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Breastfeeding practices and associated predictors in Chinese mothers in Australia

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Background: Chinese immigrants are the largest culturally and linguistically diverse immigrant group in Australia. Preliminary evidence indicates that infants from Chinese mothers may be at increased risks of overweight and obesity due to suboptimal infant feeding practices. Breastfeeding is associated with healthy weight gain while the replacement of breastmilk with other milks or foods is associated with rapid weight gain, a strong risk factor for obesity in later childhood. This study aims to describe breastfeeding practices and its key predictors in Chinese Australian mothers.

Methods: An online survey was developed based on the Australian Infant Feeding Survey and modified to be culturally appropriate. Chinese immigrant mothers who have a child aged 1–3 years born in Australia were eligible to participate. Infant feeding practices were analysed using descriptive statistics and key predictors were analysed using Poisson regression.

Results: A total of 265 Chinese mothers completed the survey. Almost all (91.4%) initiated exclusive breastfeeding (EBF), however by two weeks, only 50% of mothers were breastfeeding exclusively. The EBF rate at four months was 39% and 5% at six months. The sharp drop in EBF rate in the first six months was due to the introduction of formula, with 38% of mothers reporting that from birth, they intended to mix feed by using formula to top up breastmilk. Intention to EBF, awareness of recommendations to introduce solids at around 6 months and greater breastfeeding confidence predicted longer EBF duration.

Conclusion: The first few weeks postpartum is a critical period to support Chinese mothers in continuing EBF. Antenatal education should aim to address mothers' ambivalence regarding EBF and formula use and provide clear education to delay the introduction of solids to around 6 months. Improving EBF rates is likely to promote optimal infant growth and reduce the risks of obesity in later life.

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Body mass is important to bone health, but so is its distribution: associations between body composition and bone health measures in 11–12 year old children

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Body composition may be an important driver of bone mass accrual in childhood. However, the relative impacts of the underlying components such as fat mass, fat-free mass, and/or truncal/non-truncal distribution remain unclear.

The Child Health CheckPoint is a cross-sectional study of 11–12 year olds, drawn from the Longitudinal Study of Australian Children. 1874 children completed multiple health measures. Body composition (truncal fat, non-truncal fat, fat free mass) was measured by bio-impedance. Bone health (trabecular/cortical density and geometry, polar stress-strain index (SSI)) was measured by peripheral quantitative computerised tomography (pQCT) of the non-dominant tibia. Compositional multiple linear regression explored the relationship between body composition and bone health measures. Novel isocompartmental substitution modelling quantified the differences in bone health associated with the reallocation of mass between body compartments. Models were adjusted for age, height, pubertal stage, socioeconomic status and physical activity.

843 children (49.3% male) with complete data were analysed. Higher fat-free mass was associated with overall improved skeletal geometry and trabecular density, but lower cortical density. Associations with higher truncal and non-truncal fat were in the opposite direction. Bone strength (estimated by SSI) increased linearly with overall mass. Isocompartmental substitution modelling revealed profoundly opposing relationships with different elements of body composition. For example, a 6% absolute increase in fat-free mass was associated with a 1 standard deviation (SD) increase in SSI, while a 3% absolute reduction in truncal fat was associated with an approximately 1 SD increase. Associations for non-truncal fat were similar in pattern, but much weaker, to those for truncal fat.

While heavier children generally have stronger bones, it is higher lean mass *combined with* lower truncal fat that appears to drive improved outcomes at any given total body mass. Overweight interventions that maximise fat-free mass and minimise truncal fat may have additional benefits for long term skeletal health.

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