

Translating Best Evidence into Best Care

EDITOR'S NOTE: Studies for this issue were identified using the Clinical Queries feature of PubMed, "hand" searching *JAMA Pediatrics*, *Pediatrics*, and *The Journal of Pediatrics*, and from customized EvidenceUpdates alerts.

EBM PEARL: RELATIVE RISK: Relative risk (RR) is the probability of an event occurring given an exposure (experimental event rate [EER]) divided by the probability of the event occurring in the absence of, or given another exposure (control event rate [CER]). The RR is commonly used in the medical literature, especially when the event rates are low and in nonrandomized trials. As it is often used in nonrandomized studies, the RR typically will be adjusted for a variety of confounding factors that may affect the outcome. The 95% CI for the RR is statistically significant when it does not cross 1. The RR should be distinguished from the absolute risk reduction (ARR), which is the difference between the CER and the EER, and is significant when the 95% CI does not cross 0. The inverse of the ARR is the number needed to treat (NNT). An adjusted-RR-use example may be seen below in the piece by Alper et al (on page 255 regarding the article by Williamson et al; *CMAJ* 2015;187:961-9).

LITERATURE SEARCH PEARL: AMEDEO: AMEDEO.com is a free, sponsored (Boehringer Ingelheim) automatic search system. AMEDEO sends a weekly list of abstracts to its subscribers based on their topics of interests. The system searches a limited number of journals on the specific topics selected (neonatology is one of the topics). A fair number of pediatrics journals are represented, including *The Journal of Pediatrics*. The mechanics of AMEDEO use include subscribing, choosing topics of interest on their web site (eg, asthma), and checking off which journals you would like AMEDEO to search for each topic.

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Football concussion rates across school levels

Dompier TP, Kerr ZY, Marshall SW, Hainline B, Snook EM, Hayden R, et al. Incidence of Concussion During Practice and Games in Youth, High School, and Collegiate American Football Players. *JAMA Pediatr* 2015;169:659-65.

Question Among young football athletes, what are the rates of concussion across school levels?

Design Prospective, observational cohort study, assembled from 3 athletic data sets.

Setting US.

Participants Grammar, high school, and college level football players. The Youth Football Surveillance System included 118 youth football teams, providing 4092 athlete-seasons. The National Athletic Treatment, Injury and Outcomes Network program included 96 secondary school football programs, providing 11 957 athlete-seasons. The National Collegiate Athletic Association Injury Surveillance Program included 24 member institutions, providing 4305 athlete-seasons.

Intervention Concussion injury.

Outcomes Incidence of concussion.

Main Results The game and practice college concussion rates were 3.74 and 0.53 per 1000 athlete exposures (AE), respectively. The game concussion injury rate ratio (IRR) of college compared with high school and youth athletes was 1.86 (95% CI, 1.50-2.31) and 1.57 (95% CI, 1.17-2.10), respectively. The practice concussion IRR in college was lower than that in high school, IRR 0.80, (95% CI 0.67-0.96) and similar to youth athletes, IRR 0.89 (0.67-1.20).

Conclusions Football practices were a major source of concussion at all 3 levels of competition.

Commentary Despite the increased attention to concussion and the feeling among some that concussions in football are epidemic, there is a dearth of injury rate data in youth sports. This study is one of the few to systematically examine concussion rates using the same methodology during a similar time period in youth, high school, and college football athletes. The risk of concussion occurring during a season was relatively low, especially at the youth level. Overall (game + practice) concussion rates were similar among levels of play with a rate of 0.99/1000 AE in youth football players, 0.92 /1000 AE in high school, and 0.82/1000 AE in college football athletes. Although the rates are slightly higher than previous studies, the findings are similar in that significantly more concussions occurred during games than practices at all levels.^{1,2} Citing an inability to change the intensity or conditions of games, the authors suggest attempting to decrease concussion rates by decreasing contact in practice. These data would suggest that rule enforcement or rule changes during games may do more to decrease the overall concussion rate.

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References

1. Gessel LM, Fields SK, Collins CL, Dick RW, Comstock RD. Concussions among United States high school and collegiate athletes. *J Athl Train* 2007; 42:495-503.

