of allergic sensitization and, therefore, an increased risk of developing future asthma.

REVIEWER COMMENTS. A limitation of this study lies in the fact that all subjects were hospitalized for their wheezing, thereby representing a minority of children with rhinovirus infection. Nevertheless, when considering the asthma predictive index, the evidence presented from this study suggests that a history of rhinovirus infection, especially severe infection, could be considered an additional risk factor for the development of asthma.

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Association of Childhood Obesity With Atopic and Nonatopic Asthma: Results From the National Health and Nutrition Examination Survey 1999–2006

Visness CM, London SJ, Daniels JL, et al. *J Asthma*. 2010;47(7):822–829

PURPOSE OF THE STUDY. Previous work has suggested that obesity is related to asthma through an allergic inflammation pathway. These researchers sought to examine the role of C-reactive protein (CRP) in the association between obesity and asthma among a nationally representative sample of US children and young adults.

STUDY POPULATION. The sample came from the 1999–2006 National Health and Nutrition Examination Survey (NHANES) and specifically included children aged 2 to 19 who had information on BMI and asthma status (N = 16 074).

METHODS. Atopy was measured by using allergen-specific serum immunoglobulin E; asthma status was measured through self-report of diagnosis by a physician; and BMI was calculated on the basis of height and weight measurements. Multiple logistic regression analysis was used to examine the association between BMI and asthma status.

RESULTS. Nearly 10% of the children reported current asthma. A higher proportion of atopic compared with nonatopic children reported current asthma (15.8% vs 6.4%; odds ratio [OR]: 2.71 [95% confidence interval (CI): 1.98–3.72]). There was a strong relationship between BMI and CRP levels (r = 0.41). Obese children had a 1.68 odds (95% CI: 1.33–2.12) of having current asthma. Among nonatopic children, those in the obese category were more than twice as likely to have current asthma (OR: 2.46 [95% CI: 1.21–5.02]); however, there was no association between overweight or obesity and asthma among atopic children. Increased CRP levels were associated with an increased odds of having asthma among nonatopic children (OR: 1.45 [95% CI: 1.16–1.81]) but not among atopic children (OR: 0.97 [95% CI: 0.65–1.44]).

CONCLUSIONS. The association of overweight and obesity with asthma was stronger among nonatopic children. Overweight might lead to systematic inflammation that, in turn, leads to an increased risk of asthma in nonatopic people.

REVIEWER COMMENTS. There is growing evidence that the rise in both obesity and asthma might be related. This study was cross-sectional and limits our understanding of the causal relationship between obesity and asthma. However, it contributes to advancing the evidence in this area by examining the mechanisms through which obesity and asthma might be related—in this case, through nonallergic disease. Future studies can build on these findings by examining these associations prospectively.

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Risk of Asthma in Young Adults Who Were Born Preterm: A Swedish National Cohort Study

Crump C, Winkleby, Sundquist J, Sundquist K. *Pediatrics*. 2011;127(4). Available at: www.pediatrics.org/cgi/content/full/127/4/e913

PURPOSE OF THE STUDY. To evaluate whether those who were born prematurely were more likely to be prescribed asthma medications in young adulthood than those who were born at term.

STUDY POPULATION. This was a national cohort study of all singleton infants born in Sweden from 1973 through 1979 (N = 622 616) and followed to ages 25.5 to 35.0 to determine whether asthma medications were prescribed in 2005–2007.

METHODS. Asthma-medication data were obtained from all outpatient and inpatient pharmacies throughout Sweden. Outcome was defined as prescription of (1) both a β_2 agonist inhalant and a glucocorticoid inhalant or (2) a combination inhalant containing a β_2 agonist and other drugs for obstructive airway diseases.

RESULTS. Young adults who were born extremely prematurely (23–27 weeks' gestation) were 2.4 times more likely to be prescribed asthma medications than those who were born at term (95% confidence interval: 1.41–4.06). No association was found between later prematurity (28–32 or 33–36 weeks' gestation) and asthma medications in young adulthood.

CONCLUSIONS. Extreme preterm birth (23–27 weeks' gestation) but not later preterm birth is associated with an increased risk of asthma, at least in young adulthood.

