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The Benefits of Multi-Sport Strengthening: How to Do It Without Wasting Time



to gradually increase their time spent in multi-sport events such as swimming, cycling, and running.

Several priorities can decrease the likelihood of common overuse injuries in these sports, including meticulous attention to proper mechanics, a correct bike fitting, adequate training gear, stretching, and strength training. Today, we'll focus on the habit of strength training.

Benefits of strength training. Before anyone can throw out excuses as to why they can't add strength work into their training schedule, we remind you of just a few of its benefits:

1. Don't underestimate the role strong muscles play in performance. Stronger muscles produce more force, which makes us more efficient and faster.
2. Improving our training and race-day performance is the result of a more symmetrical body. Such balance involves the upper and lower portions of the body, the right and left sides, and the agonist and antagonist muscles. We reach our full force production potential when balance is achieved throughout muscle groups in each joint of the body.
3. Strength training increases time to exhaustion and lends to a higher lactate threshold point. Put simply, an athlete can swim, bike, or run further at a given intensity level than they could before.
4. Athletes who lift have enhanced protection from injury.

By Rebecca Bennion, Ryan Stromberg, and Phil Pattison

TOSH - The Orthopedic Specialty Hospital

Anyone who's spent much time swimming, biking, or running can attest to the repetitive nature of these sports. Lap after lap and mile after mile our muscles, tendons, ligaments, and joints go through the same range of motion. Safely building quantity through strict training allows our bodies to adapt to the prolonged repetition over the hours, days, and weeks spent in the pool, on the bike, and in running shoes.

But even the most diligent athlete may find themselves recuperating from overuse injuries despite their best efforts

How to do strength training without burning up too much time. Let's face it — time is a concern.

Swimming, biking, and running each require a significant time commitment. Then there are those who are training for a triathlon. How can you possibly train for each discipline and now add resistance training without sacrificing too much time away from other life priorities?

Here are tips and exercises that will give you the best return for your efforts:

- 1. **Perform exercises that work more than one joint at a time.** Consider the difference between performing a leg extension versus a squat. A leg extension only works one joint, while a squat targets multiple joints in one exercise. Whether we're swimming, cycling, or running, our bodies use multiple joints at a time. Strength train the same way.
- 2. **Imitate movements and positioning to replicate your sport mechanics.** Using the squat as an example again, there are a variety of ways to perform that exercise. Stance width can vary from narrow to wide and any position between. Consider your foot stance when you ride your bike. When doing squats, you can align yourself in that same width.

- 3. **Keep the number of exercises you do to a minimum.** We're trying to do what's best for our bodies in the least possible amount of time. Rather than continually adding exercises to your routine, alternate which exercises you do and focus on sets and reps. Changing it up will force your body to continually adapt and therefore become stronger.
- 4. **Do upper and lower body exercises no matter what discipline you focus on the most.** When we're cycling and running, we use our lower body a lot, so it makes sense that we'd want to focus on building strength in our hips and legs. As a swimmer, it's obvious that upper body strength is vital. But don't forget that upper body strength is necessary for cyclist and runners and lower body strength is necessary for swimmers too. Whole body balance is vital to proper mechanics, stability, and power in each of these sports.
- 5. **Include core exercises (abdominals and back) in your routine.** What connects the upper body and lower body? What ensures that movements between the upper and lower body counterbalance one another? It's your core. Performance suffers as force is lost because of a weak core. Exercises that improve core strength can be done daily if time permits.

Examples of high-quality exercises you can try:

Exercise	What it Works	Benefiting Sport
Bohemian Lunges	Glutes, hamstrings, quads	Cycling, Running
Mini Band March	Hips, core	Cycling, Running
Mini Band Square	Hips, glutes, quads, core	Cycling, Running
Single Leg Bridge	Glutes, hamstrings	Cycling, Running
Renegade Row	Core, hips, shoulders, biceps, triceps, back, chest	Cycling, Swimming, Running
Side Plank with Trunk Rotation	Shoulders, chest, core	Cycling, Swimming, Running
External & Internal Rotation	Shoulders	Swimming
Lying T's & Y's	Shoulders, back	Swimming, Running
Fire Hydrants	Hips, glutes	Cycling, Swimming, Running

Bohemian lunges (also called Bulgarian or balance lunges) are a great lower body exercise and can be easily progressed to increase intensity.