2. Zuckerman SL, Kerr ZY, Yengo-Kahn A, Wasserman E, Covassin T, Solomon G. Epidemiology of Sports-Related Concussion in NCAA Athletes From 2009-2010 to 2013-2014: Incidence, Recurrence, and Mechanism. *Am J Sports Med* 2015. pii: 0363546515599634.

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Community health worker program enhances asthma outcomes

Campbell JD, Brooks M, Hosokawa P, Robinson J, Song L, Krieger J. Community Health Worker Home Visits for Medicaid-Enrolled Children With Asthma: Effects on Asthma Outcomes and Costs. *Am J Public Health* 2015;105:2366-72.

Question Among children with uncontrolled asthma, what is the therapeutic efficacy of a community health worker (CHW) home-visit program, compared with education alone, in improving health outcomes?

Design Randomized parallel-group trial.

Setting King County, Seattle, Washington.

Participants Children, 3 to 17 years of age, enrolled in Medicaid, with provider-diagnosed, uncontrolled asthma.

Intervention CHW home-visit program vs parent/patient education alone.

Outcomes Asthma symptom-free days, Pediatric Asthma Caregiver Quality of Life Scale score, and self-reported, asthma-related urgent health services.

Main Results The intervention group had greater improvements in asthma symptom-free days, 2.10 days more over 2 weeks (95% CI, 1.17 to 3.05) and caretakers' quality of life, 0.43 units more (95% CI, 0.20 to 0.66) and a larger reduction in urgent health care utilization events, 1.31 fewer events over 12 months (95% CI, -2.10 to -0.52).

Conclusions A streamlined CHW asthma home visit program for children with uncontrolled asthma improved health outcomes.

Commentary After almost two decades of development work to demonstrate the efficacy of the pediatric asthma CHW model, the King County Healthy Homes program has now tested the model's effectiveness. The study design was strong, with excellent retention of a high risk sample. Asthma outcomes improved in both arms, with greater changes in the CHW arm, similar to previous more intensive interventions.¹ The CHW arm cost more per participant than the control arm but resulted in a net savings of \$1340.92 (return on investment of 1.90). However, when two outliers were removed, these savings were no longer seen, which brings into question the robustness of the results. The study design could not address the influence of materials provided to all participants (eg, vacuums, cleaning supplies) on study outcomes. These materials help to control asthma but they are not covered by standard healthcare plans. The pediatric asthma CHW model is currently undergoing modifications and implementation in other settings. These efforts should continue to address costs to both the individual and healthcare system.

Reference

1. Krieger JW, Takaro TK, Song L, Weaver M. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. *Am J Public Health* 2005;95:652-9.

Dopamine increases mortality in pediatric septic shock

Ventura AM, Shieh HH, Bouso A, Goes PF, Fernandes IC, de Souza DC, et al. Double-Blind Prospective Randomized Controlled Trial of Dopamine Versus Epinephrine as First-Line Vasoactive Drugs in Pediatric Septic Shock. *Crit Care Med* 2015;43:2292-302.

Question Among children with septic shock, what is the therapeutic efficacy of dopamine, compared with epinephrine, in preventing mortality?

Design Randomized, controlled, double blind trial.

Setting Hospital Universitário da Universidade de São Paulo, Brazil.

Participants Children, 1 month to 15 years of age who met clinical criteria for fluid-refractory septic shock.

Intervention Dopamine (5-10 $\mu\text{g}/\text{kg}/\text{min}$) or epinephrine (0.1-0.3 $\mu\text{g}/\text{kg}/\text{min}$).

Outcomes Primary outcome: 28-day mortality.

Main Results Dopamine was associated with death: number needed to harm, 8 (95% CI 4-62).

Conclusions Dopamine was associated with an increased risk of death.

Commentary This rigorously conducted randomized controlled trial has important implications for the management of septic shock in pediatric as well as adult patients. The findings of this study are supported by and further validate the literature in adult patients demonstrating the harm of dopamine in patients with septic shock.¹ Organ perfusion pressure, as reflected by the mean arterial pressure/central venous pressure,² was significantly higher in the epinephrine group. It is unclear if the difference in outcomes was related to the difference in organ perfusion or due to the inherent "toxicity" of dopamine.¹ This study employed a large-fluid-volume-resuscitation algorithm designed and initiated prior to the publication of the FEAST trial in 2011, which demonstrated that fluid boluses increased mortality in resource-poor areas of Africa and has raised questions about the proper fluid-management approach.³

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