

## STRENGTH TRAINING FOR MULTI-SPORTERS

By Rob Maxwell, M.A.

At one time, there was much debate over whether endurance athletes should strength train. Now, there doesn't appear to be as much debate. The trend is moving to **should** versus shouldn't. I take it a step further and state that EVERYBODY should strength train—and strength train correctly. Like every other training parameter these days, strength training has now also become overly complicated. In reality, proper strength training is not complicated. In fact, it's very straightforward. What often happens is authors and trainers forget their physiology lessons when they begin writing up programs, and they appear to get trapped by the “more is better” myth. There are many effective programs out there for strength training. But there are also many that are extremely inefficient. I don't want to cover all of the bad programs out there, because if something is working for you, then do it. This is about the most effective, most efficient path to making your muscles stronger, so you can be a better endurance athlete.

Why should multi-sporters work out? The biggest reasons are to **stay injury free** and to be more **fit and healthy in general**. Generally, strength training should not be thought of as DIRECTLY making you a better swimmer, cyclist, and/or runner (look up the principal of sport specificity). Yes, stronger quads will help you climb better on your bike, but so will climbing. Strengthening your upper body will help you carry your arms as you fatigue in a long running race, but again, so will running. In other words, the best way to make improvements in the sport of triathlon is to swim, bike, and run. But don't discount staying injury free, because you cannot get faster if you can't train. And this is the most critical aspect of strength training for endurance athletes. If you strength train correctly, it makes injuries much less likely. Yes, it's still possible to be strong and get injured, but by building up the muscles around the joints, soft tissue and bone, it makes injuries far less likely to happen. **This is the way to get fast. Stay in the game.** Years of consistent improvements will give you the greatest gains. Every time you have to lay off due to injury, you're putting yourself in a hole. You basically have to start back from scratch (depending on the lay off) and build back up. There is some muscle memory, but you're still pulling yourself out of a hole. I come from a long history of working out, since I used to actually body build, so I never had to be convinced. I started out that way. Rarely and thankfully, I rarely lose time due to injury. I keep myself strong, and I practice common sense. These two things should keep you training year round.

The other benefit to strength training is you're simply more fit. Muscle tone is good, right? Yes, it is. Do you realize that you lose 5-10% of your muscle mass per decade after the age of 30, unless you directly try to keep it on? And do you realize this is why your metabolism lowers? Plus, don't you want to have some muscle on the body? Simply put, it makes for a more fit and healthy body. Many endurance athletes fear that strength training will cause them to bulk up. This fear is typically not justified. And it's not the training program that denotes that. It's the genes. Most people don't just naturally bulk up—not to the point of slowing down or being hugely (pardon pun) noticeable. Body builders are born, not made. Most endurance athletes are ectomorphs (naturally “skinny”), and that physique will not build easily. Even mesomorphs (naturally muscular) will struggle to put on significant muscle while doing endurance events. This is mostly due to the fact that most of the needed calories to build muscle are being used up

with the endurance training. And to build anything—fat or muscle, you need an excess of calories. In other words, it becomes a goal in itself. If it were so easy, why would body builders (who cheat) go to all means to try to gain added muscle? Trust me, don't fear the bulk. It won't happen by accident. What will happen is you'll gain that little bit of muscle that will make you stronger and more fit.

