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LAURIE McCARTNEY, PRESIDENT

TAKE FIVE

CHECK OUT FIVE OF OUR FAVORITE HIGHLIGHTS FROM THIS ISSUE!

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Strength training for youth.

25 CEU: NUTRITION AND EXERCISE
Timing is everything.

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Learn to let go of insecurity and embrace possibility.

42 THRIVING IN A FITNESS CAREER AFTER 50
Pros share how to stay relevant and inspired.

66 SOCIAL MEDIA AND BODY IMAGE
Can #fitspiration do more harm than good?

MOVING BEYOND PERFECTION

Is perfection getting in the way of your success? What about your happiness? It's time to give yourself and your clients a break from the perfection pursuit.

Let's be real. Perfection isn't possible. And it's not the key to success *or* happiness. If everything was perfect, we'd never grow, never really change. We'd be too scared to take a chance and try something new (and quite possibly make a mistake), and we'd never experience the joy that comes with it.

As you read through this issue of *American Fitness,* take some extra moments with our cover story, "Petra Kolber's Cure for Toxic Perfectionism." Here, Kolber, a true fitness industry champion, shares her personal struggle and how she flipped her unhealthy quest for flawlessness into the healthy pursuit of happiness—for herself and others. As fitness professionals, we, too, can think about how we can spread happiness and joy when it comes to movement. We may be accustomed to pointing out what needs improvement or how this exercise or that move can address this or that "flaw." We've all used terms like *muscle failure* and *faulty form.* But Kolber urges us to pause to imagine how our clients and participants must feel when they come to us for guidance, and instead try to highlight how *good* exercise will make them feel.

I know many of you are also taking your first steps toward the head of the group exercise floor and may be in need of a perfection pause of your own. Having a strong foundation of knowledge will enhance both confidence and skills. Utilizing branded programming, as highlighted in "Build Your Tribe With a Branded Program," could be a great stepping stone since it provides you with ready-to-implement programming while offering participants a consistent experience. You practice the new release, and polish your moves and cuing. As you lead the workout, you may make a mistake. It happens. Your participants understand you are not perfect, and they appreciate your authenticity. (And it gives *them* permission to be imperfect, too.) Smile, learn, and move on.

With warmer weather and longer days on the horizon, many of us are looking forward to getting outside with our clients and classes. Spring provides an exciting opportunity to grow and expand your knowledge and abilities, making our communities stronger and fitter. For example, see how to take your group training to fun new levels (and locations) in "It's Spring—Throw the Doors Open and Get Outside!" And to help clients who are already thinking about swimsuit season, turn to "Supersets: Lift Weight to Lose Weight," where you'll learn to apply NASM's OPT™ model to help them meet their goals head-on.

I invite you to try your own perfection detox, while also finding ways to bond with other fitness pros as we strive to obtain our goals. By supporting each other's successes, mistakes, imperfections and progress, we can embrace the joy and happiness the journey brings…for us and for our clients.

Warm wishes,

Laurie McCartney
President – Global Fitness & Wellness Solutions

WHAT'S NEW

ADD A DOSE OF FITNESS EDUCATION TO YOUR JULY GETAWAY

If you are looking for vacation destinations that mix fun and fitness with learning, come visit AFAA and NASM at sessions and booths at these upcoming events in July:

Destination...Orlando, Florida
Zumba with AFAA at the Zumba Convention on July 27–30 (zumba.com).

Destination...San Jose, California
Look for AFAA and NASM at the San Jose FitExpo on July 29–30 (thefitexpo.com/sj.shtml).

NASM'S OPTIMA EVENT IS BACK!

Meet us in Scottsdale, Arizona, October 12–15, for the NASM Optima 2017 Conference. Last year's Optima event was a huge success, and it's back—once again bringing together the industry's most influential fitness trainers, speakers, partners, exhibitors and attendees. Join us for 4 packed days and you will expand your knowledge, learn about the latest products and trends, and network with peers and influencers. There's not a better, more enjoyable way to learn how to strengthen your business and make a bigger impact on the lives of your clients. So save the date: Mark your calendar now for the NASM Optima 2017 Conference!

