

Are there any known health risks to early introduction of solids to an infant's diet?

Evidence-based answer

No. Few studies support an association between early introduction of solid food and atopic conditions, obesity, or any other illness (strength of recommendation [SOR]: **B**, cohort studies with mixed results). Very weak evidence suggests an

increased risk of atopic dermatitis.

A single cohort study found an association between early gluten exposure and increased risk of celiac disease in high-risk infants, who carry the HLA-DR3 or DR4 allele (SOR: **B**, single cohort study).

Evidence summary

Early feeding of solid food—defined as introduction of solids before 4 months of age—has been implicated as a potential cause of several adverse outcomes, including atopy, adiposity, gastrointestinal illness, and celiac disease. But what does the evidence tell us?

Atopy: Conflicting evidence, little support

A 2006 meta-analysis of 13 studies examining the risk of atopic diseases associated with early introduction of solids concluded that “there is insufficient evidence to suggest that, on its own, the early introduction of solids to infants is associated with an increased risk of asthma, food allergy, allergic rhinitis, or animal allergies.”¹

The meta-analysis showed some evidence of an association between early solid introduction and eczema, the strongest being a 10-year New Zealand cohort study (N=1265).² The study concluded that introducing solids and increasing food diversity before 4 months of age was associated with eczema at 2 to 10 years.

Subsequent studies have not produced similar results.³⁻⁶ A well-designed 6-year German birth cohort study (N=2612) found that delaying introduction of solids didn't decrease the odds of asthma, allergic rhinitis, or food sensitization. Increased food diversity at 4 months (trying 3-8 foods vs none) was associated with some, but not all, measures of eczema.⁴

A German prospective cohort study (N=5991) found no benefit in delaying solids longer than 4 months or potentially allergenic solids longer than 6 months to prevent eczema.⁵ A Dutch prospective cohort study (N=2558) not only confirmed these findings, but found a higher risk of atopy at 2 years of age after delayed introduction of solids, even after accounting for reverse causation (delaying solids in children with early atopic symptoms).⁶

Adiposity and GI illness: No significant association

A randomized, prospective trial (N=165) compared early and late introduction

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FAST TRACK

Few studies support an association between early introduction of solid food and atopic conditions, obesity, or any other illness.

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The best time to introduce gluten-containing foods to babies at increased risk of celiac disease is between 4 and 6 months of age.

of solids with fat mass at 3, 6, and 12 months of age. No significant difference in adiposity between treatment groups was noted at any end point.⁷ Several cohort studies (N=316, N=313, N=54) have found no statistically significant relationship between early solid feeding and obesity at 6 months, 5 years, and 6 years, respectively.⁸⁻¹⁰

A cohort study (N=455) in Dundee, Scotland, reported that infants fed solids before 12 weeks were “significantly heavier” at 26 weeks but not at 52 or 104 weeks; this finding has limited validity, however, because the study didn’t control for parental weight.¹¹ The Dundee study also found no significant association between gastrointestinal illness and the timing of introduction of solids.¹¹

Celiac disease: Timing key for high-risk babies

A prospective observational study (N=1560) of infants at increased risk of celiac disease (defined as having either the HLA-DR3 or DR4 allele) determined that the optimum time for introducing gluten-containing foods is 4 to 6 months. Infants exposed in the first 3 months of life had a 5-fold increased risk of developing celiac disease, and babies exposed after the sixth month had nearly a 2-fold increased risk.¹²

Recommendations

Strong consensus exists for withholding solids until 4 to 6 months of age, including recommendations from the American Academy of Pediatrics,¹³ the European Academy of Allergy and Clinical Immunology,¹⁴ and the World Health Organization.¹⁵ The American College of Allergy, Asthma, and Immunology has adopted a more precise recommendation that solids be introduced no earlier than 6 months.¹⁶ ■

Acknowledgments

The views expressed in this article are those of the authors and do not necessarily reflect the official position of the Department of the Navy, Air Force, Department of Defense, or the United States Government.

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