



A Guide to Drowning Prevention

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Children and water can be a fatal combination. The good news is, this does not have to happen to your child! Drowning deaths can be prevented if you are armed with the right information and are ready to take the right action steps.

Did you know?

1. Drowning is the leading cause of death for children ages 1-4 in both Orange County and California, and the second leading cause of accidental death in ages 1-14.
2. Drowning is silent. There is no splashing or screaming. A drowning person may just look like they are treading water. They may even make eye contact with you.
3. A child can drown in mere seconds.
4. Accidents often happen when there is a lapse in supervision, rather than a total lack of supervision. Many children who drown are in sight of an adult who may be distracted only briefly, or because they assume someone else is watching the pool.
5. No one is drown-proof. Don't give your child a pass on safety protocols even if he has had swimming lessons and is an experienced swimmer. Even older children, teens and adults can drown.
6. A child can drown in as little as two inches of water. Keep an eye on all bodies of water, such as bathtubs, toilets, buckets, ice chests and dog dishes.
7. If a child has drowned, CPR is the only thing that will save his or her life.
8. Not all drowning victims die. Oxygen deprivation from near-drowning can lead to brain damage.

Drowning is 100% preventable.



Water Safety Tips

- Watch your child in and around water. If your child turns up missing, check bodies of water first.
- Place pool safety barriers between your child and the pool. Pool safety barriers can buy you time if your child gets out of your sight and heads towards the pool. Barriers can include a fence around the pool, a pool cover and a pool alarm or a motion detector.
- Assign a “Water Watcher,” who knows how to swim, to watch over children in the pool during parties.
- Place a phone, life-saving ring and shepherd’s hook at poolside.
- Learn infant/child CPR.
- Remove toys in and around the pool when the pool is not in use.
- Flotation devices such as water wings are considered toys and should not be used as a substitute for watching your child.
- Water should be drained out of buckets and wading pools when they are not in use.
- Never leave a child unattended in the bathtub or count on a baby bath ring or seat to keep your child safe.

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Oxygen Deprivation from Near-Drowning Can Lead to Brain Damage

In cases of drowning, not all victims die. Fatal drowning are usually the most publicized, but what the public often doesn't hear are the tragic stories of near-drowning survivors who face lifelong disabilities due to the lack of oxygen to their brains.

An estimated 5,000 children ages 14 and younger are hospitalized each year for near-drowning: 15 percent die in the hospital and up to 20 percent are left with severe, permanent neurological disabilities, says Dr. Gary Goodman, a critical care specialist and medical director of the Pediatric Intensive Care Unit at CHOC Children's at Mission Hospital.

"Humans are air-breathing animals," Dr. Goodman says. "Our bodies need a constant supply of oxygen. There is no organ that is more sensitive to a lack of oxygen than the brain. It cannot use any other fuel. It has to have oxygen."

The parts of the brain that control thinking and memory are the first areas of the brain to be harmed as a result of oxygen deprivation. Physicians believe that brain damage begins to occur after about five minutes of oxygen deprivation.

"If you can rescue a child before that and restore their breathing with CPR, and get their breathing back, usually the children will recover," Dr. Goodman says. "After five minutes, there will be brain damage. It's just a matter of how severe."

Victims of near-drowning accidents whose brains are deprived of oxygen for too long often experience disabilities for the rest of their lives. These include central nervous system damage contributing to varying levels of brain damage, resulting in memory loss, seizures, learning disabilities, paralysis and sometimes remaining in a permanent vegetative state.

Surviving victims may also experience a lifetime of multiple medical problems including respiratory, cardiovascular and neuromuscular disorders. This can take a major toll on a family.

Drowning is the leading cause of unintentional injury-related death for children ages 1 to 4. It takes only seconds to drown, and it often occurs silently when an unsupervised child is near water, Dr. Goodman says.

Although most incidents of drowning in Orange County occur in backyard swimming pools, children can drown in just one inch of water. They can drown in buckets, bathtubs, wading pools, diaper pails, toilets, hot tubs and spas. Open water such as oceans, rivers and lakes pose a drowning threat to people of all ages.



The Dangers of Secondary Drowning: What Parents Should Know

By Dr. Georgie Pechulis, pediatric hospitalist at CHOC Children's

With Memorial Day weekend right around the corner, it generally signals the beginning of summer and the opening of the much-anticipated pool season. Our kids will undoubtedly be awaiting their water time with endless excitement, and we as parents will do our best to keep them safe. Amidst our best efforts to educate ourselves and our children on water safety, drowning still tends to peak in these summer months. Secondary drowning is another danger, albeit rare, that parents should be aware of.



What is secondary drowning?

We as pediatricians actually don't like this term, since it creates a lot of confusion.