LEARN FROM AN *AMERICAN FITNESS* EXPERT AT FITNESS FEST

Join Fabio Comana, MA, MS, in Mesa, Arizona, April 21–23! You may recognize the name Fabio Comana from articles in *American Fitness*, such as the CEU Corner in Winter 2017, "Exploring the Science of Recovery." Comana is a faculty instructor for NASM, as well as San Diego State University and the University of California, San Diego. This April, you can sign up for three of Comana's information-packed sessions at FitnessFest (fitnessfest.org). Topics include:

- Building Blocks—Core Science and Training Explained
- Mobility and Flexibility—Research and Application
- Coaching Update—5 Simple Ideas for Success

IMPROVE YOUR BODY, MIND AND BUSINESS AT IDEA® WORLD CONVENTION

Connect with AFAA and NASM in Las Vegas, July 19–23! Vegas has a healthy summer attraction worth checking out: NASM's and AFAA's sponsored track at the 2017 IDEA World Convention. There, AFAA and NASM will host booths and a morning workout at the trade show, plus conference sessions and workshops by Rick Richey, MS; Angie Miller, MS, LPC; Marty Miller, DHSc; and Fabio Comana, MA, MS, on these topics:

- NASM Corrective Exercise Model—Essentials and Beyond (Richey)
- NASM: Morning Jumpstart Workout (Richey)
- AFAA: How to Use Group Fitness to Build Your One-on-One Training Business (A. Miller & Richey)
- AFAA: Managing Stress Through Mindfulness and Meditation (A. Miller)
- NASM: Boot Camps and Group Training—How to Organize the Madness (M. Miller)
- NASM: Championship Core—Core Training for Athletes and Weekend Warriors (M. Miller)
- NASM: Challenges and Training Solutions for Gen-X Clients (Comana)
- NASM: Movement Mechanics—Lower-Extremity Update (Comana)

To register or learn more, visit nasm.co/IDEAWorld2017.

BY LAURA QUAGLIO

Training Edge [INDUSTRY NEWS, INSIGHTS & TOOLS]

THROW BASEBALL INJURIES A *Curveball*

If baseball games seem to fly by more quickly, there's a good reason: In recent years, rule changes in Major League Baseball have shortened game time. Among the repercussions: Players now must deliver pitches within 12 seconds instead of 20. According to research in *Medicine & Science in Sports & Exercise* [2016; 48 (12), 2512–16], this shorter rest interval affects game performance and results in increased inflammation and muscle damage for 2 days after game play. The American College of Sports Medicine reports that, over time, this wear and tear may result in "more severe overuse-type injuries throughout a pitcher's career."

Providing your ball-playing clients with a well-conceived exercise program may help reduce their risk of overuse-related injury. Here are some recommendations from Kenneth Miller, MS, a NASM-CES, PES, and biomechanist for the National Pitching Association:

Assess and reassess. Assess the player in the preseason and throughout play to identify postural and movement deficiencies, and to address compensations or restrictions, using the NASM Optimum Performance Training™ (OPT ™) model.

Address compensations. The NASM Corrective Exercise Specialization provides additional assessments and strategies that focus on impairments to specific body parts, including the ankles, shoulders and hips. "Corrective exercise in-season is almost a necessity," says Miller. The stresses of practice and game play are likely to lead to compensations. (Learn more at www.nasm.org/CES.)

Keep tabs on the player. For example, a pitcher may experience tension in the hip, but since his elbow and shoulder feel fine, he keeps throwing. This lack of hip flexibility can create compensations through the body leading up to the shoulder or elbow. Players may brush off such cues, so be sure to stay updated by assessing and asking questions about things like tightness, soreness and/or weakness—anywhere in the body.

Be a team player. "Work with the player's sports coach and sports medicine team," says Miller. "Make sure you know when he is throwing and how much so you don't overuse the player." Miller starts the dialogue by reaching out first. "I'll let them know what I see and how I'm going to deal with it on my end," he says. "Often they'll reciprocate." This means Miller can work on issues the coach identified during a game or practice session, so it's a win-win situation.

PHYSICAL CONDITIONING CAN HELP PREVENT INJURIES IN PITCHERS.

Minimal Shoes, Maximal Gains

Switching footwear may impact strength, safety and race times.

WHAT MILLENNIALS WANT FROM A GYM

Novelty. Entertainment. Adventure. New experiences. Individuality. A fitness tribe to call their own.

These are some of the "wants" topping the list of the Millennial generation gym-goer. In the past few years, boutique fitness studios have noticed a surge in membership, largely from this generation, because they cater to specific, unique interests. Even so, more than 85% of boutique-goers belong to multiple studios, which further highlights the Millennials' desire for newness and variety.

These findings are among those reported in a Club Intel e-booklet on www.Club-Intel.com—*Looking Back So We Can See Forward*—which shares industry insights from the 2016 IHRSA Health Club Consumer Report. With 75–80 million Millennials in the U.S. alone, these 18-to-30-somethings have the power to "change the industry," says the Club Intel report.

Fitness professionals looking to appeal to this demographic might benefit from shining some light on what makes them, their facility and their programs unique and entertaining…or by beginning to offer unique, targeted options to round out their schedule of more-traditional classes. Also try to change up routines to keep them interesting, and make time to connect with clients: A true tribe has members who know each other well.

