Does Antiepileptic Drug Exposure in Utero Affect Childhood IQ?

Cognitive Function at 3 Years of Age After Fetal Exposure to Antiepileptic Drugs.

Meador KJ, Baker GA, et al:


| High-dose valproate exposure in utero is associated with a significant drop in IQ points in children at 3 years of age. |

**Objective:** To determine if exposure to certain antiepileptic drugs in utero have any effects on long-term intelligent testing at age 3 years.

**Methods:** This study was done in the United Kingdom and the United States in a multicenter trial. Women on a single medication for epilepsy who were pregnant were asked to be enrolled. Drugs that were of interest were carbamazepine, lamotrigine, phenytoin and valproate. The study's ultimate long-term goal was to evaluate cognitive ability of children at age 6 years. This study was a midway point for evaluation at age 3 years. The women who had poly-therapy for epilepsy were not included. Mothers with an IQ <70, or who had HIV, neurological diseases, or syphilis were excluded. Demographic data evaluated for the study included: IQ of the mother; age at delivery; socioeconomic class; frequency of seizures; medication use; high or low dosage of medication; and compliance with the medication. Children were evaluated using developmental scales and IQ testing.

**Results:** There were 258 children assessed in the study at age 2 to 3 years; 73 of the children were exposed to carbamazepine, 84 to lamotrigine, 48 to phenytoin, and 53 to valproate. Children exposed to higher dosages of valproate had a lower IQ than the other antiepileptic drugs (approximately 9 points less). In lower dosage ranges, there were little differences between the drugs.

**Conclusions:** High-dose valproate exposure in utero was associated with a significant drop in IQ points in children at age 3 years.

**Reviewer's Comments:** This study illustrates the long-term effect of certain drug exposures in utero for children. Many physician look at the teratogenic features from these types of drugs after birth, but the long-term effects are often missed. Mothers who have questions about drugs used in pregnancy should avoid drugs like valproate if there is a safe alternative to treat their epilepsy. The ultimate goal of this study is to look at the IQs of 6-year-olds. The authors will need to look at whether the drop in IQ points at age 3 years is sustained until grade school.

**Additional Keywords:** IQ Testing

**print tag:** () Refer to original journal article.
Objective: To evaluate the extent prescription opioid poisoning in young children in the United States and the extent of serious harm associated with these exposures.

Design/Methods: Data were utilized from the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS), which is a detection system of information from many U.S. poison centers, including reports regarding prescription opioids. Data were examined which looked at opioid exposures for a 3.5-year period from 2003 to 2006 in children <6 years. Standardized definitions were used to categorize the effect of the exposure. These ranged from minor (minimally bothersome to the patient) to moderate (more prolonged and systemic, but not life-threatening) to major (life-threatening or resulting in significant residual disability) or death.

Results: 9179 children were exposed to opioids during this period. The exposures primarily involved hydrocodone (>6000 cases) and oxycodone (>2000 cases). Others much less common exposures included morphine, methadone, buprenorphine, fentanyl, and hydromorphone. Median age of the exposed patient was 2 years. Nearly all exposures involved ingestion and were considered unintentional. Exposures occurred in home settings (92% in the patient's own home and 6% in another residence). There were 8 deaths, 43 major effects, and 214 moderate effects. All deaths occurred in children <3 years of age and were caused by oxycodone in 4 cases, hydrocodone in 2 cases, and methadone in 2 cases. Nearly all of the exposures were attributable to medications in the household that had been prescribed for an adult.

Conclusions: Young children are exposed to prescription opioids written for other patients, and this can result in major health effects and death.

Reviewer's Comments: The authors note that this surveillance program involves only a portion of U.S. poison centers so that total exposures and deaths are likely higher. Since most of the exposures occurred in the child's residence, the presumption is that these medications were obtained during an exploration of the environment. Details of the reports indicate that most medications found by the child were likely lost or discarded tablets, containers that had been left open, or partially filled cups of medication. Unfortunately, a number of medications in the category constitute the type where one pill can kill a child. The study reinforces that need for anticipatory guidance regarding child-proofing of medications in the household.

Additional Keywords: Young Children

print tag: () Refer to original journal article.
Bronchiolitis Tx With Epinephrine/Dexamethasone May Reduce Hospitalization

Epinephrine and Dexamethasone in Children With Bronchiolitis.
Plint AC, Johnson DW, et al:
N Engl J Med; 360 (May 15): 2079-2089

Hospitalization rates for infants with bronchiolitis may be slightly decreased when epinephrine is used in combination with dexamethasone.

Background: Bronchiolitis is the most common acute infection of the lower respiratory tract in infants, usually caused by respiratory syncytial virus (RSV) and associated with wheezing, respiratory distress, and hypoxemia. Treatment is controversial, and bronchodilators and corticosteroids when used alone have not proven beneficial in decreasing hospitalization rates.

Objective: To determine if treatment with epinephrine, dexamethasone, or the combination decreases hospitalization rates among infants with bronchiolitis.

Design: Randomized, double-blind, placebo-controlled, clinical trial.

Participants: 800 infants, between 6 weeks and 12 months of age, seen in 8 Canadian pediatric emergency departments (EDs) were included.

Methods: Infants had to have their first episode of bronchiolitis (wheezing associated with a respiratory infection) and a score of 4 to 15 on the respiratory distress assessment index (RDAI), which excludes very mild and very severe disease. Children with a prior history of wheezing or asthma, cardiopulmonary disease, and those exposed to varicella were excluded. Children were randomized to receive nebulized epinephrine (3 mL in a 1:1000 solution) plus oral dexamethasone (1 mg/kg x 1 dose followed by 0.5 mg/kg daily x 5 doses), epinephrine plus placebo, dexamethasone plus placebo, or double placebo as groups 1 through 4, respectively. Assessments included RDAI score, vital signs, oxygen saturation, rectal temperature, and side effects. The primary outcome was hospital admissions up to 7 days after enrollment. Other outcomes measured included changes in heart and respiratory rate, RDAI score, oxygen saturation, and time to discharge.

Results: Most ineligible infants (1841) were excluded due to a previous history of wheezing. Admission rates within 7 days were 17.1, 23.7, 25.6, and 26.4% for groups 1 through 4, respectively. Relative risk for combination versus placebo was 0.65 (95% CI, 0.45 to 0.95). The unadjusted difference between combination therapy and placebo was statistically significant ($P = 0.02$) but when analyses were adjusted, the difference just missed statistical significance. Treatment with epinephrine or dexamethasone alone did not reduce the rate of hospitalization. Respiratory rate and RDAI scores were better among those with combination therapy and length of stay in the ED was slightly shorter. Results were not affected by RSV status, history of atopy, or duration of illness. There were no significant adverse events.

Conclusions: In infants with bronchiolitis, combination therapy with epinephrine and dexamethasone may reduce hospitalizations.

Reviewer's Comments: Limitations included the exclusion of infants with a history of wheezing, the exclusive use of academic centers, and the use of multiple comparisons. The unanticipated synergy prompted the authors to consider the results as exploratory suggesting a need for a properly designed study to compare combination therapy to placebo. Ultimately, 11 children required treatment with high-dose corticosteroids to prevent 1 hospitalization. This risk, as opposed to that associated with inhaled corticosteroid use, must be considered.

