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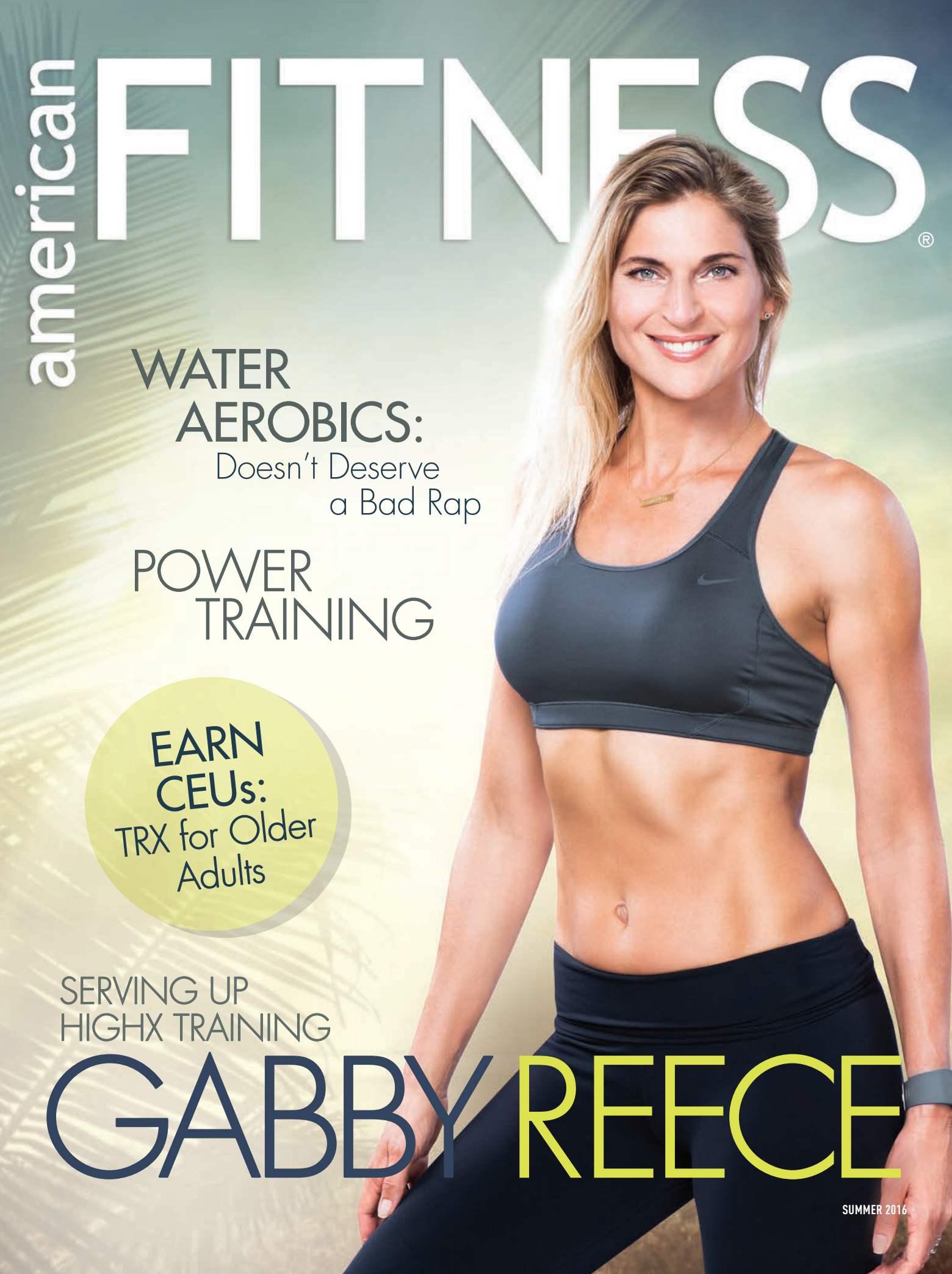

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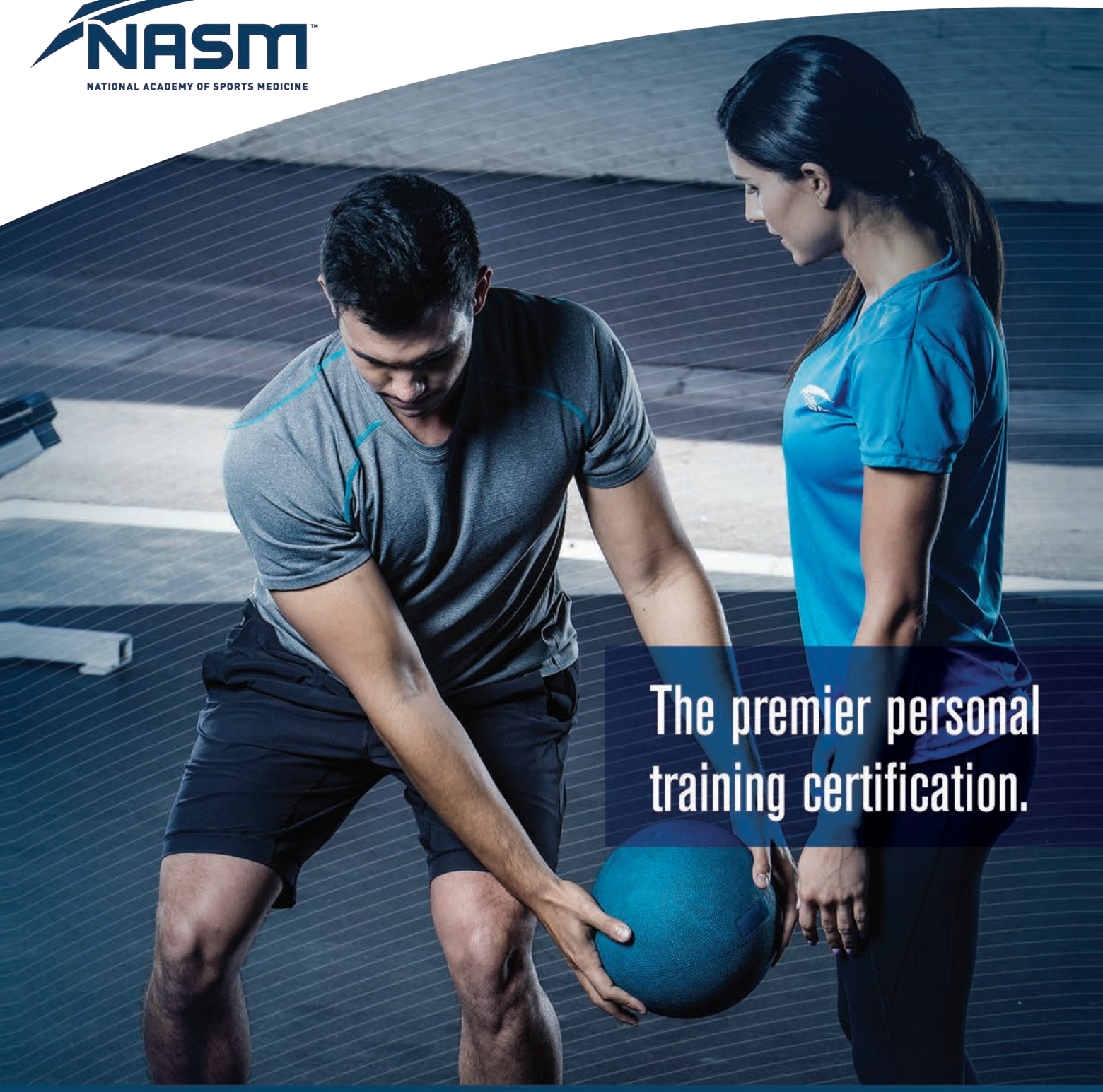

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ANDREW WYANT, PRESIDENT

TAKE FIVE

SOME OF OUR FAVORITE HIGHLIGHTS FROM THIS ISSUE:

WHY WE CHOOSE FITNESS CAREERS

"Why do we do what we do?" That's a question I've been thinking a lot about, specifically about why we all chose careers in the fitness industry. When I speak with personal trainers, fitness instructors and coaches about the reasons they started their fitness careers, I get many different answers. For some it was a love of sports, working out, or a passion for staying in shape. For others it was because they didn't like their old jobs, or they simply wanted to supplement their income. But whether it was for the adrenaline, endorphins, or simply to do something different, I've found that the reason you keep doing what you're doing is almost always the same: the satisfaction and gratification you get from helping others lead happier, healthier lives.

Every one of you is an agent of change and, make no mistake about it, you're not only changing lives, you're *saving* lives. You're both helping people get in better shape physically and helping them feel better about themselves mentally. In this issue of *American Fitness,* you'll meet people like you who are passionate about fitness and helping others.

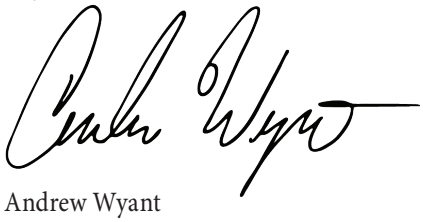
I can't think of a more admirable example than Gabrielle "Gabby" Reece. A living beach volleyball legend and a long-time advocate of health and wellness, Gabby turned her passion for fitness and a healthy lifestyle into HIGHX. Drawing from her experience as a professional athlete working with "the best trainers in the world," Gabby created this high-intensity, team-oriented circuit training program designed for any age, gender and fitness level.

Next, David Cruz shows how you can help prevent the most common complaint among both competitive and recreational swimmers. Think training for power is just for high-performance athletes? Think again. In "Got Power?" Ken Miller not only makes the case that everyone can benefit from power training, he goes on to share a total-body routine.

These articles just scratch the surface of the inspiration and information you'll find in this issue.

I began by asking, "Why do we do what we do?" It's the same question I ask myself. Though the reason I became involved in the fitness industry may be different from yours, the reason I've *stayed* is not. I love coming to work every day because I believe the difference we can make in your lives helps you make a difference in the lives of so many others. I absolutely know that working together we can be a positive force in building a healthier, happier planet. And that's why I do what I do. How about you? Tell me your story at Andrew.Wyant@nasm.org. Let me know if I can share it to help inspire and motivate others as you inspire and motivate me.

Regards,



Andrew Wyant
President

WHAT'S NEW

THE NEWEST EDITION OF NASM'S *ESSENTIALS OF PERSONAL FITNESS TRAINING* LAUNCHES!

NASM recognizes the need for fitness professionals to feel confident in taking and passing their exam, as well as ensuring that they have an application-based foundation of knowledge, transforming science to real-world scenarios. Scientific research and techniques continue to evolve, and, as a result, we must all stay on the cutting edge to remain competitive and provide our clients with the safest and best programming options. With that we are thrilled to introduce the latest edition of NASM's *Essentials of Personal Fitness Training*–revised to meet the needs of the fitness industry by producing a more highly qualified and employable personal trainer based on market feedback from NASM personal trainers in addition to other industry professionals and employers. The text is sequenced to create a learning experience that exposes students to concepts as they would be relevant in the natural education and development process seen in the industry, creating a logical progression from student to professional. Leading experts across the country collaborated to author this text with the primary goal of elevating the standards of entry-level education for professional fitness trainers. Look for more details at www.nasm.org.

NET PROFIT EXPLOSION AND NASM PARTNER TO BENEFIT CURRENT AND SOON-TO-BE CERTIFIED PERSONAL TRAINERS.

Plans to help make NASM-certified personal trainers even stronger independent business owners were recently announced. Through a partnership with Net Profit Explosion (NPE), NASM will provide certified personal trainers with key insights and resources to start, maintain and grow their personal fitness training business. NPE is a leading provider of business growth and entrepreneurship consultation in the U.S. and internationally. The partnership produces unique and immediate benefits to existing and future NASM-certified personal trainers, giving them the opportunity to learn valuable entrepreneurship skills that can propel the growth of a fitness-based business. Whether a trainer is just starting out as a one-person enterprise or opening their own facility and managing a team of trainers, NPE provides education, coaching, and access to a community of like-minded professionals dedicated to helping each other take their business to the next level.

AFAA RELEASES TWO NEW COURSES: *FITNESS INSTRUCTION ESSENTIALS* AND *PRACTICAL MODALITY INSTRUCTION.*

In *Practical Modality Instruction* take an in-depth look at 11 of today's most popular group exercise modalities, covering body weight training, foam rolling, stability balls, elastic resistance, sliding discs, medicine balls, suspension training, dumbbells, kettlebells, active resistance and box/step drills. You'll learn over 175 exercises and cover the important points of exercise technique, effective cueing, common form faults and movement variations. Plus, you'll get 16 time-saving predesigned workouts and a template to create your own safe and effective programs. 5.0 AFAA CEUs. $99

Great for a refresher or for those who may be considering a career in fitness, *Fitness Instruction Essentials* teaches evidence-based principles of movement science application, while also reviewing key tips for maintaining a healthy, fit lifestyle. You'll also cover various fitness assessments and programming to help monitor participant progress while earning 2.0 AFAA CEUs. $49

Visit www.AFAA.com/courses for more info on both of these new releases!

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FITNESSMATS by WellnessMats

Fitness enthusiasts, ground support has arrived. WellnessMats®, an industry leader in therapeutic anti-fatigue flooring mats, presents FitnessMats, a complete line of elite training exercise mats for fitness facility and home use. Building on the philosophy of its parent prototype, the FitnessMat™ is ergonomically designed for durability, performance, comfort and safety.

FitnessMats tout an Advanced Polyurethane Technology (APT™) that supports body weight while providing permanent shock absorption and recovery, described as a consistent bounce back. Sporting a nonslip shell, the 100% polyurethane material suspends one's body weight, thus reducing impact on joints during exercise. FitnessMats remain stationary during HIIT and plyometric movements as well as Pilates, stretching and yoga.

The FitnessMat's antimicrobial surface won't leach, stain or discolor in the sun. The high traction, smooth exterior is easy to clean and disinfect. Void of noxious chemical smells, the eco-friendly, puncture and tear resistant mat also offers an extended life-cycle guarantee. The ADA-compliant, 20° beveled edges don't curl, thus reducing tripping and slipping hazards. A seven-year warranty accompanies a proudly displayed Made In America tag. The nontoxic and latex free mat comes in two sizes, 4 feet and 6 feet, and three colors—black, brown and grey.

"It is our mission to elevate the anti-fatigue mat category by creatively promoting a healthy lifestyle that begins from the ground up," says Daniel Bouzide, owner of WellnessMats, "This includes manufacturing the 'Best in Class' flooring products while educating consumers and businesses on the valuable health, safety and morale benefits experienced when using a premium anti-fatigue mat. We will lead the 'Healthy Way of Life' campaign while never compromising the integrity and values that our company was founded upon."

WellnessMat recently launched the MobileMat™, a smaller, portable version of its FitnessMat. The 5′ x 2′ x 5/8″ folding mat includes an integrated hinge seam and handles for easy transport.

You can purchase WellnessMats at **www.wellnessmats.com.**

PLYOJAM

PlyoJam®, created by Jason Layden, is an LA-based dance fitness concept that incorporates fast, explosive plyometric movements into fun, high-energy, high-intensity dance routines for a 60-minute calorie burning class. Students come from all over the city to take classes with Layden, who was named one of the 10 hottest trainers on Instagram. His unique workout has encouraged people to get out and dance their way to health. Participants have reported how much PlyoJam has helped them through weight loss; one even credits her amazing 75-pound (and counting) reduction to the new phenomenon! Celebrities are starting to catch on to the craze, too, with actresses such as Robin Tunney, Sarah Jane Morris and Kelly Hu raving about it, as well as fitness model Alicia Marie saying that PlyoJam is now her go-to cardio activity!

Layden is currently training other fitness pros and expanding PlyoJam, with classes now in 11 states as well as Canada and the UK. There is also an online training program in which instructors can master the six PlyoJam techniques (Tag, Button, Accent, Build, Mirror and Showcase), and then incorporate these into their routines. Instructors also learn the 20 standard plyometric movements used in a class.

Layden's mission is to push cardio dance to a whole new level of fitness, allowing people to dance harder, burn more calories, and reach fitness goals through the intense formula PlyoJam offers. Find out more at www.plyojam.com.

Reboot Your TRIATHLON TRAINING

Ready to get technical with your triathlon training? When it's time for you or your clients to get serious about training, Triathlon 2.0 Data-Driven Performance Training by Jim Vance shows you how to take your tech monitoring device results and use the data to build a program for maximum performance. Ride, run or swim, triathlon training is more than just getting out there and doing it. Racers need to develop a strong aerobic base and continue to build upon it. But this doesn't mean that more is always better. Racers don't want to arrive at the starting line undertrained or overtrained—the goal is to arrive at their performance peak. Learn to be triathlon tech-savvy with heart rate monitors, GPS trackers and cycling power meters, and how to put all the numbers together into an effective periodized training program to get over the finish line in record time.

Get on pace with Triathlon 2.0, available from Human Kinetics at www.humankinetics.com.

TRX OFFERS DIGITAL EDUCATION COURSE FOR YOGA PRACTITIONERS

TRX®, an industry leader in functional training and creator of Suspension Training® body weight exercise, released "TRX For Yoga" at the 2016 IHRSA Convention this spring. The new commercial offering provides yoga studios, health clubs and gyms a cutting-edge take on the yoga experience that can help facilities differentiate their group programming, while increasing member acquisition and retention.

