

HEALTH TIP

Any outdoor activity during the hot summer months (golf, cycling, running, hiking, etc.) requires plenty of fluid. If your activity is under 60 minutes in length, water will do just fine. Anything over an hour in length, have a sports drink to replenish lost minerals and electrolytes.

Inside this issue:

Flexibility Training	1
Hot Topics	2
Exercise of the Month	2
Good Swing Starts with a Strong Base of Support	3
Chef's Comer	4
"Back" Page	5

Flexibility Training

Flexibility is defined as the normal range of motion of a particular joint. Each joint has a different range and is affected by muscle tightness, injury, and gender. While flexibility is extremely important, it is usually one of the most ignored components in a fitness program. Including flexibility can decrease the chance for muscle imbalances, joint dysfunction, and injuries caused by overuse patterns (golf swing, cycling, pitching, etc.).

Tight muscles can lead to muscular imbalances within the body. These muscular imbalances lead to potential injury. For example, tight hip flexors cause the opposing muscles group, the glutes to become weakened. This leads to a decrease in pelvic stability. With the glutes weakened and inhibited, the hamstrings have to "pick up the slack" of the glutes and help with hip extension. This can lead to knee and low back pain. Flexibility can reduce this phenomenon by creating proper length-length tension relationships between opposing muscle groups.

There are four types of flexibility: *Self-Myofascial Release*, *Static Stretching*, *Active Stretching*, and *Dynamic Stretching*

Self-Myofascial Release involves applying pressure to a tender point found in the muscle. By applying pressure to the muscle, an organ located where the muscle and tendons meet called the Golgi-tendon organ, gets excited and causes the muscle to relax. Once a tender spot is found, it should be held until at least 50%, then move to the next tender spot.



The most common form of this involves taking the muscle and holding the stretch for at least 20 seconds. **BOUNCE!!** Holding the stretch for a prolonged period of time allows the muscle to relax and elongate quicker.

Active stretching involves holding a static stretch for 2-4 seconds, relax, then repeat. This type of stretching involves using your agonist muscles (opposing muscles) to create greater range of motion. This type of stretching are no postural dysfunction.

Dynamic stretching uses the forces produced by the muscles and momentum to take a muscle through full range of motion. This type of stretching can be used as a warm-up if no postural dysfunctional patterns are present. Leg swings are a great example of dynamic stretching.

Flexibility will greatly enhance your bodies ability to become more efficient when combined with strength and aerobic. So don't' forget to stretch!!

authored by dave radin

Flexibility is one of the most ignored components of an exercise program.

flexibility is **static stretching**. Once a tender spot is the tenderness is reduce by at least 20 seconds. **DO NOT** stretch for a prolonged period relax and elongate quicker.

holding a static stretch for 2-4 for up to 5-10 repetitions. involves using your agonist muscle create greater range of motion should only be done if there patterns present.

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

Muscles provide which function in the body?

- A. Support of body and containment of organs
- B. Allow movement of body as a whole.
- C. Heat production and regulation of body temperature.
- D. All of the above

answer can be found on page 4

Hot Topics

Men & women perform squats differently, putting women's knees at risk

It is generally accepted that female athletes exhibit different movement patterns compared to men, which increases their risk for ACL injury and patellofemoral pain. **Why these differences occur is not so widely understood.** Muscles of the trunk, hip and knee influence the orientation of the lower extremity during weight bearing activities. The purpose of this study was three-fold: first, to compare the orientation of the lower extremity during a single leg squat among male and female athletes; second, to compare the strength of muscle groups in the trunk, hips and knees between the two genders; and third, **to evaluate the association between trunk, hip and knee strength and the orientation of the knee joint during activity.**

Twenty-four male and 22 female athletes served as subjects. Muscle force was measured in each subject for trunk flexion, extension and lateral flexion, hip abduction and external rotation, and knee flexion and extension. **The frontal plane projection angle of the knee during a 45-degree single leg squat was also determined.**

Results of the study show that men and women move in opposite directions during a single leg squat. This is consistent with other studies which show that women performing athletic moves (cross-cutting maneuvers, jump landing, etc.) tend to begin in a valgus (knock-knee) posture and move even more further into valgus, as opposed to men who begin in a valgus posture but move to more neutral alignment. **This study also demonstrated that women produce less force than men** in all muscle groups tested (with the exception of trunk extension.) The projection angle of the knee during the single leg squat was most closely associated with hip external rotation strength.

This is another study that documents the importance of **balanced strength in the trunk, hip and knee musculature for proper knee mechanics**, since women are more prone to collapse their knees inward (valgus) than men. Results of this study also indicate the importance of adequate range of motion in the hip adductors and strength in the hip external rotators. **Fitness Professionals should pay close attention to strength and range of motion deficits in the trunk, hip and knee musculature and program to correct these deficits.**

Willson, John, D. et al. Core strength and lower extremity alignment during single leg squats. . Medicine & Science in Sports & Exercise. 2006, 38(5), 945-952.