Additional Keywords: Dexamethasone & Epinephrine

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Nonprescription Medications Can Be Fatal in Children

Pediatric Fatalities Associated With Over the Counter (Nonprescription) Cough and Cold Medications.

Dart RC, Paul IM, et al:

Fatality associated with nonprescription cold medications primarily occur in children.

**Objective:** To evaluate the role of over-the-counter (nonprescription) cough and cold medications in pediatric deaths and to examine the factors that contribute to these fatalities.

**Design/Methods:** A panel of 8 experts from the fields of pediatrics, toxicology, and forensic pathology examined data from 5 sources, including 24 years of information from the American Association of Poison Control Centers, the medical literature from 1950 to 2007, and materials from a 2007 Food and Drug Administration (FDA) advisory committee regarding pediatric fatalities from these nonprescription medications.

**Results:** 103 deaths were identified that were judged to be possibly, likely, or definitely related to a cough and cold ingredient in a nonprescription medication. In 85%, an overdosage appeared to be involved. In the remaining 15%, a dosage could not be assessed. The authors found that risk factors included the use of medication in children <2 years of age, the use of the medication for sedation, medication use in a day care setting, use of 2 medications with the same ingredient, problems with measuring devices (either a failure to use one or the use of an inappropriate device), use of the wrong product due to misidentification, and the use of a non-prescription medication intended for adults.

**Conclusions:** Deaths caused by non-prescription cough and cold medications were uncommon, but when they occurred, they primarily affected children <2 years old and involved an overdosage. In some cases of fatality, the intent of the caregiver was to provide therapeutic symptom relief but in other cases, it was to induce sedation and in some may have been to facilitate child maltreatment.

**Reviewer’s Comments:** At the peak of cough and cold season, it has been estimated that approximately 4 million children <12 years of age are treated weekly with nonprescription medications. The literature is certainly not replete with glowing examples of the efficacy of these medications despite their widespread use. The "first, do no harm" dictum certainly is one reason why for younger children, the FDA has requested that these medications not be used and also why multiple manufacturers are discontinuing their production for children <2 years of age.

**Additional Keywords:** Pediatric Fatalities

**print tag:** () Refer to original journal article.
Does Treating GERD Improve Asthma?

Efficacy of Esomeprazole for Treatment of Poorly Controlled Asthma.
The American Lung Association Asthma Clinical Research Centers:
*N Engl J Med*; 360 (April 9): 1487-1499

In adults with poorly controlled asthma, treatment for GERD does not improve the asthmatic condition.

**Objective:** To determine if treating gastroesophageal reflux disease (GERD) will help improve asthma symptoms in poorly controlled adult patients.

**Design/Participants:** Randomized, placebo-controlled, double-blind study of adults who were 18 year old and had asthma. The patients who were selected despite the usage of inhaled beta agonists and inhaled corticosteroids still had poorly controlled asthma. Participants were excluded if they had smoked within the previous 6 months or had a history of 10 pack-years of smoking. Also, those who had FEV1 of <50% of their predicted value, had surgery for ulcers, or had clinical indications for acid suppression were excluded.

**Methods:** This study was performed at 19 clinical centers over a 4-year period. After randomization, patients received esomeprazole 40 mg twice daily or a placebo. The outcomes were measured utilizing daily diaries to look at symptoms and to monitor morning peak flows, nocturnal awakenings, and usage of beta agonists. The presence or absence of GERD was determined by ambulatory pH monitoring.

**Results:** The majority of the 412 patients were women. The lung function scores were at the low range of normal as determined by the Juniper Asthma Control Questionnaire (JACQ) screening test; 15% of patients had a history of GERD. The ambulatory pH monitoring determined that 40% of the participants in the treatment or placebo groups had evidence of GERD. Patients were considered adherent if they took the esomeprazole at least 80% of the time. There was 91% to 94% compliance rate with either taking the study drug or placebo. Results showed that all of the participants had poorly controlled asthma, and 61% had an increased use of beta agonists. There were no differences between 2 groups in changes in peak flow scores, urgent care visits, corticosteroid use, or beta agonist use. Night awakening occurred on 1 or more occasions in 50% of the patients and did not differ between the treatment and placebo groups.

**Conclusions:** Using esomeprazole did not help improve symptoms in poorly controlled asthma in adults.

**Reviewer's Comments:** This study was not in children, but the results may be indicative of what we might see in children or adolescents. Children with asthma already have increased costs for medications and prescribing additional medications can only add to this burden. Even though many children have wheezing and GERD, it does mean the treatment of GERD will have a benefit in asthma. Once again, in this study it looked at poorly controlled asthmatic adults and not those with mild asthma. So it cannot be presumed that proton pump inhibitors do not have any benefits in those patients, but future studies might need to be performed before recommending additional medication for asthmatic children.

**Additional Keywords:** Esomeprazole

**print tag:** () Refer to original journal article.
Sweetened Beverage Consumption Increases Caloric Intake

Impact of Change in Sweetened Caloric Beverage Consumption on Energy Intake Among Children and Adolescents.
Wang YC, Ludwig DS, et al:
Arch Pediatr Adolesc Med; 163 (April): 336-343

Reducing the consumption of sugar-sweetened beverages can significantly reduce the overall caloric intake in children.

**Background:** The consumption of sugar-sweetened beverages is considered to be a major cause of overweight and obesity in childhood. The amount of such beverages consumed by children has been increasing significantly over time. Recent data show that approximately 9 out of 10 children consume a sugar-sweetened beverage daily, and >10% of total caloric intake comes from them. Theoretically, replacing these beverages with calorie-free beverages would have a real impact on the net caloric intake in children.

**Objective:** To calculate the amount of caloric reduction that would occur in natural settings if adolescents replaced sugar-sweetened beverages with lower-calorie beverages.

**Design:** Secondary analysis based on previously collected nationally representative data.

**Methods:** Data were drawn from the National Health and Nutrition Examination Survey 2003 to 2004. Within this survey is a 24-hour dietary recall. To be included in the study, data had to be from children aged 2 to 19 years with 2 completed dietary interviews. Beverages were grouped into 5 categories: sugar-sweetened beverages; diet beverages; milk; 100% fruit juice; and other (such as unsweetened tea or coffee). Analyses controlled for the consumption of non-beverages, fast-food intake, weekend versus weekday intake, weight status, and income. The main outcomes of interest were associations between intake of sugar-sweetened beverages and total caloric intake.

**Results:** Data were available for 3098 individuals. The average caloric intake was 2118 kcal over a 24-hour period; >90% had at least 1 sugar-sweetened beverage on measured days. Each serving of a sugar-sweetened beverage was associated with an increase in intake of 106 kcal per day. Increases were also seen for whole milk (169 kcal/day), reduced-fat milk (145 kcal/day), and fruit juice (123 kcal/day). No significant increases were seen for water or diet drinks. Replacing all sugar-sweetened beverages with water could theoretically reduce the average caloric intake each day by 235 kcal.