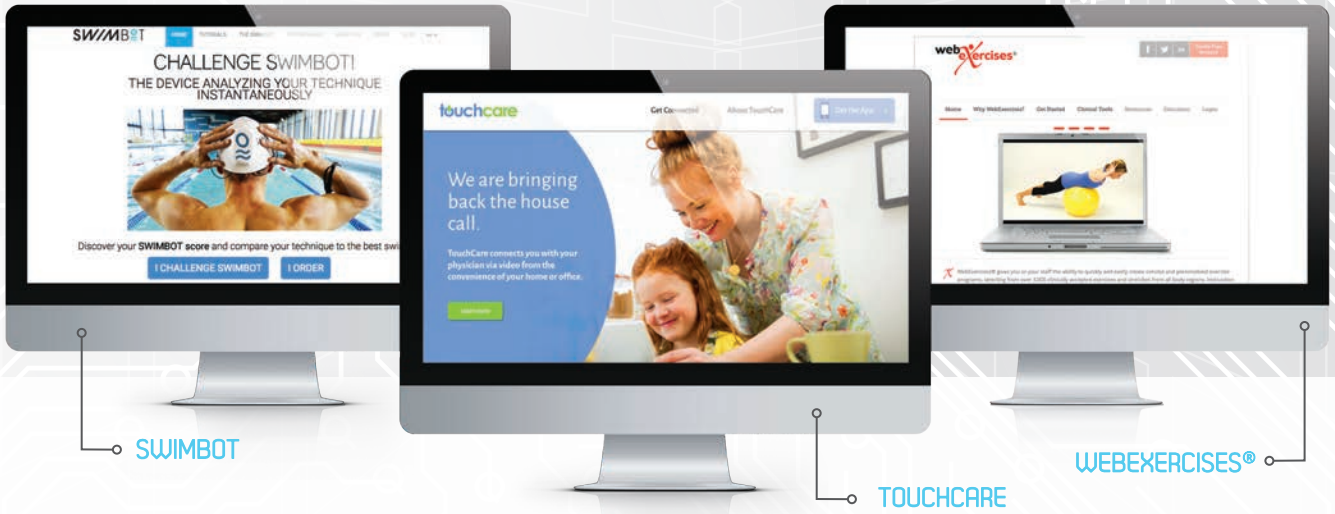
"TRX For Yoga" is a professional education course designed to fuse two of the most popular and effective disciplines in the fitness industry today—suspension training and yoga. The course provides fitness professionals the education to perform and lead full-blown "TRX For Yoga" classes to increase strength and flexibility while allowing scalability throughout different yoga poses. It also enables instructors to incorporate modules of "TRX For Yoga" into their existing yoga classes making for an ideal way to merge TRX and yoga.

"Our emphasis goes beyond 'products' and emphasizes real solutions that enhance the training experience and positively impact bottom line membership and revenue goals, and that's exactly what this new offering represents," says Brynne Elliott, Senior Director Training. "'TRX For Yoga' allows facilities to differentiate and drive incremental revenue through a dynamic new program, integrating two of the industry's most effective functional training disciplines."

TRX is a natural fit in a yoga environment. In fact, Suspension Training and yoga have experienced tremendous growth over the last 10 years. According to the National Center for Complementary and Integrative Heath, the number of Americans practicing yoga has doubled to 21 million in just the last decade. Furthermore, of the top 20 fitness trends listed by the American College of Sports Medicine for 2016, TRX programs easily fit into three of the categories.

The "TRX For Yoga" course includes detailed instructional videos, a follow-along workbook, and precise benchmarks to gauge comprehension and prepare for the final test to become a certified instructor. Upon completion of the course, fitness professionals will earn five hours of continuing education credits, be well versed in the benefits of the program, and be able to properly perform and instruct yoga sequences using the TRX Suspension Trainer.

For more information on the "TRX For Yoga" course and how to purchase, fitness professionals can check out www.trxtraining.com/products/trx-for-yoga.



LET'S GET TECHNICAL

TOUCHCARE

TouchCare was founded in 2013 with the goal of changing the way healthcare services are delivered. Their mobile app was built to make it easier for providers and patients to stay connected. Talking to physicians or healthcare providers face-to-face is the best way to communicate concerns and quickly diagnose your condition. The TouchCare app helps patients do this anywhere life takes them entirely from their mobile devices. TouchCare is being used by physicians in primary care and emergency medicine, small- to medium-sized specialty practices, at leading institutions (such as Mount Sinai), and innovative private practices that are seeking better outcomes for their patients. Learn more at www.touchcare.com.

WEBEXERCISES

Established in 2005, the WebExercises® mission is to complement in-facility/gym exercise programs allowing clients to be more successful with their corrective exercise or fitness programs. This is accomplished with online and mobile tools, so that clients can continue their exercise programs in between sessions with their personal trainers. The software is easy to use for both trainers and clients and is also backed up by a highly responsive customer support center. The program consists of 3,500-plus clinically accepted corrective exercises, 60 pre-programmed template protocols for the most common conditions, and best practice exercises that can be selected by body region. These factors have allowed WebExercises to become the industry standard for active care management and prescribed at-home exercise programming known for its efficiency and engaging user experience, which is utilized by fitness and healthcare professionals around the world. WebExercises is the exclusive content partner for companies such as Theraband®, Rocktape, BOSU®, TRX® and Airex®. For more information, visit www.webexercises.com.

SWIMBOT

Are you serious about swimming? The Swimbot coaching device uses the latest scientific data to correct technique in real time. Swimbot is perfect for swimmers who have the basic stroke techniques down but are looking to make their stroke more efficient so they can swim faster and/or longer. And competitors can gain faster swimming times as a result of stroke efficiency.

Swimbot contains a set of conduction earphones and a powerful microprocessor that produces sounds in order to instantaneously correct your swim stroke. The device is able to monitor breathing, record stroke speed and where arms are placed. Swimbot consists of nine sensors and every 10 milliseconds the information is recorded on the microprocessor. The processor can then be used to create 3-D imagery that enables the swimmer to see how they are personally using technique and where they can improve. Check out a demo at swimbot.net/en/.

BARE YOUR SOLE

TO MOVE SHOD OR UNSHOD

BY LAWRENCE BISCONTINI, MA

"Do those shoes make your feet feel funny?" So many times do instructors and trainers wearing minimalist shoes like Vibram® FiveFingers hear such questions. "I didn't start off with such shoes," says Yury Rockit, an AFAA certified instructor working in Hanoi, Vietnam. "Just like getting used to my own contact lenses, which required me to add one hour of use every day, I slowly started wearing my minimalist shoes every day. I could feel my feet muscles working in different ways during various activities, and I knew something was working that hadn't worked before."

Advocates, such as Christopher MacDougall in his book *Born to Run,* profile how the Tarahumara Indians successfully avoided protecting the feet for daily activities. Still others, including foot researcher Dr. Daniel Lieberman, advise even competing without the assistance of traditional shoes. In the arena of competitive running, the original Olympic athletes racing to the Greek city of Marathon accomplished their deeds unshod (Perrottet). Today, the fitness world is considering the training of intrinsic foot muscles as if they were as important as other, superior, major muscles.

FOOT AWARENESS

To be sure, the fitness industry did not teach foot awareness until recently, despite the numerous claims that fitness starts from the feet up. Many readers who worked as fitness professionals in the last century will recall male and female muscle diagrams where the feet were cut off from the illustrations, or were shown with shoes and no labels. Today's take proves different.

Stacey Lei Krauss, creator of The willPower Method®, based in Denver, Colo., claims that "working with foot fascia is the new black." Krauss observes that the fitness industry only now "is just starting to understand the body's interconnectivity as never before as we explore the power in proper movement training to facilitate healthy and responsive fascial tension and release. As a consequence, it only makes sense that foot fitness is a necessary part of full-body health. The foot-to-core connection is fascinating, and critically important."

FOOT FUNCTION

The foot's anatomy dazzles the brain with its complex structure of 33 joints, 26 bones, 20 muscles and endless sensory receptors. While all are designed to move us efficiently, absorbing forces (landing), creating forces (propulsion), and offering dynamic stability and mobility throughout movement, the softer part—the ball of the foot—seems to be its natural "pillow" designed to absorb the shocks of Activities of Daily Life, or ADLs. Traditional shoes place the foot in a plantar flexed position from the start, and gait becomes part of a heel-strike action by these forced dynamics (Robbins). When removing the shoe, however, gait becomes a forefoot-strike action, using this natural shock- absorbing quality of the front of the foot (Lieberman).

SWITCHING IT UP

For the fitness participant willing to investigate minimalist shoes to awaken the intrinsic muscles of the feet—even for a trial effort—knowing how to make the change is key. Fabio Comana, MA, is a faculty instructor at San Diego State University. Agreeing with Rockit, he advocates a sensible changeover. He explains:

> Perhaps the most common mistake is the instant transition to minimalist shoes without any modification to training volume, loads or modalities. I will always work to improve sensory kinesthesia (barefoot) in the foot and strengthen the intrinsic muscles within the foot, as this has generally been lost or largely ignored [in our industry]. I will always start by seeking to align the subtalar joint (to improve postural alignment) if possible (bearing in mind certain pre-existing non-correctible limitations). Once we see some improvement to sensory kinesthesia, I then implement a series of isolated foot exercises (barefoot) to strengthen those intrinsic muscles (performed seated). This will transition into static, integrated (standing) barefoot patterns, and later progress to dynamic movements. Finally, if appropriate, we consider mobility by coaching running technique in a minimalist style (coaching body orientation, hip position, leg cycles, foot strike, etc.).

Krauss agrees with other practical tips, sharing with her students the following link as she

spreads her message via her willpowermethod.com: willpowermethod.com/blog/fitness/why-toes/.

Certainly, abandoning the shoes does not prove a sensible choice for all, or for all disciplines. Should the gym environment suddenly dismiss shoes all together, or pick a stance between the extremes of shod or unshod? Could one imagine the gym extremes of taking a yoga class in traditional, basketball high-top sneakers, or trying a cycling class with the bare feet in toe cages? "Some diabetics, others with foot neuropathy, and others with foot issues should stay shod for the public fitness traditional environment," recommends Rockit. Comana cautions, "although I personally see the value of being barefoot (minimalist), I respect the limitations/concerns [of] a person within a facility. I strongly encourage a gradual transition to avoid potential injury."

SPEAKING OF FEET

For trainers and instructors ready to explore adding some new terminology from the barefoot training nomenclature into their repertoire with clients, some key words will color the fitness vocabulary:

- heel: calcaneus
- toes: phalanges
- observable foot and ankle proprioceptive movement during isometric stabilization: ankle noise
- energy center of muscles running across the bottom of the foot from below the big toe to below the little toe: transverse arch
- energy center of muscles running down the foot perpendicular to the transverse arch from below the middle toe to the calcaneus: longitude arch
- the connection of triangular energy from the three points of area below the big toe, below the smallest toe, to the center of the calcaneus: foot triad (see Figure 1)

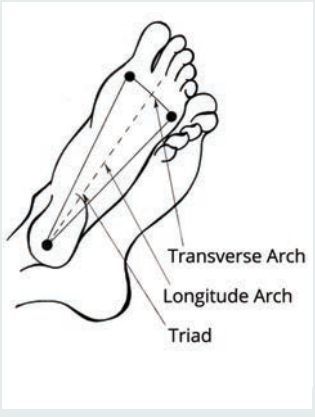


Figure 1

Today's personal trainers do not have to be foot specialists to incorporate foot awareness moves and cues into their training. Rockit advises, "just adding some of the above terminology can help educate clients about total kinesthetic awareness from the feet up. We often teach muscles of the core, yet neglect the very body parts that move us through our lives, literally. Just a cue like 'lift your phalanges inside of your shoes and sit back into your calcaneus in the squat' can help them connect to these body parts in a new way. Or 'notice how much ankle noise you have on the right lunge versus the left lunge as you negotiate balance there' can help a client understand body compensatory differences."

A TRAINING MATCH

Peter McCall works as an adjunct faculty in exercise science at Mesa College, San Diego. He recommends using the right shoe at the right time, saying, "If you play field or court sports training in minimalist shoes, [these] may not provide an advantage, [so] you want to train in the types of shoes that you will wear during your favorite sport or activity, like wearing cleats for training if you need to play in cleats, or wearing appropriate shoes for training if you play a court sport (i.e., tennis or basketball) as this will ensure that your hips and core can properly stabilize the forces created when the feet impact the ground." Like his colleagues, McCall also advocates sometimes losing the shoes and training unshod, saying that being barefoot gives "better contact with the ground, more normal motion in the foot and lower leg, and a more normalized (more efficient) movement at the hip."

IN SUMMARY

Removing shoes to set the phalanges and feet muscles free can be quite a new experience for both novice and experienced gym-goers. The key takeaway is to adopt an open-minded position and recognize that certain activities whilst barefoot or in minimalist shoes may improve a person's alignment, balance, gait and stability-mobility relationship. Ultimately, each person should make informed choices about the presence or absence of shoes; the exploration of foot freedom can unleash an entirely new world for fitness enthusiasts. **AF**

LAWRENCE BISCONTINI, MA, *is an AFAA contributing writer who has been barefoot off and on since birth. He has won multipleawards in the fitness industry including the 2015 Lifetime Achievement Award from ECA. Lawrence has been assisting group fitness educators worldwide to deepen their career growth in the industry for several decades, and consults regularly for many fitness companies. Find Lawrence at www.findLawrence.com.*

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...being barefoot gives "better contact with the ground, more normal motion in the foot and lower leg, and a more normalized (more efficient) movement at the hip."

corrective exercise

ACTIVATION & INTEGRATION

BY KYLE STULL, MS, LMT, NASM-CES

What Is Corrective Exercise?

The National Academy of Sports Medicine (NASM) defines corrective exercise as "the systematic process of identifying a neuromuscular dysfunction, developing a plan of action, and implementing an integrated corrective strategy."[1] To do this you'll need the knowledge of how to perform an assessment, design an appropriate program, and implement that program with proper exercise technique. NASM suggests the following four-step system to accomplish this:

1. Inhibit tight muscles
2. Stretch (lengthen) shortened muscles
3. Activate weak muscles
4. Integrate each part into the whole system

Steps 1 and 2 incorporate the mobility aspect of corrective exercise. There are many different ways to work on mobility, including foam rolling and stretching. Unfortunately this is where many people stop trying to improve movement. If a client does not incorporate steps 3 and 4, a new movement cannot be created. Put simply, if all you do is foam roll and stretch then you will continue to feel "tight."

Movement Basics

Before diving into activation and integration, it's important to get a foundational understanding of functional anatomy and the nervous system.

Functional anatomy is essentially how muscles work in real life. Unfortunately the traditional approach to teaching anatomy leaves some important pieces out. Learning that the hamstrings work to flex the knee (decrease joint angle) is beneficial for general knowledge. However, when viewed during movement the hamstrings do much more than simply flex the knee. A vital primary function of this muscle group is to decelerate knee extension (increase in joint angle) during gait—important because most hamstring injuries occur while engaging this motion. The hamstrings have the most load on them as they slow down the forward swinging leg, reaching peak force as the forward foot strikes the ground.[2] During this time, these muscles are both stabilizing the hips and slowing down the forward moving leg with an eccentric contraction. That is a lot of work and most training does not focus on the deceleration capabilities of the hamstrings. The concept actually applies to more than just hamstrings, but this muscle group provides a nice example.

"Over time, and often due to a lack of movement variety, people begin using a movement strategy that leads to excessive and improper wear and tear on parts of the body. In this case, a corrective exercise specialist has the challenge of essentially re-teaching the body how to move."

Having a basic understanding of the nervous system helps us to understand *why* the body is choosing a particular action. Humans are masters of compensation. The motions of the human body are optimized by the nervous system to move with the most efficiency through using groups of muscles and not working in isolation. Over time, and often due to a lack of movement variety, people begin using a movement strategy that leads to excessive and improper wear and tear on parts of the body. In this case, a corrective exercise specialist has the challenge of essentially re-teaching the body how to move.

Inhibit

Inhibiting releases tension and/or decreases activity of overactive neuromyofascial tissues in the body. Thus, the areas that are restricted, or not moving properly, will have flexibility restored by performing self-myofascial release, aka foam rolling (or other similar modality).

Lengthen

After inhibiting, the client will then move to adding increased mobility with a combination of static, active and/or dynamic stretches. However, additional flexibility alone does not improve the quality of movement. The body must be shown what to do with that newfound motion or it will resort back to its old movement strategy.

Activation

Once the body can move through adequate ranges of motion, stability is added. This will be the first step in "teaching" the body how to use that newfound range of motion. In the NASM Corrective Exercise model this is done by using isolated activation techniques. As stated previously, the body does not work in isolation, but recruits groups of muscles to complete movements. However, if the body is placed in particular positions, then one can work to achieve optimal activation from the underactive muscle.

Consider the gluteus medius for the client with knees that cave in during a squat. The gluteus medius is often identified as being underactive and "weak." Though this muscle is a primary hip abductor it also has fibers that run in different directions, meaning it does different things in different planes of motion. The gluteus medius has anterior fibers that serve as internal rotators and hip flexors, and posterior fibers that serve as hip extenders and external rotators. Therefore, simply performing hip abduction will not provide what this muscle needs most. It must be a very particular form of hip abduction to "isolate" the posterior fibers of the gluteus medius. If we consider the action of this part of the muscle, then we must perform hip abduction with hip extension. A side-lying leg wall slide (see image bottom right) is a great exercise. Here, the foot is pressed into the wall creating hip extension and then hip abduction is performed.

Integration

Integration is easily defined as bringing parts together to form a whole. Since the body works as one unit, this part of corrective exercise ties everything together. Integration must come after mobility and activation to be sure all the parts are ready to work. Similar to activation, exercise technique (form) is important.

The human body will naturally want to resort back to what it knows best, its old patterns. Essentially the body has created a movement habit that must be replaced. The integration phase can

group training
corrective exercise

sample warm-ups
approximately 4 minutes each

ankle

01 FOAM ROLL CALVES

02 STANDING STATIC CALF STRETCH
30 seconds each side.

03 BUDDY SYSTEM SINGLE-LEG CALF RAISE
Internally rotate leg, use a buddy for stability
12 slow reps each side.

04 SINGLE-LEG BALANCE WITH REACH
Do not use a buddy, stand on one leg and reach the other leg into multiple planes of motion.

side-lying leg wall slide

group training

corrective exercise

hip

01 FOAM ROLL QUADS/ HIP FLEXORS

02 KNEELING HIP FLEXOR STATIC STRETCH
30 seconds each side.

03 FLOOR BRIDGE
12 reps with slow tempo.

04 REVERSE LUNGE TO BALANCE
Balance on one leg, slowly step backward into a lunge position (keep weight shifted forward), then step back up to single-leg balance.

shoulder

01 FOAM ROLL LATISSIMUS DORSI

02 CHILD'S POSE (LAT STATIC STRETCH)
30 seconds.

03 STANDING "Y-T-A'S" *(see below)*
12 reps with slow tempo.

04 BENT OVER DUMBBELL ROW
50% max intensity.

begin to increase load, as this will help to "store" the new movement. The load cannot be at an intensity that makes the body go back to the old pattern it is most comfortable with. Typically, an intensity of about 50% maximum can be used. Habits are formed by repetition, so ideally the client would perform 15 to 20 repetitions. But don't let the number of repetitions become the goal; *form* is the goal. If the client becomes fatigued at repetition eight, then that's where the set stops. *Do not* let them perform *any* repetitions with bad form. An example of integrated movement for the client whose knees cave is a body weight squat with a resistance loop around the knees. This band gives the client something to press the knees against as he is squatting, helping strengthen the glutes and keep ideal form.

