

IMPROVEMENTS IN JUMPS AND SPRINT PERFORMANCE BY A SPECIFIC TRAINING IN ELITE YOUTH SOCCER PLAYERS

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Speed strongly depends on intra- and intermuscular coordination. Specific training interventions were developed to improve coordination in order to optimize quickness in soccer players. The present study investigates the effects of a specific practice of run-jump coordination on selected quickness parameter.

Seventeen players of the U-15 team of the high performance centre of a professional soccer club (Ø 14.2 years old, 7 training sessions per week) were tested. To test quickness we measured Drop Jumps from a 20cm height (reactive strength indices-RSI = vertical jump high/ground contact times in mm/ms), the maximum stride frequency (Hz) via a 6-Second-Feet-Tapping, speed (s) via a 10m/20m sprint, agility (s) as a defined-Agility-drill, Dribbling in same Agility-Drill (s). The intervention lasted for 6 weeks run coordination, followed by another 6 weeks of jump-coordination practice. All of the above tests were performed at baseline and repeated after 6 and 12 weeks, respectively. Each intervention was carried out twice a week. We analysed mean, minima and maxima of the test parameters. Differences were examined for significance via paired sample t-tests.

The RSI increased, from 1.9 ± 0.6 mm/ms, by 29% to 2.29 ± 0.21 mm/ms ($p < .05$) after 12 weeks of training. At the same time the average ground contact times decreased nonsignificantly from 160ms to 153ms to 144ms in the Drop Jump. In the 20m sprint the soccer players first deteriorated from 3.40s to 3.47s ($p < .01$) after 6 weeks, but improved by 3.2% to 3.29s ($p < .001$) after 12 weeks.

The results show improvements in soccer specific quickness parameters after 6 weeks of specific coordination training. Improvement in the RSI due to reduced ground contact times may improve the usage of the Stretch-Shortening Cycle for change of direction or acceleration. It seems to be crucial to take into account regeneration times when testing for training induced adaptations in young elite soccer players.