Consider Intranasal Steroids for Allergic Rhinitis in Young Children

Efficacy and Safety of Triamcinolone Acetonide Aqueous Nasal Spray in Children Aged 2 to 5 Years With Perennial Allergic Rhinitis: A Randomized, Double-Blind, Placebo-Controlled Study With an Open-Label Extension.

Weinstein S, Qaqundah P, et al:
Ann Allergy Asthma Immunol; 2009; 102 (April): 339-347

Intranasal steroids may be a treatment option for patients aged 2 to 5 years, as efficacy and safety are now being demonstrated.

Objective: To evaluate the safety and efficacy of an intranasal steroid specifically in children aged 2 to 5 years with perennial allergic rhinitis.

Design/Participants: This was a randomized, double-blind, placebo-controlled study with an open-label extension. Patients aged 2 to 5 years were enrolled who had a >=1 year history of allergic rhinitis and positivity on testing either by skin prick tests or radioallergosorbent testing (RAST) reactions to perennial allergens in the patient's environment (such as cats, dogs, molds, or dust mites).

Methods: Patients had to have normal hypothalamic-pituitary-adrenal (HPA) axis function by testing. Participants were randomized to receive either placebo or triamcinolone acetonide aqueous nasal spray (TAA AQ) 110 g once daily. Therapy continued for 4 weeks, at which point families could voluntarily use the steroid nasal spray for up to 7 months. Patients were examined on a monthly basis during this time. A total nasal symptom score was used. The primary end point for efficacy was the change from baseline during the double-blind treatment period. Safety and tolerability were assessed from parental reports and physical examination. Repeat evaluations of adrenal function via the cosyntropin stimulation test were done at the end of the double-blind and open-label periods. Growth was measured before and at the end of the study by stadiometry.

Results: 474 patients were enrolled in the double-blind study, and 436 continued into the open-label extension phase. The mean age was approximately 3.5 years. There was a significant reduction in the total nasal symptom score (particularly for sneezing and nasal itching) for the intranasal-steroid group compared to the placebo group. Adverse events between the 2 groups were similar. Adrenal function was not diminished as tested at the end of the study.

Conclusions: The use of TAA AQ once daily in 2- to 5-year-old children with perennial allergic rhinitis has a favorable efficacy to safety ratio when studied for up to 6 months.

Reviewer's Comments: Although the data achieve statistical significance in many categories, the numbers are not dramatic. Even so, there was improvement, and the lack of effects on adrenal function was reassuring. The authors concede that the study was not designed to assess individual growth velocity, but height-for-age distributions did not change, suggesting no growth impedance. As this is one of the initial forays into this age group, appropriate questions would include whether different dosing or steroid types might have better results. The families seemed to have better luck with compliance with nasal sprays for this young age group than might be seen in most pediatric practices.

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Misinterpreting OTC Labels Dangerous to Children

Parental Misinterpretations of Over-the-Counter Pediatric Cough and Cold Medication Labels.
Lokker N, Sanders L, et al:
Pediatrics; 2009; 123 (June): 1464-1471

Significant misunderstandings exist in the appropriateness of over the counter cough and cold medications in children.

Background: Although the Food and Drug Administration has approved the use of cough and cold medications in adults, they have really never been fully tested for use in children. A number of medications have been implicated in the deaths of children in the last 40 years, leading to a recent advisory committee recommendation against the use of over-the-counter (OTC) cough and cold medications in children <6 years of age; most manufacturers voluntarily removed products intended for children <2 years of age from the shelves. Many products intended for use in children still remain.

Objective: To determine how well parents understand the age indications for OTC cough and cold medications.

Methods: Surveys were administered to participants in general pediatric practices in 3 academic centers from 2006 to 2007. Patients were eligible if they spoke English and were responsible for caring for an infant <15 months of age. Trained research assistants administered a 30- to 45-minute survey. Five items assessed how well caregivers understood the labeling on OTC medicines. The 5 questions were asked for 4 different medications. Additional data were gathered for participants to be used in the analyses.

Results: Over the course of the study, 182 caregivers participated. Most of the participants were mothers caring for children of an average age of 4.5 months. Almost all participants (99%) had adequate literacy skills, although only 17% had numeracy skills (the capacity for quantitative thought and expression) above a 9th-grade level. More than 50% had previously used OTC medications for a child's fever and 29% for a child's cold. When looking at the products' labels, >85% of caregivers thought the medications were appropriate for children <2 years of age. More than half reported that they would use them for a cold in a 13-month-old infant. Characteristics of the packaging affecting this decision included the use of the word "infant" and pictures of babies, teddy bears, etc. Lower numeracy was associated with inappropriate reasons to use the medications.

Conclusions: Parents often misunderstand the labeling on OTC cough and cold medications. Lower numeracy is associated with this misunderstanding and may lead to harm. New guidelines for product labeling may be necessary to prevent injury in infants and small children.

Reviewer's Comments: Even though the medications for children aged <2 years have been pulled from the shelves, parents still do not understand the dangers these drugs pose, and the labeling is not helping. There is more to be done at the federal level and in the office setting.

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Penicillin Remains Tx of Choice for GAS Pharyngitis

Prevention of Rheumatic Fever and Diagnosis and Treatment of Acute Streptococcal Pharyngitis: A Scientific Statement From the American Heart Association (various committees and councils): Endorsed by the American Academy of Pediatrics.


New AHA guidelines continue to endorse penicillin or amoxicillin as the first-line treatment for group A streptococcal pharyngitis.

Objective: To update the 1995 recommendations on the diagnosis of acute group A streptococcal (GAS) pharyngitis and prevention of rheumatic fever.

Methods: A scientific statement was developed from an expert panel utilizing evidence-based literature, including a classification of the strength of evidence.

Results: GAS pharyngitis is a disease principally involving children aged 5 to 15 years in the winter and early spring. Acute rheumatic fever is rare in the younger child (<3 years of age) and as an initial attack in an adult. Differentiation from viral pharyngitis requires microbiologic confirmation. However, strep infections are more likely with sudden-onset sore throat, pain on swallowing, fever, scarlet fever rash, headache, nausea, vomiting and abdominal pain, exudative disease, enlarged tender anterior cervical lymph nodes, and a history of exposure. Viral origin is more likely if there is concurrent conjunctivitis, coryza, hoarseness, cough, or diarrhea. In infants, GAS infections may present with purulent nasal discharge or excoriated nares. Rapid strep tests have a high degree of specificity, but an unacceptably low sensitivity; therefore, a back-up culture continues to be advised in settings where GAS infections are more likely. In the winter and early spring, as many as 15% of school-age children may be asymptomatic GAS carriers. These are patients with positive throat cultures without clinical findings or an immunologic response to GAS. GAS carriers are a low risk for the development of rheumatic fever and not important in the spread of GAS to those around them in school or in office settings. The authors recommend penicillin V or amoxicillin as the antibiotics of choice, including once-daily amoxicillin at a dose of 50 mg/kg (maximum 1000 mg) for 10 days. In penicillin-allergic patients (those without an anaphylactic-type reaction), other antibiotics may include narrow-spectrum oral cephalosporins (such as cephalexin), clindamycin, or a macrolide. Antibiotics not recommended include tetracyclines, trimethoprim-sulfamethoxazole, and ciprofloxacin. Follow-up cultures are not required in an asymptomatic patient.

