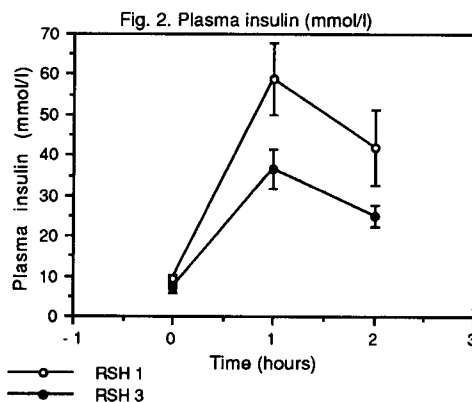
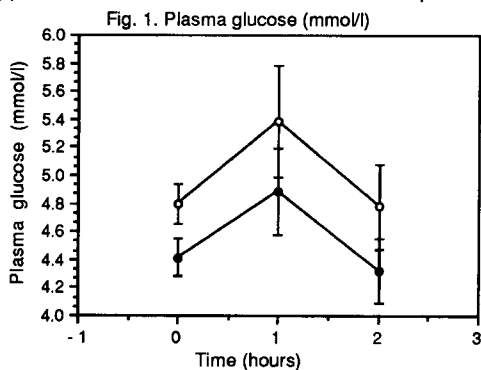


BODY BUILD AND CARBOHYDRATE METABOLISM IN FEMALE CAUCASIANS

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The association of body build (as assessed by relative sitting height (RSH)) with metabolic complications such as hypertension, impaired glucose tolerance, hyperinsulinemia and hypertriglyceridemia in Caucasians, is of interest due to the increased prevalence of these conditions in Aboriginal populations (O'Dea 1987). Aborigines have both a centralised fat distribution (Rutishauser 1987) and a low RSH, and it is possible that both are linked with their metabolic abnormalities. There is evidence to suggest a link between centralised fat distribution and RSH in Caucasians (Gallagher et al. 1988). The purpose of this study was to assess whether RSH is also associated with different responses to an oral glucose load.

A group of 38 normal weight, young females from the Geelong region (age range 18-28) were selected for the study on the basis of their RSH. Subjects were given a 75g oral glucose tolerance test after a 12 hour overnight fast. Plasma glucose and insulin were determined at 0, 1 and 2 hours. The group was divided according to RSH (the lowest 19 RSH versus the highest 19 RSH) and results are expressed as the mean \pm standard error. Results for fasting glucose in mmol/l were 4.85 ± 0.10 (low RSH) and 4.45 ± 0.11 (high RSH) and showed as significantly higher ($P < 0.05$) in the 'low RSH' group. However trends in fasting insulin concentrations were the same suggesting possible mild insulin resistance. Although there was a trend to higher glucose levels at 1 and 2 hours in the low RSH group, the differences were not significant. The insulin levels at 1 and 2 hours also tended to be higher in the low RSH group, and this difference reached significance at 2 hours ($P < 0.05$). The differences were more pronounced when the upper and lower tertiles of RSH were compared (Figs. 1 and 2).



If a relationship between RSH and carbohydrate metabolism can be shown in individuals of normal weight, then RSH might be a useful early indicator of hyperinsulinemia. Further studies, involving larger subject numbers (both male and female), may shed more light on the strength of this relationship.

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