Early Child Care Exposure And Wheezing: A Meta-Analysis

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Background: There are mixed results regarding the relationship between early child care attendance prior to 1 year of age and increased risk of the development of wheezing in children.

Methods: We conducted a meta-analysis to synthesize the evidence on whether attending child care prior to 1 year old increases the risk of wheezing. We identified published studies (1964–2014) using search terms (asthma, child care, day care center, nursery school, preschool) in the following databases: MEDLINE, CINAL, and EMBASE. Additionally we scanned bibliographies of selected articles. We combined studies that had sufficient data to estimate the odds of recurrent wheezing among children who attended child care prior to age 12 months old. Statistical tests for homogeneity and publication bias were also performed.

Results: Among the 14,719 studies screened, 51 met the inclusion criteria. The definitions of child care attendance were not standard across studies. For studies that provided sufficient data (n = 4), child care exposure prior to 1 year old was associated with increased odds of wheezing in children 3 years old and younger (OR = 1.49; 95%CI: 1.13, 1.95; I^2 = 0.0%). However, child care exposure prior to 1 year old inversely related to wheezing children 4 years old and older (OR =0.47; 95%CI:0.31, 0.74; I^2 = 0.0%).

Conclusion: Child care attendance prior to 1 year old may initially increase the odds of wheezing among children ages 3 years old and younger, but has a protective effect of decreasing the odds of wheezing in children 4 years old and older.

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