

Study Selection and Assessment 1098 reports were obtained through a search. 29 studies that fit inclusion criteria were included in the review (4 randomized controlled trials, 20 cohort studies, and 5 cross-sectional studies). Two independent reviewers abstracted data and scored these studies for quality; disagreements were settled through consensus with a third investigator.

Main Exposure Pacifier use.

Main Outcome Measures Breastfeeding duration or exclusivity.

Main Results Results from 4 randomized controlled trials revealed no difference in breastfeeding outcomes with different pacifier interventions (pacifier use during tube feeds, pacifier use at any time after delivery, an educational program for mothers emphasizing avoidance of pacifiers, and a UNICEF [United Nations Children's Fund]/World Health Organization Baby Friendly Hospital environment). Most observational studies reported an association between pacifier use and shortened duration of breastfeeding.

Conclusions The highest level of evidence does not support an adverse relationship between pacifier use and breastfeeding duration or exclusivity. The association between shortened duration of breastfeeding and pacifier use in observational studies likely reflects a number of other complex factors, such as breastfeeding difficulties or intent to wean. Ongoing quantitative and qualitative research is needed to better understand the relationship between pacifier use and breastfeeding.

Commentary This study attempts to answer a critically important dilemma for clinicians— what should we advise parents regarding pacifiers and breastfeeding? Pacifier use during naps and bedtime may reduce the risk of SIDS; however there are concerns that pacifiers may negatively impact breastfeeding. Although the authors conclude that “the highest level of evidence does not support an adverse relationship between pacifier use and breastfeeding duration or exclusivity,” the evidence that they present actually suggests that the jury is still out and begs for more high quality studies. Though their literature search yielded 29 articles, O'Connor et al based their conclusion largely upon 4 randomized controlled trials (RCT's) using a quality rating system that they developed for this review. It is not clear why the authors developed their own system rather than use existing quality rating systems (e.g. US Preventive Services Task Force, Jadad, etc.). According to the Grading of Recommendations Assessment Development and Evaluation group (GRADE)¹ who provide a system for assessing the strength of evidence for recommendations based on 4 key features: study design, quality, consistency, and directness, these RCTs actually provide low evidence for assessing the association between pacifier use and breastfeeding. None of the RCT interventions directly address pacifiers at nap or bedtime and each was compounded with other issues such as bottle usage, supplementation feeds, or indirect recommendations rather than the intervention itself. O'Connor et al also illustrated how

RCTs lacked consistency in interventions and outcomes. Though the authors emphasize the higher level of evidence provided by RCTs, many would consider observational studies a suitable and perhaps ideal study design to understand harms. Ultimately, this review points out the weakness of existing RCTs which provide low evidence for a recommendation, and as such it emphasizes the importance to look further into existing observational studies. Additionally, it offers suggestions to improve future research on this critically important topic.

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Limited evidence supports use of laxatives for functional constipation in children

Pijpers MA, Tabbers MM, Benninga MA, Berger MY. Currently recommended treatments of childhood constipation are not evidence based: a systematic literature review on the effect of laxative treatment and dietary measures. *Arch Dis Child* 2009;94:117-31.

Question Among children with functional constipation, how effective are different laxatives and dietary measures for treatment of the constipation?

Design Systematic review.

Data Sources Medline and Embase databases were searched to identify studies evaluating the effect of a pharmacologic treatment or dietary intervention on functional constipation.

Study Selection and Assessment Of the 736 studies found, 28 met the inclusion criteria. The quality was assessed using a validated list of criteria. In total 10 studies were of high quality.

Outcomes Frequency of defecation per week and other related measures.

Main Results The included studies were clinically and statistically heterogeneous in design. Most laxatives were not compared with placebo. Compared with all other laxatives, polyethylene glycol (PEG) achieved more treatment success (pooled relative risk (RR): 1.47; 95% CI 1.23 to 1.76). Lactulose was less than or equally effective in increasing the defecation frequency compared with all other laxatives investigated. There was no difference in effect on defecation frequency between fiber and placebo (weighted standardized mean difference 0.35 bowel movements per week in favor of fibre, 95% CI 20.04 to 0.74).

Conclusions Insufficient evidence exists supporting that laxative treatment is better than placebo in children with constipation. Compared with all other laxatives, PEG achieved more treatment success, but results on defecation frequency were conflicting. Based on the results of this review, we can give no recommendations to support one laxative over the other for childhood constipation.

Commentary This review about laxative treatments for pediatric constipation highlights the need for more high-quality, evidence-based studies on this common medical problem. Investigations regarding this condition have been increasing; however, many studies in this area pre-date current standards for design and statistical methods and are further compromised by differing definitions, insufficient power and other factors. Therefore, we agree that this common childhood problem deserves a greater effort to determine the best evidence for the components of treatment, including the effect of combinations or multimodal approaches.^{1,2} Nonetheless, we have concerns about how readers will interpret the findings of this study. The conclusions of this article could lead practitioners to assume there is no evidence that laxatives help children with constipation. Even though this conclusion might be reached using only studies of efficacy in controlled situations, this belies the availability of studies of effectiveness in typical, complex social circumstances. Although such “lower quality” studies are inherently confounded by a variety of situational and behavioral factors including child development, child adjustment, and parent-child dynamics, so is life. Methods other than randomized controlled trials may more practically determine treatment effectiveness in general application.³ Overall, we hope the readers will learn from this article that better studies in this area are needed; however, we hope that readers will not be deterred in the meantime from using the guidance available from guidelines and consensus statements that have used the best available evidence and have sought the experience from providers across clinical settings including primary care.⁴

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Cough and cold medications are risky for children

Dart RC, Paul IM, Bond GR, Winston DC, Manoguerra AS, Palmer RB, et al. Pediatric fatalities associated with over the counter (nonprescription) cough and cold medications. *Ann Emerg Med* 2009;53:411-7.

Question Among children who use over-the-counter (OTC) cough and cold medications, what is the risk of dying from these medications?

Design Case series developed from five different sources of information, including the medical literature, FDA databases, and manufacturers' reports.

Setting An independent panel of eight experts (pediatrics, pediatric critical care, pediatric toxicology, clinical toxicology, forensic toxicology, forensic pathology) used explicit definitions to assess the causal relationship between medication ingestion and death.

Participants Children under 12 years of age who died in which the report mentioned a cough and cold ingredient.

Outcomes Death among children associated with cough and cold medicine ingredient.

Main Results The experts found that of 189 cases, 118 were judged possibly, likely, or definitely related to a cough and cold ingredient. Of the latter, 103 involved a nonprescription drug and of these 88 involved an overdose. In 15, a dosage could not be determined. The authors identified that age younger than two years, use of the medication for sedation, use in a daycare setting, combining two or more medications with the same ingredient, failure to use a measuring device, product misidentification, and use of products intended for adults were associated with the fatalities. Finally, the review of the information showed that six of the children died after an attempt to sedate them, three were cases of abuse, and in 10 homicide was suspected.

Conclusions Pediatric death caused by nonprescription cough and cold medications are usually associated with an overdose in children less than 2 years old. The intent of caregivers appears to be therapeutic to relieve symptoms in some cases and non-therapeutic to induce sedation or to facilitate child maltreatment in other cases.

Commentary OTC cough and cold preparations have been known to result in very little clinical benefit and some adverse events. This paper by a group of inter-professionals, represent an extensive effort in combing the literature in order to identify fatalities associated with cough and cold medications. Beyond just sorting out case reports in the indexed literature, the authors review parents' and manufacturers' records. What was found in this study