

**Title**

Kinematics of football's overhead throwing

**Aim of research**

The main aim of the research was to find out of the differences between two ways of soccer throw in from point of the movement performance. We evaluated speed of the ball during the phase of release, distance of the throw and the trajectory of flying the ball which has stated like the criterion of performance. Movement pattern was observed by means of the spatio-temporal interaction.

**Methods**

Observed group was formed by  $n = 13$  soccer skilled soccer players. They executed overhead soccer throw-in by two ways: 1) static throw-in, 2) throw-in after run up. All throws was executed in line with rules of the soccer throw-in. The speed of the ball was stated by means of radar gun STALKER. The horizontal distance and trajectory of flying phase of the ball was diagnostified by 2D kinematics analysis and evaluation of the throwing technique was realized by 3D spatial video analysis.

**Results**

The comparison of the two ways of soccer throw-in shows that higher speed of the ball during the phase of releasing and longer distance of throw was in favour of the way after run up throwing. We found out the some differences between intraindividual attempts of the throws. It seems, that the key phase of this movement is backswing phase over the head and forward swing phase till the moment of the releasing the ball.

**Keywords**

soccer, soccer throw in, kinematics analysis, play skills