Ask About Hair-Grooming in a Patient With Unexplained Syncope

Hair-Grooming Syncope in Children.

Evans WN, Acherman R, et al:

Clin Pediatr (Phila) 2009; 48 (October): 834-836

Syncope associated with hair-grooming is a surprisingly common phenomenon. The likelihood of a significant contributory arrhythmia or structural cardiac abnormality in children with this type of syncopal episode is very low.

Objective: To describe children undergoing cardiac evaluation for syncope for whom a trigger of hair-grooming has been identified.
Participants/Methods: The authors, a group of cardiologists, looked at their experiences in outpatient consultations over a 9-year-period. Of >65,000 patients seen, 1525 who had syncope as their chief complaint were identified. Of these 1525 patients, 111 (7%) had hair grooming as the trigger. The authors then did a retrospective analysis of these patients' records for clinical observations.
Results: Nearly 80% of patients were girls, who had a mean age of 11 years. Most males were cutting their hair when the syncope occurred, while most girls were combing or brushing their hair. Seventy-five percent of the patients were standing when the syncope occurred. Approximately 50% had previous syncopal episodes that were not hair-related. Nearly two-thirds had a prodrome prior to the collapse. In nearly 9 out of 10 patients, the event lasted <60 seconds. As part of the authors' standard protocol, all patients seen with syncope had both an electrocardiogram (ECG) and an echocardiogram done as part of the work-up. All 111 patients with hair-grooming syncope had ECGs and echocardiograms done. None had significant contributory arrhythmias or structural abnormalities.
Conclusions: The authors concluded that in this group, the largest reported series of children presenting with syncope who had a hair-grooming trigger, this particular trigger appears to stimulate a benign form of neurocardiogenic reflex syncope.
Reviewer's Comments: I must confess that I do not usually ask about personal hygiene actions (other than toileting) when confronted with a patient who has fallen down in the bathroom. However, I will now, as this study demonstrates that nearly 1 out of 10 syncopal episodes involving adolescents, at least in Las Vegas, are associated with fussing with the hair in one form or another. Hair grooming in selected individuals appears to be a powerful autonomic trigger. Since most of the episodes occurred while standing, there was likely some orthostatic-venous pooling that may have been involved. When such a trigger is identified, parents can be reassured that the likelihood of significant cardiac disease is very low (in this study, zero). However, the authors, who are cardiologists, do not make the leap of faith that more detailed studies can be eliminated if hair-grooming is the trigger for syncope. Of course, it is important to look for additional details of history involving both family and patient. If a patient with hair-grooming syncope is identified, he/she should be encouraged to drink fluids before and to sit down during the hair ritual. (Reviewer-Mark F. Ditmar, MD).

Keywords: Syncope, Triggers, Hair-Grooming

Print Tag: Refer to original journal article

Military Deployment Has Effect on Children's Behavior at Home.

Children on the Homefront: The Experience of Children From Military Families.

Chandra A, Lara-Cinisomo S, et al:

Pediatrics 2010; 125 (January): 16-25

Families that experience extended military deployment are more likely to have difficulties in the home.

Background: As extended and multiple deployments become more common in the military, many youth are now experiencing more parental absence. Almost 1.9 million children had at least 1 parent in the military in 2006, and almost 1.2 million of them had a parent on active duty. Given these facts, it is becoming more important to understand the health and mental well-being of these children.
Objective: To describe the experience of deployment for children and their health and well-being, especially with respect to academic, social, and family functioning.
Methods: Families were selected from Operation Purple, a free camp sponsored by the National Military Family Association for children of military service members, age 7 to 17 years, at over 60 sites across the country. Approximately 12,500 children applied to the camp, of whom over 9000 were accepted. A potential pool of 4170 families was sent a letter informing them about the study and offering them the chance to opt out. Of these, 3165 were eligible for the study. In each family, 1 child between 11 and 17 years of age and a home caregiver were interviewed by a computer-assisted telephone survey. Topics covered included academic engagement, anxiety, behavior problems, emotional difficulties, peer functioning, family functioning, and general difficulties with deployment.
Results: Children whose parents are deployed in military service experience more emotional difficulties than other national samples of children. Girls of all ages and older boys experienced significantly more school-, peer-, and family-related difficulties. The longer a parent is deployed and the poorer the family is in general, the more challenges a child experienced. Some family characteristics were also found to be significantly associated with difficulties experienced during deployment. These difficulties also extended to reintegration when a deployed parent returned home.
Conclusions: Children who have a parent deployed in the military are more likely to experience school-, peer-, and family-related difficulties, especially those who experience longer parental deployment. Programs to support parents and children who experience extended military deployment are warranted.
Reviewer's Comments: While I was not particularly surprised that long-term deployments have an effect, I was surprised at the number of children this affects. This is something that clinicians need to be aware of and intervene upon. (Reviewer-Aaron E. Carroll, MD, MS).

Keywords: Military Deployment, Emotional Difficulties

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Rates of IBD Are Increasing in the US

Rising Incidence of Inflammatory Bowel Disease Among Children: A 12-Year Study.

Malaty HM, Fan X, et al:

J Pediatr Gastroenterol Nutr 2010; 50 (January): 27-31

The incidence of IBD, primarily in the form of Crohn disease, has been increasing over time.

Background: Inflammatory bowel disease (IBD) causes significant morbidity representing the fifth most common gastrointestinal disease, with 20% to 30% of cases starting when patients are <18 years of age. Recent studies have suggested the incidence of IBD may be increasing over time.
Objective: To determine the trend of IBD over time in the pediatric population taking into consideration the diverse ethnic community in the United States.
Design: Retrospective epidemiological investigation.
Participants: 272 children (identified from a registry) with the diagnosis of IBD between 1991 and 2002.
Methods: Cases of IBD were classified as Crohn disease (CD), ulcerative colitis (UC), or indeterminate colitis (IC). Cases were identified by zip code at the time of diagnosis; out-of-state cases were excluded. The time period was divided into 2 periods (1991-1996 and 1997-2002) to assess trends. Rates were expressed per 100,000 pediatric populations in the greater Houston area using 1990 and 2000 census data. Ages were categorized into 4 groups (0 to 4 years, 5 to 9 years, 10 to 14 years, and 15 to 17 years). Due to a potential correlation with several variables, such as age, sex, ethnicity, and/or study period, multivariate analysis was performed.
Results: Among the 272 children with IBD who qualified, 56% had CD, 22% had UC, and 22% had IC. The male-to-female ratio was 1.2:1, 0.6:1, and 0.8:1 for CD, UC, and IC, respectively. The median age at diagnosis was 11 to 12 years, but 25% were diagnosed before age 10. The incidence of all types of IBD increased from 1.1 of 100,000/year (95% CI, 0.85 to 1.36) in 1991-1996 to 2.2 of 100,000/year (95% CI, 2.10 to 2.77) in 1997-2002. The increased trend was present for CD and IC, but not for UC until multivariate analysis was performed. All ethnic groups demonstrated an increased trend over time, with whites showing a nearly 3-fold increase. African-Americans had the highest ratio of CD to UC. Males and females had similar rates of IBD, but males showed a greater incidence in the second time period. All age groups, except the youngest, showed an increased incidence, with the greatest increase noted in the 10- to 14-year-old age group. Multivariate analysis found older age groups, white race, and the second study period to be highly significant for both CD and UC independently.
Conclusions: The incidence of IBD is increasing in the U.S. more clearly for CD than for UC.
Reviewer's Comments: I am concerned that studies like these may not capture all the cases of IBD in either time period by missing cases diagnosed elsewhere. Better diagnostic techniques over time could inflate the most recent incidence rates. In any case, this study should remind clinicians to look for IBD across all ethnic groups, ages, and genders. (Reviewer-Seth L. Schulman, MD).

Keywords: Rising Incidence, Epidemiology

Print Tag: Refer to original journal article

ECC Is One of the Largest Chronic Diseases in Children

Update on Early Childhood Caries Since the Surgeon General's Report.