Conclusions: New American Heart Association recommendations, endorsed by the American Academy of Pediatrics, continue to recommend combining clinical judgment with diagnostic testing and the throat culture as the gold standard. Penicillin (or amoxicillin if palatability is a problem) remains the treatment of choice.

Reviewer's Comments: This is a comprehensive look at an issue that occupies a good deal of time for pediatricians. Much of it is complementary to the Red Book. There is additional information on prophylaxis for bacterial endocarditis (ironically no longer recommended for patients with rheumatic fever), as well as discussions on poststreptococcal reactive arthritis and the controversial pediatric autoimmune neuropsychiatric disorders associated with streptococcal (PANDAS) infections syndrome. Regarding the latter, the authors feel it is unproven and do not recommend GAS testing or prophylaxis for exacerbations of this disorder.

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What Is Best Antibiotic for Soft-Tissue Infection?

Antibiotic Selection for Purulent Skin and Soft-Tissue Infections in Ambulatory Care: A Decision-Analytic Approach.

Hersh AL, Weintrub PS, Cabana MD:

Acad Pediatr; 2009; 9 (May-June): 179-184

As long as the prevalence of MRSA remains >10% in the community, clindamycin is the optimal empiric choice of antibiotic for treatment of a soft-tissue infection.

Background: The increasing appearance of community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has significantly increased the number of skin and soft-tissue infections seen in primary care settings. In some areas, CA-MRSA accounts for >60% of soft-tissue infections. Because of this, many are unsure of the best therapy for such infections until confirmatory testing has been performed. However, delays in therapy are not desired. Some have suggested using the local epidemiology for CA-MRSA in predictive models to help choose initial antibiotics.

Objective: To create a strategy for choosing the optimal antibiotic for a soft-tissue infection using threshold values for bacterial prevalence and antibiotic resistance.

Methods: A decision model was created to evaluate 3 different antibiotic strategies: (1) clindamycin; (2) trimethoprim/sulfamethoxazole (T/S); and (3) cephalexin. The end point for each branch of the decision tree was the probability of antibiotic activity against the infection; the optimal overall strategy was the one that would maximize the overall probability of activity. Assumptions included that GAS would be susceptible to clindamycin and cephalexin, all methicillin-sensitive *Staphylococcus aureus* (MSSA) were susceptible to cephalexin, and all CA-MRSA were resistant to cephalexin. Sensitivity analyses were conducted to determine the thresholds for prevalence and antibiotic resistance when 2 strategies were equal.

Results: In the base case model, clindamycin had the highest probability of activity (0.95), followed by T/S (0.89) and cephalexin (0.28). If the prevalence of CA-MRSA dropped below 10%, then cephalexin was the optimal choice of antibiotic. In the base case, clindamycin was always superior to T/S, but if the resistance to clindamycin rose above 13%, then T/S became superior. The activity of clindamycin and T/S were both highly sensitive to changes in the bacterial prevalence of GAS and CA-MRSA.

Conclusions: As long as the prevalence of MRSA remains >10% in the community, clindamycin is the optimal empiric choice of antibiotic for treatment of a soft-tissue infection. As long as the resistance of CA-MRSA to clindamycin is <13%, it is a superior choice to T/S. This is an excellent example of how a decision model can guide local communities with different epidemiology to make rational antibiotic choices.

Reviewer's Comments: Although decision analyses are sometimes difficult to understand, this is an excellent example of how the methods can be used to inform clinical care. We need more like these.

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**Best Initial Monotherapy for SSTIs**

*Empiric Antimicrobial Therapy for Pediatric Skin and Soft-Tissue Infections in the Era of Methicillin-Resistant Staphylococcus aureus.*


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**Objective:** To compare the clinical effectiveness of monotherapy with b-lactams, clindamycin, or trimethoprim-sulfamethoxazole (T/S) in the outpatient management of nondrained, noncultured skin and soft-tissue infections (SSTIs), in a methicillin-resistant *Staphylococcus aureus* (MRSA)-endemic region.

**Design:** For this retrospective, case-control trial, the cohort was drawn from 5 urban pediatric primary care centers in Philadelphia (a community-acquired [CA]-MRSA endemic region).

**Methods:** By analyzing all the ICD-9 visit codes associated with SSTIs, the researchers identified all patients who presented to a primary care office or emergency department (ED) with a first documented SSTI over a 3-year period. The study excluded patients who had a drainage procedure, wound culture, admission on the day of initial visit, patients treated topically, and patients treated with >1 oral antibiotic agent. The primary outcome was treatment failure, as defined by hospitalization, a drainage procedure, change in antibiotic regimen unrelated to adverse reaction, or extension of initial antibiotic course, so long as initial course was at least 7 days. Each case of treatment failure was matched randomly to 4 control subjects who were treated successfully. Univariate and multivariate analysis was performed to assess risks for treatment failure.

**Results:** Of the 3,808 patients identified with SSTIs during the study period, 2096 (55%) were eligible for the study. Treatment failure was identified in 104 (5%) of these patients. Compared with b-lactam monotherapy, T/S monotherapy was associated with an increased risk of treatment failure (OR, 2.35). There was no significant difference in treatment failure with clindamycin when compared to b-lactams. Other associated risk factors for treatment failure included being seen initially in the ED (OR, 2.77), white race (OR, 2.43), the presence of induration or abscess (OR, 1.88), fever (OR, 1.94), and antibiotic use within the past 6 months (OR, 1.76). An organism was identified in 29 (27.9%) of the 104 cases of treatment failure, of which 69% were from CA-MRSA and 31% were CA-methicillin-sensitive *Staphylococcus aureus* (CA-MSSA).

**Conclusions:** Outpatient empiric monotherapy coverage for CA-MRSA for nondrained, noncultured SSTIs is not associated with improved outcomes. Furthermore, monotherapy with T/S was associated with increased risk of treatment failure (at least partially due to the fact that it does not cover group A streptococcus). Given these results, the authors conclude that b-lactams should be the preferred first-line treatment of nondrained, noncultured SSTIs, even in a CA-MRSA endemic area.

**Reviewer's Comments:** In the all-too-common situation in which there is an SSTI but nothing that can be drained or cultured, this study provides the most empiric evidence yet that b-lactams are still the best first-line monotherapy, even in a CA-MRSA endemic region. In cases with increased risk for treatment failure (involving fevers, abscess, or presentation to the ED), I would consider starting with dual therapy.

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**b-lactams are still the best choice as initial monotherapy for nondrained, noncultured skin infections, even in endemic MRSA areas.**

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Should Bagged Urine Cultures Be Trusted?

Moving From Bag to Catheter for Urine Collection in Non-Toilet-Trained Children Suspected of Having Urinary Tract Infection: A Paired Comparison of Urine Cultures.

The diagnosis of UTI in non-toilet-trained children should not rely on bag-obtained specimens for urinalysis.

Background: Urinary tract infections (UTIs) are a common cause of fever in young children. Collecting urine in children not yet toilet trained has evolved, and in the United States, more practitioners are relying on specimens collected via suprapubic aspiration and catheterization and less on those collected using a bag because of the risk of contamination.

Objective: To compare bag-obtained specimen (BOS) and catheter-obtained specimen (COS) cultures in the same children suspected of having a UTI.

Design: Prospective, cross-sectional study.

