

ANTHROPOMETRICS OF ELITE MALE ITALIAN RUGBY UNION PLAYERS

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Introduction

Anthropometric evaluation of athletes is essential to assist talent selection, guide training, monitor seasonal variations and quantify the evolving demands of the game. Evaluation requires a specific normative database that accounts for different geographical, technical and age contexts. Yet, scientific data on rugby union players are relatively scarce, dated and mainly referred to the southern hemisphere, therefore limiting their applicability to different contexts. To fill in this gap, this descriptive study was aimed at providing normative data on anthropometric characteristics of elite senior male rugby players of the northern hemisphere.

Methods

In 123 male players from the National Italian senior rugby union team body weight, stature and % body fat (plicometry) were measured between 2006 and 2009. Mean and standard deviation were calculated for forwards (FW) and backs (BK) and for positional subgroups and compared by t test ($p < 0.05$).

Results & Discussion

FW were significantly heavier (108 ± 8 vs 91 ± 6 Kg), taller (190 ± 7 vs 183 ± 5 cm), had a larger % body fat (16 ± 4 vs $11 \pm 4\%$) and fat free mass (91 ± 5 vs 80 ± 6 Kg) compared to BK.

Group	FW				BK		
	Props (#18)	Hooker (#6)	Locks (#14)	3rd row (#22)	(#10)	fly-half, centre (#30)	wings, full back (#27)
age (yrs)	27 \pm 5	26 \pm 3	24 \pm 3	25 \pm 3	26 \pm 5	24 \pm 3	24 \pm 3
Mass (kg)	116 \pm 7	103 \pm 1*	109 \pm 6*°	103 \pm 6*°§	87 \pm 4	92 \pm 6	90 \pm 6
hight (cm)	185 \pm 3	181 \pm 1*	197 \pm 2*°	190 \pm 5*°§	178 \pm 3	183 \pm 5	185 \pm 5
body fat (%)	20 \pm 3	17 \pm 2*	17 \pm 3*	13 \pm 3*°§	12 \pm 3	11 \pm 4	11 \pm 3
Fat Free Mass (Kg)	93 \pm 5	86 \pm 3*	90 \pm 4	90 \pm 4*°	77 \pm 4	81 \pm 5	80 \pm 6
FFM/hight (Kg/m)	50.3 \pm 2.5	47.4 \pm 1.5*	45.6 \pm 2.4*	47.1 \pm 1.9*°§	43.2 \pm 2.0	44.5 \pm 2.0	43.5 \pm 2.3

*, ° and § indicate, respectively, a significant difference vs props, hookers and locks. No differences were detected among BK subgroups.

Conclusion

Our study provides a large normative database for elite male rugby union players in the northern hemisphere. Furthermore, it confirms previous data on elite senior players of the southern hemisphere and role differences, in all the measured parameters, between FW and BK and between FW subgroups. While these data may not be representative of the Italian national senior championship, they confirm the specificity in the physical requirements of rugby union in individual playing positions at the international level.