

# Training the Core

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At the very heart of becoming a great athlete is not only having a strong and powerful core, but one that will reduce injury. Most every strength and conditioning program should have at least two goals: 1) improve performance 2) reduce injury.

Comprehensive is the key word when designing a solid program. No longer is it sufficient to just do crunches or sit ups. Current core training programs focus on training the hip, lumbar and pelvis region.

## Why is training the core important?

1. The core is where all movement begins. (1)
2. “A weak core is a fundamental problem inherent to inefficient movement that leads to predictable patterns of injury.”(1)
3. If our arms and legs are strong but our core is weak there will not be enough force created to produce efficient movements. (1)
4. If you have good core strength and you take a step the energy will pass evenly through your foot, calf and hip-right up the core and through the roof of your head. (2)
5. If you have bad core strength, specifically hip instability, the energy will leak out at the hip, then the body must compensate, thus leading to injury.
6. By strengthening the core one becomes more able to better utilize the muscles of the extremity like the legs and arms. (3)

## What is the core?

The core is where the body's center of gravity is. (1) Many people think of the core consisting solely of the muscles of the stomach. In actuality the core consists of the parts in the lumbo region, pelvic region and hip region. Here are some of the muscles that are part of each region.

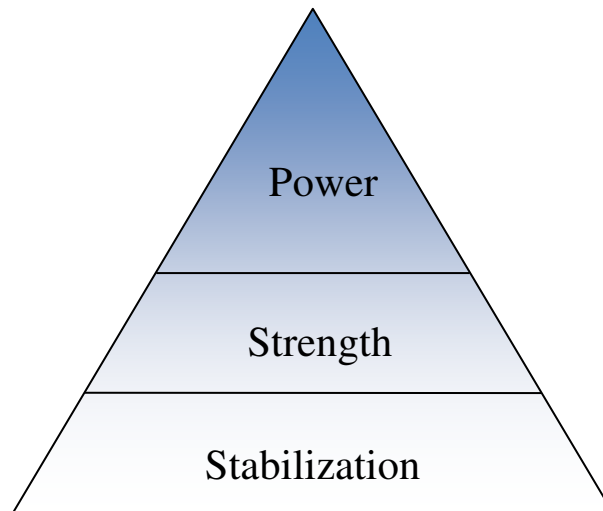
1. Lumbar Spine Muscles
  - a. Erector spinae
  - b. Quadratus lumborum
  - c. Transversospinalis Group
  - d. Latissimus Dorsi
2. Key Abdominal Muscles
  - a. Rectus Abdominus
  - b. External Oblique
  - c. Internal Oblique

- d. Transverse Abdominus
- 3. Key Hip Muscles
  - a. Gluteus Maximus
  - b. Gluteus Medius
  - c. Psoas

It is the integrated function of the above muscle groups that stabilize the entire body. (1)

## How should we train the core?

Traditional methods of core training have included isolated absolute strength training in isolated muscles, utilizing single planes of motion. (1) “However, all functional activities occur in multiple planes of motion and require deceleration, dynamic stabilization and acceleration. (1) Therefore it is vitally important to have our athletes do more than just stomach crunches or back extensions. The athlete, parent, coach or trainer needs to understand that to effectively train the core you need to train force reduction, stabilization and force production.(1) Below is an example given of how to build your core program.



### Stabilization exercises-

- Drawing-in maneuver
- Push up freeze position on elbows
- side iso-obliques
- bridging
- Floor superman
- Floor cobra
- Quadruped Opposite arms opposite legs
- Tube walking

### Strength exercises-

- Ball crunch
- side sit-up
- Russian twist
- reverse crunch
- reverse crunch with rotation
- Knee up
- knee ups with rotation
- Prone cobra
- ball hamstring curl
- ball opp. arm opp. Leg
- back extension
- cable chops and rotations and lifts
- Med ball figure 8 pattern
- triangle pattern
- Reverse hyperextensions

### Power exercises-

- Med ball throw and catch
- Med ball chest pass
- Med ball rotation chest pass
- Med ball Oblique throw and side oblique throw
- Med ball soccer throw
- Pullover throw and back extension throw. (1)

Pictures and descriptions of all the exercises will be put on the website over time. So check back often.

Here is an example of how to arrange your sets, reps and number of days training per week. Every athlete is different. Some can handle the load below and others need to start out easier. As a rule; start low and work your way up from there. Your likelihood of getting injured is far greater if you start with too much work too soon.

Stabilization training Phase-1- 2-4 exercises from the stabilization group done 1-3 sets for 12-20 reps or 1-3 sets for 15-20 seconds, 3-5 days a week. Some of the exercises are held for time rather than doing a rep not based on time. Start easy and work your way up by adding sets and reps or sets and time. Progression is the key. No hurry in progressing. Core work should be a lifetime venture.

Stabilization training Phase 2- 1-2 stabilization exercises, 2-3 sets for 12-20 reps or 2-3 sets for 20-30 seconds 3-5 days a week and 2 strength exercises, 2-3 sets for 8-12 reps, 2-3 days a week. Some of the exercises are held for time rather than doing a rep not based on time. Start easy and work your way up by adding sets and reps or sets and time. Progression is the key. No hurry in progressing. Core work should be a lifetime venture.

Strength training- 2-4 exercises from the strength group, done 2-3 sets for 6-15 reps, 2-4 days a week. (1)

Power training 1- 1-2 exercises from the power group and 1-2 in the strength group. 3-4 sets x 5-10 reps 2-3 days a week.

Power training 2- 3-5 power exercises, 3-5 sets for 3-5 reps, (rest longer during the power phase, 3-5 min) 2 sessions a week. (1)

Never forget to include the core into your training regimen. One way to hammer home the importance of the core training program is to put it toward the beginning of our training program. If you utilize a progressive program tailored to your athletes, injuries can be reduced and performance can increase.

I appreciate any feedback on the articles written. Please let me know how you liked or disliked the article.

(1) NASM OPT for the Performance Enhancement Specialist

(2) Verstegen, Mark. (2004) *Core Performance*

(3) Hedrick, Allen Coaches guide to training the Core/trunk Part 1, *Performance Soccer Conditioning. Vol. 6 Num 7 page 10-11.*