LETTER

Reference body composition and anthropometry

Jordão et al[1] have compared midarm body composition of subjects with different nutritional status, using computed tomography (CT) scan and anthropometry. In detail, they estimated the traditional Jelliffe upper arm fat area (UFA) formula[2] calculated from arm circumference (C) and triceps skinfold (T), reaching the conclusion that this formula underestimates the fat area. This conclusion was already reported by other authors.[3,4] A few years ago we conducted a similar study, comparing anthropometry and magnetic resonance imaging (MRI) in obese and normal weight children.[5] We also found that the Jelliffe formula underestimated fat area in both groups and more markedly in the obese. Moreover, we proposed a simplified formula $C \times (T/2)$ that we named the upper arm fat area estimate (UFE), and found its results very close to MRI data in both studied groups.

Using mean C and T data reported in Jordão's paper,[1] we calculated the UFE, and compared the results with UFA and CT scan data. Table 1 shows closer values to CT scan using UFE than using UFA, suggesting that UFE also applies to adults. However, it appears to overestimate the arm fat area in malnourished subjects.

These observations suggest the need for studies, conducted on large patients samples of different ages, comparing anthropometry to reference body composition methods, in order to develop new indices and to optimise their prediction in subjects with different nutritional conditions.

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Table 1 Upper arm fat area calculated from Jelliffe (UFA) and Rolland-Cachera *et al* (UFE) formulas compared with computed tomography

Fat area (cm²)	Healthy women	Obese women	Healthy men	Malnourished
UFA[a]	18.1	60.5	17.1	7.33
UFE[b]	25.3	63.7	21.5	10.1
Computed tomography[a]	25.8	76.5	22.9	8.37

[a]In Jordão *et al.*[1] [b]Calculated from the mean arm circumference and triceps skinfold in Jordão *et al.*[1]

References

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