**Conclusions:** Lowering the consumption of sugar-sweetened beverages can significantly reduce the overall caloric intake in children. Sugar-sweetened beverages are consumed by many children and are a significant and independent source of calories in children. Replacing these beverages with reduced calorie beverages could result in significantly fewer consumed calories each day, which could be a powerful way to confront the obesity epidemic.

**Reviewer's Comments:** This study further confirms that sugar-sweetened beverages are a major component of caloric intake in children and adolescents. Despite the protests of students, some schools have provided lower calorie liquids that are eventually accepted. We need more such health-conscious school programs.

**Additional Keywords:** Energy Intake

**print tag:** () Refer to original journal article.
Children With KD Can Have Range of Unrelated Symptoms

Associated Symptoms in the Ten Days Before Diagnosis of Kawasaki Disease.

Baker AL, Lu M, et al:

*J Pediatr*; 154 (April): 592-595

> It is not uncommon that children with Kawasaki disease also have a wide variety of other symptoms that are not part of the disease's diagnostic criteria.

**Background:** Kawasaki disease (KD) is an acute systemic vasculitis of childhood that can lead to coronary artery aneurysms if left untreated. The lack of a specific test makes the diagnosis of KD challenging.

**Objective:** To describe common symptoms associated with KD in the first 10 days of the illness.

**Design/Participants:** This study was part of a larger multicenter, randomized, controlled trial of corticosteroid treatment for KD. Children were eligible for the study if they had any of the following: established clinical criteria for KD: specified coronary artery enlargement on echocardiography along with appropriate clinical criteria; coronary artery aneurysm; and 1 clinical criterion. Children were enrolled in the study on days 4 to 10 of their illness (day 1 was the first day of fever). As part of the study, nurses recorded symptoms (excluding KD criteria) for each participant for the 10 days prior to study enrollment, using parent interviews and observations of primary caregivers. Only symptoms that occurred in at least 10% of patients were part of this analysis. The authors also examined the age distribution among different symptoms, as well as the association between symptoms and laboratory test results.

**Results:** 198 children were enrolled in the study. Of the 93 types of symptoms recorded, only 9 occurred in >10% of subjects. The most common symptoms were irritability (50%) and vomiting (44%). Rounding out the top 5 reported symptoms were decreased fluid intake, cough, and diarrhea. Patients with vomiting had a modest increase in median alanine aminotransferase compared to those without vomiting. There was no association between irritability and erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP). Patients with joint pain, abdominal pain, and vomiting had higher neutrophil counts. Younger patients were more likely to be irritable and have rhinorrhea, while older patients were more likely to report vomiting, abdominal pain, and joint pain. There was no association between symptoms and coronary artery size up to 5 weeks after the onset of fever.

**Conclusions:** Symptoms other than those diagnostic of KD are common in the first 10 days of the illness. It is not clear whether these symptoms are due directly to KD or an infectious cause that may have triggered the KD condition.

**Reviewer's Comments:** Children with KD can present with additional symptoms beyond those that are diagnostic for the disease. Therefore, it is important to recognize that the presence of additional symptoms do not rule out the possibility that the child has KD. The types of additional symptoms present tend to aggregate by age so that younger children with KD are more likely to be irritable and older children are more likely to have abdominal symptoms.

**Additional Keywords:** Symptoms

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Does Race or Gender Affect Metabolic Syndrome Risk Factors?


Johnson WD, Kroon JJM, et al: 

There are differences in the prevalence of components of the metabolic syndrome in adolescents of different races and sexes; black adolescents seem to have a lower prevalence of these factors.

**Background:** The prevalence of obesity is on the rise, and along with it, the prevalence of type 2 diabetes and other disorders. One of these is the metabolic syndrome, which includes an elevated triglyceride, low HDL-cholesterol (HDL-C), high blood pressure (BP), and elevated fasting blood glucose.

**Objective:** To determine the prevalence of different combinations of components of the metabolic syndrome in adolescents.

**Design:** Retrospective review using data from the National Health and Nutrition Examination Survey (NHANES).

**Methods:** Data were used from 2001 to 2006 for children 12 to 19 years of age; those who were not Hispanic, white, or black, who did not have complete data, or who were on a medication to regulate blood glucose were excluded. Specifically, data abstracted included waist circumference, diastolic and systolic BP, glucose concentration, triglyceride concentration, and HDL-C concentration. Children were defined as having the metabolic syndrome if they had 3 of these values in the 90 percentile or greater for their age. Demographic and descriptive data were also collected for use in analyses.

**Results:** Over the years for this study, 2456 adolescents were analyzed, representing the population of 29 million adolescents in the United States. Slightly >50% were male, 68% were white, and each age group comprised between 11.2% and 13.1% of the sample. The overall prevalence of the metabolic syndrome was 8.6%; approximately 50% of those studied had at least 1 component of the metabolic syndrome. Males (11%) had a higher prevalence than females (6%), and Hispanics (11%) had a higher prevalence than whites (9%) or blacks (4%). Black females had a rather high prevalence of large waist circumference (23%), but this did not seem to drive a higher rate of the metabolic syndrome. Hispanic and white adolescents had significant numbers of individuals with a large waist circumference, high triglyceride concentration, and low HDL-C.

**Conclusions:** The racial and gender differences of the components of the metabolic syndrome indicate that there may be differences for the onset of associated cardiometabolic disorders. There were differences in the prevalence of components of the metabolic syndrome in adolescents of different races and sexes, with black adolescents having a lower prevalence of these factors. These differences should be studied further to see if they can be used to target interventions to improve cardiometabolic health in adolescents as they become adults.

**Reviewer’s Comments:** The concept of the metabolic syndrome is useful, as it should alert the physician of an obese teenager to monitor his/her lipids, BP, and glucose levels. Once identified, the patient may be stimulated to lose weight, change dietary habits, exercise, and avoid salty foods as a method to prevent further health problems, such as atherosclerosis and heart disease. Actually, these recommendations are good for all obese patients.

**Additional Keywords:** Adolescents

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Asymptomatic Children Can Have Detectable Respiratory Pathogens in Winter

Respiratory Pathogens in Children With and Without Respiratory Symptoms.

van der Zalm MM, van Ewijk BE, et al:
J Pediatr; 154 (March): 396-400

Forty percent of asymptomatic children have detectable respiratory pathogens in the wintertime.

Background: In the majority of cases, respiratory infections in children are felt to be caused by viruses. While much is known about the prevalence of respiratory pathogens in times of illness, less is known about their prevalence during symptom-free periods.

Objective: To evaluate the presence of respiratory pathogens in children with and without respiratory symptoms.

Design: A prospective longitudinal study conducted for 6 months during the winter of 2004 to 2005 in the Netherlands.

Participants: The parents of 18 children (age range, newborn to 7 years) were contacted twice weekly to determine the presence of any respiratory symptoms in their child. These symptoms could include rhinorrhea or nasal congestion, sore throat, earache, cough, or fever. Whether the child did or did not have respiratory symptoms, samples were collected from the nose and oropharynx every 2 weeks. Polymerase chain reaction (PCR) testing was done on the swabs for rhinovirus, enterovirus, coronavirus, respiratory syncytial virus (RSV), influenza A and B, human metapneumovirus, adenovirus, Chlamydophila pneumoniae, and Mycoplasma pneumoniae. An episode was defined as "asymptomatic" if there were no respiratory symptoms for the week before and the week after a sample was taken.

