

intake of vitamin D and E during pregnancy was protective for the development of wheezing (OR: 0.56 [95% CI: 0.42–0.73] and 0.68 [95% CI: 0.52–0.88], respectively). Adherence to a Mediterranean diet was protective for persistent wheeze and atopy (OR: 0.22 [95% CI: 0.08–0.58] and 0.55 [95% CI: 0.31–0.97], respectively). The authors of most (17 of 22) fruit and vegetable studies reported beneficial associations with asthma and allergic outcomes.

CONCLUSIONS. The available evidence is supportive with respect to vitamins A, D, and E; zinc; fruits and vegetables; and a Mediterranean diet for the prevention of atopic disease.

REVIEWER COMMENTS. Although the study was observational in nature, its results highlight the importance of dietary exposures in the development of atopic disease. Controlled interventional studies are warranted to determine if it is possible to prevent atopic disease with dietary modification.

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Partial Protein-Hydrolyzed Infant Formula Decreased Food Sensitization but Not Allergic Diseases in a Prospective Birth Cohort Study

Kuo HC, Liu CA, Ou CY, et al. *Int Arch Allergy Immunol.* 2011;154(4):310–317

PURPOSE OF THE STUDY. To determine whether feeding a partially protein-hydrolyzed formula in the first 6 months of life would decrease the incidence of future allergic diseases.

STUDY POPULATION. Taiwanese newborns who had at least 1 first-degree family member with a history of atopy and who were not breastfeeding participated.

METHODS. A total of 679 participants were exclusively fed with partially hydrolyzed whey formula (HF) ($n = 345$) or cow's milk infant formula (CM) ($n = 334$) for at least 6 months via an open-label protocol. They were prospectively assessed at 6, 18, and 36 months of age to determine allergic sensitization (immunoglobulin E [IgE] > 0.7 kU/L) and clinical presence of eczema, food allergy, asthma, or allergic rhinitis.

RESULTS. At 36 months, cow's milk protein sensitization in the HF group was significantly lower than that in the CM group (12.7 vs 23.4%; $P = .048$). There was no difference with sensitization to egg or peanut between the 2 groups. Aeroallergen sensitization and serum total IgE levels were not significantly different. Occurrence of allergic disease was significantly correlated with aero-

allergen sensitization but not to food-allergen sensitization, parental atopy, or feeding types.

CONCLUSIONS. The authors concluded that although HF feeding during the first 6 months of life helped to lower cow's milk protein sensitization, it alone is not enough to decrease the development of allergic disease.

REVIEWER COMMENTS. Can controlling a susceptible infant's diet early in life help to lessen the development of atopic symptoms in later years? These findings suggest that exclusively feeding this HF for the first 6 months of life does not. Other comparative studies have found more favorable outcomes in those infants who were fed extensively hydrolyzed formula. However, more large-scale, controlled studies that follow newborns through childhood are needed to better define the advantages.

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Association Between Short Sleep Duration and the Risk of Sensitization to Food and Aero Allergens in Rural Chinese Adolescents

Zhang S, Liu X, Kim JS, et al. *Clin Exp Allergy.* 2011; 41(4):547–555

PURPOSE OF THE STUDY. To explore the association between sleep duration and sensitization to food allergens and aeroallergens.

STUDY POPULATION. There were 1534 rural Chinese adolescent twins aged 12 to 21 years drawn from an ongoing prospective study on precursors of metabolic syndrome in children in a large Chinese twin cohort. Any participant aged 12 to 21 years at a follow-up visit for the main study with complete information on sleep questionnaires and skin-prick-test (SPT) results was included.

METHODS. Subjects completed standard sleep questionnaires and SPTs to 9 food allergens and 5 aeroallergens. Total sleep time was defined as the interval from bedtime to wake-up time minus sleep latency. Sensitization was defined as having at least 1 positive SPT result. Percentage body fat was calculated, because previous studies have suggested that sleep duration and allergic sensitization are associated with adiposity.

RESULTS. Compared with subjects in the highest tertile of sleep duration, those who slept less were more likely to be sensitized to any food allergen (odds ratio [OR]: 1.9 [95% confidence interval (CI): 1.3–2.7] and 1.4 [95% CI: 1.0–1.9] for the first and second tertiles [trend test $P_{\text{trend}} = 3 \times 10^{-4}$], respectively). The corresponding ORs for sensitization to any aeroallergen were 1.5 (95% CI: 1.1–2.0) and 1.3 (95% CI: 1.0–1.7) ($P_{\text{trend}} = 8 \times 10^{-3}$). These associations were independent of percentage body

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