Participants: 192 non-toilet-trained children <3 years of age presenting to the emergency department with fever of unknown origin; 51 of the 192 were <3 months old.

Methods: The first collection was obtained by using an adhesive bag that was changed every 30 minutes. If the dipstick was positive for nitrates or leukocytes, a urinalysis was performed. Positive results were confirmed by obtaining a specimen by catheterization, although the decision to obtain a COS was ultimately determined by the treating clinician. BOSs and COSs on the same patients were sent for culture and read in a blinded fashion. Patients with urinalysis obtained by bag and catheter were included. Circumcision status was not obtained. Urinalysis was positive if there were >=10 WBC/L and/or bacteriuria on microscopic examination. A BOS culture was positive if 1 species was present at 105 CFU/mL and a COS culture was positive if 1 species was present at 103 CFU/mL. A COS was considered the gold-standard for comparison to a BOS.

Results: Of the 192 BOSs (all positive on urinalysis), 48.4% were culture positive, 21.4% were negative, and 30.2% were polybacterial. Of the COS urine cultures, 53.2% were positive, 41.4% were negative, and 8.3% were polybacterial. A positive urinalysis predicted a UTI 63% and 53% of the time for a COS and BOS, respectively. Among the BOSs, 7.5% were false positive for cultures and 29% were false negative. Therefore, 40.1% of BOS cultures (95% CI, 33.2 to 47.0) would have led to a misdiagnosis or impossible diagnosis compared to 8.3% of COS-positive cultures leading to an impossible diagnosis due to multiple organisms. Pyelonephritis was found in 12 of the children (6.3%) with a negative BOS culture. Catheterization failures were seen in 7.7% of the children, and no complications were noted.

Conclusions: Bag-obtained urinalysis should be confirmed by catheterization before treating young children for UTI.

Reviewer's Comments: The biggest limitation to this study included the lack of catheterization in 65% of children with positive BOS urinalysis due to the clinician deciding one was not required. The most interesting finding is the rate of false-negative BOS cultures (29%), which the authors attribute to sterilization due to the cleaning process upon bag placement. The low rate of failure and absence of complications reinforce the need to use a more reliable method over bag collection.

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Once Again, the Horrible Hormones Are Responsible

Menstrual Migraine in Adolescents.
Crawford MJ, Lehman L, et al:
Headache; 2009; 49 (March): 341-347

In teenage girls with migraine headaches, approximately 50% will note a menstrual association to their headache pattern.

Objective: To categorize the role of menses in migraine headaches in preadolescent and adolescent girls.

Design/Participants: A retrospective review of data obtained from a referral headache center at Cincinnati Children's Hospital.

Methods: As part of the initial evaluation, girls were asked to complete a general headache questionnaire, including the relationship between headaches and the menstrual cycle, as well as general medical and family history. Specific questions included onset of menarche and pubertal development, regularity of periods (particularly monthly patterns), and the characteristics of headaches (e.g., severity, duration, and associated symptoms) related to menstruation.

Results: Data on 830 girls (mean age, 14 years; range, 9 to 18 years), who met the International Classification of Headache Disorders for migraine, were available; 87% (720 of 830) had migraine without aura and 13% (110 of 830) had migraine with aura. The average headache frequency was 17 per month, with an average severity of 6.5 on a pain scale up to 10. Average duration of headache was 12 hours. Average reported age of menarche was 11.9 years. Of the girls who had achieved menarche, 50% (331 of 656) reported experiencing worse headaches during their period. In girls who had not had their first menstrual period, 18% reported a monthly pattern to their headaches, which does suggest a hormonally-related pattern in the premenarchal age group. For those with menstrual migraine, two-thirds of the girls experienced a headache within 2 days before their periods started. One in 5 noted an onset of headache on the day of the initiation of menses. Only 15% had headaches start after their menstrual period had begun. The likelihood of increased headache frequency during menstruation for those with apparent menstrual migraine was high, as girls reported this headache exacerbation in approximately 75% of menstrual periods.

Conclusions: The association of migraine headaches with menstruation, well-described in adults, does become apparent during adolescence. Early identification of the pattern may allow for better long-term treatment.

Reviewer's Comments: There is another interesting statistical offshoot from the study. The data indicated that girls who were diagnosed with menstrual migraine had the headaches beginning at or shortly after menarche and not years later. The percentage of those with menstrual-related migraines remained constant after puberty. Patients either developed migraine headaches with early menstruation or they did not, suggesting that certain girls may have a different biological or genetic basis to their migraine headaches that is affected by hormonal changes. The potential predictive nature of menses, particularly in older adolescents, makes the possibility for intermittent prophylaxis for migraine headaches an option.

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Best Method for Treating Dehydration in the ED


Karpas A, Finkelstein M, Reid S:
Pediatr Emerg Care; 2009; 25 (May): 301-306

The parents of children who have IV rehydration are more likely to switch to oral rehydration in the future if an effective oral antiemetic could be used.

Objective: To determine the parental preference for rehydration therapy for dehydration in young children presenting to the emergency department.

Methods: Children 6 months to 5 years of age were recruited in an urban pediatric emergency department (ED). The children's parents were invited to be a part of the study after triage was completed and before physician assessment. Both oral and IV hydration methods were explained. Parents were asked about their preference and asked for 2 reasons why they made the choice they did. Demographics were also asked about, in addition to details about the illness.

Results: 260 parents that completed the survey; 38% chose oral rehydration and 62% chose IV therapy. Forty-six percent of parents reported that their children's symptoms were present for >2 days. Ninety-one percent of the parents attempted oral fluids at home. However, only 34% used appropriate oral rehydration fluids and small frequent amounts of fluid. Sixty-five percent of the children continued to vomit at home despite being offered oral rehydration, and 31% just refused to drink. Of those parents who chose IV therapy, 53% would definitely, and 42% might, choose oral rehydration if there was an oral antiemetic effective for stopping vomiting. Those who chose oral over IV rehydration did so because of the lack of a topical pain reliever for IV catheter insertion.

Conclusions: The parents of children who had IV rehydration were more likely to switch to oral rehydration in the future if an effective oral antiemetic could be used.

Reviewer's Comments: The expectation that IV therapy will be used in ED is a hard barrier to overcome. Oral antiemetics, such as ondansetron, are now more commonly used in adults and slowly being used for children. The authors in this article do not recommend or discuss which oral antiemetics could be used. If safety profiles indicate that current oral antiemetics are effective and safe, oral rehydration therapy may become a favored treatment in the ED.

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Symptoms That Can Predict Wheezing Attacks

Signs and Symptoms That Precede Wheezing in Children With a Pattern of Moderate-to-Severe Intermittent Wheezing.

Rivera-Spoljaric K, Chinchilli VM, et al:
J Pediatr; 2009; 154 (June): 877-81.e4

Significant cough that disrupts daily activities is the greatest risk factor for predicting the onset of a severe wheezing attack.

**Objective:** To identify physical finding that can help predict the onset of a wheezing episode in children.

**Participants/Methods:** Children 12 to 59 months of age who had 2 episodes of moderate-to-severe wheezing in the previous year with an upper respiratory infection (URI) were recruited. Children were randomized to inhaled corticosteroids, leukotriene receptor antagonist, or a placebo for 7 days at the start of an URI. Patients also received albuterol 4 times daily (or more if needed). Questionnaires were distributed to the parents, who were asked about the first symptom their child exhibited at the onset of their breathing illness. Other questions asked parents what the most important symptom was that made them most certain of an event, and what are the 2 symptoms that are present when they give the medications that are intended to lessen their child's symptoms. They were also asked questions about appearance, appetite, behavior, breathing, sleep issues, cough, fever, and noisy breathing.

