



# Early Life to Adolescence Food-Related Symptoms and Food Allergy in Swedish Children

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## Abstract

**Background:** Uncertainty exists regarding the risk factors that contribute to the persistence of food-related symptoms (FRS) and food allergies (FA) from childhood to adolescent. This study's objective was to discover adolescent risk factors for FRS and FA in children who had such conditions in the first four years of life (early life).

**Methods:** We distinguished between children with early life FRS in the absence of FA and FA in children enrolled in a Swedish birth cohort and followed to the age of 16 (n = 2572). At the age of 16, corresponding phenotypes were identified. Using logistic regression, associations between putative risk factors at 4 years and FRS and FA at 16 years old were looked into.

**Results:** The prevalence of early-life FRS and FA were 12.2% and 6.8%, respectively. Children with early life FRS had FRS or FA at age 16, whereas those with early life FA had FA at age 16 in 74.3% of cases. Parental allergy, early-life allergic multimorbidity, early-life sensitivities to peanuts/tree nuts, and IgE reactivity at 4 years were each statistically significantly linked with FRS or FA at 16 years for each of the early-life phenotypes. In contrast, among children with early life FA exclusively, male sex was linked to an increased risk of FA at age 16.

**Conclusions:** Food-related complaints are twice as frequent in children as food allergies. Contrary to food allergies, symptoms associated to food frequently go away by adolescence. But these phenotypes share a lot of similarities.

## Keywords:

## Introduction

Food-related symptoms (FRS) and food allergies (FA) are common conditions in children. FRS are defined as symptoms related to food intake that are not caused by an allergic reaction. FA, on the other hand, is an immune-mediated reaction to food proteins. Both conditions can have a significant impact on a child's quality of life and health. The persistence of these conditions from childhood into adolescence is a topic of ongoing research. This study aims to explore the risk factors for FRS and FA in children who had these conditions in the first four years of life (early life) and how these conditions manifest themselves at age 16. The study is based on data from the Swedish Birth Cohort, which follows children from birth to age 16. The results show that early-life FRS and FA are prevalent, with 12.2% and 6.8% of children, respectively, having these conditions in the first four years of life. Children with early life FRS had FRS or FA at age 16, whereas those with early life FA had FA at age 16 in 74.3% of cases. Parental allergy, early-life allergic multimorbidity, early-life sensitivities to peanuts/tree nuts, and IgE reactivity at 4 years were each statistically significantly linked with FRS or FA at 16 years for each of the early-life phenotypes. In contrast, among children with early life FA exclusively, male sex was linked to an increased risk of FA at age 16.

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## Method

### Participants

The study included children from the Swedish Birth Cohort, which follows children from birth to age 16. The children were enrolled in the cohort at birth and followed up at 4 and 16 years of age. The study was approved by the ethics committee at Karolinska Institutet.



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### Discussion

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