REVIEWER COMMENTS. This is the first study with adequate statistical power to evaluate the risk of asthma beyond adolescence in people who were born extremely prematurely. A meta-analysis of 19 previous studies revealed an overall odds ratio of 1.07 for risk of asthma when comparing people born at gestational ages of <37 weeks to those born at ≥37 weeks (*J Allergy Clin Immunol.* 2006;118[4]:823–830), but this study did not disclose specific data for extremely preterm children. One possible explanation for the findings in the Crump et al study is that preterm birth and asthma might share common genetic determinants. The results of at least 2 previous studies suggest that maternal asthma might be associated with preterm delivery (*Thorax.* 1995;50[5]:525–530 and *Am J Obstet Gynecol.* 2001;184[2]:90–96). Other studies reported that maternal asthma is associated with an increased risk of asthma in their children (*Am J Respir Crit Care Med.* 1998;157[4 pt 1]:1073–1078 and *Environ Health Perspect.* 2001;109[6]:579–582).

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Lung Function and Respiratory Symptoms at 11 Years in Children Born Extremely Preterm: The Epicure Study

Fawke J, Lum S, Kirkby J, et al. *Am J Respir Crit Care Med.* 2010;182(2):237–245

PURPOSE OF THE STUDY. More extremely preterm (EP) infants (≤25 weeks' gestational age) are surviving. What becomes of these children in terms of lung function?

METHODS. This was a national cohort study that involved all infants born at ≤25 completed weeks' gestation in the United Kingdom and Ireland between March and December 1995 ($N = 182$). At the age of 11 years, parents completed a questionnaire and the children performed spirometry. Schoolmates born at term matched for age, gender, and ethnic origin served as controls. Current asthma was defined as "use of asthma medication or wheeze in the past 12 months by children with a doctor diagnosis of asthma, or use of asthma medication and wheeze in the past 12 months even if no prior diagnosis of asthma."

RESULTS. Twice as many EP-born children (25% vs 13%; $P < .01$) had current asthma. Baseline spirometry was reduced (forced expiratory volume in 1 second [FEV_1] 83% vs 100% of predicted; $P < .001$) and bronchodilator responsiveness (>12% increase in FEV_1) was increased (27% vs 8%; $P < .001$) in EP-born children. These changes were most marked in those with previous bronchopulmonary dysplasia. Fifty-six percent of EP-born children had abnormal baseline spirometry results, but fewer than half of them were receiving any medication.

CONCLUSIONS. After extremely preterm birth, impaired lung function and increased respiratory morbidity persist into middle childhood, especially among those with bronchopulmonary dysplasia. Many of these children might not be receiving appropriate treatment.

REVIEWER COMMENTS. A large percentage of children who survive being born extremely prematurely go on to have persistent asthma in childhood. An even higher percentage of them have abnormal spirometry results, and many show reversibility with bronchodilator; however, only half of them are on asthma medication, which indicates that they are receiving inadequate treatment. These children deserve close monitoring through history and spirometry to diagnose and treat asthma.

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DIAGNOSIS AND MANAGEMENT

Changing Trends in Asthma in 9–12 Year Olds Between 1964 and 2009

Malik G, Tagiyeva N, Aucott L, McNeill G, Turner SW. *Arch Dis Child.* 2011;96(3):227–321

PURPOSE OF THE STUDY. This study is a continuation of the Aberdeen Schools Asthma Survey; the first survey was completed in 1964. Subsequent surveys were repeated in 1989, 1994, 1999, and 2004. This survey reports lifetime prevalence of asthma, eczema, hay fever, and wheeze in the previous 3 years. Trends over a 10-year period (1999, 2004, and 2009) were analyzed.

STUDY POPULATION. Children aged 9 to 12 years in Aberdeen, United Kingdom, were invited to participate in this study.

METHODS. Questionnaires were distributed to children by school staff, completed by parents at home, returned to school staff, and then collected by the research team. The same questionnaire that was used in 2004 was used for this study. In addition, International Study of Allergy and Asthma in Children (ISAAC) questions were included.

RESULTS. A total of 2253 children were eligible for the study, and 1196 (53%) of the surveys were returned. The average age of the children was 10.8 years, and 588 (49%) of them were male. Of 31 eligible primary schools, 26 participated in the study. The number of schools that participated was similar to the number that participated

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