Results: 230 samples were obtained. In 56% of the symptomatic episodes, a pathogen was found. However, a pathogen was also found in 40% of the asymptomatic episodes. In both symptomatic and asymptomatic episodes, rhinovirus and coronaviruses were the most prevalent viruses obtained. Young children with pathogen-positive episodes were unlikely to be asymptomatic (only 9%), which compared to 36% of the oldest children who were asymptomatic despite the presence of a respiratory pathogen. In only 3% of the asymptomatic episodes were multiple pathogens found compared to 17% of the symptomatic episodes.

Conclusions: Respiratory pathogens are detected frequently from children who have no respiratory symptoms. Symptomatic episodes are more likely to occur with the presence of >1 respiratory pathogen or in a younger child.

Reviewer's Comments: The presence of respiratory pathogens in 40% of asymptomatic children in the wintertime makes it plainly evident why parents get frustrated by the frequency of infections when children attend daycare or school. Even the harshest of exclusionary policies do not limit the asymptomatic child from attending and being a possible vector. These results demonstrate that older children, with more challenged and developed immune systems, are less likely to be symptomatic when carrying a potential pathogen.

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**S. aureus** Head and Neck Infections Becoming More Common

*Nationwide Trends in Pediatric Staphylococcus aureus Head and Neck Infections.*


Head and neck *Staphylococcus aureus* infections are becoming more common, and there is an increasing resistance with clindamycin, especially in those strains resistant to methicillin.

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**-Staphylococcus aureus**

**Background:** *Staphylococcus aureus* continues to be a major pathogen in the community across the United States. Resistant *S. aureus* has also been more prevalent in children. Areas on the body, such as the head and neck, are common places for this infection to be isolated.

**Objective:** To look at the epidemiology of *S. aureus* infections in the head and neck areas of children.

**Methods:** The authors studied a retrospective microbiology query over a 5-year period from a surveillance network of >200 hospital microbiology laboratories. The demographics were recorded on age, sex, region, state, and source of infection. The results from head and neck specimens were reviewed for this study. Areas that were of interest included the middle ear fluid, external ear canal, mandible, nasopharynx, nasal cavity, cervical lymph node, oral cavity, sinus cavity, and oropharynx. To simplify, the authors divided each subsite into 3 categories: the oropharynx/neck; sinonasal; and otologic.

**Results:** There were 21,009 people identified in the network between the age of 0 and 18 years; 75% of the data on infections were from outpatient sites. The largest geographic region with the most head and neck *S. aureus* infections was in the East-North Central region of the United States (20% of the total). The oropharynx neck area was the most commonly infected area at 60%, followed by sinonasal group at 37%, and only 3% in the otologic group. Twenty-one percent of the isolates were methicillin-resistant *S. aureus* (MRSA). MRSA infections were found in the highest portion in otologic areas (37%) then sinonasal (28%). Eighteen percent of all isolates were resistant to clindamycin, and 47% of the MRSA isolates were resistant to clindamycin.

**Conclusions:** Head and neck *S. aureus* infections are becoming more common, and there is an increasing resistance with clindamycin, especially in those strains already resistant to methicillin.

**Reviewer’s Comments:** Staphylococcus infections are on the rise in all areas of the United States. A significant point made by the authors is the differences in the specific body site. MRSA was more likely to be found in the otologic area, whereas overall, *S. aureus* infections were in the oropharynx region. Clindamycin resistance was also very significant in the MRSA group. Culturing is still the gold standard.

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Mass Screening for Pediatric Celiac Disease--No Consensus Yet

Long-Term Health and Quality-of-Life Consequences of Mass Screening for Childhood Celiac Disease: A 10-Year Follow-Up Study.


Pediatric patients with celiac disease discovered through mass screening demonstrated high compliance rates with dietary modification 10 years after diagnosis without deterioration of general quality-of-life measurements.

**Background:** Patients with celiac disease (CD) face morbidities such as osteoporosis, stunted growth, neuropsychiatric disturbances, and lower health-related quality of life (HRQOL). Mass screening for CD is controversial because it is unclear if early detection and treatment in asymptomatic patients improves morbidity.

**Objective:** To follow both treated and untreated participants who were diagnosed with CD by mass screening for 10 years after diagnosis to determine health status and HRQOL.

**Design:** Prospective 10-year follow-up study.

**Participants:** 32 children diagnosed with CD by mass screening at the age of 2 to 4 years.

**Methods:** Randomization was attempted by the investigators with 7 asymptomatic participants assigned to a gluten-free diet (GFD) and 1 child with and 6 without symptoms assigned to a normal diet. However, another 18 participants refused randomization and continued with the study. Five symptoms were followed: abdominal pain, diarrhea, constipation, irritability, and lassitude. Participants were also evaluated on HRQOL at both diagnosis and 1 year after starting treatment.

**Results:** Approximately two-thirds of participants benefitted from early identification and treatment (40% who were symptomatic at diagnosis and 25% who were initially asymptomatic but progressed to symptoms); approximately 20% of participants remained asymptomatic despite continuing a normal diet. The general HRQOL of all-comers within the study was similar to that of the general population. However, participants with CD maintaining the GFD had HRQOL measurements on the CD-specific questionnaire that were similar to those of the source population of untreated patients with CD.

**Conclusions:** A majority of participants who maintained a GFD had resolution of symptoms. On the general HRQOL, participants on the GFD showed improved HRQOL; however, they also demonstrated a lower HRQOL compared to untreated patients with CD on the CD-specific questionnaire. The investigators concluded that there are health benefits to early detection through screening and treatment. However, that there may not be clear benefit to treatment in asymptomatic patients as the HRQOL is ambiguous and some participants remained asymptomatic on a normal diet.

**Reviewer's Comments:** This study is fundamentally flawed in its failure to appropriately randomize its participants. True comparisons between diets and their impact on both symptoms and HRQOL cannot be made with any certainty; therefore, a decision concerning mass screening remains unanswered.

**Additional Keywords:** Screening

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Putting Kids on Pot Can Help Bedwetting a Lot--or at Least a Little

The Short- and Long-Term Effects of Simple Behavioral Interventions for Nocturnal Enuresis in Young Children: A Randomized Controlled Trial.
van Dommelen P, Kamphuis M, et al:
J Pediatr; 154 (May): 662-666

Lifting a 4- to 5-year-old child with nocturnal enuresis and placing him or her on the toilet about 2 hours after falling asleep modestly improves the cure rate of nocturnal enuresis after 6 months.