How Do I Include This in My Group Training Sessions?

Think of corrective exercise as your new warm-up. A small dose of corrective exercise is easy to implement into a group setting in the beginning of a class, preparing everyone for better movement. Most people are prone to the same movement compensations because they are exposed to the same daily routines. This means most people in your group could use corrective exercise for their ankles, hips and shoulders. For more on corrective exercise programming, visit www.nasm.org/ces. **AF**

KYLE STULL *is the Senior Master Trainer for TriggerPoint Performance Therapy, a Master Instructor for NASM and for Equinox Fitness Clubs and an international presenter. He has taught different aspects of personal training and corrective exercise for more than five years. Kyle has a master's degree in rehabilitative science, a bachelor's in sports management, and is a licensed massage therapist.*

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BY MATT BRZYCKI

HOW MANY CALORIES ARE USED DURING A BODYPUMP™ CLASS?

BODYPUMP™ is a popular group exercise class that's found in more than 10,000 gyms worldwide. Participants do choreographed routines to music, performing exercises with weighted bars for high reps that target the entire body.

In one study, 40 subjects (average age 31.7) did three sessions of BODYPUMP within 14 days (actual classes led by the same instructor). They had been doing BODYPUMP for at least three months prior to the study.

On average, the male subjects used 298.9 calories or ~5.0 calories per minute; the females used 201.7 calories or ~3.4 calories per minute.

Importantly, the level of intensity for males and females was 3.9 and 3.2 METs, respectively. According to the American College of Sports Medicine, this represents a moderate level of intensity—comparable to walking at about 3 miles per hour. And 85% of the subjects reported that BODYPUMP was highly enjoyable.

IS IT POSSIBLE FOR EXERCISERS TO OVERHYDRATE?

The intake of fluids that greatly exceeds the loss of fluids—overhydration—is thought to be the primary risk factor for developing hyponatremia, which causes a low concentration of sodium in the blood. This creates an electrolyte imbalance that can result in vomiting, headache, altered mental status, seizure and coma.

Most cases of hyponatremia develop during or immediately after exercise/activity. In particular, endurance athletes should be aware of the potential for overhydration. For the average person, however, it is extremely rare.

But what about the risk of dehydration? At one point, it was recommended that fluids should be consumed before becoming thirsty. But other than exercising in environments that trigger a high rate of sweating, thirst is actually an adequate stimulus for preventing dehydration while reducing the risk of hyponatremia.

Bottom line: Rehydrate safely and drink according to thirst.

DOES CRANBERRY JUICE REDUCE CARDIOMETABOLIC RISK?

For adults, the leading causes of death include cardiovascular disease, diabetes and stroke. Fortunately, these conditions are modifiable through changes in lifestyle. It's known, for example, that cardiometabolic risk can be reduced by exercising and eating healthier.

A wide range of foods has been investigated as a possible means of lowering the chances of cardiometabolic disease. One of the latest is cranberry juice.

Researchers randomly assigned 56 subjects (average age 50) to consume either cranberry juice (sweetened with sucralose) or a placebo (with sucrose, fructose and dextrose) twice a day (480 milliliters; 80 calories total). The subjects followed diets that were 15% protein, 32% fat and 53% carbohydrate.

After eight weeks, there were no significant differences between the two groups in three measures of cholesterol and systolic blood pressure. However, triglycerides, blood glucose and diastolic blood pressure were lower in the group that received cranberry juice.

Worth noting is that the study was supported by a company that manufactures cranberry juice. Also, the lead author received funding from that company and another author was a company employee.

MATT BRZYCKI *is the Assistant Director of Campus Recreation, Fitness at Princeton University. He has more than 33 years of experience at the collegiate level and has authored, co-authored and edited 17 books.*

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PREVENTING SWIMMER'S SHOULDER

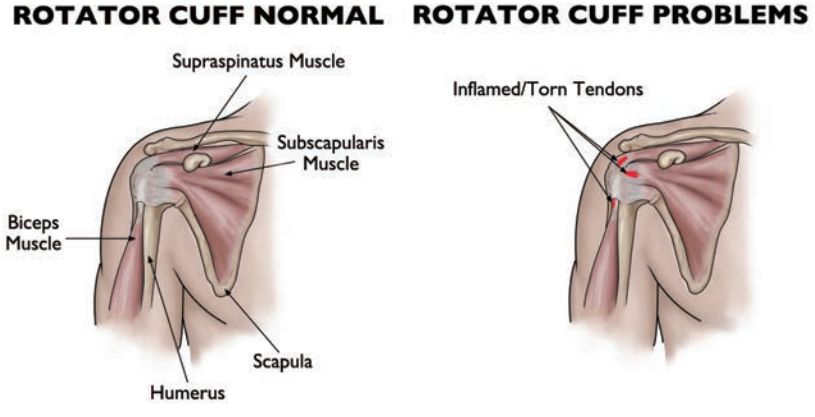
AVOID THE PAIN WITH A CORRECTIVE EXERCISE PROGRAM

BY DAVID CRUZ, DC, CSCS, FMS, SFMA

Shoulder pain is the most common complaint among swimmers, both competitive and recreational, with prevalence ranging from 40 to 91%.[1] This is partly due to the repetitive nature of the sport, since a competitive year-round swimmer may perform 11,000 yards per day resulting in 30,000 shoulder rotations per week.[2] The frequency of anterior shoulder pain during and after workouts among swimmers has led to the term "swimmer's shoulder." Generally, the condition has a gradual onset, but can be caused by multiple factors. This article will discuss how imbalances occur and impact the development of swimmer's shoulder, plus corrective exercise strategies to help prevent or improve it.

MUSCLE MOVEMENT

To understand key causes for this condition, it's important to identify what muscles are responsible for the swimming stroke. Focusing on freestyle, since it's the most common and research supported,



it can be broken into two primary phases. The first phase is known as the pull-through where propulsion occurs and is further divided into subphases depending on hand relationship to the water.[3] This is followed by the recovery phase when the hand is out of the water. During each phase all the muscles of the shoulder complex, including the latissimus, deltoid, rotator cuff, pectoral and scapular stabilization muscles, must synergistically work together propelling the body forward. The following chart, adapted from the book *Breakthrough Swimming* by Cecil Colwin, describes the interaction of each muscle during the swimming stroke.

When a swimmer experiences pain, their stroke movement will be altered with some muscles being inhibited while others are recruited as a compensatory mechanism.[4] If inadequate or no rehabilitation has been performed, the impaired motor control patterns will persist even after pain has resolved, continuing to alter swim mechanics. The sequela of the dysfunctional movement patterns will result in muscular imbalances changing the muscle length-tension ratios, leading to even more dysfunctional movement. This pattern can last indefinitely until faulty movements are corrected.[5] Two main regions affected are the rotator cuff and scapular stabilizers.

Performing an active assessment with range of motion is important for all overhead athletes (See *American Fitness* Spring 2016, "5 Essential Exercises for Overhead Throwing Athletes"). A static posture assessment should also be performed as part of a baseline evaluation. If an athlete is experiencing swimmer's shoulder, they will likely have postural misalignments including forward head, rounded shoulders, scapular winging, or right to left muscular imbalances.[6]

NORMAL SAGITTAL POSTURE

Normal static posture provides a foundation from which the extremities function. Therefore, any structure with a weak foundation leads to secondary problems elsewhere in the system.[7] More specifically for swimmers, a change in scapula position increases the likelihood of shoulder impingement problems in addition to restricted neck movements and excessive muscle loading.[8]

In order to assess a client's true posture and avoid the Hawthorne effect,[9] have clients take a couple of steps in place and nod their head with their eyes closed. Have them stop, keeping eyes closed, and assess their posture from both front and side views. By keeping their eyes closed, the righting reflex (which corrects body orientation in an upright position) will be avoided, allowing a more accurate assessment.

If there is a postural fault related to forward head, Harman and colleagues found a simple exercise program could improve postural alignment.[10] Study participants performed two strengthening and two stretching exercises consisting of chin tucks and shoulder retraction exercises coupled with a cervical extensor and pectoralis stretch.

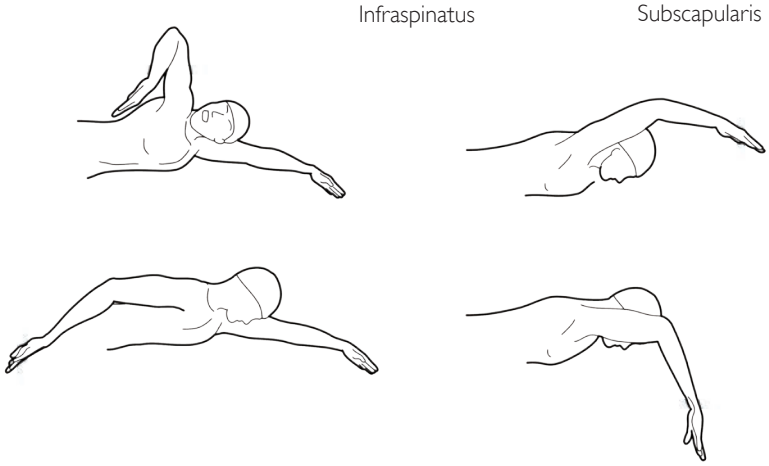
MUSCLE ACTIVITY OF FREESTYLE STROKE

EARLY RECOVERY
Posterior Deltoid
Middle Deltoid
Rhomboids

MID RECOVERY
Upper Trapezius
Middle Deltoid
Serratus Anterior
Infraspinatus

LATE RECOVERY
Anterior Deltoid
Serratus Anterior
Rhomboids
Subscapularis

GLIDE/REACH
Anterior Deltoid
Middle Deltoid
Upper Trapezius
Rhomboids



END OF PULLING
Posterior Deltoid
Middle Deltoid
Subscapularis
Supraspinatus

LATE PULL-THROUGH
Latissimus Dorsi
Subscapularis

MID PULL-THROUGH
Serratus Anterior
Pectoralis Major
Latissimus Dorsi

EARLY PULL-THROUGH
Pectoralis Major
Teres Minor (extension)

HEAD RETRACTION EXERCISE

Looking forward with shoulders back, activate core muscles to provide stability and minimize trunk sway. Attempt to draw head directly backward, keeping it level—avoid tilting head up or down. Hold for two seconds, return to start position, repeat. (3 sets, 10 reps)

SUPINE CHEST STRETCH

Lie on a foam roll, supporting head and running along the spine to the pelvis, feet flat on floor. Bend both elbows to 90° at shoulder level with palms facing up. Relax, feeling a stretch in the chest and anterior shoulder. Maintain for 30 to 60 seconds. Do not force arms to the floor. Keeping elbows bent will also stretch pectoral muscles instead of the anterior capsule of the shoulder joint.

Rounded shoulders is another common postural fault among swimmers.[11] Kluemper and colleagues performed a six-week anterior stretching and posterior strengthening shoulder program, concluding that stretching the internal rotator and adductor muscle groups and strengthening the external rotator and abductor groups can reduce this posture in competitive swimmers.[12]

BLACKBURN "T"

This posterior shoulder strengthening exercise was shown to elicit high EMG activity of the infraspinatus, teres minor and trapezius muscles.[13]

Start by lying on a ball, lower body in plank position, arms extended in front at shoulder level. Make hands into soft fists, thumbs up. Lift the arms as if moving them behind, keeping elbows straight. Squeeze shoulder blades together while trying not to extend the head. Hold for three to five seconds, return to start position, repeat. (3 sets, 10 reps)

PUSH-UP PLUS

Rounded shoulder posture and poor scapular control can also be due to serratus anterior weakness. Wadsworth and colleagues demonstrated a significant delay in serratus anterior activation in the painful shoulders of swimmers, resulting in an inability to stabilize the scapula against the thoracic wall causing scapular winging or scapular dyskinesia.[14] A push-up plus is an effective intervention in strengthening the serratus anterior muscle. According to Decker et al., a push-up plus on the knees was more user friendly than the traditional push-up plus using less force, but eliciting similar electromyography (EMG) amplitudes.[15]

Start in the push-up position with knees or toes (advanced) touching floor, hands under shoulders. Maintaining a plank position, lower toward floor, followed by a push-up. Then push the upper back higher so shoulders are in a rounded, protracted position. Return upper back to neutral plank position and repeat.

CONSIDERATIONS FOR EXERCISE PROGRAMMING

It's important that clients with existing shoulder pain are cleared by their physicians before starting an exercise program. If the client has completed physical therapy, you can use the exercises they learned as a starting point and base for progression.

General guidelines for clients with previous or existing shoulder pain:[16]

- Never exercise through pain.
- Groove appropriate and perfect motion and motor patterns before adding load or other challenges.
- Begin by taking gravity out of the equation; start supine or prone and progress to quadruped, kneeling then standing.
- Increase intensity or time, but not both. (Intensity can be increased by either changing resistance or stability.)

For clients ready to progress, the following guidelines will help do this safely and effectively:[17]

- If still making progress, continue with the current workload.
- If plateaued, progress at a 2 to 10% increase.
- If experiencing a flare-up, decrease volume.

As with all exercise programs, long-term adherence and regular exercise execution are important to achieve satisfying results. For more shoulder programming strategies, check out NASM's Corrective Exercise Specialization www.nasm.org/ces. **AF**

DAVID CRUZ, DC, CSCS, FMS, SFMA, *practiced as a sports chiropractor for 18 years treating athletic injuries, from weekend warriors to professional athletes. He received his Bachelor of Science degree in athletic training and has completed graduate course work in kinesiology. The combination of his background in sports medicine and interest in technology made him passionate about bringing these two worlds closer together, resulting in the foundation of his company WebExercises in 2005. WebExercises provides a systematic approach to exercise prescription for health and wellness professionals. It is available online and is also integrated with several EHR companies. In addition to WebExercises.com, Dr. Cruz is co-founder and partner of two other software businesses within the healthcare and technology industry.*

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FUNCTIONAL MOVEMENT AND TRAINING THAT ARE TOTALLY ACCESSIBLE

BY SUSAN DAWSON-COOK, MS

Many fitness professionals implement the TRX Suspension Trainer, but often with only select clients and small groups. They know TRX® founder, Randy Hetrick, is a former Navy SEAL, so they apply this tool designed to toughen men's muscles on military missions with none but the athlete and the ultra-fit. Most have yet to discover the tool's surprising potential to improve muscle strength, functional balance and flexibility in older adults.

HISTORY OF TRX

Hetrick constructed the first version of the TRX out of web strapping while deployed to Southeast Asia as a SEAL Squadron Commander. He launched a commercial version of the suspension device in 2004, marketing it to elite commandos and other military personnel seeking the ultimate workout. Athletes soon clamored to get their hands on a strap. "We focused on the more elite end of the spectrum for the first five years or so," says Hetrick. While ultra-fit people sweated and grunted through suspension workouts too tough for many to imagine, the regular and older populations largely avoided TRX training.

As Hetrick's body of Master Trainers and trained fitness professionals ballooned, the TRX's applications for desk jockeys, seniors and even injured individuals became increasingly apparent. "It's as useful at unloading and stabilizing as it is for super loading and destabilizing," states the entrepreneur. He cited the example of a squat, an exercise many seniors struggle to perform. "To split the weight between the upper and lower body makes it more doable." An older adult with weak thigh muscles may be able to execute a squat for the first time in years and an individual with pain or restrictions in the knee can learn how to fractionally load it without pain. Anyone struggling with balance can rely on the strap for partial support.

SENIOR POPULATION RESEARCH

A German study observed 11 participants aged 60 and older with no previous suspension training experience.[4] All followed a 12-week TRX training program, performing seven different exercises three times per week, and were asked to subjectively report positive effects in the areas of flexibility, strength, gait and balance from the TRX regimen. Thirty-six percent of participants reported a decline in musculoskeletal pain during the intervention. Twenty-seven percent reported that the workouts incited knee, hip or thoracic spine pain, which suggests that trainers should proceed with caution when implementing the TRX with this population. Ninety-one percent of the participants wanted to continue TRX training after the study concluded.

Dr. Christian Thompson, associate professor of kinesiology at the University of San Francisco, has published scientific reports on exercise programming for older adults in peer-reviewed journals including *Medicine & Science in Sports & Exercise,* the *Journal of Aging and Physical Activity*, and the *Journal of Applied Research.*

Dr. Thompson conducted an internal TRX study that was presented at the 2013 ACSM Health and Fitness Summit in Las Vegas.[7] The investigation followed 12 subjects, ages 75 and older. Six individuals served as a control group over the course of the eight-week study. The other six trained for 60 minutes twice a week, performing mobility, strength, gait and dynamic balance activities with the TRX.

Participants performed the Functional Reach Test (FRT), 30-second chair stand (CS) test and the Timed Up and Go (TUG) test before and after the eight-week training period. Anterior reach displacement (as measured by the FRT and TUG test results) improved significantly in the exercise group but not in the control group. This outcome led Thompson and his colleagues to conclude that suspension training is a feasible mode of exercise for older adults and can lead to improvements in functional fitness.

Dr. Thompson reports studies are underway to compare spinal compression while doing rows or push-ups on the TRX with forces experienced when doing comparable activities on the floor or with a cable device. So far, research indicates that suspension training is a safe means of improving core strength and function in the absence of major back pathology. He has received grant money for fall prevention research and plans to include the TRX in some of the studies.

BALANCE BENEFIT

Many older adults fear falls. Those with balance and functional stability deficits may resist trying one-legged balance activities or stepping onto an unstable surface even when offered spotting help by a trainer. To assuage this fear, trainers may allow a client to grip a fixed object such as a bar or wall, which will prevent him or her from learning to use muscles to stabilize in unstable circumstances.

With the TRX, older adults can try new exercises with less fear of toppling over. The device provides "a dynamic point of stability," observes Hetrick. "You're not hanging on to a fixed object, which gives too much stability. It's a safety net. You get the stability that you need."

Dr. Thompson teaches older adults how to use the TRX in a small group setting. The suspension trainer offers an excellent spotting mechanism to facilitate balance, strength and mobility exercises, he points out.

