Introduction: The anthropometric profile, specifically body composition, plays a crucial role in the physical performance of volleyballers. Since there are varying positions in volleyball, it is likely that differences exist in anthropometric and physical performance profiles among players due each role’s specific physical requirements. Objectives: The aims of this study were to analyze the anthropometric and physical performance profiles of elite female volleyballers, to determine any differences in these features among different playing positions. A further aim was to examine any relationship between anthropometric measures and measures of performance. Methods: This study assessed 42 female professional volleyball players (Age: 27.2±5.4 years). Players were categorized according to playing position: middle blockers (n=12), opposite hitters (n=6), outside hitters (n=12), setters (n=8), and liberos (n=4). Anthropometric measurements assessed were: height, weight, fat mass (5 skinfolds) musculoskeletal mass (5 corrected girths). Additionally, the physical performance parameters examined were: jump tests (vertical-jump and spike-jump), speed, agility, and strength tests (crunches test and overhead medicine ball throw). Results: In terms of height middle blockers were the tallest (186.5±1.4 cm), while liberos were the shortest (166.7±8.1 cm). There were significant differences in body mass among positions (p<0.05) with opposite hitters the heaviest (73.6±5.5 kg), and liberos the lightest (58.2±5.7 kg). Liberos displayed significantly lower (p<0.05) chest, mid-thigh, calf and waist girths and musculoskeletal mass any other position. For skinfolds (fat mass) the significant differences were as follows: liberos < setters for abdominal, setters < middle blockers for calf and opposite hitters < setters for mid-thigh. Finally, significant positive correlations (p<0.05) were found between the jump tests and the mid-thigh and calf corrected girth. Conclusion: These findings suggest that height offers a performance advantage for middle blockers, whereas lower body mass, especially a lower fat mass, seems to be advantageous for setters and liberos. Additionally, high musculoskeletal mass together with an appropriate fat mass are advantageous for opposite and outside hitters.

Keywords
Body composition, Sport performance, Volleyball.