



News That's Fit To Print

VOLUME 3

AUGUST 2007

Notes from Editor

The summer is quickly coming to an end and school will be starting very soon. This can be a great time to back into your exercise routine that has dropped off over the summer.

Stressed out?, don't think you need strength training as a women, or wondering about what you heard about fitness is true or not, check this month's articles.

Yours in Health,

Dave Radin
Editor

10 Reasons Women Should Strength Train

1. You Will Be Physically Stronger.

Increasing your strength will make you far less dependent upon others for assistance in daily living. Chores will be easier, lifting kids, groceries and laundry will no longer push you to the max. If your maximum strength is increased, daily tasks and routine exercise will be far less likely to cause injury. Research studies conclude that even moderate weight training can increase a woman's strength by 30 to 50 percent. Research also shows that women can develop their strength at the same rate as men.

2. You Will Lose Body Fat.

Studies performed by Wayne Westcott, PhD, from the South Shore YMCA in Quincy, Massachusetts, found that the average woman who strength trains two to three times a week for two months will gain nearly two pounds of muscle and will lose 3.5 pounds of fat. As your lean muscle increases so does your resting metabolism, and you burn more calories all day long. Generally speaking, for each pound of muscle you gain, you burn 35 to 50 more calories each day. That can really add up.

3. You Will Gain Strength Without Bulk.

Researchers also found that unlike men, women typically don't gain size from strength training, because compared to men, women have 10 to 30 times less of the hormones that cause muscle hypertrophy. You will, however, develop muscle tone and definition. This is a bonus.

4. You Decrease Your Risk Of Osteoporosis.

Research has found that weight training can increase spinal bone mineral density (and enhance bone modeling) by 13 percent in six months. This, coupled with an adequate amount of dietary calcium, can be a woman's best defense against osteoporosis.

5. You Will Improve Your Athletic Performance.

Over and over research concludes that strength training improves athletic ability in all but the very elite athletes. Golfers can significantly increase their driving power. Cyclists are able to continue for longer periods of time with less fatigue. Skiers improve technique and reduce injury. Whatever sport you play, strength training has been shown to improve overall performance as well as decrease the risk of injury.

6. You Will Reduce Your Risk Of Injury, Back Pain and Arthritis.

Strength training not only builds stronger muscles, but also builds stronger connective tissues and increases joint stability. This acts as reinforcement for the joints and helps prevent injury. A recent 12-year study showed that strengthening the low-back muscles had an 80 percent success rate in eliminating or alleviating low-back pain. Other studies have indicated that weight training can ease the pain of osteoarthritis and strengthen joints.

7. You Will Reduce Your Risk of Heart Disease.

According to Dr. Barry A. Franklin, of William Beaumont Hospital in Royal Oak, Michigan, weight training can improve cardiovascular health in several ways, including lowering LDL ("bad") cholesterol, increasing HDL ("good") cholesterol and lowering blood pressure. When cardiovascular exercise is added, these benefits are maximized.

8. You Will Reduce Your Risk of Diabetes.

In addition, Dr. Franklin noted that weight training may improve the way the body processes sugar, which may reduce the risk of diabetes. Adult-onset diabetes is a growing problem for women and men. Research indicates that weight training can increase glucose utilization in the body by 23 percent in four months.

9. It Is Never Too Late To Benefit.

Women in their 70s and 80s have built up significant strength through weight training and studies show that strength improvements are possible at any age. Note, however, that a strength training professional should always supervise older participants.

10. You Will Improve Your Attitude And Fight Depression.

A Harvard study found that 10 weeks of strength training reduced clinical depression symptoms more successfully than standard counseling did. Women who strength train commonly report feeling more confident and capable as a result of their program, all important factors in fighting depression.

Authored by Elizabeth Quinn

<http://sportsmedicine.about.com/cs/women/a/aa051601a.htm>

Inside this issue:

Women and Strength Training 1

Hot Topics 2

Exercise of Month 2

Breathe Your Stress Away 3

Chef's Comer 4

Muscle Month 5

Greatest Mythis in Fitness 6

LOOK!

Did you know if you refer friends and family who sign up for a training package, you can receive complimentary sessions!! For more information, ask your trainer the next time you are working out, or call either the Mooresville or Cornelius locations for more information.