Once the client learns the basics and is comfortable with the TRX, it can be used to support work on balance pads, half foam rollers and BOSUs®. "You can balance on one leg and use the TRX as a dynamic point of stability to activate all the way from ankle up to knee and hip and up into spine," claims Hetrick.

FLEXIBILITY TOOL

The TRX can be employed to mobilize joints and improve flexibility. "Using gravity to decompress the spine, you can allow yourself to fall away from the strap," says Hetrick. The long torso stretch is one example of this. "You hang away from the anchor with the hips outward—no other tool lets you do it. Given the dynamic nature of the strap, each individual can work tight spots. Using gravity to elongate tissues has become one of the staples of the suspension trainer."

HOW IT WORKS

When the TRX was first introduced, many fitness professionals struggled to get started. "No one had invented a strap like this and people didn't understand how you would use it," comments Hetrick. "Every time I was in front of someone, I had to start from scratch. Pretty quickly we realized the key to success with this is to rapidly upskill a training pro so they can make appropriate adjustments for different levels."

Hetrick systemized the presentation so fitness professionals were taught not only how to use the device, but also how to progress and regress exercises. He now considers his San Francisco-based company to be as much of an educational as a product company.

Before exercise begins, the TRX straps are attached to a fixed anchor point about 6 feet above the ground. There are six basic body positions. For the sake of simplicity and ease for seniors who have difficulty getting down on and up from the floor, the three standing positions will be highlighted. The first is Stand Facing the anchor point (SF), the second is Stand Facing Away from the anchor point (SFA) and the final is Stand SideWays to the anchor point (SSW).

There are five length adjustments for the suspension straps: Long (L), Mid Calf (MC), Mid Length (M), Short (S) and Over Shortened (OS). TRX instructor training manuals assign an ideal strap length for each exercise.[3]

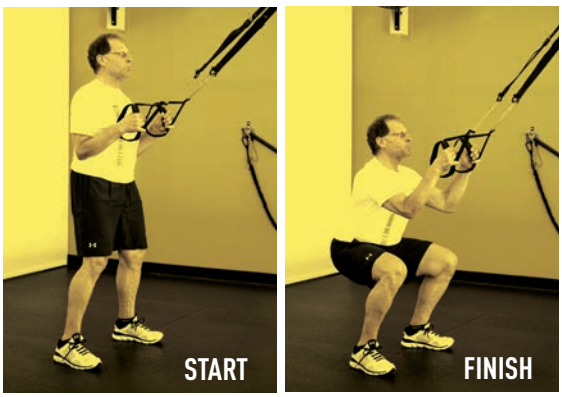
A trainer should ensure the client balances his or her body weight when doing the activities so no slack is observed in either strap and no sawing motion occurs at the top of the strap (locking loop area).

For many exercises, a base-of-support adjustment can be used to make balance easier or more challenging. A staggered stance would be easiest, followed by a position with the legs wide apart. More challenging would be activity with the feet hip-width apart or bearing all weight on one leg.[3]

Exercise intensity varies according to body angle. By reducing the angle between the body and surface, the center of gravity (COG) moves outside the base of support, more load is transferred to the TRX and the participant is called upon to generate more force.

SAMPLE EXERCISES

Squat for Lower Extremity Strength and Hip, Knee and Ankle Mobility (SF, M)



Many older adults with compromised lower body strength and/or cranky joints find it difficult to rise from a chair, let alone perform a series of squats. Overweight individuals find raising and lowering their weight particularly troublesome. With the TRX, both standing and performing a squat become achievable for almost everyone. "They can feel ranges of motion they haven't felt in a long time," explains Head of Human Performance for TRX, Chris Frankel.

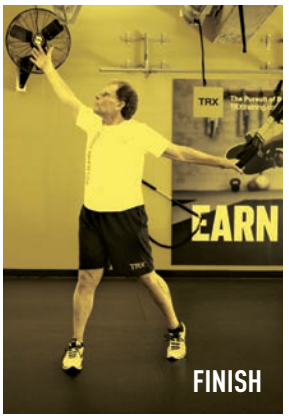
"You can unload arthritic joints without the pain of an unassisted squat," Dr. Thompson adds. In addition to training lower body muscles that are so essential to older adults' ability to perform activities of daily living (ADLs), this closed chain exercise also teaches the individual how to engage core muscles. "With four points

of contact, the core turns on automatically. We have good research to support that."

A chair can be used during the squat with a new client. Reassure him or her that the straps are there to assist in standing up. Instruct the individual to keep the chest open while using the arms to unload some of the weight. Cue the participant to start with feet hip-width apart, toes and knees tracking forward, and grip the TRX handles with the arms bent, elbows close to the body and palms facing in. The client will now sink down into a squat of a comfortable depth and then keep the weight in the heels while driving upward to the starting position.

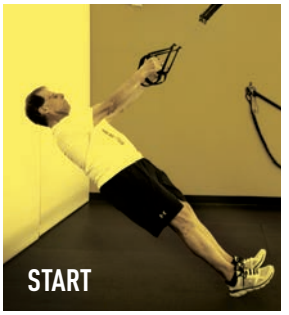
The participant can further unload the knees by adopting a slight body tilt away from the anchor. The shallower the exerciser's angle is with the floor, the less weight will be borne on the knees. Having the client grip both foot cradles together while squatting can advance the exercise. Single-leg and transverse squats are other more difficult variations. Alternating the squat with a row, calf raise or an overhead reach can add complexity and further challenge for the more advanced older adult.

Ta-Da for Mobility and Balance (SSW, S)



A closed chain exercise Dr. Thompson created to facilitate mobility of the ankles, hips, thoracic spine and shoulders, the Ta-Da is performed with the client facing sideways to the anchor. Instruct the individual to plant feet slightly wider than hip-width apart and grip both foot cradles with the inside hand. The client will then raise the outside hand at an upward angle before reaching down and across midline and touching the inside knee. Cue the participant to then raise the outside hand upward while rotating and pivoting away from the anchor point and rising up on the trailing toe. Clients may need spotting support during the rotation if they have difficulty maintaining balance.

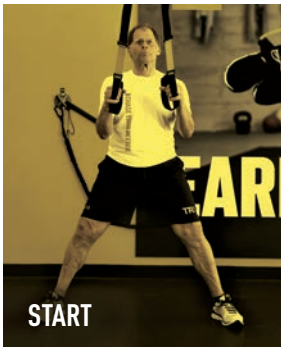
TRX Low Row (SF, S) for Trapezius Strengthening



A high, mid and/or low row can be performed with the same short strap setting. Beginners should start facing the anchor point with bodies aligned in a nearly upright position, feet wider than shoulder-width apart or in a staggered stance. Instruct client to grip the handles and fully extend arms, hanging back in a reverse plank position. Once proper starting alignment is achieved, the participant should pull shoulders down and back, retract the scapula, and drive elbows back to move the torso toward the anchor. Length in the spine should be maintained throughout the exercise.

Intensity can be progressed by standing at a shallower angle with respect to the floor or doing a single-arm row. Balance can be challenged by standing with feet close together, on one leg, or by executing alternating knee lifts or marches as rows are performed.

TRX Side-to-Side Lunge (SF, M) for Lower Extremity Strength Plus Hip and Knee Mobility



Walking, cycling and running are popular activities done in the sagittal plane. The TRX Side-to-Side Lunge provides an opportunity to work in the less-practiced frontal plane. In addition, it will improve stability and balance while recruiting the quadriceps, hamstrings and gluteus maximus, as well as increasing mobility in the hip and knee joints.

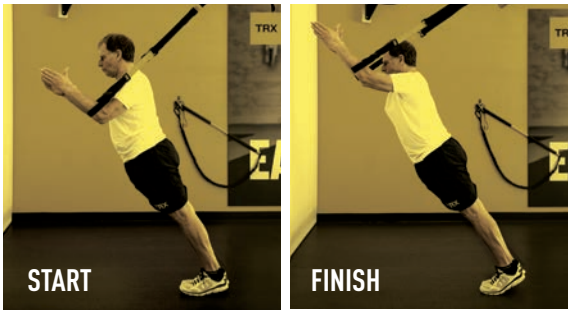
Instruct client to grip the handles and maintain tension on the strap while keeping elbows close to the body throughout the exercise. During movement, the individual should hinge slightly forward at the hips, keep spine long and push the buttocks back during the weight shift to unload the knees. Cue them to drive through the mid-foot on the bent leg side to transition to the other side.

Standing Plank for Core Stability (SFA, M-L)

The standing plank is an ideal core exercise for clients who have difficulty getting down on and up from the floor. The individual faces away from the anchor point with feet hip-width apart and arms extended while adopting an outward lean sufficient enough to incite overload on the core complex. Shoulders ought to be pulled down and away from the ears and the belly should be pulled upward to keep the lower spine neutral as the plank is held. Instruct the client to breathe normally.

"You can manipulate that standing plank a number of ways," notes Hetrick. "You can do marches, a shallow chest press or lift one leg at a time." Those with wrist issues can be instructed to slip their forearms through the cradles before performing the exercise so there is no need to grip.

Standing Roll Out for Shoulder Mobility and Core Stability (SFA, M)



TRX Senior Master Instructor Leigh Crews explains to do the Standing Roll Out, instruct client to stand facing away from the anchor with feet hip-width apart and slide forearms through the foot cradles, palms facing inward. This allows the individual to do the roll out without stressing the wrists. The starting position is on the balls of the feet with a slight away-from-the-anchor lean. Cue client to brace through the core, keep shoulders down and away from the ears, and press heels back (without overstretching gastrocnemius) throughout the activity. The participant will raise arms upward to about eyebrow level, which will incite a full-body lean and intense core engagement. The exercise can be regressed by adopting a wide or offset stance.

TRX TRAINING

TRX provides a basic Suspension Training course as well as a Group Training and Functional Training Course. These eight-hour courses, taught by TRX Master Trainers, are offered in major cities in the U.S., Canada and the United Kingdom.

The current listing of workshops can be viewed at www.trxtraining.com/products/courseschedule. Many DVDs are also available and can be purchased and then streamed or downloaded from www.trxtraining.com/shop/workouts-exercises/downloads-dvds.

Brandon Wagner, a TRX Senior Master Trainer in Tucson, Ariz., has a long history working with older adults, first at the world-renowned Canyon Ranch and now at Select Fitness. He considers the TRX a "must use" tool for seniors. "The suspension trainer requires you to use your body the way it was intended to be used.

"With seniors, balance and coordination are two things lost most quickly." Wagner is chagrined when trainers park older adults on chairs. "This is the last thing this population should be doing." Just like with canes and walkers, "they get dependent on something inhibiting them." Wagner urges trainers to teach older clients to use their whole body. He believes if more fitness professionals were educated on how to implement the suspension trainer with this population, many more older adults would keep their independence longer. "Carrying a bag of groceries requires balance, stability and strength. They'll see greater return and be more independent in the long term."

"We're working with a tool that is leading the trend when it comes to functional movement and functional training and is totally accessible," enthuses Hetrick. "We're about helping people move better no matter what age." **AF**

SUSAN DAWSON-COOK, MS, *is an AFAA certified personal trainer/group exercise instructor and a nationally ranked U.S. Masters swimmer. In addition to writing articles on health, fitness and competitive swimming, she pens romance novels under her pseudonym, Sabrina Devonshire.*

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SUSPENSION TRAINING® FOR OLDER ADULTS

1. TRX was originally created for:
A. toughening men's muscles on military missions.
B. couch potatoes.
C. triathletes.
D. older adults.

2. One big-league benefit of using the TRX with older adults is:
A. the suspension strap facilitates more muscle overload.
B. it is adjustable.
C. it allows fractional loading of joints without pain.
D. it can be disassembled and used as a stretch strap.

3. Clients engaging in TRX training for several weeks are likely to:
A. experience gait difficulties.
B. avoid falls.
C. improve performance on a functional reach test.
D. be able to walk without a cane or walker.

4. Balance activities with the TRX:
A. are dangerous.
B. enable the client to learn to stabilize in unstable circumstances.
C. are less effective than exercising holding onto a bar.
D. are always done gripping both handles with one hand.

5. When performing a TRX squat:
A. client faces away from the anchor point and the strap is shortened.
B. client faces anchor point and strap is adjusted to an Over Shortened length.
C. client faces the anchor point and strap is adjusted to Mid Length.
D. client stands sideways to the anchor point, gripping both handles.

6. The Ta-Da is performed with the client facing _____ to the anchor.
A. down
B. diagonally
C. sideways
D. up

7. This TRX row modification will not increase the difficulty:
A. decreasing body angle with respect to the floor.
B. legs staggered while the row is executed.
C. executing marches while rows are performed.
D. doing a single-arm row.

8. A good cue for the TRX row would be:
A. hyperextend spine slightly during activity.
B. protract shoulders while driving back with elbows.
C. shrug shoulders and retract scapula while row is performed.
D. pull shoulders down and back while retracting scapula.

9. The most difficult stance for balance during a TRX activity is:
A. staggered with one foot in front of the other.
B. standing with legs wide apart.
C. bearing weight on one leg.
D. standing in a sideways stance.

10. When balancing during TRX exercise, clients should make sure:
A. there is plenty of slack in the strap.
B. no base-of-support adjustment is used.
C. no sawing motion occurs at the top of the strap.
D. both feet are together.

11. For many exercises, _____ can be used to make balance easier or more challenging.
A. less slack
B. a less staggered stance
C. a position with the legs closer together
D. a base-of-support adjustment

12. Which is not a benefit of standing TRX exercises?
A. Reduction of dependence on canes and walkers.
B. Teaches older adults to do whole-body movements.
C. Improved sleep quality.
D. Facilitates improvements in balance and coordination.

13. Wagner doesn't like to see seniors:
A. parked in chairs.
B. lifting weights.
C. working in groups.
D. standing.

14. A _____ can be used during the squat with a new client.
A. cane
B. balance barre
C. wall
D. chair

15. Implementing a suspension training program can help seniors:
A. do anything.
B. achieve tasks they wouldn't normally do.
C. keep their independence longer.
D. all of the above.

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gabrielle REECE

SERVING UP HIGHX TRAINING

BY LUCIA VITI
PHOTOS BY JENNIFER CAWLEY

Gabrielle, "Gabby" Reece is a living legend. The collegiate beach volleyball phenomenon turned pro is a fashion model, actress, sports announcer, writer, celebrity host and fitness trainer.

Infamous for taking risks, the former host of *MTV Sports, The Extremists with Gabrielle Reece, Insider Training,* Gravity Games and the 1998 Goodwill Games, also touts a line of fitness products and DVDs: *Bell Express 15* workout kits; *Gabrielle Reece Fit & Healthy Prenatal Workouts;* and *Gabrielle Reece: The Complete Fit & Healthy Pregnancy Workout.*

The icon was the first female athlete to design a woman's athletic shoe—the Nike Air GR II—that outsold the Air Jordan. And let's not bypass her reality TV spots on *Extreme Makeover: Home Edition, America's Next Top Model, The Biggest Loser,* and *STRONG.*

Since bowing out of the pro circuit spotlight in 2010, the statuesque, 6-foot-3 wife—married to big-wave surfer Laird Hamilton—and mother of two remains an advocate for health and wellness.

HIGHX: The Program

The maven has now launched HIGHX, an explosive, high-intensity, team-oriented circuit training program. Accompanied by every fitness toy imaginable—and then some—teams, designed by class size, course through stations executing two exercises in six mini sets of 30 seconds. A team leader relays their cohorts station to station as a master coach conducts the entire class. Nontraditional, dissimilar movements sequence from high intensity to active recovery. Once completed, stations are not repeated.

"HIGHX considers the science behind what your body can and cannot do," says Reece. "Cardio, strength and resistance training is balanced with active recovery."

How it Began

The "idea by accident" grew organically as a simple response to facilitate working out with friends after the local gym closed on her residential island of Kauai. Reece's "community service classroom" became her HIGHX testing ground and quickly garnered up to 100 students. Men and women range between 17 to 65 years of age and include the hyper-fit as well as the de-conditioned. Writing a curriculum that builds upon itself week after week (to date the ace has written more than 1,200 workouts), Reece scales the workouts to include everyone.

Dedicated to staying connected to HIGHX on a grassroots level, her island class costs a single George Washington.

Functional Fitness for Every Body

"HIGHX is a safe, solid and sophisticated *inclusive* training program," she clarifies. As a competitive athlete, I was exposed to the best trainers in the world. HIGHX is my way of sharing that experience. I took the lead and designed a functional fitness program for the locals. Carve HIGHX into a hundred slices and it still offers a solid workout that invites everyone to participate."

Sidestepping the need for equipment in large numbers, stations serve no more than a four-member team. Both genders of all ages and fitness levels mesh by choice or by Reece's direction. Reece explains, "The team within itself reflects the individual as teams work together in one room. The exchange of energy is super positive."

Working It

Reece spoke enthusiastically about watching 50-somethings discover their inner athletes as 60-somethings perform at impressive levels and 20-somethings realize, "cool, that's what the new 50/60 looks like." Reece also notes the importance of working students at their threshold while instigating a fine line of increasing intensity.

HIGHX circuit stations line the classroom perimeter. The Master trainer "rolls around" in the middle, "to keep a grip on everyone," says Reece. "I'm the high coach. I don't perform. I move, touch, connect students with what's supposed to happen at each station, and encourage ways to work through recovery sessions. I am a portal that creates an environment for people to be successful. A great coach is about the athlete. And HIGHX is about a community of athletes."

Diversity and safety must override the challenge of, "How do I stress my body for change and progression; not, I busted it for five years in one modality but I hurt my back, knee or hip," she emphasizes. "How do we stay true to safety and train forever?"

Perspective

This coach maintains a no-nonsense, no excuses approach to HIGHX. Dedication is paramount while fanaticism is unwelcome. "Health requires balance," she points out. "I encourage commitment to a lifestyle, not a cult. I'm not interested in I love you. I'm interested in let's get together, let's bust butts in a safe, smart and real way; let's stay positive and have a good day."

Reece encourages diversity in training. "Fitness is a puzzle, a constant rotation, an ever-changing element that travels. It's high-intensity training, it's stretching, it's hiking. Exercise is not just about looking good; it's about functioning better."

On a Personal Note

Ask the elegant beauty how she manages stardom, marriage to a world-renowned athlete, motherhood and a fitness empire and she will define humility. "Juggling is a discipline, not an emotion," she concludes. "It's what I do while I never lose sight of how fortunate I am. Everything is a gift."

