

PRACTICAL ASPECTS OF HIGH INTENSITY TRAINING FOR TALENT DEVELOPMENT IN A PROFESSIONAL FOOTBALL CLUB SETTING

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Most team sports are characterized by a high intensity, intermittent activity pattern. Team sport players (e.g. football, basketball, rugby, water polo) perform a high number of high intensity and sprint activities of various durations during match play. These bursts of intense exercise are interspersed with lower intensity activities also of variable duration. Insight into the cardiovascular and metabolic demands of these sports provided by simple physiological measurements such as heart rate and blood lactate also indicates that high demands are placed on both aerobic and anaerobic metabolic pathways during match play. In view of these observations, it is clear that any performance test aiming at the assessment of a player's physiological capabilities should take into account the intermittent nature of the game and try to mimic the metabolic demands of its intense exercise/recovery activity pattern.

Intermittent performance tests have been developed and validated to assess match-fitness in several team sports. Some of these tests have been used to assess the performance capabilities of players and referees, and to evaluate the effects of various training and nutritional interventions on fitness and performance.

One such test is the Yo-Yo Intermittent Recovery Test (Yo-Yo IRT), which has become in the past few years one of the most extensively investigated fitness test from a physiological perspective, but also one of the most widely used test in practical sport settings. The ability to perform intermittent high-intensity exercise for prolonged periods of time, as measured by the Yo-Yo IRT, constitutes a discriminative variable both in women's and men's football. In addition, individualized high intensity training adapted to the specific needs of each player could contribute to optimize player development and performance in an elite youth football academy setting. High-intensity running activities in the last 15-min period of a football game become fewer and shorter, and the distance covered by high-intensity running in this phase is related to the physical capacity of elite players, as assessed by the Yo-Yo IRT. When urgent enhancements in sprint performance are required, the sequence of loaded strength-power exercises (15–50% body mass) and unloaded high intensity exercises (jumps and sprints) or drills (small-sided games) may prove effective.

Repeated-sprint ability (RSA) tests have also been used in recent years to assess team sport fitness. Despite the increasing knowledge and interest in RSA, there is little information about the evolution of RSA with age in highly trained, developing, team-sport athletes. Recent studies indicate that performance in RSA improves during maturation of highly trained youth football players, although a plateau occurs from 15 years of age. In contrast to expectations based on previous suggestions, percent sprint decrement during repeated sprints do not deteriorate with age.