

## Complete Summary

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### GUIDELINE TITLE

Prevention of drowning in infants, children, and adolescents.

### BIBLIOGRAPHIC SOURCE(S)

Prevention of drowning in infants, children, and adolescents. Pediatrics 2003 Aug;112(2):437-9. [14 references] [PubMed](#)

### GUIDELINE STATUS

This is the current release of the guideline.

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## SCOPE

### DISEASE/CONDITION(S)

Drowning-related death and injury

### GUIDELINE CATEGORY

Counseling  
Prevention

### CLINICAL SPECIALTY

Family Practice  
Pediatrics

### **INTENDED USERS**

Advanced Practice Nurses  
Nurses  
Physician Assistants  
Physicians

### **GUIDELINE OBJECTIVE(S)**

To present recommendations for prevention of drowning in infants, children, and adolescents

### **TARGET POPULATION**

Infants, children, and adolescents

### **INTERVENTIONS AND PRACTICES CONSIDERED**

1. Parent, caregiver, and child education
2. 4-sided fencing
3. Pool alarms and pool covers
4. Swimming lessons
5. Close adult supervision and presence of lifeguards around any body of water
6. Immediate resuscitation at the site of a submersion incident
7. Use of personal flotation devices
8. Pediatricians' interventions and support of state and community efforts to ensure safety of children and prevention of drowning
9. Supportive counseling services for relatives and friends of drowning victims

### **MAJOR OUTCOMES CONSIDERED**

Not stated

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

The guideline developer performed MEDLINE searches.

### **NUMBER OF SOURCE DOCUMENTS**

Not stated

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Subjective Review

## **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Not applicable

## **METHODS USED TO ANALYZE THE EVIDENCE**

Review

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Informal Consensus

## **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Not stated

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

## **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

## **METHOD OF GUIDELINE VALIDATION**

Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

Not stated

# **RECOMMENDATIONS**

## **MAJOR RECOMMENDATIONS**

**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 (Rauchschalbe, Brenner, & Smith, 1997). 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. Ultimately, 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 cardiopulmonary resuscitation (CPR) and keep a telephone and equipment approved by the United States Coast Guard (e.g., 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 childcare, 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 Guidelines for Out-of-Home Child Care Programs* (American Academy of Pediatrics, 2002).
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 (Rabinovich, Lerner, & Huey, 1994). 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 (US Consumer Product Safety Commission, 2003). 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 [Brenner, 2003].)

### **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 (e.g., 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 (e.g., along a riverbank).
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 (e.g., 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 (e.g., 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.

### **CLINICAL ALGORITHM(S)**

None provided

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **REFERENCES SUPPORTING THE RECOMMENDATIONS**

[References open in a new window](#)

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The type of evidence supporting each recommendation is not specifically stated.

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

- Provision of appropriate information to health care professionals so that they can provide appropriate counseling on the prevention of childhood drowning

- Developing appropriate environmental and behavioral strategies to prevent drowning in infants, children, and adolescents

## POTENTIAL HARMS

Not stated

## QUALIFYING STATEMENTS

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The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Patient Resources

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Staying Healthy

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Prevention of drowning in infants, children, and adolescents. Pediatrics 2003 Aug;112(2):437-9. [14 references] [PubMed](#)

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

**DATE RELEASED**

2003 Aug

**GUIDELINE DEVELOPER(S)**

American Academy of Pediatrics - Medical Specialty Society

**SOURCE(S) OF FUNDING**

American Academy of Pediatrics

**GUIDELINE COMMITTEE**

Committee on Injury, Violence, and Poison Prevention

**COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

*Committee on Injury, Violence, and Poison Prevention, 2002-2003:* Marilyn J. Bull, MD, *Chairperson*; Phyllis Agran, MD, MPH; M. Denise Dowd, MD, MPH; Victor Garcia, MD; H. Garry Gardner, MD; Gary A. Smith, MD, DrPH; Milton Tenenbein, MD; Jeffrey C. Weiss, MD; Joseph Wright, MD, MPH

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**FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

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approves a revision or reaffirmation, or retires a statement, the current policy remains in effect.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).

Print copies: Available from American Academy of Pediatrics, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following is available:

- Brenner RA and American Academy of Pediatrics, Committee on Injury, Violence, and Poison Prevention. Technical report: prevention of drowning in infants, children, and adolescents. *Pediatrics* 2003;112:440-445.

Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).

Print copies: Available from American Academy of Pediatrics, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

## **PATIENT RESOURCES**

The following are available:

The Injury Prevention Program (TIPP) Safety Slips

- Home water hazards for young children. Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).
- Water safety for your school-aged child. Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).
- Pool safety for children. Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).
- Life jackets and life preservers. Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Web site](#).

Print copies: Available from American Academy of Pediatrics, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

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## **NGC STATUS**

This NGC summary was completed by ECRI on February 20, 2004. The information was verified by the guideline developer on March 29, 2004.

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