Tinanoff N, Reisine S:

Acad Pediatr 2009; 9 (November-December): 396-403

ECC remain one of the most common chronic conditions of childhood, but can be recognized by risk factors and intervened upon by physicians.

Background: The National Health and Nutrition Examination Survey (NHANES III) showed a high number of decayed or filled teeth (dft) in preschool children, especially in poor and near-poor children. Five-year-old poor and near-poor children had an average of almost 3 dft each, while non-poor children of the same age had <1 each.
Objective: To update that report and provide the latest information on the epidemiology of caries and risk factors for their occurrence.
Methods: A review of the literature with respect to early childhood caries (ECC) was conducted.
Results: The risk factors for ECC were identified. Perhaps the best predictor of future caries is the existence of a previous cavity. Therefore, any child with a previous history should be considered at high risk for another. Colonization with mutans streptococci has been associated with ECC as has the presence of plaque. Other significant risk factors included a diet high in sugar (especially sucrose), lack of enamel maturation, lower socioeconomic status, stress or chronic illness, and belonging to an ethnic minority. Having any of these classifies a child as being high risk for ECC. A number of strategies have been seen to reduce the risk of ECC. The first is brushing with fluoridated toothpaste on a daily basis. However, perhaps the best intervention remains a fluoridated water supply. The relatively increased risk of fluorosis has led to diminished recommendations for fluoride supplementation unless a child is at high risk and lives in an area where water is not fluoridated. Fluoride varnish has been recommended by the American Academy of Pediatrics for use by primary care pediatricians, but no studies have yet assessed the appropriateness of its use in primary care. Further interventions include counseling parents on better practices and referrals to dentists beginning at 1 year of age.
Conclusions: ECC remain one of the most common chronic conditions of childhood, but can be recognized by risk factors and intervened upon by physicians. A number of risk factors, many quite common, place children at higher risk of developing ECC. Interventions, including increased use of fluoride and dental visits, significantly decrease the risk of ECC.
Reviewer's Comments: Although we sometimes think of caries as a dental issue, it is important to remember that they are one of the most common chronic conditions of childhood. It is also important to remember that fluoride-enhanced drinking water is the major combatant of caries, and many families who use bottled water miss this preventative opportunity unless they supply oral fluoride. Monitoring for caries and referring for treatment is critical. (Reviewer-Aaron E. Carroll, MD, MS).

Keywords: Early Childhood Caries

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No Association Between *H. pylori* and EE--Positive or Negative

Is There a Relationship Between Helicobacter pylori Infection and Erosive Reflux Disease in Children?

Emiroglu HH, Sokucu S, et al:

Acta Paediatrica 2010; 99 (1): 121-125

Though separate theories have attributed either a causative or protective effect of *H. pylori* on GERD, there is no association between *H. pylori* infection and prevalence or severity of EE.

Background: Endoscopy with histology is the most accurate method for determining esophageal damage that results from gastroesophageal reflux disease (GERD). While we know that *Helicobacter pylori* infection is associated with duodenal ulcerations, it has been suggested that the same infection may exert a protective effect on GERD. *H. pylori* infection is prevalent in patients with nonerosive reflux disease (NERD), but whether *H. pylori* may be negatively associated with erosive esophagitis (EE) is less clear.
Objective: To examine the relationship between *H. pylori* infection and EE in children.
Methods: A Turkish pediatric center conducted a retrospective review of children who received diagnostic upper endoscopy between 2002 and 2005. None of the patients received antibiotics or bismuth within the 6 months prior to study. Those using H2 blockers, proton pump inhibitors, or other selected drugs discontinued therapy 4 weeks prior to study. If detected, esophagitis was scored by gross appearance and histology. EE was diagnosed if macroscopic erosions or ulcerations were present. NERD showed histologic, but no gross signs of esophagitis. A control group was comprised of those without evidence of GERD. *H. pylori* infection was determined by both positive urease test and histologic examination.
Results: 206 children were included for study (mean age, 8.4 years), with 67 (32.5%) showing signs of GERD. Of these, 24 revealed erosions or ulcerations (comprising the EE group), and 43 showed only histopathologic changes (forming the NERD group). *H. pylori* were detected in 35% of the total group, including controls, with no significant difference found between those with or without GERD. Although the *H. pylori* infection rate was higher in the NERD group than in the EE group, the difference was not statistically significant. Positive *H. pylori* status did not correlate with prevalence or severity of EE.
Conclusions: There is no association (either positive or negative) between *H. pylori* infection and the prevalence or severity of EE.
Reviewer's Comments: Contrary to the premise in this study, it has been proposed that *H. pylori* contributes to development of GERD through antral gastritis, increasing acid production, decreasing lower esophageal sphincter tone, or impairing gastric filling. Epidemiologic evidence, however, suggests that there is a negative association between *H. pylori* and GERD. As the incidence of *H. pylori* has decreased in Westernized countries, the prevalence of GERD has increased. Furthermore, the risk of GERD seems to increase after eradication of the organism. The authors suggest that bacterial ammonia production resulting from persistent *H. pylori* infection could serve to oppose gastric acidity, thereby protecting from esophageal damage. But the results of this study fail to support either theory, and, in fact, fail to support an association between *H. pylori* and GERD at all. (Reviewer-Alyssa Siegel, MD).

Keywords: Gastroesophageal Reflux, Esophagitis,*Helicobacter pylori*

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Nurse Home Visits on Children Have Impact on Their Young Adult Lives

Long-Term Effects of Prenatal and Infancy Nurse Home Visitation on the Life Course of Youths: 19-Year Follow-Up of a Randomized Trial.

Eckenrode J, Campa M, et al:

Arch Pediatr Adolesc Med 2010; 164 (January): 9-15

Nurse home visits during pregnancy and early childhood have significant effects on girls 19 years later, including fewer criminal records, fewer children, and less Medicaid use.

Background: Studies of early childhood education and enriched child care have shown that they can have positive short-term effects on cognition and academic performance. Many of these benefits linger, including increased high school graduation, reduced teen pregnancy, and a lower arrest rate. Some have proposed that home visitation services with a focus on maternal health and care giving competencies might have similar benefits.
Objective: To determine if prenatal and infancy nurse home visits affect the life course of children at 19 years of age.
Methods: This was a follow-up study of 19-year-old children whose mothers had participated in the Elmira Nurse-Family Partnership program. The population, divided into 4 groups, included mothers who were <19 years of age, unmarried, or of low socioeconomic status. Mothers in group 1 were given sensory and developmental screening for their children at 12 and 24 months of age. Mothers in group 2 received the screenings plus free transportation for prenatal care and well-care visits through the child's second birthday. Group 3 mothers received the same as group 2 mothers plus nurse home-visits during pregnancy. Those in treatment group 4 received everything that group 3 did, plus the nurse visits were extended until the child's second birthday. The visits were intended to improve health behaviors so as to improve pregnancy outcomes, help parents provide more competent care so as to improve child health and development, and help families plan better to improve economic self-sufficiency. The main outcomes of interest included youth self-reported educational achievement, welfare use, criminal involvement, and reproductive behavior.
Results: Girls born to mothers in the nurse home-visit groups had significantly fewer arrests (RR, 0.3) and convictions (RR, 0.2) than those in the control group. Those girls were also less likely to have had children themselves (RR, 0.4) or be on Medicaid (RR, 0.4) than those born to control groups. The program did not have significant effects on boys.
Conclusions: Nurse home visits during pregnancy and early childhood had significant effects on girls 19 years later, including fewer criminal records, fewer children, and less Medicaid use.
Reviewer's Comments: While I was not particularly surprised that nurse home visits were a good thing, it is amazing how long the positive effects extend. It would be interesting to compare this study with the experiences in countries where home visits are part of the health system. We should do much more to encourage this type of attention to new mothers. (Reviewer-Aaron E. Carroll, MD, MS).

Keywords: Nurse Home Visits, Long-Term Development

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Adolescent Risk Factors for Adult T2DM

Childhood Predictors of Adult Type 2 Diabetes at 9- and 26-Year Follow-Ups.

