evolve

The Body Dynamics Quarterly Newsletter

Stretching for Optimal Performance

In the fitness and health industry, it is generally well-accepted dogma that stretching is an important part of a regular strength training program. And yet stretching is the most overlooked part of most people's fitness and exercise programs. When performing exercises for both strength and flexibility, one need not sacrifice the other. As a matter of fact, flexibility training and strength training can actually enhance one another.

Most people understand that flexibility is important but often do not understand the effect stretching has on the body. Unlike weight training and cardiovascular activity, stretching does not burn significant calories, and it is not usually perceived as a body-shaping activity. However, few realize that stretching before and after a workout has benefits beyond enhancing muscle pliability. Stretching can actually strengthen the body, prevent injury, and dramatically decrease recovery time.

SPEEDING MUSCLE RECOVERY

One of the best times to stretch is right after a weight training workout. After you have used weights (or other means) to overload and fatigue your muscles, the muscles are somewhat shortened. This shortening is due primarily to the repetition of intense muscle activity that often only takes the muscle through part of its full range of motion. This shortening of muscle fibers makes the muscle appear bigger. The shortened muscle is also full of lactic acid and other byproducts from exhaustive exercise. If the muscle is not stretched afterward, it will retain this decreased range of motion, and the buildup of lactic acid will cause post-exercise soreness. Static stretching of the shortened muscle helps it become more pliable and return to its full range of movement. It also helps remove lactic acid and other waste products from the muscle. Hence, stretching speeds muscle recovery and decreases the muscle soreness typical of any fitness program.

Stretching strengthens the body, prevents injury, and decreases recovery time.

ENHANCING MUSCLE STRENGTH

Stretching before weight training also offers benefits. It can actually improve your overall strength as well as endurance. Many people do not realize the impact that periodic stretching

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High- versus Low-Resistance Strength Training

In a study published in *Physical Therapy* in April 2008, authors Jan, Lin, and Liau et al. conducted a randomized controlled trial with 19 men and 79 women to compare the effects of high- and low-resistance strength training. Although the study specifically addressed patients with knee osteoarthritis, the results may be generalized to a broader population.

The authors found that both approaches to strength training resulted in significant improvement in strength and function, but high-resistance strength training may have a greater positive impact.

Perhaps the most valuable information this study imparted was the definitions the authors used for high- and low-resistance strength training: High-resistance was defined as 60 percent of a 1 Repetition Max, where subjects performed 3 sets of 8 repetitions 3 times/week. By contrast, low-resistance was defined as 10 percent of a 1 Repetition Max, where subjects performed 10 sets of 15 repetitions 3 times/week.

In other words, in order to receive the same benefit, those who choose low-resistance

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Inside This Issue

From the Body Dynamics Director

I hope you all had a great summer with plenty of opportunities for the four Rs: Rest, relax, replenish, and refresh! As the kids head back to school, we hope you'll consider the backpack pointers in this issue—there really is a formula for keeping backpack weight manageable for our kids! Also, a friendly reminder about our after-school Gravity Training program for kids (Tuesdays and Thursdays 4 to 4:30 PM). It's a great way to cross-train for those already involved in team sports, and it boosts the exercise quotient for kids who need a new or different outlet. Defy gravity, join the Youth Team!

Speaking of teams, we have an incredible one—one that includes great clinicians, a dedicated staff, and wonderful, loyal customers. Thank you to everyone for helping to bring such a great spirit to BDI and creating such a rewarding environment to work in. I hope that folks had the opportunity to meet some of our newest team members this summer and are ready to welcome back our new Mamas—Steph, Kasey, and Amy—in the fall! It's getting hard to keep track of who everyone is, so check out our Web site for updated staff bios and photos. And while you are at it, register for fall classes!

Hang loose through the "Dog Days." We'll see you in September.

Jennifer M. Gamboa, DPT, OCS, MTC

Stretching for Performance

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has on the fitness level of their body and the body's ability to perform. When your muscles are not stretched, localized areas within the muscle have fibers that become stuck together. Because these "knots" of muscle remain stuck or adhesed during the weight-resisted exercise, they cannot participate in the shortening of that muscle. Subsequently, much less muscle and fewer motor units are used for each repetition. The result is less strength and slower progress. Stretching before a workout counteracts these knots by pulling the adhesed muscle cells apart. This allows the cells to function at their full range of motion and contribute to each repetition.

So muscle flexibility is crucial to strength and fitness. Stretching before a workout is paramount to realizing maximum strength gains and is necessary to experience the greatest benefit during a workout. Performing flexibility exercises after a workout allows the muscle to work at its full range of motion and helps reduce muscle soreness. Ultimately, stretching, in addition to strength and cardiovascular training, will condition the body for optimum performance.

To feel the benefits of stretching first hand, register for our "Stretch for Effect" class, held Saturday mornings, or make an appointment with a Body Dynamics trainer, who can develop a home strech program targeting your problem areas. ■

Strength Training

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training must still achieve a similar training volume as experienced under high-resistance conditions. Take home point: If you decrease the resistance, you must increase the repetitions—by a lot—to achieve the same strength gains. ■

Body Dynamics, Inc.

evolve is a quarterly newsletter of Body Dynamics, Inc.

Body Dynamics, Inc. (BDI) is a comprehensive center for orthopaedic and manual physical therapy and a leader in training elite athletes and performing artists. BDI's highly evolved programs address musculoskeletal needs through a multidisciplinary approach that integrates rehabilitation with Pilates-evolved fitness programs and massage therapy.

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Bolster Your Immune Response

As summer turns to fall, it is not uncommon to begin catching colds, struggling with sore throats, or complaining of sinus congestion. For these reasons, late summer and early fall are ideal times to book an acupuncture session, which can strengthen your immune system in anticipation of the challenges that cooler weather brings.

