



Having a strong and stable core allows for efficient transmission of energy to the extremities allowing players to increase their power and decrease injury risk.

MIND YOUR CORE

What Is The Core?

The core is made up of the deep abdominal muscles, diaphragm, and pelvic floor.

- **STABILITY:** It stabilizes the spine and the pelvis.
- **MOBILITY:** A stable core creates a secure platform for the legs and upper body to move freely, with optimal biomechanical alignment.
- This allows an athlete to better execute all the dynamic movements required in a tennis match.
- Decreased core performance is associated with increased athlete injury risk (lower extremity and low back).
- **INCREASED STABILITY** leads to improved strength, endurance, agility, power, and enhances performance.
- **DECREASED STABILITY** leads to compensation, overuse/overload, soft tissue irritability, potential injury, and reduced on-court performance.



Why Is The Core Important In Tennis?

- The sport-specific demands of tennis place asymmetrical stress on the trunk/body. **TRUNK ASYMMETRY** MAY increase injury **RISK**.
- Repetitive and high forces are generated, transferred, and absorbed from the trunk/spine.
- 54% of the forces during the tennis serve come from the trunk and legs.

Recent Core/Injury Research

A recent USTA research study looked at the results of screening tests in 231 elite and professional tennis players.

- Players with a history of back injuries performed worse on core tests than those without a history of back injuries.
- Decreased core strength, decreased hip mobility, and decreased hamstring flexibility (all on the same side as serving /dominant side) were associated with back injuries.
- Adolescent tennis players (13-17 years old) reported more back injuries than the other age groups (12 and under, 18 and older).
- Adolescent tennis players may be at increased risk of back injuries due to the physical changes that occur during puberty which is characterized by phases of rapid growth and development. Younger players need tennis-specific and age-specific strength and conditioning and injury prevention programs.
- The study also found that flexibility patterns differed between male and female players. Females had tighter hip flexors, males had tighter hamstrings and quads. This may influence injury patterns experienced by each gender.

Screening And Assessing The Core

The side plank is an effective way to check the strength and endurance of the core muscles.

To Perform the Test:

Hold the side plank position (a minimum of 30 seconds, for a maximal hold) without dropping the hips.

Check:

- Can you hold the position for 30 seconds?
- Is there a difference between the left and right side plank? This may indicate reduced function on one side. This can be rectified with an appropriate exercise program.
- This test can be used as a baseline to track improvements/changes. Your strength and conditioning coach and/or primary health care provider can advise you on how often the test should be repeated.



Training Tips

- Train **SMARTER**, not harder!
- **MANAGE** your core with a well-rounded program of on and off-court training.
- Work both sides of the trunk and lower body equally. Or as advised by your exercise professional.
- **CHALLENGE** your core (add unstable surfaces like the Bosu® or physioball when practicing planks, side planks, bridging, single-leg squats, etc.).
- Try incorporating pilates, yoga, tai chi, and Gyrotonic Expansion System® (a holistic approach to movement) into your training routine for more balanced/symmetrical core and flexibility training.
- Manage your hip/gluts flexibility with a roller...they are an extension of your core!

Reference: USTA High Performance Profile