

FIBRE INTAKE IN OBESE PERSONS ATTENDING THE QUEENSLAND INSTITUTE OF TECHNOLOGY
WEIGHT CONTROL CLINIC

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Intakes of energy and dietary fibre have been determined in 100 obese persons attending the Queensland Institute of Technology Weight Control Clinic and in 20 normal weight subjects. Food diaries, maintained for between one and two weeks, were used to estimate food consumption.

Total dietary fibre intakes were calculated as 14.9 ± 5.8 and 16.7 ± 6.5 g/day in the obese and control groups respectively. This compared with the equivalent of 15.7 g/day determined in the Australian studies of Angus et al. (1981) and 20.4 and 19.9 ± 5.3 g/day in the British studies of Southgate et al. (1978) and Bingham et al. (1979) respectively. A five-fold range in fibre intakes was observed in both the obese and normal subjects. Fibre density of food consumed was determined for each person by dividing total fibre intake by total energy intake.

A comparison of areas under the curves of plots of fibre density versus energy intake. The number of subjects are indicated in parenthesis.

Energy (MJ)	Control (g)	Obese (g)	Energy (MJ)	Control (g)	Obese(g)
3-4	44.8 (1)	40.7 (8)	6-7	24.0 (5)	21.8(24)
4-5	34.8 (4)	31.6 (31)	7-8	20.8 (1)	18.8(6)
5-6	28.4 (6)	25.8 (29)	8-9	18.3 (3)	16.7(2)

A significant difference was shown between fibre density and energy intake in both groups ($P < 0.05$).

The results show that the control group had a consistently greater area under the curve at each megajoule increment. That is, within the normal energy intake range, the control population consumed more fibre-dense food than did the obese. Within normal energy intakes, the 2 curves were parallel because fibre density was found to be inversely proportional to energy intake (Fibre density = $k/\text{total energy intake}$; control $k = 155.7$, obese $k = 141.5$). At high energy intakes, the curves tended to converge. This was reflected in the decreasing difference between the areas under the curve at high energy intakes. That is, the difference between the intakes of fibre-dense foods of the two groups was diminished. It is suggested that at very high intakes of energy, fibre density intake is decreased since fibre provides satiety value.

These results substantiate the hypothesis that the consumption of less fibre-dense foods may be a contributing factor in obesity and support the postulated beneficial role of dietary fibre in its prevention.

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