

The Relationship Between Repeat Sprint Ability and Sport-Specific Skills in Elite Youth Soccer Players

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Objective:

To investigate the relationship between repeat sprint ability (RSA) and sport-specific skills in elite youth soccer players.

Subjects:

Sixty-seven elite youth soccer players (age: 16.3 ± 0.8 years, weight: 69.0 ± 8.7 kg, height: 179.4 ± 8.3 cm, BMI: 21.3 ± 1.4 kg/m²).

Observation Technique:

The test battery assessed speed and strength (30-m sprint, countermovement jump), sport-specific skills (change of direction (COD), agility t-test, dribbling), and anaerobic endurance (RSA) using the 6 x 20/20 protocol: 6 20-meter sprints with 20 seconds of passive rest.

Outcome Measures:

Mean time across all RSA test sprints (RSAmean) and fatigue indices caused by repeated sprints, such as the fatigue index (FI) and percentage decrement score (Sdec), were analyzed. A correlation was considered strong if it was between 0.70 and 1.00, moderate if it was between 0.30 and 0.69, and weak if it was between 0.01 and 0.29. The Shapiro-Wilk test was used to assess the normality of distribution. Pearson's or Spearman's correlation tests were used to determine the relationships between the analyzed parameters. The test results were obtained using a SmartSpeed Pro timing system (VALD Performance, Australia).

Results:

RSAmean showed a moderate positive correlation with COD performance ($r_s = 0.589$, $P < 0.001$) and dribbling skills ($r_s = 0.507$, $P < 0.001$), and a strong positive correlation with agility t-test time ($r_s = 0.764$, $P < 0.001$). No significant correlations were found between FI or Sdec and sport-specific skills.

Conclusions:

A **significant positive** relationship was found between the mean time of **RSA** test sprints and the performance **in dribbling, change of direction, and agility t-test** in elite youth soccer players. Practitioners should consider these findings when designing training programs aimed at developing sport-specific skills.

Correlation Matrix Heatmap



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