Core Training

Core Training Progression for Athletes

Todd Brown

With several million athletes participating in a wide variety of sports in the United States, many of whom seek advice for training, there is a significant need for quality training programs that are supported by educational material. In regard to core training there is a myriad of training programs to choose from. In order to achieve the two foremost goals in most athletes’ minds (health and performance), a sound and realistic methodology should be cautiously progressed through over the course of weeks and months. According to McGill, the following tests are just a few tests that will form the foundation for an accurate assessment (2):

- **Push Up Test (Torsional Control)**
  Begin this test in a push up position. Once proper alignment is achieved, place the left hand on top of the right hand. Repeat to the other side. If the pelvis elevates or sags to one side, the test is positive for a lack of torsion control.

- **Extensor Test (Extensor Endurance)**
  Lie on your stomach on a bench or table. Legs must be secured, as the upper body will be cantilevered out over the bench. Maintain a horizontal position for as long as possible. Once the horizontal position is lost, the test concludes and the total time is recorded.

- **Flexor Test (Flexor Endurance)**
  Sit with your back resting against a support that is angled at 60 degrees from the floor. The toes are secured with the knees and hips flexed at 90 degrees. Arms are folded across the chest with the hands resting on the opposite shoulders. The support is removed by pulling it back four inches and time begins. Once any part of the back touches the support, time stops and the test is concluded.

- **Side Bridge (Left and Right) Test (Lateral Muscle Endurance)**
  Lie in a side bridge position. Elbow and forearm should be on the ground slightly above the shoulder. Legs should be extend...
test concludes when the straight back posture is lost and the hip returns to the ground.

**Bracing**

Although there is some tension within the training community as to if bracing or hollowing (drawing in the belly button) is more beneficial to stability, the brace appears to be sounder in relation to biomechanics and intuitive sense. Bracing creates a true muscular girdle around the spine with the activation of both abdominals and back extensors. In stark contrast, hollowing, which stems from the work in 1981 of Gracovetsky and colleagues, is an attempt to isolate the transverse abdominis in order to stabilize the lumbar spine (1). Isolating a single muscle is now thought to be oversimplification when the variety of movements are taken into consideration and observed in sports. The abdominal brace teaching technique (2) is as follows:

- Stand and palpate the active low back extensors while the lumbar torso is slightly flexed.
- Slowly extend until moment equilibrium is reached and extensors shut off.
- The position reached is a position of rest for the spine and is often reported as a posture of least symptoms.
- At this point, contract the abdominals without moving and bracing has been achieved (figure 1).

**Birddog**

Once static abdominal bracing is achieved and mastered, progress to the next level of training. Dynamic bracing should be learned first in a quadruped position, on the ground on all fours (figure 2). While maintaining the abdominal brace, execute a traditional “birddog” activity. This entails raising the right arm directly in front while simultaneously lifting and extending the opposite (in this particular case, the left) leg directly back (figure 3). Maintain a neutral position with the spine through bracing and do not “hike” the hips (2). If you have difficulty in feeling the hip hike, place a foam half roller on the lumbar area of the spine and execute the activity without the half roller falling off.

**Squat**

Progression may then occur to standing and squatting positions in which the abdominal brace is maintained while...
executing a traditional body weight squat (figures 4 & 5). Once the squat technique is accomplished successfully, other non resistance based exercises may be explored such as follow the leader.

**Follow the Leader**

With feet shoulder width apart extend one hand forward. Using your hand, mirror the movements of your partner’s hand. These movements can be up, down, and side to side, or any combination (figure 6). This drill may be progressed by executing the activity on a single leg or even walking forwards, backwards or moving side to side (figure 7).

**V’s**

In order to increase the demand on the core, resistance may be added to various movements such as standing or walking. V’s are an activity that combines resistance while standing and combining multiple planes of movement. First stand with feet shoulder width apart. Hands should be grasping a resistance band that is attached to the base of the wall directly in front of the body (figure 8). Perform a “V” motion with the hands to the right and left as shown (figures 9&10).

**Split Squat**

Another alternative using stationary resistance band movements is to stand in a split squat position. Attach the resistance band to a wall mount running roughly waist high. Once in position, firmly grasp the band with both hands (figure 11) and rotate away from the wall and lead foot (figure 12), returning to the starting position to complete the repetition. Execute the activity to both sides. Progression may occur to the next level in which the activity is executed in the same manner with the addition of a step as if executing a lunge.

The previously cited material is a general progression for athletic core training. Bear in mind that although fundamental, the most essential element is testing and evaluation. Once that information is collected, training may then begin with a sound and accurate progression to enhance stability, health, and ultimately performance.

**References**


**About the Author**

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Figure 6. Follow the Leader

Figure 7. Follow the Leader Single Leg
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Figure 8. V Starting Position

Figure 9. V Rotation to the Right
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Figure 10. V Rotation to the Left

Figure 11. Split Squat Rotation Start
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Figure 12. Split Squat Rotation Finish