

AMERICAN ACADEMY OF PEDIATRICS

Committee on Sports Medicine and Fitness and Committee on Injury and Poison Prevention

Swimming Programs for Infants and Toddlers

ABSTRACT. Infant and toddler aquatic programs provide an opportunity to introduce young children to the joy and risks of being in or around water. Generally, children are not developmentally ready for swimming lessons until after their fourth birthday. Aquatic programs for infants and toddlers have not been shown to decrease the risk of drowning, and parents should not feel secure that their child is safe in water or safe from drowning after participating in such programs. Young children should receive constant, close supervision by an adult while in and around water.

ABBREVIATION. AAP, American Academy of Pediatrics.

Drowning is a leading cause of unintentional injury and death in the pediatric age group. In the United States, drowning rates are the highest among children ages 1 through 2 years. In Arizona, California, Florida, and Texas, drowning is the leading cause of death in this age group.¹ Other reported medical risks to infants and toddlers that involve being in water include hypothermia,^{2,3} water intoxication,⁴⁻⁶ and the spread of communicable diseases.⁷ Serious consequences from these medical conditions are rare and can generally be reduced by following existing guidelines published by the American Red Cross⁸ and the YMCA.⁹ The policy statement published in 1993 by the American Academy of Pediatrics (AAP) entitled "Drowning in Infants, Children, and Adolescents"¹⁰ also provides an excellent review of the subject. This AAP policy statement on infant swimming programs is an update of the 1985 policy.¹¹

Infant and toddler aquatic programs are popular throughout the United States. An estimated 5 to 10 million infants and preschool children participate in formal aquatic instruction programs. Infant and preschool programs have been developed by such organizations as the American Red Cross⁸ and the YMCA.^{9,12} These programs, which focus on aquatic adjustment and swimming readiness skills, may also include water safety instruction for parents and guardians. They provide enjoyment for parents and children but were not designed to teach children to become accomplished swimmers or to survive independently in the water. Other infant/toddler aquatic programs, however, attempt to develop water survival skills.

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.
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Regardless of the program design or focus, infant and toddler aquatic programs are unable to ensure that children will understand water hazards, use appropriate avoidance strategies, or attain program safety goals. Currently, no data are available to determine if infant and toddler aquatic programs increase or decrease the likelihood of drowning. Programs that claim to make children safe in water or safe from drowning are misrepresenting what is possible and are giving parents a false sense of security about their child's safety in the water.

Swimming skills (ie, the ability to perform standard swimming strokes) should be distinguished from water safety skills (ie, survival flotation, energy conservation "swimming," or poolside safety behavior). Without specific training, children can perform rudimentary swimming movements in the water sometime around their first birthday.¹³ The types of swimming movements a young child first demonstrates are not traditional strokes, such as the front crawl, but are more basic movements similar to the dog paddle. The optimum time to master more complex skills of swimming has not been thoroughly researched and has not been determined. A recent study by Blanksby et al¹⁴ showed that swimming skills can be acquired more readily once motor development has reached the 5-year-old level. Although some children may acquire swimming skills earlier, Parker and Blanksby¹⁵ found that children younger than 4 years require longer instructional periods to learn skills and are limited by their neuromuscular capacity. Therefore, having children begin swimming lessons at an earlier age does not translate to a more rapid mastery of aquatic skills or a higher level of swimming proficiency compared with those taking lessons at a later age.

The effects of training on the acquisition of water survival skills in young children have been studied by Asher et al¹⁶ In a population of children averaging 34 months of age, water survival skills were enhanced after a training program. Safety training, however, did not result in a significant increase in the poolside safety skills of these children. The correlation between measurable safety skills and risk of drowning has not been established.

For any water safety or swimming class, children learn better if they are developmentally ready, properly motivated, positively reinforced, and if the experience is enjoyable. When instruction attempts to optimize learning by reducing fear of water, children may unwittingly be encouraged to enter the water without supervision.

Regardless of an infant's or toddler's apparent

level of comfort and competence in or around water, constant close supervision by an adult is necessary to prevent drowning and near-drowning. Even a brief lapse in supervision can have tragic results.^{17–20} The concept of “touch supervision” has been advocated, which requires the caregiver to be within an arm’s reach or able to touch the swimmer at all times.

