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Training Tips to Help Triathletes Reduce Overuse Injuries

The triathlon is arguably the most physically demanding endurance sport. Competitive triathletes report training up to 20 hours per week when preparing for a competition (3, 7). The repetitive motions experienced during training increases the triathlete's risk of sustaining an overuse injury. Almost 50% of triathletes will experience a sport-related injury that will affect their ability to train or will require them to seek medical attention (1).

Overuse Injuries Experienced by the Triathlete

The joints most vulnerable to injury when training for a triathlon include the knee, the shoulder, and the ankle (1). The onset of a sport-related overuse injury may be due in part to poor or deficient strength. For example, sports medicine professionals have identified that weakness in the hips may contribute to hip injuries or other lower extremity injuries (2, 6). Niemuth et al (6) found that injured runners were significantly weaker in their hips when compared with non-injured runners. The repetitive overhead shoulder motion of the freestyle stroke, combined with scapular and rotator cuff muscular weakness, may increase the triathlete's risk of developing shoulder pain (9).

Training Habits of the Triathlete

The majority of the triathlete's conditioning program is devoted to training for each event. For example, a sample training program for a competitive triathlete will include swimming 3 days a week (1,500 to 4,000 meters each session), cycling 3 days a week (30 to 100 kilometers each session), and running 5 days a week (8 to 25 km each session) (8). Weight training may help to reduce the athletes' risk of sustaining certain overuse injuries. It appears that the typical triathlete has very little time to devote to weight training. It has been reported that the typical triathlete weight training program lasts 30 minutes and is performed only 2 days a week (8).

The Training Program

The program presented in this article utilizes several exercises that combine 2 or more muscle groups (see page 8). Adopting this program (or at least some of the exercises) will allow the triathlete to train several muscles or muscle groups in a short training session.

The "abdominal brace" contraction should be performed with each plank exercise. The abdominal brace is a contraction of the abdominal wall musculature with no inward or outward movement of the abdominal wall (4).

Scaption

The "scaption" exercise (figure 1) targets the deltoid and the supraspinatus muscles (10). The exercise is performed with arms relaxed at the side and palms facing forward. Begin by raising both arms from the side of the body to shoulder height. The arms should not be raised directly to the side; rather the arms should be elevated in the plane of the scapula.

Side Plank with Shoulder External Rotation

The side plank is an effective core exercise for training the obliques and the transversus abdominis (4). In the side plank pose, position the shoulder and upper arm along the side of the body with the elbow flexed to a 90 degree angle. Raise the hand upwards (rotating the shoulder away from the body) to train the portions of the rotator cuff (figure 2).

Three Point Plank with Upper Extremity Movements

Start in a 3-point plank position with one upper extremity free for movement. Horizontally abducting (move away from the body) the arm with the shoulder in external rotation (figure 3) trains the external rotators, the supraspinatus, the middle trapezius, and the rhomboids (5, 10). Extending the shoulder (figure 4) trains the middle trapezius and the posterior deltoid (5, 10). The shoulder row (figure 5) is effective for strengthening the trapezius, the rhomboids, and the posterior deltoid (5, 10).

Prone Plank with Lower Extremity Extension

This exercise is effective for training the core musculature and the gluteus maximus. Assume the prone plank position on your forearm and feet (figure 6). The exercise is performed by lifting (extending) the lower extremity 3 to 5 inches off the ground (figure 7).

Side Plank with Hip Abduction

This exercise is effective for training the core and the gluteus medius. Once the side plank position is assumed, lift (abduct) the leg off the lower leg (figure 8).

Lunges

The lunge (figure 9) is an excellent exercise for training the muscles of the hips and the quadriceps. Dumbbells may be held in each hand to add resistance.

Including these exercises into a comprehensive training program may help to reduce the risk of sustaining an overuse injury. A triathlete may also benefit from consulting or training with a certified strength and conditioning specialist (CSCS). ■

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Triathlete Injury Prevention Training Program

2 – 3 sets of 15 repetitions

Utilize dumbbells with exercises 1 – 3 and 6, increasing weights as able.



Figure 1. Scaption



Figure 2. Side plank with shoulder external rotation



Figure 3. Three-point plank with shoulder horizontal abduction



Figure 4. Three-point plank with shoulder extension



Figure 5. Three-point plank with shoulder row

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Figure 6. Prone plank



Figure 7. Prone plank with hip extension



Figure 8. Side plank with hip abduction



Figure 9. Lunges