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## Trends in asthma, allergy and breastfeeding in Australia

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The incidence of allergy and asthma in children in Australia presents major clinical and public health challenges. The draft Infant Feeding Guidelines of the National Health and Medical Research Council (NHMRC) recommend exclusive breastfeeding to around 6 months of age, followed by continued breastfeeding while complementary foods are introduced, as the best way to minimise allergy (NHMRC 2012). However, there has been debate as to whether earlier introduction of solids may be more likely to prevent allergy (Prescott & Nowak-Wegrzyn 2011; Symon & Bammann 2012; Williams & Prentice 2011). Recent statistics released by the Australian Institute of Health and Welfare (AIHW) show that asthma rates are falling and that exclusive breastfeeding may be increasing, making it more likely that exclusive breastfeeding to 6 months is protecting against asthma, not promoting it.

In the first set of Children's Dietary Guidelines and Infant Feeding Guidelines issued by the NHMRC in 1995 and 1996, it was recommended that exclusive breastfeeding continue to 4–6 months before solid foods were introduced (NHMRC 1995; NHMRC 1996). During the 1980s–90s in Australia it was quite common to introduce solids at an early age, often before 3 months of age. In the 1995 National Nutrition Survey, 7% of infants had received solids before 3 months and 61% before 6 months (Donath & Amir 2002). In the 1998–2001 National Health Survey the figures for 3 months and 6 months were 20% by 3 months and 70% by 6 months (Donath & Amir 2005). In Tasmania in the 1990s, by 4 months 34% had solids and by 6 months the proportion had reached 93% (Hughes 2001). In the Perth Infant Feeding Study of 2002 by 4 months and 6 months of age, 44% and 93% of infants respectively had received some solids (Scott, Binns et al 2009).

Then in 2003 the revised recommendation of introducing solid foods a little later, at around 6 months, was recommended to Australian parents (NHMRC 2003). The change was made because it was recognised that the early introduction of solid foods reduced the quantity and duration of breastfeeding. Breastmilk contains many nutrients and bioactive substances that are important for the health and development of infants. The introduction of solids compromises the stabilisation of the microbiome and this may have subsequent health effects (Kau, Ahern et al 2011). The increasing risk of obesity in Australian children was also of concern (NHMRC 2012). Detailed reasons and a discussion of the implications of the 'Developmental Origins of Adult Disease' hypothesis are found in the NHMRC Guidelines (NHMRC 2003; NHMRC 2012).

In the 2010 National Infant Feeding Study, solids were reported to be introduced to 35% of infants aged 4 months, 92% of infants aged 6 months and 95% of children aged 12 months (AIHW 2011). In this survey earlier introduction of solid foods was associated with lower education levels, obese mothers, speaking English at home and in infants who are given a dummy. A higher proportion of infants are now being exclusively breastfed: 39% to 4 months and 15% to 6 months compared to the Perth Infant Feeding Study where the rates were 11% at 4 months and 1% at six months (AIHW 2011; Scott, Binns et al 2006). These results suggest that the incidence of exclusive breastfeeding to 4 and 6 months is increasing and that of the early introduction of solids is falling.

There has been concern expressed about an increase in allergic diseases, including asthma, in Australia. In the 2007–8 National Health Survey, asthma was the

most frequently reported long-term condition (10%) in children, followed by hay fever and allergic rhinitis (7%), and undefined allergies (5%) (AIHW 2012). Recently the AIHW has reported that the prevalence of current asthma among children increased during the 1980s and early 1990s, but the trend has since reversed. Between 2001 and 2007–08 the prevalence of current asthma among children aged 0–15 decreased from 13.5% to 9.9% (age standardised rates) (AIHW 2012). The decline in the reported prevalence of asthma was also accompanied by a decline in hospital discharges. The asthma hospital separation rate decreased from 1000 per 100,000 children in 1996–97 to 554 in 2010–11 (AIHW 2012).

There have been conflicting reports on the influence of infant feeding on the development of allergy and asthma. However, the largest randomised controlled trial of breastfeeding promotion (n=17,046) showed no significant differences in the incidence of allergies or asthma between the trial group (promotion of exclusive breastfeeding to 6 months) and the control group (Kramer, Guo et al 2004). Most national organisations and the World Health Organization (WHO) recommend exclusive breastfeeding to 6 months of age as the best way of optimising infant nutrition and health and minimising allergy (American Academy of Pediatrics 2012; WHO 2003). The American Academy of Pediatrics and the NHMRC both state that there are no advantages in postponing the introduction of solids beyond 6 months and there are some disadvantages (American Academy of Pediatrics 2012; NHMRC 2012).

In recent decades the rates of exclusive breastfeeding in Australia have increased and solid foods are being introduced later. At the same time the rate of asthma in children has fallen substantially. It is difficult to draw conclusions of causation from observational data of this type, but the available data offer no support for the hypothesis that the early introduction of solid foods will reduce rates of allergy and asthma. If anything this data supports previous findings that breastfeeding and, particularly, exclusive breastfeeding may be protective against the development of allergy and asthma. Recommending exclusive breastfeeding for the first 6 months of life remains the most appropriate policy.

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