**Objective:** To assess the short- and long-term effects of 3 behavioral interventions to overcome nocturnal enuresis in young children

**Methods:** Children who were 4 to 5 years old, who had nocturnal enuresis for 2 nights per week, and who were never treated with an alarm system or pharmacologically were eligible for the study. After a 2-week trial period to confirm nocturnal enuresis, the participants were randomized to 1 of 4 groups: lifting the child to a toilet 1.5 to 2 hours after falling asleep with the use of a password to check whether the child was awake, lifting the child to a toilet without using a password, using a chart-based reward system, or a control group. Parents completed a daily enuresis diary for 6 months. A follow-up questionnaire was done 3 years later. Participants were terminated from the study if they were dry for 14 consecutive nights. The dropout rate was higher in the lifting to the toilet groups (30% and 36%) than in the reward and control groups (19% and 14%).

**Results:** After 6 months, only the group that lifted the child without using a password had a significantly higher "dry" rate than the control group (37% vs 21%); 27% of the group that involved lifting with a password and 32% of the reward-system group were dry (neither rate reached statistical significance). Only 65% of the participants completed the 3-year follow-up survey. The "dry" rate for the control group at 3 years was 69% versus 76% to 78% for all other groups.

**Conclusions:** Lifting a 4- to 5-year-old child with nocturnal enuresis and placing him or her on the toilet about 2 hours after falling asleep modestly improves the cure rate of nocturnal enuresis after 6 months. The investigators speculated that the intervention involving waking the child via a password would work best because the child would be more awake, but this intervention proved less effective.

**Reviewer's Comments:** Watchful waiting is still the gold standard for "curing" nocturnal enuresis, but this study demonstrates a viable approach for families who just can't wait for the problem to go away on its own. Bedwetting alarm systems have much higher cure rates in kids at least 6 years of age (approximately 80%). However, the authors consider alarm systems for this age group "inappropriate," presumably because of the effort these systems require for younger children. It is interesting, however, that the dropout rates for the "lifting" approach were almost double that of the control groups, suggesting that this intervention is not that easy for families to complete. I wonder what happened to the old saw that since bedwetting is so common in 4 year olds, it is not a problem until the child turns 5.

**Additional Keywords:** Behavioral Interventions

**print tag:** () Refer to original journal article.
SIDS--Sleep Environment Risk Factors

Sleep Environment Risk Factors for Sudden Infant Death Syndrome: The German Sudden Infant Death Syndrome Study.

A number of factors were found to significantly increase the risk of sudden infant death syndrome, including bed sharing, duvets, sleeping prone on sheepskin, sleeping in another person’s house, and sleeping in the living room.

Background: Sudden infant death syndrome (SIDS) is still the most common cause of death in the first year of life outside the neonatal period. The "Back to Sleep" campaign has significantly reduced the prevalence of SIDS worldwide. This has led to other recommendations, which have less evidence. The evidence that does exist seems to have come from studies in which the infants were sleeping on their stomachs.

Objective: To determine risk factors for SIDS in a population of infants who slept primarily on their backs.

Design/Methods: This was a case-control study performed over a 3-year period in Germany. In this 3-year period, 333 SIDS cases were identified; they were matched to 998 control cases on age, sex, region, and sleep time. Questionnaires were given to control and case families with a trained interviewer in the parents' home. Data were gathered on sleep patterns, the likely time of death, environmental factors, illnesses, and other data that might have been pertinent. Autopsies were performed on all cases by forensic pathologists.

Results: Only 4% of infants were put to sleep on their stomachs, but these infants were at significantly higher risk for SIDS (OR, 7.1). A number of factors were found to significantly increase the risk of SIDS. These included bed sharing, the use of duvets, sleeping prone on sheepskin, sleeping in another person's house, and sleeping in the living room. Sleeping with a pacifier was found to be protective in reducing the risk of SIDS. However, the number of each of these findings is small.

Conclusions: There remains good evidence for putting infants to sleep on their backs, but this study indicates other factors that may contribute to SIDS or its prevention. Several factors were found to be associated with an increased risk of SIDS, including sleeping in another person's house and sleeping in the living room. These findings were in a small number of cases, however, and need confirmation from larger studies. We should continue to recommend that all infants be placed on their backs to sleep.

Reviewer's Comments: Although the "Back to Sleep" campaign has been successful, further interventions are necessary. This study provides a number of avenues for further exploration. These trials may be misleading, as many infants will roll over and sleep for some of the night in the prone position.
Intrathecal Baclofen May Increase Gait in Ambulatory CP Patients

Intrathecal Baclofen Infusion for Ambulant Children With Cerebral Palsy.

Brochard S, Remy-Neris O, et al:
Pediatr Neurol; 40 (April): 265-270

An intrathecal baclofen infusion in ambulatory cerebral palsy patients decreased spasticity and increased independence in ambulation, yet it has a significant complication rate.

**Background:** Cerebral palsy (CP) places children at significant risk for non-ambulation, with one-third of children losing their ability to walk by 5 years of age and others facing continual deterioration without intervention due to increasing spasticity. Intrathecal baclofen infusion has been used in quadriplegic CP, yet few studies have focused on its effect on walking.

**Objective:** To determine if intrathecal baclofen infusion improves the gait in ambulatory CP patients.

**Design:** Retrospective, consecutive case series.

**Participants:** 21 children with a diagnosis of CP who were capable of ambulating with or without an assistive device with sufficient body mass to have an intrathecal pump, lower limb spasticity score >3 on the Ashworth Scale, and a clearly defined goal in starting the infusion.

**Methods:** Each participant received a test dose of intrathecal baclofen prior to pump implantation to ensure efficacy. A pump was then placed with follow-up 1 year later. Spasticity was tested via the Ashworth Scale both at initiation of therapy and again at follow-up. Postural control and gait assessment were also assessed; the latter with the Gillette Functional Assessment Questionnaire. Finally, complications as a result of the pump were determined.

**Results:** The mean Ashworth score for lower extremity spasticity was significantly lowered 1 year after initiation of the intrathecal baclofen infusion. In terms of postural control, 7 participants experienced improvement and needed less assistance with ambulation. The Gillette Functional Assessment Questionnaire score significantly improved. On further analysis, neither age nor the Ashworth Scale (spasticity) correlated with the Gillette score (functionality). Finally, approximately 40% of participants experienced complications including catheter rupture, catheter migration, a myelomeningocele, and skin necrosis. Nine children required further surgical intervention secondary to complications.

**Conclusions:** Ambulatory CP participants demonstrated decreased spasticity scores and improved postural stability and functionality; however, nearly 40% experienced complications, with more than one-third requiring further surgical intervention.

**Reviewer's Comments:** This study's strength lies in its focus on the subset of CP patients with ambulation. Its narrow focus and its use of questionnaires to address spasticity and functionality elicit results that are appealing to those who serve this population. However, the high complication rate also found during this study is alarming and must be strongly considered before advising an ambulatory patient. I agree with the investigators that a long, prospective study is required to follow the rate of complications and the impact of these complications on survival and quality-of-life metrics.

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Will Breastfeeding Be Disrupted by Pacifier Use?

Pacifiers and Breastfeeding: A Systematic Review.
O'Connor NR, Tanabe KO, et al:
Arch Pediatr Adolesc Med; 163 (April): 378-382

Pacifiers do not significantly shorten the duration of breastfeeding.

