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A TOTAL SAMPLE VS. PLAYING-POSITION APPROACH TO IDENTIFYING RELATIONSHIPS BETWEEN DIFFERENT AGILITY COMPONENTS IN BASKETBALL

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Purpose: Non-planned agility (reactive agility - RAG), and pre-planned agility (change of direction speed - CODS) are important determinants of success in basketball. However, the association between these two conditioning capacities in high-level basketball players is rarely evidenced. The aim of this investigation was to evaluate the relationship between basketball-specific CODS and RAG in the total sample, and separately for three main playing positions in the game of basketball (i.e. guards, forwards and centers).

Methods: The sample comprised 106 national/international-level male basketball players (age: 21.9±3.5 years; body height: 195.1±7.9 cm; body mass: 90.1±10.0 kg), divided according to their playing positions in game (guards, N = 49; forwards, N = 22; centers, N = 35). The variables included body mass, body height, and body fat percentage; as well as basketball-specific CODS and -RAG. The reliability of CODS and RAG was evidenced by intra-class-coefficients (ICC). Differences among positions were established by one-way analysis of variance, consecutive post-hoc analyses, and effect size differences (η²). Finally, the relationship between variables was established by means of Pearson’s moment correlation coefficient (r), which was calculated for the total sample, and then separately for each playing position.

Results: The intra-session reliability was somewhat higher for CODS, than for RAG (ICC: 0.81 and 0.76, respectively). The centers were tallest (F: 67.75, p < 0.01; η²: 0.57), and heaviest (F: 39.01, p < 0.01, η²: 0.44), followed by forwards. The guards and forwards achieved better results than centers in CODS (F: 5.19, p < 0.01; η²: 0.09), and RAG (F: 3.85, p < 0.05; η²: 0.07). When observed for the total sample, the CODS and RAG shared 49% of common variance (r: 0.70). When calculated for playing positions, the highest correlation between CODS and RAG was evidenced for centers (r: 0.81), then for forwards (r: 0.71), and guards (r: 0.51).

Conclusion: Relatively strong correlations between CODS and RAG among forwards and centers implies the possibility of simultaneous strength and conditioning of these capacities for these two playing positions. Meanwhile, because of the small common variance, separate training for RAG and CODS is warranted for guards. The study highlights the necessity of a position-specific approach to evidencing determinants of sport-specific conditioning qualities for high-level players.

Keywords: pre-planned agility, non-planned agility, team sports, sport-specific test