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Dietary intake of New Zealand European women with different body composition profiles – The women's EXPLORE study



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Introduction: Dietary intake is a significant contributor in determining body composition; body fat content may vary as a result in women within the same BMI category. The aim was to investigate dietary intakes of young New Zealand European (NZE) women with different body composition profiles (BCP).

Methods: Post-menarche, pre-menopausal NZE women (16–45 years) ($n=231$) completed a validated 220-item, self-administrated, semi-quantitative food frequency questionnaire (FFQ) assessing dietary intake over the previous month. Body mass index (BMI, kg/m^2) was calculated from height and weight; body fat percentage (BF%) was measured using air displacement plethysmography (BodPod). Participants were categorised into three BCPs: normal BMI (18.5–24.9 kg/m^2), normal BF% (<30%) (NN); normal BMI, high BF% ($\geq 30\%$) (NH); high BMI ($\geq 25 \text{ kg}/\text{m}^2$), high BF% (HH). Micronutrient and macronutrient intakes were examined.

Results: Insufficient intakes of multiple nutrients were observed for many women (vitamin D, 55%; iron, 82%; calcium, 28.5%; folate, 48%; fibre, 28%). Percentage of energy intake was outside the acceptable macronutrient distribution range (AMDR) for carbohydrate (below the AMDR, mean \pm SD $41.9 \pm 7\%$) and saturated fat (above the AMDR, $13.9 \pm 3.5\%$). Fewer serves of fruit and vegetables and more of diet soft drinks, chocolate bars and cooking oil were consumed by the HH BCP; they also had lowest calcium (1159.5 mg/d) and highest energy (9296 kJ/d), total (89.4 g/d) and saturated (36.5 g/d) fat intakes. No significant associations were found with BF%. Vitamins A, E, D, and zinc intakes were adequate, and comparable between BCPs.

Conclusion: Pre-menopausal NZE women are at risk of nutritional deficiencies (iron, vitamin D,

folate, calcium, dietary fibre) due to poor intakes, irrespective of body fatness. On average, NZE women do not follow dietary guidelines; consuming diets low in carbohydrates and high in saturated fat. Targeted interventions should be developed to improve NZE women's dietary quality, particularly reducing energy and fat intakes of those with excess adiposity.

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The infant feeding practices of Chinese immigrant mothers in Australia: A qualitative exploration



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Background and significance: The Australian Infant Feeding Guidelines recommend exclusive breastfeeding for the first six months of life and that solid foods be introduced at around six months while continuing breastfeeding. A majority of Australians are not meeting this guideline and new immigrant populations are potentially most at risk. Evidence suggests that Chinese immigrant mothers in Australia are more likely to introduce infant formula and solid foods earlier. Shorter duration of exclusive breastfeeding is associated with higher risks of overweight in Chinese children. A better understanding of the facilitators and barriers to achieving best practice in infant feeding is needed to support at risk populations achieve best early feeding outcomes.

Methods: This qualitative study describes Chinese immigrant mother's infant feeding experiences and explores factors influencing their early feeding choices. Semi structured interviews were conducted with 36 Chinese immigrant mothers who had children aged 0 to 12 months, living in Melbourne, Australia. Interviews were conducted in Chinese, using an interpreter, or in English, and audio recorded. Recordings were transcribed and analysed thematically.

Results: Eight themes were identified. Key themes included Chinese immigrant mothers were supportive of exclusive breastfeeding, however

breastfeeding problems and conflicting views about infant feeding and growth from grandparents reduced many mothers' confidence to breastfeed exclusively. For many new mothers, anxiety that exclusive breastfeeding provided insufficient nourishment prompted the introduction of formula before six months of age. Most mothers delayed introducing solid food to five to six months in the belief that this prevented the development of allergic diseases and gastrointestinal problems.

Conclusion: Chinese immigrant mothers in Australia need support to increase their confidence to breastfeed exclusively. To achieve this, culturally sensitive guidance is needed and the contradictions in advice given by Chinese grandparents and health professionals on infant feeding practices and healthy infant growth need to be recognised and addressed.

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Obesity prevention in infants: A qualitative study exploring the influence of the Growing healthy program on infant feeding behaviours



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Introduction: Infant feeding behaviours associated with obesity, such as formula feeding, feeding beyond satiety and early introduction of solids are potentially modifiable. Providing support to parents to promote healthy infant feeding using mobile phone apps (mHealth interventions) is a novel, yet untested approach. This qualitative paper explores the mechanisms by which an mhealth program (Growing healthy) may influence mothers' uptake of healthy infant feeding practices in the first nine months of life.

Methods: The 300 participants in the Growing healthy program were invited to participate in individual semi-structured telephone interviews when their infants were aged 6–12 months. Interviews explored the impact of the program on breastfeeding, best practice formula feeding and timing of introduction of solids – including the effect on key

behavioural mediators such as participants' capability (e.g. knowledge), opportunity (e.g. support and advice) and motivation (e.g. plans and emotions). Interviews were audiotaped, transcribed and thematic analysis performed.

Results: A total of 44 Mothers of infants aged 6–12 months were interviewed. Participants thought the program influenced their capability around feeding decisions, with videos considered more useful in guiding practical skills than written information. Participants also felt that the app provided a convenient, trustworthy and “round-the-clock” source of information enhancing support with infant feeding. Push notifications linking to information in the app encouraged healthy infant feeding practices as messages were timely and concordant with current feeding experiences. Participants reported less impact of the app on their motivations regarding feeding. When the information provided in the app was consistent with advice received by health professionals, uptake of appropriate infant feeding behaviours was higher.

Conclusions: This study provides new information about the mechanisms by which a novel mhealth intervention can influence healthy infant feeding practices to prevent excess weight gain in early childhood.

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NADPH oxidase modulates leptin effects on gastric vagal afferent mechanosensitivity



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Leptin, produced locally in the stomach modulates peripheral gastric vagal afferent satiety signals by a paracrine mechanism of action. In lean, standard laboratory diet (SLD) fed mice, leptin potentiates gastric vagal afferent mucosal receptor responses to mucosal stroking. In contrast in mice with high fat diet (HFD)-induced obesity leptin has no effect on mucosal receptors and inhibits the response of tension receptors to stretch, an effect not observed in lean mice (J Physiol 2013;591:1921–34). The mechanism for this switch in effect of leptin in gastric vagal