

# HCY Swimming Philosophy

At HCY, we strive to help each swimmer reach their potential. Potential in swimming is difficult to define, but it can be easily illustrated.

An athlete can be considered to have reached potential when they achieve 100% development in four areas: maturation (both physical and mental), skill development, aerobic/anaerobic training, and performance execution.

Let's discuss each area:

## **Skill Development:**

Swimming is a skill-based sport. Both the top-tier and the second-tier swimmers in the world have done millions of yards in their careers. So what separates the two levels? Genetics and skill.

While there isn't anything we can do about genetics, we can use science to help us understand skill development and how it should be applied in our sport.

Experts claim that it takes about 40,000 repetitions of a skill before it is automated. When a skill is automated, it can be executed without thinking about it. A great example of this in swimming is doing a practice while thinking about homework, an upcoming social event, friends, boy/girlfriends, or any other topic not related to the execution of the skill they are performing at that time.

How is that possible? Simple. That swimmer has executed that skill so many times that the brain isn't controlling it anymore. Feedback sensors in the central nervous system recognize the signal and continually send the signal to the muscles without it coming back to the brain. Once a skill is automated to this point, it is extremely difficult to change or enhance technique.

If a swimmer swims 5000 yards in a practice and takes 20 strokes per lap, that swimmer will automate their skills in 10 practices. If that swimmer swims 10,000 yards in a practice, they will automate their skills in 5 practices. If the goal is to get the stroke right, you can see how small our window is in which to develop elite-level skills. You can also see how the value of the quality of the laps should outweigh the quantity of the laps.

In swimming, this is the major obstacle. Most programs put a higher value on training levels than technical levels. Doing so puts swimmers in a position that limits their technical development, and as a result, compromises their ability to reach their potential in the sport.

Skill development, or technique work, is the most crucial aspect of swimming development.

## **Aerobic/anaerobic training**

While aerobic and anaerobic training are important, they are not as important as skill development. Certainly swimmers need a base-line level of conditioning to fuel the level of muscle activity during the races. However, how much they need is grossly overestimated in most swimming programs.

What science is finding is that there is a ceiling to how well conditioned athletes can be. Before the tech suit era, many Olympians and high-level swimmers would level off in their improvement and swim several years with minimal improvement. Why? They were at their ceiling, and while their training maintained their conditioning levels, it didn't improve their conditioning levels much.

In addition to having a ceiling to how much athletes can develop their conditioning, science is revealing that this ceiling is reached rather quickly. What this means is that if a swimmer takes their time and develops great strokes, they can catch up with their conditioning later. The same cannot be said the other way, however. If a swimmer tried to reach their training ceiling, they will have engrained inferior strokes, putting them in a position that is difficult to enhance their strokes. If you would like a clearer picture of this, I suggest reading "Talent Code" by Daniel Coyle.

### **Maturation**

With the explosion of post-grad swimming over the last 8 years in USA Swimming, the average age of our Olympic team has increased. While in the 1980's it was estimated that full maturation in the sport occurred at approximately 21 for men and 17 for women, it is now considered to be 27 for men and 22 for women.

That means that a 12 and Under girl swimmer still has 10 years to hit their full physical maturation, while 12 and Under boys have 15 years to hit their full physical maturation.

To keep swimmers in the sport this long, sport enjoyment is a vital component. Whereas overtraining leads to burnout, skill development and a patient approach to training leads to enhanced sport enjoyment and longer sport commitment.

### **Performance Execution**

As swimmers progress in the areas of technique, conditioning, and maturation, they make possible new, more advanced race strategies. Each swimmer has a level of technical integrity that is ideal for each race. In addition, each swimmer has a pattern of aggression that is ideal. It takes time to perfect race strategies. It also takes an intelligent training strategy to build the habits needed to maintain the integrity of the technique in accordance to the designed race strategy.

### **Summary**

In order to reach potential, skill development needs to be nurtured slowly, persistently, and cautiously. It also needs to be valued higher than the quantity of yards swum. In the process, swimmers need to enjoy the sport, which will enable them to remain committed longer, reaching full physical and mental maturation. Throughout the process, swimmers need to slowly build their aerobic and anaerobic conditioning so that their baseline conditioning levels satisfy their energy needs for the length of their specific races.

Because of this, HCY is a technique-first program that values the quality of training over the quantity of the training. The training that is done is based on science with the goal of teaching swimmers to maintain or improve the integrity of their technique in the face of fatigue.