

Notes from Editor

School is finally back!! The time for fall sports such as football, soccer, cross country, and volleyball.

Should your kids decide to participate, read about the guidelines on youth and strength training.

Yours in Health,

Dave Radin
Editor

Youth Strength Training

As adults, we know what strength training can do for our bodies and our self-esteem. Many of you may be wondering if strength training is appropriate for your kids. Research has shown that youth participating in strength training elicit gains in muscular strength and endurance, improvement in body composition, and sports performance. The question remains, at what age can a youth start a weight training program? Avery Faigenbaum, an expert in the field of youth strength training, says "Generally speaking, if 7 and 8 year old children are ready for participation in organized sports or activities (e.g. little league baseball or gymnastics), then they are ready for some type of strength training."

The most common concern with youth weight training is injury to the growth plate. Injuries that occur during a weight training program are usually a result of improper supervision, overloading, and improper technique. There have been no documented cases of growth plate injuries during a competently adult supervised weight training program.

Youth should start using bodyweight as resistance and build from there. More advanced individuals can use light dumbbells and barbells, provided adequate and competent adult supervision are available. Each session should be focused on correct form and technique.

Below are the basic guidelines for Youth Strength Training:

- At most, a ratio of 1:10 (supervisor to children) to provide adequate supervision
- Encourage kids to stay hydrated during the exercise session.
- Warm-up for at least 10 minutes of movement or calisthenics and stretches.
- Perform 6-8 exercises for the major muscles groups, 1 set of 10-15 repetitions. (Squats, Push-ups, ab curls, etc) When 15 reps can be performed, increase the sets to 2 per exercise. After that, a small increase in weight of 1-3 lbs.
- Gradually increase weight as strength improves.
- Train on non-consecutive days (every other day).
- Do not perform any heavy or maximal lifts.
- Keep it fun.



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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

What vitamins does the brain need in order to produce glucose?

- A. Vitamin B1
- B. Vitamin D
- C. Vitamin A
- D. Vitamin C

answer can be found on page 4

Hot Topics

Explosive Training Increases Energy Expenditure

Most strength professionals advocate slow, controlled concentric contractions during resistance training to best stimulate both muscularity and calorie expenditure. **The philosophy has been that slow contractions create greater lactate accumulation and thus greater muscle fatigue providing a better stimulus for hypertrophy and calorie expenditure.** New evidence suggests that explosive contractions may best promote energy use both during and after resistance training. **In addition, an explosive contraction has greater potential for stimulating type 2B fibers, which have a greater affinity for hypertrophy.**

Researchers studied 9 college-age men who each performed three different exercise protocols using a plate-loaded squat machine. **Squats were completed either using a slow cadence (2 seconds) or explosively (<1 second) both with a weight equal to 60% 1RM for 4 sets of 8 repetitions. The third protocol consisted of 6 sets of 4 repetitions with a heavier resistance (80% 1RM).** The eccentric component was controlled at 2 seconds, range of motion was consistent, and rest intervals were maintained at 90 seconds between sets. **Researchers collected expired air at 20 min before, during, and 1 hour post-exercise. Four blood samples were collected at 15-minute intervals beginning 15 minutes post-exercise.**

Although blood lactate was greater after slow contractions, as expected, **the explosive group actually burned more calories both during and after exercise.** The results for the heavy explosive group were similar to the slow contraction group.

Given the results of this study, **experienced exercisers may benefit from incorporating more explosive contractions during resistance exercise.** Beginners should strive to improve exercise technique and form through slow, controlled movements before attempting explosive contractions.

Mazzetti, Scott et al. (2007) Effect of Explosive versus Slow Contractions and Exercise Intensity on Energy Expenditure. Medicine and Science in Sports and Exercise. 39(8): 1291-1301.

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Exercise of the Month—Knee Tucks (stability Ball)

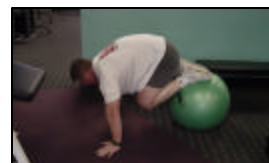
Preparation:

- Assume the prone position with arms extended and a stability ball placed under the shins. (Push up position)



Movement:

- Engage inner abdominals and pelvic floor muscles to assure spinal stabilization.
- Pull knees towards chest. (Tuck position)
- Return to the start position and repeat.



