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4-11-2017

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# Clinical Recommendations for Functional Ankle Instability Based Upon Best Practice Guidelines

Marc McCuen  
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## Introduction

Functional Ankle Instability is often the result of multiple previous lateral ankle sprains. Usually more than two lateral ankle sprains on the same ankle puts that ankle into a category of Functional Ankle Instability. The reoccurring lateral ankle sprains lead to Functional Ankle Instability, which is stated as being a feeling of instability, repeated episodes of giving way, weakness during physical activity, and self-reported disability (Hall, Docherty, Simon, Kingma, Klossner, 2015). Patients describe Functional Ankle Instability by saying that their ankle “gives way,” or that there is “weakness with function” (Hall, 2015). There are several questionnaires that allow for patients Functional Ankle Instability to be ranked. These questionnaires include the Functional Ankle Disability Index and the Cumberland. The exact number of people affected by Functional Ankle Instability is unknown, but multiple sources estimate that about half of people who have experienced a lateral ankle sprain go on to suffer from Functional Ankle Instability. This large number of patients creates an increase to insurance costs, as well as the utilization of resources within the clinic. Understanding the best treatment protocols for Functional Ankle Instability leads to the best outcomes for patients, which in turn helps ease the burden from both a clinical and a administrative aspect. Utilizing the most efficient treatment interventions leads to an increase in patient outcomes, which in turn leads to a decrease in the number of overall patient visits. Decreasing the number of overall visits lowers the amount of out of pocket costs for the patient.

