

BODY COMPOSITION OF AN ELITE GROUP OF SPORTSMEN

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In recent years, growing interest has been shown in the assessment of human anthropometry and body composition. First-class athletes represent a group where information of this type is of extreme value. Body-stature characteristics may influence particular sporting ability and performance. High level training may lead to variation in body composition from population standards.

In this study, the anthropometry of 42 senior players from a Victorian Football League team was investigated. The assessment was carried out over a 2-week period in the middle of the season, and conformed to literature techniques. Indices under study included height, weight, circumferences at mid-arm, chest and waist (measured with a fibreglass tape) and skinfold thicknesses at five sites: biceps, triceps, subscapular, supraileac and mid-abdominal. Skinfold thicknesses were measured with John Bull calipers (exerting pressure = 10 mm Hg). All measurements were taken on the non-preferred side of the body. Body mass index (= w/h^2) and mid-arm muscle circumference (Jelliffe 1966) were calculated. Body-fat percentage was estimated from the sum of four skinfolds (Durnin and Womersley 1974).

Index	Mean	Standard Deviation	Range
1. Age (years)	23.00	3.60	18.0- 32.0
2. Height (cm)	182.00	6.61	171.0-197.0
3. Weight (kg)	81.75	6.49	68.1- 95.5
4. Body mass index (kg/m ²)	24.70	1.55	21.8- 27.5
5. Chest circumference (cm)	100.40	3.96	93.3-109.5
6. Waist circumference (cm)	84.37	3.37	79.0- 94.0
7. Mid-upper-arm circumference (cm)	32.19	2.08	28.6- 38.8
8. Mid-arm muscle circumference (cm)	29.35	1.73	26.8- 33.8
9. Triceps skinfold (mm)	9.03	2.94	4.4- 11.7
10. Biceps skinfold (mm)	3.92	0.75	2.8- 5.7
11. Subscapular skinfold (mm)	9.82	2.03	6.5- 14.4
12. Supraileac skinfold (mm)	10.89	2.91	6.5- 19.5
13. Sum of 9, 10, 11 & 12 (mm)	33.66	6.89	22.4- 52.2
14. Mid-abdominal skinfold (mm)	10.76	4.44	5.5- 20.8
15. % fat	14.22	2.60	9.28- 19.40

This study shows a preliminary assessment of body composition in a specific group of sportsmen. Further work is being done to compare characteristics of this group to the standard population and to other special groups. Differences in body composition within the group itself might be related to different field positions or measures of ability. It would be of interest to complete a total profile of the footballer, including dietary, biochemical and social data, to note relationships between these characteristics.

DURNIN, J.V. and WOMERSLEY, J. (1974). *Brit. J. Nutr.* 32: 7.
 JELLIFFE, D.B. (1966). WHO Monograph No. 53.

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