

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: STANDARD MEAN DIFFERENCE (SMD): The SMD is commonly used in meta-analysis to express a summary statistic when studies report results in terms of a continuous measurement, and when all included studies measure the same outcome but do so using different measures. The SMD is defined as the difference in means of two study groups, divided by the pooled standard deviation (SD) of the outcome (study variability). Therefore, two studies where the mean differences relative to the study outcome SDs are the same have the same SMD. Although the SMD is a useful statistical tool, its primary clinical use is to note whether the SMD is statistically significant and its magnitude. The higher the SMD magnitude, the higher the new treatment probability of benefit. An example of SMD use is in the piece by Devillier on page 1169 regarding the systematic review/meta-analysis by Di Bona et al; *JAMA Intern Med* 2015;175:1301-1309.

LITERATURE SEARCH PEARL: TRIP DATABASE: The Trip database (tripdatabase.com) is a medical literature search engine, developed in 1997, dedicated to providing high quality evidence. Trip originally stood for Turning Research Into Practice, but the developers no longer refer to this Trip acronym. Trip's unique feature is organizing retrieved literature by primary evidence sources (individual, primary research studies), secondary evidence sources (guidelines, synopses, systematic reviews), and ongoing research protocols. There are a number of other features, including a direct link to PubMed Clinical Queries, with a search result summary listed in Trip (generated from a high-specificity, “narrow” Clinical Queries search) and with the articles listed—via hyperlink—in PubMed (ncbi.nlm.nih.gov/pubmed). Trip “basic” is free; the premium version is available by subscription and includes simultaneous image and video searches and other expanded services.

—Jordan Hupert, MD

Allergic rhinitis treatment with sublingual immunotherapy

Di Bona D, Plaia A, Leto-Barone MS, La Piana S, Di Lorenzo G. Efficacy of Grass Pollen Allergen Sublingual Immunotherapy Tablets for Seasonal Allergic Rhinoconjunctivitis: A Systematic Review and Meta-analysis. *JAMA Intern Med*. 2015;175:1301-1309.

Question Among children with allergic rhinitis, what is the therapeutic efficacy of sublingual immunotherapy, compared with placebo, in ameliorating symptoms?

Design Meta-analysis of randomized controlled trials.

Setting US, Canada, Europe.

Participants Children and adults, 4 – 65 years old.

Intervention Grass-pollen-allergen sublingual immunotherapy tablets (SLIT) or placebo.

Outcomes Symptom score and medication score.

Main Results The symptom score (standard mean difference [SMD], -0.28 ; 95% CI, -0.37 to -0.19 ; $P < .001$) and the medication score (SMD, -0.24 ; 95% CI, -0.31 to -0.17 ; $P < .001$) demonstrated small treatment benefits.

Conclusions The meta-analysis demonstrated a small benefit of SLIT in reducing symptoms and in decreasing the use of symptomatic medication.

Commentary Di Bona et al suggest that the clinical benefit of SLIT is smaller than that of subcutaneous immunotherapy

(SCIT) or pharmacotherapy in grass-pollen-induced allergic rhinoconjunctivitis. Although the methodology of their meta-analysis was rigorous, their interpretation of the results is questionable. An effect size based on the standardized mean difference (the number of standard deviations between means), or Hedges g , is not a same as the “intervention effect” or “effect estimate” classically used in medicine. The relative clinical impact (RCI—the active vs. placebo difference between post-treatment symptom scores, as defined by the World Allergy Organization) appears to be more appropriate. In another study, the mean RCI was -29.6% for a five-grass pollen SLIT tablet, -19.2% for a timothy pollen SLIT tablet, -23.5% for nasal corticosteroids, -15.0% for H1-antihistamines, and -6.5% for montelukast.¹ Although our value of Hedges g for SLIT was similar to that reported by Di Bona et al, the RCI data suggest that grass pollen SLIT tablets had a greater clinical impact than second-generation antihistamines and montelukast and much the same mean clinical impact as nasal corticosteroids. These results are in line with the RCI-based study by Matricardi et al, which found that SCIT is at least as potent as pharmacotherapy in controlling the symptoms of seasonal allergic rhinitis.² Accordingly, the conclusions by Di Bona et al may be clinically misleading as they understate the benefit of SLIT tablets.

