

From: Ball Bearings
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ENCORE

Starring Roles

Muscles can have two different roles. In one, they act to move the body (mobilizers), in the other they act to resist or control movement (stabilizers). In the core, the mobilizers can move you four main ways: bending forwards, backwards and sideways, as well as twisting. A well known core mobilizer is the Rectus Abdominis muscle, otherwise known as your 'Abs'. It is used when doing sit-ups. For exercises that use core mobilizers, benefits will be referred to as "improve core **strength**".

The role of the core stabilizers is to keep the individual bones of your spine correctly aligned while using your mobilizers. This is known as Spinal or Core Stability. These spinal stabilizers include the *Transversus Abdominis (TVA)*, *Multifidi* and *Rotatores*. To make things simple, these muscles will be referred to collectively as spinal stabilizer muscles. For exercises that use spinal stabilizers, benefits will be described as "improve core **stability**".

Of these three stabilizers, you can most easily

touch your TVA muscle, and therefore know when it is working. On the next page we will explain how to check for yourself if you are contracting your TVA properly.

I Just Need A Washboard Stomach!

"Sit-ups, sit-ups and even more sit-ups, that's how one gets good core strength and stability, right?"
Yes and no. Washboard, yes! Core stability, no!

Sit-ups and crunches strengthen mobilizers, but even when you finally have that washboard stomach you may still have poor spinal stability. Strong mobilizers do not give you good core stability. This is because mobilizing muscles are not attached in the correct positions to do this job, and they become tired quickly.

Core Stability...So What?

Research shows that people with good core stability are less likely to suffer from lower back pain and injuries. What is the point in being able to do 200 sit-ups if your back aches for two days after pushing the lawnmower?

IS MY TVA ON?

In order to engage your TVA voluntarily and begin training it, you need to learn when it is working. This is best done with the help of a health care professional, however, the following exercise describes how to do this on your own.

Lie on your back with your knees and hips bent, feet flat on the floor. With your finger tips, find the top left and right corners of your pelvis, they should feel like hard bony points. Now slide your first two fingers down and inwards about 5 cm (2 inches). Apply moderate pressure. You are now above your TVA muscle. When relaxed it should feel soft (See TVA Relaxed next page).

To contract the TVA, hollow your lower abdomen, especially the sides, using only 20-30% of your maximum contraction. This is not as easy as it may sound. If you are having difficulty visualizing what to do or contract, try one of the prompts below for extra help.

- Imagine you have a string attached just below your belly button running through to your spine. Now pull that string towards your back bone (don't pull too hard on the string)
- Try to pull the corners of your pelvis (the hard bony points) towards each other.

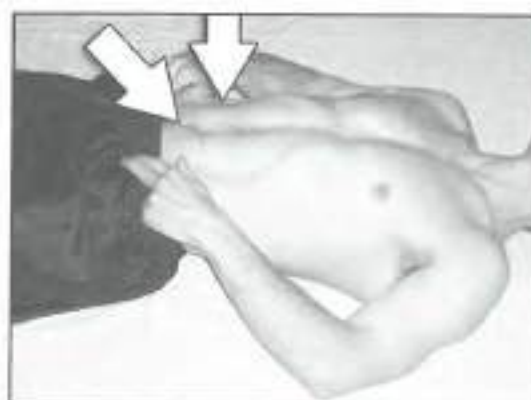
- Imagine pulling the sides of your waist away from your belt

If you are contracting your TVA you should feel slight tension equally under your fingertips on both

sides. Remember this feeling. This is what you need to do later when you read "engage your TVA", "stabilize trunk" or "stabilize core". You will be using your TVA's a lot! (See TVA Engaged)



TVA Relaxed



TVA Engaged

Problems? Don't Expect To Master It The First Time!

If you feel the muscles bulge up, then you are trying too hard and are starting to use your mobilizing muscles (photo 1). Back off a little. You need to learn to tighten the muscles with a low intensity effort. Postural and stabilizing muscles respond best to low forces. Keep practicing until you get it right!