HIGHX Certification

The nationwide release of HIGHX training programs occurs as a progressive, four-level belt system. Instructors are required to teach two to three months before advancing to the next level or hold a personal training certification or a four-year degree. Reece's equipment partner Lifeline, a division of Pivotal 5, offers instructors and fitness facilities equipment packages. For more information on becoming a HIGHX Trainer contact www.highxtraining.com. **AF**

LUCIA VITI *is an AFAA certified, 34-year fitness veteran and freelance journalist. Ms. Viti presently teaches at the Bay Club Carmel Valley located in San Diego.*

INSIGHT INTO YOUR **YOGA** PRACTICE

WHAT "ADVANCED" ACTUALLY MEANS

BY DANA BENDER, MS

With technology ever-evolving, an increasing number of yoga practitioners is utilizing social media to share pictures of themselves doing "advanced" yoga poses. Additionally, *Yoga Journal* and other online websites showcase individuals performing acrobatic-like or intricate yoga poses. While there is no innate harm in these images, the con is that some people might start to believe that to be "advanced" in yoga one *must* be able to perform extremely hard poses. Not only this, but some yoga practitioners might shy away from classes that are called "advanced" due to that word choice. These individuals may tell themselves, "I'm not advanced. I only do the set-up of headstand, and won't be able to keep up with the class."

Both of these assumptions are incorrect. Being advanced means neither of those things, despite common belief.

So what does "advanced" actually mean in relation to a yoga practice? This is an important element to consider both for yourself as a yoga practitioner, and for your clientele.

WORKING IN A SAFE AND CLEAR WAY

First, an advanced student is someone who works the edge of his practice in a safe and clear way. He pushes himself, but is also mindful of physiological limitations, the flow of his breath, any indication of pain and misalignments. He might not go as deep in all of the poses, but knows the safe and effective alignment he can work in order to keep progressing over time.

Many individuals can take a yoga class for the first time and enter all the poses with ease because their bodies are very flexible. However, these people might not be engaged in a safe way for their joints. They could be overly flexible naturally, but in time this over-flexibility may cause chronic injury. Also extremely strong individuals might put so much power into their yoga practice that they cause injury to their rotator cuffs in poses such as Chaturanga (yoga push-ups). As the saying goes, bigger is not always better. Misalignments occur all the time, so practitioners need to work safely and precisely set their alignment.

LISTENING TO THE BODY

Second, an advanced yoga practitioner is someone who listens to her body and breathing pattern while moving through poses. She knows her abilities, and is able to push herself with a balance of effort and ease without losing the breath. She might opt out of certain poses, or hold certain ones longer based on what her body is telling her. For example, she might need to hold longer in Downward Facing Dog, or opt out of inversions that day. Just because a harder pose is presented by the instructor doesn't mean that one has to take advantage of that offering. An advanced practitioner decides which pose will benefit her most in that moment, even if it means taking a restorative pose instead of a Vinyasa flow.

PRACTICE MAKES PROGRESS

Third, an advanced practitioner understands the benefit of repetition. He still comes to yoga class and may even need to modify poses. He knows that repeatedly practicing a pose by any means available to him is the only way he will evolve in the poses. The classic quote, "You only get out what you put in" is definitely accurate within a yoga context. Sometimes progressing in a pose means repeating the set-up until you eventually work toward actually entering the pose. Furthermore, sometimes a pose might not open up due to bone or physical limitations, and an advanced practitioner knows that is all right. For instance, in the set-up of any yoga pose, a specific area of the body is getting stretched out. An advanced yoga practitioner is okay with this process, and understands that it is critical for a deeper opening.

GETTING A POSE IS ONGOING

Fourth, many practitioners will work too hard to "get" a pose rather than realizing that achieving a pose is a constant action that never ends. Every time a person practices yoga, her body is in constant change due to factors such as energy levels, nutritional intake, injury and muscular tightness. Therefore, an advanced practitioner knows that one is never "done" practicing a pose—rather, one is continuously working within poses she has done since her first class. She is working toward accommodating the ebb and flow of the body, and adding new layers of understanding or challenge. This requires staying dedicated despite day-to-day physiological changes. Becoming frustrated at not "getting" a pose is counterproductive and unnecessary when one takes an informed approach to the practice.

YOGA IS MORE THAN PHYSICAL

Fifth, an advanced yoga practitioner is someone who understands that yoga is more than just the asanas, or physical poses. A yoga practice is a way of life, or mindset, which encompasses many facets. Coming to yoga to sweat and get a good workout is completely okay, but an advanced practitioner knows that there is more to it. Specifically, those who incorporate this mindset learn that the physical challenges they experience on the mat transcend the class experience when these individuals deal with real-life struggles. At minimum, a yoga practice teaches people how to breathe fully, stay mindful, and keep a beginner's mind through life struggles.

While this is not an extensive list of all the attributes that make one advanced, it conveys important factors to consider while practicing yoga. Whether you take yoga occasionally, regularly or promote yoga to your clients, it is important to uphold these principles in order to be more "advanced" in your approach to yoga poses. **AF**

DANA BENDER *works as an assistant program manager for Exos | MediFit in Philadelphia, Penn. She is a Registered Yoga Teacher (RYT), ACE Personal Trainer, and an ACSM Exercise Physiologist. Dana has an MS in clinical health psychology and counseling, and teaches as a health and exercise science adjunct at Rowan University in New Jersey.*

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BY CRISTINA BARRERA

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TOO cool FOR THE pool

WHY WATER AEROBICS DOESN'T DESERVE THE BAD RAP

BY JANICE JAICKS

Water aerobics has always brought to mind shower caps, '60s hits, and old folks chatting it up during class. Working out in the water definitely provides a safe environment for older adults, people seeking to rehab an injury, and those who just want to relax weary muscles and bones; however, a water aerobics class (if led correctly) can challenge even the most fit individuals.

Between the water's resistance and a variety of plyometric moves, a tremendous cardio and strength workout can be achieved in the pool. Interval training in the water is also gaining popularity, and is a workout that is suitable for active and fit adults. An aquatic boot camp with running, pull-ups and push-ups will increase heart rate and keep it up much like a land boot camp, contrary to the general belief that water aerobics doesn't offer much intensity. One of the most important things is knowing how to put together a program that uses water to the fullest extent. Understanding *surface area* and *levers* is also essential when demonstrating how to make a move more challenging. For instance, a "slicing" move will not have you working your upper body very hard, nor get your heart rate up. Similarly, a short lever will not be as challenging as a long lever (straight legs or straight arms, as opposed to bent). In addition, new instructors (or land instructors trying to transition to water) are often inclined to choreograph too much, which leads to the workout having a "dance" feel that does not create enough overload. With that being said, proper training is crucial so an adequate amount of necessary, quality moves is included in a water aerobics program. Because of slower movement in the water, an effective workout requires the overload to be created by combining 15 to 30 moves. This is quite different from a cardio class on the floor, where 15 to 30 moves in a routine might be considered unsafe.

Recently I was talking to my doctor about my bone density test. She told me that I was doing well—she was aware that I exercised regularly, and she also knew that I was "into aquatics." She said, "Of course swimming is not weight bearing," and that is what we have all heard in the past. Since the inception of group water exercise, the assumption has been that there is no weight-bearing component and that aquatics don't improve (or even maintain) your bone density. Yet today, there is research supporting the notion that our bones *can* be improved through water exercise… though we can't easily look and determine how hard someone is pushing against water compared to pumping iron on the gym floor. In her article titled "Rethinking Aquatic Exercise for Bone Density," Andrea Salzman, MS, PT, asserts,

…the study of aquatic plyometrics has shown clinicians that it is possible to execute speed, power, and other explosive activities in water; and moreover, that these activities result in similar athletic gains as their land-based counterparts, without the incidence of injury. While the argument that exercise in the water will produce less weight-stressors is technically true, this argument ignores all other mechanisms by which the body lays down bone. For example, muscle pull on bone is an excellent stimulus for bone growth. Exercise in the viscous medium of a swimming pool produces drag, and drag produces resistance, and resistance creates muscle pull. End result? More bone.

So the time has come to do away with age-old myths about water aerobics being for old ladies and pregnant women. As fitness professionals, it is important for us to recognize the benefits of water exercise for multiple populations and respect this unique and versatile format. **AF**

JANICE JAICKS *has been an aquatic fitness professional for more than 25 years. She founded FitnessFest in 1997 and has hosted over 30 conferences in the Southwest, including Phoenix's largest continuing education conference for fitness professionals. Janice has trained hundreds of new and veteran aqua instructors all over the country. She is a continuing education provider for ACE, AFAA, NASM and AEA, and is the former fitness coordinator for Fitness Forum Health Club in Chandler, Ariz. Janice has gained valuable experience as a national presenter with IDEA, SCW, IAFC and her own FitnessFest and AquaCon conferences.*

RUN OR WALK FOR A CAUSE

WITH SUMMER HERE, THIS IS THE PERFECT TIME TO SIGN UP FOR A CHARITY RUN OR WALK. HERE ARE SOME FUNDRAISING EVENTS IN THE MONTHS AHEAD.

FOR BREAST CANCER

The Susan G. Komen® organization is best known for its challenging Susan G. Komen 3-Day, a 60-mile walk that has drawn more than 500,000 participants and crew since 2003, and raised more than $8 million for research and treatment programs.
Visit www.the3day.org

FOR FAMILIES AFFECTED BY DISABILITIES

Over the last 13 years, Walk With Me events have raised nearly $41 million for Easter Seals, which provides services for people with disabilities and special needs.
Visit www.easterseals.com

FOR MULTIPLE SCLEROSIS

Walk MS is a series of events that attracts about 330,000 people every year in cities and towns nationwide. The charity has been raising money since 1988 to fund research and to provide support for those living with the disease.
To participate, visit secure.nationalmssociety.org

FOR HEART DISEASE

The Heart Walk® is one of the American Heart Association's most popular events. The group's mission: To save more lives from heart disease and stroke. This year, one million walkers are expected to participate.
Visit www.heartwalk.org

SOURCE: NEWS.HEALTH.COM/2016/03/03/10-CHARITY-WALKS-AND-RUNS-THATLL-GET-YOU-SWEATING-FOR-A-CAUSE/

Training Mate

FORMER RUGBY STAR AND CELEBRITY FITNESS TRAINER, LUKE MILTON, CREATED TRAINING MATE—A HIGH-INTENSITY WORKOUT WITH AN AUSSIE TWIST THAT PUTS THE FUN IN FITNESS.

Training Mate started on the shores of Sydney harbor in 2009 with a simple belief that moving your body and having fun with your mates could get you in the best shape of your life. In 2013, Milton decided to bring this philosophy to the U.S.—complete with some Aussie flair.

Training Mate is a circuit-based 45-minute HIIT (high-intensity interval training) class that uses a combination of resistance and cardiovascular exercises to burn up to 1,000 calories in a single session.

The class is divided into four timed stations, which you'll complete with up to three partners. The goal? Push yourself as much as you can during each 45-second interval. No class is the same so you'll encounter a variety of exercises and equipment such as kettlebells, dumbbells, suspension bands, bikes, rowers and even Kangoo Jumps! These all work to improve your speed, power and endurance while toning and strengthening the core. Plus, each class ends with a dedicated abs segment in an outdoor garden.

You can do anything for 45 seconds. Check them out at www.trainingmatela.com.

LATIN DANCING

MAY HAVE HEALTH BENEFITS FOR OLDER ADULTS

- A Latin dance program was more effective than health education alone in boosting older Latinos' physical fitness.
- Dancers walked faster and were more physically active during their leisure time than before they started dancing.
- Dancers completed a 400-meter walk in just under 392 seconds compared with almost 430 seconds at the start of the study.

Leisure physical activity rose from 650 minutes to nearly a total of 818 minutes per week.

The dance program is called BAILAMOS©, a culturally tailored, community-based lifestyle intervention developed at the University of Illinois at Chicago by David X. Marquez and Miguel Mendez. Four different dance styles were included—merengue, bachata, cha-cha-cha and salsa—and routines were led by the dance instructor, with more complex choreography as the program progressed.

Increasing physical activity is one of the key 2020 Impact Goals of the American Heart Association, which calls for all adults to get a minimum of 150 minutes of moderate physical activity or at least 75 minutes of vigorous physical activity (or a combination of both) each week.

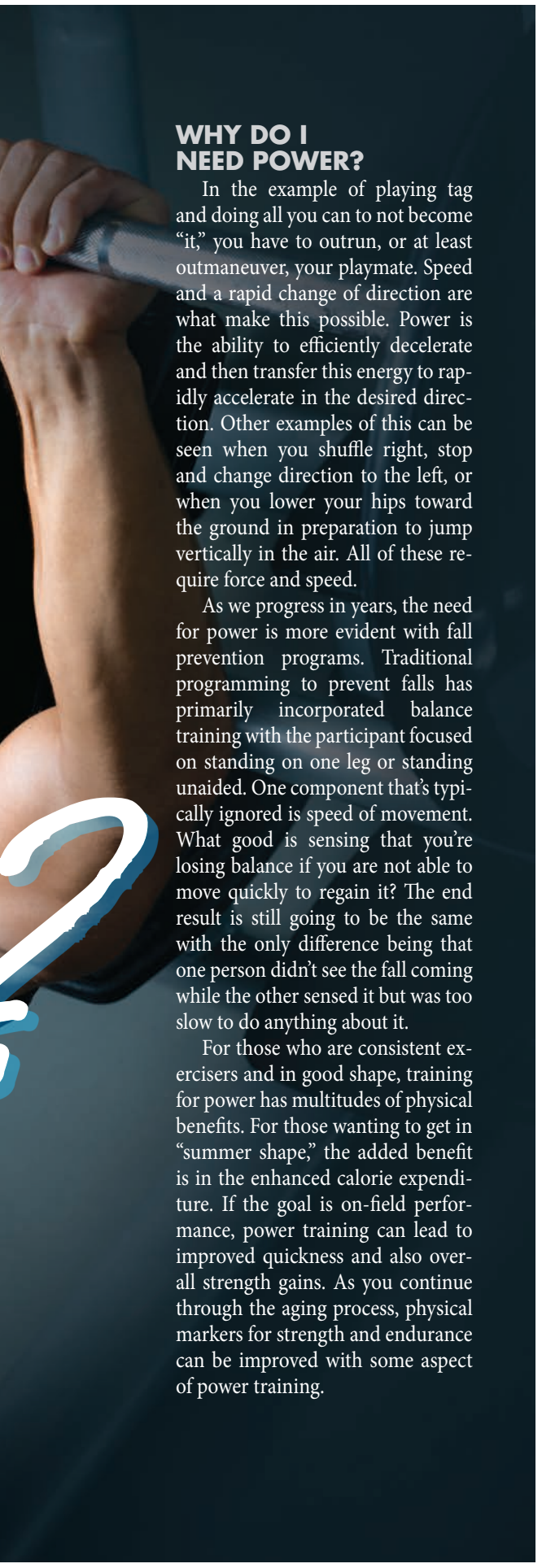
SOURCE:
NEWSROOM.HEART.ORG/NEWS/LATIN-DANCING-MAY-HAVE-HEALTH-BENEFITS-FOR-OLDER-ADULTS

GOT POWER?

HOW TO GET IT (BACK)

BY KENNETH MILLER, MS

Training for power has been underrepresented, or at least misrepresented, for its benefit and application in life. When we're younger we take for granted our ability to sprint after a ball, jump over a fence, or evade the person who is "it" in a game of tag. As years go by and we spend increasingly more hours sitting at a desk, slumped over the computer, staring at a smart phone or behind the steering wheel, our need for power still remains. However, hours upon hours in those seated positions lead to a gradual decrease of our ability to move and react quickly. With this said, training for power is not just reserved for on the field or on the court performance by professional athletes. The questions now become "Why do I need power?" and "How do I get it back?"



WHY DO I NEED POWER?

In the example of playing tag and doing all you can to not become "it," you have to outrun, or at least outmaneuver, your playmate. Speed and a rapid change of direction are what make this possible. Power is the ability to efficiently decelerate and then transfer this energy to rapidly accelerate in the desired direction. Other examples of this can be seen when you shuffle right, stop and change direction to the left, or when you lower your hips toward the ground in preparation to jump vertically in the air. All of these require force and speed.

As we progress in years, the need for power is more evident with fall prevention programs. Traditional programming to prevent falls has primarily incorporated balance training with the participant focused on standing on one leg or standing unaided. One component that's typically ignored is speed of movement. What good is sensing that you're losing balance if you are not able to move quickly to regain it? The end result is still going to be the same with the only difference being that one person didn't see the fall coming while the other sensed it but was too slow to do anything about it.

For those who are consistent exercisers and in good shape, training for power has multitudes of physical benefits. For those wanting to get in "summer shape," the added benefit is in the enhanced calorie expenditure. If the goal is on-field performance, power training can lead to improved quickness and also overall strength gains. As you continue through the aging process, physical markers for strength and endurance can be improved with some aspect of power training.

HOW DO I GET IT BACK?

First things first—in order to get power you have to attain and eventually maintain range of motion. This means that you need to have the capacity to move the joints through an appropriate range with control and strength. Once a plan for mobility is created that addresses movement restrictions (i.e., calf stretches for tight calf complex), you can now progress toward improving stability and strength. When muscles can lengthen and shorten with control and efficiency, you are in a better position to improve strength with ideal sequencing and coordination.

The progression is to then work on strength endurance. This is the ability to hold and maintain posture with control. At this stage you are able to move with coordination for extended periods in multiple directions and/or positions with different loads and speeds. You or your client can then be challenged with increased range of motion, speed and resistance based on an ability to move with command.

The final step in gaining or reeducating the body for power is to now increase both speed and force, as power is the product of both factors. Assuming an intermediate level of conditioning, the body will be primed for the increased intensity and volume of work required to improve power. This type of workout can be built around the superset model of training where similar motions are combined, with the first requiring relatively high resistance immediately followed by a quick and forceful movement. This sequence of exercises needs a high level of nervous excitement with education of the same muscle groupings for speed.

