

This article is the first of a 3 part series on the **underwater pull** of the front crawl swim stroke. The first article I will be discussing the high elbow pull portion of the stroke which specifically focuses on the catch (also known as the first 1/3rd of the pull phase).

High Elbow Pull Critical To Increasing Speed In The Front Crawl.

As a triathlete, I know many of us are all looking for the holy-grail to become faster in the water. Many of us swim length after length and seem to be stuck at the same speed in our 50 meter or 100 meter splits no matter how hard we try to get faster. I have experienced this dilemma for the past couple of years in my own training and I know I'm not alone. I have spent hours taking swim courses on what I need to do to be better swimmer, all the courses discuss all the important things such as proper way to kick, head position in the water, body position, body rotation, high elbow in the catch pull phase among others. All the things mentioned here are important to become a better swimmer but I have never been able to distinguish what are the most critical elements (highest importance) of the stroke to become a faster swimmer or at least none of the courses I have taken would rank which factors are the most critical to becoming faster. That all changed a number of months ago when I came across a 4 time Olympian and gold medalist and a triathlon world champion's book who is now an elite triathlon coach in the United States. 80 % of a swimmer's speed is created by a high elbow position on the catch/pull phase of the stroke. Approximately 20 % of speed is from everything else such as kick, body position, rotation, head position ect. (*Taormina, Swim Speed Secrets, 2014*). Until a swimmer can achieve the correct underwater pull phase of the stroke you will be stuck at the same split times in your training and racing (*Taormina, Swim Speed Secrets, 2014*). Many things in life employ the 80/20 rule and swimming is no different. We spend 80 % of our time hanging out with 20 % of our friends in life and in swimming, the high elbow in the catch pull represents 80 % of speed and 20 % is everything else you have been told. This article will cover some of the key aspects of the High Elbow Position. This comment on the importance of the high elbow position under water in the catch phase does not suggest all the other aspects of such as kick, head position in the water, body position, and body rotation are not important to master but the correct pull needs to be mastered first before spending significant time on the secondary aspects discussed above. (*Taormina, Swim Speed Secrets, 2014*).

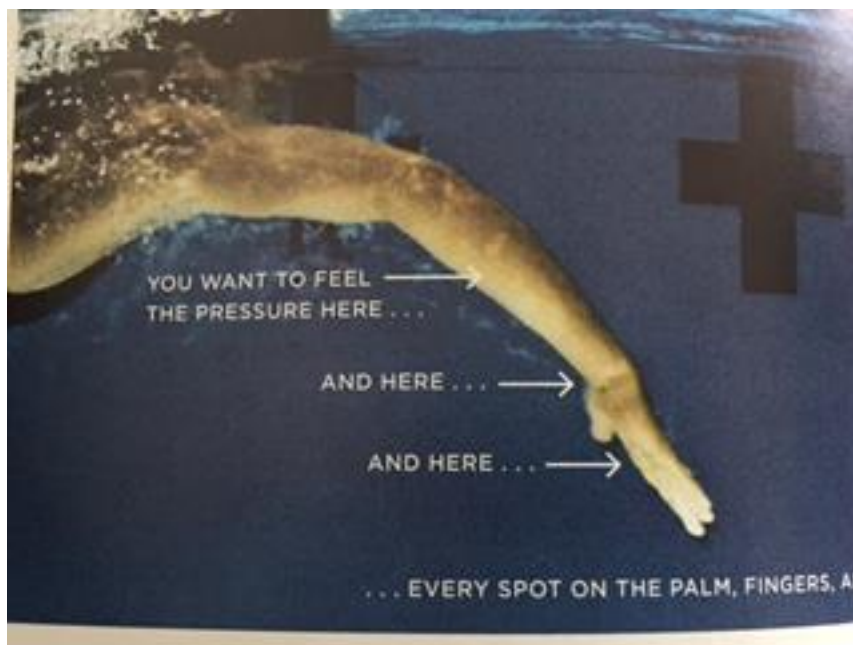
Figure 1.0



The athlete in figure 1.0 is a U.S.A Olympic Gold Medalist so I felt it would be a good idea to use an elite swimmer in discussing this important subject. Figure 1.0 illustrates the beginning of the catch phase of