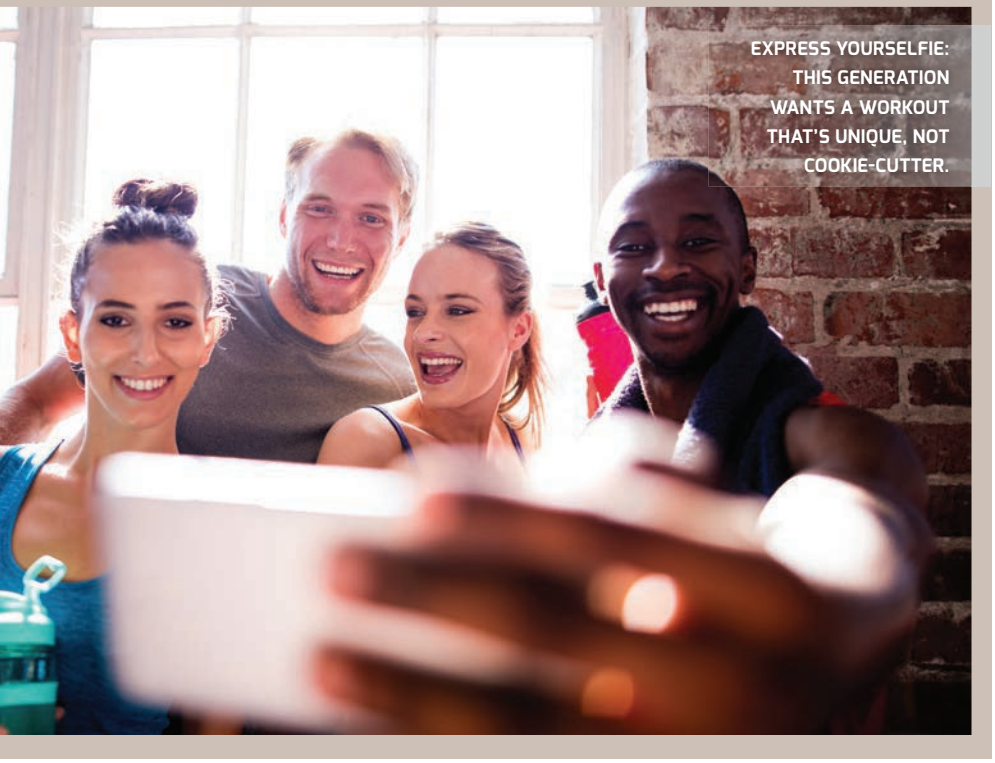
In an article at ClubIndustry.com that shares these and other tips for boosting Millennial membership, Brian Kane of the Precor marketing research and commercial management team writes: "Boutiques are a reminder of the need to be different and focused. Being all things to all people is a strategy that is unsustainable in a mature industry where competition is greater than it has ever been." In other (very Millennial) words: ***You do you.***

Three recent studies report potential perks for choosing minimalist running shoes (MRS):

Stronger leg and foot muscles. A study of 38 runners conducted by The Hong Kong Polytechnic University and Harvard Medical School showed that running in MRS can increase muscle volume in the extrinsic foot muscles (those attaching the leg to the foot) and intrinsic foot muscles (which connect the heel and toes). This is likely because MRS provide less stability and cushioning, and no arch support, thereby increasing strength demands on both groups of muscles, according researchers at PolyU.

A reduced risk of injury. Researchers at the University of Exeter in the UK and Harvard Medical School studied 29 runners to compare the loading rates (the speed at which force is applied to the body) associated with different types of running shoes. They found that running in MRS and landing on the ball of the foot (which is typical for barefoot and MRS runners) results in significantly lower loading rates than running in traditional running shoes (which is usually associated with landing on the heel). Lower loading rates may reduce the risk of running injury due to the reduced demands on the body, the researchers reported in *Medicine & Science in Sports & Exercise* [2016; 48 (12), 2462–68].

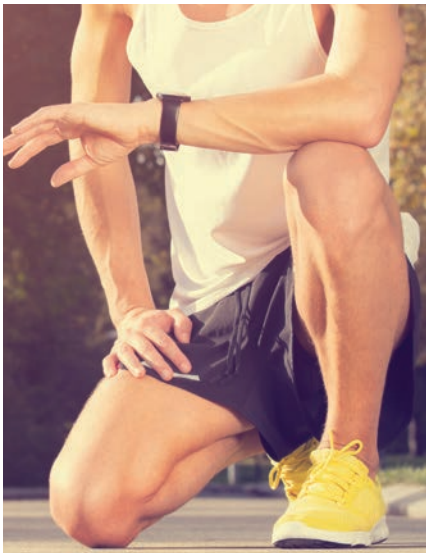
Faster race times. Researchers at the University of Colorado, Boulder's department of integrative physiology tested 18 runners with sub-20-minute 5K times while running in three types of shoes: one that was unweighted, one that contained 100 grams (3.5 ounces) of lead pellets and another with 300 grams (10.6 ounces) of lead. When the runners completed three 3,000-meter time trials, they ran about 1% slower for every 100 grams of added weight, reported *Medicine & Science in Sports & Exercise* [2016; 48 (11), 2175–80]. Though the study was not specific to minimalist shoes, its findings imply that the lower weight of these shoes could help runners improve their times.



