

Childhood Atopic Dermatitis is Associated with Cognitive Dysfunction: A NHIS study from 2008-2018

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Background: Atopic dermatitis (AD) is a common inflammatory skin disease in children and adults. Little is known about the association of childhood AD with cognitive dysfunction. The objective of this study was to examine the association between AD and cognitive dysfunction, including memory impairment and developmental delays, in U.S children (age <18 years).

Methods: Data were analyzed from the National Health Interview Survey (NHIS) 2008-2018 for children. The NHIS utilizes a multistage, clustered, cross-sectional design.

Results: The prevalences of cognitive dysfunction, such as memory impairment (0.87% vs. 0.42%), developmental delays (6.96% vs. 3.87%) and attention deficit (hyperactivity) disorder (ADD/ADHD) (10.78% vs. 8.10%) were higher in children with AD versus those without AD. In multivariable logistic regression models adjusting for age, sex, race, region, socioeconomic factors, allergic conditions and mental health childhood AD was associated with higher odds of memory impairment (adjusted odds ratio [95% confidence interval]: 1.84 [1.34-2.51]), developmental delays (1.54 [1.40-1.70]) and ADD/ADHD (1.31 [1.20-1.42]) compared to children without AD. Childhood atopic disease (defined as comorbid AD, asthma, allergic rhinitis and food allergies) further increased the prevalence of developmental delays to 13.44% (2.10 [1.20-3.70]) in male but not in female children.

Conclusion: In a nationally representative sample of the U.S population, a significant positive association between childhood AD and atopic disease with cognitive dysfunction was identified. Furthermore, a dimorphic relationship with developmental delays was identified between sexes.