Symptoms of a weakened or imbalanced immune system vary and may include:

- Susceptibility to colds
- Chronically swollen lymphatic glands at the neck, armpit, or groin
- Fatigue (including chronic fatigue)
- Difficulty recovering from a common cold, which may develop chronic sinusitis, chronic ear infection, or chronic pharyngitis
- Stomach flu, indigestion, and low appetite
- Autoimmune diseases and allergies
- Injuries that heal slowly and cause repeated problems
- Scars that do not heal completely even after years, keloid formation, and adhesions
- Overall slow response to treatments for any disease or complaint

To help your body make the transition from languid summer days to the brisk weather that autumn ushers in, begin by going to bed earlier. Changing your diet can also be helpful. Switch from cold drinks, raw salads, and fruits, all favored during hot summer months, to warmer drinks and more thoroughly cooked foods like soups and stews. Autumn is a time of letting go, so find a new home for the possessions you no longer need. Last, ask your acupuncturist for advice or help if you have any of the symptoms of an imbalanced immune system. ■

Fitness Classes Now Forming

- Mind-body coordination
- Pilates-evolved fitness
- Cardiovascular health
- Strength training
- Stretch and ballet

Kids and Backpacks: Smart Tips for Spine Safety

Research studies have shown that forward-head posture, rounded shoulders, and gait imbalance increase when students wear backpacks that are more than 15 percent of their body weight. These postural deviations tend to be greater in children and preadolescents. Improper backpack use can also lead to the development of bad postural habits during childhood that can continue for a lifetime. For all of these reasons, it's important to select a backpack carefully and to teach your child to wear it properly.

The following tips are recommended for safe backpack use:

- Wear both straps. This better distributes the weight of the backpack and promotes more symmetrical alignment.
- Wear the backpack over the midback. The muscles of the midback are strongest and best able to support a heavy load. Never let a pack extend below the lower back, regardless of what fashion dictates!
- Lighten the load. Keep the back pack at 10 to 15 percent or less of your child's body weight. Only those items required for the day should be included in the pack.
- Stay strong! The more fit your child is, the better she/he is able to support a heavy backpack.

When choosing a backpack, consider the following ergonomic features:

- Size. The larger a backpack is, the greater the potential for filling it up! And heavy backpacks cause muscle fatigue and soreness. Choose a size that is adequate for the amount of books—but no larger.
- Padded back and straps. This will reduce pressure on the back and shoulders and improve comfort.
- Multiple compartments. These are helpful in distributing the load evenly throughout the backpack.
- Extra hip and chest straps. These straps can distribute the weight to the trunk and hips.

There are a variety of signs that your child's backpack may be too heavy or is being used incorrectly. These signs include red marks across either shoulder, postural changes, difficulty putting on and taking off the backpack, tingling in arms and hands, or general aches and pains in the back, neck, or shoulders. If pain persists after making the adjustments described here, see your pediatrician. ■

News and Notes From Body Dynamics

- Body Dynamics is the 2008 recipient of the American Physical Therapy Association's Private Practice of the Year award! The award is designated by the association's Private Practice Section to acknowledge one physical therapy practice each year for innovative operation.
- Congratulations to Jason Grandeo, who received his Doctorate in Physical Therapy (DPT) this summer, and to Amy Humphrey, who is now a board-certified Orthopedic Clinical Specialist (OCS)!
- This summer Body Dynamics ran an 8-week program known as P.Ace (or Performance = Athletic Competitive Enhancement) for the U15 Annandale Express Girls Soccer Team. This off-season training program focuses on speed, agility, strength, balance, and power, which translates into explosive playing on the field and decreased risk for ACL injuries.
- Sonia Cronmiller attended a 2-week seminar in NYC on "Dynamic Dancing: Kinesthetic Anatomy and Biomechanics of Motion of the Spine and Trunk," taught by Irene Dowd.
- Ausra Kaminskas attended a seminar on facial rejuvenation massage, acupressure, and acupuncture.
- Chip Coleman will be performing in the Washington National Opera's production of The Pearl Fishers this fall.

Calendar

Early Bird Registratin Deadline	8.22
Fall Classes Begin	9.1
Labor Day: No Classes	9.1
Breath Workshop	**10.24**
Thanksgiving: No Evening Classes	11.26
Thanksgiving: No Classes	11. 27-29
Golf Conditioning Workshop	**12.6**
Fall Classes End	12.20

Let us know how we're doing.
Fill out our online survey available on www.bodydynamicsinc.com.

Your Questions About Neuromuscular Reprogramming (NMR)

WHAT IS NMR?

Neuromuscular reprogramming or NMR is a form of therapy that connects the brain and body in a kinesthetic conversation to help correct dysfunctional patterns the body has developed from shock, pain, or injury.

HOW DOES NMR WORK?

NMR uses muscle testing to create an immediate link between a muscle and the motor control center of the brain.

WHAT IS MUSCLE TESTING?

Muscle testing asks a muscle to resist a certain amount of applied pressure. The action of resisting the pressure informs the therapist how well the sensory feedback system is working.

WHO CAN BENEFIT FROM NMR?

Anyone can benefit from NMR. Most of the time, we aren't aware of how our body moves us through our daily activities. It often makes adjustments so that we can continue doing what we always do. Sometimes, those adjustments—or quick fixes—aren't in our best long-term interest. NMR gives the body and brain a chance to consciously connect to create a healthier, more functional movement pattern.

HOW CAN I LEARN MORE?

Contact us for more information about NMR or to schedule an appointment with our new massage therapist, Kim Fischer-Key.

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