using multiple environmental and biological factors. The study reinforced known clinical and demographic associations with early-life wheeze. However, the definition of wheeze phenotypes was largely based on the empirical categorization of the investigators. In addition, further information regarding disease course and outcomes was not available, and future longitudinal studies are necessary to determine the clinical relevance of the identified phenotypes in terms of stability over time and also in predicting severity and treatment response.

**CONCLUSIONS.**

**RESULTS.** The study found that the risk of asthma was highest in children born before 32 weeks’ gestation compared with control subjects, and it remained high in those born up to 38 weeks. Delivery after 41 weeks seemed to protect against the development of asthma. The magnitude of the risk decrease depends on gestational age at birth.

**REVIEWER COMMENTS.** Reduction in risk of asthma development is a key goal of asthma management. This study confirmed previous reports of the association between preterm delivery and asthma in offspring. A novel finding is that the risk is still almost double in those born late preterm and that it remains significant even in those born early term compared with children born at term. This knowledge can help guide the avoidance of iatrogenic early term/late preterm deliveries, especially in pregnant women with asthma. A limitation of the study is that prenatal and environmental factors after birth, which are potential risk factors for asthma development in children, were not controlled. In addition, asthma severity was not taken into account.

**URL:** www.pediatrics.org/cgi/doi/10.1542/peds.2014–1817YY

Merin E. Kuruvilla, MD  
J. Andrew Bird, MD  
Dallas, TX

The Burden of Childhood Asthma and Late Preterm and Early Term Births


**PURPOSE OF THE STUDY.** The goal of this study was to evaluate the association between gestational age at birth and the risk of subsequent development of childhood asthma.

**STUDY POPULATION.** The study population was derived from a clinical birth database of 45,030 infants born after 22 weeks’ gestation at a university hospital in Finland between 1989 and 2008. Women with live-born infants without asthma served as control subjects.

**METHODS.** This trial was a retrospective, observational, hospital-based birth case-controlled study in which data on 44,173 women with live-born infants were linked with data from the register for reimbursement for asthma medication for their offspring. Pregnancy factors consisting of 75 background items were recorded during pregnancy. Health care workers added information on pregnancy complications, pregnancy outcomes, and the neonatal period. The main outcome measure was asthma among the infants.

**RESULTS.** The study found that the risk of asthma was highest in children born before 32 weeks’ gestation compared with control subjects. There was also a significantly higher risk found for those born late preterm (33–36 weeks) and those born early term (37–38 weeks); these 2 groups contributed the most to the extra cases of asthma compared with the reference group of term infants. Delivery at ≥41 weeks was protective against developing asthma. The burden of asthma in offspring was associated mainly with early term deliveries, even though the relative risk of asthma was higher in infants born before 32 weeks. Maternal asthma and male gender had stronger effects on the risk of asthma in offspring born after 37 weeks.

**CONCLUSIONS.** The risk of asthma was 3.9-fold higher in children born at <32 weeks’ gestation compared with late preterm (33–36 weeks) and those born early term (37–38 weeks); these 2 groups contributed the most to the extra cases of asthma compared with the reference group of term infants. Delivery at ≥41 weeks was protective against developing asthma. The burden of asthma in offspring was associated mainly with early term deliveries, even though the relative risk of asthma was higher in infants born before 32 weeks. Maternal asthma and male gender had stronger effects on the risk of asthma in offspring born after 37 weeks.

**Parental Psychological Distress During Pregnancy and Wheezing in Preschool Children: The Generation R Study**


**PURPOSE OF THE STUDY.** The goal of this study was to evaluate the associations of maternal psychological distress during pregnancy with childhood wheezing in the first 6 years of life.

**STUDY POPULATION.** In this study, 4848 children were evaluated from the Generation R Study, a population-based cohort trial from fetal life onward in Rotterdam, the Netherlands. Subjects were born between April 2002 and January 2006.

**METHODS.** The Brief Symptom Inventory was used to assess maternal and paternal psychological distress at 20 weeks of gestation and 3 years after delivery. Maternal psychological distress was also assessed at 2 and 6 months after delivery. Information on wheezing was obtained annually at ages 1, 2, 3, and 4 years by using the asthma questionnaire from the International Study on Asthma and Allergy in Childhood, and information on physician-diagnosed (ever) asthma was obtained by using a questionnaire at 6 years.

**RESULTS.** Of mothers, 7.8% had overall psychological distress during pregnancy. Children had an increased odds ratio (OR) of wheezing overall from 1 to 4 years of life if...
The Burden of Childhood Asthma and Late Preterm and Early Term Births
Maryam Saifi and J. Andrew Bird
*Pediatrics* 2014;134;S163
DOI: 10.1542/peds.2014-1817ZZ

Updated Information & Services
including high resolution figures, can be found at:
/content/134/Supplement_3/S163.2.full.html

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
/site/misc/reprints.xhtml
The Burden of Childhood Asthma and Late Preterm and Early Term Births
Maryam Saifi and J. Andrew Bird
*Pediatrics* 2014;134;S163
DOI: 10.1542/peds.2014-1817ZZ

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/134/Supplement_3/S163.2.full.html