Background: Avoidance of pacifiers is one of the tenets of successful breastfeeding advice from many consultants and organizations that promote breastfeeding. The basis of these recommendations is hard to determine. Other studies indicate that pacifiers use at bedtime may decrease the incidence of sudden infant death syndrome (SIDS). Guidelines from the American Academy of Pediatrics (AAP) recommend that pacifiers not be used for the first month for breast-fed babies.

Objective: To review the literature on breastfeeding and the use of pacifiers.

Methods: A detailed literature review of articles in the English language that included pacifiers and breastfeeding was undertaken; 274 studies were found on first review. Articles were selected that reported an association between pacifier use and breastfeeding initiation and duration, had a clearly indentified comparison group, and consisted of healthy term and preterm infants. Only 29 studies met the author's criteria. There were 4 randomized, controlled trials (RCT), 20 cohort studies, and 5 cross-sectional studies. Difficulties in this analysis included the definition of pacifier use and the frequency of use. Breastfeeding was classified as exclusive, predominant, or any.

Results: None of the RCT studies found a significant difference in breastfeeding duration when pacifiers were used. In one study, the duration of breastfeeding was the same in the study group, in which mothers received educational programs that emphasized the avoidance of pacifiers, and in the control group, in which pacifiers use was not discouraged. Both groups had an 18% rate of weaning at 3 months. The observational studies looked at >1 relationship between pacifier use and breastfeeding. Seventeen of 25 studies showed shortened duration of breastfeeding when pacifiers were used; 8 showed no difference. There were many unaccounted for variables in these observational studies.

Conclusions: The RCT studies showed no adverse effect on breastfeeding when pacifiers were used.

Reviewer's Comments: Although this study attempted to answer some of the questions that occur every day regarding infant feeding, unfortunately, a literature review of studies of variable methodologies will not provide definitive answers. There was great contamination of the study and control groups as shown in one study citing that 61% of infants in the study group used pacifiers compared to 84% in the control group. Treating pacifiers as a pariah will not pass the common sense test as many mothers do not experience any harm of pacifier use so they will use them to calm the baby. The AAP recommendation of pacifier use at bedtime to prevent SIDS only adds to the confusion of right or wrong. The authors should be congratulated on their hard work in reviewing the literature; unfortunately, the source material is the result of flawed methods and unaccounted for variables—hence the call for a prospective well-controlled RCT.

Additional Keywords: Pacifiers

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Screening Febrile Infants May Miss Serious Infections

A Week-by-Week Analysis of the Low-Risk Criteria for Serious Bacterial Infection in Febrile Neonates.

Schwartz S, Raveh D, et al:
Arch Dis Child; 94 (287-292):

Screening febrile infants may miss urinary tract infections.

Background: The former practice recommended performing a full workup and treating all febrile infants (FI) <3 months of age. The management of FI was first modified by changing the age to 6 weeks and further amended to outpatient management with empirical antibiotics for well-looking febrile infants between 1 and 2 months of age.

Objective: To examine the reliability of low-risk criteria to exclude serious bacterial infections.

Design: A review of records over a 10-year span was performed of neonates aged 28 days who came to the emergency department for evaluation of fever. The low-risk group of neonates were well appearing and had a white blood cell (WBC) count of 5000 to 15,000/mm3, a negative urine leucocyte esterase, and <23 WBC in the spinal fluid. Serious bacterial infection (SBI) included positive culture, infiltrate on chest x-ray, and/or a bone or soft-tissue infection that appeared after admission.

Results: 644 febrile neonates were identified; 195 were excluded because of incomplete records. A sub-analysis of the 181 excluded charts showed 32 neonates (17%) with SBI (vs 19% of the study group). Seventy-nine percent of the SBIs were in males. Six percent of the 226 low-risk criteria patients had a serious infection. Sixteen percent of SBI cases would not have been detected by the low-risk criteria. All but one infection was from the urinary tract. In this study, urine cultures of >1 organism were considered positive for urinary tract infection (UTI). Of the 82 positive urine cultures, 7 had >1 organism. The urine screen for infection detected 73% of those who had a UTI confirmed by urine culture (sensitivity, 73%; negative predictive value, 92%). The first temperature was 38.3 degrees C for those with SBI and 38.1 degrees C for those without infection. WBC count >15,000/mm3 was strongly associated with SBI but had a positive predictive value of only 33%. The authors noted the high rate of circumcision at 8 days, which could contribute to the UTI incidence.

Conclusions: The accepted low-risk criteria used to assess FI 28 to 60 days of age are not sufficiently reliable in neonates of all ages, leading to the failure to diagnose UTI. Bacteremia and meningitis are rarely missed. The authors recommend admitting all febrile patients.

Reviewer's Comments: In this age of trying to discourage over-use of expensive hospitalizations, the recommendations of admitting all FI will not please the insurance companies. There is an alternative that needs to be tested. Do all newborns with UTI need to be admitted? In this study, cultures of several organisms were considered positive, not a contaminant. Certainly, infectious disease consultants could advise us about antibiotics that would cover the common organisms causing UTI. Since most UTIs in this age group stem from anatomical or hematological causes, a safe protocol might be created to provide maximum care and reduce the costs.

Additional Keywords: Febrile Newborns

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Overweight Prevention--Promote and Provide Drinking Water in Schools

Promotion and Provision of Drinking Water in Schools for Overweight Prevention: Randomized, Controlled Cluster Trial.
Muckelbauer R, Libuda L, et al:

**Background:** Obesity remains a major problem worldwide for children; its prevention remains a major priority. Most strategies to influence obesity are aimed at individuals, and are not environmental modifications. Targeting beverages has been an approach with some modest benefit in other studies, since sugar-containing beverages can be a significant source of calories. Replacing such beverages with water may be a way to encourage a reduction in calorie consumption and prevent obesity.

**Objective:** To determine if an environmental and educational intervention promoting water consumption in an elementary school can prevent obesity.

**Design/Methods:** This was a randomized, controlled cluster trial of second and third graders from 32 elementary schools in 2 cities in Germany. The level of randomization was at the city. In the intervention schools, 1 or 2 water fountains were installed that could provide filtered or carbonated water. Children were also given plastic water bottles and were encouraged to fill them before class. Four lessons were also taught on water needs, with a formal curriculum. Schools in the control group did not receive the water fountains or the educational curriculum. The main outcomes of interest included the prevalence of overweight, body mass index (BMI), and beverage consumption in the 2 groups. As a secondary measure, the water flow of the fountains was measured.

**Results:** Over the 1 year of this study, 2950 children participated (1641 intervention and 1309 control). At the end of the study, the prevalence of overweight was 23.5% in the intervention group and 27.8% in the control group (a significant difference). The overall difference in BMI in the 2 groups was not statistically significant. Those in the intervention group consumed, on average, 1.1 more glasses of water per day; there did not seem to be a significant reduction in the consumption of other beverages in the intervention group, however.

**Conclusions:** The environmental and educational intervention to increase water consumption had a significant effect in preventing overweight in an elementary school population. Installing an extra water fountain and encouraging its use resulted in lower rates of overweight in the elementary school population. It did not seem to do so by replacing the consumption of other beverages. This is a promising and interesting idea, and one that seems easy to replicate.

