

FITNESS TESTING AND TRAINING OF THE TOP-CLASS FOOTBALL PLAYER

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In order to determine the fitness capacity of a football player various test can be performed. The maximum oxygen uptake of a player can be measured using an incremental treadmill test and then measuring the expiratory air towards the end of the test. However, the maximum oxygen uptake is not a sensitive measure of performance of a football player. In addition, the measurements require advanced equipment. Instead the endurance performance of football player can be determined in a simple way on the field by the Yo-Yo intermittent endurance test. Performance in the test is well correlated to the amount of high intensity work conducted in a game. The Yo-Yo intermittent recovery test can be used to determine the players' ability to perform repeated intense exercise during a game, which is essential for a top-class player (Bangsbo et al., 2008). Both tests have been shown to be sensitive to changes in performance of the elite football player, and increases of 20-40% are typically observed in the pre-season compared to only a few percent changes in maximum oxygen uptake. Sprint performance can be evaluated by carrying out repeated 30-metre sprints separated by 30 s of recovery.

The physical demands of a football player are high with elements of maximal force development, such as jumping, tackling and jumping, and fatigue does occur during a game. Therefore, it is important to prepare the players by fitness training, which can be divided into aerobic, anaerobic and isolated muscle training as well as coordination training. The aerobic and anaerobic training should preferably be performed in drills as this will ensure that the muscles used in football are trained and are obtaining the adaptations. In addition, such training does also develop the players' technical and tactical ability. The aerobic training can be evaluated by measuring heart rate, e.g. heart rate during aerobic high intensity should be at the least 80% of maximum heart rate and on average around 90% at the end of each interval. Anaerobic training can be conducted as speed endurance production training, where the players are performing almost maximally for 10-30 s followed by long recovery period, and speed endurance maintenance training with intense exercise periods lasting 20-60 s separated by relative short recovery periods (1-2 times the exercise periods). Additional aerobic and anaerobic training during the season have shown to improve performance level even for elite players. In agreement, short-term intensified training of already well-trained players can improve mechanical efficiency, Na⁺/K⁺ pump α2 isoform expression and repeated sprint performance. The isolated muscle training consists of muscle power training, muscle endurance training and flexibility training.

References

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