

What Parents Should Know About Drowning and Dry Drowning

Drowning is a common and preventable cause of death in children.

Children aged 1 to 4 years carry the highest risk, followed by adolescents. A common concern raised to pediatricians and on every parent's mind is water safety. The definition of drowning is when breathing is impaired from submersion or immersion in liquid. Drowning is a process that can be interrupted and does not always lead to death. Submersion refers to when the head goes under the water; immersion is when water is splashed over the face. Drowning is classified into 2 categories: fatal or nonfatal. While swimming pools are the most common site of drownings, it is important to recognize water safety within the home as well. Bathtubs, toilets, and even buckets of water can harm infants and toddlers.

Water Safety

Being within arms' reach to your child at all times is the most important aspect of water safety and is called *touch supervision*. The American Academy of Pediatrics encourages layers of protection to prevent drowning. Pools need to have fencing on all 4 sides with a self-latching gate. Approved personal flotation devices (life jackets) must be available around natural bodies of water, such as lakes, rivers, and ponds. For all locations, undistracted supervision is the most important part. Adults and trained adolescents who are supervising children in water should avoid distractions and any use of alcohol or drugs or excessive cell phone use. They should be knowledgeable about cardiopulmonary resuscitation (CPR). Some tools are not useful. Pool alarms are not helpful as they give a false sense of security. Floatable swimming aids (floaties or puddle jumpers) are not approved as a personal flotation device and are not substitutes for appropriate supervision.

Teaching children to swim is important, and the American Academy of Pediatrics has recommended swim lessons as early as age 1 year to provide another protection layer. However, infant swim classes such as Infant Swimming Resource have not been shown to lower the risk of drowning. As an alternative, families may seek out parent-child water play classes to gain familiarity and comfort with being around water together.

What Is Dry Drowning?

The term *dry drowning* became sensationalized by news outlets in 2017 after a report of a 4-year-old boy who died unexpectedly 1 week after playing in knee-deep water. While initially diagnosed as dry drowning, he actually died of unrelated heart problems. Parents remain confused and afraid as other stories continue this myth of dry drowning. Each case has ultimately been found to have a different diagnosis due to an underlying medical condition.

Authors: Alexandra M. Stern, MD; Lindsay A. Thompson, MD, MS

Published Online: June 27, 2022. doi:10.1001/jamapediatrics.2022.1434

Author Affiliations: Department of Pediatrics, University of Florida, Gainesville (Stern, Thompson); Department of Health Outcomes and Biomedical Informatics, University of Florida, Gainesville (Thompson).

Conflict of Interest Disclosures: None reported.

Water safety and drowning prevention

Practice layers of protection to prevent drowning any time your child is around water, including pools, bathtubs, and natural bodies of water.

- ▶ Stay within arms' reach of your child at all times around water
- ▶ Avoid distractions, alcohol and drug use, and excessive cell phone use while supervising children around water
- ▶ Secure pools with fencing around all 4 sides and a self-latching gate
- ▶ Provide access to life jackets around natural bodies of water
- ▶ Learn cardiopulmonary resuscitation (CPR)
- ▶ Teach children to swim



Symptoms of drowning such as gasping or difficulty breathing most commonly occur immediately. In rare cases, symptoms may develop 4-6 h after a nonfatal drowning.



If a child develops worsening cough, fast breathing rate, vomiting, or change in mental status after nonfatal drowning, take them to the nearest emergency department for evaluation.

Recognizing Danger Signs of Drowning

Children most commonly show symptoms of drowning immediately, with gasping and difficulty breathing. There are rare cases where symptoms may develop more slowly, typically between 4 and 6 hours later. These signs include a worsening cough, fast breathing rate, vomiting, and change in mental status. If any of these signs develop, the child should be taken to the nearest emergency department for evaluation.

FOR MORE INFORMATION

<https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Infant-Water-Safety.aspx>

<https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Swim-Lessons.aspx>

<https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Pool-Dangers-Drowning-Prevention-When-Not-Swimming-Time.aspx>

<https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Water-Safety-And-Young-Children.aspx>

<https://health.clevelandclinic.org/dry-drowning-separating-fact-from-fiction/>

The JAMA Pediatrics Patient Page is a public service of *JAMA Pediatrics*.

The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your child's medical condition, *JAMA Pediatrics* suggests that you consult your child's physician. This page may be downloaded or photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, email reprints@jamanetwork.com.