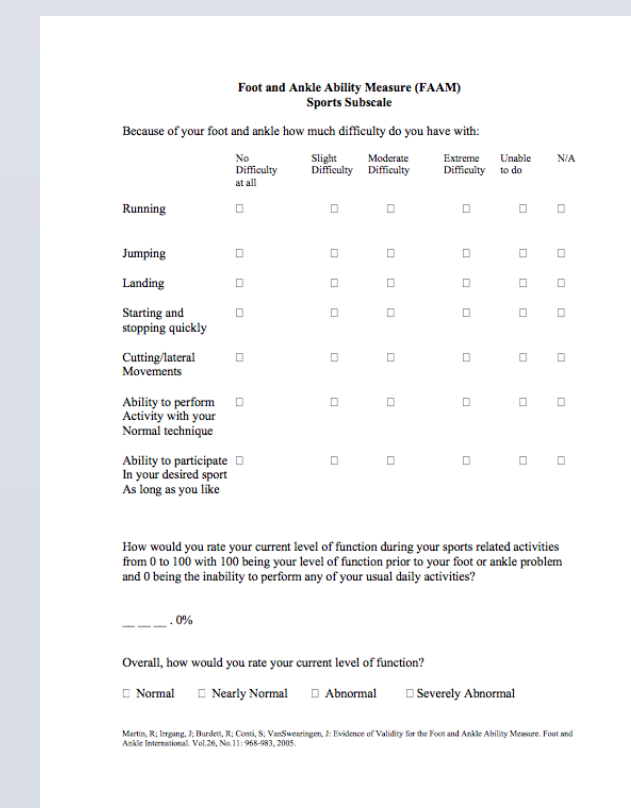
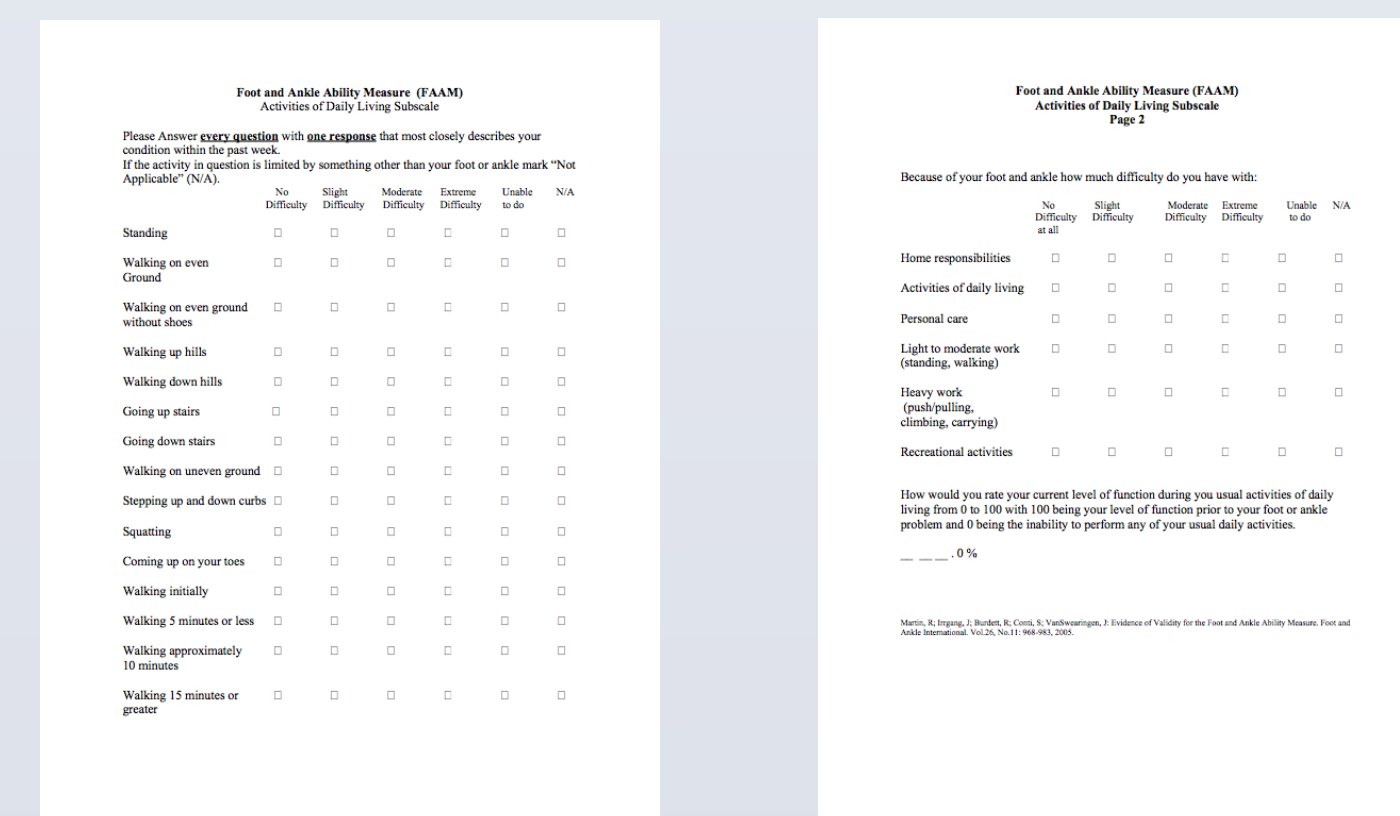
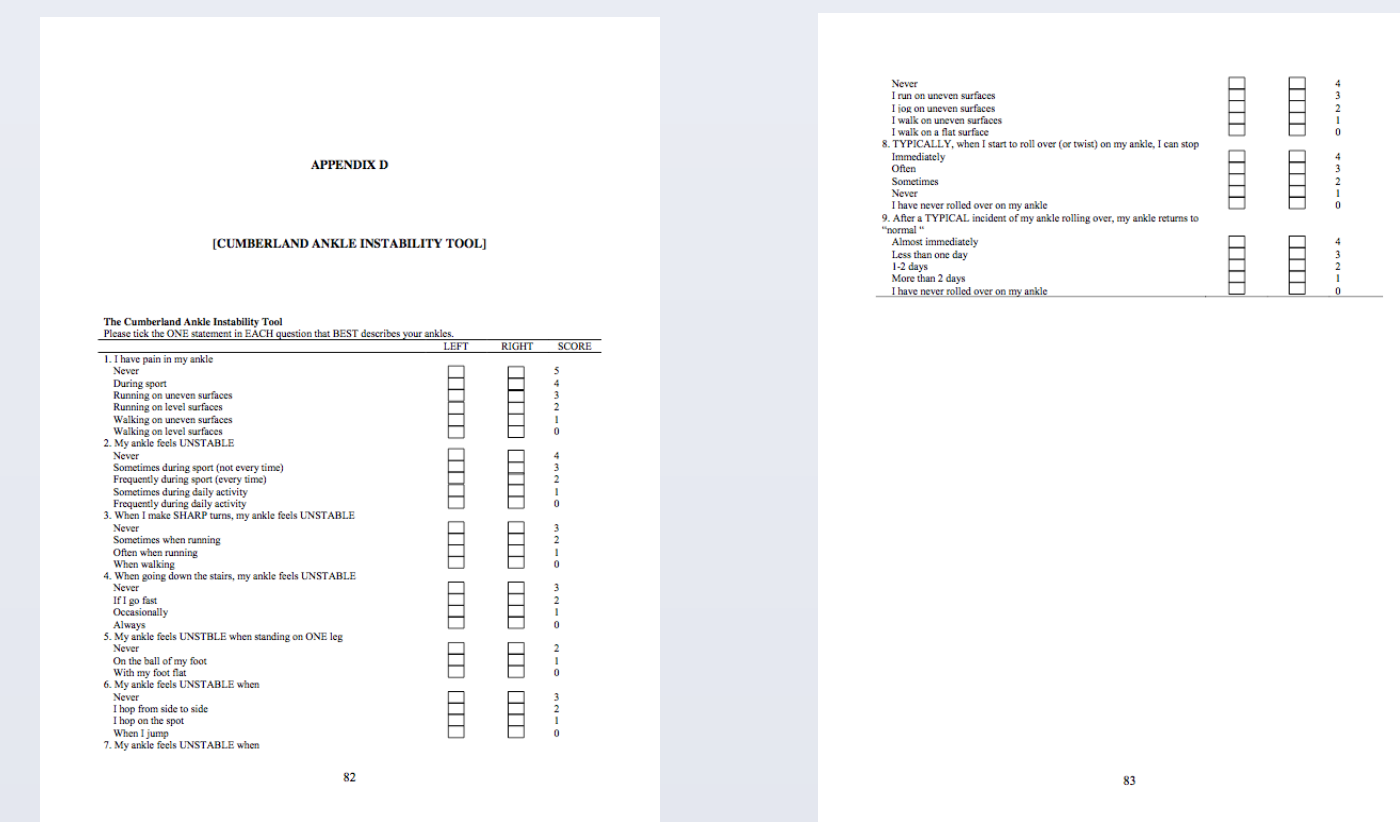
## Objectives