As I said above, many writers and trainers have made strength training too complicated. Without stating what “they” do wrong, I'll simply tell you what's right, and then you can determine what is best for you. The most important thing to keep in mind regarding strength training is **TIME UNDER LOAD**. I rarely see this mentioned when I read articles on strength training. Time under load is the amount of time that the muscle tissue is being stimulated. **For hypertrophy (increased muscle mass) to occur, the muscle must fatigue between 40 and 90 seconds.** We have two basic metabolic systems: the aerobic system and the anaerobic system. Both need to be stimulated at the correct intensity for the correct amount of time. Your anaerobic system is the system you're attempting to make stronger in a strength training session--your fast twitch muscle fibers. Fatiguing the muscles in the 40-90 second range is what is referred to as creating an inroad. Most studies indicate that if you've created an inroad to the muscle of 20% (weakening by 20%), you've done what you need to get results. Longer duration than that and you're getting into pre-aerobic, meaning the intensity is not high enough. Reps were created because it's simply easier to count, and it gives you a means of knowing when you need to increase resistance. I don't believe most people, many trainers included, understand where rep ranges come from. For example, 8-12 reps has been used for years, because if you do a 6 second rep—2 on the positive and 4 on the negative (which is recommended), and you fatigue the muscle in that range, this means you were under load for 48 to 72 seconds, which is right in the anaerobic window. I know this might be new to a lot of you, but this is not new to strength research. There are a lot of people who try to get away from these basic facts, but proper training comes back to this. Additionally, hypertrophy and strength go hand and hand. We get stronger by adding size to each individual muscle fiber (hypertrophy). So this is the science. Dispute it all you like. It's not going to change. Why do you think sprinters have such huge quads? Do you think they count the “reps” of peddle strokes climbing the hill? Or do they simply hold that anaerobic burn for a minute or so until they can't anymore? Time under load is the same thing.

There is your science, and now let's build your program. So what should multi-sporters do? Really the same thing everybody does. The body, regardless of what type of athlete you are, needs to train the same way. Triathletes are going to want to make sure they choose certain exercises, so they know they are protecting joints that are more vulnerable.

A program I recommend:

- **FREQUENCY:** 2 days per week. If you work intensely, studies show the greatest strength gains will be made in 2 non-consecutive days per week. Studies also show that 1 day per week (in season) will maintain strength gains.
- **INTENSITY:** Each set should be taken to momentary muscular failure, which is the point at which you cannot do another rep in good form. If not, an inroad cannot be made.
- **SETS:** 1. Yes, one. This is always a point of much debate. But studies have shown time and time again that strength gains occur from intensity, not volume. Doing more simply

impedes your recovery system. Remember, the intensity creates the inroad. Doing more will not create more, it will simply take away recovery.

- **REPS:** Again, the anaerobic system needs to be stimulated, and that occurs between 40 and 90 seconds. So a range of 10 to 15 is best, if you're doing a 4-6 second rep.
- **SPEED OF MOVEMENT:** 4-6 seconds. Yes, this matters. You want to stimulate the muscle tissue—not the joint. When you go slowly, you're putting more stress on the muscle and taking away momentum. Momentum takes the load off of the muscles. (There are some advocates of “super slow”, but that is more advanced training).
- **FORM:** This is critical. Again, this is mostly about the speed of movement, but also remember to pause in the contracted position, and do not take the load off of the muscles by resting at the bottom. Keep muscles under load and keep movements smooth.
- **PROGRESSION:** Remember overload. You can't make improvements if you stay the same. So each time you can hit the high end of your reps in good form, you should increase by roughly 5% more resistance the next time.
- **INTENSITY HELPERS:** When you can handle the intensity of the workout and feel like you can and want to do more, don't add sets. Simply make it more intense. This can be done with any of these methods: breakdowns, pre-exhaust, negative only training, assisted reps, and super slow protocols (contact me to go over any of these techniques).
- **EXERCISE ORDER:** Largest to smallest in muscle groups.
- **EXERCISE SELECTION:** Again, not too much. Doing a full body workout of 8-12 exercises is ideal. You want to stimulate and have plenty of time and energy to swim, bike, and run.
- **MY FAVORITE EXERCISES FOR TRIATHLETES:** Leg press, leg extension, leg curl, chest press, seated row or lat pulldown, overhead shoulder press, bicep curl, tricep extension, abdominal curl on machine, lower back extension on machine. Occasionally I'll see the point in doing a tibia dorsi flexion exercise.

I hope this clears up a lot of misguided thinking. Strength training is my specialty, and I'm happy to discuss with anybody the ins and outs of proper strength training. Sometimes it's human nature to think more is better. And in this case, this thinking is correct, but the “real” more is in intensity. Proper strength training is **HARD**, so sometimes people really don't want to accept that, and they come up with routines that are longer and don't “hurt” as much. But all they end up doing with that is taking a long, inefficient road back to the same place.