



# Female Volleyball and Soccer Athletes' Perceptions on the Use of Recovery Strategies: A Pilot Study

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## Introduction

- Post-activity recovery has been demonstrated to play an important role in physical performance and in decreasing the likelihood of injury occurrence.<sup>1</sup>
- It is important for athletes to obtain the appropriate balance between the stresses caused by training and competition and recovery. With this appropriate balance, there will be a decreased risk of injury and performance can be maximized.<sup>2</sup>
- Within this pilot study, recovery strategies such as active land-based, active water-based, stretching, and cold water immersion will be reviewed
  - Active land-based: similar to walking greater than or equal to 3 mph (3-6 METS, 64-76% of HR max), including light jogging or low intensity cycling
  - Active water-based: swimming, pool walking, or pool jogging (water activity staying within 3-6 METs, 64-76% of HR max)
  - Stretching: static stretching, proprioceptive neuromuscular facilitation (PNF), or dynamic stretching
  - Cold water immersion: ice baths or cold tubs
- While there is research analyzing the effectiveness of various recovery strategies, a psychological component to these recovery strategies must also be considered, as research has demonstrated that an athlete's belief in a recovery strategy can play a role in the effectiveness of the chosen method.
- There is growing evidence that recovery in an athlete is related to individual preference and perceptions of the intervention. Somatic reasons integrate with psychological factors within athletes which can influence their behavior.<sup>3</sup>
- While there have been multiple studies on the effectiveness of recovery methods, there have not been many studies looking into athletes' perceptions of the effectiveness of the strategies.

## Purpose

- The purpose of this pilot study is to investigate the perceptions of recovery strategies among collegiate female soccer players and volleyball players, and to see if there is a difference between the preferred methods of the two sports.
- The hypothesis is that collegiate soccer athletes will use post-activity recovery strategies more predicated on their tendency to utilize both type I and type II muscle fibers. It is also anticipated that athletes of both sports will not be fully aware of the beneficial effects that recovery strategies will provide for their physical performance.

## Methods

- Target sample size was 130 female collegiate athletes consisting of athletes from the University of West Florida, Florida Southern College, and Florida Gulf Coast University

## Results

Demographics	Soccer	Volleyball
Total Number	51	39
Mean Age	20.02 [+ or -] 1.76 years	19.64 [+ or -] 1.56 years
Years Experience	10 – 15 (86%)	5 – 10 (54%)
Months in Season	4 months (55%)	4 months (51%)
Games per Month	8 games (75%)	10 games (31%)
Practices per Week	4 practices (35%)	5 practices (54%)
Duration of Practice	2 hours (63%)	2.5 hours (51%)

- 98% percent of participants self-reported using recovery strategies

Most Frequently Used	Soccer	Volleyball	Total
Static Stretching	84%	90%	86.7%
Cold Water Immersion	71%	74%	72.2%
Dynamic Stretching	51%	54%	52.2%

- All other recovery strategies were below 40% for athlete use
- Statistical significance between soccer and volleyball athletes in the use of light jogging and pool jogging
  - 40% of soccer athletes used light jogging as a recovery strategy while < 1% percent of volleyball athletes used that recovery strategy
  - 20% percent of soccer athletes used pool jogging while 0% of volleyball athletes used that recovery strategy

Perceived Effectiveness	Soccer	Volleyball
Highest Rating of Perceived Effectiveness	Cold Water Immersion – 38% ranked it 5/5	Dynamic Stretching – 48% ranked 4/5 Cold Water Immersion – 41% ranked 4/5
Perceived Effectiveness of the Most Frequently Used Strategy	Static Stretching – 40% ranked it 3/5	Static Stretching – 43% ranked it 3/5

## Data Analysis

- Quantitative data analyses conducted on the scale-based ratings data using Statistical Package for Social Sciences (IBM SPSS Incorporation, version 22, Chicago, Ill, USA)
- Data was found to be approximately normally distributed with a sample size of 90, thus crosstab measurements to find out frequency statistics with an alpha set at .05 were conducted to compare ratings across the five recovery strategies
- Data were presented as means [+ or -] standard deviation (SD) or proportions (%) of responses.

## Summary

- 98% of the participants reported using recovery strategies.
- Static stretching is the most often used recovery strategy by both the volleyball and soccer athletes, but the athletes perceived it to be only moderately effective.
- Cold water immersion is the second most used recovery strategy and athletes perceive this strategy to be more effective than static stretching.
- The data analysis concluded that there is no significant difference in the most frequent recovery strategies used by soccer and volleyball athletes. However, with frequency counts, soccer players did participate in more recovery strategies than volleyball players.
- It is encouraged that athletes and coaching staff are informed about the effects different recovery strategies have upon the body to help enhance the perceptions the athletes have for specific recovery strategies, as well as to receive the most physiological benefits out of the recovery strategies.

## References

1. Jeffreys I. A multidimensional approach to enhancing recovery. *Strength Cond J.* 2005;27(5):78-85. <https://search.proquest.com/docview/212596717>. doi: 10.1519/00126548-200510000-00014.
2. Barnett A. Using recovery modalities between training sessions in elite athletes: Does it help? *Sports Med.* 2006;36(9):781-796.
3. Howatson G, Leeder J, van Someren K. The BASES expert statement on athletic recovery strategies. *Sport Exerc Sci.* 2016;48:6-7. [https://www.researchgate.net/publication/304771853\\_The\\_BASES\\_Expert\\_Statement\\_on\\_Athletic\\_Recovery\\_Strategies](https://www.researchgate.net/publication/304771853_The_BASES_Expert_Statement_on_Athletic_Recovery_Strategies).