**Results:** 238 children were randomized, and 215 had at least 1 or 2 URIs in the previous year. Fifty percent of parents had at least some college education, 65% of the participants were male, and for the most part, mothers filled out the surveys. Nose symptoms and significant cough were major factors prior to the onset of wheezing. A significant cough is one that affects both awake and sleeping activities. Significant cough remained the largest risk factor for the start of severe wheezing attacks.

**Conclusions:** Significant cough was greatest factor for predicting the onset of a severe wheezing attack.

**Reviewer's Comments:** This study was helpful to doctors and parents who ask what first symptoms should a parent look out for prior to the onset of a wheezing attack. The answer is the intrusive cough. Parents need to be vigilant with early treatment of wheezing to try to avoid systemic corticosteroid use and hospital visits.

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Promoting Immunizations--Consider Marketing

Social Marketing as a Strategy to Increase Immunization Rates.
Opel DJ, Diekema DS, et al:
Arch Pediatr Adolesc Med; 2009; 163 (May): 432-437

Social marketing strategies may be a useful model for promoting immunizations and other positive health behaviors.

Background: Every year, it seems that more families are opting not to vaccinate their children because of concerns about autism or other real or perceived potential side effects. There has been much media attention about vaccine side effects. In the 2004 National Immunization Survey, almost 30% of parents were unsure about, had delayed, or had refused vaccines for their children. Many will say that this is the burden of success, that vaccines have been so successful that families do not remember (and therefore do not understand) how horrible vaccine-preventable diseases are. However, many of the outbreaks of these diseases can be traced to children whose parents have chosen not to vaccinate. Partly due to the increased influence of the media, including the Internet, parents are no longer getting most of their medical information from the health-care provider, but from Internet discussions, media reports about lawsuits, and from celebrities who endorse or speak out against a particular medical treatment.

Objective: To describe the potential utility of social marketing aimed at increasing childhood immunizations.

Results: Social marketing is the use of marketing technology for planning programs to influence behavior in order to improve personal and societal outcomes. It has been used successfully in other health promotions, such as smoking cessation programs. The goal of social marketing with regard to immunizations would be to convince parents that their child is better off if he/she is immunized. For effective social marketing, there has to be a reasonable argument, a trustworthy messenger, and a message that resonates with the audience. A social marketing message to increase immunization rates would need: (1) a message that dispels myths that are barriers to immunizations; (2) a spokesperson with a compelling pro-vaccine story that can capture the attention of parents who are unsure about immunizations; (3) testimonials from families who have been affected by vaccine-preventable diseases; (4) health-care providers to provide factual messages through media outlets and at health care visits; and (5) funding from nonprofit organizations, as funding from vaccine manufacturers would make consumers suspicious of the message. The state of Washington is currently developing and implementing a state wide social marketing campaign aimed at increasing immunizations in children 0 to 24 months of age. If it is successful, it will be a useful model for promoting not only immunizations, but other positive health behaviors.

Reviewer's Comments: The rate of immunization refusal is increasing much more rapidly than before. It is clear that current methods of encouraging childhood immunizations are unsuccessful for a subset of the population. While we should not abandon the scientific arguments, perhaps we can learn something from the marketers about how to better promote the "product" of immunizations.

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Head Start Programs May Be Good Role Models

Child Health in Child Care: A Multi-State Survey of Head Start and Non-Head Start Child Care Directors.

Gupta RS, Pascoe JM, et al:
J Pediatr Health Care; 2009; 23 (May/June): 143-149

Children attending Head Start programs are more likely to receive health screenings and consultations with health professionals than those in other child care centers.

Background: More than 50% of children aged 3 to 5 years attend a center-based child care program in the United States. Screening for medical, dental, and developmental concerns are among the federally mandated services included in Head Start (HS) programs, whereas non-Head Start (non-HS) centers individually implement and enforce health-care performance standards.

Objective: To compare health consultation, screening practices, and health risk among children in HS versus non-HS child care centers.

Methods: Licensed child care center directors from 5 states were selected at random for completion of a telephone survey. Survey domains included barriers to health education in the center, usefulness of health education, health screening, availability of health consultants (physician, nurse, dentist, nutritionist, or mental health provider), specific health issues pertinent to child care centers, time in physical activity versus television, and personal/demographic information. Race and the percentage of children receiving public assistance were also noted.

Results: 2753 child care directors participated in the survey, approximately 10% serving at HS Centers. More than 90% of HS programs routinely screened for child health problems compared to 64.9% in other centers. Directors of HS programs were significantly more likely than their non-HS counterparts to consult with health professionals, particularly dieticians (50.6% vs 15.5%) and mental health providers (60.2% vs 16.3%). Less than 3% of HS center directors reported prolonged television viewing (>1 hour) as a typical daily activity at the center, as opposed to 11.3% of non-HS directors. Children in HS were at greater risk for dental problems, even after adjusting for race and public assistance. All other health concerns, including behavioral and developmental issues, had a similar prevalence in either setting. Approximately 50% of each subgroup cited inadequate time and funds as a barrier to health education, and approximately 75% of each subgroup reported limited English-speaking capability of parents as a limitation to implementing health education.

Conclusions: Children attending designated HS centers are more likely to receive health screenings and consultations from health professionals, have more dental problems detected, and watch less television than children in non-HS programs.

Reviewer's Comments: Incorporating health promotion in child care programs may improve knowledge of health-related issues and healthy behavior by parents and child care providers. Overall, this study found that HS programs placed greater emphasis on children's health issues and practices than did independent child care centers, despite similar prevalence of health care issues. This difference may reflect the effectiveness of the federal mandates placed on HS centers versus the variability in child care health regulations imposed on other centers by states. HS programs may serve as a model for development of more comprehensive child health practices for all child care centers.

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False-Negative Wrist X-Rays Common in Scaphoid Injury

Clinically Suspected Scaphoid Fractures in Children.

Nearly 1 in 3 patients with clinically suspected scaphoid fractures that are negative on initial radiographs will have a fracture become radiographically evident at follow-up.

Objective: To determine how often clinically suspected scaphoid fractures with initially negative radiographs are subsequently found to be positive for fracture and which physical examination features are more likely to suggest a scaphoid fracture.

Design/Participants: A retrospective and longitudinal review of patients <16 years of age who were seen at the Akron Children's Hospital Emergency Department and referred to orthopedics for a traumatic wrist injury from 1995 to 2002. A total of 63 cases were retrospectively identified in whom there was a high clinical suspicion of scaphoid fracture on initial evaluation, but a normal radiograph.

Methods: In the retrospective group, all patients were immobilized in a short-term thumb-spica splint and were subsequently seen for follow-up radiographs. The second arm of the study was prospective with 7 defined physical examination features noted for each patient. These included pain with wrist active range of motion, anatomic snuffbox tenderness, volar tenderness over the scaphoid, pain with side-to-side pressure of the thumb, pain with radial deviation of the wrist, pain with ulnar deviation, and pain with resisted supination. This longitudinal group comprised 41 patients for a total cohort of 104 patients with wrist injury. The average age of participants was 13 years.

