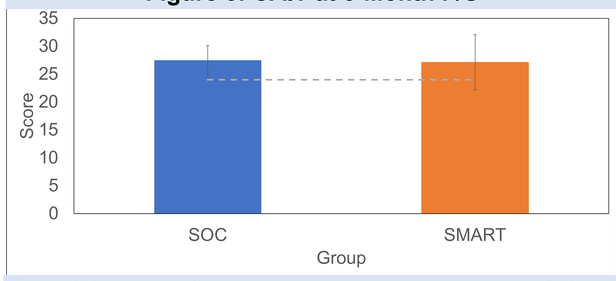


Figure 4: FADI at Intake, RTA, and 6-Month F/U



dotted line represents score associated with CAI

Figure 5: CAIT at 6-Month F/U



p=0.81; dotted line represents score associated with CAI

CONCLUSIONS

- Six-months after completing supervised rehabilitation for an A-LAS, no re-injuries were noted and the rate of giving way episodes was lower than published literature.
- Participants had improvements in PROs with scores not associating with presence of CAI. This demonstrates support for supervised rehabilitation as protective against the development of CAI after A-LAS.

DISCLAIMER: The views expressed in this abstract are of those of the authors, and do not necessarily reflect the views, opinions, or policies of the US Departments of Army/Navy/Air Force, Department of War, nor the US Government. This work was supported by the Department of Defense Office of the Congressionally Directed Medical Research Program under Award No. W81XWH-18-1-0083. The study protocol was approved by the University of Kentucky Institutional Review Board (#44172) in compliance with all applicable federal regulations governing the protection of human subjects.