Morrison JA, Glueck CJ, et al:

Arch Pediatr Adolesc Med 2010; 164 (January): 53-60

Elevated BMI, blood pressure, lipid levels, and insulin levels in early adolescence are associated with adult-onset T2DM.

Objective: To determine whether pediatric office measures (waist circumference, body mass index [BMI], systolic blood pressure [SBP], diastolic blood pressure [DBP], parental history of diabetes) and laboratory measures (glucose, lipids, and insulin) predict type 2 diabetes mellitus (T2DM) at ages 19 and 39 years.
Methods: The authors examined data from 2 longitudinal studies, the National Growth and Health Study (NGHS) and the Princeton Follow-up Study (PFS). The NGHS collected data from girls at age 10 years and again at 19 years. The PFS collected data at 12 years of age and at 39 years of age. Sensitivity, specificity, positive predictive values (PPVs), and negative predictive values (NPVs) for office- and laboratory-based measurements were calculated for later T2DM. Children with evidence for DM upon entry were excluded.
Results: In the NGHS, the incidence of T2DM at age 19 was 1.2% in black women and 0.2% in white women. In the PFS, the incidence of T2DM at age 39 was 4.9% overall. In the NGHS, specificity for T2DM was generally high for BMI (>95th percentile), SBP (>95th percentile), DBP (>95th percentile), parental DM, insulin (>95th percentile), HDL cholesterol (thth percentile), and triglycerides (>95th percentile) (94% to 97%). Sensitivity, however, was low (13% to 38%), as was the positive predictive value (2% to 6%). The results of the PFS were similar. In the PFS, specificity for T2DM was generally high for BMI (>95th percentile), SBP (>95th percentile), DBP (>95th percentile), fasting glucose (>100), insulin (>95th percentile), HDL cholesterol (thth percentile), and triglycerides (>95th percentile) (95% to 97%). Sensitivity, however, was low (4% to 21%), as was the PPV (6% to 21%). For PFS, multiple regression analysis revealed that SBP and BMI >95th percentile and black race were reasonably well associated with adult T2DM (area under the receiver-operator curve [AUC] of 0.698). For NGHS, multiple regression analysis revealed that SBP >95th percentile and parental history of DM were reasonably well associated with adult T2DM (AUC of 0.698). When also adding insulin >95th percentile, the AUC climbed to 0.764.
Conclusions: Children with SBP, BMI, triglycerides, and insulin levels all greater than the 95th percentile, fasting glucose >100, and a family history of DM are at increased risk for developing T2DM. The PPVs for these measurements on T2DM were generally low, however. The authors speculate that this group should be targeted for preventive measures. The study has several limitations, including difficulty distinguishing type 1 DM from T2DM in follow-up.
Reviewer's Comments: Given that the sensitivities are low for all of these markers, it is important not to over rely on these individual measurements when counseling adolescents about their risk for T2DM. Even those without the risk factors identified in this study, (SBP, BMI, triglycerides, and insulin levels all >95th percentile and black race) are still at risk for T2DM. Well-known preventive strategies against T2DM should universally be encouraged, such as routine exercise and moderate caloric intake. (Reviewer-Daniel Coghlin, MD).

Keywords: Adult-Onset Type 2 Diabetes Mellitus, Childhood Predictors

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Bacteremia in Young Infants Often Associated With UTI

Blood Culture and Bacteremia Predictors in Infants Less Than Three Months of Age With Fever Without Source.

Gómez B, Mintegi S, et al:

Pediatr Infect Dis J 2010; 29 (January): 43-47

Approximately 2% of infants <3 months of age with FWS have bacteremia; the predominant pathogen is *Escherichia coli* and generally associated with a UTI.

Background: Over the last 15 to 20 years, the epidemiology and microbiology associated with fever without source (FWS) in infants <3 months of age have changed dramatically, largely due to intrapartum group B *Streptococcus* antibiotic prophylaxis and pneumococcal conjugate vaccine.
Objective: To determine the rate of bacteremia as the cause of FWS in young infants and to ascertain findings associated with bacterial infection.
Design: Retrospective descriptive study.
Methods: The authors conducted a retrospective record review of all infants <90 days old who presented to a pediatric emergency department in 2003 to 2008 with FWS. Infants with a temperature ≥38°C or with tactile fever as reported by parents were eligible. Patients were treated as deemed appropriate by the emergency physician, but in general, the work-up was comprised of urine dipstick, CBC, C-reactive protein (CRP), blood culture, and urine culture. Lumbar puncture was performed on a case-by-case basis. The following data were recorded: demographics, medical history, duration and height of fever, whether the infant appeared ill, symptoms, physical examination findings, laboratory results, and treatment received.
Results: Of the 1018 cases for whom blood culture was performed, only 23 (2.2%) were positive. There were 9 cases of *Escherichia coli* (8 of whom also had a positive urine culture), 4 *Streptococcus pneumoniae*, 3 *Enterococcus faecalis*, 3 *Neisseria meningitidis*, 2 group B *Streptococcus*, and one each with *Staphylococcus aureus* and *Klebsiella pneumoniae*. On multivariable analysis, factors associated with a positive blood culture were abnormal urine dipstick result and an appearance of not being well. The rate of a positive blood culture in a well-appearing infant with normal urine dipstick was 1%. CRP, WBC count, and absolute neutrophil count (ANC) were not helpful in predicting a positive blood culture with adequate sensitivity or specificity. The authors developed an algorithm whereby patients were classified as low risk for serious bacterial infection if they were previously healthy, well appearing, had a urine dipstick reading that was negative for leukocytes and nitrates, WBC of 5000-15,000/mm3, ANC <10,000/mm3, no pleocytosis if lumbar puncture was performed, and normal clinical evaluation for several hours. Using this algorithm retrospectively on this study population, only 0.6% of low-risk cases had a positive blood culture, for a sensitivity of 87% and a negative predictive value of 99.4%
Conclusions: A blood culture should be performed in all infants <3 months of age with FWS.
Reviewer's Comments: It is clearly important to obtain a blood culture in infants with evidence of urinary tract infection (UTI) or who are not well-appearing. UTI as the predominant cause of bacteremia in toddlers is now well established, but to my knowledge, this is the first study to report this in young infants. It will be helpful to see if these results are corroborated by others. (Reviewer-Rachel Moon, MD).

Keywords: Blood Culture, Bacteremia, Infant, Diagnostic Tests

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SBIs Rare in Infants <3 Months Old With Influenza.

Influenza Virus Infection In Infants Less Than Three Months of Age.

Bender JM, Ampofo K, et al:

Pediatr Infect Dis J 2010; 29 (January): 6-9

Young infants (<3 months old) with influenza and admitted to the hospital often stay <48 hours and rarely have SBIs.

Background: Infants <3 months old are at risk for contracting influenza because they are not eligible for vaccination. In addition, influenza symptoms (eg, fever) in these infants may trigger an evaluation for serious bacterial infection (SBI).
Objective: To describe the presentation, outcomes, and risk of SBI for infants <3 months old with influenza.
Methods: This was a retrospective cohort study conducted at a tertiary care children's hospital. Infants who tested positive for influenza during each respiratory season from October 2004 to September 2008 were identified from the laboratory data. During the study period, the hospital routinely tested patients presenting to the emergency department (ED) with fever and respiratory symptoms for a panel of respiratory viruses, which included influenza. Infants with additional viruses besides influenza were excluded from the analysis. Demographic and clinic data on infants were obtained from a medical record review. The outcomes assessed for infants <3 months with influenza were the need for hospitalization and admitting diagnosis, length of stay, and the rate of SBI. In addition, the authors calculated the number of infants <3 months of age with influenza compared with the total number of infants treated for fever at the hospital during the study period.
Results: 218 infants <3 months of age were diagnosed with influenza during the study period. During the winter months, these infants with influenza comprised 12% of all infants <3 months who were evaluated in the ED for fever; 49% of these infants were hospitalized, and they were more likely to be hospitalized than older infants (OR, 1.6 to 2.6). The most common reason for admission was fever (48%), and 72% of them were hospitalized for <48 hours. Only 5 children in this group had SBI (4 had urinary tract infection, 1 had bacteremia). Infants <3 months of age were not any more likely to require intensive care or ventilatory support than older infants.
Conclusions: During winter months, infants <3 months of age with influenza and admitted to the hospital most frequently present with fever, rarely have concomitant SBI, and often stay in the hospital <48 hours.
Reviewer's Comments: Although we might wish we could, we cannot vaccinate infants <3 months of age against influenza. However, this study at least reassures us that when this age group gets influenza, they do not end up sicker than older infants, and in many cases, they are better. It seems that most of their admissions to the hospital are to rule out SBI as a cause of their fever, and most infants are discharged once this rule out is negative. Since SBIs in these infants with influenza are uncommon, we might consider future strategies to avoid hospital admission to help these infants avoid contracting additional viruses during their hospital stay. (Reviewer-Beth A. Tarini, MD).