Fitness Quiz

Adding **three** pounds of **muscle** to your body's frame increases your basal metabolic rate by how many calories?

- A. 35 kcal
- B. 70 kcal
- C. 90 kcal
- D. 105 kcal

answer can be found on page 4

Hot Topics

Vastus Medialis Has Greater Role Than Once Thought

Degeneration, injury and pain are all consequences of instability at the knee joint. A weak VMO or Vastus Medialis Oblique, which has been thought to act both as a stabilizer of the patella and as a knee extensor, is often the culprit in cases of knee pain or injury. Unfortunately, studies have not unanimously agreed on the exact function of the VMO and as a result therapeutic strategies to prevent and treat injuries may be insufficient. The discrepancies lie with the methodology of most research on the VMO, which has been performed during non-weight bearing or non-functional activities. **To better understand VMO function,** researchers evaluated its relative contribution during weight-bearing activities.

Ten participants completed both **bilateral and unilateral drop jumps (DJ)** and squat jumps (SJ) on a force platform while electrical activity in the Vastus Lateralis (VL) and VMO region of the Quadriceps Femoris was measured. The most significant finding of this study was that the **relative contribution of the VMO during single leg jumps was significantly greater than the VL.** The authors simultaneously conducted 6 cadaver dissections during which they identified a distinct nerve supply to the VMO. **This contrasts previous findings** and suggests that the VMO can act independently of the quadriceps group.

The researchers concluded that the **VMO is indeed an important stabilizer of the patella in the trochlear groove.** As such, this muscle can be trained most effectively using single leg closed-chain strength exercises and plyometrics to **increase functional activation of the VMO.**

Toumi, H., et al (2007) New Insights into the Function of the Vastus Medialis with Clinical Implications. Medicine and Science in Sports and Exercise. 39(7): 1153-1159.

www.exerciseetc.com

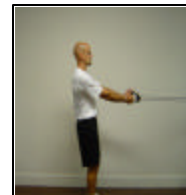
Exercise of the Month—Tube Abduction

Preparation:

- Stand with good posture.
- Arms straight out in front of body with palms facing each other.

Movement:

- Engage inner abdominals and pelvic floor muscles to assure spinal stabilization.
- Open arms to sides pinching shoulder blades together.
- Return to start position and repeat.



FACTOID

The basic nutrient that the nerves in the brain and body use is **glucose**, a simple sugar.

Trainer Spotlight



Bob Weir LMT, NCTMB
Neuromuscular Therapist

Bob has been a practicing Allied Health professional for more than 20 years. Prior to graduating from Southeastern School of Neuromuscular & Massage Therapy Bob was a Registered Respiratory Therapist. Bob is the owner and operator of LKN Massage in Davidson. Bob is the official Massage Therapist for the UNCC Athletic Department and has served as an instructor for Southeastern School of Neuromuscular & Massage Therapy. Bob specializes in injury rehabilitation, myofascial release and Trigger Point Therapy for pain relief and peak performance.

Breathe Your Stress Away

Stress increases heart and breathing rates as well as increases the bodies demand for oxygen. Rapid shallow breathing decreases the efficiency of oxygen delivery to your brain, muscles and the rest of your body and inhibits the clearing of carbon dioxide (a metabolic waste product) from the body. Lack of oxygen causes increased anxiety, poor mental concentration and inhibits growth and repair of tissue. Learning to control breathing is one of the best ways to control stress and to assure your cells are receiving adequate amounts of life giving oxygen while ridding the body of toxic waste products.

Controlled breathing is in itself an easy and time efficient relaxation and is the prerequisite to other effective relaxation techniques such as meditation, guided imagery, and progressive relaxation to name just a few.

Effective breathing is initiated by the diaphragm muscle and ensures maximum oxygen uptake. It is imperative to become proficient at diaphragmatic breathing (also known as abdominal breathing.) It may be easiest to first practice abdominal breathing when you're lying down. With practice, you should be able to do abdominal breathing anywhere and anytime.