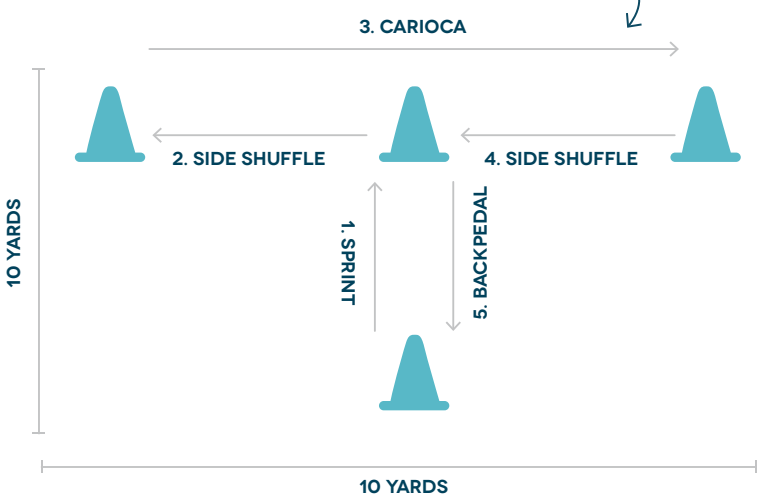
Here is an example of a total-body routine built around conditioning for power that can be done twice a week.

Dynamic Warm-Up

Forward Lunge to Balance
Side Lunges
Knee Hugs

Speed, Agility and Quickness (SAQ) Speed Ladder Drills

Side Shuffle x4, alternate lead leg
In-In-Out-Out x2
Cone "T" Drill x3



RESISTANCE TRAINING x4 SETS

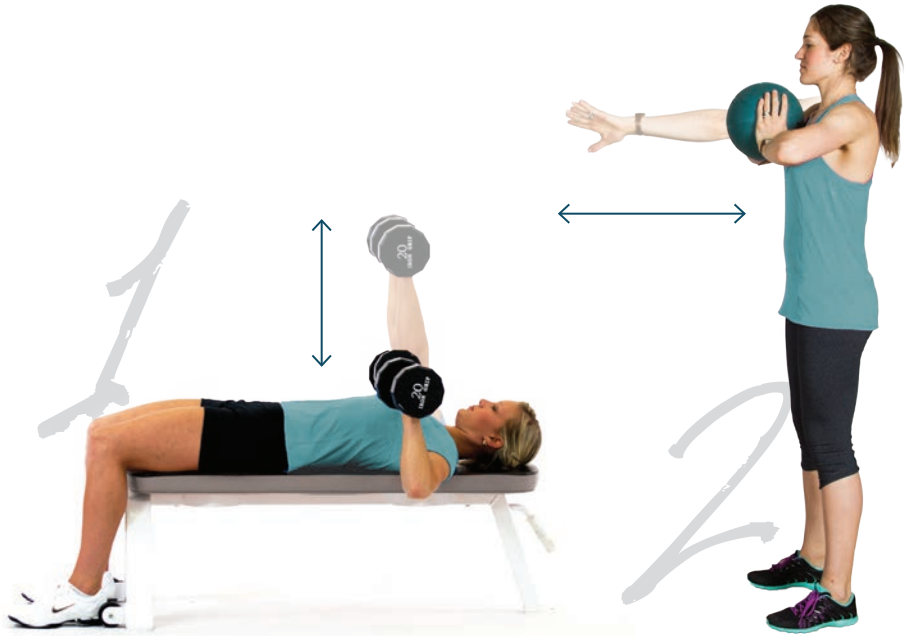
MOVEMENT #1—Performed with HEAVY Resistance

MOVEMENT #2—Performed in rapid succession—As Fast As Possible (AFAP), with resistance up to 30 to 45% 1RM, or up to 10% body weight for Medicine Ball (MB)

REST—2 to 3 minutes between pairs

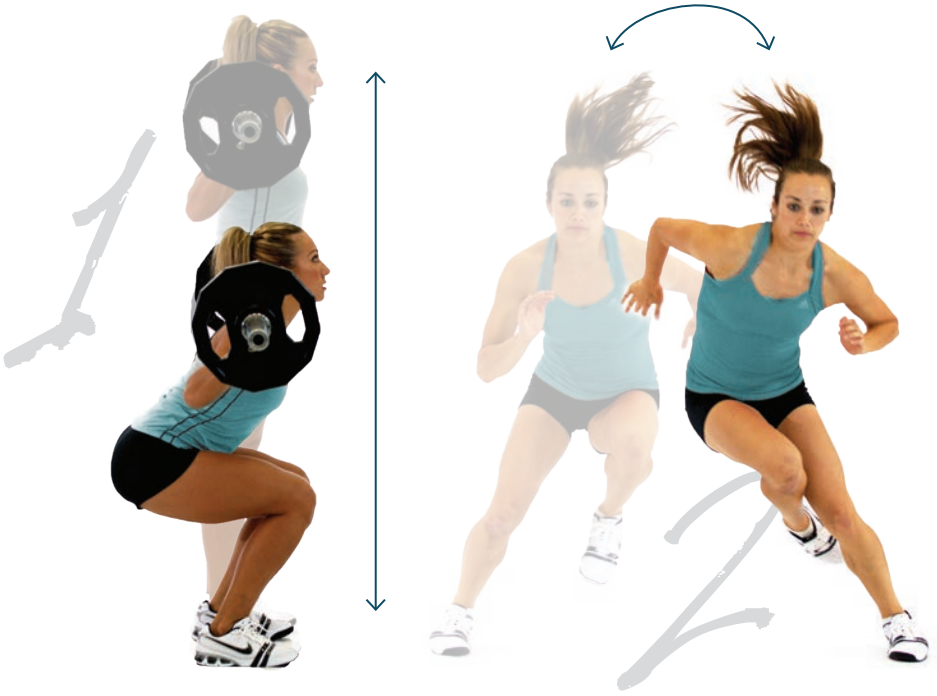
PUSH

1. **DUMBBELL BENCH PRESS (5 REPS).** With feet flat on floor and back flat on bench, press dumbbells straight up and then together by extending elbows and contracting chest. Return dumbbells by flexing elbows and allowing shoulders to retract and depress.
2. **LATERAL MB CHEST PASS (10 REPS).** Facing a wall (or partner) hold MB in both hands at chest level with elbows flexed. Push and release the ball forward as hard as possible by extending the elbows and contracting the chest. Catch the ball and repeat.



SQUAT / LUNGE

1. **FRONT OR BACK SQUAT (5 REPS).** With feet shoulder-width apart, toes pointing forward, knees over 2nd and 3rd toes, slowly squat down bending knees and flexing hips, keeping the chest tall. Rise back up by pressing through the heels and contracting the glutes.
2. **REPEAT ICE SKATERS (10 REPS).** Standing on one foot, toes pointed forward, rapidly hop to the other foot, switching back and forth. Progress by adding a reach with the opposite hand as in a skating action.



"REGARDLESS OF THE PHASE OF TRAINING, YOU CAN ALWAYS **INTEGRATE** SOME ASPECT OF **POWER TRAINING** WITH MODERATE LEVELS OF PLYOMETRICS AND AGILITY INTERJECTED INTO ANY WORKOUT."

PULL

1. **SEATED CABLE ROW (5 REPS).** Start with arms extended at chest level. Flex elbows and pull handles toward armpits with thumbs pointing up. Keep shoulder blades retracted and prevent head from jutting forward. Return to start by extending elbows with control.
2. **MB SLAMS (10 REPS).** Feet shoulder-width apart, toes pointing straight forward, hold MB directly overhead, arms fully extended. Quickly throw toward the floor, allowing arms to follow through. Catch (if it bounces) or pick up and repeat.

HERE'S AN ALTERNATE POWER ROUTINE TO TRY AS WELL:

PUSH

1. Incline Bench Press
2. MB Chest Pass With Squat

SQUAT / LUNGE

1. Dumbbell Staggered Stance Squat
2. Power Step Ups

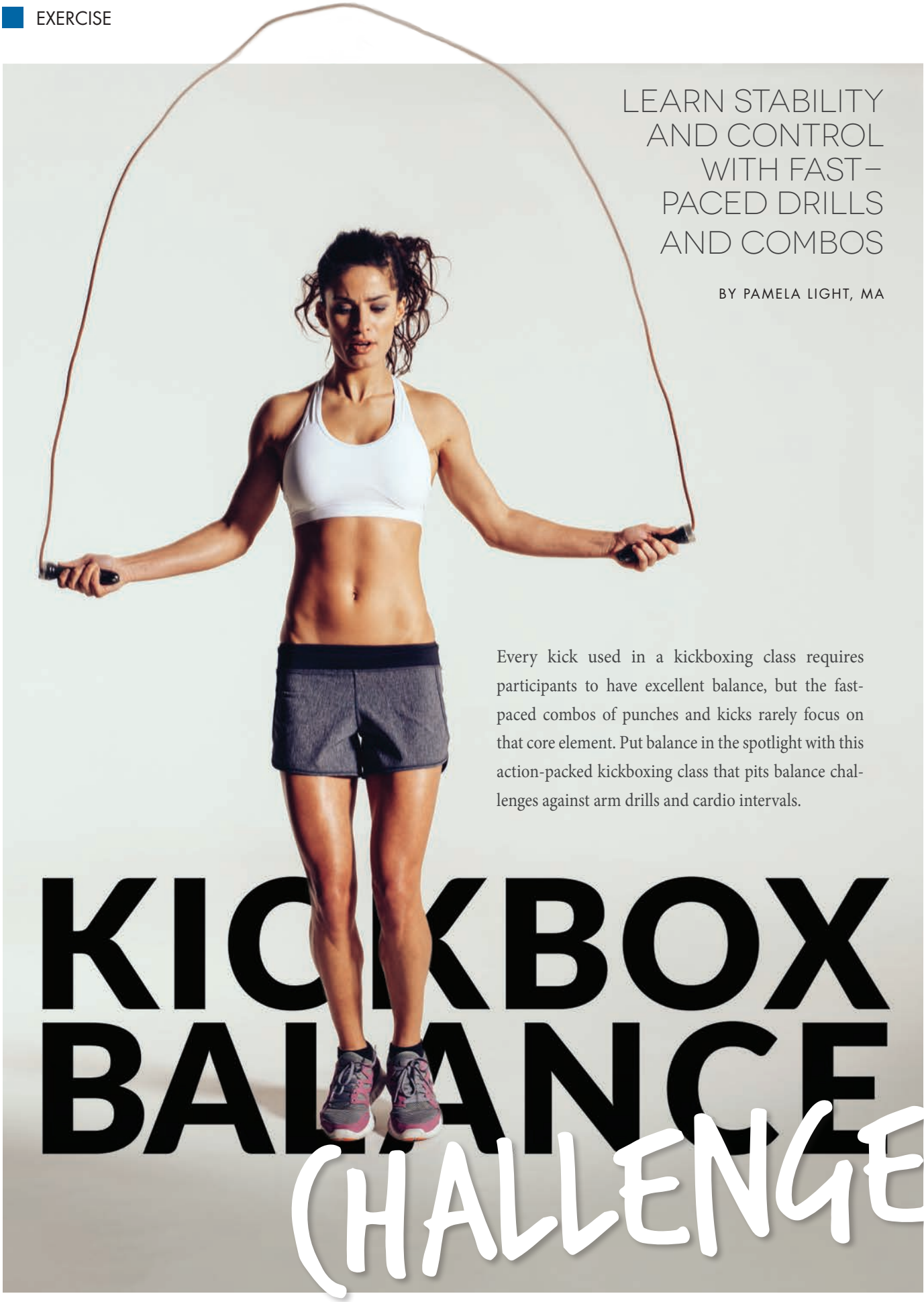
PULL

1. Dumbbell Row
2. MB Slams With Rotation

After four weeks at this level of training the exerciser should revisit previous formats of training, stability and strength. This will help recalibrate muscle imbalances and overuse patterns generated through the high level of intensity training. At the same time, it will set the stage for the next bout of high-intensity training. The most important part of adding speed to your workout or exercise session is to laugh and have as much fun as the kids in the park playing a game of tag, trying not to be "it."

For more on power training, check out NASM's Personal Trainer Certification and Performance Enhancement Specialization at www.nasm.org. **AF**

KENNETH MILLER, MS, *is an NASM-CES, PES, and a Pain Free Movement Specialist. As a personal trainer and strength coach in the San Francisco/Oakland Bay area, he works with athletes and clients to improve and increase their capacity for movement in different sports and recreational activities.*



LEARN STABILITY AND CONTROL WITH FAST-PACED DRILLS AND COMBOS

BY PAMELA LIGHT, MA

Every kick used in a kickboxing class requires participants to have excellent balance, but the fast-paced combos of punches and kicks rarely focus on that core element. Put balance in the spotlight with this action-packed kickboxing class that pits balance challenges against arm drills and cardio intervals.

KICKBOX BALANCE CHALLENGE

THE PLAN:

The class will consist of sets that include a balance challenge, a punch combination, and a simple cardio exercise to spike heart rate and create an exciting interval-style workout. The sets will run as follows:

- Balance Challenge, right leg lead, 1 minute
- Cardio Interval, 30 seconds
- Arm Combination, right arm lead, set number of reps
- Cardio Interval, 30 seconds
- Balance Challenge, left leg lead, 1 minute
- Cardio Interval, 30 seconds
- Arm Combination, left arm lead, set number of reps
- Cardio Interval, 30 seconds

This format allows time for legs to recover while arms work and for heart rate to rise and fall.

Balance tips to share with your class:

- Tighten core muscles.
- Keep knees soft and active.
- Move slowly and deliberately.
- Look at something that is not moving, such as a spot on the floor.

Don't worry if you wobble or have to set a foot down—it means you are pushing yourself and will get stronger because of it.

THE WORKOUT:

WARM-UP

Use the warm-up as an opportunity to teach or review form of moves that will be used during the class. Be sure to practice:

Jabs
Crosses
Hooks
Uppercuts
Speed Bags
Front Kicks
Back Kicks

SET #1

Balance Challenge #1: *Speed Bag with both arms + Repeating top half of Front Kick*. With balance leg firmly on the ground, keep kicking leg at hip height and repeatedly extend and bend the knee to complete the top half of a front kick. At the same time, elbows point to the upper corners of the room and work an imaginary speed bag with fast, tight rotations.

To modify, eliminate the speed bag.

Cardio Interval #1: *Jumping Jacks.* Challenge everyone to play with speed, going as fast as possible, or to complete squat jacks, getting deep into the thighs with each repetition.

Arm Combination #1: *4 Jab, Cross + 8 count Speed Bag with both arms.* Complete Jab, Cross 4 times for 8 total punches, then immediately follow with speed bag for 8 counts. Complete the combo 16x.

SET #2

Balance Challenge #2: *3 Repeating Back Kicks + Squat.* Back kick 3 times in a row using the same leg without touching the floor between reps, and then set foot down under hip for a parallel squat.

To modify, touch foot to the floor between each Back Kick.

Cardio Interval #2: *Jump Rope*. Using real or imaginary jump ropes, mix things up with side-to-side jumps, front-to-back or double-unders.

Arm Combination #2: *Front Arm High Block + Back Arm Hook + 4 alternating Uppers*. Complete the combo 16x.

SET #3

Balance Challenge #3: *Double Pulse Stationary Lunge, Kick Through, Double Flutter Kick*. Complete a Stationary Lunge with a Double Pulse at the bottom of the movement. Bring the back leg through to the front without touching the ground for a quick Double Front Kick, only completing the top half of the kick. Bring leg back through into Stationary Lunge position without touching the ground.

To modify, touch the ground as leg moves from lunge to kick.

Cardio Interval #3: *Sprint in place*. This can be a small, fast run or bring knees to hip height with pumping arms to increase intensity.

Arm Combination #3: *Jab, Cross, Jab, Cross, Front Hook, Back Uppercut.* Complete the combo 16x.

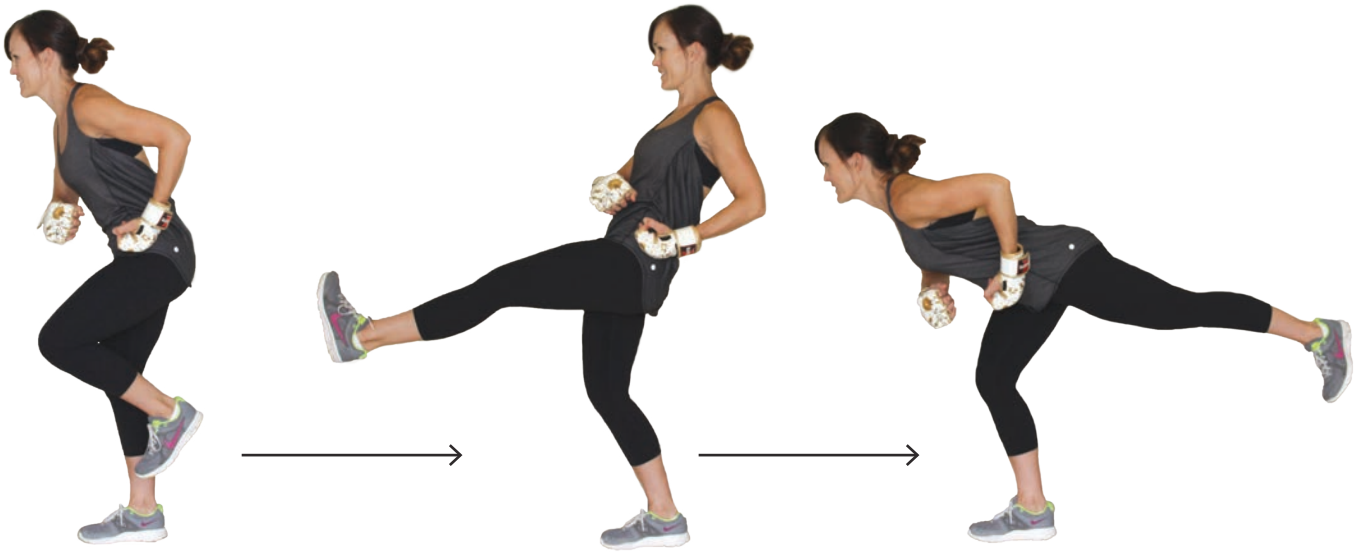
SET #4

Balance Challenge #4: *Front Kick through to Back Kick (same leg)*. Standing strong on the supporting leg, kick front and straight through to the back without touching the ground. Make sure to slightly bend the supporting leg, tighten abdominals, and keep movements deliberate and controlled.

To modify, touch the ground between kicks.

