

## THE EFFECT OF DIETARY FAT ON ENERGY AND NUTRIENT INTAKE AND GROWTH IN EARLY CHILDHOOD

M. LANDERS, S. SWANSON, D. MACKERRAS\* and J. BOULTON\*\*

The dietary guidelines for Australians recommend a diet low in fat. This recommendation does not apply to infants and should be modified in pre-school children (NH&MRC 1992). Low fat diets in early childhood may compromise energy and mineral intakes, and therefore have a deleterious effect on growth and development (Pugliese et al. 1987; Dagnelie et al. 1991; Kaplan et al. 1992). The Toowoomba Children's Nutrition Study is a longitudinal cohort study investigating the relationship between the amount and type of fat in the diet, and the quality of nutrient intake, particularly with respect to minerals, as well as the growth velocity in the first three years.

Recruitment of 350 healthy full-term infants is progressing through the local public hospital and child health clinic, with growth and nutritional measurements being collected on subjects at birth, 1, 3, 6, 9, 12, 18, 24, 30 and 36 months of age. Heights and weights measured at each age will be converted to standard deviation scores based on the NCHS percentiles prior to analysis. The sample size chosen has 80% power to detect a difference in height of 1.5cm at two years at the 5% level of significance. Multivariate analysis will look for associations between percentage energy from dietary fat, and height and weight standard deviation scores, energy and mineral intakes, and parental socio-economic status (SES) both within and across age groups. Relationships between SES parameters, food beliefs, nutrition information sources and infant feeding practices will be investigated.

Since commencement nine months ago, 247 subjects have enrolled in the study. Based on current recruitment rates, recruitment will cease in September 1994. Preliminary descriptive statistics show a decline in breast feeding from 88% on leaving hospital, to 80% at one month, 68% at three months, and 54% at six months. A 1988-89 study showed that 87% of all new mothers leaving Toowoomba Base Hospital were breast feeding (pers.com., Glen Nitchie, Qld Health) suggesting our sample is representative of the Toowoomba population. Cessation of breast feeding was most commonly associated with mothers' perceived inadequate milk supply. The age of introduction of transitional foods centred around four months, with only 4% having solids at one month and 2% still exclusively breast fed at 6.5 months. Nutrition information was most commonly obtained from baby nutrition booklets.

The information gathered over the next four years from this study should provide both local and national health authorities with comprehensive knowledge about current infant feeding practices and the influences on and ramifications of these; in particular, the role of fat in the growth of infants and young children. Such knowledge will provide a backbone for future public health recommendations on early nutrition and help in the development of more effective public health strategies.

DAGNELIE, P.C., STAVAREN, W.A. and HAUTVAST, J.G.J.A. (1991). *Acta Paediatr. Scand.* 374: 111.

KAPLAN, R.M. and TOSHIMA, M.T. (1992). *Prev. Med.* 21: 33.

NH&MRC. (1992). 'Dietary Guidelines for Australians' 1st edn (AGPO: Canberra).

PUGLIESE, M.T., WEYMAN-DAUM, M., MOSES, N. and LIFTSHITZ, F. (1987). *Pediatrics* 80: 175.