



**HELENA ANDERSSON** is a researcher in sport science who has worked with several women's soccer teams. She graduated with a Bachelor of Exercise Science at Griffith University, Australia in 1999. She earned her Master in Applied Sciences degree (Sport and Exercise Science) at Sydney University, Australia in 2001. In parallel to her doctoral studies at the School of Medical and Health Sciences at Örebro University, she has been working as a fitness coach for several soccer teams. These include the women's national teams of Sweden, China leading up to a 5th placement at the World Cup in 2007, and U.S.A leading up to a Gold Medal at the Beijing Olympic Games in 2008. She is currently working for the Swedish Football Association as a national instructor in physiology. Her main area of research includes physiological changes in players after soccer games and the following recovery processes.

This thesis aimed to investigate physiological changes occurring in elite female players after two repeated soccer games separated by active or passive recovery. The study was designed to mirror an actual competitive situation for elite female soccer players. Twenty-two players participated in two 90-min soccer games separated by 72 h of active or passive recovery. Several performance parameters, blood physical stress markers, oxidative stress markers, antioxidant compounds and cytokines were measured before, 5 h, 21 h, 45 h, 51 h, and 69 h after the first game and immediately after a second game. The active recovery training (cycling at 60% HRpeak; resistance training at <50% 1RM) lasted one hour and took place in the days between the games. The results showed that two soccer games induce similar acute changes in several physiological parameters. It also showed that elite female players have an efficient antioxidant defense system, which allowed the maintenance of a balanced redox status in response to soccer games. A strong and balanced pro- and anti-inflammatory response was observed after the first game. However, a dampened cytokine response occurred after the second game. The majority of the physiological parameters had fully recovered prior to the second game and the players' performance in the second game was not affected by the physiological changes induced by the first game. Finally, active recovery training performed between two games did not accelerate the recovery of several physiological systems in elite female players.

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## The physiological impact of soccer on elite female players and the effects of active recovery training



Doctoral dissertation by  
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