

Swimmers No Longer Owe Success to Training

UNCW swimmer, Laura Chinni, pushes off the wall into her last lap of the 400-yard individual medley. Water repels off of her compressed LZR Racer bodysuit as she streamlines underwater. Chinni breaks surface in the pool at the McKay Natatorium on the campus of George Mason University. As she swims freestyle, she retains perfect body position. With every stroke, she rolls her shoulder, extending her arm as far as possible. She pulls her arms through the water with as much power as she did on her very first lap. Chinni finishes and looks up at the score board. 4.20.51. She places third at the CAA Conference Championship meet and breaks the previous UNCW school record.

In fact, Chinni and her 33 teammates who attended the meet broke a total of 26 school records. The women's team ended up placing third out of 9 teams, while the men's team won the championship title for the 8th consecutive year. Although the team trained over 20 hours a week for seven months, they couldn't have accomplished what they did without the help of the Speedo's new LZR Racer bodysuit, which all of the swimmers at the meet wore.

"Some of the records would not have been broken without the suits," said Todd Desboro, UNCW men's swimming assistant coach.

The LZR Racer bodysuit was created by Speedo in early 2008 with the help of experts from aerospace, engineering and medical industries, including NASA.

Speedo created a new type of fabric as thin as Saran Wrap called LZR Pulse, which is ultra lightweight and water repelling. The fabric is tighter than any other fabric used for hi-tech swimsuits of the past, especially in the chest and shoulder parts. The pressure from the compression can cause muscle constriction in distance events, causing discomfort and ultimately preventing them from performing at top speed. This is why the LZR Racer is mostly used for sprint events.

Swimmers must be extremely cautious when pulling the bodysuit on and off. They also have to be careful while wearing it. The bodysuits can get caught on rough surfaces. The LZR Racer is vulnerable to tearing and running like panty

hose. The UNCW swimmers had to be careful not to sit directly on the pool deck or the rough surface of the starting block.

“How many races you wear the suit depends on what kind of care you take for the suit and if you are sized correctly. Some of the suits got holes in them after 4 or 5 swims; some of the suits lasted the entire swim meet,” said Desboro.

To prevent swimmers from ripping their bodysuits, Speedo has a 5 minute video on its website, speedo.com, instructing swimmers how to put the bodysuit on.

UNCW swimmer, Meredith Banks, waited until she was as cool and dry as she could be before putting on her LZR Racer. She put plastic bags over her feet and sat down on the locker room bench. The plastic bags allowed the bodysuit to slide over her toes without her toenails getting caught. Banks pulled the suit up onto the calves, high enough for the suit to be fully pulled up. She was careful not to use her fingernails.

“Nails can poke holes in the suits faster than you realize,” said Banks.

Banks pulled the straps over her shoulders and looked in the mirror to ensure that the bodysuit was correctly aligned. She sucked in her stomach and arched her back as two of her teammates zipped the suit. One teammate held the teeth as close together as possible while the teammate zipped. The bodysuit “suctioned” to Banks’ body. This was uncomfortable for her at first.

“There was an initial feeling of panic. It was like I was being suffocated,” said Banks.

Banks bent over, touching her hands to the ground. One of her teammates ran her fingers along the zip, checking for any bumps or misaligned teeth. The entire process of putting the LZR Racer on took 20 minutes.

Unlike hi-tech swimsuits in the past, the LZR Racer has bonded seams and an ultra-low profile zip. This means that the bodysuit has a smoother and more flexible surface which ultimately reduces the drag resistance more than other hi-tech swimsuits. Because the UNCW swimmers stretch and jump around before

their races to increase their heart rate, their previous bodysuits moved and wrinkled up. Now, because of the silicon grippers at the ankles of the LZR Racer, the swimmers no longer waste time worrying about the positioning of their suits.

The LZR Racer bodysuit involves a hydro-form compression system that allows complete range of movement. The compression helps the swimmers, especially those with more fat. Skin friction drag is reduced, and the rippling and vibration of the muscles caused when the swimmer pushes through the water is prevented. With every stroke, they are able to roll their shoulder and extend their arm as far as possible, all while retaining perfect streamlined form.

The hydro-compression system also provides maximum energy efficiency. All of the UNCW swimmers vouched that they felt fast the entire race.

“Half way through my first race, I remember thinking, ‘Oh, my gosh! There’s the wall again! That came up fast!’” said Banks.

The LZR Racer features ultra-thin, ultra-low drag LZR panels that are cut by laser and embedded into the fabric at specific points on the swimmer’s body. The LZR Racer also encompasses an internal core stabilizer positioned up over the hip bones to hold the swimmer in a corset-like grip.

The panels and core stabilizer provide swimmers with support and help them to maintain perfect body position. Swimmers are able to swim “on top” of the water and avoid water resistance as a result. This aspect benefits, mostly, swimmers who normally ride lower in water due to muscle density.

“As soon as you dive in [the water], your body is raised higher. It is like you are lying on the surface of the water,” said UNCW swimmer, Laura Chinni.

The more the LZR Racer bodysuits are worn, the more they stretch out. This is why the suits have an ideal life expectancy of 15 to 20 swims. However, this does not mean the bodysuit will last that long. 15 to 20 swims is the maximum. After too many races, the suits will get too big, allowing water to get into them.

Most swimmers, including the UNCW swimmers, wear the LZR Racers for only one meet before tossing them out for a new one. Some don't even wear one the entire meet.

"By the end of the meet my LZR had definitely stretched out. I could feel water getting into it on some of my flip turns. Next year, I think I will get two, so I can wear one the first half and then switch to a newer one towards the end of the meet," said Chinni.

The UNCW swimmers did not pay for their own LZR Racers. Instead, they held a fundraiser at the end of the 2008 season and used the money they made to cover the cost, which ran \$550 per LZR Racer bodysuit. This is very expensive compared to the price of a practice swimsuit, which costs roughly \$30.

Psychologically, swimmers benefit from knowing they are wearing the fastest swimsuit. Their confidence is raised, which ultimately results in improvement. After wearing the LZR Racer for the first time, the UNCW swimmers developed the mindset that they were going to blow their competition out of the water. The fact that almost every swimmer at the meet had on a LZR Racer did not faze them.

"Just knowing that we, as a team, had LZRs on for our races made us feel like we were on top," said Banks.

The UNCW swim team will continue to use the LZR Racer bodysuits in future championship meets, Desboro said. Though the team contributes a lot of their success at the CAA Conference Championship meet to the bodysuits, they still have to train as hard as they did before.

"Hard work is the overall improvement factor," said Northern Kentucky Clippers head swim coach, Jason Roberts. "A swimmer can put the suit on and see faster results from the suit even if they do not work hard. However, a swimmer who works hard will see the same results and will always stay ahead of those who don't work hard because they will improve from working hard. Basically the suits have made the time that is considered a 'good' time faster."

UNCW swimmers are not the only ones who have seen improvement by wearing the LZR Racer bodysuits. Swimmers all over the world with access to the

hi-tech suits have also improved. The number of world records set in 2008 was nearly double that of the average for the thirty preceding years, according to a study by Joel Stager at Indiana University. The LZR Racer bodysuit has caused the par for swimmers to go up.

“In the end, the suit doesn’t make the swimmer; the swimmer makes the suit and the performance. The swimmers are still going to have to work hard in order to improve,” said Desboro.