Abdominal / Diaphragmatic Breathing

1. Put one hand on your abdomen, at the naval, and put your other hand on the center of your chest.
2. Inhale deeply through your mouth, pay close attention to your abdomen. Proper diaphragmatic breathing will cause your abdomen to rise as your lungs fill with air. The hand on your chest should move only slightly. If your chest rises more than your abdomen you are breathing from your chest.
3. Repeat, but this time, breathe in through your nose. Breathing through your nose is better than breathing through your mouth because your nose: warms filters and moistens the air and allows more efficient delivery of air to the lungs.

Exercise 1: Push the air out.

The best way to maximize respiration is by exhaling more air not inhaling it. Full exhalation allows you to push the air out from the bottom of your lungs and create a vacuum that will help ensure abdominal breath when you inhale. For most people inhalation lasts much longer than exhalation. Your goal should be to have your exhalations last at least as long as your inhalation. To do this you will need to exercise your intercostal muscles, the accessory breathing muscles found between your ribs. The following exercise will strengthen the intercostals and allow you to eventually lengthen your exhalations unconsciously.

1. Start with two or three nice relaxed abdominal breathes
2. At the end of the second or third breath try to push or squeeze more air.
3. Try to make exhalation last twice as long as inhalation.

Believe it your not, you can significantly affect your ability to handle stress by simply changing the rhythm and depth of your breaths. The following exercises are easy to do and can practiced almost anywhere and in any stressful situation.

Exercise 2- Breath slower, deeper, and more relaxed:

1. Start with a series of nice relaxed abdominal breaths.
2. Pay close attention to the rate and depth of your breathing.
3. Consciously try to slow down the rate of you breathing and focus on taking deep, quiet and relaxed breaths.
4. Try to make you exhalations last at least as long as you inhalations.

(Continued on page 6)

Chef's Corner...

Grilled Pork Tenderloin with Apples

This recipe serves: 4

Ingredients

For the pork:

- 2 pork tenderloins, about 12 ounces each
- 1 teaspoon Dijon mustard
- 3 tablespoons sherry vinegar
- 1 tablespoon olive oil
- 1/4 teaspoon salt
- 1/4 teaspoon freshly ground black pepper
- 1 clove garlic, minced



For the apples:

- 1 tablespoon butter
- 2 Granny Smith apples
- 1/4 cup apple cider vinegar
- 1/4 cup honey

Cooking Instructions

1. Using a sharp knife, remove and discard any whitish-silver skin and visible fat from the tenderloins.
2. Mix the remaining ingredients for the pork together in a shallow bowl. (This can be done in advance and stored in the refrigerator for 2 to 3 days.) Add the trimmed tenderloins and marinate for at least 30 minutes or overnight in the refrigerator.
3. Preheat the grill to medium-high heat.
4. Sear the pork on the grill on all sides. Lower the heat to medium and cook for 8 to 12 minutes, until the pork is just cooked through. Transfer the pork to a cutting board and let the meat rest for 2 to 3 minutes. Slice the pork, arrange the slices on a serving platter and keep warm.
5. Meanwhile, melt the butter in a medium skillet over medium heat and add the apples. Using a slotted spoon, transfer the apples to the platter with the pork.
6. Add the vinegar and honey to the skillet and bring to a boil. Cook until the mixture becomes syrupy, about 3 to 4 minutes. Pour the syrup over the pork and apples and serve.

Nutrition Information

Serving Size: 3-4 slices of pork with apples

Number of Servings: 4

Per Serving			
Calories	458	Carbohydrate	29 g
Fat	16 g	Fiber	1 g
Protein	48 g	Saturated Fat	6 g
Sodium	295 mg		

Quiz Answer:

D. 105 Kcal

By adding three pounds of lean body mass (muscle), you can increase your BMR by 105 Kcal.

Each pound of muscle burns approximately 35 kcal at rest.

Muscle Anatomy



Muscle: Gastrocnemius

Origin: Medial and Lateral Femoral Condyle (back of knee)

Insertion: Calcaneus via the Achilles Tendon (heel)

Eccentric Action: Deceleration of femoral internal rotation; deceleration of subtalar joint pronation.

Isometric Action: Stabilize subtalar joint and tibio-femoral joint

Concentric Action: Plantarflexion of foot, assist in external rotation of knee, assist in flexion during swing phase of gait.