Results: Of the 104 injured wrists with no initial radiographic evidence of fracture, 30% (31 of 104) had radiographically evident fracture at follow-up. Of the 41 patients in the longitudinal group, 41% (17 of 41) had a scaphoid fracture on follow-up x-rays. Three features on examination were statistically significant predictors of scaphoid fracture: volar scaphoid tenderness (odds ratio [OR], 5.5); pain with radial deviation (OR, 9.75); and pain with active range of motion of the wrist (OR, 5.51).

Conclusions: In children with clinically suspected scaphoid fractures, but with negative x-rays, nearly 1 in 3 will have radiographic evidence of scaphoid fracture on repeat follow-up studies. If there is clinical suspicion of a scaphoid fracture but normal radiographs, the patient's wrist should be immobilized in a spica splint and physical examination and radiographs repeated in 2 weeks.

Reviewer's Comments: The authors also raise an obvious question in this era of high technology. If the plain x-ray is negative, is MRI the next step? MRI has a 100% negative predictive value and may thus limit the duration of unnecessary immobilization. The authors, however, do argue for the merits of immobilization with follow-up x-rays, which will identify 85% of all fractures by the 5th week. If symptoms persist, they would obtain additional imaging, either an MRI or bone scan, at that point. The average age of patients in this study is 13 years, because scaphoid fractures are uncommon in younger patients. The distal radius rather than the scaphoid tends to fracture with outstretch injuries in younger patients.

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Screening for Chlamydia in Teenage Girls--Room for Improvement

Screening for Asymptomatic Chlamydia Infections Among Sexually Active Adolescent Girls During Pediatric Urgent Care.


A clinic-based intervention to screen adolescent females for CT in an urgent care setting significantly increased the screening rates.

**Background:** In addition to being the most common reportable sexually transmitted disease in the United States, *Chlamydia trachomatis* (CT), if untreated, can cause pelvic inflammatory disease, ectopic pregnancy, and infertility. Since the disease can be asymptomatic, annual screening is recommended for all sexually active adolescents and adults <26 years of age. However, very few females in this age range report receiving counseling or testing for sexually transmitted infections each year. Implementing new screening strategies may be necessary to improve care to meet recommendations.

**Objective:** To create and then test an intervention to add screening for CT to pediatric urgent care visits in order to improve rates of screening.

**Design/Methods:** This was a randomized, controlled trial performed in a large health maintenance organization setting in California. Ten large pediatric clinics were randomized to 1 of 2 paths. The intervention clinics were reorganized to improve CT screening during urgent care. This involved thinking about how to identify sexually active adolescents, obtain urine, and provide counseling. The control clinics received presentations on CT and screening. The main outcome of interest was the proportion of sexually active adolescent girls in each clinic who were screened for CT. Eligible patients had to be sexually active females between the age of 14 and 18 years.

**Results:** During the 3-month baseline period, there were no differences between the proportion of adolescents screened for CT in the control and intervention clinics. Once the intervention began, however, the change in the screening rates in the intervention clinics was significantly higher than in the control clinics. By the fifth intervention period, the proportion of sexually active adolescent girls screened for CT in the intervention group had increased by 16%; the screening rate in the control clinics has decreased by 2% in the same period.

**Conclusions:** A clinic-based intervention to screen adolescent females for CT in an urgent care setting significantly increased the screening rates. This should not minimize the barriers that still exist in the urgent care environment. Screening rates were still suboptimal and are nowhere near where we would like them to be.

**Reviewer's Comments:** Screening for CT is so poor in general that it feels like anything would improve it. This intervention did, but there is still an amazingly large amount of room for improvement.

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Tough Call--Should Family Be Present When Child Is Resuscitated?

The Effect of Family Presence on the Efficiency of Pediatric Trauma Resuscitations.

Dudley NC, Hansen KW, et al:
Ann Emerg Med; 2009; 53 (June): 777-784

The presence of family members during pediatric trauma resuscitation did not affect the efficiency of the resuscitation as measured by time to CT scan and time required for completion.

Objective: To evaluate whether the presence of family members during a pediatric trauma resuscitation causes delays resulting in a prolonged resuscitation.

Design: A prospective study was conducted at Primary Children's Medical Center in Salt Lake City, Utah, between 2004 and 2006.

Methods: A study protocol allowed families the option to be present during trauma resuscitations on even days. Social workers had been trained as the family support person, and physicians and nursing staff were aware of the study objectives. Two family members could attend. On odd days, family members were required to wait outside the trauma room. Following resuscitations that involved family presence, staff members completed an anonymous questionnaire. Family members also completed questionnaires during the hospital stay. The main outcome measured was the time of arrival of a patient until the patient was taken from the room to CT scan, which was considered a measure of the efficacy of the resuscitation. Since not all patients required a CT scan, a secondary measure studied was the time to completion of the secondary survey and all laboratory tests and portable radiographs. Documentation of times was done on a flow sheet.

Results: 705 patients were included in the study: 283 with and 422 without family presence. The median time to CT scan (21 minutes) and median resuscitation time (15 minutes) did not statistically vary regardless of whether the family was present. On the surveys, families believed their presence was helpful to their child and themselves.

Conclusions: The presence of families during pediatric trauma resuscitations did not prolong the time to CT imaging or to resuscitation completion.

Reviewer's Comments: The American Academy of Pediatrics has strongly supported the option of family presence for a variety of aspects of pediatric emergency care. This study finds that the timeliness of care in trauma codes is not affected by family presence. Additionally, in the family surveys, those who were present during the resuscitation were overwhelmingly in favor of that practice. The door to the resuscitation area is one that is becoming less likely to be closed. If they are not doing so already, hospitals need to develop structured family presence programs.

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Try Less-Invasive Method for Malaria Testing


Nwakanma DC, Gomez-Escobar N, et al:
J Infect Dis; 2009; 199 (June 1): 1567-1574

Testing of saliva samples may be a less-invasive method of parasite detection for malaria diagnosis.

Background: A high proportion of malaria cases worldwide are seen in young children. With increasing global travel, it is not uncommon for a pediatrician to see a patient with fever who has recently traveled to a malaria-endemic region and for whom malaria is in the differential diagnosis. Diagnostic tests for malaria include thick and thin blood film microscopy to visualize parasites and polymerase chain reaction (PCR)-based assays. Both tests currently require venipuncture, and it is often difficult to obtain compliance with repeated blood draws to evaluate clearance of parasitemia.

Objective: To determine the accuracy of saliva and urine PCR-based assays to detect malaria parasitemia.

Design: Prospective cohort study.

Methods: Patients aged >=10 years with suspected malaria were enrolled before a definitive diagnosis was made. Matched saliva, urine, and blood samples were collected. Thick blood smears and quantitative PCR-based assays of saliva, urine, and blood samples were performed.

Results: 386 patients were enrolled in the study. PCR of blood samples had 98% sensitivity and 95% specificity compared with microscopy. Saliva PCR had 73% sensitivity and 97% specificity, and urine PCR had 32% sensitivity and 98% specificity. When a parasite density threshold of 1000 parasites/L was used as a proxy for clinical malaria, saliva PCR had 82% sensitivity and 95% specificity, and urine PCR had 42% sensitivity and 98% specificity. Increasing volume of saliva and urine specimens increased the sensitivity of malaria parasite detection.

