

Association of influenza vaccination on the prevalence and secular trends of atopic dermatitis in United States children.

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Background: A previous study found that children with atopic dermatitis (AD) had higher rates of vaccination for influenza and other pathogens. However, little is known of how the secular trend of influenza vaccination effects AD prevalence in the United States.

Objective: This study sought to confirm the association between childhood AD and influenza vaccination, and determine whether the secular trend of influenza vaccinations accounts for trend of increasing AD over time among US children.

Methods: We analyzed data on 151,189 children ages 0-17 years from the 2005-2018 National Health Interview Survey using logistic regression models.

Results: The prevalence [CI95] of childhood AD increased in children overall from 10.0% (9.3-10.7%) in 2005 to 12.8% (11.7-13.8%) in 2018. From 2005-2006 to 2017-2018, AD prevalence increased in children ages 0-5 years (11.4% [10.5-12.3%] to 14.4% [13.2-15.6%]), 6-10 years (10.2% [9.3%-11.1%] to 13.3% [12.1-14.5%]), and 11-17 years (8.9% [8.1-9.7%] to 12.0% [11.0-12.9%]). The prevalence [CI95] of flu vaccinations increased from 17.2% (16.5-17.9%) to 48.1% (47.0-49.3%). Children with AD had significantly higher odds of influenza vaccination (adjusted OR [CI95]: 1.144 [1.092-1.200]) overall, and particularly in ages 0-5 years (1.251 [1.163-1.346]) and 6-10 years (1.152 [1.056-1.257]), but not in ages 11-17 years (1.003 [0.924-1.089]). There was no significant interaction between influenza vaccination and year as predictors of AD in children overall (P=0.6725), or in ages 0-5 years (P=0.5191), 6-10 years (P=0.7455), or 11-17 years (P=0.9151). Interactions were also non-significant in higher order linear and spline models.

Conclusion: These findings confirm that children with AD have higher odds of influenza vaccination in US children, but not adolescents. However, the increasing trend of influenza vaccinations do not appear to be a driving factor for the increasing prevalence of childhood AD over time.