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CORRESPONDENCE

Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters must be signed personally by all their authors.

Dental caries and between-meal snacks

SIR,—It is commonly believed that dental caries is caused or grossly promoted by consumption of sugar and sugar-containing foods and that of these the between-meal moieties, particularly if they be sticky, are the most damaging. These beliefs receive support from some studies but scarcely any at all from others.[1 2]

In Johannesburg in high school pupils of 16-17 years we found DMF (decayed-missing-filled) scores to be roughly 10 for whites, 8 for Indians, 6 for coloureds (Eur-African-Malay), 2-3 for urban blacks and 1·5 for rural blacks.[3] The mean daily total sugar intake of white pupils, 135 g, was certainly greater than that of rural and urban black pupils, roughly 80 and 90 g respectively. Interestingly, for females the mean daily intakes of ethnic groups in the lower thirds of sugar consumption were much the same, about 40-60 g, yet on this relatively low intake there were huge differences in mean DMF scores, ranging from 11·6 to 0·9.

Virtually all white, coloured, and Indian pupils partake of much the same types of snack at school breaks or at home, chiefly soft drinks, potato crisps, sweets and chocolates, and sandwiches. For approaching one-third of all pupils these foodstuffs constitute breakfast. The most intriguing group is urban black senior pupils. About two-thirds eat no breakfast, though not for economic reasons. Of snacks, the most popular are fat cakes and sandwiches of white bread with pickles or meat; also soft drinks, sweets, and popcorn. About 70% of pupils have one or more of these foods daily and all partake of one or other on more than half of school days.

As indicated, this regular consumption by all ethnic groups of much the same type of between-meal snacks, with their contributions of sugar and refined cereal and their frequent stickiness, especially in the case of black pupils, is associated with gross differences in DMF scores. Urban black high school pupils, an élite stratum, are being increasingly exposed to these and other Western foodstuffs, yet their DMF scores have not significantly increased during the last generation.[3 4] We just do not know the exact reasons why these pupils still have excellent teeth.

Orthodox teaching is that in a given community a marked decrease in intake of sugary between-meal snacks will lead to a non-trivial reduction in caries scores; this opinion appears altogether premature. Moller,[5] of Copenhagen, has pointed out that "the implication . . . that unrefined carbohydrates would be less cariogenic [than refined carbohydrates] has received surprisingly little critical evaluation." Certainly in caries development the snack foods mentioned play a role, yet in our view the near total obsession that they are by far the principal cause of dental caries is stultifying research progress.

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[1] *Confectionary and the Statistics of Dental Caries.* London, Cocoa, Chocolate and Confectionery Alliance, 1974.
[2] Chung, C S, *et al, Journal of Dental Research,* 1977, **56,** 11.
[3] Retief, D P, Cleaton-Jones, P E, and Walker, A R P, *British Dental Journal,* 1975, **138,** 463.
[4] Staz, J, *South African Journal of Medical Sciences,* 1938, suppl 3, p 1.
[5] Moller, I G. Paper presented at International Sugar Research Foundation Conference, Paris, 1977.

Blood transfusion and renal allograft survival

SIR,—Mr R W Blamey and his colleagues (21 January, p 138) report a series of 32 cadaveric renal allografts in which there was improved graft survival in those recipients who had previously received blood transfusions. It may be of some interest to report our own findings in a much larger series. A previous analysis of 65 patients from this hospital in 1968[1] failed to reveal any effect of blood transfusions, but this may have been due to the error of grouping