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Exercise of the Month— Stability Ball Bridges

Preparation:

- Lie in the supine position on a stability ball. Cervical Spine should be in neutral position.
- The legs are bent 90 degrees from the knees. Feet are directly under the knees.



Movement:

- Engage inner abdominals and pelvic floor muscles to assure spinal stabilization.
- Slowly lower hips towards the floor without allowing the ball to move.
- Maintaining flexed gluteal muscles, raise hips back up towards the ceiling into a "table top"



FACTOID

Tonic Muscles, (postural muscles), contract with little to no movement of the skeletal bones it attaches, while **phasic muscles** provide strong muscular contractions that create movement of the skeleton.

Trainer Spotlight



*Bill Scibetta, RN, NSCA-CPT
President—Precision Fitness*

Bill is a licensed Registered Nurse as well as a National Strength and Conditioning Association – Certified Personal Trainer. After spending years practicing in the specialty of Orthopedics and Sports Medicine, Bill has dedicated his career to helping individuals identify and overcome obstacles that stand in the way of optimal wellness and peak physical performance.

A Good Swing Starts with a Good Base of Support

A good golf swing starts with a strong base of support (hips, pelvis and lumbar spine). A highly conditioned base of support will provide stability throughout the swing and allow forces to be effectively transferred from the legs through the hips to the upper body to produce optimal power and control. A strong base helps protect the joints and other supporting tissues against the strong compression, shear and torsion forces that occur during the golf swing. Unfortunately, there are a number of factors that predispose the golfer to developing poor postural patterns and muscle imbalance that result in a weak base of support.

Many of us now find ourselves spending excessive time in our cars or sitting in poorly designed chairs hunched in front of a computer. Over time we are conditioned to have tight hip flexors and a lazy posture. Poor posture and muscle imbalance decrease musculoskeletal efficiency and disrupt communication within the neuromuscular system. Short tight muscles display a lower activation threshold, meaning they fire at times when they should be less active or inactive. Over activation of dominant muscles leads to decreased neural control to their opposing muscles. Simply stated, "when one muscle becomes tight and overactive its opposing muscle becomes loose and lazy." Tight dominant hip flexors create weak and lazy hip extensors (gluteals) and set off a chain reaction of dysfunction.

Tight hip flexors pull the pelvis into a forward tilt leading to an excess curvature of the lumbar spine. As a result the muscles of the abdominal wall lengthen and weaken while the muscles of the lumbar spine get short and tight. This pattern also causes disruption in our body's lateral stabilization system. The hip abductors (muscles that move the legs away from the center of the body) along with their opposing adductors (muscles that move the legs toward the center of the body) work to stabilize the pelvis during lateral movement. Inefficiency in this lateral stabilization system inhibits coordination and hinders proper weight shift through the golf swing. So what we are left with are weak hip extensors (gluteal muscles) that can't drive the hips through the swing, dominant hip flexors that won't allow the hips to open to allow a full turn, tight spinal flexors that are forced to do the work of the weak hip extensors, but are too tight to make a full rotation, and a lack of coordination needed to make consistently good ball contact. To make matters worse most golfers spending hours at the driving range reinforcing and strengthening this dysfunctional pattern.

To break this pattern of dysfunction and build a strong base of support we must first establish coordinated muscle firing among the deep stabilizing abdominal musculature, the hip flexors and extensors, hip abductors and adductors, and spinal flexors, extensors and rotators. This is accomplished through the activation and strengthening of weak and inhibited muscles, and stretching the tight and dominant muscles. Once these muscles are re-educated and coordinated muscle firing is established we can then work to build optimal strength and power.

The first step in this process is the development of the deep abdominal and pelvic musculature. This is done by mastering the abdominal brace. The abdominal brace is an isometric contraction of the abdominal muscles meaning the abs are neither pulled in nor pushed out. This maneuver should be the first step of every exercise as it is the foundation of lumbar, pelvic, and hip stabilization. Don't limit the abdominal brace to exercise. Practicing the brace with all activity (sitting, walking, driving, golfing, etc) will help you develop the endurance your abdominals need to maintain a strong base of support as well as a healthy back.

It is important to implement a good stretching program to lengthen tight muscles as you strengthen your base of support. Aside from the already mentioned hip flexors and lumbar extensors other areas commonly tight among golfers include the muscles of the hamstrings, neck, scapular elevators (upper trapezius and levator scapulae) and shoulder internal rotators. A qualified strength and conditioning or golf fitness professional can provide you with a postural and biomechanical analysis that can provide a more detailed picture of your specific areas of need. Improving your base of support will add distance and control to your game and help prevent, reduce, and possibly eliminate golf related pain and injury.

authored by bill scibetta

What's That???