**Reviewer’s Comments:** Knowing how hard it is to influence people with respect to weight gain on an individual level, it's nice to see that a simple intervention like this might work. It's worth replicating this in the United States.

**Additional Keywords:** Water Fountains

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Asthma Flares Triggered by URI No Worse Than Others

The Impact of Viral Respiratory Infection on the Severity and Recovery From an Asthma Exacerbation.

Chang AB, Clark R, et al: 
Pediatr Infect Dis J; 28 (April): 290-294

In the outpatient setting, asthma flares triggered by upper respiratory infections are not more prolonged or more severe.

Objective: To evaluate the impact of a concurrent upper respiratory infection (URI) on the severity and resolution of symptoms in children with a non-hospitalized exacerbation of asthma.

Participants/Methods: Eligible participants were aged 2 to 15 years and presented to an emergency department for an acute asthma exacerbation. The study evaluated the impact of a URI, defined clinically as well as via nasopharyngeal (NP) swab results, on asthma quality-of-life scores, cough diaries, and asthma diaries on days 5, 7, 10, and 14. NP swabs were analyzed via polymerase chain reaction (PCR) for rhinovirus, respiratory syncytial virus, adenovirus, parainfluenza, influenza, enterovirus, coronavirus, human meta-pneumovirus, Mycoplasma pneumoniae, and Chlamydia pneumoniae. Exclusion criteria included hospitalization for asthma, other underlying respiratory disease, neurodevelopmental abnormality, and maintenance oral corticosteroids.

Results: Mean age of the 201 children randomized was 4.6 years. The completion rate for quality-of-life scores was >80.0%, but for diaries, it was only 65.7%. URI was clinically present in 64% of participants and in 54% of those tested via NP swab. At day 5, there was a significantly worse asthma diary score for those with a clinically diagnosed URI, but there was no significant difference for those with a PCR-confirmed URI.

Conclusions: There was no difference between those with or without a URI (diagnosed either clinically or via PCR) in asthma quality-of-life scores on day 7, 10, or 14 or in cough or asthma diaries.

Reviewer's Comments: While URIs are well known to trigger asthma exacerbations, this study reports that these infections do not impact severity or duration of outpatient asthma exacerbations once day 7 of illness is reached. There were conflicting data for day 5, however, and the study did not examine severity of illness prior to day 5. Families may want to know that URIs do not cause more severe or prolonged asthma symptoms in the outpatient setting beyond 5 to 7 days of illness. When asthma symptoms are prolonged, they should not be attributed to simply the natural course of the URI. Of interest, no participant in this study tested positive for mycoplasma.

Additional Keywords: Asthma Exacerbations

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Wet Combing Detects Head Lice Better Than Visual Inspection

Accuracy of Diagnosis of Pediculosis Capitis: Visual Inspection vs Wet Combing.

Jahnke C, Bauer E, et al:
Arch Dermatol; 145 (March): 309-313

Use of wet combing is >3 times more likely to detect head lice compared to visual inspection alone in children found to have active pediculosis capitis.

Objective: To compare the accuracy of techniques currently in use (visual inspection and wet combing) as diagnostic modalities for pediculosis capitis.

Design: Observer-blinded comparison study involving 5 primary schools in Germany that had reported emerging or persistent head lice infestation in some classes to a public health unit.

Participants/Methods: Children ranged in age from 6 to 12 years. Parents were notified that their children would be screened. Each child was examined by 2 methods. The first investigator used visual screening, which consisted of parting the hair at 5 standardized topographic sites using an applicator stick. An illuminated magnifying glass was used for confirmation if eggs/nits or lice were detected. Following visual screening, the child was seen by a different investigator who was unaware of the results of the previous screening. The second investigator re-examined the child with a head lice detection comb. This technique involved wetting the hair with a commercially available conditioner, disentangling the hair with an ordinary comb, and then using a lice comb for testing. After each time the comb was pulled through the hair, the conditioner was wiped on a white paper and an illuminated magnifying glass was used to identify any trapped objects. Investigators rotated between sites after 2 hours. The primary outcome measure was a comparison of the sensitivity of each technique in detecting either active lice or historic infestation (nits without lice).

Results: 304 children participated in the study. The authors found that wet combing was superior to visual inspection for diagnosis of active infestation. The sensitivity of wet combing for detection of lice was 91% compared to only 29% for visual inspection ($P <0.001$). However, visual inspection was better at diagnosing presence of nits (86% vs 68%; $P <0.001$).

Conclusions: Wet combing, compared to visual inspection, is a more accurate and sensitive method to detect active head lice infestation. Visual inspection is a better method to determine presence of nits.

Reviewer's Comments: Other studies have shown that children with head lice in industrialized countries typically have only a few head lice in their scalp. This contrasts with infestations in developing countries where larger numbers of lice are more likely to be found. The relatively limited views of the scalp with visual inspection would be more likely to miss a louse. The wet combing technique is a more global search. There is debate on whether presence of nits alone constitutes an active infestation warranting a pediculicide. Certainly, unless you are careful in your search for nits, the landscape is strewn with debris that are believed to be nits, but aren't. If your goal is detecting a louse, wet combing is the way to go.

Additional Keywords: Visual Inspection vs Wet Combing

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Recent Decreases in SCD Mortality May Be Due to Vaccine


Yanni E, Grosse SD, et al:

*J Pediatr;* 154 (April): 541-545

Over the last 20 years, mortality rates from sickle cell disease have declined for children aged 0 to 9 years but not for children aged 10 to 14 years.

**Background:** In that last 20 years, there has been implementation of numerous medical interventions aimed at reducing the mortality from sickle cell disease (SCD), including newborn screening, pneumococcal vaccines, and penicillin prophylaxis. The impact of these interventions and the trend in SCD-related mortality in the last 2 decades is unknown.

**Objective:** To examine trends in SCD-related mortality from 1983 to 2002 in the United States.

**Methods:** This study analyzed death certificates from 1983 to 2002 for black children aged 0 to 14 years for whom SCD was listed as a cause of death on the death certificate. Death certificates were excluded from analysis if they also contained sickle cell beta thalassemia, sickle cell trait, or conditions other than SCD (perinatal conditions, congenital anomalies, trauma, or autoimmune diseases). The number of living black children from 1983 to 2002 was extracted from U.S. census data. The ratio of the number of SCD deaths to the number of living black children were calculated for 3 age groups (0 to 3 years, 4 to 9 years, and 10 to 14 years) for each of the following 5 time periods: 1983-1986, 1987-1990, 1991-1994, 1995-1998, and 1999-2002.

**Results:** 1354 (0.5%) of 276,158 black children aged 0 to 14 years who died from 1983 to 2003 had SCD listed on their death certificate. In 17% of cases, SCD was the only cause of death listed. The greatest decline in mortality occurred for black children aged 0 to 3 years, where mortality decreased by 68% over this 20-year period (from 2.42 per 100,000 to 0.78 per 100,000). For children aged 4 to 9 years, SCD-related mortality declined by 39%. However, there was no significant decline in SCD-related mortality for children aged 10 to 14 years. States that introduced SCD newborn screening during this period did not have significantly different death rates from states that did not screen for SCD. However, there was a 42% drop in mortality from 1999 to 2002 in the group aged 0 to 3 years that coincided with the release of the 7-valent pneumococcal conjugate vaccine.