You want to avoid tilting your pelvis, moving your back, breathing in and holding your breath (photo 2). If any of these happen, then you are 'cheating' by using mobilizing muscles and

need more practice. If you have to use more than 20-30% of maximum effort before you feel any tension, then you still need more training of your TVA before progressing onto the Ball.

Do not worry if you have trouble doing this properly; you are not alone. Many highly trained athletes have trouble contracting their TVA properly! With repeated practice, you should be able to get your core stabilizers to contract on command.



Photo 1

Too Much Effort: Wrong.



Photo 2

Breath Holding: Wrong.

THE WALKOUT

BENEFITS

Increase body control in moving from a seated to lying position. The Walkout is a starting position for many exercises.

TARGETS

Low back, TVA, buttocks, hips and quads.

TECHNIQUE

Start in the neutral spine seated position. Slowly walk your feet forward while leaning back into the ball. Place your hands on the ball for added stability. Continue forward until your head rests on the ball. Keep hips up, do not sag and remember your neutral spine. In the Finish position, engage TVA but keep abs relaxed.

Try moving side-to-side and front-to-back. First time users should keep their head resting on the ball. To return to a seated position: contract your abs, bring your chin to your chest, and walk your feet back towards the ball. Even easier, from the Finish position just sit down on the ground! A great way to stretch and relax your abdominal and chest muscles is shown in the Walkout Stretch photo.

START



MIDDLE



FINISH



WALKOUT STRETCH



15 seconds



30 seconds



60 seconds



ROLLING SHIP

START



SWAY RIGHT



SWAY LEFT



PROGRESSION



BENEFITS

Improve core stability during dynamic movements.

TARGETS

Whole trunk, buttocks, hips and quads.

TECHNIQUE

Start in The Walkout position (see previous page). With your hips, buttocks and shoulders leading the way, sway side-to-side. Do not let your hips sag and keep your trunk in a straight line from knees to head. Perform this exercise in a slow and controlled manner. Try not to get thrown overboard!

To make this exercise more challenging, hold your hands and arms straight over your head, parallel to the ground (see Progression).



15 seconds



30 seconds



60 seconds

TABLE TOP

BEGINNER



ADVANCED



Bearing in mind....

...do not sag at the hips or overcompensate by arching your back up towards the ceiling. In the Advanced position, if you are unable to lift your leg without your buttock dropping, you need more practice at the Beginner level before advancing.



ALTERNATIVE



BENEFITS

Integrate core stability with hip strength.

TARGETS

Core, low back, buttocks, hips and quads.

TECHNIQUE

This exercise is a progression of The Walkout (see page 37). However, this time cross your arms on your chest and hold for a time count. Keep your TVA contracted and breathe normally. Remain still, avoiding side-to-side movement. Increase the challenge by lifting one leg off the ground (see Advanced). Put yourself to the test by slowly alternating legs.



20 seconds



45 seconds



90 seconds

SUPERMAN!

BENEFITS

Improve back strength and stability.

TARGETS

Low, mid, and upper back, buttocks, shoulders and abs.

TECHNIQUE

Start in the Tough Tummy position (see page 36) with the ball under your hips and abdominal region. Slowly raise one arm and the opposite leg.

The goal is to avoid side-to-side movement, as well as twisting hips and upper back. Do not lift your limbs so high that either your hip or shoulder rotates and causes you to lose your neutral posture. You can test this by balancing an object like a golf club across your back while performing the exercise. The golf club should not tip or dip to either side.

Progress by trying to lift three limbs at once...is it a bird?...Is it a plane?...

START



FINISH



PROGRESSION



5 reps x 5 seconds



8 reps x 10 seconds



8 reps x 15 seconds



DOLPHIN

BENEFITS

Improve low back strength.

TARGETS

Low back, buttocks and hamstrings.

TECHNIQUE

Start in the Tough Tummy position (see page 36) with the ball under your hips. Raise your legs so that your whole body is horizontal. Elbows should not be locked. Keep them slightly bent at all times. If you feel wrist pain, make fists and balance on your knuckles.

