

ANTHROPOMETRICAL AND PERFORMANCE CHARACTERISTICS OF ELITE AUSTRALIAN RULES FOOTBALL PLAYERS

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Introduction

Both young and professional Australian Football (AF) players train to develop their physical performance and anthropometrical characteristics to improve their chances of selection. However, the relative importance of anthropometry and its relevance to performance in AF is not well known. Therefore, the aim of this study was to compare the anthropometrical characteristics in youth, semi-professional and professional AF players. A second purpose to examine their relationships with physical performance.

Methods

Forty seven professional (AFL), 22 semi-professional (VFL) and 21 youth elite (TAC) AF players were assessed for anthropometrical profile (segmental and whole body lean mass (LM), body fat (BF) and bone mineral content (BMC)) with a pencil beam DEXA (Lunar DPX-IQ, GE). Physical performance characteristics (bench press, bench pull, weighted jump squat) were also assessed. One way ANOVA assessed differences between the playing levels (AFL, VFL and TAC) in these measures. Relationships between anthropometry and physical performance were assessed with a Pearson's correlation. Significance was set at $P < 0.05$.

Results & Discussion

The AFL and VFL players were older, taller and heavier than the TAC players ($P < 0.05$). The AFL players had greater total LM than both the VFL and TAC players, however, there were only segmental LM differences between the TAC and AFL players ($P < 0.001$). There were no differences between the playing levels in either whole body or segment LM or BF when expressed as a proportion of mass. However, there was greater BMC in each body segment in the AFL compared to the TAC players. The AFL players were stronger and had greater leg power than the VFL and TAC players. Both whole body and segmental lean mass were correlated with bench press ($r = 0.43-0.64$), bench pull ($r = 0.58-0.73$) and jump squat performance measures ($r = 0.33-0.55$).

Conclusion

Both whole body and segmental LM are different between playing levels of elite AF players. These differences are most likely reflective of differences in training and maturation status. The increased LM at higher levels and their relationships with performance measures highlight the importance of optimizing LM in young players. Future studies should examine training factors affecting LM during the season.