The Gastrocnemius (calf muscle) is the a major player for any lower body activity such as running, jumping, stair climbing, etc. The calf is a powerful muscle that can cause problems for the ankle and knee if not addressed. Ankle instability and knee pain can be attributed to tightness in the calf. Tight calves can cause the feet to flatten which can lead to weakness in the glute medius. The calves can also cause the feet to externally rotate. Externally rotated feet also lead to tight hamstrings (bicep femoris especially) and a tight piriformis. With these muscles tight, the hip stabilizers weaken leading to knee pain.

Corrective exercise with the calf is flexibility and general strength and stability training. See the exercises below:

What's That???

When supplementing calcium for bone strength, don't forget Vitamin D, A, and C as well.

Vitamin D helps the absorption of calcium.

Vitamin A helps with the re-absorption of bone/ bone shaping during normal cell growth.

Vitamin C helps with synthesis of bone collagen.



Flexibility Exercise



Stability Exercise



Strength Exercise

Our Training Philosophy:

**"M.P.E.
TRAINING"
MAXIMUM
PHYSICAL
EFFICIENCY**

Precision Fitness

8311-4DMagnolia Estates Dr
Cornelius ,NC 28031
Ph. (704)-895-2857
Fax (704)-892-7068

484 Williamson Rd
Suite B
Mooresville, NC 28117
Ph. (704)-662-8664
Fax (704)-662-6602

info@ncprecisionfitness.com

We're on the Web!
www.lakenormanfitness.com

Want to learn about something that has not been on previous newsletters? Send an email to:

dave@ncprecisionfitness.com

(Continued from page 3)

Exercise 3 - Count your breaths:

1. Start with a one or two of nice relaxed abdominal breaths.
2. At the start of the second or third breath count to yourself "10"
3. At the start of the following breath count "9"
4. Repeat counting down with each breath counting down until you reach zero.

When you reach zero chances are you will be feeling noticeably more relaxed. If not simply take a few more easy breaths and start over.

authored by bill scibetta
email: bill@ncprecisionfitness.com

The Greatest Myths in Fitness

In every industry there lie deep dark secrets. Some are minor and inconsequential while others are scary and have wide ranging consequences. I have said in many of my past articles that the most dangerous thing possible is knowing what you know, but that you know wrong. The fitness and rehabilitation industry is no different.

As with other industries the computer has changed a lot of the ways we do things. Most of what I was taught in school no longer holds true. Exercises I used to swear by no longer hold the legitimacy they used to, it is scary to think back to all the patients we taught these exercises too. Did they harm them, no, but they were definitely not the best exercise to do. The ability to look inside the body, read how the muscles actually contract and to be able to measure force placed on joints with 'traditional' exercises is truly an eye opening experience.

I have ranted before on some of the most dangerous common exercises still out there, so please read those articles to build a base of knowledge. My rant today is all about what we are doing to damage ourselves. Obviously if you are reading this article you have an interest in fitness and or wellness, so you have a base of knowledge. Let's expand on that base.

Did you know that traditional CRUNCHES actually place severe strain on the spine, and doing crunches with your feet fixed or on a decline bench is just plain unintelligent.

Did you know that the BARBELL BENCH PRESS is so bad for your shoulders that it just makes me angry, besides in sports / life if you are laying flat on your back you lost!

Did you know that the SMITH MACHINE is useless. When in life do you move a bar fixed on a rail, never mind the fact that it forces you to move vs. you creating the movement.

Did you know that your trapezius muscle is so over developed that SHRUGS only serve to create a larger muscle imbalance.

Did you know that the DUMBELL RACK and FLOOR SPACE are the best things in the gym.

Did you know that SITTING to exercise has little benefit.

Did you know that SQUATTING with out proper flexibility and balance will injure your back and or knees, not to mention not having someone qualified instruct you on how to properly squat. The same goes for LUNGES. Both exercises are also among the BEST for leg and hip strength.

Did you know that almost everything you did in high school GYM CLASS was horrible for you, so please do not do anything you remember from 'that coach'.

Did you know that almost everyone goes to the gym and does the same exercises year after year yet they see no change but expect to, this is also the definition of INSANITY.

Please educate yourself, find a qualified PROFESSIONAL trainer with an accredited certification and never stop challenging your body to change.

By bryan fass
Email: bryanf@ncprecisionfitness.com