Keywords: Influenza, Hospitalization, Infants, Serious Bacterial Infections

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Meningococcal Dz in US at Historic Low

Changes in Neisseria meningitidis Disease Epidemiology in the United States, 1998-2007: Implications for Prevention of Meningococcal Disease.

Cohn AC, MacNeil JR, et al:

Clin Infect Dis 2010; 50 (January 15): 184-191

Meningococcal disease rates in the U.S. remain at historic lows, both before and after the implementation of the quadrivalent vaccine, but the case fatality rate remains high at ≥10%.

Background: In 2005, the quadrivalent meningococcal conjugate vaccine was licensed and recommended for routine use in adolescents. By the fall of 2007, approximately one-third of teenagers had received the vaccine.
Objective: To describe the epidemiologic changes in meningococcal disease that occurred before and after the implementation of the quadrivalent vaccine.
Methods: Information was collected from various sites via the Active Bacterial Core on the number of cases of invasive *Neisseria meningitidis* identified from 1998 to 2007. Isolates from cases were serogrouped at the local sites and then forwarded to the Centers for Disease Control and Prevention for confirmation. Based on these surveillance numbers, estimates were calculated for the likely incidence and number of cases for all 50 states.
Results: The authors found that for the surveillance sites for that 9-year period, there were 2262 cases of meningococcal disease reported of which 11% were fatal. This gave an estimated U.S. average annual incidence of meningococcal disease at about 0.5 cases per 100,000 population, which translates to approximately 1500 cases and around 200 deaths annually. The authors also found that the annual incidence of meningococcal disease declined significantly (64%) from 1998 (0.92 cases per 100,000) to 2007 (0.33 cases per 100,000). However, the data demonstrated that after the introduction of the quadrivalent vaccine, there was no significant decrease in serogroup C or Y disease among teenagers in 2006-2007 compared to 2004-2005. Infants <1 year have the highest incidence, with a rate of 5.38 cases per 100,000 population.
Conclusions: The authors concluded that even prior to the introduction of the quadrivalent meningococcal conjugated vaccine, the incidence of meningococcal disease in the U.S. had declined to a historic low. Future vaccination strategies need to include the targeting of infants and preventing serogroup B disease.
Reviewer's Comments: What explains the remarkable decrease in meningococcal disease prior to the vaccine? The authors suggest it may be multifactorial with less societal crowding and decreased smoking, both known environmental risk factors. They speculate that the widespread use of fluoroquinolones and even the pneumococcal vaccine may be changing the dynamics of organisms carried in the nasopharynx. Fewer carriers may be leading to fewer cases. In any event, this decline in meningococcal disease was occurring before the introduction of the vaccine. The authors note that the data are early, that widespread coverage has not been achieved, and that considerable meningococcal mortality and morbidity still exist. The study reaffirms a high case fatality rate of over 10%. The authors also note ominously that fluoroquinolone-resistant *N. meningitidis* strains have been detected in several states, making vaccination even more important. Prevention should be easier than treatment. (Reviewer-Mark F. Ditmar, MD).

Keywords:*Neisseria meningitidis*, Epidemiology, Quadrivalent Meningococcal Conjugate Vaccine

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Unvaccinated Children at Higher Risk for Varicella Infection

Parental Refusal of Varicella Vaccination and the Associated Risk of Varicella Infection in Children.

Glanz JM, McClure DL, et al:

Arch Pediatr Adolesc Med 2010; 164 (January): 66-70

Children whose parents refuse varicella vaccination are at higher risk for infection than their vaccinated counterparts.

Background: The varicella vaccination is the most frequently refused of the childhood vaccination despite the 80% decrease in hospitalization, morbidity, and mortality that has followed its implementation. No study has assessed the relationship between parental refusal and risk of infection.
Objective: To evaluate the individual- and population-based attributable risk of varicella in children of parents who refused the varicella vaccination.
Design: Case-control study.
Participants: Children 12 months to 8 years of age
. Methods: Possible candidates were found by reviewing records from the Kaiser Permanente of Colorado health care system with ICD9 codes for varicella or by laboratory testing for varicella (polymerase chain reaction, direct fluorescent antibody, viral culture positive for varicella, or a rise in serum varicella IgG). These potential candidates' cases were then independently reviewed for disease confirmation by exposure risk, physical examination, and laboratory results as noted in the chart. Each confirmed case was then matched to 4 controls without acute varicella infection. Finally, both cases and controls were retrospectively evaluated for varicella vaccination status and were excluded from analysis if it was determined that there was a medical contraindication against vaccination or it was not clear that parents had refused vaccination.
Results: Approximately 130 confirmed cases of varicella were discovered from the almost 87,000 potential cases and compared against 430 controls. Of the 130 confirmed cases of varicella, 7 cases (5%) were unvaccinated secondary to parental refusal compared to <1% within the control group. The odds ratio for vaccine refusal and varicella infection was 8.6, with an individual attributable risk of 99%, implying that all 7 cases were due to vaccine refusal. The total population attributable risk was almost 5%, suggesting that 5% of all cases of varicella are due to vaccine refusal.
Conclusions: On the individual level, varicella infection in children whose parents refused to vaccinate are almost 100% due to their unvaccinated status; when reviewing all varicella infections, 5% are due to vaccine refusal.
Reviewer's Comments: What I want to know is the personal- and population-based attributable risk for morbidity and mortality secondary to vaccination refusal. This is information that could help educate physicians and parents who feel the varicella vaccination is optional, thereby improving vaccination rates (Reviewer-Lisa Humphrey, MD).

Keywords: Varicella Infections, Varicella Vaccination, Vaccination Refusal

Print Tag: Refer to original journal article

2009 H1N1 Influenza--Infection Rates Within Households

Household Transmission of 2009 Pandemic Influenza A (H1N1) Virus in the United States.

Cauchemez S, Donnelly CA, et all:

N Engl J Med 2009; 361 (December 31): 2619-2627

There appears to be an overall low rate of transmission of 2009 H1N1 influenza virus in households in the presence of an infected individual.

Background: Early in the epidemic in the spring and summer of 2009, all suspected and confirmed cases of H1N1 were reported to the Centers for Disease Control and Prevention (CDC).
Objective: To determine the rate and characteristics associated with household infectious spread with the 2009 H1N1 influenza virus.
Methods: Reports of illness in the primary patient and other household members were included in the data for analysis. As of May 28, 2009, there were 938 cases of probable or confirmed 2009 H1N1 influenza; 865 cases had data information obtained by the CDC.
Results: The median age of the cases was 15 years of age, and 57% of the homes had at least 2 to 6 household members in the home with the primary index H1N1 case. There were 600 household contacts studied; 13% had an acute respiratory illness and 10% had an influenza-like illness. Seventy-two percent of the household members did not have any respiratory illnesses. Those contacts who acquired an illness in the home were more likely to be ≤18 years of age when compared to those who were 19- to 50-year-old household members. The attack rates in the homes were increased by a factor of 2 in those who were ≤18 years. In households with a member that was >50 years of age, there was a decrease in susceptibility to H1N1. Children and older adults were just as infectious as younger adults. Symptoms such as cough, sore throat, runny nose, fever, and vomiting were not significantly associated with increased infectivity.
Conclusions: There was an overall low rate of transmission of 2009 H1N1 influenza virus in households with the presence of an infected individual.
Reviewer's Comments: The promotion of transmission reduction habits (eg, frequent hand washing, covering your mouth while coughing, or using a surgical mask) seemed to help reduce the rate of transmission of H1N1, especially in homes with an infected individual. The greatest concern for household transmission was the increased illness in adolescents and children. Based on this article, reassurance should be given to parents that there was overall low risk of transmission H1N1 virus among family members in their homes. (Reviewer-Charles I. Schwartz, MD).

