DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

# Water-Related Injuries: Fact Sheet

## Overview

- In 2004, there were 3,308 unintentional fatal drownings in the United States, averaging nine people per day. This figure does not include the 676 fatalities, from drowning and other causes, due to boating-related incidents (CDC 2006; USCG 2006).
- For every child 14 years and younger who dies from drowning in 2004, five receive emergency department care for nonfatal submersion injuries. More than half of these children were hospitalized or transferred to another facility for treatment (CDC 2006).
- Nonfatal drownings can cause brain damage that result in long-term disabilities ranging from memory problems and learning disabilities to the permanent loss of basic functioning (i.e., permanent vegetative state).
- A CDC study about self-reported swimming ability (Gilchrist et al. 2000) found
- that:

    - Younger respondents reported greater swimming ability than older respondents;
    - Self-reported ability increased with level of education (i.e., high school graduate, college graduate, etc.);
    - Among racial groups, African Americans reported the most limited swimming ability; and
    - Men of all ages, races, and educational levels consistently reported greater swimming ability than women.

## Groups at Risk

- **Males:** In 2004, males accounted for 78% of fatal unintentional drownings in the United States (CDC 2006).
- **Children:** In 2004, of all children 1-4 years old who died, 26% died from drowning (CDC 2006). Although drowning rates have slowly declined (Branche 1999), fatal drowning remains the second-leading cause of unintentional injury-related death for children ages 1 to 14 years (CDC 2005).
- **Minorities.**
    - Between 2000 and 2004, the fatal unintentional drowning rate for African Americans overall was 1.3 times that of whites. However, in certain age groups it was even higher. For example, the fatal unintentional drowning rate for 5-14 year old African Americans was 3.2 times higher than that for whites.
    - Between 2000 and 2004, the fatal unintentional drowning rate overall for American Indians and Alaskan Natives was 1.8 times that of whites. In American Indian and Alaskan Native children 5-14 years old, it was 2.6 times higher than that of whites.

- Factors such as the physical environment (e.g., access to swimming pools) and a combination of social and cultural issues (e.g., valuing swimming skills and choosing water-related activities when making recreational choices) may contribute to the racial differences in drowning rates. If minorities participate less in water-related activities than whites, their drowning rates (per exposure) may be higher than currently reported (Branche et al. 2004).

## Risk Factors

- **Lack of supervision and barriers (such as pool fencing).** Children under age one most often drown in bathtubs, buckets, or toilets (Brenner et al. 2001). Among children ages 1 to 4 years, most drownings occur in residential swimming pools (Brenner et al. 2001). Most young children who drowned in pools were last seen in the home, had been out of sight less than five minutes, and were in the care of one or both parents at the time (Present 1987).
- **Recreation in natural water settings (such as lakes, rivers, or the ocean).** The percent of drownings in natural water settings increases with age. These locations represent the majority of drownings in those over 15 years of age (Gilchrist et al. 2004).
- **Recreational boating.** Boating carries risks for injury. In 2005, the U.S. Coast Guard received reports for 4,969 boating incidents; 3,451 participants were reported injured, and 697 died in boating incidents. Among those who drowned, 87% were not wearing life jackets. Most boating fatalities from 2005 (70%) were caused by drowning; the remainder were due to trauma, hypothermia, carbon monoxide poisoning, or other causes. Open motor boats were involved in 45% of all reported incidents, and personal watercraft were involved in another 26% (USCG 2006).
- **Alcohol use.** Alcohol use is involved in about 25% to 50% of adolescent and adult deaths associated with water recreation (Howland et al. 1995; Howland and Hingson 1988). Alcohol influences balance, coordination, and judgment, and its effects are heightened by sun exposure and heat (Smith and Kraus 1988). Alcohol was involved in about one-third of all reported boating fatalities.
- **Seizure disorders.** For persons with seizure disorders, drowning is the most common cause of unintentional injury death, with the bathtub as the site of highest drowning risk (Quan et al. 2006).

## Prevention

Prevention tips include (CDC 2005; Gilchrist et al. 2004; and Quan et al. 2006; CPSC):

- Designate a responsible adult to watch young children while in the bath and all children swimming or playing in or around the water. Adults should not be involved in any other distracting activity (such as reading, playing cards, talking on the phone, or mowing the lawn) while supervising children.
- Always swim with a buddy. Select swimming sites that have lifeguards whenever possible.
- Avoid drinking alcohol before or during swimming, boating, or water skiing. Avoid drinking alcohol while supervising children.
- Learn to swim. Be aware that the American Academy of Pediatrics does not recommend swimming classes as the primary means of drowning prevention for children younger than 4 years of age. Constant vigilant supervision and barriers such as pool fencing are still necessary even when children have completed classes.

- Learn cardiopulmonary resuscitation (CPR). Because of the time it might take for paramedics to arrive, your CPR skills can make a difference in someone's life. CPR performed by bystanders has been shown to improve outcomes in drowning victims.
- With young children, do not use air-filled or foam toys, such as "water wings", "noodles", or inner-tubes, in place of life jackets (personal flotation devices). These toys are not designed to keep swimmers safe.
- If you have a swimming pool at your home:
    - Install a four-sided, isolation pool fence that totally separates the house and yard from the pool area. The fence should be at least 4 feet high and should completely separate the pool from the house and play area of the yard. Use self closing and self latching gates that open outward, and have latches that are out of a child's reach. Consider additional barriers such as automatic door locks or alarms to prevent or notify you regarding access to the yard or pool.
    - Toys should be removed from the pool immediately after use. Floats, balls and other toys might encourage children to enter the pool area or lean over the pool and potentially fall in.
- If in or around natural bodies of water:
    - Know the local weather conditions and forecast before swimming or boating. Strong winds and thunderstorms with lightning strikes are dangerous.
    - Use US Coast Guard approved life jackets when boating, regardless of distance to be traveled, size of boat, or swimming ability of boaters.
    - Heed colored beach warning flags.
    - Watch for dangerous waves and signs of rip currents (e.g. water that is discolored and choppy, foamy, or filled with debris). If you are caught in a rip current, swim parallel to shore; once free of the current, swim toward shore.

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