

# Teaching Stroke Efficiency to the Developmental Age Group Swimmer

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While coaching the 10 and under swimmers for the Ozark LSC at the Mid-Western Zone Championships in 2002, I noticed that many competitors in the 50-meter freestyle were taking close to 70 strokes in the race. In the 100-meter freestyle many swimmers were taking close to 150 strokes in the race. Considering most of these swimmers were going 5 meters off their starts, and 5 meters off the turn in the 100, these swimmers were approaching 1.5 strokes per meter. These kids were swimming fast but they were not holding onto the water. The realization that most of the fastest kids in the region were inefficient swimmers made me wonder when the best time for a swimmer to learn stroke efficiency. More importantly, if a swimmer was taught stroke efficiency early, would they have a greater chance of long term success in swimming? There has to be a way to teach these young swimmers to be as fast but to swim more efficiently.

As a developmental level coach (the majority of my swimmers are B to BB swimmers), I have a great opportunity to address whether teaching stroke efficiency at an early age allows a swimmer to develop more fully as an age grouper. I believe that proper skills taught at a young age and repeated until they become a habit are the proper foundation for age group swimmers. More importantly this foundation will increase each swimmers chances of being great later in his/her career. Having fast age groupers is fun but fast age groupers are not being offered college scholarships. Instead, give them great skills when they are young so they can be fast when they are 17 or 18.

## Efficiency Begins with Proper Body Position on Land

The beginning stage of building a good foundation for strokes starts with creating great aquatic posture. The more streamlined and balanced a swimmer can make his/her body the easier it will be for him/her to swim. The bodywork that I had my swimmers do is based on the theories of Bill Boomer (references to teach these skills are the **videos *The Boomer Chronicles Number One and Number Two* and the *Richard Quick's Posture, Line and Balance***). The swimmers start by learning the basic skills of aquatic posture. As they mastered the basic skills, additional skills were added which better prepared them for incorporating efficiency into their technique.

**For the first eight weeks of the short-course season my swimmers would do ten to fifteen minutes of bodywork on deck.** The bodywork consisted of swimmers **learning how to lengthen or "grow their spine"**. "Growing the spine" results in a more streamlined body position that is the fundamental position for building strokes. **Once they mastered these skills, I introduced some balance skills while working on their aquatic posture.** Balance work ranged from having swimmers create an aquatic posture and balance on one leg to using balance-boards and foam rolls. **Learning how to move body segments, increase and decrease core muscle tone and undulation of the spine were also introduced during this time.** All of the skills are geared towards teaching the swimmer how to move while still maintaining the most streamlined body position possible.

## Maintaining Body Position in the Water

**Floating with good aquatic posture was the next step** in the sequence for teaching my swimmers stroke efficiency. **The more a swimmer can learn to float with great aquatic posture and balance that posture the more their strokes and kicking can be used for propulsion.** If a swimmer

has poor aquatic posture and balance the majority of their strokes and kicking will be used to stabilize their body position. The floating drills described below were taught in the same time frame as the aquatic posture work that was being done in dryland. **Ten minutes to fifteen of each practice was dedicated to working on aquatic postures in the water.** The goal was to take a skill that swimmers had mastered on land and translate those skills to the water.

To reinforce proper body position and form good habits, **controlled swimming was done at this time. The floating drills were broken up with short swim, kick or drill sets that were done slowly. The focus of those sets was on great aquatic posture** (a streamlined and balanced body position) not swimming speed. **Because of this increased focus on aquatic posture and improving efficiency I did decrease yardage by 25 to 30 percent.** Again the goal is to create a solid foundation to build swimmers skills. As swimmers became more advanced and mastered more of the aquatic posture skills I would link several of them together.

## **The Efficiency Test-Translating Posture to Stroke Efficiency**

Once my swimmers had worked on a series of aquatic posture skills **the next step was to work on their stroke efficiency. Stroke efficiency sets were periodically used to teach swimmers to incorporate good posture into efficient swimming. These sets consisted of swimmers having a partner count their strokes over a set distance. The goals of these sets were to maintain aquatic posture while minimizing stroke counts over a specific distance.** During the time that the stroke efficiency sets were conducted, **we still did posture work on deck and in the water. The stroke efficiency sets were based on two, three-month cycles. Each week of each month we did one long axis and one short axis efficiency set.** The set for the first month of each cycle was 2 X 8 X 25 @1:00, for the second month of each cycle swimmers did 2 X 5 X 50 @ 1:40 and the third month of each cycle the set was 2 X 4 X 75 @ 2:00. **One round of each set was free or fly and the second round of each set was back or breast. The intervals on these sets give coaches a lot of time to watch strokes and body position and to make specific corrections.** As the intervals do get faster and the yardage increases in the cycle, swimmers are challenged to maintain their efficiency. **One advantage to this system is its flexibility. Swimmers with higher skill levels can do these sets on faster intervals.** I told my swimmers **it was their goal on the longer swims to not give up any strokes.** Swimmers were given their averages from the previous cycles to use as a yardstick for their improvement. Doing these cycles was a big asset to the swimmers aerobic conditioning as well as their stroke mechanics.

