

# AMERICAN ACADEMY OF PEDIATRICS

## POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

Committee on Injury, Violence, and Poison Prevention

### Prevention of Drowning in Infants, Children, and Adolescents

**ABSTRACT.** Drowning is a leading cause of injury-related death in children. In 2000, more than 1400 US children younger than 20 years drowned. A number of strategies are available to prevent these tragedies. Pediatricians play an important role in prevention of drownings as educators and advocates.

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ABBREVIATION. CPR, cardiopulmonary resuscitation.

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#### BACKGROUND

From 1990 to 2000, drowning was the second leading cause of unintentional injury death among US children between 1 and 19 years of age.<sup>1</sup> Rates of drowning vary with age, gender, and race. Age groups at greatest risk are toddlers and adolescent males. After 1 year of age, males are at greater risk than are females. After 5 years of age, American Indian/Alaska Native, black, and Asian/Pacific Islander males have higher drowning rates than do white males of the same age.

Near-drowning events, in which victims survive for at least 24 hours, also result in significant numbers of injured children. It is estimated that for each drowning death, there are 1 to 4 nonfatal submersions serious enough to result in hospitalization.<sup>2-6</sup> Children who still require cardiopulmonary resuscitation (CPR) at the time they arrive at the emergency department have a poor prognosis, with at least half of survivors suffering significant neurologic impairment.<sup>7</sup> Additional details regarding childhood drownings are available in the accompanying technical report available online.<sup>8</sup>

#### PREVENTION OF INJURY

Preventive interventions are dependent on the age of the child, the site of submersion, and the circumstances surrounding the event. Installation of 4-sided fencing that isolates the pool from the house and yard is effective in preventing more than 50% of swimming pool drownings among young children.<sup>9,10</sup> Supervision of young children around any water is an essential preventive strategy, but inevitable lapses make supervision alone insufficient. Data regarding the effectiveness of other potential preventive strategies, such as swimming instruction,

are lacking, as discussed in the accompanying technical report (available online).<sup>8</sup>

#### RECOMMENDATIONS

Pediatricians should alert parents to the dangers that water presents at different ages and in different situations.

#### For Newborn Infants and Children Through 4 Years of Age

1. Parents and caregivers need to be advised that they should never—even for a moment—leave children alone or in the care of another young child while in bathtubs, pools, spas, or wading pools or near irrigation ditches or other open standing water. They should also be reminded that infant bath seats or supporting rings are not a substitute for adult supervision.<sup>11</sup> They should remove all water from containers, such as pails and 5-gallon buckets, immediately after use. To prevent drowning in toilets, young children should not be left alone in the bathroom, and unsupervised access to the bathroom should be prevented.
2. Whenever infants and toddlers are in or around water, be it at their own home, the home of a neighbor, a party, or elsewhere, a supervising adult should be within an arm's length providing "touch supervision." The attention of the supervising adult should be focused on the child, and the adult should not be engaged in other distracting activities, such as talking on the telephone, socializing, or tending to household chores.
3. If a home has a residential swimming pool, it should be surrounded by a fence that prevents direct access to the pool from the house. Rigid, motorized pool covers, pool alarms, and other protective devices, which may offer some protection if used appropriately and consistently, are not a substitute for 4-sided fencing.
4. Children are generally not developmentally ready for formal swimming lessons until after their fourth birthday. However, because some children develop skills more quickly than others, not all children will be ready to learn to swim at exactly the same age. For example, children with motor or cognitive disabilities may not be developmentally ready for swimming lessons until a later age. Ul-

timately, the decision of when to start a child in swimming lessons must be individualized. Parents should be reminded that swimming lessons will not provide “drown proofing” for children of any age.

