

Duration of total and exclusive breastfeeding, timing of solid food introduction and risk of allergic diseases: a systematic review and meta-analysis

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Abstract

Background Allergic diseases are the leading causes of chronic illness in children and young adults in the UK.

Aim To undertake a comprehensive review of the evidence on the effect of breastfeeding (BF) duration and timing of solid food introduction (SFI), on the risk of wheeze, atopic dermatitis, rhino-conjunctivitis, food allergy, allergic sensitisation and measures of lung function or bronchial hyper-responsiveness.

Methods We carried out a systematic review following the PRISMA guidelines (International Prospective Register of Systematic Reviews [PROSPERO] CRD42013003802). We included intervention, cohort, case-control and cross-sectional studies.

Following literature searches (July 2013), study eligibility, data extraction and risk of bias assessments were conducted independently by two investigators. Random effects meta-analyses

were used to pool results. Five levels of comparison of total or exclusive BF duration were used to assess disease risk in children at age 0–4 yrs, 5–15 yrs or 15+ yrs: ‘never vs ever’, ‘_1–2

months vs. <1–2 months’, ‘_3–4 months vs. <3–4 months’, ‘_5–7 months vs. <5–7 months’, and ‘_8–12 months vs. <8–12 months’. Exclusive BF (EBF; BF without formula or solid food supplementation) was categorised as ‘_0–2 months vs. <0–2 months’, ‘_3–4 months vs. <3–4 months’ and ‘_5+ months vs. <5+ months’, and SFI as ‘_3–4 months vs. <3–4 months’.

Publication bias was assessed using Egger’s asymmetry test.

Results Of 16,289 identified studies, 564 met the inclusion criteria and were eligible for analysis. We found reduced risk of wheezing in children aged 5–14 yrs with longer BF or EBF duration, which was dose-dependent, but there was evidence of publication bias (BF and odds of recurrent wheezing $P = 0.007$).

Similar results were found for recurrent wheeze at age 5–14 yrs but not in other ages. Measures of lung function were also increased with increased BF or EBF duration. We found no evidence that BF duration influences other allergic outcomes, and no evidence that timing of SFI influences any of the outcomes assessed.

Conclusion Longer breastfeeding duration may protect against wheezing later in childhood. Any effect is likely to be through effects on lung function rather than allergic sensitisation. Other allergic outcomes do not appear to be influenced by breastfeeding duration