FACTOID

It takes more muscle involved to produce a frown than a smile. So conserve energy and smile!

Trainer Spotlight



**Dave Radin, CSCS,
USAC-L3, NASM-CPT**
Personal Trainer

After receiving a Bachelor of Science in Health and Fitness from Springfield College in 1993 Dave spent seven years working at the prestigious Duke University Diet and Fitness Center. During his time in Durham Dave helped coach world class athletes as a volunteer Strength and Conditioning Coach at UNC – Chapel Hill. Prior to joining Precision Fitness, Dave served as the Personal Training Director for the Lake Norman YMCA. Dave has helped countless individuals meet a variety of fitness and wellness goals and has extensive experience coaching young athletes to a higher level of fitness and athletic performance.

The Power of the Power Nap

What do Leonardo Da Vinci, Thomas Edison, Albert Einstein, John F. Kennedy, Eleanor Roosevelt, Ronald Reagan, Winston Churchill, John D. Rockefeller all have in common? Aside from being brilliant thinkers, great leader, and amazingly productive individuals, they were all Nappers!

According to the results of a poll conducted by the National Sleep Foundation, the majority of American adults (63%) do not get the recommended eight hours of sleep needed for good health, safety, and optimum performance. Almost one-third of those polled report sleeping less than seven hours each week night, with many saying they try to “catch – up” on their sleep on weekends. This approach simply doesn't work. Getting adequate sleep not only helps you feel rested but it allows you to restore and rejuvenate many body systems such as:

- **Growth and development** – Growth hormones are released during sleep, and sleep is vital to proper physical and mental development. Deep sleep also promoted healing on a cellular level.
- **Nervous system** – gest that neurons used themselves during sleep. deprivation, neurons are ciently and the nervous
- **Immune system** – ens the immune system, comes more susceptible
- **Memory and learning** memories, as well as memories. After you sleep may solidify the
- **Mood enhancement** The parts of the brain



Naps can give you many physiological benefits

Some sleep experts sug- during the day repair When we experience sleep unable to perform effi- system is impaired. Sleep deprivation weak- thus making the body be- to infection and disease. – Sleep seems to organize help you to recover learn something new, learning in your brain. **and social behaviors** - that control and social in- teractions, emotions and decision-making, slow down dramatically during sleep, allowing optimal performance when awake. REM sleep seems especially important for a good mood during the day.

Dr Sarah Mednick, a psychologist and sleep researcher at Salk Institute for Biological Studies; along with colleagues at Harvard University conducted a series of studies looking at naps in normal populations. These studies proved not only that a that a nap can restore proficiency in a variety of critical skills that we rely upon everyday, but also showed napping can produce improvements equal to those observed after a full night of sleep. In her book “Take a Nap! Change your life”; Dr. Mednick asserts “Scientists no longer argue about whether napping is natural or unnatural, helpful of unhelpful. These are givens”

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Chef's Corner...

Pepper-Crusted Beef Tenderloin with Roasted Vegetables

This recipe serves: 4

Ingredients

4 small red skinned potatoes, halved
 2 carrots, peeled and cut into 3/4-inch pieces
 2 parsnips, peeled and cut into 3/4-inch pieces
 2 tablespoons olive oil
 1 tablespoon chopped fresh rosemary leaves, or 1 tea-
 spoon dried
 salt to taste
 freshly ground black pepper
 1 pound beef tenderloin



Cooking Instructions

1. Preheat the oven to 425°F.
2. In a mixing bowl, toss the potatoes, carrots and parsnips together with the olive oil, rosemary, salt and pepper. Transfer the vegetables to a shallow roasting pan and roast them in the oven for 10 minutes.
3. Season the beef with salt and a generous amount of pepper. Remove the vegetables from the oven and place the beef on top of them in the roasting pan. Return the pan to the oven and roast the vegetables and beef for 15 minutes.
4. Turn the temperature down to 350°F and continue roasting for an additional 15 minutes or until the vegetables are tender and the beef is cooked to the desired doneness. (To check for doneness, insert a meat thermometer into the thickest part of the roast. It should read 135° for medium rare.)
5. Let the tenderloin rest for 10 minutes before slicing. Serve a few slices of the beef with a large spoonful of the vegetables.

