

JOURNAL WATCH

PEDIATRICS & ADOLESCENT MEDICINE

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"Heads up: brain injury in your practice" tool kit ►

The CDC has revised its mild traumatic brain injury tool kit.

Mild traumatic brain injury (MTBI) accounts for 75% to 90% of traumatic brain injury cases, and duration of symptoms usually ranges from minutes to months. Research has expanded our knowledge and increased our awareness of the extent, incidence, and long-term effects of MTBI, with or without loss of consciousness (LOC).

Most physicians who care for pediatric patients occasionally are called on to treat patients with trauma. To help clinicians manage patients with MTBI, the CDC has revised its "Heads Up: Brain Injury in Your Practice" tool kit. The tool kit includes a booklet on diagnosis and management of MTBI, a patient evaluation tool, an information sheet for patients to help guide their recovery, a palm card for on-field management of sports-related MTBI, and patient education materials.

The booklet reminds clinicians that patients with MTBI do not necessarily lose consciousness and typically have normal structural neuroimaging studies. Symptoms, which result more from dysfunction of brain metabolism than from structural damage, generally fall into four categories: physical, cognitive, emotional, and sleep-related. Monitoring symptoms, which might persist for weeks or months and might worsen with activity, is stressed. Clear guidelines also are provided for referral to specialized care. The section on prevention, which outlines strategies to minimize risk for MTBI, is equally important.

Physicians can systematically evaluate patients with obvious or suspected concussion by using the three-part Acute Concussion Evaluation form (injury characteristics, symptoms, and risk factors for protracted recovery). For sports team physicians, the palm card is helpful in evaluating and managing sports-related injuries.

Comment ► This is one of the most valuable tool kits I have seen; it does an excellent job of defining MTBI and describing how best to manage MTBI. I am now more aware that LOC is not a requirement for diagnosis of MTBI and that symptoms can be relatively subtle, persist for weeks, and include sleep disturbances. I urge every primary care physician to obtain and use this tool kit to assist them in management of children with MTBI.

William P. Kanto, Jr., MD
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▲ Centers for Disease Control and Prevention. Heads up: brain injury in your practice: a tool kit for physicians. (http://www.cdc.gov/ncipc/tbi/Physicians_Tool_Kit).

Diagnosing pediatric hypertension: missed opportunities ►

Hypertension was missed in about 75% of children with persistently elevated BP readings.

The well-child visit is intended to detect potential threats to wellness and to provide appropriate interventions. To determine the incidence of undiagnosed hypertension in a pediatric population, investigators performed a review of electronic medical records for 14,187 children and adolescents (age range, 3-18 years) who attended at least three well-child care visits at community-based clinics of an academic medical center from 1999 to 2006. Stage 1 hypertension was defined as systolic or diastolic blood pressure (BP) readings at three visits at or above the 95th percentile for sex, age, and height; stage 2 hypertension was defined as three BP readings at or above the 99th

percentile plus 5 mm Hg; prehypertension was defined as an average BP between the 90th and 95th percentile.

Overall, 507 patients (3.6%) met criteria for hypertension, but in only 131 (26.0%) was this diagnosis documented in the medical records, including only 10 of 17 patients with stage 2 hypertension. Of 485 patients (3.4%) who met criteria for prehypertension, only 11.0% had documented diagnoses. Hypertension was more common in Hispanics (odds ratio, 1.31) than in whites, and prehypertension was more common in blacks (OR, 1.20). Both hyper tension and prehypertension were associated with family history of hypertension. Factors associated with a diagnosis of hypertension were older age, male sex, obesity, and stage 2 hyper tension readings.

Comment ► Hypertension in children often is not diagnosed, even when criteria suggestive of the diagnosis are present in electronic medical records. Electronic medical records give us the ability to evaluate important clinical epidemiology trends; however, such records must be programmed to display clinical-alert flags when abnormal values and important family history are present so diagnoses can be made and interventions can be provided.

F. Bruder Stapleton, MD
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▲ Hansen ML, et al. Underdiagnosis of hypertension in children and adolescents. *JAMA* 2007;298:874-9.