- Establish best interventions from the literature
- Utilize Best Practice Guidelines from The Journal of Orthopaedic and Sports Physical Therapy
- Review individual patient treatments logs, correlating interventions and number of visits with outcomes
- Decrease overall number of days of treatment
- Establish clinical recommendations in order to get patients back to full strength and best use the resources in the clinic
- Utilization of resources and interventions leading to optimizing outcomes and therefore reimbursement rates.
- Improving clinical efficiency to achieve maximum outcomes with decreased number of overall visits, therefore leading to lower patient costs.

## Materials and Methods

### Materials

In order to collect data, and gain a better understanding of the best recommendations for the treatment of Functional Ankle Instability, two previously validated tools were utilized. The first tool being the Cumberland Ankle Instability Tool. The Cumberland Ankle Instability Tool is a 9 question survey that is scored on a 30 point scale, and is used to measure the severity of Functional Ankle Instability. The second tool is the Foot and Ankle Ability Measure, which has the Daily Living Subscale and the Sports Subscale. The data that was utilized from the Foot and Ankle Ability Measure was the self reported percentages for both the Daily Living and Sports Subscales.



### Methods

Participants who came into the Freeman Athletic Training Room with a lateral ankle sprain participated voluntarily in the study, and informed consent was gained. Subjects were administered the Cumberland Ankle Instability Tool, and the Foot and Ankle Ability Measure, on the first day they were seen. They were then given the Cumberland Ankle Instability Tool and the Foot and Ankle Ability Measure when they were cleared for return to sport. Demographical data was collected for all the participants, and data was collected on the initial and return Cumberland Ankle Instability Tools along with the Foot and Ankle Ability Measure. One this data has been collected then the participants exercise logs were reviewed, and the type of treatment that they received was charted for analysis.

## Results

Upon comparing initial Cumberland Ankle Instability Tools with Cumberland Ankle Instability Tools when participants were cleared for return to sport, scores of the initial were lower than the return. The average for the initial scores was 16.875 for the left ankle and 20.5 for the right ankle. The average for the return scores was 25.25 for both the left ankle and right ankle. The initial Foot and Ankle Ability Measure scores were lower than the return scores for both the Living Subscale and Sports Subscale. The Living Subscale scores were higher than the Sports Subscale scores for both initial and return measures. The average initial Daily Living Subscale percentage was 82.71 and the return average score was 95. The average initial Sports Subscale percentage was 51.29 and the return average score was 87.5.

