

One of us (EKP) is on secondment from the Agricultural Research Centre, Tikkurila, Finland and gratefully acknowledges the support of a British Council Scholarship.

REFERENCE

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The influence of frequency of sucrose intake on the concentration of lipids, proteins and glucose in the plasma. By JUDITH BRICE, BETTY L. COLES, M. H. JOURDAN and I. MACDONALD, *Departments of Dietetics and Physiology, Guy's Hospital and Medical School, London, SE1*

Metabolism on a constant calorie intake is modified by changing the frequency of meals (Gwinup, Byron, Roush, Kruger & Hamwi, 1963; Hejda & Fábry, 1964; Irwin & Feeley, 1967). As a further study of this phenomenon it was decided to measure the effects on the fasting serum lipids, proteins and glucose levels of 'gorging' and 'nibbling' sucrose in a diet that contained a high proportion of this carbohydrate.

The subjects were eleven male students aged 20–22 years. The experimental diet, which was taken for 18 days, consisted of lean meat, green vegetables and water-preserved fruit eaten at midday and 17.30 h. The sucrose intake was 7 g/kg body-weight per day, and when 'gorging' half the daily amount was taken at 08.00 h and the remainder at 21.00–22.00 h. During 'nibbling' the sucrose was taken six times a day. Six subjects 'gorged' first and five 'nibbled' first. Blood samples were obtained by venepuncture after a 12 h fast at various times during the experimental diet.

There was a mean loss of weight of 0.6 kg during the 'gorging' period and a mean loss of 0.4 kg during the 'nibbling'. The percentage increase in serum triglycerides was significant at days 3 and 7 during 'gorging' and at days 14 and 18 during 'nibbling', and the slope of a regression line fitted to these values was significant during 'nibbling'. There was a significant fall in serum albumin with both dietary regimes, the fall after 'gorging' being significantly greater than after 'nibbling'. There was a significant rise in the fasting serum glucose while 'gorging' but not while 'nibbling'.

These findings confirm those previously reported that the pattern of eating can influence the metabolic response to a diet.

We are grateful to the volunteers and should like to thank the Medical Research Council and Cadbury Bros. Ltd for grants.

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