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Post-Activation Potentiation and the Shot Put Throw

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ABSTRACT Acute post activation potentiation (PAP) is a physical conditioning activity that incorporates intense muscle activation to enhance muscular force production. Practical applications of PAP as a conditioning activity to enhance sport performance are of interest to athletes and coaches. **PURPOSE:** This study compared the effects of a dynamic warm-up and a dynamic warm-up followed by a PAP conditioning activity on shot put throw distance. **METHODS:** NCAA Division I male (n=6) and female (n=7) track and field athletes volunteered as participants for the study. Each participant was randomly placed into one of two groups. During the first test session one group performed a dynamic warm-up followed by an 8-minute rest period then a shot put throw test. The other group performed a dynamic warm-up followed by a PAP conditioning activity comprised of 3 repetitions of a hang clean and jerk at 80% 1-RM followed by an 8-minute rest period then a shot put throw test. During week 2 the two groups crossed over with respect to the warm-up conditions and repeated the shot put throw test. Three shot put trials were collected following each warm-up condition and the best score was used for subsequent analysis. The mean shot put throw distances were compared between warm-up strategies with a paired t-test. **RESULTS:** The shot put throw scores were: PAP 10.93±1.81* and non-PAP 10.57±1.84 meters (p=0.007). **CONCLUSION:** Within the parameters of this study, when compared to a standard dynamic warm-up, a dynamic warm-up strategy that includes a PAP event significantly improves shot put throw performance. **PRACTICAL APPLICATIONS:** Coaches and athletes could apply the dynamic warm-up that includes a PAP conditioning activity as implemented in this study to enhance shot put performance during competitive scenarios.

Keywords Shot Put, Hang Clean and Jerk, PAP
