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NEWS
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*****With Labor Day weekend approaching, health professionals fear increase in drownings.

DALLAS--A two-year-old boy wanders out alone to a backyard pool. Out of curiosity he bends over the edge to splash the water with his hand and slips.

Three 10-year-olds challenge each other to swim the entire length of a pool in one breath. Taking heavy, quick breaths they hyperventilate themselves and begin the contest. Two make it. One never surfaces.

A group of young adults gathers at the lake for a party. After a heavy day of sunning and drinking, one attempts to swim to the other side.

Each situation sets the stage for a potential drowning episode. This year, approximately 15 cases of drownings or near-drownings (when the unconscious person has been revived) have been reported in Dallas. The cities of Grapevine and Lewisville combined have reported almost as many more.

Although these figures are lower than for most past summers, health professionals fear, with the Labor Day weekend approaching, that these numbers may rise.

No age group is immune to drowning but statistically children comprise the majority of drowning and near-drowning cases. Most are male and, in Dallas, most drown in home pools. In the majority of cases, the children were left unsupervised beside the water.

Dr. Charles Ginsburg, associate professor of Pediatrics at The University of Texas Health Science Center at Dallas and medical director of Ambulatory Care Services at Children's Medical Center, says he is horrified by the number of pediatric drowning and near-drowning cases that the Children's and Parkland pediatricians treat during the summer. In July, he says Children's and Parkland's Emergency Services averaged between one and four cases a week.

"Drowning is completely preventable in almost all cases. It's largely a matter of using common sense. With children, a good rule is to never leave them unsupervised near water, whether it's a pool, a lake or a bathtub.

"As unbelievable as it may seem, we usually see about two cases a year of kids who have drowned in buckets, diaper pails or bathtubs."

Additionally, Ginsburg emphasized that children should always wear life vests or jackets when they are in any type of boat. This is something, he says, that is often overlooked.

Everyone agrees that prevention is the best defense against drowning, but when a water accident does occur, time and emergency care are critical to the survival of the patient.

Dr. Charles Crumpler, assistant professor of Internal Medicine in the Division of Ambulatory Care - Emergency Medicine at the health science center, authored a paper last year to help medical students and health professionals understand drowning and primary emergency care. Much of the information he outlined for the students can be valuable knowledge for the lay person also.

Crumpler explained that to drown is to suffocate by submersion. Once the victim has stopped breathing, time becomes a critical factor.

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It is important to begin cardiopulmonary resuscitation (CPR) as soon as possible, Crumpler stressed. If possible, CPR should be started while the patient is being removed from the water. The longer the patient is without oxygen, the greater the risks of brain damage and death. Also, no attempts should be made to remove water from the patient's lungs or stomach.

"Water intake is dangerous but it is something that must be dealt with at a hospital. Anyone who has survived a near-drowning episode, whether they've been revived and appear to be fine or not, should be hospitalized for 24 hours.

"In 90 percent of the drowning, near-drowning cases the people do inhale water," Crumpler explained. "When water is inhaled it washes away a detergent-like substance in the lungs called surfactant. Surfactant keeps the tiny alveoli (air sacs in the lungs) from collapsing. When the surfactant is washed away, respiratory distress can occur. Often it is a delayed problem, happening eight to 12 hours after the actual drowning episode.

There are actually four types of drownings, Crumpler said. The previously described "wet drowning" is the most common. Second to this is "dry drowning." Dry drowning happens when a spasm of the larynx occurs, preventing entry of water and air into the respiratory passages. If these patients are rescued prior to brain death, respiratory damage is not a danger.

The third type of drowning is referred to as secondary drowning. "These are near-drowning patients who have been rescued only to succumb hours to days later of other causes related to water inhalation," he explained.

The final type of drowning is known as the immersion syndrome. Crumpler explained that these are actually sudden cardiac deaths rather than deaths from water intake or suffocation. A common cause for this is immersion into very cold water.

Drowning is the fourth most common cause of accidental death in the United States. Among males one to 34 years of age and females 15 to 19 years of age it ranks second only to motor vehicle accidents.

In addition to unsupervised swimming, Crumpler warns against the dangers of swimming in very cold water, mixing water sports with drugs and alcohol and hyperventilating.

"Hyperventilating can be a subtle killer, causing the person to pass out in the water without warning," Crumpler explained. "People usually hyperventilate because it helps them increase the time they can stay under water.

"What happens chemically is that it drives their carbon dioxide (CO₂) levels very low. CO₂ is what tells the brain when to take a breath. So, the person who has hyperventilated and is swimming under water may need to take a breath, but not feel like he or she has to. This may cause them to lose consciousness in the water and drown."

Crumpler says that the question of when to opt to revive a drowning victim with CPR is very controversial.

"Generally, after five to seven minutes irreversible brain damage is happening. But people have been known to survive for as long as 40 minutes under certain conditions.

"If the water is very cold, less than 25 degrees centigrade, the drowning victim may experience hypothermia or a cooling of their body temperature. This cooling tends to slow metabolism. Another phenomenon, called the diving reflex, can also extend their time."

The diving reflex generally happens when the face is submerged in cold water. The body's vessels constrict, sending most of the blood to the brain and heart, allowing the two vital organs more oxygen.

Crumpler says that children do better in hypothermic situations. Many cases have been documented where a child has recovered from a near-drowning episode after a long submersion time.

"Because people have been reported to survive after long submersion times, I don't think we have the luxury of not trying to resuscitate them just because we think too much time has passed.

"We have to try because of those people who have survived submersions of up to 40 minutes or more."

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