Is foam rolling an effective recovery tool for fatigue?

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Introduction

- Hausswirth and Le Meur (2011) stipulate that recovery is the physiological return to homeostasis after an inflammatory response from exercise
- It is important for individuals involved in exercise to mitigate risk of injury and optimize rate of recovery .
- Foam rolling (FR) is a type of "self-myofascial release" technique that is commonly used as it is inexpensive, compact and can be done individually

Purpose and Hypothesis

Purpose: If foam rolling is an effective recovery method for a maximal vertical jump on a force plate

Hypothesis: Foam rolling will result in a higher peak force output as well as a faster rate of force development (RFD) when comparing with other recovery methods

Methods

- 12 volunteers (6 female & 6 males)
- Age ranged from 19-40 years old

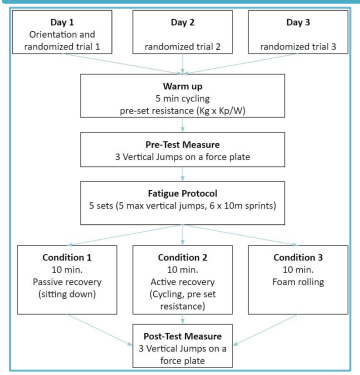

Figure 1. Experimental design

Figure 2. Participant performing the foam rolling recovery condition

Results

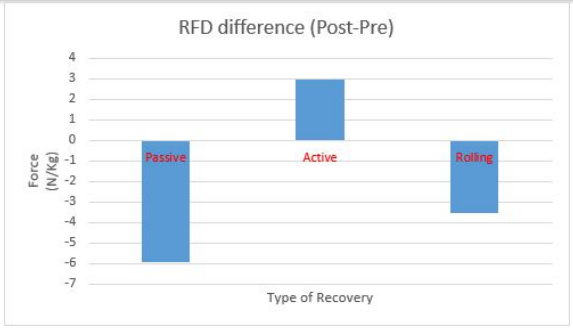

Figure 3. RFD values. Passive: -5.93 N/Kg; Active: 2.93 N/Kg; Rolling: -3.53 N/Kg

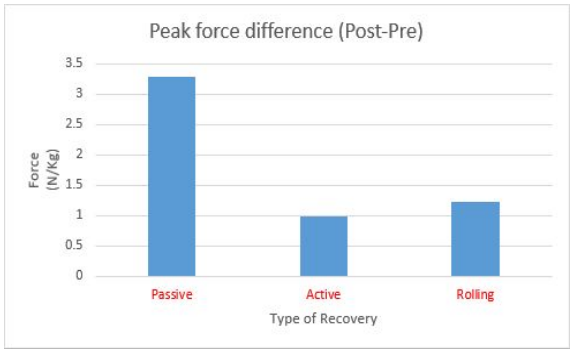

Figure 4. Peak force values: Passive: 3.30 N/Kg; Active: 0.98 N/Kg; FR: 1.22 N/Kg

Multiple Single Factor ANOVA

RFD		Peak Force	
FR vs. Passive	*P-value 0.78964036*	FR vs. Passive	*P-value 0.534626623*
FR vs. Active	*P-value 0.444404528*	FR vs. Active	*P-value 0.874415232*
Active vs. Passive	*P-value 0.394806729*	Active vs. Passive	*P-value 0.481824483*

Figure 5. No statistical significance difference between recovery methods

Discussion

- Passive recovery showed the greatest decrements in RFD due to rested neuromuscular propagation which could explain the slight decrement in RFD during foam rolling recovery
- Active recovery showed an improved difference in RFD over foam rolling. This could be due to primed neuromuscular connection when jumping on a force plate
- Though foam rolling did not show the significant difference, it does show that it contributed in a change where it did yield a slower RFD, as well as a higher peak force output
- Foam rolling more useful in warm ups than for recovery

Conclusion

- Passive recovery showed the greatest difference in both RFD as well as Peak
- Active showed the lowest differences in RFD as well as Peak
- Choosing a recovery method is a personal preference
- Future direction of research could look into landing forces for injury prevention

References

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