	Total Number of Surveys	Total Number of Initial Surveys	Total Number of Return Surveys	Gender	Age	Number of Repeated Visits	Number of Overall Days
Men's Basketball #1	4	2	2	M		20	10
Men's Basketball #2	1	0	1	M		20	N/A
Men's Lacrosse #1	4	2	2	M		19	25
Football #1	2	2	0	M		20	N/A
Track & Field #1	3	2	1	F		19	14
Track & Field #2	2	2	0	F		21	N/A
Volleyball #1	4	2	2	F		21	23
Volleyball #2	1	1	0	F		20	N/A
Women's Soccer #1	4	2	2	F		19	9
Totals	25	15	10	M=4 & F=5		19-21	AVG=16.2

	Initial Cumberland Ankle Instability Tool - Left Ankle Score	Initial Cumberland Ankle Instability Tool - Right Ankle Score	Return Cumberland Ankle Instability Tool - Left Ankle Score	Return Cumberland Ankle Instability Tool - Right Ankle Score	Initial FAAM Daily Living Subscale Percentage	Initial FAAM Sports Subscale Percentage	Return FAAM Daily Living Subscale Percentage	Return FAAM Sports Subscale Percentage
Men's Basketball #1	6	N/A	25	N/A	70	50	95	85
Men's Basketball #2	N/A	N/A	25	31	N/A	N/A	N/A	N/A
Men's Lacrosse #1	29	18	32	14	90	70	85	75
Football #1	16	19	N/A	N/A	89	89	N/A	N/A
Track & Field #1	11	28	14	27	80	75	N/A	N/A
Track & Field #2	17	21	N/A	N/A	90	50	N/A	N/A
Volleyball #1	16	30	N/A	N/A	N/A	N/A	N/A	N/A
Volleyball #2	8	N/A	25	N/A	75	25	100	100
Women's Soccer #1	32	7	32	29	85	0	100	90
Averages	16.875	20.5	25.25	25.25	82.71	51.29	95	87.5

	Acute/ Protected Motion Phase of Rehabilitation	Progressive Loading/ Sensorimotor Training Phase of Rehabilitation
	Early Weight Bearing With Support	Therapeutic Exercise and Activity Training
	Manual Therapy	Sport-Related Exercise and Activity Training
	Physical Agents (Cryotherapy, Diathermy, Electrotherapy, Low-Level Laser Therapy, & Ultrasound)	
	Therapeutic Exercises	
	Manual Therapy	
Men's Basketball #1	X	X
Men's Basketball #2	X	X
Men's Lacrosse #1	X	X
Football #1		X
Track & Field #1	X	X
Track & Field #2		
Volleyball #1	X	X
Volleyball #2	X	X
Women's Soccer #1	X	X
Averages	78%	44%

## Conclusions

Using Best Practice Guidelines from The Journal of Orthopaedic and Sports Physical Therapy to identify what interventions were utilized correctly, and what interventions should be utilized more often, the following conclusions were reached. Participants in the Acute/ Protected Phase of Rehabilitation used Early Weight Bearing with Support interventions 78% of the time, Manual Therapy interventions 22% of the time, Physical Agents 67% of the time, and Therapeutic Exercises 67% of the time. Evidence for Early Weight Bearing with Support is supported with strong evidence, Manual Therapy is supported with moderate evidence, Physical Agents are ranked supported with strong evidence to conflicting evidence depending on the agent, and Therapeutic Exercises are supported with strong evidence. All of the interventions are utilized effectively, but Manual Therapy could be used more often to effectively decrease overall days of treatment. Participants in the Progressive Loading/ Sensorimotor Phase of Rehabilitation used Manual Therapy 22% of the time, Therapeutic Exercises and Activities 78% of the time, and Sport-Related Activity Training 44% of the time. Evidence for Manual Therapy is supported with strong evidence, Therapeutic Exercises and Activities is supported with weak evidence, and Sport-Related Activity Training is supported with weak evidence. Both Manual Therapy and Sport-Related Activity Training could utilized more effectively. By correctly utilizing these interventions the patients number of overall visits will decrease; which in turn lead to better reimbursement rates, lower costs for the patient, and better resource utilization.

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## Acknowledgements

A special thank you to Angelo Lamatrice for all of his help with this project. It would not have been possible without his patience and guidance. Another thank you to all of the Freeman Athletic Training Room staff for all of their help, and a thank you to Paul Longenecker along with all of the Health and Sport Science Department.

