

STRONGER TO THE CORE

PREVENT INJURY, GAIN BALANCE, DEVELOP STRENGTH

BY BETH KAPES

Countless hours in the gym may lead to well-built arms and chest muscles, but the reality is that this isolated strength is virtually useless. Whether it is a professional athlete or a weekend warrior, it is the body's core strength that holds the overall key to generating power and agility, as well as warding off injuries.

Often misinterpreted as consisting of only the abdominal muscles, the core is actually an entire grouping of deep and superficial muscles that run up and down the body's trunk. These muscles are central to protecting the spine and lower back, especially as we age and when doing twisting and running sports, according to Timothy E. Kremchek, M.D., of Beacon Orthopaedics.

"The big picture is that it's not glamorous to work out your core, but it's extremely important to not only preventing injury, but also increasing performance," says Kremchek. "It's important to not only develop the strength of the core, but the 'excursion' or flexibility of the core, which is essential when dealing with twisting sports, whether it is golf, softball, tennis or baseball."

A central theme among core strength experts is balance. By stabilizing the spine, pelvis and shoulders, a strong core provides a solid foundation for movement in the extremities -- your hands and feet. The many different muscles of the core help control movements, transfer energy and shift body weight. And, it's their balanced development that can prevent back pain, which affects 25 percent of Americans each year.

"By treating the core as your center of gravity, posture and balance is improved allowing for strength in the arms and legs and, in turn, preventing back pain," says Heather Nettle, MA, coordinator of exercise physiology services at Cleveland Clinic Sports Health.

The core consists of three different muscle layers including the inner core or actual vertebrae containing the disc, ligaments and the smallest muscles that lay along the spine, and the outer layer that is made up of the larger muscles, including the abdominal muscles that provide power. The most important core layer are those muscles in the middle because these are responsible for stabilizing the joints and protecting the back, explains physical therapist, Sarah Cline, who specializes in the spine with Beacon Orthopaedics and Sports Medicine Center.

"You'll often see, especially in athletes, that they're extremely strong in their arms and legs and their outer core muscles, but if you try to get them to do something simple that requires balance and stabilization, they can't," says Cline. "The middle layer is the 'stabilizers,' which are responsible for much of [this] strength."

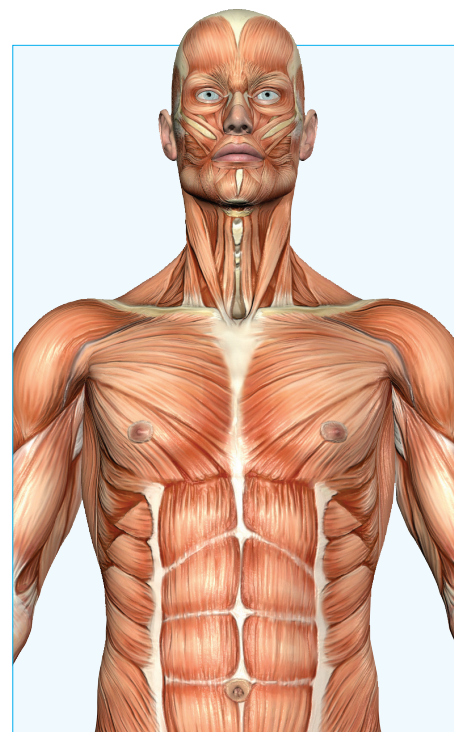
For example, Kremchek has found that a person with developed core strength can throw a baseball from their knees with more velocity than someone without a developed core can standing up. "The velocity was 80 percent [when thrown from the kneeling position] because a lot of that force comes from both the twist, or excursion and strength of your core," Kremchek explains.

It may seem daunting and complicated to build core strength, but a simple approach is best, according to Al Ducker, ATC, CSCS, director of Outreach/Athletic Training Services at Cincinnati SportsMedicine and Orthopedic Center.

"There isn't a need for expensive, fancy equipment -- you can accomplish a lot by using your own body weight to build the core," Ducker says. "Body weight exercises including the push up, pull up and sit up are the most common, in addition to squats and leg lifts."

Today's approach to building core strength is essentially down to the bare bones, according to Kremchek, and much of the structuring of the core's layers can be done with an inexpensive physio, or 'Swiss,' ball.

"When thinking about the core, many believe that crunches and exercise machines that work the back are the way to go, but that's only working one layer of muscles," explains Cline. "The Swiss ball challenges your body to train the inner core through techniques such as sitting on the ball to work on balance, and through certain exercises that challenge the middle 'stabilizer' muscles. Everything starts with the core -- it's where you get your power." **CG**



BUILD YOUR CORE

A well-designed core strength training program should include exercises that train the front, side and back of the core, working the abs, back and hips and may include:

ROLLERBALL

Assume a push-up starting position with your hands on a Swiss ball. Straighten your arms and begin slowly rolling the ball toward your feet so your body jackknives upwards. Keep your arms, legs and back straight, then reverse slowly rolling the ball back as far up as it will go.

THE QUADRUPED

Assume a neutral position on your hands and knees. Raise your left arm in front until parallel to the floor, extend your right leg behind you parallel to the floor, too. Hold for a 20-count and alternate.

SITTING TWISTS

Sit on the floor with knees bent. Hold a small medicine ball in front of your chest with straight arms and lean back, forming a V between thighs and chest. Twist your torso, keeping arms straight, until the ball touches the floor. Slowly rotate to touch the floor on the other side. Repeat.

HIP RAISES

Lying on your back with knees bent at a 90-degree angle, lift your butt off the floor a few inches and hold still for a 20-count and return.

LUNGES

Standing straight with dumbbells in your hands, step forward with one leg until your rear knee almost touches the ground. Use the forward leg to push yourself back up to standing and alternate feet.