"Skeletal muscles are vulnerable to injury due to overuse and wear and tear of daily life, yet they are overlooked as the major source of pain and dysfunction"

Source: *Trigger Point Therapy for Myofascial Pain*, Finando, Donna and Steven. Healing Arts Press.

Quiz Answer:

D. All of the above.

All three types of muscles (cardiac, skeletal, and visceral) provide the functions mentioned on page 2

Chef's Corner...

Grilled Shrimp with Mango Barbecue Sauce

This recipe serves: 4

Ingredients

1 mango, peeled, pitted and coarsely chopped
 1 large shallot, peeled and coarsely chopped
 1/2 to 1 jalapeño chili pepper, or to taste, seeded
 1/4 cup fresh lime juice
 1 teaspoon honey
 salt to taste
 1 pound medium or large shrimp, peeled and deveined
 freshly ground black pepper
 4 bamboo or metal skewers
 2 cups hot, cooked rice



Cooking Instructions

1. Place the mango, shallot and jalapeño pepper in a food processor or blender and puree. Add the lime juice and honey. Season to taste with salt and more jalapeño pepper if desired.
2. Preheat the grill to medium-high.
3. Place the shrimp in a medium bowl. Drizzle the shrimp with 2 tablespoons of the mango mixture and season with salt and pepper. Thread the shrimp on the skewers.
4. Grill the skewers of shrimp on both sides until the shrimp are just cooked through, about 2 to 3 minutes per side.
5. Serve the shrimp over rice and drizzle with the remaining mango sauce.

Serving Size: 1/4 pound of shrimp with sauce

Nutrition Information

Number of Servings: 4

Per Serving			
Calories	390	Carbohydrate	59 g
Fat	5 g	Fiber	1 g
Protein	26 g	Saturated Fat	1 g
Sodium	272 mg		

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Precision Fitness

8311-4DMagnoliaEstatesDr
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

When Exercising Right Looks Wrong (II)

Enter any health club and a concept is very apparent, the same exercise performed again and again. Crowded floor space taken up by machines designed to make exercise easier, and a thought process called 'gym science' which involves no science at all. My last article touched on some of the thought processes or lack of thought that goes into proper exercise. With the advent of the computer exercise science has changed drastically. Particularly needle EMG (electro myo-gram) testing, this is where a hair thin needle is inserted into a muscle and its electrical and contractile properties are measured. The results of these studies have drastically changed how we exercise. Exercises that we did in the past have been proven ineffective and better exercises have been proven more efficient and effective.

So what is right and what is wrong?. It depends on what you are training for and your personal fitness and wellness goals. An athlete should almost never train sitting down. Sports are played standing, involve balance, agility, speed and multi-joint movements. There is no basis for training sitting down for a non athlete either. We spend too much of our lives sitting in the car at the computer and on the phone. Yet we go to the gym and contort ourselves into a machine that basically forces us back into a rounded seated posture and now forces us to move according to the machine, not according to how your body wants to move.

Lets begin with everyone's favorite body part, chest. Chest must be trained first in the week, ever notice that all the guys train chest on Monday. The chest is an accessory muscle that aids in glenohumeral stability and arm movements, but we love to isolate and enlarge the chest. This actually interferes with athletic performance secondary to altering arm mechanics. I could go on a rant about the only way to have a strong chest is to first build a strong and balanced back, but I will save that for another time. The problem with training chest is it is horrible on the shoulder and elbow, we are not designed to lay on our back and hold a bar with weights, sometimes a lot of weight. Read a great article call 'big bench bad shoulders' by Paul Chek.

Try a single arm chest press while standing at an adjustable cable machine, think that is easy, now try it while on one leg. Perform the press slowly with a weight you can handle, press from your chest not your arm/elbow and by all means do not lean your body weight into the movement. When was the last time you did a push up?. Still a great exercise. Works chest, triceps, abs and spine. Keep you glutes tight, head up and be gentle on those elbows please, don't lock out. Do push ups with your feet on a stability ball, one foot only on the ball. How about placing your hands on the stability ball and feet on the floor and now doing a push up, hello stabilizers and abs. What about pushups on a medicine ball, alternating from arm to arm. Speaking of balls, a single arm dumbbell chest press lying on a stability ball activates almost every muscle in the body.

The exercise variations for a safe and efficient chest workout are beyond the scope of this article, but hopefully this got you thinking. The bottom line is that single joint isolation exercises only lead to joint damage and injury. Multi-joint exercises not only protect joints but stabilize them as well, multi-joint exercises also activate the majority of the core and pelvic musculature. The bottom line is the more muscles you can activate the more efficient the exercise is and the more calories you will burn in less time with less effort. Mechanical efficiency, global stabilization, agonist / antagonist muscular balance, concepts to know and train by.

Authored by bryan fass