Start with body weight, then add dumbbells or kettlebells, and finally add a hop with or without weight to further increase the intensity. To perform them, place one foot on a chair or stable surface behind you with the other foot slightly in front of your hips. Be sure your hips are squared up and not rotated to one side or the other. Slowly lower your body down by bending at the knees.

Be sure to keep your forward knee centered over your foot, keeping your hip, knee, and ankle in a straight line without letting the patella go forward of the toes. Pushing back up through the ball of your foot will emphasize your quad while pushing up through your heel will place more emphasis on your glutes and hamstrings. As you choose to progress to the hop, you should push through the ball of your foot, keeping a neutral alignment throughout both the push-off and landing.

Try to land as softly as possible to emphasize the eccentric control of the muscles. You can also place your back foot on an unstable surface such as a Swiss ball as another

means of progression, again emphasizing the correct alignment. All the work should be done with the front leg. A simple way to be sure you're working the legs correctly is to pay attention to how much pressure is on your back foot as you're pressing up.

There should only be enough pressure on the back foot to keep you stable throughout the motion. We prefer to rest the top of our foot on the chair rather than our toe because we find it harder to push up with our back foot that way. Repeat three sets of 8-12 on each leg.



Mini Band March (resistance loop) marches are a great exercise for your hip flexors and ankle dorsiflexors. They'll also work your core and challenge your balance.

To perform the mini band march, place the band around your feet with the feet shoulder-width apart and march in place by alternating your legs. Bring your knee to hip height while keeping a slight bend in the stance leg.

As tension on the band increases, it will pull the marching leg toward midline so be sure to resist this as you drive your leg up by keeping your knees directly in front of your hips. The closer to your toes the band is, the more it will work your ankle dorsiflexors, but be cautious, since it makes it more challenging to keep the band from slipping off of your foot. Hip flexor and ankle dorsiflexor strength are important for all aspects of triathlon. Try three sets of 10 – 15.

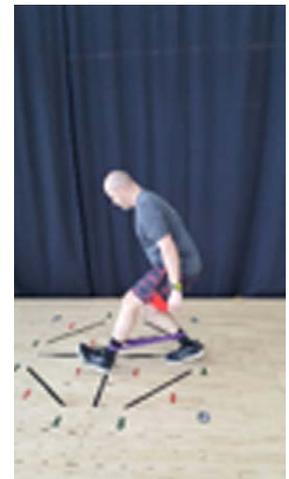


Mini Band Square is an exercise that works your hip abductors, flexors, and extensors. You'll also feel it in your quads due to the positioning.

To perform the exercise, place the band around your ankles and squat down slightly so you have about a 30-degree bend in your knees. Think of a defensive posture in basketball; keep your body weight centered and toes forward. Leading with your right foot, side-step 10 feet to the right in a side-shuffle motion. You want to keep tension on the band at all times so don't bring your feet too close together and don't drag them.

After 10 feet of side-stepping, you'll walk forward while staying in bent knee posture. We call this "sneaky walking." Emphasize a heel-toe pattern and walk forward 10 feet. You'll then sidestep to the left 10 feet and finally finish with a backward "sneaky walk" for 10 feet. While stepping backward, emphasize reaching back with your toe and pushing off with your heel. At this point you've just done a square lap and should be about where you

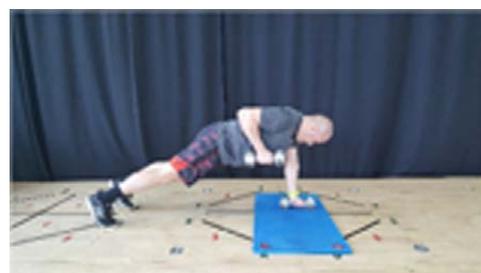
started. Perform three to five laps. If you have a large area, you can actually do square laps, but if you're like us and have to avoid obstacles like furniture, toys, dogs, etc., a hallway is a great place to do this with a minor modification. In a hallway, we begin by sidestepping down the hall and back, then turn and "sneaky walk" forward and backward.



