



## Body Composition in Tribal Indian Girls from the North-East India

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Measurement of body composition is an essential part of nutritional assessment of an individual. Studies report that body fat in Indian children is higher for a given body mass index than in western populations [1]. Body fat tends to increase with age in girls and various factors such as dietary intake, physical activity, pubertal stage and ethnicity influence the body composition. India being a diverse country, body composition of Indian girls is likely to be different in different geographical regions, such as is reported in the current study [2].

There is very little data on body composition of tribal girls, though tribals make up around 8.6% of the total population. In the current study by Saha et al., in 6-12 y-old Chakma girls, authors found that girls from the Chakma tribe from Tripura had higher body fat till around 9 y of age, after which they were comparable to non-tribal Bengali girls [2]. Santhal girls had a body fat percentage which was much lower than that of the Chakma girls at all age groups [3], including at 12 y (10.8% in Santhal girls vs. 18.4% in Chakma girls). Interestingly, body fat was much higher in rural Karbi Anglong adolescent girls from Assam, being 23.5% at 10 y and 26.1% at 12 y [4]. On comparing the body mass indices, they were very similar in Chakma girls

(14.3 to 17.7 kg/m<sup>2</sup>, 6-12 y), non-tribal Bengali girls (13.1 to 17.3 kg/m<sup>2</sup>, 6-12 y), Santhal girls (14.0 to 17.3 kg/m<sup>2</sup> from 6 to 12 y) and Karbi Anglong girls (16.5 to 17.8 kg/m<sup>2</sup>, 10-12 y). Thus, at a relatively similar BMI, varying body fat percentages have been reported in tribal and rural girls from the North-east, indicating the importance of measuring body composition in these girls.

It is important to identify reasons for the differences in body fat in the two sets of girls that Saha et al. have studied. Authors have collected data on socioeconomic status and all the girls belonged to low socioeconomic status as per the Kuppaswamy classification. Thus, socioeconomic status was less likely to be the reason for differences in body fat that the authors found. However, to identify factors which were responsible for differences in body composition of two sets of girls, dietary intake and physical activity data would have been very useful. Further, Chakma girls had higher body fat in younger years, while the fat percentage was similar at 12 y. It is thus likely that the Chakma girls went into puberty early; examination for pubertal maturity in community based studies though difficult, is required to shed light on changes in body composition. Further, comparison of anthropometric parameters with healthy Indian girls by calculating age matched Z-scores would have highlighted the growth impairments in the children studied [5].

Further studies in tribal children and adolescents from the North-East are required to understand growth and body composition in these children. Such studies, including longitudinal studies will go a long way in optimizing growth and body composition in tribal children.

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## Compliance with Ethical Standards

**Conflict of Interest** None.

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