Conclusions: Testing of saliva samples may be a less-invasive method of parasite detection for malaria diagnosis.

Reviewer’s Comments: A high proportion of malaria cases are seen in young children around the world. A less-invasive, reliable diagnostic test will be helpful, both in the diagnosis of malaria and assessment of treatment efficacy.

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Refusal of Pertussis Vaccine Puts Child at Risk

_Parental Refusal of Pertussis Vaccination Is Associated With an Increased Risk of Pertussis Infection in Children._

Parents who refuse the pertussis vaccine for their children put them at significantly increased risk for pertussis.

**Background:** Although vaccines may be one of the most effective health interventions ever created, more parents have begun to refuse immunization for their children. The reasons for these refusals are many, ranging from safety concerns to the idea that the diseases prevented by vaccines are no longer dangerous. Studies have shown that states with high nonmedical exemption rates have increased rates of pertussis in children 3 to 18 years of age; these studies did not allow for an analysis at the level of individual vaccinations.

**Objective:** To determine if children who were infected with pertussis were more likely to have parents who refused the pertussis vaccination for them.

**Design:** This was a case-control study from the Kaiser Permanente of Colorado health plan.

**Participants/Methods:** Eligible participants were children aged 2 months to 18 years who were members of the health plan between 1996 and 2007. Cases were children with a documented pertussis infection by laboratory test or an ICD-9 code. Charts of selected cases were reviewed by trained abstractors in order to record pertinent data for analyses. Four controls were selected for every case and were matched for sex, length of time in the health plan, and age at the index date. Vaccine refusers were identified by documentation of the refusal of at least one pertussis immunization for nonmedical reasons. Vaccine accepters included children who were up to date or behind in vaccinations for nonrefusal reasons.

**Results:** Over the course of the study, 439 children were identified as having a diagnosis of pertussis, 178 of whom had a chart-verified positive PCR. After exclusions, the final study population included 156 laboratory-confirmed cases. The average age was 9 years, and 53% of subjects were males. In cases, 12% of parents had refused the pertussis vaccine versus only 0.5% of parents in the control group. Those whose parents refused a vaccine for pertussis were at significantly increased risk for being infected with pertussis. Over the entire pediatric population, 11% of pertussis cases could be attributed to vaccine refusal.

**Conclusions:** Parents who refuse the pertussis vaccine for their children put them at significantly increased risk for pertussis. This also indirectly shows that herd immunity is not protective and that we still need the vaccines. Once again, we need to figure out how to increase vaccination rates.

**Reviewer's Comments:** This is direct evidence that refusing the pertussis vaccine increases a child's risk for developing the disease. Unlike other childhood diseases in which a nonimmunized child may be protected from contracting the disease since the peer group is protected by immunizations, herd immunity is not the answer for pertussis.

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**HLA-DR4 as Risk Allele for Autism Acting in Mothers**

**HLA-DR4 as Risk Allele for Autism Acting in Mothers of Probands Possibly During Pregnancy.**

Johnson WG, Buyske S, et al:  
**Arch Pediatr Adolesc Med;** 2009; 163 (June): 542-546

The HLA-DR4 genes in mothers may act in pregnancy on fetuses in such a way as to later lead to the development of autism.

**Background:** Although usually the genes associated with disease act in the affected individual, recent developments have discovered that some genes are active in mothers, affecting their fetuses during pregnancy. Studies of children with autism suggest that the disorder may be due to multiple gene loci that interact with each other and environmental factors. Many other studies also support the hypothesis that autism may have origins prenatal in nature. Most of the studies have been a case-control design, however, and did not use direct tests to document the maternal allele in pregnancy.

**Objective:** To determine if the allele HLA-DR is active in pregnant mothers, affecting the later development of autism in their children.

**Design/Methods:** This was a prospective study of families recruited through the Center for Outreach and Services for the Autism Community in New Jersey. Recruited families had to have mothers and maternal grandparents available for testing. Families were genotyped for HLA-DR4 alleles, and subjects were tested with the Autism Diagnostic Observation Schedule-Western Psychological Services and Autism Diagnostic Interview, Revised. Analyses were conducted to examine relationships between maternal allele frequency in pregnancy and the development of autism in children. Specifically, researchers evaluated if the transmission of HLA-DR4 alleles from grandparents to children with autism were in different rates than the transmission of other unrelated genes.

**Results:** Over the course of this study, 31 families took part. The transmission disequilibrium of HLA-DR4 from maternal grandparents transmitted to children with autism and HLA-DRB1 was statistically significant (OR, 4.7). Fourteen copies were transmitted, and 3 were not, compared to 35 and 46 copies of other alleles. There was no significant transmission disequilibrium from parents directly to their children with autism, suggesting that the HLA-DR4 allele is not directly responsible for autism in children themselves.

**Conclusions:** This study adds to evidence that the HLA-DR4 gene in pregnant mothers may, in some way, contribute to the development of autism in their children later in life. It did not, however, show a relationship between the presence of the allele in children and increased risk.

**Reviewer’s Comments:** This type of study goes a long distance to the old saw that it was the refrigerator mother who brought on autism. Thankfully, that psychobabble has been scrapped. This fascinating, well-designed study showed that the allele is active in the mother, and not necessarily the child. It's an intriguing hypothesis and deserves further testing.

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Tools to Help Predict Need for VCUG

Screening Young Children With a First Febrile Urinary Tract Infection for High-Grade Vesicoureteral Reflux With Renal Ultrasound Scanning and Technetium-99m-Labeled Dimercaptosuccinic Acid Scanning.

DMSA scanning and renal ultrasound together are more predictive for the presence of reflux than either method alone after a febrile urinary tract infection in children.

Background: Generally, a voiding cystourethrogram (VCUG) is recommended in conjunction with renal ultrasound (US) or dimercaptosuccinic acid (DMSA) scanning. However, VCUGs are unpleasant tests associated with a risk of infection.

Objective: To determine if testing with a DMSA scan and US can predict the need for performing a VCUG after a febrile urinary tract infection (UTI).

Design: Retrospective chart review.

Participants: 699 infants and children aged 2 months to 2 years.

Methods: Children were eligible if they had a febrile UTI documented by culture or acute pyelonephritis (APN) by DMSA scan if antibiotics were administered before a culture was obtained and before the patients had an US, DMSA scan, and VCUG. US was performed within 3 days to look for pelvicaliceal dilation, parenchymal thinning, increased echogenicity, small kidney, or a duplicated renal collecting system. DMSA scanning was performed within 5 days of the infection to look for APN or cortical thinning suggesting renal scarring. VCUG was performed 7 to 10 days after antibiotic treatment to look for vesicoureteral reflux (VUR). Odds ratios were obtained. Sensitivity, specificity, and positive and negative predictive values were obtained for the presence of high-grade (III to V) VUR for US alone, DMSA scan alone, or both.

