

Cody Unser comes from sports royalty. Her father, race car driver Al Unser Jr., won the Indianapolis 500 twice. Her grandfather, Al Unser, won the famed auto race four times. By middle school, Cody Unser was forging her own path to athletic glory. She raced snowmobiles, played basketball, and competed in gymnastics.

All that changed when Unser was 12. Shooting hoops one day, she suddenly had difficulty breathing. Her head hurt, and her

legs went numb. Doctors diagnosed *transverse myelitis (TM)*, a rare neurological disorder. TM permanently damages the spinal cord, stopping it from passing electrical messages from the brain to the lower body and leaving the lower body unable to move.

Just like that, Unser went from being a bold, young athlete who shared her family's "need for speed" to a scared girl paralyzed from the chest down. "All the things I had dreamed of for my life, all of my plans—suddenly it was a question of: Could I do this, and how was I going to do that?" she says. "I lost confidence."

That was before Unser, pictured below, discovered scuba diving. The sport is becoming a popular activity for people with disabilities such as Unser, who can move her arms and has learned to power herself in the water. Doctors recommend scuba for people who have TM as well as for paralyzed soldiers returning from Iraq and Afghanistan. Although the benefits of scuba diving haven't been scientifically explored, experts say the sport is a



No longer restrained by gravity, Cody Unser (center) is joined underwater by her mother, Shelly Unser (right), and a diving trainer.

**For people with disabilities, scuba diving invigorates body and mind.**

# Buoyed Spirits

By Joshua Kors

promising therapy that offers exercise for the body, stimulation for the brain, and a tonic for the spirits.

To Unser, the draw of the water is simple. "It's freedom," she says. "When I'm scuba diving with my friends and family, my paralysis disappears. You're weightless; you don't have gravity pulling you down. You can do what everyone else can do."

## BODY AND MIND

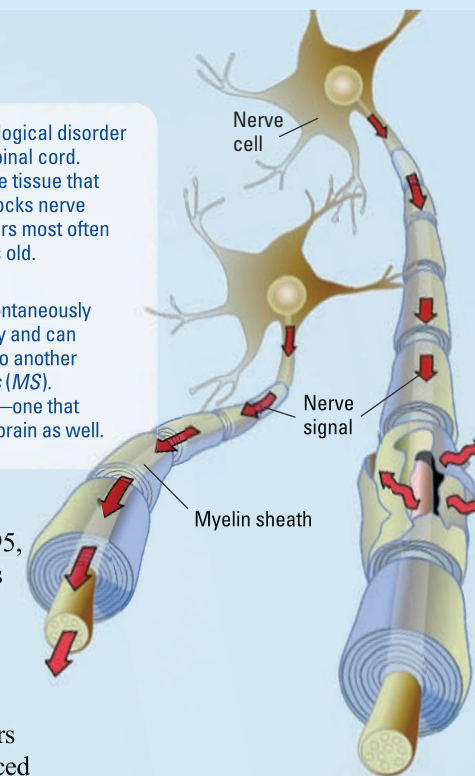
Most able-bodied people maintain a certain level of physical fitness simply by walking. "[But] when you're in a wheelchair, staying fit becomes a lot harder," says Sara Klaas, director of the spinal cord injury program at Chicago's Shriners Hospital for Children. Klaas says many people in wheelchairs become depressed and stop trying to care for their bodies. They may become *obese* (dangerously overweight), which can lead to *cardiovascular* (heart and blood vessel) disease and *diabetes* (abnormally high blood sugar levels). Without exercise, muscle tissue also *atrophies*, or breaks down from lack of use, even the muscles that aren't paralyzed.

"Scuba strengthens the muscles and builds the right attitude," says Klaas, an early supporter of scuba therapy. For years, she has been introducing children at her facility to diving. The results, she says, have been dramatic. "At first, a lot of the children feel completely dependent on their parents," she says. "In the water, they find independence. They're up, out of their chairs. They're burning calories and using the muscles that are working."

Leaving their wheelchairs helps divers with disabilities avoid another medical problem: *pressure ulcers* (bedsores) on the skin. A pressure ulcer forms when a person has been sitting or lying in one position for too long. Patients with ulcers become vulnerable to deadly infections. The actor Christopher Reeve, who was paralyzed in a

Transverse myelitis (TM) is a rare neurological disorder that destroys the *myelin sheath* in the spinal cord. The myelin sheath is a layer of protective tissue that surrounds nerve cells. Loss of myelin blocks nerve signals, resulting in paralysis. TM appears most often among children and teens 10 to 19 years old.

TM is an *idiopathic* disorder; it arises spontaneously from an unknown origin. It attacks quickly and can cause paralysis overnight. TM is similar to another neurological condition, *multiple sclerosis (MS)*. However, MS is a *progressive* condition—one that gets worse over time—and involves the brain as well.



horseback riding accident in 1995, died in 2004 from complications of an infected bedsore.

## MYSTERY BENEFITS

Unser, who is now a senior in college, says that in the 10 years she has been diving, she has noticed benefits that go beyond strengthening her arms and shoulders and avoiding bedsores. Though doctors say that Unser is paralyzed from the chest down, she contends that she's been able to move her hips while diving.

"When you put someone in the water, you transform them," says Jim Elliott, president of Diveheart, a nonprofit organization that promotes scuba diving for people with disabilities. Elliott says he has seen scuba benefit more than the muscles. "It sharpens the mind too," he says. "I remember an autistic kid who came on one of our scuba adventures. Before the

trip, he was in 90 percent special classes. Two months later, he was in 90 percent mainstream classes."

Klaas says no scientific data shows that scuba can enhance mental function or reestablish a connection between the brain and a person's paralyzed limbs. Still, she says, she would never dismiss Unser's and Elliott's experiences. "When it comes to spinal cord injuries, there are a lot of mysteries," says Klaas. "We just don't understand it well enough to say that kind of reconnection is impossible." In fact, she adds, the more she studies spinal cord injuries, "the more I realize anything's possible." **CS**



Diving instructor Steven Gale (left) assists Vin Davis, a U.S. Army veteran who lost two limbs while serving in the Vietnam War.

Left: Courtesy of Jim Elliott/Diveheart; Inset: Aquarium of the Pacific; Above: AP Images; graphic: KRT Newscom