5. Parents, caregivers, and pool owners should learn CPR and keep a telephone and equipment approved by the US Coast Guard (eg, life preservers, life jackets, shepherd’s crook) at poolside.
6. Parents should be cautioned not to use air-filled swimming aids (such as water wings) in place of personal flotation devices (life preservers).
7. Parents should be certain that all people who will be caring for their child or children understand the need for constant supervision of children when in or around water. If children are in out-of-home child care, parents should inquire about exposure to water and water-related activities at the provider site, such as presence of a swimming pool at the home or visits to off-site pools. Recommendations for child-staff ratios while children are wading or swimming are available and vary with the age of the child and by jurisdiction. Some states include in their licensing requirements staffing ratios for water activities. Parents should be aware of the ratios at their child’s site of care. National recommendations are available in *Caring for Our Children: National Health and Safety Performance Standards for Out-of-Home Child Care Programs*.<sup>12</sup>
8. Pediatricians are encouraged to identify families who have residential swimming pools and then schedule periodic counseling beginning in the perinatal period to ensure that parents remain aware of the risk of drowning and near-drowning. Families (and extended families and others visited by children) should be advised to install an isolation fence (also referred to as a 4-sided fence) that prevents direct access to the pool from the house. The fence should be at least 4 feet high (or greater if required by local ordinance). The fence should also be climb-resistant. For example, chain-link fences are easily scaled by young children, whereas ornamental iron bar fences are more difficult to climb.<sup>13</sup> The distance between the bottom of the fence and the ground should be less than 4 inches. The distance between vertical members of the fence also should be less than 4 inches. The gate is the single most important component of the fence. It should be self-latching and self-closing, should open away from the pool, and should be checked often to ensure good working order. Detailed guidelines for safety barriers for home pools are available online from the Consumer Product Safety Commission.<sup>14</sup> Families can also be advised to consider supplemental pool alarms and rigid pool covers as additional layers of protection; however, neither alarms nor pool covers are a substitute for adequate fencing. (Importantly, some types of pool covers, such as solar covers, should not be used as a means of protection, as detailed in the accompanying technical report.<sup>8</sup>)

#### For Children 5 to 12 Years of Age

Pediatricians should counsel parents and other caregivers on the risks of drowning for children in this age group and the need for children to learn about water safety. Counseling should include the following topics:

1. Children need to be taught to swim. Knowing how to swim well in one body of water, however, does not always make a child safe in another. In addition to rules for safe swimming in pools, parents and children need to know the various safety requirements for swimming in natural bodies of water, such as lakes, streams, rivers, and oceans. Drowning risk increases with certain changing environmental conditions (eg, depth, water temperature, currents, and weather), hazards concealed in murky water, and inaccessibility of emergency medical services.
2. Children need to be taught never to swim alone and never to swim without adult supervision.
3. Children should be required to use an approved personal flotation device whenever riding in a boat or fishing and, preferably, wherever they are at risk of falling into the water (eg, along a river bank).
4. Parents and children need to understand that jumping or diving into water can result in injury. Parents should know the depth of the water and the location of underwater hazards before permitting children to jump or dive. The first entry into any body of water should be feet first.
5. Parents and children need to recognize drowning risks in cold seasons. Children should refrain from walking, skating, or riding on weak or thawing ice on any body of water.
6. When swimming or taking a bath, children with seizure disorders should be supervised closely by an adult at all times. Showers are preferable to baths for situations in which the child cannot be supervised directly because of privacy issues.

#### For Adolescents 13 to 19 Years of Age

1. In addition to the topics listed for children 5 to 12 years of age, pediatricians should counsel adolescents about the dangers of alcohol and other drug consumption during aquatic recreation activities (eg, swimming, diving, and boating). Because boys are at much higher risk of water-based injuries than are girls, they warrant extra counseling.
2. Adolescents should learn CPR. Pediatricians should support the inclusion of CPR training in high school health classes.

#### Community Interventions

1. Pediatricians are encouraged to work in their communities to pass legislation to mandate isolation pool fencing for new and existing residential pools. They also should support efforts to ensure that community pools and other pools accessible to the public (such as pools at apartments, hotels, and motels) have lifeguards with current CPR certification.

2. Pediatricians are encouraged to support efforts in their states to pass legislation and adopt regulations to establish basic safety requirements for natural swimming areas and public and private recreational facilities (eg, mandating the presence of lifeguards in designated swimming areas).
3. Pediatricians should support state and community efforts to enforce laws that prohibit alcohol and other drug consumption by boat operators and adolescents.
4. Pediatricians should work with emergency medical services personnel to encourage systematic reporting of information on the circumstances of immersion events. Consistent documentation of this information is the critical first step in the development of local and state surveillance systems needed to guide design of preventive strategies appropriate for the geographic area.
5. Pediatricians should work in their communities to develop emergency medical services that meet the needs of children, including those who nearly drown.
6. Supportive counseling services should be available to relatives and friends of drowning victims.

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