Cardio Interval #4: *4 Shuffle Right, 4 Cross-Country Ski, Repeat Left.* Cover as much ground as possible while shuffling; raise arms overhead and lower them while skiing to maximize intensity.

Arm Combination #4: *Front Hook, Back Uppercut, Front High Block, 2 Front Knees.* The punches here are fast. One count each for Hook and Uppercut, 2 counts for High Block. Complete the combo 16x.



SET #5

Balance Challenge #5: *Tri-Level Front Kick, Tap.* Without touching the ground, Front Kick 3 times, each one higher than the last. Set down kicking leg and tap back with opposite leg. As each kick gets higher, keep hips level, bend supporting knee and lean back, opening the front of the supporting hip.

To modify, keep kicks low and touch toe down between kicks.

Cardio Interval #5: *Alternating Knee Strikes.* Bring knees higher than hip height and pull down strong with arms. Exaggerate the pull-through as if doing the Running Man to increase intensity.

Arm Combination #5: *Jab, Jab, Double Jab, Front Hook, 2 Back Uppercuts, 2 Squats.*

BALANCE STRENGTH WORK

Single-Leg Squat with Airplane Arms. Set up in a lunge position with supporting leg firmly under hip—knee bent, opposite leg reaching back with just a toe resting on the ground, and arms open to the side at shoulder height. Lift the back toe from the ground and sink into a squat with the supporting leg. It will be a small but effective movement. Keep knee tracking over the middle toe, but not moving out beyond toes.

Complete 8 reps with a slow pace, 2 beats down, 2 beats up. Complete 8 reps lowering down for 3 pulses, and raising up for one. Complete 16x at single count tempo.

To modify, touch back toe down at the bottom of each squat.

CORE WORK

Rolling Plank. Use balance to work your core, straight down the middle and on the sides. Set up on elbows and toes, with shoulders down and back, core holding strong, and hips at shoulder height. Hold 8 counts. Open to a side plank by releasing one elbow and rotating until the entire front body is open to the side of the room, keeping strong through the supporting elbow. Return to start and repeat opening to the other side.

Complete 8 reps, opening to each side.

Back Extension Dive. Set up supine with arms 90° at shoulder height, like football goal posts. Lift chest and straighten legs away from the floor, flexing through the gluteals and all along the length of the spine. Pulse up 3 counts and then set the legs down and extend arms overhead as if diving into a pool, keeping arms away from the floor as if it is hot. Pull back to start and repeat 16x.

Sometimes when people think of kickboxing, they focus on the punching and kicking aspects. But keep in mind that without great balance, you won't be able to pull off any of these great moves! **AF**

PAMELA LIGHT *has a bachelor's degree in exercise physiology and a master's in writing. She has instructed group fitness for 23 years and specializes in strength training, kickboxing and spin at Bay Club in Rolling Hills, Calif.*

remember those *resolutions?*

COFFEE CAN HELP!

The use of caffeine to reduce perception of effort during exercise can make the healthy choice easier.

We're halfway through the year; how are you doing with your New Year's resolutions?

Responding to findings that the majority of people give up their resolution of more exercise within the first six months, Professor Samuele Marcora, Director of Research at the University of Kent's School of Sport and Exercise Sciences, says his research could provide a solution. He suggests that reducing perception of effort during exercise using caffeine could help those who find it difficult to stick to their fitness plans.

Together with lack of time, physical exertion is one of the main perceived barriers to exercise, which is natural, as humans have evolved to effectively conserve energy. This inherent "laziness" means that sustaining exercise in the long term is very difficult.

Professor Marcora posits that perception of effort is one of the main reasons why most people choose sedentary activities for their leisure time. Compared to watching television (zero effort), even moderate-intensity physical activities such as walking require considerable effort.

He also states that while there is no strong ethical opposition to the use of psychoactive drugs to help quit smoking (nicotine) or treat obesity (appetite suppressants), the negative perception of "doping" in sports may prevent the use of stimulants and other psychoactive drugs to treat physical inactivity, which is responsible for twice as many deaths as obesity.

SOURCE:
WWW.EUREKALERT.ORG/PUB_RELEASES/2016-01/UOK-ACT011316.PHP

SLEEP TIGHT, SLEEP RIGHT!

More than a third of American adults are not getting enough sleep on a regular basis, according to a study by the Centers for Disease Control and Prevention (CDC).

This is the first research to document estimates of self-reported healthy sleep duration (seven or more hours per day) for all 50 states and the District of Columbia.

The American Academy of Sleep Medicine and the Sleep Research Society recommend that adults aged 18 to 60 years sleep at least seven hours each night to promote optimal health and well-being. Sleeping less than that is associated with an increased risk of developing chronic conditions such as obesity, diabetes, high blood pressure, heart disease, stroke and frequent mental distress.

"As a nation we are not getting enough sleep," observes Wayne Giles, MD, director of CDC's Division of Population Health. "Lifestyle changes such as going to bed at the same time each night; rising at the same time each morning; and turning off or removing televisions, computers, mobile devices from the bedroom, can help people get the healthy sleep they need."

For more information on CDC's Sleep and Sleep Disorders program, please visit www.cdc.gov/sleep (accessed Apr 1, 2016).

SOURCE:
WWW.CDC.GOV/MEDIA/RELEASES/2016/P0215-ENOUGH-SLEEP.HTML

walk it off

"Walking is the most common form of exercise, and many walkers like to count how many calories they burn. However, the leading standardized equations used to predict or estimate walking energy expenditure—the number of calories burned—assume that one size fits all."

A study at Southern Methodist University, Dallas, found that under firm, level ground conditions, the leading standards are relatively inaccurate and have significant bias. The standards predicted too few calories burned in 97% of the cases researchers examined, according to SMU physiologist Lindsay Ludlow, a researcher in the SMU Locomotor Laboratory of biomechanics expert Peter Weyand.

So SMU scientists have developed a new standardized equation that appears to be approximately four times more accurate for adults and kids together, and two to three times more accurate for adults only. "[It] is formulated to apply regardless of the height, weight and speed of the walker," explains Ludlow. "And it's appreciably more accurate."

The new equation achieves greater accuracy by better incorporating the effect of body size, and by specifically recognizing the influence of height on gait mechanics.

"It hasn't been really clear just how accurate the existing standards are under level conditions because previous assessments by other researchers were more limited in scope," observes Weyand, a co-author on the paper. "The SMU approach improves upon [these] standards by including different-sized individuals and drawing on a larger database for equation formulation."

In general, the new metabolic estimates can be combined with other physiological signals such as body heat, core temperature and heart rate to improve predictions of fatigue, overheating, dehydration, aerobic power available, and whether a person can sustain a given intensity of exercise.

SOURCE:
WWW.EUREKALERT.ORG/PUB_RELEASES/2016-03/SMU-GNY031516.PHP

TO SPRINT OR NOT TO SPRINT?

SOURCE:
WWW.EUREKALERT.ORG/PUB_RELEASES/2016-03/UOBC-WHT032216.PHP

High-intensity sprint training may be gaining popularity at gyms, but if you're new to this form of exercise, the workout could do more harm than good.

A study by Canadian and European researchers found signs of stress in the muscle tissues of their non-athlete, untrained subjects after ultra-intense exercises. Perhaps more concerning, researchers reported the untrained subjects had a weakened ability to fight off free radicals, molecules that can alter DNA and harm healthy cells.

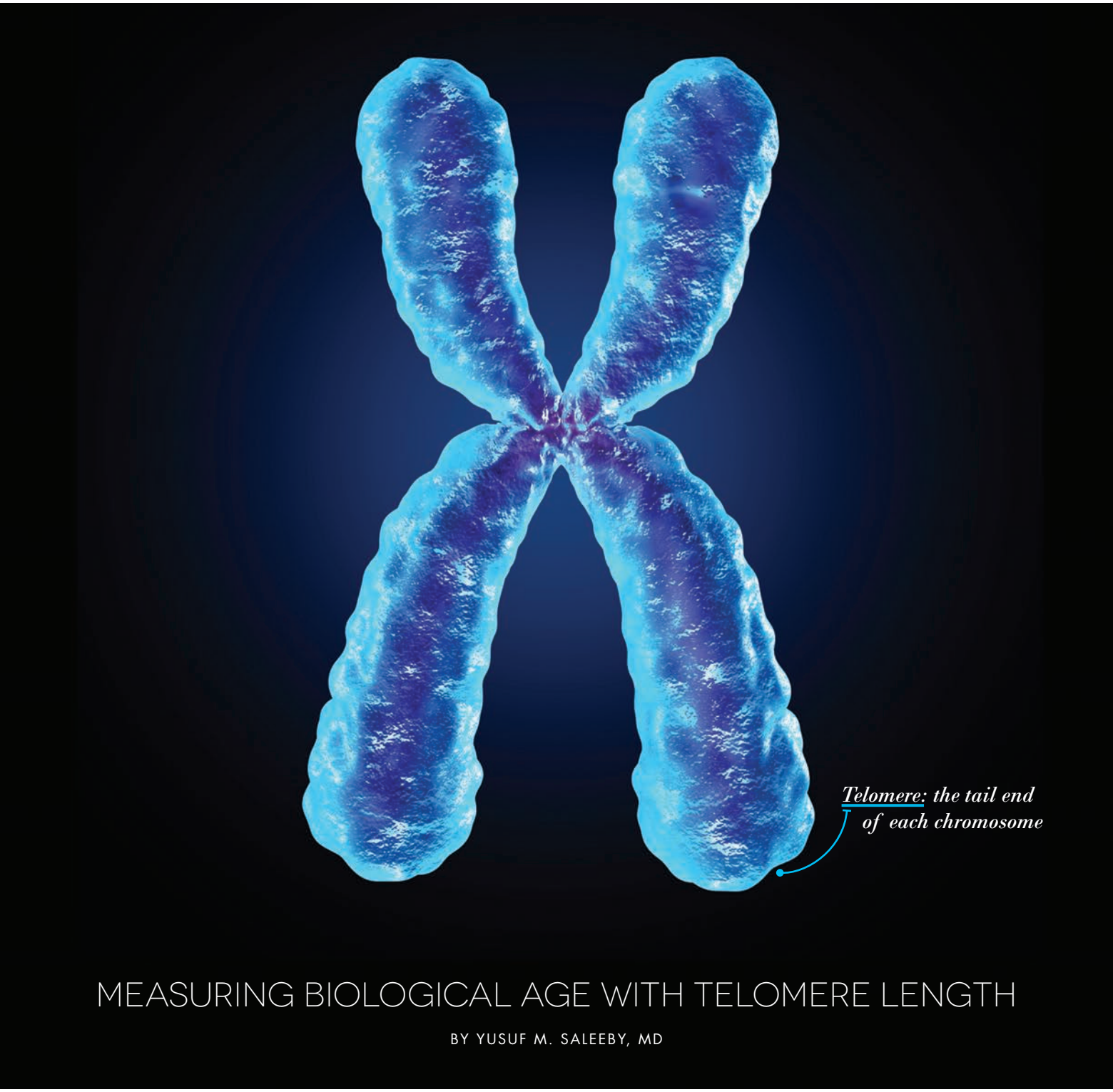
"Our study raises questions about what the right dose and intensity of exercise for the average person really is," says Robert Boushel, the study's senior author and director of the University of British Columbia's School of Kinesiology. "We need to be cautious about supporting sprint training in the general population."

The researchers analyzed tissue samples from their test subjects and found that their mitochondria, the powerhouse of cells, were only firing at half-power post-training, reducing their capacity to consume oxygen and their ability to fight off damage from free radicals. High levels of free radicals in the body have been linked to a number of medical conditions including cancer, premature aging and organ damage.

"If you're new to going to the gym, participating in high-intensity 'sprint' classes may increase your performance but might not be healthy for you," warns Boushel.

Seasoned athletes and those who are well trained have built up antioxidant enzymes in their bodies to protect against free radicals, the author explains. He recommends beginners start slowly and gradually increase intensity over time, under the supervision of a trained professional or kinesiologist.

Tell Me More, Telomere



MEASURING BIOLOGICAL AGE WITH TELOMERE LENGTH

BY YUSUF M. SALEEBY, MD

Some of your most eager fitness clients may want to know about new anti-aging strategies from nutritional genomics, a new field that looks at preserving DNA and telomere length. Here's the latest on that science. (You should still know that exercise itself remains one of the top strategies.)

Scientists and doctors are quick to understand the importance of the telomere. The telomere is simply the tail end of each chromosome (much like the plastic tips at each end of a shoelace). Their importance is critical in the duplication of DNA for cell division and replication. Without the required sequence of nucleic acids in cell DNA, the process of meiotic cell division would not be possible. Without the ability for cells to divide and replicate, the cell eventually dies. Three geneticists, Drs. Elizabeth Blackburn, Carol Greider and Jack Szostak, won the 2009 Nobel Prize in Physiology or Medicine for the discovery of the telomere genetic code. Their work goes back to the mid to late 1970s when they published their first paper together on isolating the sequence for telomeres. In 1989 the RNA-based telomerase was discovered. Telomerase is an enzyme that repairs and extends the telomere. Also known as telomerase reverse transcriptase (TERT), it is an important aspect of cell function and even has implications in cancer research. The more active your telomerase is, the better you can maintain your telomere length (TL).

It was quickly discovered that when the telomere is used time and again, a small bit of it gets cleaved off. With each replication of the cell and its DNA, the telomere gets shorter, until the enzymes that initiate cell division have no "foothold" on which to attach and start the replication process. When this happens, it is what scientists call cell senescence (deterioration with old age) and then eventually cell apoptosis (death).

Prior to this discovery of the telomere, Dr. Leonard Hayflick came up with a principle (Hayflick Limit) in the mid 1960s that determined how long a cell would live. This phenomenon or limit was calculated to be no longer than about 50 to 60 replication cycles. While the reason was not clearly understood, scientists adhered to this Hayflick Limit until the telomere was discovered and the ability to maintain the integrity of or lengthen the telomere by the enzyme telomerase was realized. Now there was a way to defeat the Hayflick Limit.

Cells did not have to die after just 60 or so divisions. If one could just lengthen or preserve the telomere, then the cell could become immortal. So preservation of the telomere not only could result in extension of the life of the cell, but also protection against faults in immune function and cancer. Conversely, overproduction and unbridled telomerase activity could result in immortal cells that are not desirable, such as cancer cells.

The race was on to bring to market a viable test for checking the length of the human telomere. TL is able to determine the "biological age" of a person. Are you appropriate for your chronological age? Measuring an average TL, you would be age matched (biological = chronological)—short TL (making a person "older" biologically than their chronological age) or a longer TL (making a person "younger" than their chronological age). A small clinical trial in 2003 revealed that subjects with shortened telomeres suffered almost a 3.2-fold higher mortality rate from heart disease and an 8.5-fold higher mortality rate from infectious disease. Shortened Leukocyte Telomere Length (LTL) has been associated with heart disease, diabetes and even cancer risk. What would it take to keep the telomere longer or lengthen it without untoward effects of cancerlike intemperate activity?

How to Test

Testing is performed by tagging the telomere and measuring its mass with special sensors. The more tagged, the more the length. Complicating matters is the fact that different cells within an organism (and even species) have variances in telomere lengths. Convention governs the use of leukocytes as the primary type of cell to be measured. Also the method of measurement is a topic for discussion and controversy among scientists. DNA extraction; Telomere Restriction Fragment Assay; qPCR Assay; Q-FISH and flow-FISH; Single Telomere Length Analysis (STELA); and Dot Blot Telomere Assay are all different methods with their pros and cons. Further research will elucidate the most accurate and cost-effective technologies. Prices range from $800 with Life Length to around $250 with Cell Science Systems and SpectraCell Laboratories.

How to Lengthen

Scientists have realized that the absolute best way to slow down telomere shortening is with lifestyle modifications. Tobacco cessation, preventing or controlling type 2 diabetes mellitus (T2DM), avoiding indulgences in alcoholic beverage consumption, foregoing the calorie-dense and nutrient deficient Standard American Diet for one high in phytonutrients, giving up the sedentary life for one that involves routine exercise and reduction in "stress" all help to minimize TL shortening. Everything else is secondary, and people at risk for shortened telomeres or with known shortened telomeres need to focus primarily on these measures.

Substances high in antioxidant potential that also act as anti-inflammatory agents may slow down shortening and possibly help in increasing the TL. In particular, the adaptogen herb *Astragalus membranaceus*—with potent levels of cycloastragenols and astragalosides (Astragaloside IV in particular)—has much promise as a dietary supplement in combination with positive lifestyle modifications to retard the shortening of TL and possibly even increase it.

Researchers are trying to isolate the active ingredient and have come up with some products. Geron Corporation's TA-65® is one in particular, as is Product B®, but both are

rather expensive options. A study revealed Alpha Lipoic Acid (ALA) as another agent of interest. Obviously, more research is needed to determine benefit and cost effectiveness. More compounds will likely come to public attention, as this topic is hot among researchers. **AF**

YUSUF M. SALEEBY, MD, *is an Integrative Functional Medicine physician and founder and director of Priority Health. He is also medical advisor and co-founder of Zimetry, a patient direct access website. His focus is on true predictive testing and preventive medicine. He can be reached for comment at ymsaleeby@gmail.com.*

"So preservation of the telomere not only could result in extension of the life of the cell, but also protection against faults in immune function and cancer."

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DANCE/ MOVEMENT THERAPY

BEING IN ACTION

BY ANNE KRANTZ, PhD, BC-DMT

Most of us would agree that dance is therapeutic; we feel better when we move our bodies with a sense of freedom and release or with a pulsing rhythmic response. What about applying the art of dance to psychotherapy? Imagine creating movement precisely unified with thought and feeling to address dysfunctional or destructive psychological, physical and relationship patterns. How might it feel to dance out long-hidden emotions embedded in unconscious habits and behaviors or the inner stories of verbal and nonverbal communications? Might it be possible to link healthy rehabilitative exercise with fundamental changes in self-experience, development, body image and life direction? Dance/movement psychotherapy is a total approach that reconnects physical and emotional expression with therapy objectives by working directly with body states, feeling, cognition and lifestyle to confront human suffering and mobilize human potential.