Results: There were 483 boys among the 699 eligible children studied. Any grade of VUR was seen in 206 patients, and high-grade VUR was seen in 119 patients. Abnormal US results were observed in 392 patients (56.1%), abnormal DMSA scans were observed in 288 (41.2%), and abnormal US or DMSA scans (or both) were noted in 463 (66.2%). Of the 392 children with abnormal US, 80 had high-grade VUR; however, 32 cases would have been missed if this test was the sole study performed. The sensitivity of US was 67.2%. Of the 288 children with abnormal DMSA scans, 78 had high-grade VUR; however, 33 cases would have been missed if this was the sole study performed. The sensitivity of DMSA was 65%. Using both tests, 20 cases of VUR would have been missed. The sensitivity of both tests combined was 83.2%, and the negative predictive value was 91.5%. Of the 20 children whose condition would have been missed (all of whom were on antibiotics), 4 had breakthrough infections and 1 developed a new scar.

Conclusions: US and DMSA should be performed after first febrile UTIs, and a VCUG should be performed if either test is abnormal.

Reviewer's Comments: Putting aside the controversy associated with the need for antibiotic prophylaxis in VUR, it is difficult to make the assumption that it is satisfactory to miss VUR in children when, as in this study, they receive prophylaxis. I would reserve this approach for cases in which I fear parents would refuse VCUG.

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Identifying Cause of Nosebleeds in Infants

The Incidence and Aetiology of Epistaxis in Infants: A Population-Based Study.
Paranjothy S, Fone D, et al:
Arch Dis Child; 2009; 94 (421-424):

Most cases of epistaxis in infants are due to respiratory infection. However, one should be suspicious for abuse or coagulation disorders when there is no apparent cause of epistaxis.

Background: Epistaxis or nosebleeds in infants can be a frightening experience for both parents and physicians. However, little is known about the etiology of epistaxis in infants on a population level. To date, studies on epistaxis in infants have been limited to case series or highly specialized populations.

Objective: To describe the etiology and estimate the incidence of epistaxis in infants.

Methods: Children aged <1 year who were admitted to hospitals in Wales with epistaxis between January 1, 1999, and December 31, 2004, were identified by searching a patient database for a primary or secondary diagnosis of nose bleeding by ICD-10 code. For each case, physicians who cared for the child were sent a questionnaire to validate the case as epistaxis and to provide information on the infant's age on admission, clinical history, and evaluation for abuse. Incidence rates for epistaxis were calculated based on the overall infant population at risk.

Results: There were 44 individual infants with 52 admissions for epistaxis. Epistaxis was a primary diagnosis for 28 infants. Physicians were contacted for 40 of the 44 infants, and they confirmed the diagnosis of epistaxis in 36 infants. The annual calculated incidence was 19.3 per 100,000 infants (95% CI, 14.0 to 26.7). The median age at admission for epistaxis was 12 weeks. Of the 36 infants, 23 had an identifiable cause: 11 had acute rhinitis; 5 were attributable to trauma (1 due to abuse); 4 had coagulation disorders; and 2 infants had congenital facial disorders. For 13 infants, the final diagnosis was nonspecific epistaxis without any evidence of definite upper respiratory infection. Coagulation disorder was excluded in 7 of these 13 infants.

Conclusions: Epistaxis is rare in infants, with an event rate of 1 of 5200 infants. In this study, there was no identifiable cause for one third of the infants. For those with an identifiable cause, half had acute rhinitis; the remaining cases were secondary to trauma, congenital disorders, or coagulation disorders. Child abuse was found to be the etiology in 1 case.

Reviewer's Comments: The average physician caring for infants is unlikely to see many cases of epistaxis. In the majority of these cases, there may be a relatively benign explanation, such as an upper respiratory infection. However, coagulation disorders and abuse should still be considered as possible etiologies in situations without an obvious benign explanation or that are suspicious for abuse.
Preventing Depression in Adolescents May Begin With Parents

Prevention of Depression in At-Risk Adolescents: A Randomized Controlled Trial.
Garber J, Clarke GN, et al:
JAMA; 2009; 301 (June 3): 2215-2224

Adolescents with a parent who has a history of depression benefitted in reducing the onset of depression with group cognitive therapy.

Background: Since there is a higher risk of developing depression with a significant family history of depression, developing techniques that can help reduce the onset of depression could be beneficial.

Objective: To determine if group cognitive therapy can help prevent depression in at-risk adolescents.

Design: This was a multicenter study.

Methods: Adolescents were recruited who had a parent with a history of current or past depression. Adolescents were aged 13 to 17 years. Children with parents who had schizophrenia or bipolar disorder were excluded, as were children who already participated in cognitive therapy. Subjects were randomized and were enrolled in 8 weekly 90-minute sessions of cognitive behavioral therapy or continued their usual treatment of choice.

Results: 316 teenagers were randomized. The mean age was 14.8 years, and 59% were female. The rates and hazard ratios for developing depression were lower in the cognitive therapy group. Patients who had some mood disorder issue reported improvement in their symptoms while in cognitive therapy. However, if an adolescent had a parent with a current depression episode, the cognitive therapy did not show the same benefit in reducing the risk of depression.

Conclusions: Adolescents with a parent who had a history of depression benefitted in reducing the onset of depression with group cognitive therapy.

Reviewer's Comments: Using group cognitive therapy has been found to help prevent the onset of depression with a history of a parent with a mood disorder. The challenges are identifying patients with a family history and finding group therapy for adolescents. Many parents do not share their mental health issues with their child's pediatrician. Therefore, it is difficult to identify children who might be at risk.

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Listen to the Teacher--Early Attention Concerns May Equal Later Problems

"The Impact of Early Behavior Disturbances on Academic Achievement in High School."

Breslau J, Miller E, et al:

*Pediatrics;* 2009; 123 (June): 1472-1476

Attention problems in 6-year-old children can predict decreased math and reading achievement at age 17.

**Objective:** To determine the impact of attention problems, internalizing problems, and externalizing problems at age 6 on math and reading achievement at age 17.

**Methods:** Data were extracted from a longitudinal study of low-birth-weight and normal-birth-weight children followed up from age 6 through age 17. Initial assessments at age 6 included the Wechler Intelligence Scale for Children-Revised and the Teacher Rating Form (TRF). This study examined the results of 3 behavior problem scales from the TRF: the attention problems subscale, the internalizing scale (anxiety, depression, somatic complaints), and the externalizing scale (delinquent and/or aggressive behavior). Mathematics and reading achievements at age 17 were measured by the Woodcock-Johnson Psycho-Educational Battery-Revised test. The associations of teacher-rated behavior problems at age 6 (adjusted for IQ and family socioeconomic status) with math and reading scores at age 17 were estimated using multiple regression analysis.

**Results:** Even when adjusted for socioeconomic variables such as maternal education and marital status, teacher ratings of attention problems at age 6 significantly predict math and reading achievement at age 17 (standardized coefficients of -0.09 to -0.10). In other words, an attention score at age 6 that is one standard deviation off the mean is associated with a decrease in reading and math scores at age 17 by one tenth of a standard deviation. When types of behavior problems are examined simultaneously, only attention problems continue to significantly predict math and reading scores.

**Conclusions:** Teacher-reported attention problems at age 6 independently predict decreased math and reading achievement at age 17. The authors speculate that interventions at school entry for children with attention problems should be tested as a way to improve long-term educational achievement.

**Reviewer's Comments:** In this age of increasing skepticism about the diagnosis and management of attention problems, this study adds to the evidence that attention problems do matter, even when studies are controlled for socioeconomic and other behavioral problems. Clinicians who dismiss attention problems at school entry as issues simply to be outgrown or attributed to social dynamics are potentially missing a chance to improve that patient's long-term academic success.

