



# The Neuroscience Institute

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***Bitter rite of summer:  
The Neuroscience Institute sees season's first  
vertebral injury caused by diving into shallow water***

***Neurosurgeon urges swimmers:  
No diving into water less than 10-12 feet deep***

CINCINNATI, Ohio - A neurosurgeon with The Neuroscience Institute at the University of Cincinnati and University Hospital on Thursday issued a strong reminder to the community that diving into water less than 10 to 12 feet deep can result in devastating and irreversible injuries to the spinal cord.

Charles Kuntz IV, M.D., who is also a neurosurgeon with the Mayfield Clinic, this month treated the first shallow-water diving injury of the year at University Hospital. The patient, a man in his 30s, fractured a vertebra in his neck after diving into three feet of water in a swimming pool and striking his head on the bottom. He did not suffer paralysis.

"Although the injury was very serious, this patient was extremely fortunate," Dr. Kuntz said. "Many people who suffer shallow-diving injuries incur spinal cord injuries and paralysis."

Last summer three patients were treated at Cincinnati hospitals for spinal cord injuries incurred by shallow-water diving. All three patients were paralyzed.

"This is an appropriate time to remind people of the hazards of shallow-water diving," Dr. Kuntz said. "And by shallow I don't mean just a couple of feet. Severe injuries can occur in what may appear to be perfectly safe water because of the height and weight of the diver, the angle of the dive, and the diver's skill. Elite swimmers are trained to make flat, racing dives that keep them near the surface. Most of the population is not trained to dive this way."

“As a general rule,” Dr. Kuntz concluded, “swimmers should *never* dive into water less than 10 to 12 feet deep.”

Dr. Kuntz urged parents, teachers, camp counselors, and coaches to impress upon young people the risks of diving into shallow water. He said swimmers and divers should enter the water feet first to determine depth.

Spinal cord injury occurs when the spinal cord, a bundle of nerves that runs down the back from the base of the brain to the waist, is damaged or severed by trauma. This can occur during a dive into shallow water if the diver’s head strikes the bottom, causing the vertebrae that encircle the spinal cord to collapse. If the spinal cord is damaged and it is unable to transmit nerve impulses to and from the brain, paralysis occurs.

About 1,000 spinal cord injuries occur in the United States each year when people dive into shallow water, according to the ThinkFirst National Injury Prevention Foundation and the North American Spine Society. The injuries are most likely to be suffered by males aged 15 to 25 and in water that is 6 feet deep or less, the organizations report. Three-fourths of diving-related injuries occur in natural bodies of water – lakes, rivers, or ponds – whose depth can be affected by drought, tides, and debris.

“Witnessing a life-altering injury caused by a shallow-diving mishap is probably the most tragic and preventable event I see,” said Dr. Kuntz. “With one unfortunate decision, the life of a healthy young person is completely transformed. The individual is likely to be dependent on machines for the rest of his or her life.”

The ThinkFirst National Injury Prevention Foundation makes these recommendations to swimmers:

- never dive into an above-ground pool or the shallow end of an inground pool
- always test water depth before diving
- never dive alone
- never drink and dive
- never dive off ledges, balconies, pool equipment or the side of a diving board

The Foundation for Spinal Cord Injury Prevention, Care & Cure estimates that about 11,000 new spinal cord injuries result each year, about 40 cases for every million people living in the United States. An estimated 250,000 Americans are currently living with spinal cord injury.

Spinal cord injuries have profound human and financial costs. While the lifetime medical expenses for a person paralyzed from the neck down can reach \$2 million, it is the patient’s tragic, life-altering paralysis that is most devastating.

For additional information about preventing traumatic brain and spinal injuries, visit the ThinkFirst National Injury Prevention Foundation at <http://www.thinkfirst.org/home.asp>.

To view ThinkFirst’s list of facts and safety tips relating to a variety of activities, from swimming to riding bicycles, go to: <http://www.thinkfirst.org/About/Facts.asp>.

The Neuroscience Institute is a regional center of excellence located at The University Hospital and the University of Cincinnati College of Medicine. The Institute is recognized for its premier clinical facilities and research laboratories, its internationally renowned physicians, its ongoing clinical and basic science research, and its advanced training programs for neuroscience specialists.

The Mayfield Clinic is recognized as one of the nation's leading physician organizations for clinical care, education, and research of the spine and brain. The group includes 22 neurosurgeons and treats 20,000 patients from 35 states and a dozen countries in a typical year. Mayfield's neurosurgeons are active participants in important clinical trials and have pioneered surgical procedures and instrumentation that have revolutionized the medical art of neurosurgery for brain tumors and neurovascular diseases and spinal disorders.

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