Drowning is defined by the International Liaison Committee on Resuscitation as, "a process resulting in primary respiratory impairment from submersion/immersion in a liquid medium." So what does that mean? Any event from being in water that causes problems breathing, whether it is primary, secondary, wet or dry, or any other forms of drowning.

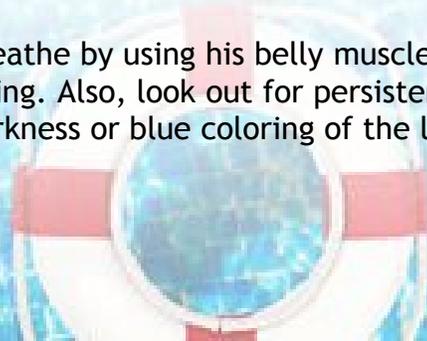
Secondary or delayed drowning refers to the phenomenon of water inhalation, followed by presumed recovery, and respiratory problems that appear afterwards. Often the story involves being underwater or inhaling water with immediate symptoms that appear to go away. However, vague symptoms persist and cause breathing problems long after the event, to the surprise of parents. It is a subset of drowning and thankfully, is relatively rare.

Here are a few of the most common questions I receive from parents about secondary drowning:

My child coughed after accidentally swallowing some water. Should I bring him to the ER?

Fortunately, most simple aspiration events are not serious. Parents will need to look for the persistence of symptoms. In other words, you'll notice your child hasn't returned to his or her normal breathing or behavior after the incident.

- **Breathing:** Your child is working hard to breathe by using his belly muscles or if you notice her nostrils flaring or head bobbing. Also, look out for persistent coughing even long after the event, and darkness or blue coloring of the lips.



- **Behavior:** You notice your child is not acting right. He or she is lethargic, irritable or not their usual self. This will be different from what you're normally used to. Use your parental instinct.

My child seemed fine. What happened?

If water irritates the lungs, it can cause inflammation, fluid buildup and difficulty for the body to receive the oxygen that you breathe. Sometimes these effects happen long after the event has occurred. We expect these symptoms to show within 24 hours after aspiration of water.

If you have any of these concerns, please seek medical attention with your pediatrician or even the Emergency Department if your child appears in distress.

How can I keep my child safe?

As always, the best way to keep your child safe is to monitor them at all times in the water and to ensure they do not have any access to potential water hazards. This includes not only pools, but filled bathtubs, hot tubs, lakes, koi ponds and fountains.

- **Never leave them unsupervised.** For toddlers or any children who are not able to swim, an adult should be within arm's reach at all times. Never leave the child unattended, even if it is to quickly run in the house and grab something. Commonly, drowning occurs when caregivers briefly leave the child unattended to grab cameras, phones, food or drink, etc. Appoint dedicated and qualified adult supervisors to substitute watch if you need to leave.
- **Supervise without distraction.** Your job as the supervisor is to do so without distraction. No cell phones, no reading materials and no distracting conversations. Those brief lapses of attention are when incidents can occur. It's an important job to supervise your kids in the pool and really key to ensuring your child's safety.
- **Drowning is usually silent.** The typical drowning scenario in a movie usually depicts arm flailing, screaming and water splashing in all directions. The truth is that most drowning occurs without noise. Often the child struggles quietly and slips under the water without a sound. Always be alert and on the watch, for it may not be obvious.
- **Be aware of your environment.** If you are visiting a family or friend's home, be aware of any potential water dangers nearby. Homes that do not usually have children often have open access to pools, spas and natural bodies of water such as ponds and lakes. Children are curious and will want to explore new environments. Be alert.



As a hospital pediatrician and as a mother, often I hear the stories of caregivers shifting their attention to engage in conversation, running in the house to grab something, or other forms of quick distractions that lead to these accidents. If I could ask anything, it's that we just take time to really focus on protecting our kids by being their undistracted monitor. We want them to enjoy many endless summers of water time to come.

Helpful Resources from CHOC Children's

Water Watcher Badges

CHOC provides Water Watcher badges to the community for free. This lanyard can be worn by the Water Watcher and handed off to another responsible adult if the Water Watcher needs to leave the water area. Contact the CHOC Community Education department at 714-509-8887 to get your free badge.



Three Tragic Seconds: Drowning Prevention

In this class, parents learn about the problem of drowning: why it happens, where it happens and how it happens. It presents four action steps to prevent drowning including: using layers of barrier protection, designating water watchers, learning CPR and clearly communicating child supervision. This class can be brought to your group at no cost. To schedule a visit, please call 714-509-8887.

Stewie the Duck Learns to Swim (Pre K-First Grade)

This program is a child's first guide to water safety. Presented by CHOC community educators, we show how to be safe near the water through the story of Stewie the Duck, who wants to swim with the big ducks but is prevented from going into the water by his older sisters until he learns the water safety rules. This program can be brought to your school or group at no cost. To schedule a visit, please call 714-509-8887.