Single Leg Bridge. Lay on your back with your knees bent. Draw in your stomach without holding your breath. Extend one leg up while keeping your hips level. Squeeze through your glutes and hamstrings as you lift your hips up toward the ceiling. Maintain a level hip position as you lower back to the ground and repeat. Hamstring and glute strength will lend to a powerful propulsion as you toe off in your running stride. Perform three sets of 10 -15 on each leg



Renegade Row is a challenging exercise that will work your core, hip flexors, scapular stabilizers, chest, and triceps. Begin in the push-up position with your hands holding dumbbells, with the handles roughly parallel to the center line of your body and about shoulder-width apart. While maintaining the push-up position, row your arm back. Emphasize pulling your scapula toward your spine and minimize trunk rotation as much as possible. Slowly lower the dumbbell back to the floor and be sure you're stable before repeating on the other side. Alternate sides and repeat three sets of 8-12 on each arm.



Side Plank with Trunk Rotation and Push-up. Start in a side-plank position and add trunk rotations by bringing your arm from the top side under your body back to the starting position. Try three sets of 10 on each side. For chest and arm work, particularly the triceps, a military push-up can be performed between each rotation.

Swimmers, cyclists, and runners all benefit from this exercise. Trunk stability and rotation are important in swimming for clearance and maintaining proper mechanics to decrease stress to the shoulder, cyclists benefit from a strong upper body, and runners need stability through the core to maintain ideal mechanics.



Standing External Rotation and Internal Rotation with Resistance Band. Start with your elbows bent to 90 degrees and your arms at shoulder height.

External rotation includes facing the wall and rotating your hands toward the ceiling; internal rotation involves starting with your hands up facing away from the wall, then pulling your hands down so they're facing forward. Internal rotation strength is important for swimmers during the catch-and-pull phases of the stroke. It's also important to work on strengthening your external rotators for stability throughout the stroke and avoiding poor posture and impingement in the front of the shoulder. Aim for three sets of 15-20 on each exercise. for all aspects of triathlon. Try three sets of 10 – 15.



T's and Y's Lying on a Physioball. You'll begin by lying on the physioball on your stomach.

Raise your arms from the side of the ball until they're parallel to the ground in the T position, being sure to squeeze your shoulder blades together during the movement. Next, raise your arms from the side of the ball at a 45-degree angle toward your head in the Y position. Perform three sets of 10 on each of these motions.

Scapular stability is important for positioning of the arm as you propel yourself through the water. Proper positioning will help improve the efficiency of the muscles and avoid excess stress to the anterior shoulder.



Fire Hydrants are a unique exercise for your hips and core muscles.

Begin in a quadruped position (on your hands and knees) with your knees under your hips, your hands under your shoulders and your back flat. Extend one hip as if performing a donkey kick, keeping your knee bent at 90 degrees. Keep your back flat throughout the movement; don't fall into bad form by extending your back. Once your hip is extended, externally rotate your hip like a dog at a fire hydrant while keeping your pelvis as parallel to the ground as you can.



Slowly lower the leg back down and repeat on the other side. Perform three sets of 10 on each side. Increase intensity by placing a mini band (resistance loop) around your legs just above the knees. This exercise will emphasize your hip extensors and rotators. Your hips, especially the rotators, steer your knees. Strong hip musculature will keep the knees in proper alignment, which improves efficiency and mechanics while reducing your risk of injury.





Authors:

Ryan Stromberg is sports-certified physical therapist at TOSH – The Orthopedic Specialty Hospital in Murray. After graduation from physical therapy school, Ryan completed a sports residency at the University of Wisconsin. Ryan grew up in the pool and has transitioned to completing triathlons over the past few years. He recently started a swim clinic at TOSH, using underwater video to help patients improve their movement pattern to reduce risk of injury.



Phil Pattison is a licensed PTA in the physical therapy department at TOSH – The Orthopedic Specialty Hospital. Phil graduated from the Salt Lake Community College physical therapy assistant program and has worked in outpatient orthopedic physical therapy as a licensed PTA for 18 years at TOSH. He’s worked with athletes ranging from recreational up to Olympic and professional levels. He has a deep love of cycling and has competed in road, MTB, cyclocross, and triathlon disciplines, and will be competing in his first 70.3 distance triathlon this year.

Rebecca Bennion: Rebecca is the TOSH Running Program Coordinator. She graduated from Weber State University in 2004. She earned her degree in Human Performance Management, with an emphasis in fitness and nutrition. Later she received her MBA, as well as additional professional certifications through the National Strength and Conditioning Association (NSCA). Rebecca has a deep passion in helping others reach their health, fitness, and performance goals.