

## Translating Best Evidence into Best Care

**EDITOR'S NOTE:** Journals reviewed for this issue: *Archives of Disease in Childhood*, *Archives of Pediatrics and Adolescent Medicine*, *British Medical Journal*, *Journal of the American Medical Association*, *The Journal of Pediatrics*, *The Lancet*, *New England Journal of Medicine*, *Pediatric Infectious Diseases Journal*, and *Pediatrics*. Gurpreet K. Rana, B.Sc., M.L.I.S, Taubman Medical Library, University of Michigan, contributed to the review and selection of this month's abstracts.

—John G. Frohna, MD, MPH

### Swimming lessons may reduce risk of drowning in young children

Brenner RA, Saluja Taneja G, Haynie DL, Trumble AC, Qian C, Klinger RM, et al. Association between swimming lessons and drowning in childhood: A case-control study. *Arch Pediatr Adolesc Med* 2009;163:203-10.

**Question** Among healthy children aged 1-19 years, does participation in formal swimming lessons versus no participation reduce the risk of death due to unintentional drowning?

**Design** Population-based case-control study.

**Setting** Multiple counties across 6 states in the United States.

**Participants** 88 cases of unintentional drowning deaths detected by medical examiner report (patients aged 1-19 years), 213 matched controls (at least 2 controls per case). Controls were matched for age, sex and county of residence.

**Outcomes** Death due to unintentional drowning.

**Main Results** For children in the 1-4 year age group, exposure to formal swimming lessons was associated with an 88% reduction in the risk of drowning (adjusted OR 0.12; 95% CI 0.01-0.97). This risk calculation was adjusted for the potential confounders of parental education level, child risk taking behavior and race. For children in the 5-19 year age group, exposure to formal swim lessons was associated with a 64% reduction in risk of drowning, but this association was not statistically significant (adjusted OR 0.36; 95% CI 0.09-1.51). Exposure to informal swim instruction was not associated with a reduction in risk of drowning for either age group.

**Conclusions** Participation in formal swimming lessons is associated with a reduction in the risk of unintentional drowning death for children 1-4 years of age. The magnitude of the risk reduction is unclear as the estimation of risk reduction is very imprecise in the current study.

**Commentary** As the second leading cause of unintentional death among the pediatric population, drowning continues to be a major cause of childhood mortality. Little is known about the effectiveness of many drowning prevention strategies, including swim lessons. As a result, the role of swimming lessons as a tool to prevent drowning in young children has been controversial. The current AAP policy statements on drowning prevention and on swimming programs for young children state, "children are generally not developmentally ready for swimming lessons until after their 4<sup>th</sup> birthday."<sup>1,2</sup> The supporting technical report states,

"there are no data to show that swimming lessons actually decrease the risk of drowning."<sup>3</sup> This study by Brenner et al provides just such data. The study is limited by the small sample size, which resulted in wide confidence intervals and thus did not allow a precise estimate of risk reduction. The study may also be limited by participation bias. Of the possible 146 case families contacted for participation in the study, 58 (40%) chose not to participate in the study. The authors present data that participants and non-participants were similar in most characteristics. However, data on the exposure variable of swimming lessons was missing from almost half of the non-participants, so it is possible that non-participants differed significantly on this critical characteristic from those who chose to participate in the study. Recommendations against swim lessons for young children are based partly on the theory that early exposure to water may increase the risk of drowning by decreasing a child's fear of water. The current study found no evidence to suggest that early participation in swim lessons increased a child's risk of drowning. Larger studies are needed to more clearly define the relationship between swimming lessons and drowning risk for the pediatric population. Strong evidence is necessary to better formulate changes in policy that will advance drowning prevention efforts.

Gwen McIntosh, MD, MPH

University of Wisconsin  
American Family Children's Hospital  
Madison, Wisconsin

### References

1. American Academy of Pediatrics. Policy Statement: Prevention of Drowning in Infants, Children, and Adolescents. *Pediatrics* 2003;112:437-9.
2. American Academy of Pediatrics. Swimming Programs for Infants and Toddlers. *Pediatrics* 2000;105:868-70.
3. American Academy of Pediatrics. Technical Report: Prevention of Drowning in Infants, Children and Adolescents. *Pediatrics* 2003;112:440-5.

### Topiramate is effective for migraine prophylaxis in children

Lewis D, Winner P, Saper J, Ness S, Polverejan E, Wang S, et al. Randomized, double-blind, placebo-controlled study