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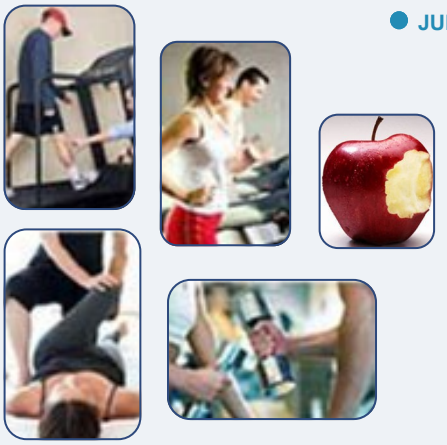

A Step Above
Personal Training Concepts

> Physical fitness is not only one of the most important keys to a healthy body, it is the basis of dynamic and creative intellectual activity.
>
> ***~ John F. Kennedy***

Jinjer's Thoughts:

Core Stability and Mobility Training . . . Key To A Healthier Lifestyle

Training the "CORE", a relatively new buzz term in the fitness industry, has been a hot topic over the past few years, although coaches and athletes have understood its value for many years. Even though both core stability and core strength are interdependent, they have different definitions and functions.

According to an article by DC Health (July 2009), **core stability** means the ability to resist unwanted movement; for example, trying to balance on one leg while using core muscles to prevent trunk, upper, and lower extremities from moving. If your arms are allowed to flap around, then most likely you will lose your balance. Another example of **stability** might be standing on one leg while the other leg is demonstrating very slow, front kicks. The body is trying not to over compensate but stabilize movement of one leg while the other leg is slowly kicking in and out. Core muscles are working more efficiently to help maintain a correct alignment of the spine and pelvis via static or isometric contractions. Balance training is considered a part of core training.

Core strength, on the other hand, is defined by DC Health (July 2009) as "the amount of force the core can produce to perform a desired movement." The amount of pressure you will be able to apply will be directly proportionate to the degree of tension that you hold in your muscles, and the level of your pain threshold. Using a weighted ball (medicine ball) and starting with a light weight (2-lb, 4-lb, 6-lb), toss it back and forth with a partner, starting at close range in order to avoid injury in the lower back. This will help you learn how to absorb force and, at the same time, how to increase core strength and power. This exercise is better suited for general fitness and athletic performance.

Core training exercises need not be mutually exclusive for general fitness or athletes. Core activation happens voluntary and involuntary when sitting, twisting, pushing open a door, turning over in bed, picking up the laundry or even just walking or running. Research has shown that when core muscles are strengthened, dynamic postural strength and control increase; muscle balance and co-ordination improve; strength and flexibility increase across the lumbar, pelvic and sacroiliac joint; and efficiency of movement is enhanced for performance and activities of **daily living**. Core generally refers to the deep muscle layers that lie close to the spine and provide structural support: muscles of the lumbo-pelvic region, the hips, abdomen and the low back [Fabio Comana, 2010]. Muscles commonly referred to as the core are **transverse abdominis** [TVA] (the innermost of the flat muscles of the abdomen), **quadratus lumborum** (the deep muscles of the back), **multifidus** (one of the smallest yet most powerful muscles that give support to the spine), **diaphragm and pelvic floor musculature** (muscles above and below the abdomen). These are some-times considered the deep-trunk muscles. The co-contraction of these muscles produce force via "thoraco-lumbar fascia" [TF] (which provides support to the lumbar region and is used to transfer loads) and intra-abdominal pressure [IAP] to help stabilize the lumbar spine.

Other core muscles such as

CORE STABILITY AND MOBILITY TRAINING (Continued)

rectus abdominis (located along the front of the abdomen and commonly known as the "six-pack" muscle of the abs), **erector spinae group** (group of muscles that stretch from the tailbone to the top of the rib cage), **external oblique** (on the side and front of the abdomen) and **internal oblique** (under the external obliques, running in the opposite direction), **lliopsoas** (hip muscles) and **latissimus dorsi** (the pair of fan-shaped muscles across your *middle* and *lower back* that attach the arms to the spine) are larger muscles that generate gross movements and forces within the trunk [Fabio Comana, 2010]. Understanding core function helps us to have an increased postural awareness and is the key to supporting the lumbar spine, in addition to reducing the incidence of low back pain.

How should you start training your core muscles? There is an over-abundance of exercises out there for core stability and strength training. However, this article is more suited for individuals who are inactive and may suffer from lower back pain. Fabio Comana notes that "training should begin by establishing lumbar stability with exercises that emphasize TVA activation." Individuals who experience low back pain have trouble activating the transverse abdominal muscles [TVA]. Below is a simple exercise that will help anyone refocus and concentrate on learning how to reactivate their core consciously. There are several exercises that can follow this one, but this is the first step in getting reacquainted with your body. When this technique can be demonstrated to one's ability, independent of the diaphragm (during breathing), then it will be time to move to other exercises. Fabio believes that it's important to follow the sequence in this exercise. He also believes it will train a person to stabilize the lumbar spine under minimal loading on the spine.

I want to thank Fabio Comana personally for the difference he has made in my training profession. I recently had the opportunity to meet him at a conference this summer and trained with him in several workshops. Even though I have participated in fitness for over 15 years, became certified as a trainer through the National Council on Strength and Fitness (NCSF), have had some awesome teachers in my graduate programs at University of Virginia and Radford University, this guy is an amazing coach and instructor. He has really given me a deeper understanding of coaching wellness.

STEP ONE: CORE ACTIVATION

Start by laying on your back with knees bent. Your lumbar spine should neither be arched up nor flattened against the floor, but aligned normally with a small gap between the floor and your back. This is the "neutral" lumbar position you should learn to achieve.

1. Pelvic floor contractions ("Kegels" or contraction to interrupt the flow of urine.)	Perform 1-2 sets x 10 repetitions with a 2-sec tempo, 10-15 sec rest-intervals between sets
2. TVA contrac-tions (drawing the belly button towards the spine). Do not move hips or contract abs	
3. Combination of both contractions.	Repeat exercise volume stated above
4. Contractions with normal breathing	1-2 sets x 10 repetitions with slow, 10-sec counts while breathing independently, 10 -15 sec rest-intervals between sets. Progress to 3 - 4 sets x 12 to 15 repetitions, each with a 10-sec count, 10-15 sec rest interval between sets.

Fabio Comana

An exercise physiologist and spokesperson for ACE and faculty, teaching courses in Exercise Science and Nutrition at San Diego State Univ., and UC San Diego. Prior to ACE, Fabio was a head coach, and strength and conditioning coach at SDSU; and opened and managed health clubs for Club One. A national and international presenter, he is frequently featured on television, radio, internet, and in print publications, and has authored chapters in various textbooks.

DON'T FORGET . . .

Registration is now open for our FALL group exercise classes in Wytheville.

Beginning September 7th:
Tuesday and Thursday Boot Camp
6:30 p.m. to 7:30 p.m. **(Classes Full)**

Beginning September 8th:
"Rise and Shine" Low-Impact Aerobics Mondays and Wednesdays
6:00 a.m. to 7:00 a.m.
(Space still available)

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