Nutrition Information

Serving Size: 2 or 3 slices of beef with vegetables

Number of Servings: 4

Per Serving			
Calories	315	Carbohydrate	27 g
Fat	13 g	Fiber	4 g
Protein	23 g	Saturated Fat	3 g
Sodium	73 mg		

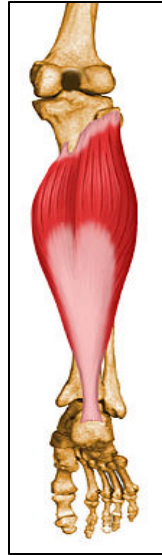
Quiz Answer:

A. Vitamin B1

(also known as thiamine)

The brain's main source of energy is glucose, a simple sugar. To be able to produce the glucose needed for daily energy requirements, the brain B1.

Muscle Anatomy



Muscle: Soleus

Origin: Posterior surface of fibula head and upper shaft; soleal line of tibia

Insertion: calcaneus via the Achilles tendon.

Eccentric Action: decelerate ankle dorsiflexion, decelerate internal rotation of lower leg, decrease joint pronation

Isometric Action: stabilizers for calcaneus

Concentric Action: ankle plantarflexion

The soleus lies underneath the calf muscle, known as the gastrocnemius (*see august newsletter for more information*).

This muscle can become tight on individuals who tend to walk on their toes or women who wear high heels. People with a tight soleus tend to have problems with squats, specifically with keeping their heels on the floor. A program of stretching the soleus, building stability in the ankle by performing single leg balance progression exercises will usually correct this problem.

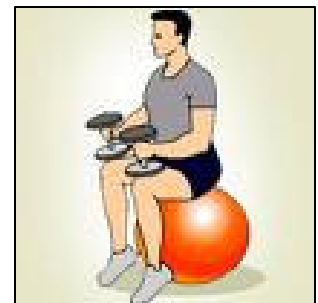
Below are exercises for the soleus:



Soleus stability



Soleus stretch



Soleus strength

What's That???

According to the US Centers for Disease Control and Prevention (CDC), rates of type 2, or adult onset, diabetes have tripled in the last 30 years. This is due largely to the global epidemic of obesity, a major risk factor for developing type 2 diabetes. The connection is so strong that some health experts have coined a new term, "Diabesity".

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

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You don't need to be sleep deprived to enjoy the scientifically proven benefits of a good nap which include:

- Increased alertness
- Improved motor skills
- Improved memory
- Reduced errors
- Better decision making
- Increased sensory perception
- Elevated mood
- Increased creativity
- Reduced stress
- Reduced illness

Keys to the perfect nap

- **Time it right!** Between 1 and 3p.m there is a natural dip in our circadian rhythm, our body temperature drops and energy levels usually dip. This is an ideal time for a nap. You should not nap two to three hours before bedtime.
- **Avoid** consuming large quantities of caffeine as well as foods that are heavy in fat and sugar, as these may impair your ability to fall asleep.
- **Find a clean, quiet place where you won't be disturbed.** Try to avoid light, darken the room, or wear an eyeshade. Darkness stimulates the sleep inducing hormone.
- **Utilize breathing exercises and imagery** to help you relax and fall asleep. Once you are relaxed and in position to fall asleep, set your alarm for the desired duration (see below).
- **Tailor your naps to fit your needs.** If you simply want to be more alert and have more energy and stamina, a 15- to 20-minute will work just fine. If you have to memorize a speech or remember data or formulas you may want to sleep a bit longer; 30 to 50 minutes will allow you to get some slow-wave sleep. Waking up right in the middle of slow wave sleep (the deepest stage of sleep) however may leave you feeling tired and groggy. If you find this to be the case simply make your nap a little shorter or a little longer.
- **Most importantly** - Loose the guilt! Recognize that you're not being lazy; napping will make you healthier, more alert, and productive.

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