Keywords: 2009 H1N1 Influenza, Household Transmission

Print Tag: Refer to original journal article

Postexposure Prophylaxis With Varicella Vaccine Decreases Risk of Varicella Dz.

Effectiveness of Varicella Vaccines as Postexposure Prophylaxis.

Brotons M, Campins M, et al:

Pediatr Infect Dis J 2010; 29 (January): 10-13

Giving varicella vaccine within 5 days of exposure to chickenpox decreases the risk of developing the disease.

Background: Studies that have examined the efficacy of postexposure prophylaxis with varicella vaccine have yielded conflicting results using experimental vaccines. In addition, vaccine formulations have changed since many of these studies were conducted.
Objective: To determine the efficacy of current varicella vaccines given for postexposure prophylaxis.
Participants/Methods: This prospective cohort study was conducted in Spain from May 2002 to 2007. Eligibility criteria included age >1 year old, household exposure to someone with chickenpox rash, and no history of varicella vaccination or disease. Participants received a vaccination (with Varilrix or Varivax) within 5 days after exposure. Participants <13 years old received a single dose and subjects ≥13 years received 2 doses 1 month apart. The primary outcome was development of varicella (based on parent description of rash by phone) within 4 to 8 weeks after exposure. The authors calculated vaccine effectiveness using a formula from previous studies and 87% as the disease attack rate in nonvaccinated individuals. Severity of disease was graded as follows: mild if <50 lesions, moderate if 50 to 500 lesions, and severe if >500 lesions or hospitalization due to disease complications.
Results: 67 individuals were included in the study; 73% of subjects were vaccinated within 3 days of exposure and 27% between days 4 and 5. Sixty-seven percent of the individuals did not develop chickenpox, 15% developed mild chickenpox, and 18% developed moderate chickenpox; nobody developed severe disease. Vaccine effectiveness was 62.3% for all disease (95% CI, 47.8 to 74.9) and 79.4% (95% CI, 66.4 to 88.9) for moderate or severe disease. There were no differences in vaccine effectiveness by age, sex, or days since exposure.
Conclusions: Administration of varicella vaccine within 5 days after disease exposure is effective in preventing and attenuating disease.
Reviewer's Comments: This article provides helpful information for the practicing pediatrician. If it is within 5 days of exposure to chickenpox, it is not too late to give varicella vaccine to prevent or attenuate chickenpox in unvaccinated children. Although it would be best to be vaccinated prior to exposure, this is not always the case. (Reviewer-Beth A. Tarini, MD).

Keywords: Varicella, Postexposure Prophylaxis, Vaccination

Print Tag: Refer to original journal article

Infants With Fever <24 Hours After Vaccination Are at Lower Risk for SBI

Serious Bacterial Infection in Recently Immunized Young Febrile Infants.

Wolff M, Bachur R:

Acad Emerg Med 2009; 16 (December): 1284-1289

In infants 6 to 12 weeks of age with fever, immunization within 24 hours is associated with a lower risk of serious bacterial infection compared to those without recent immunization. Urine testing should still be considered.

Objective: To investigate the prevalence of serious bacterial infections (SBI) in infants with fever after vaccinations.
Design/Methods: This was a retrospective review of the records of infants between 6 and 12 weeks of age with fever ≥38°C without a source who were seen in the emergency department at Boston Children's Hospital from 2000 to 2007. These patients were classified as having received vaccinations within a 72-hour period (this time frame was divided into 12-hour blocks) or having received no recent immunizations. The main outcome studied was a documented SBI. Patients were included in the study if, at a minimum, they had blood and urine cultures. Many patients had additional studies including lumbar punctures, stool cultures, chest x-rays, and point of care testing for respiratory syncytial virus (RSV) or influenza. A definite SBI required positive cultures or pneumonia on x-ray. The prevalence of a serious bacterial infection was then compared for patients with and without recent immunization.
Results: 1978 febrile infants were studied, of whom approximately 10% (213 of 1978) had received recent immunizations. Median age for both groups was about 64 days. Definite SBIs were found in 7% of those without recent immunizations versus only 2.8% of those with recent immunizations. If a patient had received a vaccination in the previous 24 hours, the prevalence of an SBI decreased to 0.6%. If over 24 hours since vaccination, this rate increased to almost 9%. The relative risk for an SBI was 0.41 if a recent immunization had been given. All SBIs in the recently immunized group were urinary tract infections. Among those not recently immunized, there were cases of bacteremia, urinary tract infection (UTI), bacterial meningitis, and pneumonia.
Conclusions: In febrile infants who have recently received immunizations, if the immunizations were given <24 hours before the fever, there is still a substantial risk of urinary tract infection, and urine testing is warranted in this group. Infants who were vaccinated >24 hours previously should be managed similarly to those without recent immunizations.
Reviewer's Comments: This paper gives clinicians some evidence-based ammunition to limit septic work-ups in situations of lower risk, in this case, fever associated with recent immunizations. Other situations, such as recognizable viral illnesses (for example, RSV), have also been shown to have lower a likelihood of SBI. Although the protocol at Boston calls for lumbar punctures for all patients <3 months of age with fever, most of us still balk at the need for cerebrospinal fluid analysis in a smiling 2-month-old infant with fever. Once again, the main serious bacterial infection to consider remains a UTI. (Reviewer-Mark F. Ditmar, MD).

Keywords: Serious Bacterial Infection

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Does RotaTeq Vaccine Increase Risk of Intussusception?

Real-Time Surveillance to Assess Risk of Intussusception and Other Adverse Events After Pentavalent, Bovine-Derived Rotavirus Vaccine.

Belongia EA, Irving SA, et al:

Pediatr Infect Dis J 2010; 29 (January): 1-5

There is no evidence of an association between RotaTeq and intussusception in the 30 days after vaccination.

Background: A pentavalent, bovine-derived rotavirus vaccine (RotaTeq) was licensed in 2006 for use in infants aged 0 to 6 months. A previous rotavirus vaccine was pulled from the market because of a potentially increased risk of intussusception.
Objective: To evaluate the risk of intussusception and other adverse effects associated with RotaTeq.
Design: Prospective cohort.
Methods: The Vaccine Safety Datalink (VSD) is a federally funded, collaborative database tracking vaccine adverse effects at 8 managed care organizations. Data were analyzed for the first year of life for infants receiving any doses of RotaTeq. A sequential analysis method was used to analyze, on a weekly basis, whether there was an increased risk of adverse effects in the 30 days after RotaTeq administration. Frequencies of adverse effects were compared with those of historical controls from 1991 to 2004. Pre-specified adverse effects that were studied included intussusception, seizures, meningitis/encephalitis, myocarditis, gram-negative sepsis, gastrointestinal bleeding, and Kawasaki disease.
Results: 207,621 doses of RotaTeq were administered in the study population between May 2006 and May 2008. Based on historical controls, it was expected that there would be 40 cases per 100,000 child years of intussusception in children 4 to 52 weeks of age. Rates of intussusception among infants receiving RotaTeq did not significantly exceed the historical control rate at any time during the study period. Five subjects had ICD-9 codes for intussusception in the 30 days after receiving a dose of RotaTeq. All 5 of these children had multiple immunizations simultaneously with the RotaTeq. No episodes of intussusception occurred in children who received RotaTeq outside of the recommended age range. In addition, there was no increased risk for any of the other pre-specified adverse effects after RotaTeq administration.
Conclusions: There was no evidence of an association between RotaTeq and intussusception in the 30 days after vaccination. In addition, there was no association between RotaTeq and seizures, meningitis/encephalitis, myocarditis, gram-negative sepsis, gastrointestinal bleeding, or Kawasaki disease.
Reviewer's Comments: The advantage of this study is that it provides a method of rapidly detecting serious vaccine safety issues. The disadvantage, however, is that, because of ethical reasons, historical controls had to be used. In addition, if small increases in adverse effects are to be detected, much larger samples are required. Nonetheless, this study is the largest post-licensure study evaluating the safety of RotaTeq and is reassuring to those who may be concerned about the possibility of intussusception or other serious adverse effects. (Reviewer-Rachel Moon, MD).

