



Strength Training For Swimmers *By Joe Stein, President*



Specificity, one of the core principles of exercise science tells us that the best exercise for golf is playing golf and the best exercise for baseball is playing baseball. True enough. To take their games to the next level, Tiger Woods, Roger Clemens and other professional athletes strength train to improve sport-specific abilities and reduce the risk of injuries. Locally I have developed strength-training programs for high school, collegiate and recreational athletes who participate in soccer, golf, tennis, basketball and baseball. I was a little wet behind the ears when it came to developing a program for competitive swimmers.

However, as the summer approached, it was time to dive into strength training a swimmer. A client asked if I could do off-season strength training of her teenage daughter Micaela, who swims competitively for the Red Bank Y. We agreed the swim team coach would do in-water training for endurance and technique. My responsibility was to develop land-based strength training. The design of this program focused on five goals: prevent overuse injuries, increase strength without significantly increasing muscle size, develop power, increase flexibility and improve nutrition. Let's look at each of these goals in depth:

Prevent Overuse Injuries

Swimmers' shoulders take a pounding. Throughout a practice session, a swimmer may perform over 10,000 shoulder movements. The large muscles of the chest, back and shoulders usually can handle this repetition due to their relative strength. But what about the four smaller muscles that comprise the rotator cuff? These muscles anchor the arm in the shoulder socket and facilitate rotation. With a lot of anatomy jammed into a very small space, overuse can cause impingements, which often lead to tendonitis and bursitis. Exercising with light weights and elastic tubing can add strength and flexibility to the rotators in a proactive and preemptive fashion.

Increase Strength Without Adding Size

Compared to a runner moving through air, swimmers are unique athletes. Their medium, water, provides significant resistance as they move through it. Bulky musculature with sharp definition would increase drag and reduce speed. That is why most competitive swimmers have strong but smooth muscles. The specific protocol will vary by individual; however exercising with light to moderate weights used in multiple sets containing higher number repetitions will increase strength and endurance. Exercises for strengthening the abdominals, low back and obliques will increase core stability and improve the transfer of biomechanical forces.

Develop Power

Once a solid foundation of strength is achieved, exercises to develop power can be introduced to improve specific skills such as the starting dive and flip turn. Bounding, leaping and plyometric box jumping can all be used to develop the bursts of power needed to give swimmers a competitive advantage.

Increase Flexibility

Improving one's flexibility is like upgrading the transmission in your car: it allows the power of the engine to be transferred to the wheels in an optimum way. Having a full range of motion allows a swimmer to develop maximum efficiency with arm movements as well as their kicking. Increased efficiency equates to less effort needed to move through the water. In addition to classic static stretching, assisted stretching can be used to maximize flexibility and prevent injuries, especially in the back, chest and shoulders.

Improve Nutrition

Helping to improve a teenager's nutrition can be especially challenging. Since no eating takes place during our training sessions, the implementation of this takes place under the watchful eye of the parents. In addition, let's face it, kids like to eat what they like to eat—whether it is healthy or not. Painless, incremental changes to diet seem to work best: right now we are working on breakfast. The concept of better quality inputs will yield better performance have taken root. Whole-wheat English muffins, 2% milk American cheese, fresh fruit and 99% fat-free yogurt is a great start to anyone's day. If having clearer skin and stronger hair are the fringe benefits of increasing water consumption, why not drink more water?

Take the plunge

When the swim season begins, I will keep you posted regarding the progress of how Micaela fares in competition. When *you* are ready to take your training to the next level, a personal trainer can help you develop the competitive edge needed to swim with the big fish.

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