

INFLUENCE OF BODY BUILD ON BODY COMPOSITION IN ABORIGINES

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In 1984 Gracey et al. reported that less than 60% of a sample of 388 female Aborigines of childbearing age living in the Kimberley region of Western Australia had a satisfactory nutritional status. One sixth of the subjects were classified as undernourished on the basis of body mass index (BMI) and one quarter, mostly older women, were judged to be overweight. The 50th centile for BMI increased from 18.7 at 15-19 years to 26.6 kg/metre squared at 30-34 years.

In order to clarify the situation with respect to nutritional status Rutishauser and McKay (1986) carried out a more detailed anthropometric study on 117 Aboriginal women, aged 15-79 years, from the same region. From skinfold measurements made on these women it was clear that Aboriginal women with a BMI below 20 did not lack subcutaneous fat. Estimates of percent body fat based on the sum of four skinfolds (Durnin and Womersley 1974) indicated that their average body fat (24%) was well within the normal range for young women, while Aboriginal women with a BMI greater than 20 had an average body fat in excess of 30%. These estimates of body fat suggest that the relationship between subcutaneous fat and BMI differs from that in women of Caucasian origin and this was later confirmed by regression analysis of BMI and a number of anthropometric measurements in both Aboriginal and Caucasian women (Rutishauser 1987). For a given sum of skinfolds Aboriginal women were found to have a BMI which was about two units lower than that for Caucasian women, while for a given arm circumference Aboriginal women had a BMI one to two units higher than Caucasian women. These differences are likely to be due, at least in part, to differences in body proportions between the two groups (Abbie 1957).

Without more direct measurements of body composition, which are independent of race specific prediction equations, it is not possible to interpret these differences in relation to nutritional status. The present study was, therefore, undertaken to provide additional information on body composition by measurement of total body water and to extend the observations to men. Results of anthropometric, bioelectrical impedance and total body water measurements on 25-30 adult Aborigines of both sexes are reported and discussed in relation to the influence of body proportions and to their implications for the assessment of nutritional status.

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