**Conclusions:** There have been significant declines in SCD-related mortality for children aged 0 to 9 years, but there has been no change for children aged 10 to 14 years in the past 20 years.

**Reviewer's Comments:** (1) Infection remains the greatest threat to the life of young children with SCD. (2) Prevention of infection is not the key to decreasing mortality among older preteen and teen children. (3) For older children with SCD, we need to focus on improving treatment of their primary disease.

**Additional Keywords:** Mortality, Newborn Screening

**print tag:** (Refer to original journal article.)
Use of high-dose inhaled corticosteroids had no effect on reductions of wheezing or bronchodilator usage after respiratory syncytial virus infection in infants.

**Objective:** To determine if early use of high-dose inhaled corticosteroids after respiratory syncytial virus (RSV) bronchiolitis reduces severity and occurrences of future wheezing in children.

**Design:** Randomized, double-blind, placebo-controlled trial.

**Participants/Methods:** Infants aged <13 months who had a RSV lower respiratory infection were enrolled. Infants were randomized to receive either high-dose inhaled beclomethasone hydrofluoroalkane or placebo. Treatment was started 24 hours after detection of the RSV infection. Asthma nurses taught parents of patients the proper inhaler use technique. Children were followed up over 1 year to determine the number of wheezing days and number of bronchodilator (if needed) usages.

**Results:** 243 infants qualified for study; there were 119 in the treatment group and 124 in the placebo group. The number of wheezing days recorded by parents was similar in both groups. In a subset group of infants who were non-ventilated with RSV, there was a lower rate of wheezing than in the control group. Infants who were in the treatment group had less cough and a reduced rate of wheezing (4.3%) as compared to the control group (2.1%). There were no other differences between groups. There were no differences in the use of bronchodilators between groups. There were no adverse events in the study.

**Conclusions:** Use of high-dose inhaled corticosteroids had no effect on reductions of wheezing or bronchodilator usage after RSV infection in infants.

**Reviewer's Comments:** Use of inhaled steroids after RSV infection is common practice to help, in theory, reduce the inflammation of the airway. This article shows that early use of these medications did not significantly improve the re-occurrence of wheezing or reduce bronchodilator use.

**Additional Keywords:** High-Dose Inhaled Corticosteroids

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Folic Acid During Pregnancy May Increase Risk of Lower Respiratory Infections

Folic Acid Supplements in Pregnancy and Early Childhood Respiratory Health.


Folate supplements in the first trimester definitely reduce some congenital anomalies but are associated with an increased risk of wheeze and respiratory tract infections in the infant up to age 18 months.

**Background:** There is general agreement that folic acid given to pregnant women will significantly help decrease the occurrence of neural tube defects, but there is recent evidence in pregnant mice that supplementation with methyl donors, including folic acid, led to increased gene methylation and allergic asthma phenotypes in offspring via epigenetic mechanisms. Recent evidence implicates methylation as crucial in the development and function of T regulatory cells, and it could influence early childhood airway inflammation by this and other mechanisms.

**Objective:** To determine if folate supplements in pregnancy increase the risk of lower respiratory tract infections and wheezing in children up to age 18 months.

**Participants/Methods:** 32,077 Norwegian children born between 2000 and 2005 filled out appropriate survey material.

**Results:** 79.3% of women took folate supplements at some point during pregnancy: 22.3% used them in the first trimester only, 13.8% used them only after the first trimester, and 42.6% used them in both periods. The relative risk for wheezing for children exposed to folic acid supplements in the first trimester was 1.06 (95% CI, 1.03 to 1.10), the relative risk for lower respiratory tract infections was 1.09 (95% CI, 1.02 to 1.15), and the relative risk for hospitalizations for lower respiratory tract infections was 1.24 (95% CI, 1.09 to 1.41).

**Conclusions:** Folic acid supplements in pregnancy were associated with a slight increase in the risk of early respiratory infections and wheeze. Effects were small, and unmeasured confounding may influence the associations found. These findings are in agreement with the hypothesis that early childhood respiratory health may be affected by possible epigenetic influences of methyl donors in the maternal diet during pregnancy.

**Reviewer's Comments:** This report represents early work on a possible problem of increased infections, first described in mice receiving folic acid supplements in pregnancy. The findings in this study are only suggestive of an increase in lower respiratory infections and asthma. Certainly, the slight risk is not sufficient to warrant a rethinking about the value of folic acid in preventing neural tube defects, cleft palate, and possibly congenital heart disease. Patients were followed only to age 18 months, so no statements can be made about long-term effects, if any, of folic acid supplementation. However, the possibility of folic acid causing wheezing should be placed in the paradigm when searching for causes.

**Additional Keywords:** Folate

**print tag:** () Refer to original journal article.
More Teens Having Babies--Trend or Blip?


Manlove J, Ikramullah E, et al:
J Adolesc Health; 44 (May): 413-423

Teenagers are at an increased risk of teen birth if they have single parent households, had a teen mother, are in a steady relationship, or have a partner who is aged 5 years older.

Background: Teen birth rates have decreased by almost one third since 1991. It is not clear whether this decline stems from increases in abstinence or more frequent use of contraceptives.

Objective: To examine the association of cohort trends in family, individual, and relationship characteristics with timing of first sex encounter, contraceptive use at first encounter, and teen birth rate.


Results: From 1992 to 2002, a decreased proportion of males and females ever had sexual intercourse, and an increased proportion used contraceptive method at first sexual experience. There was a non-significant decrease in teen births during this time. Female teens were less likely to have a sexual experience if they were in the 2002 cohort, of Hispanic race/ethnicity, foreign born, had parents married at birth, or educated. For males, only cohort and parent education mattered. Female teens were more likely to have had sex if they were older, had early menarche, didn't live with 2 biological/adoptive parents, or had a teen mother. For males, significant factors were Hispanic or non-Hispanic black race/ethnicity, living without 2 biological/adoptive parents, and having a mother who worked full time or was a teen mother. Female teens were more likely to use contraceptives at first sexual experience if they were in the 2002 cohort, older at first sexual experience, had educated parents, or were in a steady relationship. Significant factors for males included the 2002 cohort, older age at first sexual encounter, and being non-Hispanic black. Females had a lower odds if they were foreign born, of Hispanic race/ethnicity, or they had early menarche. Males had lower odds if they had a partner aged 3 years older. Female teens were less likely to have a teen birth if they were older at first sex or had a parent who completed at least some college. However, female teens were more likely to have a teen birth if they were of non-white race/ethnicity, living with a single biological parent, their mother was a teen mother, had a partner who is aged 5 years older, or were in a steady (vs casual) relationship.

Reviewer's Comments: So much for history. This year's news indicates that more teens are having children. It is too early to determine if this is a trend or a blip. However, we are obligated to talk to teens about reproductive responsibility. In the years of this study, increased abstinence and contraception use have helped to keep the teen birth rate from rising. However, health care providers must be sure they educate all teens, including those at high risk (single parent families or in relationships with older partners).

Additional Keywords: Teen Childbirth

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