ABSTRACT

Cohen et al (1974) found a high prevalence of anaemia amongst 0 - 13 year old children in the Turks and Caicos Islands. There was marked interisland variation with 69% of 5 year old children on Middle Caicos and 28% on Grand Turk being anaemic. They specualte that this anaemia is due to dietary iron deficiency.

A food frequency questionnaire was designed and weighted so that household iron consumption could be computed as a score. The method was pretested and the score calibrated against triplicate 24 hour recalls on 10 individuals. A correlation coefficient of $r = 0.93$ was obtained between the two methods. The questionnaire was then administered to the female household head of 144 households on Grand Turk (48), Providenciales (46) and Middle Caicos (50), selected at random from the register of voters.

The foods consumed formed a series of Guttman Scales for each of the seven food groups. Chicken, fish, rice, bread and evaporated milk were most frequently consumed. The dietaries were restricted on each island with Middle Caicos having only eight major items consumed more than three times per week by more than 25% of the households.

The households were divided into low, medium and high iron intake categories based on iron score which correspond to $\leqslant$ 7.7, 7.8 - 12.8, $\geqslant$ 12.9 mg Fe/d. Grand Turk and Providenciales were similar with 1% of the families in the low iron group and 76% in the high group. In contrast, Middle Caicos had 20% of families in the low iron group and only 44% in the high iron intake group. The iron equivalent of the total scores for the three islands were 15.2 ± 2.1, 14.6 ± 1.7, 11.8 ± 2.7 mg/d respectively. The mean Recommended Dietary Allowance for iron for these populations' age/sex structure is 10.1 mg/d. When the contributions to the total iron intake from each food group was calculated, Middle Caicos households had

significantly lower intakes in each category.

These data add strong support to the hypothesis that dietary iron deficiency is responsible for the high prevalence of anaemia in the Turks and Caicos.

Bread and rice were consumed more than 3 times weekly by 98% and 93% of households of each island. These were the only items which would be suitable for iron fortification. As the flour and rice are entirely imported from the U.S.A. in relatively small quantities (total population 7,700), it is probably more cost-effective to distribute prophylactic iron supplements rather than to fortify a dietary constituent.

Stool samples were obtained from 68 and 113 individuals on Grand Turk and Providenciales respectively; 38% and 63% of the sample households of these two islands.

Of these, 21% and 27% respectively were infected with Trichuris trichura. There were no significant interisland differences in age distribution of infection and the number of households infected.

These data show that the prevalence of worm infection was low relative to other Caribbean islands, and hence, unlikely to be a cause of anaemia.

Of particular interest however, was family clustering. This was seen in 50% and 62% respectively of the infected families. However, for two households on Grand Turk and one on Providenciales an infected 'boarder' failed to pass on his/her infection to other household members. Perhaps the boarders did not reside with the households long enough. However, 2/3 'boarders' resided with the household longer than a year. The transmission dynamics in the islands maybe interrupted as a result of climatic conditions which may be inimical to the survival of infective stages of geo-helminths.