the stroke. You will notice the elbow and upper arm position in the catch is high in relation to the forearm and hand. You will also notice the forearm and hand looks like a paddle facing straight down to the bottom of the pool. The forearm and the hand are acting as one unit with the key objective of grabbing as much water as possible acting like a paddle to pull the swimmers body forward through the water. The Forearm and hand act no differently in concept as an athletes paddle competing in sculls in the Olympics. In sculls, the athlete wants to maximize propulsion of the boat forward through the water and the paddle is one of the key levers to make this happen. The Forearm and hand in swimming is a critical lever in propelling the body forward through the water. You will also notice in figure 1.0 there is no flexion (bending) of the wrist as the hand and forearm work together as one unit. The hand and wrist should have tone in this phase of the stroke. This mean the hand and wrist are not relaxed but also not super tense in feel. It is somewhere in between. You need to think whatever tension I need to employ to keep the wrist from flexing through this part of the stroke. The reason why this is important because flexing the wrist is like breaking the paddle into two pieces causing the forearm to no longer act like a paddle to propel you through the water. Your paddle is reduced to the palm of your hand if the wrist begins to flex resulting in the paddle being significantly smaller and reducing your ability to “grab” the water and propel the body through the water.

Figure 1.1



You can see from figure 1.1 which is a side view of figure 1.0, the athlete is trying to create the biggest paddle as possible with his forearm, wrist and palm of the hand to “grab” as much water as possible as they set up to do the 2nd part pull phase of the stroke. One of the cues that can sometimes help athletes creates a visual picture in their mind as you attempt to create this paddle position in the water is imagine you are trying to reach over a barrel in front of you and using your forearm and palm of your hand as the paddle to grab the barrel and propel your body forward over the barrel. Another cue often used is visualize a brick wall in front of you and the top of the brick wall is about 12 to 18 inches below you in the water surface in front of you and you want to press your paddle against the brick wall as a way to pull your body forward aggressively using your forearm, wrist and palm of your hand as the

paddle to thrust you forward. These cues have been useful for athletes in creating the paddle position as illustrated in figure 1.1.

The high elbow position in figure 1.0 and 1.1 will not feel natural to swimmers who have been dropping their upper arm and elbow in the catch phase (low elbow position in the catch). See figure 1.2 below for what a dropped elbow looks like. The elbow is clearly dropping here in the catch phase making the paddle (elbow, wrist and palm of the hand) pointing to the pool wall in front of you rather than pointing straight down to the bottom of the pool. Why most swimmers drop the elbow in the catch is because it feels more natural to do because the deltoid muscles (shoulder muscles) in particular the outer shoulder muscles are not required to work as hard. Just stand up while reading this article and try holding your arm in the catch position with the elbow on the same plane as the upper arm as illustrated in figure 1.0 and 1.1 for 15 seconds then do the same thing with a dropped elbow as in figure 1.2. You will find it so much easier to hold the position with the dropped elbow. But the dropped elbow makes the pull virtually useless because it breaks the paddle in two and the only part of the paddle grabbing the water is the palm of your hand since the forearm remains pointing toward the end wall of the pool.

It takes time to eliminate the poor catch phase as per figure 1.2 and implement the correct form as per figure 1.0 and 1.1 but it can be done. Dry land training tools like the Halo Swim Trainer System (figure 1.3) is used by many professional swimmers and triathletes from age groupers to professionals to create the high elbow position on the catch phase. I have been incorporating the Halo Swim Training System with triathletes in their training regime and have seen significant improvements in their catch phase and their times are beginning to drop in their 50 and 100 meter splits which in the end goal. We all want to swim faster.

Figure 1.2



Figure 1.30 Halo Swim Trainer

