Change of direction skills in elite football players in relation to speed qualities and competitive level

Rostgaard, Thomas; Rasmussen, Lars Raundahl; Siggaard, Peder; Gunnarsson, Thomas Gunnar Petursson; Bangsbo, Jens

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INTRODUCTION:

It is well-established that football players during the course of a game perform intermittent exercise with changes in activity every 3–5 seconds.

Due to multiple brief intense actions involving jumping, turning, tackling, high-speed runs, and sprints, the game of football is physically demanding (Bangsbo, 1994), and requires a highly complex hybrid of physical fitness abilities, including speed, agility, and quickness. As such, change of direction (COD) skills of the individual player can be considered an important sub-component of overall physical performance capacity.

The ability to change direction multiple times at high speed is believed to be an independent measure of performance, and it improves in straight-line sprinting speed does not appear to transfer to COD performance (Young et al., 2001). The COD test which makes it possible to evaluate the ability(s). Numbers are Pearson's r (p value). Level of significance; p < 0.05.

RESULTS:

Adult elite players showed superior COD test performance (+4.2%) compared to youth elite players (p=0.05 (fig.3). Test results in the 5, 10, and 30 m sprint test showed no difference when the two levels of players were compared (AE vs. YE players, p=0.05 (tab.1). COD test performance was not related to the sprinting performance measures in either group of players (p=0.05 (tab. 1). COD test-retest performance in the YE group was not different and the CV was 1.1% (fig.4).

CONCLUSION/DISCUSSION:

The lack of relationship between COD and straight-line sprinting performance suggest that COD ability is an independent measure of performance, and that it should be tested accordingly. The COD test can reveal a difference between two levels of elite football players, and due to its high level of reproducibility, the COD test may serve as a valuable tool in the selection process of talented football players in the transition from youth to adult level elite football.

REFERENCES:


METHODS:

Fifteen youth elite (YE) football players (age: 18.2±0.2 yrs) and 16 adult elite (AE) football players (24.0±1.3 yrs) completed three attempts on a COD test consisting of multiple stopping maneuvers, transitions from forwards to backward running, and acceleration over short distances (< 5 m). This test replicates a series of movements often to be found during match play, and can be considered a football specific COD test.

Also, the players carried out three straight-line sprints separated by 2 min of passive rest. Infrared light sensors were used to determine COD performance, and running time after 5, 10, and 30 m.

On a separate occasion the reproducibility of the COD test was evaluated in the YE group (N=10). Coefficient of Variation (CV) was calculated as the standard deviation of repeated measures divided by the mean times 100.

PLOT FIGURES:

Fig. 1: Setup and administration of the COD test can be followed as a video sequence. Scan the Quick Response Code (QRC) or log on to http://www.youtube.com/watch?v=QOGjQfs1o80

Fig. 2: Set-up of the COD test used in the present study (Raundahl’s Agility Test) (please consult fig. 2 for administration of the test).

Fig. 3: Comparison of sprint performance (s) in different levels of elite football players (upper panel). Numbers are mean ± SEM; Correlation matrix (lower panel) between sprint performance and COD ability. Numbers are Pearson’s r (p value). Level of significance; p < 0.05.

Fig. 4: Test-retest reproducibility of the COD test. The correlation coefficient was 0.91 (N= 10, P < 0.005). Full line is the identity line (x = y).

CONTACT: Thomas Rostgaard, The August Krogh Institute, Universitetsparken 13 - 2nd floor (#204) – 2100 Copenhagen, Denmark. E-mail: trandersen@ifi.ku.dk