As mentioned above each swimmer had a partner on deck to count their strokes. While doing stroke counts the swimmers on deck would also work on their posture and muscle tone. I had time to check posture and tone of the swimmers who were on deck as well as watch swimmers in the water. Both groups were getting constant feedback on what they were doing well and how they could improve on specific weaknesses. **Swimmers in the water, because they were not counting their own strokes, could focus on having the highest quality swims during the set. High quality comes from great body position that allows swimmers to use their strokes for propulsion.** The goal for the swimmers was to hold their stroke count as consistently as possible on each set. The goal for the second cycle was to improve their stroke count from their averages on the first cycle.

## **Create Challenges: Drills that both Reinforce and Test Efficiency**

**My female swimmers tended to have a higher level of skill acquisition than my male swimmers.** The majority of my female swimmers had very consistent stroke counts during the first cycle, and did very well making improvements on their stroke averages. The males in my group were inconsistent with their stroke counts during the first cycle but they showed greater consistency in main-

taining their stroke counts during the second cycle. **With young male swimmers there was a need to establish some guidelines before doing efficiency sets and holding them to the guidelines when they performed the sets. I also found that it was helpful for the male swimmers to create some little “challenges” when working on skills.**

Two drills that really help the boys in my groups and reinforced stroke efficiency skills were “Oreo” swims and “Caveman” rates. Both of these drills had swimmers focus on their aquatic posture and balance skills as they were swimming. The better that a swimmer could focus on these skills the more successful they were with these drills. My boys really used the challenges of doing these drills correctly to become better swimmers. Holding the boys to the guidelines of these drills was, to a certain extent, easier than having them focus on the stroke efficiency sets and cycles.

**With the “Oreo” swims I would have swimmers break a 25 into three segments.** The first segment was from the wall to the first “Oreo” (the closest 15 meter mark) about 8 yards away. Swimmers would have to push off the wall in a balanced streamline position and glide to the first “Oreo”. From the first “Oreo” they would swim a certain number of strokes (I started with six for long axis strokes and four for short axis strokes) to the second “Oreo” about 8 yards away. **As swimmers efficiency would improve I would decrease the number of strokes they could take from “Oreo” to “Oreo”.** The final segment would have the swimmers taking a certain number of strokes from the second “Oreo” to the wall for a turn or a finish. This drill allowed swimmers to work on their stroke efficiency as well as work on specific segments of skills that will enhance their racing.

“Caveman” rates were a subjective way to introduce stroke rates to developmental swimmers. Though more expensive options exist, I used a metronome from a music shop, a flag pole and a lane line wrench. I would set the metronome to beep every few seconds for a certain stroke rate. **Swimmers would start this drill in a balanced streamline posture while floating at one set of backstroke flags. Holding the flagpole in the water I would tap the pole each time the metronome would beep.** This would give the swimmers an audible cue for their strokes. **Between each stroke swimmer needed to maintain good balanced aquatic posture. This is very tough to do at lower stroke rates and allows coaches to see where swimmers need to make improvements in their body position. Once swimmers have made those improvements then I would let them move onto faster rates. The boys really enjoyed this challenge.**

## **The Benefits of Teaching Stroke Efficiency**

**One of the biggest benefits of stroke efficiency was more of my swimmers had the confidence to do distance events** in meets. I believe that this confidence came from the work that was conducted through the cycles of stroke efficiency work. **As swimmers could see they were maintaining their stroke counts as distances increased and intervals decreased they knew they were improving.** Because of this knowledge of improvement swimmers were more willing to challenge themselves. I had six 11 & 12 year olds do a distance pentathlon meet (200 fly, back, breast, free and 400 IM), three 12 year olds swim the 1650 at a distance meet and two 10 year olds swim the 500 free and the 400 IM at a distance meet. These are reasonable numbers for these distance events when considering the decreased yardage mentioned above. When swimmers have the confidence to swim distance events, they approach their other events with the same degree of confidence and generally had more consistent results from meet to meet.

**Teaching stroke efficiency to young age groups swimmers is a great benefit on many levels. All of the sets are done at an aerobic level and a building an aerobic base is critical to future development.** A sense of **teamwork and responsibility is created through the use of partners.** As swimmers work on improving their stroke efficiency during each cycle they are learning some intrinsic values of improving their swimming. **Swimmers are also focused on maintaining correct**

**technique throughout the sets and coaches have time to reinforce this.** Using drills to challenge swimmers while working on aquatic posture, balance and stroke efficiency further enhance the learning experiences for young swimmers. While there are some immediate results from using this structure for coaching, the long-term results are what are most important. I believe that teaching proper foundational skills and stroke efficiency is one way to help swimmers reach their future potential.

## Conclusion

The ideas presented here are a good starting point for working with developmental swimmers. **The methods used above progress from general movements (deck work) to more specific movements (swimming).** It is this progression that helps develop basic aerobic function and stroke efficiency. Through this work swimmers can gain more confidence in their strokes and may show more consistent results in competition. More importantly these ideas are laying the foundation for long term success for the swimmers.

Based on the theories presented here there are potential areas for long term study: when is the best time/age to introduce these methods to swimmers; what is the correlation between improved efficiency and swimming speed over a swimmers career; what is the time frame that swimmers should undergo this form of training; does this method of training have greater benefits for sprinters or distance swimmers and others.

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