



## Core Strength and Stability: The Key to Musculoskeletal Health and Injury Prevention

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If you've seen me in clinic for an injury to any major joint, you've likely heard me reference the importance of your core. That is because core strength and stability are critical components of musculoskeletal health and injury prevention.

### What is core strength?



Core strength can be thought of as the “central strength” of your body. In order to perform any activity that requires force, your body will first engage the central muscles surrounding the torso prior to initiating movement through the limbs. The body's muscles are all connected through a kinetic chain that is stabilized by the central core muscles. In order to generate a force, a stable base is required.

### Why focus on the core?

Improved core strength can lead to optimal support and function of the extremities, balanced energy distribution, and controlled force production. This will not only improve functional movements, such as throwing a football or swinging a golf club, but can also prevent injuries and optimize joint longevity.

### How does a weak core lead to injuries?

When the core is unable to adequately stabilize the lumbopelvic region, appropriate trunk and hip posture cannot be maintained and balance and control during movement is compromised. With a weakened foundation, excessive forces are seen through individual joints, which can lead to injury. This can occur suddenly, as in tearing the anterior cruciate ligament in the knee, or gradually, as in wearing down the cartilage in a joint and developing arthritis.

### How do I measure core strength?

There are numerous ways to measure core strength and identify weaknesses ranging from the amount of time one can hold a plank position to more sophisticated measures such as the functional movement screen. There are simple tests that can be used in clinic to identify weaknesses as related to a particular injury.

### How do I strengthen the core?

Since the core is engaged with nearly every activity you do, the first step is to be active! People of all ages should be involved in regular low impact aerobic exercise as well as resistance training. There are many specialized ways to isolate and engage the core. This can be done using equipment such as kettlebells, medicine balls, dumbbells or stability balls, or without equipment with exercises such as a plank, pushup, superman, or a bridge.

It is also important to recognize that core strength is not optimized with exercises alone. There is a critical interplay between core strength and diet. Mental-emotional, nutritional and lifestyle wellness are integral to optimal core function. There are many quality free or paid online resources providing a core strengthening program that can be done right at home. For those dealing with an injury, it is often best to work with a physical therapist. For beginners or those who are seeking more advanced techniques, working with a personal trainer is another great option.



At Twin Cities Orthopedics, we have numerous resources for optimizing core strength and working toward joint health and injury prevention.

For athletes, there is an Athletic Movement and Performance (AMP) Score program along with an AMP CAMP.

**AMP SCORE PROGRAM**

**AMP SCORE**  
ATHLETIC MOVEMENT AND PERFORMANCE  
TCOmn.com

**AMP CAMP**  
Athletic Movement and Performance  
Summer Session Starts June 8<sup>th</sup>  
Strength • Speed • Power • Agility • Endurance

**WHAT'S AMP CAMP**  
AMP Camp is aimed to improve athleticism, performance and overall strength. AMP Score Measurements and test results are used to customize the training program to an athletes specific needs. Athletes will train within groups of similar abilities.

**SUMMER CAMP DETAILS**

**Sports Performance Training**  
Youth  
High School  
College  
Athletes

There is also a sports injury prevention program and an athletic competition enhancement program.

**Sports Injury Prevention Program**

Our Sports Injury Prevention Program strives to reduce injuries in athletes of all ages and enhance overall performance through the guidance of specialty-trained Physical Therapists & Athletic Trainers.

**Program Features**

- Individualized program development
- Pre & post program testing
- Team and/or individual instruction

**Additional Program Options**

- Functional movement screening
- Dartfish video analysis

**Athletic Competition Enhancement (ACE)**

**Objectives**

- Create a safe and effective environment to improve core strength, flexibility, dynamic balance, speed, and discipline; thus, improving agility
- Supplement off-season and pre-season workouts
- Offer scientifically supported exercise into athletic training
- Take 'pre' and 'post-program' measurements of individual athletes performance in order to encourage and recognize progress

**Details**

- 8-week program
- 1-hour session per week
- Small group - limited to 5 athletes
- Video analysis helps identify proper body mechanics
- Individualized program development

Specialized personal training and yoga classes are also provided at multiple TCO locations.

Finally, TCO has partnered with Viverant to provide personalized nutrition counseling.

**Nutrition Solutions Offered**  
by **viverant**

Viverant's integrated Nutrition Solutions focus on weight loss, performance nutrition, food allergies and more, offering a holistic approach to providing patients life-long health and well-being that complements TCO's innovative Physical Therapy Services. Now available at **TCO Burnsville** and **TCO Eden Prairie**. Call (952) 835-4512, option 6 to learn more. [Click here](#) for a list of services offered by Viverant.

In conclusion...

- ALL people should be actively working to strengthen and stabilize their core
- Core strength is critical for injury prevention and recovery
- There is no one "right way" to strengthen the core and a training program is highly dependent on age, goals