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Recovery Impact on Muscular Measures of Female Soccer Players

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Female soccer players are at a higher risk for injury because of their hip and knee structures. Injuries are also far more likely to occur in the second half of soccer games due to fatigue and lack of re-warm up after half time. **PURPOSE:** To investigate the effects of passive and active recovery on different muscular measures to see if injury could be prevented and performance improved. **METHODS:** Ten Shippensburg University Women's Soccer team players (age 19.2 ± 1.1 yrs) completed a battery of tests on two separate days; passive and active recovery days. Each day consisted of a warm up, two-eight minute 5v5 short sided games, and four of the same test batteries. Each test battery was measured: 1) after warm up, 2) after first half of game, 3) after the recovery period, and 4) after the second half of game. Each test battery consisted of measuring rate of perceived exertion (RPE), hamstring flexibility, and anaerobic power. Anaerobic power was measured using the Margaria-Kalamen Power Test and hamstring flexibility was measured using a sit and reach test. Two-way ANOVA with repeated measures was used to compare active versus passive data during multiple time points. **RESULTS:** The RPE after active recovery was significantly higher than during passive recovery (9.6 ± 1.4 vs. 6.9 ± 1.7 $p < 0.05$). Hamstring flexibility was similar at baseline on both days of testing (passive = 27.1 ± 9.0 cm, active = 27.4 ± 10.4 cm, $p > 0.05$), however after active recovery hamstring flexibility was 1.4 cm greater than after passive recovery (28.6 ± 9.4 vs. 27.2 ± 10.0 cm), although this difference was not statistically significant ($p > .05$). Both passive and active recovery resulted in an improvement of anaerobic power from the end of the first half to after recovery, with only active recovery showing a significant improvement. With passive recovery, anaerobic power increased slightly from 849.7 ± 188.5 to 858.5 ± 214.8 W ($p > 0.05$), while active recovery resulted in a significant anaerobic power increase from 779.1 ± 234.6 to 805.6 ± 205.0 W ($p < 0.05$). **DISCUSSION:** The increase in hamstring flexibility as well as anaerobic power seen with active recovery, during half time, could help to prevent injuries as well as increase athletic performance in the second half of game. If athletes are unable to participate in active recovery they should at least be rewarming up after half time.

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