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Injuries Roll in With Skate Shoes

Evaluating the Injury Incidence From Skate Shoes in the United States.

Ruth E, Shah B, Fales W:

Pediatr Emerg Care; 2009; 25 (May): 321-324

Fractures of the forearm, wrist, and leg are the most common skate shoe injuries, although users incur a risk of various bone and soft-tissue injuries.

Background: In 2006, 6.2 million pairs of the most popular brand of skate shoes were sold worldwide. With a removable wheel in the heel of the shoe, the user is encouraged to walk, run, or skate by shifting weight in the heel.

Objective: To evaluate the incidence and types of injuries attributed to the use of skate shoes.

Methods: Using a hospital cooperative database of the Consumer Product and Safety Commission (the National Electronic Injury Surveillance System), all footwear-related injuries sustained to 5- to 14-year-old children between 2002 and 2006 were identified. Data were then manually reviewed to select cases related to the use of skate shoes.

Results: During the study period, 3525 patients were treated in emergency departments for injuries related to skate shoes. The number of injuries markedly increased in 2006, accounting for 73.6% of total skate shoe injuries. The increase in injuries occurred parallel to the rise in the skate shoe sales trend in the United States with a correlation coefficient of 0.9982. Almost half of all injuries were fractures, most often of the forearm (38.4%), wrist (35.1%), and leg (14.9%), but injuries also occurred in the ankle, toes, fingers, shoulder, and skull. Other injuries included lacerations, concussions, internal organ injuries, hematomas, and joint dislocations. Although 104 patients (0.01%) required admission to the hospital, no deaths were reported.

Conclusions: A wide range of bone and soft-tissue injuries commonly result from the use of skate shoes, with the incidence substantially increasing with increased sales and marketing of the product.

Reviewer's Comments: Marketed as a type of footwear to be worn regularly (akin to a sneaker), it is unlikely that a child wearing skate shoes would employ safety equipment, such as a helmet, knee pads, or wrist guards, as might be encouraged with other recreational accessories, such as rollerblades. Furthermore, the companies distributing skate shoes have utilized videos, websites, and written materials to promote performance of stunts with their products. Although this study was performed in an emergency department setting, it is likely that the primary care physician will also see a range of injuries related to this fanciful footwear and should seize opportunities for anticipatory guidance if the use of skate shoes is identified.

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Identify Past Injuries in HS Athletes

Identifying Previous Sports Injury Among High School Athletes.

Knee and ankle injuries are the most common injuries among high school athletes in a spring season involving boys soccer, boys track, and girls track.

Background: An astonishing 7 million adolescents are estimated to participate in high school (HS) athletics annually. Unfortunately, injuries among these athletes are not uncommon. Many do not come to light, so it behooves physicians to be aware of these unreported injuries because, once an injury strikes, an athlete is at risk for injury recurrence.

Objective: To identify previous sports injuries among competitive HS athletes entering a new sports season.

Design/Methods: This study was a cross-sectional survey of 451 competitive HS athletes participating in the 2005 spring sports season (boys soccer, boys track, girls track) at 5 large, urban public high schools in Seattle, Washington. In addition to basic demographic data, the athletes provided information on the number of previous injuries since the start of the school year, defined as an injury that prohibited participation in sports for at least 1 day. Additional information about the most recent injury, including the medical attention received and the number of recovery days, was obtained.

Results: The response rate was 88%. There were 324 track and 127 soccer HS athletes; 68% were male. Of these athletes, 77% had a normal body mass index, and 73% were varsity athletes. Fifty-three percent (n=241) reported a previous injury during that school year; 54% had only 1 injury, 23% had 2 injuries, and 23% had >=3 injuries. For 29% of participants, the most recent injury occurred the month before the survey. The knee and ankle were the most commonly injured body parts. Injury did not differ by gender or sport. Almost two thirds of athletes received attention from a doctor or athletic trainer. Most injured athletes recovered within a week, but almost one fourth lost >3 weeks of sports participation.

Conclusions: Injuries among HS athletes are common among both males and females. While most athletes recovered within a week, a minority were serious enough to prevent return to sports for 3 weeks.

Reviewer's Comments: A large number of adolescents participate in HS athletics. As a result, during sports physicals, we need to screen for previous injuries because they are common and place an individual at risk for future injury. If we can identify these past injuries, we might be able to intervene to prevent re-injury in the future.

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How to Know When to Catheterize Young Children

Urine Culture From Bag Specimens in Young Children: Are the Risks Too High?
Al-Orifi F, McGillivray D, et al:
J Pediatr; 2000; 137 (August): 221-226

Avoid treating positive urine culture results from a bag urine specimen without a confirmatory culture from a catheter specimen.

Classic Article Review - Background: Approximately 5% of febrile children <2 years old will have a urinary tract infection (UTI). While a bag specimen is easier to obtain, it is highly likely to be contaminated. The rate of contamination and unnecessary treatment and testing with bag specimens is unknown.

Objective: To compare the risks of contaminated culture results and adverse outcomes of bag urine specimens versus catheterization.

Methods: Participants were children <=24 months of age evaluated in a children's hospital emergency department (ED) or pediatric test center (PTC) who had a urine culture obtained by clean-voided bag or catheterization method from January 1993 to December 1995. The bags were placed on sterilized skin by pediatric nurses or trained medical technologists. Dipsticks were used, and urine cultures were performed. Positive culture results were >10^4 organisms/mL (bag) or >10^3 organisms/mL (catheter). Cultures were considered contaminated with <=2 organisms or a single organism between levels of a positive and negative result (<10^3 organisms/mL [bag] or <10^2 organisms/mL [catheter]). Adverse events were contamination, unnecessary recall for repeat culture, unnecessary treatment, and unnecessary admissions. Unit of analysis was first urine culture. Multivariate regression was used to evaluate the likelihood of an adverse event with bag specimens adjusting for study year, child's age, gender, and leukocyte esterase.

Results: 7584 urine cultures were obtained in 4632 different children. More bag than catheter specimens were contaminated (62.8% vs 9.1%, respectively). Bag specimens were more likely to be contaminated when obtained in the PTC versus the ED (69.2% vs 56.4%, respectively). Bag specimens had greater odds of contamination (OR, 13.3), unnecessary recall (OR, 4.9), unnecessary treatment (OR, 4.8), and unnecessary admission (OR, 12.4).

Conclusions: Bag specimens have a higher rate of contamination and unnecessary testing and treatment than urine catheter specimens for children <=2 years old. Having trained personnel collect the bag specimen does not reduce the contamination rate. The authors suggest a bag specimen for those at lowest risk, followed by a catheter specimen for those with positive results (ie, >10 white blood cells/high powered field on an unspun urine specimen or a positive dipstick test for nitrite or leukocyte esterase).

Reviewer's Comments: Bag specimens are often contaminated. However, catheterization is invasive, and families would often prefer to avoid them if possible. A nice middle ground for infants in whom your suspicion for UTI is low might be to do as the authors suggest and use the dipstick on a bag to determine whether to proceed with catheterization. If the bag specimen is negative, you can be fairly confident that the child is unlikely to have a UTI; if it is positive, then you have justification for obtaining a catheter specimen. In addition, the outpatient setting offers a much more flexible situation because the physician often has easier follow-up than in the ED.

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