RECOMMENDATIONS

Until more clear-cut scientific evidence exists on the effects of infant and toddler aquatic programs, the AAP recommends the following:

1. Children are generally not developmentally ready for formal swimming lessons until after their fourth birthday.
2. Aquatic programs for infants and toddlers should not be promoted as a way to decrease the risk of drowning.
3. Parents should not feel secure that their child is safe in water or safe from drowning after participation in such programs.
4. Whenever infants and toddlers are in or around water, an adult should be within an arm’s length, providing “touch supervision.”
5. All aquatic programs should include information on the cognitive and motor limitations of infants and toddlers, the inherent risks of water, the strategies for prevention of drowning, and the role of adults in supervising and monitoring the safety of children in and around water.
6. Hypothermia, water intoxication, and communicable diseases can be prevented by following existing medical guidelines and do not preclude infants and toddlers from participating in otherwise appropriate aquatic experience programs.
7. Pediatricians should support data collection, drowning prevention research, and legislation aimed at reducing the risk of drowning in young children in and around water.

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REFERENCES

1. Baker SP, O’Neill B, Ginsburg MJ, Li G. *The Injury Fact Book*. 2nd ed. New York, NY: Oxford University Press; 1992
2. Sloan RE, Keating WR. Cooling rates of young people swimming in cold water. *J Appl Physiol*. 1973;35:371–375
3. Bar-Or O. *Pediatric Sports Medicine for the Practitioner: From Physiologic Principles to Clinical Applications*. New York, NY: Springer Verlag; 1983: 259–299
4. Goldberg G, Lightner EDS, Morgan W, Kemberling S. Infantile water intoxication after a swimming lesson. *Pediatrics*. 1982;70:599–600
5. Bennett HJ, Wagner T, Fields A. Acute hyponatremia and seizures in an infant after a swimming lesson. *Pediatrics*. 1983;72:125–127
6. Kropp RM, Schwartz JF. Water intoxication from swimming. *J Pediatr*. 1982;101:947–948
7. Kramer MH, Herwaldt BL, Craun GF, Calderon RL, Juranek DD. Surveillance for water-borne disease outbreaks. United States, 1993–1994. Epidemic Intelligence Service, Epidemiology Program Office, CDC. *MMWR Surveill Summ*. 1996;45:1–33
8. American Red Cross. *Water Safety Instructor’s Manual, Infant Preschool Aquatics Program*. St Louis, MO: CV Mosby; 1992:51–80
9. Division of Aquatics, YMCA of the USA. *YMCA Guidelines for Infant Swimming*. Chicago, IL: YMCA; 1984
10. American Academy of Pediatrics, Committee on Injury and Poison Prevention. Drowning in infants, children, and adolescents. *Pediatrics*. 1993;92:292–294
11. American Academy of Pediatrics, Committee on Sports Medicine and Fitness. Infant swimming programs. *AAP News*. September 1985;15
12. Hicks-Hughes D, Langendorfer S. Aquatics for the young child: a survey of selected programs. *Natl Aquatics J*. 1986;2:12–17

13. McGraw MB. Swimming behavior of the human infant. *J Pediatr.* 1939; 15:485–490
14. Blanksby BA, Parker HE, Bradley S, Ong V. Children's readiness for learning front crawl swimming. *Aust J Sci Med Sport.* 1995;27:34–37
15. Parker HE, Blanksby BA. Starting age and aquatic skill learning in young children: mastery of prerequisite water confidence and basic aquatic locomotion skills. *Aust J Sci Med Sport.* 1997;29:83–87
16. Asher KN, Rivara FP, Felix D, Vance L, Dunne R. Water safety training as a potential means of reducing risk of young children's drowning. *Injury Prev.* 1995;1:228–233
17. Present P. *Child Drowning Study. A Report on the Epidemiology of Drowning in Residential Pools to Children Under Age Five.* Washington, DC: US Consumer Product Safety Commission; September 1987
18. Jensen LR, Williams SD, Thurman DJ, Keller PA. Submersion injuries in children younger than 5 years in urban Utah. *West J Med.* 1992;157: 641–644
19. Wintemute GJ, Kraus JF, Teret SP, Wright M. Drowning in childhood and adolescence: a population-based study. *Am J Public Health.* 1987;77: 830–832
20. Quan L, Gore EJ, Wentz K, Allen J, Novack AH. Ten-year study of pediatric drowning and near-drowning in King County, Washington: lessons in injury prevention. *Pediatrics.* 1989;83:1035–1040

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