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Endurance Athletes Progressive Strength Training Program

Base Build 6 – 8 weeks & Muscular Force 4 – 6 weeks (10 – 14 weeks total)

This progressive strength training program comes in two parts. Part 1 contains 6 to 8 weeks to build a functional base with proper lifting form and adaptations while building muscular endurance. Part 2 progress to build muscular force for 4 to 6 weeks.

Strength Training Guidelines

Equipment: dumbbells can be used for all lifts, or you can also use barbells, or a mix.

When to Lift

Strength training is best done after you recover from your sport-specific training session or at least several hours before. For example, if you ride in the evening, do this strength training in the morning or early afternoon. Or do the strength training after you complete your sport-specific training with about 2 - 4 hours recovery in between. Depending on how big your sport-specific training sessions was you may need more recovery before doing a workout.

Do not strength train immediately before or after a sport-specific training session. Strength training stresses the muscles in order to make them stronger. If your muscles are worked prior to a sport-specific training session, it may hinder your sport-specific training performance. This defeats the purpose of using strength training for endurance athletes. If you train immediately after, you may not have enough muscle glycogen available to capitalize off the strength workout. There is no sense doing it if you can't give it your best. Also, weight lifting with a fatigued body can increase the risk of a muscle or tendon strain. Strength training is meant to help enhance your sport-specific performance, not hinder it.

While strength training is an asset to endurance sports training, your sport-specific training activities always need to take priority.

Frequency

Generally, 2 x is enough, especially during the competitive stage of training where most of your high intensity work needs to be done in your sport. In the off-season or early base building, athletes can strength train 3 – 4 x per week. Also, if time permits, athletes can work on specific weak areas daily. For example, taking 5-10 minutes a day to strengthen a weak glute med or increase mobility in the thoracic cavity. You don't have to do everything all in one workout. You can divide the exercises up to suit your schedule. This program is a guide. Modify it to suit you.



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Soreness

If your strength training workouts are making you very sore on a regular basis, the load is too much. Take a break from lifting until soreness subsides, reduce weights slightly and begin again.

Regardless of what most people think, muscle soreness is NOT an appropriate way to measure a good workout or effective training. You can have extremely effective training sessions without muscle soreness. In fact, as your strength and fitness increases, muscle soreness should subside. In general, muscle soreness is created from increasing stress and demand on the body, such as a new exercise, training at a higher intensity than usual, increasing load, volume, etc. While soreness every now and then is normal, too much of it can be a sign of overtraining, not enough recovery time, can delay your progress and increase the risk of getting injured.

Pre-Workout Nutrition

Make sure you are properly fuelled before doing your strength training so you are able to perform well in all your lifts. Every rep matters. An energy depleted body can negatively impact the quality of your training session. I suggest carbohydrates that are easy to digest, such as a pre-workout shake with bananas, berries, maple syrup, and a half-scoop of protein powder.

Post-Workout Nutrition

Eat a balance meal within 2 hours of working out with a focus on quality protein. On high volume training days, eat carbs and protein more frequently to ensure your body is using nutrients effectively. The body can only use so much food at one time so for endurance athletes, smaller meals more frequently can be ideal for most. Everyone is unique. Be aware of the signs that you are lacking nutrition/calories: rapid weight loss, chronic fatigue, poor performance, lack of enthusiasm to train, struggle to complete workouts (bonking), decrease in fitness (speed, VO2 & FTP, higher resting heart rate).

If you have questions or need help with this plan, feel free to email me.

Happy training!

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PART 1 – Foundations & Muscular Endurance

Guided Workout Video: <https://youtu.be/2-7GjK0I5U8>

GOAL: anatomical adaptations through foundational movement patterns (hip hinge, squat, lunge, push, pull, carry); increase muscular endurance and structural tolerance; develop core stiffness; enhance movement economy and efficiency of sport-specific performance.

- **Frequency:** full session two times per week minimum, three times a week maximum
- **Reps:** 15 reps
- **Sets:** 1 – 3 sets
- **Lbs:** 50 – 70% of 1 rep max
- **Time:** 30 minutes, includes warm up and cool down
- **Warm up:** 5 minutes, dynamic warm up (ie: treadmill, bodyweight exercises).
- **Cool Down:** 5 minutes full body stretch, foam roll, or restorative yoga.

STRENGTH TRAINING PROGRAM GUIDELINES for PART 1

Practice **progressive overload** safely by following the structure below 2-3 x per week:

- Week 1: complete ONE set of 15 reps per exercise.
- Week 2: complete TWO sets of 15 reps per exercise.
- Week 3: complete THREE sets of 15 reps per exercise.
- Week 4-8: continue with 3 sets of 15 reps per exercise.

Gradually increase load by small increments until you are at a load that works you to fatigue but still able to maintain excellent form. For example, if you deadlift 50lbs, then the following session you can add 5lbs for a 55lb deadlift. Do NOT make any major jumps in load, such as doubling the weight, unless you feel the weight is extremely light. It is important to work slowly at building up your structural tolerance to avoid injury and prevent these workouts from hindering your sport-specific training.