Etiology of bilateral vs. unilateral acute otitis media ►

Bilateral acute otitis media is more likely to be bacterial.

The "observation option" for acute otitis media (AOM) — giving families a prescription to fill only if their child does not improve — has gained popularity and has been shown to markedly reduce antibiotic prescription use (see *JW Pediatr Adolesc Med* Dec 2006, p. 96 and *JAMA* 2006; 296:1235). The AAP has endorsed this management option for children aged 6 months and older who have nonsevere illness (mild otalgia and fever <39°C). However, knowing which children benefit most from antibiotic treatment versus observation would be helpful. In two large studies, investigators compared microbiologic results from tympanocentesis and middle ear fluid culture in children with bilateral or unilateral AOM.

Investigators in Texas evaluated 566 children with AOM (age range, 2 months to 7 years) and identified a pathogen in 72%. Significantly more children with bilateral disease than with unilateral disease had bacteria (with or without a virus) in the middle ear fluid (70% vs. 57%; odds ratio, 1.72). Only *Haemophilus influenzae* was more common in bilateral disease; all other pathogens had similar rates of isolation in the two groups.

Investigators from Israel evaluated 1026 children with AOM (age range, 3-36 months) and identified a pathogen in 77%. Once again, middle ear cultures were positive in significantly more patients with bilateral AOM than with unilateral AOM (83% vs. 67%), and *H. influenzae* was significantly more common in the bilateral group. Patients with bilateral AOM also had significantly higher clinical symptom scores.

Comment ► The results from these large studies confirm those from a previous meta-analysis suggesting that bilateral AOM is more likely than unilateral AOM to be bacterial. This information can further inform the decision to start antibiotics or to wait and see if the child improves rapidly with symptomatic care.

Peggy Sue Weintrub, MD

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▲ McCormick DP, et al. Laterality of otitis media: different clinical and microbiologic features. *Pediatr Infect Dis J* 2007;**26**:583-8.

▲ Leibovitz E, et al. Is bilateral acute otitis media clinically different than unilateral acute otitis media? *Pediatr Infect Dis J* 2007;**26**:589-92.

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Prophylactic antibiotic therapy does not prevent recurrent UTI in children ▶ *Antibiotic prophylaxis led to an increase in resistant strains in recurrent UTI.*

Prophylactic antibiotic therapy often is recommended to prevent recurrent urinary tract infection (UTI). To determine whether prophylaxis lowers risk for UTI recurrence and to identify risk factors for recurrence, investigators followed a cohort of 75,000 children (age ≤ 6 years) seen at 27 U.S. primary care pediatric practices from 2001 to 2006.

The incidence of first UTI was 0.7% (611 children; 89% girls). Overall, 14% of children had recurrent infection (12% recurrence rate per year). Risk factors for recurrent UTI were white race, age 3 to 5 years at initial UTI, and grade 4 to 5 vesicoureteral reflux (VUR). Prophylactic antibiotic therapy was not associated with lower risk for

recurrent UTI. However, in the cohort of 83 children with recurrent UTI, exposure to prophylactic antimicrobial agents significantly increased the likelihood of antibiotic-resistant infection.

Comment ▶ Given advances in medical technology, periodic reexamination of common medical problems is critical. For example, with modern pediatric urology and prenatal ultrasounds, the natural history following a first UTI might be quite different from that in previous decades. This study's findings confirm that highgrade VUR is an important risk factor for recurrent UTI and suggest that antibiotic prophylaxis does not prevent recurrence. Furthermore, antibiotic exposure, not surprisingly, increases the risk for recurrent infections with resistant organisms. The investigators did not examine whether chronic antibiotic prophylaxis promotes resolution of VUR; however, results from recent studies (*JW Pediatr Adolesc Med* Jun 2006, p. 43 and *Pediatrics* 2006; 117:626) challenge the benefits of antibiotic prophylaxis for VUR as well.

F. Bruder Stapleton, MD

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▲ Conway PH. Recurrent urinary tract infections in children: risk factors and association with prophylactic antimicrobials. *JAMA* 2007;**298**:179-86.