Cricket fast bowling is an explosive intermittent type activity involving the entire body. Previous research has found that faster ball release speeds are related to faster angular velocities of the bowling arm humerus (1). Rate of force development and power output enhancement through heavy-ball bowling and exploitation of postactivation potentiation may increase bowling speed. Previous research has found baseball pitching velocity to be acutely enhanced and accuracy to be acutely diminished following heavy-ball pitching in the warm-up (3). The postactivation potentiation phenomenon may therefore exist after heavy-ball bowling in the warm-up, possibly enhancing bowling speed but possibly at the cost of bowling accuracy. Therefore, the purpose of this study is to examine the acute effects of heavy-ball bowling on fast bowling performance (speed & accuracy).

### RESULTS

A negative transfer from heavy to regular-ball bowling may explain the significant decrease in bowling accuracy in the heavy-ball bowling condition. The intermuscular coordination may have been negatively affected after bowling with the heavier cricket balls due to changes in force output. Impaired intermuscular coordination may have negated any postactivation potentiation induced from heavy-ball bowling. This may explain why there was no significant difference in bowling speed between conditions. Long-term heavy-ball bowling may allow a faster bowler to transition into regular-ball bowling quicker without negatively impacting intermuscular coordination. This may permit postactivation potentiation to be realised, and bowling speed could be enhanced without significant impairment in accuracy.

### PRACTICAL APPLICATIONS

The inclusion of heavy-ball bowling into the fast bowling warm-up may impair bowling accuracy, and the weights prescribed in this investigation do not appear to acutely enhance bowling speed. Bowling with a heavy cricket ball may still have its place for long-term power production for the upper body, and may be more applicable to fast bowlers with greater resistance training experience than those used in the current investigation. A heavier cricket ball (e.g., 400 or 350g) may be more effective in acutely enhancing bowling speed. To counteract the impaired bowling accuracy witnessed in this study, a gradual decrease in ball mass in the conditioning activity may allow bowling technique / intermuscular coordination to readjust in time for regular-ball bowling in match conditions.

### REFERENCES