Keywords: Vaccine, Adverse Effects, Intussusception

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Extreme Prematurity Associated With Adult Hypertension

Ambulatory Blood Pressure in Young Adults With Very Low Birth Weight.

Hovi P, Andersson S, et al:

J Pediatr 2010; 156 (January): 54-59

Ambulatory blood pressure readings are higher in adults who were born very prematurely compared to those born at term.

Background: There are several inconsistencies in the literature, confounding the relationship between hypertension and adults who were born prematurely. Studies to date have generally used office-based blood pressure (BP) readings, been limited to one gender, or been limited in size.
Objective: To compare ambulatory blood pressure measurements (ABPM) in a population of adults born with a very low birth weight (VLBW; defined as a BW <1500 g) and a population of adults born at term.
Design: Cohort study.
Participants: 118 subjects aged 18 to 27 years old with VLBW and 120 adult control subjects matched for age, sex, and birth hospital.
Methods: None of the subjects had renal disease, malignancy, or transplanted organs. Those with a history of pregnancy or who were taking medication for panhypopituitarism were excluded, as were those with insufficient ABPM readings. Questionnaires on lifestyle, medical history, history of hypertension, and parental education were provided. ABPM was obtained using an oscillometric device over 24 hours with readings every 30 minutes during the day and 60 minutes at bedtime. Hypertension was defined as daytime BP >140/90 mm Hg and nighttime BP >125/75 mm Hg. Normal nighttime dipping was considered absent if the ratio of night-to-day systolic BP was >0.90. Regression analyses were used to control for potentially confounding variables.
Results: Mean BW was 1.1 kg and 3.6 kg for VLBW subjects and controls, respectively. Mean gestational age was 29.2 and 40.1 weeks for VLBW and controls, respectively. A greater incidence of maternal preeclampsia and cerebral palsy was seen in the VLBW group. Taking age, sex, and body mass index into account, ABPM systolic BP was significantly greater in VLBW (difference, 2.4 mm Hg; 95% CI, 0.2 to 4.6; *P* =0.03). Greater differences were seen when maternal preeclampsia, family history of hypertension, and parental education were added to the model. Differences were not significantly different when diastolic ABPM was evaluated. Office systolic and diastolic BPs were significantly higher in VLBW subjects using the same models. There were 11 VLBW subjects either taking antihypertensive medication or with hypertension on ABPM compared to 3 controls (OR, 4.0; 95% CI, 1.1 to 14.8; *P* =0.04). Greater differences in ABPM measurements were seen in women compared to men.
Conclusions: Adults who were born prematurely have higher BPs and a higher incidence of hypertension compared to adults who were born at term.
Reviewer's Comments: Despite the authors' care to consider several confounding variables that could explain increased BP in young adults with VLBW, differences persisted. This study supports the need for close follow-up with regard to cardiovascular health (eg, lifestyle assessment and BP measurements) in this vulnerable population, especially as these subjects reach an age when visits to health care providers might seem unnecessary. (Reviewer-Seth L. Schulman, MD).

Keywords: Hypertension, Prematurity

Print Tag: Refer to original journal article

Depression in Adolescents -- Can Increased Sleep Reduce the Risk?

Earlier Parental Set Bedtimes as a Protective Factor Against Depression and Suicidal Ideation.

Gandwisch JE, Babiss LA, et al:

Sleep 2010; 33 (1): 97-106

Earlier parental set bedtime could have a protective effect against depression and suicidal ideation by increasing the number of hours of sleep.

Objective: To determine if there is a relationship between parental set bedtimes, sleep duration, and depression in adolescents.
Methods: The data were taken from the National Longitudinal Study of Adolescent Health. The study was a national sample of adolescents in grades 7 to 12 in the United States in 1994 to 1996. There were >15,000 participants who completed information about depression, suicidal ideation, and bedtime information. Standard depression scales were used to see if there was a significant risk of depression and suicidal ideation. Bedtimes were also questioned in the survey. Sleep duration was also studied; the responses were ≤5 hours, 5 to 10 hours, and ≥10 hours.
Results: The average sleep duration was almost 8 hours. Adolescents were more likely to believe they got enough sleep with increased duration of sleep. The authors found that adolescents were more likely to comply with parental set bedtimes. Adolescent suffering from suicidal ideation or depression reported going to bed later, having a later parental set bedtime, having a short sleep duration, and self-perception of not getting enough sleep. Statistical analysis showed that adolescents who had parental set bedtimes of 11 PM or 12 AM were 15% and 42% more likely to suffer from depression, respectively, than those with 10 PM bedtimes. Suicidal ideation was 15% to 30% more likely in those with a bedtime of 11 PM and 12 AM than in those with a parental set bedtime before 10 PM. Subjects who perceived that they got enough sleep were less likely to suffer from suicidal ideation.
Conclusions: Short sleep duration may play a role in the etiology of depression and suicidal ideation in adolescents. Earlier parental set bedtime could have a protective effect against depression and suicidal ideation by increasing the number of hours of sleep.
Reviewer's Comments: The common thought is that depression affects an adolescent's sleep patterns. However, this study challenges the notion that increased sleep duration, especially due to early parental set bedtimes, may have a protective effect in reducing the risk of depression and suicidal ideation. Although the statistical manipulations demonstrate the effect, many clinicians may find their experience varies from this study. (Reviewer-Charles I. Schwartz, MD).

Keywords: Depression, Partial Sleep Deprivation, Asolescents

Print Tag: Refer to original journal article

Holiday Ornament Injuries -- Another Potential Problem for Young Children

Holiday Ornament-Related Injuries in Children.

Kimia A, Lois L, et al:

Pediatr Emerg Care 2009; 25 (December): 819-822

Although holiday ornament injuries are not common, when they occur, the injuries are usually related to foreign body ingestion or glass-related injuries.

Objective: To determine the incidence of holiday ornament injuries in children.
Design: Retrospective cohort review of the records of patients in an urban tertiary care pediatric emergency department (ED) over a 13-year period.
Methods: Charts were reviewed based on computer search for key words such as holiday, Christmas, ornaments, and glass. The searches were confirmed with a manual review of the selected charts. The outcomes examined included time of year, type of injury, exam findings, imaging methods, consults with specialties, procedures, and disposition.
Results: With nearly 700,000 ED visits, 844 met computerized search criteria, and 76 cases were identified as ornament-related injuries. The major reasons for exclusion from the 844 cases were no injuries, other glass-related injuries, or the term “Christmas tree pattern” that described pityriasis rosea. The average age was 2 years. Most injuries were laceration related or ingestion of a foreign body. Fifty-six percent of the cases involved ornament fragments or light bulbs in a toddler's mouth. In 12 of the 43 cases, there was bleeding in the mouth or gastrointestinal tract. Lacerations occurred in 25% of cases. Most lacerations were to the extremities, with smaller amounts to the face. More than half of the lacerations need suturing of the injury. Subspecialty consults usually involved either plastic surgeons or general surgeons/gastroenterologists to look for foreign bodies.
Conclusions: Holiday ornament injuries are not common, but, when they occur, the injuries are usually related to foreign body ingestion or glass-related injuries.
Reviewer's Comments: Holiday ornament injuries are rare, but can have an increased morbidity based on the type of injury. Parents need to be informed of the potential risks and try to address those risks with increased awareness in homes with small children. The careful placement of ornaments and lights during the holiday season could reduce the risk of preventable injuries. (Reviewer-Charles I. Schwartz, MD).

