

High intensity interval training as a method of fitness training in an underperforming elite youth player

Background: High intensity interval training has been reported to improve variables associated with fitness and performance in athletes from a number of sports. Throughout a football match, high intensity locomotive actions (such as sprints) generally account for a distance covered of around 200 m per half; however, it has been found that as the match progresses that this number will decrease. Therefore, due to the combined effects that high intensity interval training has been found to have on the development of fitness and increasing tolerance to sprint type activity in athletes from other sports, this training modality may be of particular benefit to performance in the latter stages of a football match; particularly as most goals relative to the rest of the game are scored in the last 15 min. Consequently, data is presented from an elite youth player (aged 16 years) who completed one session per week for three weeks of pitch perimeter running (on a 90 x 62 m pitch) using a 1:1 work to rest ratio (1 min on, 1 min recovery) that was part of an ongoing 13 week individualised fitness plan.

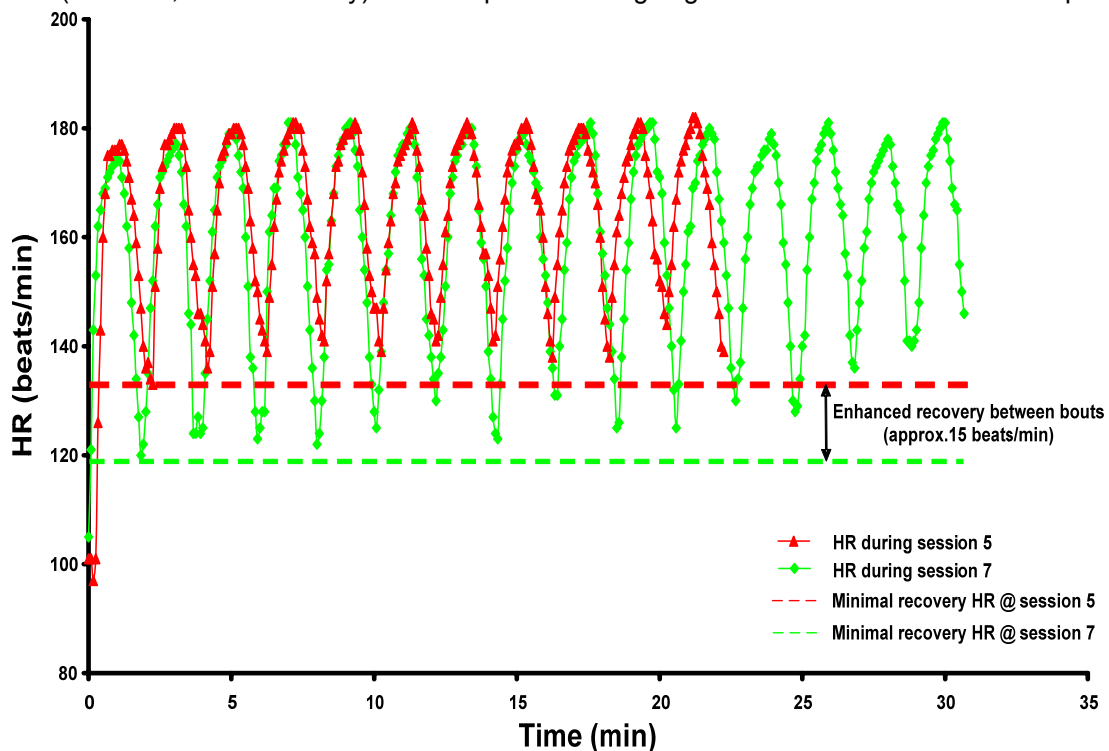


Figure 1: HR profile during two interval training sessions (Session 5: 04/11/09, and Session 7: 25/11/09). Differences in minimal recovery heart rate (HR) for each trial are denoted by the dashed lines.

Results: As a consequence of the high intensity interval training performed, the player was able to perform an increased number of laps of the pitch (11 vs. 15) which resulted from an improvement in 1 min recovery HR over the three week training period (difference of ≈ 15 beats/min).

Discussion: This data supports the use of high intensity interval training as a means of improving fitness in a professional youth football player. Previous work (please see HR during match-play report) has identified that match-play alone is not of a high enough intensity to improve fitness levels in elite youth players, consequently, the relatively simple but effective approach to improving football-specific fitness presented here may be of interest to sports scientists, fitness coaches and management staff at football clubs where individual players may be lacking in fitness.

Conclusion: Three weeks of one session per week of high intensity interval training improved performance and fitness of an underperforming elite youth player.