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BY RICHARD BUCCIARELLI

## Injuries are a reality in the game of soccer today.

Having recently returned from the CONCACAF Women's U17 Championship tournamentinGuatemalaCity,Guatemala, with the Canadian Women's U17 team in May, 2012, one thing that stuck in my mind was the inherent difficulty in trying to prepare players physically to compete in tournaments with tight schedules and very little time off in between games.

During the group phase of the Championships, Canada had to play three games in six days, with only one day off in between each game. More recently, the UEFA European Championship presents Europe's best national teams with a similar problem, having to play three games in nine days, with only two days of rest in between each game. Over the past 15-20 years, several studies have indicated that players require 5-7 days of recovery in between games in order

to rehabilitate from muscle damage and restore the body's energy stores for optimum performance. Yet in all major international tournaments, the schedules rarely permit more than two days of rest between games, and teams that are successful (getting out of the group phase and into the knock-out phase) will end up playing as many as seven games in less than 30 days.

Coaches and fitness trainers of senior/ professional level soccer teams must pay careful attention to several different factors in order to prevent injuries from occurring during international tournaments such as the CONCACAF Championship, UEFA European Championship, or FIFA World Cup. One of these factors that is of particular importance is recovery and regeneration to reduce muscle damage and soreness

caused by playing several games in succession without adequate recovery in between. As mentioned previously, the activity of soccer players during an international tournament entails several games in succession without adequate recovery between games. These competitive demands may impose strains on various physiological systems, including the musculoskeletal system, to an extent where recovery strategies after exercise become influential in preparing for the next match so that performance can be restored to normal as soon as possible. This article will discuss two proven, and easy to implement strategies that will help players accomplish these goals during tournament play:

- 1. Whole Body Cryotherapy (ice baths)
- 2. Lower Limb Compression

## Whole Body Cryotherapy

Whole body cryotherapy is the practice of immersing the entire body, from the neck down, in a bath or tub full of cold / ice water (temperature between 5-10 degrees C) for 10-15 minutes post-training and games. In a recent study by Ascensao et. Al (2010), a group of 20 male professional soccer players were assigned to either a thermoneutral water (bath in 35 degrees C water), or whole body cryotherapy (bath in 10 degrees C water) group, immediately following a match. Various different measures were taken, including delayedonset-muscle-soreness (DOMS), as well as three different physiological measures of muscle damage, 30 minutes, 24 hours, and 48 hours following the match. The results of this study indicated that whole body cryotherapy significantly decreased DOMS, as well as the presence of biochemical markers of muscle damage, 24-48 hours post-game as compared to immersion in thermoneutral water. Thus the application of ice baths immediately following training and games for all soccer players is an efficient and worthwhile practice to prevent muscle soreness and injuries.

## THE SOCCER HALL OF FAME



Fitness Coach Richard Bucciarelli with WNT U17 National Team Players Ashley Lawrence and Madeline lozzi

Lower Limb Compression

Another recovery practice that has been shown to be useful in the reduction of muscle soreness (and thus in the prevention of injuries) in soccer players is the application of compression to the lower body. The use of compressive clothing is supported by encouraging scientific evidence indicating that the treatment can facilitate limb blood flow, reduce muscle oscillation, provide a "dynamic cast" facilitating muscle recovery, and influence the inflammatory process after exercise. In a recent study by Jakeman et. Al (2010), a group of female athletes performed a variety of physical exercises, including plyometrics and running, and then was assigned to groups that participated in two recovery activities - massage and lower limb compression. Different measurements were taken post-exercise, including perceived muscle soreness. The results of the study showed that wearing compression tights in the evening after exhaustive exercise significantly reduced perceived muscle soreness for up to 96 hours, as compared to passive recovery.

The combination of ice baths immediately after training and games, and lower limb compression in the evenings following training and games, is a proven method of reducing muscle damage, as well as perceived muscle soreness, in athletes. These two practices

were an integral part of the strategy that Michelle Beckles, the Athletic Therapist for Canada's U17 Women's National Team, and I used at the 2012 CONCACAF Championship tournament. Together we were able to keep all 20 players on our roster healthy, fit, and ready to play during the tournament, in which we won our first four games, losing only 1-0 to the United States in the Final, and

qualifying for the 2012 FIFA Women's U17

World Cup in Azerbaijan. These practices

worked well for us and should be part of the overall recovery plan for all soccer players and teams as a means of reducing injuries and optimizing performance.

Richard Bucciarelli is the President of Soccer Fitness Inc., and Fitness Coach for the Canadian National Women's U17 team, who will be heading to Azerbaijan in September for the 2012 FIFA Women's U17 World Cup. For more information about Richard and Soccer Fitness, please visit www.soccerfitness.ca.