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Minority of college rapes committed by serial rapists

Swartout KM, Koss MP, White JW, Thompson MP, Abbey A, Bellis AL. Trajectory Analysis of the Campus Serial Rapist Assumption. *JAMA Pediatr* (2015). doi:10.1001/jamapediatrics.2015.0707.

Question Among college men who perpetrate rape, what is the relative group size of serial rapists?

Design Latent class growth analysis of two longitudinal data sets of sexual violence on college campuses.

Setting Two universities in the Southeastern US.

Participants College freshman.

Intervention The Sexual Experiences Survey.

Outcomes Rape perpetration.

Main Results 177 of 1645 participants (10.8%, 95% CI, 9.3% to 12.4%) reported having perpetrated at least one rape from 14 years of age through the end of college. 127 (7.7%, 95% CI, 6.5% to 9.1%) committed rape during college. Derivation and validation data sets were constructed. Within the validation data set, 25% (95% CI, 17% to 35%) of men who committed college rape, perpetrated rape across multiple academic years.

Conclusions A small group of men perpetrated rape across multiple college years (serial rapists); they constituted a significant minority of those who committed college rape.

Commentary Violence prevention requires that we understand what we are trying to prevent. This important research confirms that sexual aggressors are heterogeneous, with trajectories of persistent, initiating, and desisting perpetration.¹⁻³ There are numerous methodological challenges to understanding who commits assaults and how many. Understanding when assaults occur over the lifespan must also be considered amidst ongoing efforts to distinguish between rapists and rapes. Variation in the expression of sexually aggressive behavior over time suggests that prevention efforts should be implemented at multiple time points. Research is needed to determine the most efficacious combination of universal and targeted interventions, and to understand how strategies – such as bystander intervention and norms correction – can best be tailored to subgroups of men.

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Efficacy of hand washing and nail clipping on parasitic infection

Mahmud MA, Spigt M, Bezabih AM, Pavon IL, Dinant GJ, Velasco RB. Efficacy of Handwashing with Soap and Nail Clipping on Intestinal Parasitic Infections in School-Aged Children: A Factorial Cluster Randomized Controlled Trial. *PLoS Med* (2015). doi: 10.1371/journal.pmed.1001837.

Question Among children without parasites in Ethiopia, what is the therapeutic benefit of hand washing and/or nail clipping in preventing parasitic infestation?

Design 2 X 2 cluster factorial randomized controlled trial.

Setting Rural northern Ethiopia.

Participants 367 school-aged children (aged 6–15 years) from 216 randomized households.

Intervention Hand washing with soap and/or nail clipping or neither.

Outcomes Parasitic infection rate (primary) and anemia (secondary).

Main Results Odds of parasite reinfection was lower both for hand washing (adjusted odds ratio [AOR] 0.32, 95% CI: 0.17 to 0.62) and nail clipping (AOR 0.51, 95% CI: 0.27 to 0.95). Hand washing also was protective against anemia (AOR 0.39, 95% CI: 0.20 to 0.78), but the difference for nail clipping was not statistically significant (AOR 0.53, 95% CI: 0.27 to 1.04).

Conclusions Hand washing with soap and weekly nail clipping significantly decreased intestinal parasite infection rates.

Commentary This study offers important evidence of the efficacy of potentially scalable interventions to prevent parasite infection and anemia within a vulnerable population. This evidence is particularly important given renewed questions about the effectiveness of drug-based strategies such as school deworming.¹ Moreover, although hand washing with soap is widely promoted, its effectiveness against diarrhea—a major killer of young children—has been questioned in a systematic review that adjusted trial results for nonblinding.² By relying on objective outcomes, this study overcomes this potential reporting bias. The study also provides evidence

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