

Cohort study

High consumption of peanuts or tree nuts by non-allergic mothers around the time of pregnancy reduces the risk of nut allergy in the child

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Commentary on: Frazier AL, Camargo CA Jr, Malspeis S, *et al*. Prospective study of peripregnancy consumption of peanuts or tree nuts by mothers and the risk of peanut or tree nut allergy in their offspring. *JAMA Pediatr* 2014;168:156–62.

Implications for practice and research

- Peanut or tree nut avoidance during pregnancy is not recommended for non-allergic mothers.
- Maternal nut consumption does not appear to increase the risk of nut allergy in offspring and may even be protective.
- Further research is required to clarify the role of maternal nut consumption during pregnancy and lactation; research should consider potential differential effects of the genetic risk of peanut allergy in children.

Context

Peanut allergy affects up to 3% of children at the age of 1 year.¹ Mothers are increasingly concerned about the implications of exposing children to peanuts prenatally through their own diet or their child's diet in early infancy. A lack of high-quality evidence about the relationship between maternal diet and peanut allergy in offspring has led to inconsistent guidelines internationally. Recommendations have varied significantly over the last several decades. In the 1990s several countries advocated women should avoid peanuts during pregnancy and breastfeeding. This recommendation was reversed in 2008 by several expert bodies including the American Academy of Pediatrics due to the lack of evidence that avoidance was effective in preventing peanut allergy in children.²

Methods

Using data from the Nurses' Health Study II, Frazier *et al* explored whether there was a relationship between maternal nut consumption and physician-diagnosed nut allergy in children. The cohort included 8205 children aged between 10 and 14 years, with a 1.7% reported nut allergy. Maternal nut consumption was recorded prospectively around the time of pregnancy, with 45% reporting nut consumption during pregnancy and 76% reporting nut consumption within 1 year of pregnancy. The association between maternal nut consumption and nut allergy in offspring

was quantified using multivariable logistic regression analysis, to take into account the presence of siblings, adjusted for maternal nut allergy, maternal age and the season the child was born. Analyses were conducted separately for mothers with and without nut allergies. In a sensitivity analysis, models were adjusted for maternal vegetable intake and age at first consumption of nuts by the child.

Findings

Among mothers without a nut allergy, those who consumed more nuts around the time of pregnancy were less likely to have offspring with a nut allergy. There appeared to be a dose effect, children whose mothers consumed at least five servings of nuts per week having the lowest prevalence of nut allergy (OR=0.31, 95% CI 0.13 to 0.75), when compared with <1 serving/month. This effect was not seen in the mothers with nut allergy who consumed other nuts during pregnancy. These findings remained similar after controlling for other potentially protective factors that are also associated with nut consumption during pregnancy, namely maternal vegetable intake and the child's age at first consumption of nuts.

Commentary

In this large cohort study, the children of mothers who regularly ate nuts around the time of pregnancy were less likely to be allergic to nuts. The finding that maternal nut consumption did not increase the risk of nut allergy in children supports current guidelines which no longer recommend nut avoidance during pregnancy or breast feeding. This is the first study to link higher maternal consumption of nuts with protection from nut allergy in offspring. Previous studies generally reported no association with maternal peanut ingestion during pregnancy or lactation, although some recent retrospective studies where recall bias is a possible design weakness have reported higher peanut consumption among mothers of children with peanut sensitisation or allergy.^{3 4}

Frazier *et al* results should be interpreted with caution since the observational study design has several limitations. A range of other factors may influence maternal diet, which may be independently associated with offspring nut allergy. For example, mothers who are aware of and follow current health advice including nut avoidance guidelines may be more likely to obtain medical advice about a child's allergic symptoms and therefore it is more likely the child will be diagnosed with a food allergy. Family history of allergic disease, particularly in siblings, is also likely to influence maternal decisions regarding nut consumption.

Several areas warrant further investigation. It is possible that nut consumption during pregnancy or breast feeding could promote the development of tolerance and reduce the risk of peanut allergy; however, the optimal timing for exposure remains unclear. The lack of protective effect in offspring of allergic mothers suggests the effect may differ according to an offspring's genetic risk profile. Large prospective studies which capture maternal diet at different stages during pregnancy and lactation, and investigate associations while taking into account genetic risk factors such as filaggrin gene mutations, may shed further light on the development of peanut allergy in children.

Competing interests None.

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