Keywords: Ornament Injury, Prevention

Print Tag: Refer to original journal article

Types of Allergies In Young Children

High Prevalence of Sensitization to Aeroallergens in Children 4 Yrs of Age or Younger With Symptoms of Allergic Disease.

Baatenburg de Jong A, Dikkeschei LD, Brand PLP:

Pediatr Allergy Immunol 2009; 20 (December): 735-740

Children aged ≤4 years with allergic disease have a significant risk of being sensitized to aeroallergens.

Background: Food sensitization is common in young children. There is a perception that the incidence of sensitivity to aeroallergens is low.
Objective: To determine the incidence of aeroallergen sensitivity in children aged ≤4 years with allergic disease.
Participants/Methods: The study involved children aged ≤4 years who had IgE tests performed in a hospital in the Netherlands over an 8-year period. The results of the radioallergosorbent test and the ImmunoCap test were examined during this period. Food allergens included cow's milk, egg, wheat, soy, fish, peanut, and tree nuts. Inhalant allergens studied included dust mites, grass/tree pollen, dog and cat dander, and fungi.
Results: 2946 blood IgE tests were studied in children ≤4 years in this study period. The following aeroallergens were positive: dust mite (12%), dog dander (9%), cat dander (8%), grass pollen (7%), tree pollen (4%), and fungi (0.6%). Food allergy was more common than aeroallergens. Boys were more likely to have a higher incidence of sensitivity to aeroallergens. This was noticeably higher for dust mites, with 13.2% in boys and 9.7% in girls; also, dog dander sensitivity was 10% in boys and 6.9% in girls.
Conclusions: Children aged ≤4 years with allergic disease have a significant risk of being sensitized to aeroallergens.
Reviewer's Comments: This study, although done in a Netherlands population, showed the need to include testing for aeroallergens as well as food allergens. The increased incidence of sex-specific sensitivity to aeroallergens needs further studying to determine long-term outcomes. Food allergy sensitization is still the most common cause for allergic disease in this age group, but in the absence of an obvious food allergy, tests for aeroallergen sensitivity need to be performed. (Reviewer-Charles I. Schwartz, MD).

Keywords: Aeroallergens, Sensitization, Immunoglobulin E

Print Tag: Refer to original journal article

Weight Gain in Adolescents--Are Sugared Drinks Really to Blame?

Adolescent Beverage Habits and Changes in Weight Over Time: Findings From Project EAT.

Vanselow MS, Pereira MA, et al:

Am J Clin Nutr 2009; 90 (December): 1489-1495

Sugared drink consumption by adolescents is not associated with a BMI change over a 5-year interval.

Background: Americans consume more calories from beverages than at any other time in history. In addition, between 1977 and 1994, adolescents' consumption of soft drinks has dramatically increased, while milk consumption has decreased.
Objective: To prospectively examine the association between beverage consumption and 5-year body weight change among adolescents.
Methods: Surveys were completed in 1998-1999 and again in 2003-2004. These included a 149-item questionnaire that examined beverage intake, energy intake, nutrients, and food groups. Beverages assessed included soft drinks, punch, low-calorie soft drinks, milk, chocolate milk, and juice. The surveys also included questions about demographics, dieting history, and parental concerns about the participants' weight. The study then assessed the association of beverage categories with body mass index (BMI), using multivariate linear regression analysis. The results were adjusted for age, sex, race, socioeconomic status, baseline BMI, and baseline consumption of the beverage being analyzed.
Results: In the analysis of each individual beverage category, only low-calorie soft drinks were associated with an increase in BMI over the 5-year interval. In a separate analysis in which all beverage categories were included together, the same result was found for low-calorie soft drinks; in addition, milk intake was associated with a decrease in BMI over the 5 years. When the analysis was adjusted for dieting patterns and parental weight-loss concerns, there was no longer a significant association between low-calorie soft drinks and BMI change.
Conclusions: Contrary to the authors' hypothesis, sugar-sweetened beverages were not associated with increased weight gain. In 1 of 2 modes of analysis, however, milk intake was associated with a decrease in weight gain. Other studies have shown an increase or no change in BMI in relation to milk intake, which the authors speculate is due to not adjusting for total calorie intake and the inclusion or exclusion of chocolate milk. The authors attribute the association of diet drinks with increased weight gain to dieting behaviors as a response to weight gain.

Once again, when it comes to the impact of nutrition on BMI, the main point remains that increased calories leads to increased BMI, regardless of source. Focusing on narrow categories such as sugared drinks to encourage weight loss is unlikely to work. Relying on low-calorie soft drinks to compensate for other forms of calorie intake will not work either. Given that other studies have shown mixed results with regard to milk intake on BMI, it is still uncertain whether milk intake improves weight loss. Also, it seems strange that this study did not include water intake in the analysis. There is one additional weakness to this study's design: it did not account for or define portion sizes of drinks consumed. (Reviewer-Daniel Coghlin, MD).

Keywords: Beverage Consumption, Adolescents, BMI

Print Tag: Refer to original journal article

Is ESWL Effective in Children?

Efficacy of Extracorporeal Shock Wave Lithotripsy for Ureteral Stones in Children.

Lu J, Sun X, et al:

Pediatr Surg Int 2009; 25 (December): 1109-1112

In a study from China, the use of shockwave lithotripsy as a treatment for ureteral stones in children was found to be highly efficacious with no serious side effects noted.

Background: The traditional treatment of ureteral stones has evolved from open surgical removal to the use of small-sized ureteroscopes. Another minimally invasive technique that is currently under study in children is extracorporeal shockwave lithotripsy (ESWL). This employs high-energy shockwaves to fragment stones.
Objective: To analyze the institutional experience with ESWL in the treatment of ureteral stones in children.
Design: This was retrospective review of the records of children treated from 1997 to 2008 at the largest lithotripsy center in China.
Methods: 115 children were treated. The mean age was 7.2 years. Slightly <50% of patients had proximal ureteral stones, 14% had mid-ureteral stones, and 40% had distal ureteric stones. The size of the stones ranged from 4 to 21 mm with a median size of 7 mm. Most of the children were treated as outpatients. Therapy was started at a lower power and gradually increased up to a maximum of 3000 shocks. Three treatment sessions separated by 2 weeks were attempted. Kidney, ureter, and bladder studies with or without ultrasound were performed at 2 weeks and 3 months to assess for confirmed persistence of the stone with no fragmentation.
Results: At 3 months, the stone-free rate was 95%. The retreatment rate was 16%. ESWL failed in 5% of cases. Overall, there was no difference in stone-free rates for patients regardless of the size or location of the stones. No serious side effects were observed.
Conclusions: The use of ESWL resulted in highly satisfactory stone-free rates with negligible complications. ESWL can be considered a first-line treatment for ureteral stones in children.
Reviewer's Comments: Ureteral stones are becoming a more common problem in pediatric medicine. Generally, stones <5 mm in diameter will pass spontaneously. ESWL represents a promising possibility for children. However, the data are limited, and many factors are involved. General anesthesia is often required, proper positioning is vital, and the energy of the wave is varied. Although no significant complications were noted in this study, fragments can become trapped in the distal ureter, and stenting prior to lithotripsy is sometimes required. Certainly, this is a procedure that is best handled in a center with a good deal of experience. The center in this study is the largest in China, and that fact may be reflected in the excellent outcomes. (Reviewer-Mark F. Ditmar, MD).

Keywords: Urolithiasis

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AN Increases Child's Risk of Insulin Resistance

Acanthosis Nigricans Identifies Youth at High Risk for Metabolic Abnormalities.

Brickman WJ, Huang J, et al:

J Pediatr 2010; 156 (January): 87-92

Acanthosis nigricans is a risk factor for insulin resistance in children.