Recognizing the power of dance to address psychophysical well-being led to the emergence of Dance/Movement Therapy in the mid-20th century. Pioneer dance therapists Blanche Evan, Mary Whitehouse and Marian Chace, among others, drove the convergence of creative dance innovation, psychoanalytic theory and strong social consciousness. They brought unique approaches to varied populations and environments in which their work evolved. Chace and others developed models for in-

patient settings with psychotic patients. Evan, in New York, and Whitehouse, in Los Angeles, worked in private studios with neurotic clients who sought to confront their problems through in-depth dance therapy, individual sessions and group work. Their clients' movements and words spoke to the unconscious impact of segmented mind, body and emotion as limited functional movement and spontaneous expression became pervasive in urban American life. Chronic tension, apathy, anxiety, depression, malaise and disconnection from natural expressive movement drained individual power and creativity. Overreliance on thinking and worrying with loss of agency in meaningful action in life became normal and widespread.

Dance/Movement Therapy is now established in 40 countries, with the American Dance Therapy Association (adta.org) celebrating its 50th anniversary this year. Dance therapists work in a variety of private, medical and community treatment settings and practice as licensed psychologists, social workers, marriage and family therapists, and counselors. Graduate programs in dance therapy offer master's level degrees and a body of research is emerging in the field. Clients don't need to have prior dance or movement experience, but rather a desire to deal with their life problems using their "feeling thinking body" as well as their words. In 40 years as a dance therapist and clinical psychologist, my work with both children and adults has addressed chronic illness, developmental challenges, eating disorders, relationship problems, trauma, and many other issues that people bring to therapy. Healing Through Dance, a program I created at the University of California, San Francisco Comprehensive Cancer Center, offers cancer patients and survivors dance therapy to deal with diagnosis and treatment by creating meaning and renewed trust in life. The unique integration of dance with psychotherapy occurs as the client's personal, often unconscious, body experience is revealed in movement. Meaning is enhanced through dance, verbalization and interaction with a trained therapist. This is an active, creative therapy engaging the whole person in a dynamic model interconnecting mind, body and emotion within the social-cultural environment.

The Dance/Movement Therapy client's experience of their body is deeply personal, shaped by their relationships and life history. When creating one's own movement, a heightened awareness of the intrinsic connection of behavior, feeling and thought emerges. Body articulation allows release and enlivening, increasing vitality and presence. Giving outlet to feelings, thoughts and imagination often leads to free association in dance improvisation, in which the link between conscious and unconscious memory, thinking and feeling can be richly fluid and informative. Verbalization with a therapist is infused with direct experience of core states. The honest expression of emotion in a therapeutic relationship of understanding and acceptance allows coming to terms with the emotional impact of life's most painful circumstances, whether dealing with the challenge of cancer or facing the fear and anxiety of traumatic emotional states. A unique aspect of Evan's Dance/Movement Therapy model is the rehabilitative *physical* work that supports transformational *emotional* work toward enhanced function.

Movement is an inherent aspect of life and health, but each individual's needs are unique to their particular circumstances, desires and life situations. Can you identify your personal preferences and incorporate these into your lifestyle? What do you leave out or ignore from your movement repertoire? How do you express your emotions or deal with chronic tension or pain? How do you create meaning when loss or change impacts your life? At its core, Dance/Movement Therapy is a practice of "moving vitality," in which essential aspects of being can be danced and integrated with psychotherapy to serve your objectives going forward in life. **AF**

ANNE KRANTZ, PhD, BC-DTR, *is a board certified dance therapist and licensed clinical psychologist in San Francisco. For 40 years she has worked with children and adults in private practice and developed research and training models that integrate dance, movement and psychotherapy. She created Healing Through Dance, a program for cancer patients and survivors at the UCSF Comprehensive Cancer Center, Cancer Resource Center in 1996 and is on the faculty of CIIS Somatic Psychology program.*

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Ingredients

- 4 ripe, fresh California avocados, seeded and peeled
- 2 Tbsp lemon juice
- 1 clove garlic, crushed
- 1 tomato, finely chopped
- ¼ cup finely chopped onion
- ⅛ tsp ground cumin
- 3 drops hot pepper sauce

Instructions

1. Coarsely mash avocado with lemon juice and garlic.
2. Stir in remaining ingredients to blend.

*Large avocados are recommended for this recipe. A large avocado averages about 8 ounces. If using smaller or larger size avocados adjust the quantity accordingly.

Recipe courtesy of the California Avocado Commission.

Nutri Per Serving: *Cals 150; Total Fat 13g (Sat 2g, Trans 0g, Poly 2g, Mono 8g); Chol 0mg; Sod 10mg; Potass 452mg; Total Carbs 9g; Fiber 6g; Total Sugars 1g; Prot 2g; Vit A 141 IU; Vit C 13mg; Calcium 16mg; Iron 1mg; Folate 78mcg; Omega 3 Fatty Acid 0.1g % Daily Value*: Vit A 2%; Vit C 20%; Calcium 2%; Iron 4%*

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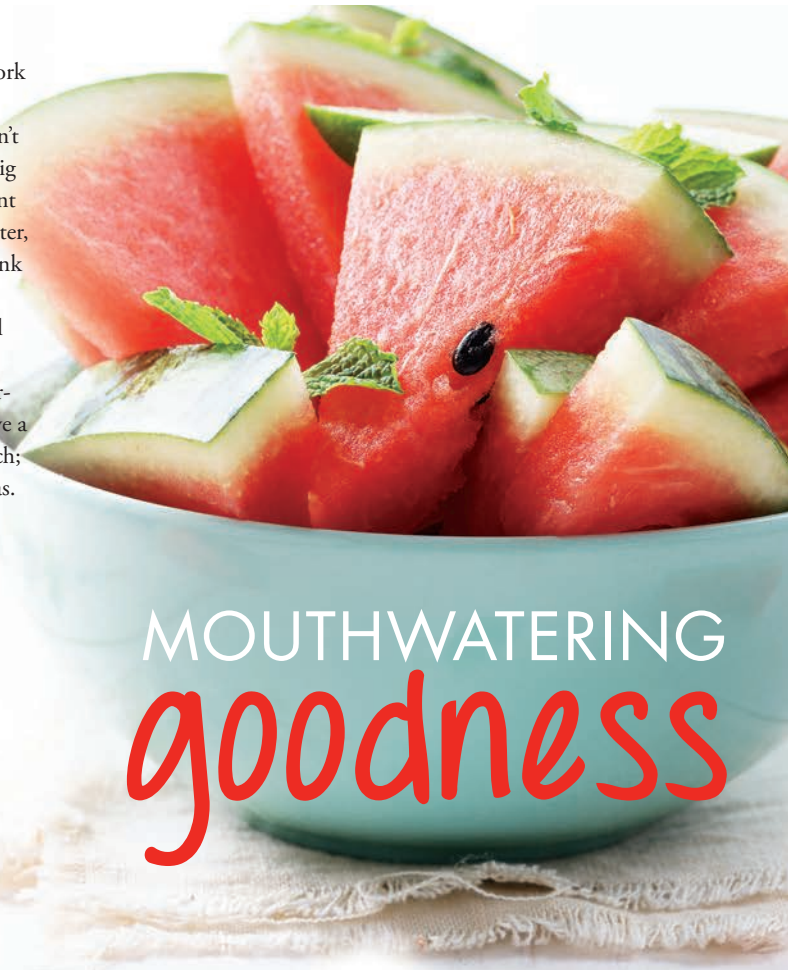

MOUTHWATERING goodness

Athletes given watermelon juice report up to 40% less muscle soreness 24 hours after exercise than those who don't consume watermelon.

Summertime is watermelon time. Not only is this fruit deliciously refreshing, it has many healthful properties. The red color comes from lycopene—there are 15 to 10mg per 2-cup serving. Packed with vitamins A, B-6 and C, watermelon also contains potassium, thiamine and magnesium, plus amino acids citrulline and arginine help maintain blood flow.

Since this melon contains 92% water, it's an excellent hydrator. Dehydration is the most common cause of reduced athletic performance. The first sign is fatigue, which is accompanied by an increased risk for injuries. A runner can lose five pounds or more of water during a race. Exercisers also lose body water every time they work out. While plain water is the most obvious fluid replacement, you don't have to rely on it alone. Eating a big slice of watermelon is the equivalent of drinking an 8-ounce glass of water, plus it replenishes electrolytes. Think of it in terms of a recovery fruit!

So this summer, include a bowl of watermelon chunks with your breakfast; bring a thermos of watermelon juice to work or school; have a slice of watermelon with a sandwich; or add diced watermelon into salsas. And go to www.watermelon.org for recipes and tips on how to choose the best watermelon.

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WHY CAN'T I SIMPLY LOSE A FEW POUNDS?

DIETING MYTHS AND GENDER DIFFERENCES

BY NANCY CLARK, MS, RD

All too often I hear seemingly lean athletes express extreme frustration with their inability to lose undesired bumps and bulges. Clearly, weight loss is not simple and often includes debunking a few myths. This article will offer some insights that may help lead to success with your weight loss efforts.

MYTH: YOU MUST EXERCISE IN ORDER TO LOSE BODY FAT.

To lose body fat, you must create a calorie deficit. You can do that by

1) exercising, or
2) eating fewer calories.

Adding on exercise does not equate to losing body fat. In a 16-week study, untrained women (ages 18 to 34) built up to 40 minutes of hard cardio or weight lifting three days a week. They were told to not change their diet, and they saw no changes in body fatness.[1] Creating a calorie deficit by eating less food seems to be more effective than simply adding on exercise to try to lose weight.

Athletes who complain they "eat like a bird" but fail to lose body fat may simply be under-reporting their food intake. A survey of female marathoners indicated the fatter runners under-reported their food intake more than the leaner ones.[2] Were they oblivious to how much they actually consumed? Or were they too sedentary in their non-exercise hours?

MYTH: IF YOU TRAIN FOR A MARATHON OR TRIATHLON, SURELY YOUR BODY FAT WILL MELT AWAY.

Wishful thinking. If you are an endurance athlete who complains, *"For all the exercise I do, I should be pencil-thin,"* take a look at your 24-hour energy expenditure.

Male endurance athletes who reported a seemingly low calorie intake did less spontaneous activity than their peers in the non-exercise parts of their day.[4] You need to keep taking the stairs instead of the elevators, no matter how much you train. Again, you should eat according to your whole day's activity level, not according to how hard you trained that day.

MYTH: THE MORE YOU EXERCISE, THE MORE FAT YOU WILL LOSE.

Often, the more you exercise, the hungrier you get and 1) the more you will eat, or 2) the more you believe you "deserve" to eat. Unfortunately, rewarding yourself with a 600-calorie cinnamon roll can quickly erase the 600-calorie deficit you generated during your workout.

The effects of exercise on weight loss are complex and unclear—and depend on the 24-hour picture. We know among people (ages 56 to 78) who participated in a vigorous walking program that their daily energy needs remained about the same despite adding an hour of exercise. How could that be? The participants napped more and were 62% less active the rest of their day.[3] Be sure to pay attention to your whole day's activity level.

MYTH: YOU SHOULD EXERCISE SIX DAYS A WEEK TO LOSE WEIGHT.

Perhaps four times a week might be better. A study with sedentary women (ages 60 to 74), who built up to exercising for 40 minutes of cardio and weights, suggests those who did four workouts a week burned about 225 additional calories in the other parts of their day because they felt energized. The group that trained six times a week complained the workouts left them feeling tired and droopy. They burned about 200 fewer calories in the non-exercise parts of their day.[5] Might this info also relate to you?

MYTH: COUPLES WHO EXERCISE TOGETHER, LOSE FAT TOGETHER.

Not always. In a 16-month study looking at exercise for weight loss, the men lost 11.5 pounds and the women maintained weight, even though they did the same amount of exercise.[6] In another study, men who did an 18-month marathon training program reported eating about 500 more calories per day and lost about five pounds of fat. The women reported eating only 60 more calories, despite having added on 50 miles per week of running. They lost only 2 pounds.[7]

What's going on here? Well, a husband who adds on exercise will lose more weight than his wife if he's heftier and thereby burns more calories during the same workout. But, Nature seems protective of a woman's role as child bearer, and wants women to maintain adequate body fat for nourishing healthy babies. Obesity researchers at New York's Columbia University suggest a pound of weight loss in men equates to a deficit of about 2,500 calories, while women need a 3,500-calorie deficit.[8] No wonder women have a tougher time losing weight.

THE BOTTOM LINE

If you are exercising to lose weight, I encourage you to separate exercise and weight. Yes, you should exercise for health, fitness, stress relief and, most importantly, for enjoyment. If you exercise primarily to burn off calories, exercise will become punishment for having excess body fat. You'll eventually quit exercising—and that's a bad idea.

Pay more attention to your calorie intake. Knocking off just 100 calories a day from your evening snacks can theoretically result in 10 pounds a year of fat loss. Doesn't one less cookie a day seem simpler than hours of sweating…? **AF**

NANCY CLARK, MS, RD, CSSD *(Board Certified Specialist in Sports Dietetics), counsels active people at her private practice in Newton, Mass. (617. 795.1875). For more food help, enjoy reading her* Sports Nutrition Guidebook *and* Food Guide for Marathoners. *They are available at www.nancyclarkrd.com. Also see www.NutritionSportsExerciseCEUs.com for online education.*

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MAGNIFICENT MAGNESIUM

A CLOSER LOOK AT A NECESSARY MINERAL

BY EVANGELINE YVONNE SAMPLES, MS, RDN, LD

Often overlooked, magnesium is a magnificent mineral. It is involved in over 300 enzymatic processes in the human body, which absorbs magnesium in the small intestine at the jejunum and ileum. Magnesium is useful in maintaining the levels of potassium and calcium inside cells. In addition, magnesium helps to build and maintain bones and teeth.[1] Healthcare providers also use the mineral therapeutically. Too little of this substance, for example, may result in muscle spasms.[1] Obstetric physicians use magnesium sulfate to prevent seizures in women who have eclampsia or preeclampsia.[2]

HOW MUCH DO YOU NEED?

Magnesium needs differ by life stage and gender. Between the ages of 19 and 30, the Recommended Dietary Allowance (RDA) is 400mg per day for males and 310mg per day for females. From ages 31 to 70, the RDA for males is 420mg per day; females ages 31 to 70 need 320mg per day. During pregnancy, daily magnesium needs increase to 400mg for those age 18 and under, 350mg for those ages 19 through 30, and 360 for those ages 31 through 50.[1] However, most Americans do not meet the RDA for magnesium.[3]

MAGNESIUM DEFICIENCY

Some members of the population are at risk for magnesium deficiency. Individuals who consume excessive amounts of alcohol excrete magnesium via the kidneys in urine. Mothers who breastfeed more than one infant are at risk of magnesium deficiency because of increased milk production. Elderly people may have low dietary intakes of magnesium because poor dentition and decreased sense of taste and smell often lead to reduced food intake. In addition, the meals served in long-term care facilities may not supply adequate amounts of this mineral.[1] Individuals who have undergone bariatric surgery are another population at risk for magnesium deficiency. In a study of 355 such patients, 12.5% of those who underwent sleeve gastrectomy and 2.9% of people who had Roux-en-Y gastric bypass surgery were deficient in magnesium five years after the procedure. The study's authors postulate that the deficiency occurs due to reduced food intake and absorption. Also, patients may not comply with taking the recommended vitamin and mineral supplements.[4]

DIETARY SOURCES

Whole grains, leafy greens and nuts are the best food sources of magnesium.[1] For instance, one ounce of dry roasted almonds has 79mg[5] and two tablespoons of unsalted peanut butter have 54mg.[6] One cup of cooked oatmeal supplies 63mg of magnesium,[7] while one cup of raw spinach provides 24mg.[8] For those who are allergic to nuts, sunflower seed butter is a good source of magnesium, supplying 50mg per tablespoon.[9] It is important to note that one cannot overconsume magnesium from foods. However, too much magnesium from supplements may result in diarrhea.[1]

MORE HEALTH BENEFITS

Magnesium is important for cardiovascular health. A goal of 500mg per day is one feature of the Dietary Approaches to Stop Hypertension (DASH) diet. The DASH program is not one single specific diet. Instead, it is a flexible eating plan designed to lower blood pressure in persons who have hypertension (high blood pressure).[10]

HEALTH PROBLEMS RELATED TO LOW INTAKE

Researchers can correlate urinary excretion of magnesium with dietary intake. The authors of a recent study associated low urinary magnesium excretion with a 60% higher risk of ischemic heart disease (IHD). IHD includes such conditions as acute myocardial infarction, coronary artery bypass grafting, angioplasty, heart failure, cardiac arrest, ventricular fibrillation and ventricular flutter.[11]

A meta-analysis revealed an inverse association between dietary magnesium intake and the risk of stroke. Specifically, researchers connected an increase of 100mg of magnesium per day with an 8% decreased risk of stroke and a 9% lower risk of ischemic stroke. Magnesium might decrease stroke risk by lowering blood pressure, and by decreasing plasma levels of lipids and glucose.[12]

Several studies have examined the relationships between various levels of magnesium and the risk of cardiovascular disease. For example, one divided participants into tertiles of 312, 341 or 442mg of magnesium intake per day. The participants in this study were men and women at high cardiovascular risk because of type 2 diabetes, hypertension, hypercholesterolemia, low levels of HDL cholesterol, and a family history of premature cardiovascular disease. The participants with the highest magnesium intake had a 37% lower risk of all-cause mortality than those in the lowest tertile. Furthermore, participants who consumed a Mediterranean diet supplemented with nuts had the greatest benefit.[13]

In another study, researchers examined the relationship between sudden cardiac death and levels of dietary and plasma magnesium among women. Participants who had the highest levels had the lowest risk of sudden cardiac death.[3]

CONCLUSION

Magnesium is a mineral that is critical for many enzymatic processes in the body. It is essential for cardiovascular health and may help to lower blood pressure in individuals with hypertension. As a health coach, one should advise clients to choose foods that are high in magnesium, such as whole grains, nuts, sunflower seeds and green, leafy vegetables. These foods can be featured in entrées or side dishes. A peanut butter or sunflower butter sandwich on whole-wheat bread with a spinach salad is one example of a meal that is high in magnesium. Sunflower seeds sprinkled

MAGNESIUM IS A MINERAL THAT IS CRITICAL FOR MANY ENZYMATIC PROCESSES IN THE BODY.

over oatmeal is another option for individuals with nut allergies. Brown rice and cooked kale supply magnesium and may accompany the client's choice of meat or vegetarian fare. A homemade trail mix with nuts or sunflower seeds and whole-grain, ready-to-eat cereal is a wise snack selection. **AF**

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