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During this period, we are building up structural tolerance through strength training that focuses on building muscular endurance and anatomical adaptations. Focus should be on using proper form, increasing range of motion (ROM) and developing pain-free functional movement patterns. This requires using loads of about 50-70% of your 1 rep max. For example, if you can deadlift 200 lbs, you would use 100 lbs to start.

If you do not know your 1 rep max, you can use strengthlevel.com to help determine this by entering your workouts. They will make the calculation. Or you can simply choose a light weight to begin and adjust it as needed. The idea is to perform, with excellent form, at a high rep for time under tension, helping you to increase muscular endurance and develop foundational functional movements patterns. Use a controlled tempo (2 seconds on the contraction, 3 – 4 seconds on lowering the weight) and be mindful of every single rep. Each one matters!

STRENGTH TRAINING LOG

Print this page and record your sets & weight as you progress. After 4 -8 weeks, you can progress to my muscular force training program.

		Wk. 1	Wk. 2	Wk. 3	Wk. 4	Wk. 5	Wk. 6	Wk. 7	Wk. 8
EXERCISE	Reps	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs	Sets/ Lbs
*Farmer's Carry	30 secs								
Romanian Deadlift	15								
Goblet Squat	15								
Reverse Lunge (per leg)	15								
Bench Press	15								
Bent-Over Row	15								



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Part 2 – Muscular Force

Guided Workout Video: <https://youtu.be/zSARysFn8hI>

GOAL: increase muscular force through functional movement patterns (hip hinge, squat, lunge, push, pull, carry); increase structural tolerance; develop core stiffness; enhance movement economy, efficiency, and generate more force to transfer over into your sport.

Make sure you completed the foundational lifting period for 4 – 8 weeks before attempting this progressive stage of strength training.

- **Frequency:** full session two times per week minimum, three times a week maximum
- **Reps:** 5 - 10 reps
- **Sets:** 3+ sets
- **Lbs:** 80% or more of 1 rep max
- **Time:** 35 minutes, includes warm up and cool down
- **Warm up:** 5 minutes, dynamic warm up
- **Cool Down:** 10 minutes full body stretch, foam roll, or restorative yoga.

This workout uses the **progressive overload** principal to train safely and effectively.

- Week 1 & 2: complete the routine as stated, become familiar with new routine
- Week 4 – 8: heavy focus on forced reps but still maintain form and control

Begin to increase load by small increments until you are at a load that works you to fatigue but still able to maintain excellent form. For example, if you deadlift 50lbs, then the following session you can add 5lbs. Do NOT make any major jumps in load. It is important to work slowly at building up your structural tolerance to avoid injury and prevent these workouts from hindering your triathlon specific training.

During the latter part of base building period, we are working to increase muscular force. This requires using loads of about 80-85% of your 1 rep max. For example, if you can deadlift 200 lbs, you would use 164 lbs to start.

Muscular force is the goal – moving a heavy weight with more force (oomph). This is also known as dynamic lifting or lifting to enhance power. Be careful not to jerk the weights. While you can do the contraction quicker (1-2 seconds), be sure to lower the weight (eccentric) under control. Do not slam the weights off the rack or floor. Exercise control and always keep a stiff core. As Dr. Stu McGill says best, “Work to spare the spine.”



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If you do not know your 1 rep max, you can use strengthlevel.com to help determine this by entering your workouts. They will make the calculation. Or you can simply take the weights you used at the end of the foundational stage, increase them by 10%, and start from there. The idea is to perform, with excellent form, increased muscular force with every single rep for the entire set. Use a controlled tempo. The last rep should be doable but challenges you a great deal.

In the chart below, I suggest sets and reps but you will need to determine the weight. Print this page and record your weight as you progress. After 4 -6 weeks, and when you enter your build stage of your training, you will advance to the next level in your weight lifting to build power.

EXERCISE	REPS	SETS	LBS	LBS	LBS	LBS	LBS	LBS
*Dumbbell Deadlift	5	3+						
Goblet Squat	4	8						
Alternating Reverse Lunges	10	3						
Renegade Row w/ Push-Up	8	3						

*You can do more sets for the deadlift if you like, or increase the reps to 8, if you do not have heavy enough weights.

NOTE: Every single exercise above trains the entire core. The core work is built in the workout using stiff-core training principals. Make sure you resist any flexion, extension or rotation of the spine. Keep the spine neutral at all times in every position. Brace your core to increase stiffness.

At this stage, you can also add plyometrics into your training such as box jumps, clap push-ups, skip rope, jump lunges, etc. Do these before the lifts and only spend about 5 – 10 minutes on them. Each plyo rep should be clean and precise. It's not endurance you are working on here but power, so make sure you take adequate rest between each rep = cleaner reps.