Background: There is concern that the prevalence of insulin resistance and type 2 diabetes (T2D) is increasing in children. Acanthosis nigricans (AN) may be a helpful clinical sign in identifying children with insulin resistance or T2D.
Objective: To determine the prevalence of abnormal glucose homeostasis in children with AN.
Methods: Children were recruited from primarily urban primary pediatric offices in Chicago. They were eligible for the study if they were 8 to 14 years old, had not received any steroid medication in the past month, and had no autoimmune disease. The presence and severity of AN were assessed using a previously published score. The authors examined whether AN was independently associated with abnormal glucose homeostasis. Abnormal glucose homeostasis outcomes were impaired fasting glucose (fasting plasma glucose [FPG], 100 to 125), impaired glucose tolerance (2-hour post-load glucose, 140 to 199), or diabetes (2-hour post-load glucose, ≥200 or FPG, ≥126).
Results: 287 adolescents completed the study. More than half of the study population was Hispanic, and approximately 70% had a parent or grandparent with diabetes; 236 adolescents had AN. These subjects were more likely to be female, have a lower maternal education, be in a later pubertal stage, and have a higher body mass index (BMI) score. After adjusting for these differences, children with AN were still more likely to have higher fasting insulin (238 ± 138 vs 126 ± 54; *P* <0.001), higher 2-hour post-load insulin (1260 ± 1098 vs 642 ± 534; *P* <0.001), and a significantly higher 2-hour glucose (6.9 ± 1.3 vs 6.4 ± 1.1; *P* =0.059). Among only the children with AN, impaired glucose tolerance was more common if the children were Hispanic or female, but not if they had a higher BMI.
Conclusions: Children with AN are more likely to have insulin resistance than children without AN.
Reviewer's Comments: While the authors admit that they conducted this study to examine the pathophysiology of abnormal glucose homeostasis, the findings presented here are still clinically relevant. In short, a child with AN in your clinic merits screening for insulin resistance or T2D. Your threshold for screening should be even lower if the child with AN is Hispanic or female. (Reviewer-Beth A. Tarini, MD).

Keywords: Acanthosis Nigricans, Type 2 Diabetes, Insulin Resistance

Print Tag: Refer to original journal article

Laparoscopy vs Laparotomy for Ovarian Dermoid Cystectomy

Management of Ovarian Dermoid Cysts in the Pediatric and Adolescent Population.

Savasi I, Lacy JA, et al:

J Pediatr Adolesc Gynecol 2009; 22 (December): 360-364

Excision of an ovarian dermoid cyst by laparoscopy affords shorter hospital stay and quicker recovery time than laparotomy, without an increase in postoperative chemical peritonitis.

Background: Dermoid cysts are the most common ovarian neoplasms in both adult and pediatric populations. Surgical excision is recommended due to the risk of ovarian torsion, spontaneous rupture, or possible malignancy. While these lesions were traditionally removed via laparotomy, laparoscopy offers advantages, including shorter hospital stay, quicker recovery time, reduced need for analgesia, and improved cosmesis. However, controversy remains regarding laparoscopic cystectomy due to a higher risk of intraperitoneal cyst rupture, with resulting chemical peritonitis, increased formation of adhesions, and hypothetical spillage of malignant cells.
Objective: To compare the outcomes of laparotomy versus laparoscopy for ovarian dermoid cyst excision in the pediatric/adolescent population.
Design/Methods: A retrospective chart review was conducted for all patients at a single children's hospital who were surgically treated for an ovarian dermoid cyst from 2001 to 2006. Preoperative investigations included tumor marker levels and pelvic imaging with ultrasound, CT, or MRI. Surgical procedures were classified as laparotomy or laparoscopy, cystectomy, or oophorectomy. Any degree of intraperitoneal spillage of cyst contents was considered a cyst rupture.
Results: 41 patients underwent surgery for ovarian dermoid cyst during the 5-year study. The age range of patients was 6 to 17 years, with a mean of 12.5 years. Cyst diameters ranged from 3.0 to 24.8 cm. Of the 41 patients, 23 (58%) underwent laparoscopy, and 18 went to laparotomy. Cyst size was significantly larger for those in the laparotomy group than for those in the laparoscopy group (mean, 14.4 vs 7.1 cm, respectively). All patients in the laparoscopy group were treated with cystectomy, whereas 22% of the laparotomy group received oophorectomy. Intraoperative rupture and spillage of dermoid contents occurred in all laparoscopy cases and in 5 (28%) laparotomy cases. Length of hospital stay was significantly shorter in laparoscopy patients (median, 0 vs 3 days). No complications resulted from cyst content spillage regardless of surgical approach.
Conclusions: Laparoscopic cystectomy is a safe and effective approach to removal of an ovarian dermoid cyst in children and adolescents.
Reviewer's Comments: While all patients undergoing laparoscopy had favorable outcomes, the study only partly addressed the issues that have raised controversy. Laparoscopy has been criticized for its association with cyst spillage. Despite 100% spillage in laparoscopy patients in this study, no patients showed signs of postoperative chemical peritonitis. However, long-term follow-up to examine additional consequences (ie, adhesion formation, fertility potential, tumor recurrence rates, or seeding of malignant cells) was not pursued. The benefits of laparoscopy are clear. However, the assurance that long-term risks of the procedure are comparable to those of laparotomy has yet to be clarified. (Reviewer-Alyssa Siegel, MD).

Keywords: Ovarian Cyst, Dermoid, Laparotomy, Laparoscopy, Cystectomy

Print Tag: Refer to original journal article

Emergency Contraception in the Pediatric ED

Patient Characteristics and Provider Practice Patterns for Emergency Contraception in a Pediatric Emergency Department.

Patel S, Miller MK, Dowd MD:

Pediatr Emerg Care 2010; 26 (January): 6-9

Although adolescent girls seem to be receiving emergency contraception in the emergency department, almost all of these cases are due to sexual assault.

Background: Of the 3.5 million unintended pregnancies that occur each year in the United States, about half could be prevented with easily accessible emergency contraception. Patients >18 years of age can acquire emergency contraception over the counter; younger patients would require a prescription. Although guidelines exist for the use of emergency contraception in adolescents, surveys show that most pediatricians have prescribed it <5 times a year. Many barriers exist in preventing women from easily obtaining emergency contraception.
Objective: To determine the characteristics of patients who receive emergency contraception in a pediatric emergency department (ED), and to describe practice variations in the use of emergency contraception.
Design/Methods: This study was a retrospective review of data from an ED in a children's hospital. The records for all patients who had received emergency contraception between 2003 and 2007 were abstracted. Data that were reviewed included patient demographics, information about the visit, sexual history, results of laboratory tests, pelvic exam, and physical exam, counseling, and medications.
Results: Over the period of this study, 180 patients were identified who had received emergency contraception. Of these patients, 116 had complete data for analysis. The average age of these patients was almost 14 years; one half were white, about 70% were on Medicaid insurance, and most presented at the ED between 8 PM and midnight. The majority of these patients (88%) were victims of non-consensual sex or sexual assault. Most patients (90%) reported their last sexual contact occurring within the previous 3 days. Almost all patients (98%) received a pregnancy test, 82% received a pelvic exam, and 89% were treated (sometimes prophylactically) for a sexually transmitted disease. Only one patient returned to the ED because of a presumed side effect from the emergency contraception.
Conclusions: Although adolescent girls seem to be receiving emergency contraception in the ED, most of these cases are because of sexual assault. This means that opportunities to provide emergency contraception to many other patients engaging in consensual sexual activity are being missed. Educational interventions are needed to correct this deficit in our practice patterns.
Reviewer's Comments: If we are serious about reducing the number of unwanted pregnancies in the United States, we have to get more serious about following guidelines about emergency contraception. Currently, it seems to be used almost exclusively for victims of sexual assault. Many opportunities are being missed. (Reviewer-Aaron E. Carroll, MD, MS).

Keywords: Emergency Contraception

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