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New agility tests can discriminate between soccer players at different performance levels

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Agility—the ability to rapidly and tactically change speed or direction—is an important factor in soccer performance. A new study reports that two new agility tests can successfully discriminate between youth soccer players at under-17 and under-19, with the older players showing enhanced agility. In contrast, other characteristics thought to be associated with agility, such as body dimensions and sprinting abilities, were not significantly different between the two age groups. Published in open-access journal *Frontiers in Physiology*, the study suggests that specific agility training could pay dividends in enhanced youth soccer player agility and performance.

The next World Cup is almost upon us, and for the duration of the tournament most people will take an interest in soccer. However, for soccer players and coaches, honing soccer skills is a year-round commitment. But what makes a good soccer player, and how can this be measured?

Sports scientists are developing tests to identify player strengths and new coaching strategies. One focus is agility, given its importance to soccer performance. Parameters thought to be linked to agility include sprinting and jumping abilities as well as body dimensions. However, most current agility tests were developed for sports other than soccer.

"During a soccer game, players frequently change their direction and speed in reaction to external factors, such as an opponent moving closer," explains Professor Damir Sekulic from the University of Split in

Croatia. "A player can also pre-plan quick changes in direction speed, such as running into a free space to get open for a pass. While both reactive and pre-planned agility are important in soccer, there is a lack of soccer-specific agility tests."

Sekulic, along with Professor Haris Pojskic from Mid Sweden University and other colleagues in Croatia and Sweden, therefore set out to develop agility tests specifically for soccer players.

The researchers asked players to dribble a ball towards four plastic cones spaced widely apart. When each player approached the cones, a light turned on above one of them. The player then needed to bounce the ball off a board near the lit cone and return to the start position as quickly as possible.

The rationale behind the test is that more agile players will complete the task in a shorter time. To assess reactive agility, the researchers did not tell the players which cone would light, while to test pre-planned agility, the players knew which cone would light and so could plan their movements.

The research team used the tests to assess youth soccer players in Sweden in under-17 and under-19 divisions. As the older players had been in soccer training for longer, it was expected that they would have higher performance levels. The researchers also measured other parameters thought to be linked to agility, including sprinting/jumping abilities and body dimensions.

Players in the under-19 group showed higher reactive and pre-planned agility scores. These findings are striking, because the new agility tests were the only measurements that distinguished between the older and younger players. The other parameters, such as jumping and sprinting ability, were not significantly different between players of different

ages.

"The superiority of the under-19 players in agility may be a direct consequence of their longer involvement in soccer training," says Pojskic. "Coaches who work with young soccer players should be aware that agility development between 17 and 19 years is mostly dependent on specific training for motor proficiency. There is no evidence that developing other capacities, such as sprinting or jumping, has any positive impact on agility in players of this age."

The findings suggest that specifically developing agility in youth soccer players, rather than focusing exclusively on attributes such as jumping and sprinting abilities, could enhance player agility and performance.

More information: Haris Pojskic et al, Importance of Reactive Agility and Change of Direction Speed in Differentiating Performance Levels in Junior Soccer Players: Reliability and Validity of Newly Developed Soccer-Specific Tests, *Frontiers in Physiology* (2018). DOI: 10.3389/fphys.2018.00506

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