Now, lift your heels toward the ceiling, squeezing your buttocks and feet together as you move. Use a slow and controlled movement, do not whip your legs up. A common technique error with the Dolphin consists of having the upper body dip downwards as the legs rise. Try to avoid this! Your upper body should remain still throughout the exercise.

Your low back will move out of the neutral spine position during this exercise. However, keep your neck in its neutral posture as shown in the illustrations.

8 times



12 times



20 times



START



FINISH



Bearing in mind....

...ensure TVA control.



SWAYING BRIDGE II

START



BENEFITS

Improve core mobilization and stability.

TARGETS

Obliques, outer hips, hamstrings, buttocks and low back.

TECHNIQUE

This exercise appears quite similar to its namesake, the 'Swaying Bridge' (see page 45). However, with this version, you will definitely feel the challenge shift to your outer hips and oblique muscles. Get into the Start position by performing The Bridge (see page 44). From this position lead with your heels pointing outwards as you slowly sway back and forth. Allow your outer hip to rotate and rise up as you sway towards the 'point of no return' (but not beyond it!)


Keep your palms face up to challenge to your rear shoulder, arms, and upper back. Palms face down to challenge the front shoulder and chest.

LEFT



RIGHT



-  20 seconds
-  40 seconds
-  60 seconds

WINDSHIELD WIPER

BENEFITS

Improve core stability, strength and range of motion.

TARGETS

Obliques, outer hips, hamstrings, buttocks and low back.

TECHNIQUE

Lie on your back. With knees and ankles bent at 90 degrees, place your heels on the ball. Keep your arms on the floor away from your sides, palms up. Rotate both legs together to one side. Go as far as you can before a shoulder loses contact with the floor. Return to the top and repeat to the other side.

To increase difficulty, perform with only one leg on the ball and the other pointed up to the ceiling.

START



LEFT



RIGHT



SIDE VIEW



5 times



10 times



15 times



SKI TUCKS

START



BENEFITS

Increase abdominal strength.

TARGETS

Abs, shoulders, arms and front of hips.

FINISH



TECHNIQUE

Start in the Hand-Stand Finish position (see page 49). Contract your abs to bring knees towards your chest. Focus on contracting maximally throughout the movement.

During this exercise keep a neutral neck posture. Do not let your back sag nor lock your elbows; keep them slightly bent.

To increase the challenge of Ski Tucks, start with the ball positioned closer to your feet (see Intermediate photo). Now only your toes will be in contact with the ball for the Finish position. Once you have mastered the two legged approach, try it with only one. Good luck!

 PROGRESSIONS

INTERMEDIATE

ADVANCED



5 times

10 times

20 times

HIP POINTERS

INNER THIGH

START



FINISH



OUTER THIGH

START



FINISH



BENEFITS

Increase dynamic and static hip strength; challenge balance.

TARGETS

Inner and outer hips, obliques.

TECHNIQUE

Lie with your side on the ball, using your hand to help balance. For the Inner Thigh, lift and lower your bottom leg as high as you can; it should be in front of your supporting, or top, leg.

For the Outer Thigh, lift and lower your top leg as high as possible. You will need to shift your supporting, or lower leg, back somewhat to help balance yourself.

For both versions, keep your pelvis perpendicular to the floor. Train both sides of your body. You can increase the challenge by adding ankle weights.

For a more strenuous hip exercise...see the next page!



HIP-UP-HOORAY

BENEFITS

Increase dynamic and static hip strength.

TARGETS

Inner and outer hips.

TECHNIQUE

Begin in a side lying position with the ball gripped between your ankles. Use one hand as a pillow and the other to assist your balance. Without twisting at the pelvis, raise your legs as high as you can, then bring them down.

Do not forget to perform your Hip-Up-Hooray lying on both your right and left side.....and try not to drop the ball!

START



FINISH



8 times



15 times



20 times



Bearing in mind....

...emphasize TVA control.

