

Letter to the Editor

Adequacy of exclusive breast-feeding in 6-month-old infants

The paper by Reilly & Wells (2005) and the subsequent correspondence (Kersting *et al.* 2006) on the adequacy of exclusive breast-feeding in infants at 6 months revive a problem that has been around for a long time (Waterlow & Thomson, 1979). It seems to me that comparing average intakes with average requirements, as these authors do, is no solution. Beaton & Chery (1988) analysed the situation where there is a curve for the distribution of requirements in a population and another for the distribution of intakes. The analysis is complex and assumed no correlation between intake and requirement. I am no statistician, but in that case it seems to me that even if the curves for distribution of intakes and requirements coincided exactly, with equal averages, it is theoretically possible, although unlikely, that the 50% of individuals with lower than average intakes might be the same individuals as the 50% with higher than average requirements, so that half the population would be inadequately fed. The question of correlation between intake and requirement is therefore crucial. The only information that I have about this is a study by Butte *et al.* (1990) in which a modest correlation was found (r 0.63) between energy intake and requirement, the latter being estimated as total energy expenditure measured with doubly labelled water.

Since weight gain is the usual criterion of whether a baby is adequately fed, we made longitudinal studies of weight gain in exclusively breast-fed children in Jordan, India and Sudan (for example, Hijazi *et al.* 1989). The difficulty with these studies was that very few infants out of an initial cohort of several hundred were exclusively breast-fed for 6 months. These children gained weight satisfactorily, but all one could conclude was that for *some* infants exclusive breast-feeding is adequate for 6 months. Therefore it was still not possible either to validate or refute the WHO/UNICEF position that exclusive breast-feeding is adequate for *all* children up to 6 months. It seems to me that now that we have an accurate, although admittedly not simple, method of estimating energy requirement as energy expenditure, what is needed are more

measurements of the correlation between requirement and intake.

Two and a half millennia ago Hippocrates (circa 400 BC) observed that 'children with voracious appetites and who suck much milk do not put on flesh in proportion', presumably because their energy expenditure was greater.

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