EXPRESS YOURSELFIE: THIS GENERATION WANTS A WORKOUT THAT'S UNIQUE, NOT COOKIE-CUTTER.

The Security Risks of Wearable Tech

HEALTH INFORMATION ON TRACKERS MAY NOT BE AS SECURE AS YOU'D LIKE.



A new report warns that wearable tech that tracks health and fitness data may put consumers' health info at risk. Researchers from American University and the Center for Digital Democracy note the lack of adequate safeguards protecting the confidentiality of this data. While the report's authors assert that policy makers must take action to protect consumers in "today's Big Data era," you may want to read over companies' privacy policies before letting them mine your data. You'll find an analysis of the privacy policies of "some of the leading wearable providers" in Appendix B of the report *Health Wearable Devices in the Big Data Era: Ensuring Privacy, Security, and Consumer Protection*, available on Democraticmedia.org.

MYTH: BODY BUILDERS HAVE STRONGER MUSCLES

CAN YOU SPOT THE STRONGEST ATHLETE HERE? NEITHER CAN WE.

Curiosity about the connection (or lack thereof) between muscle hypertrophy (size) and strength has been around since as early as 1955. Though many people believe that long-term adaptations in strength depend upon gains in size, there is remarkably little evidence to support that. When a team of researchers examined the evidence last year, they found a weak correlation between changes in muscle size and muscle strength after training. That's not so surprising when you consider that muscle mass is lost during detraining, while strength often remains steady. Further, low-load and high-load resistance training each can trigger similar growth in muscular size, though the strength gains from each of these differ.

"As the story goes with exercise-induced changes in strength, neural adaptations are contributing first, with muscle growth playing a more prominent role in the latter portion of a training program: However, there is little direct evidence that this is actually true in an adult partaking in a resistance training program," explains Jeremy Loenneke, PhD, senior author of the article, published recently in *Muscle & Nerve* [2016; 54 (6), 1012–14]. "Our paper highlights many potential issues with how we think about changes in strength following exercise."

IRISIN IS A PROVEN FAT-BURN BOOSTER.

Exercise Amps Up This Fat-Shedding Hormone

Here's a research finding that could inspire clients to break a sweat: Exercising the body's muscles boosts production of the hormone irisin. Why is that so great? Recent groundbreaking research from the University of Florida found that exposing samples of fat tissue to irisin resulted in a 20–60% reduction in mature fat cells. The researchers reported in the *American Journal of Physiology—Endocrinology and Metabolism* [2016; 311 (2), E530–41] that irisin helps quash fat-cell formation while encouraging the transformation of white fat cells (which store calories) to brown fat cells (which burn energy).

Power Down to Power Up!

Theaters and automobiles aren't the only places a cellphone should be O-F-F. Two recent studies warn against talking or texting during workouts, too, Science Daily reports. These actions lower exercise intensity and impair posture and balance. Using your cell solely for workout music, though, is A-OK.

CELLPHONE CALLS CAN THWART FITNESS GAINS.

To Work the SA, Subtract the Plus Phase

If you're using the pushup-plus exercise to activate the serratus anterior, recent research concludes that traditional pushups work just as well. In a small study published in *BMC Musculoskeletal Disorders* [2015; 16, 23], researchers studied the effects of PUP variants on (among other things) the electromyographical activity of four shoulder muscles, including the SA, during concentric contraction. They found that the highest EMG activity of the SA occurred at 55 degrees of elbow extension during the concentric phase of the PUP and *not* at the plus phase.

One note: *If, however, your clients are doing a modified pushup, add in the plus.* This study found the highest SA activity during the plus phase of hands-and-knees pushups.

Another way to increase SA activity? *Place the hands wider apart.* A study in the *Journal of Physical Therapy Science* [2016; 28 (2), 446–49] reports that SA activity was greater during traditional pushups performed with palms spaced farther apart (150%) than when in neutral (100%) or narrow (50%) positioning.

The highest EMG activity in the SA occurs during a traditional pushup's concentric (not plus) phase.

MOTIVATION SHOWDOWN:

COMPETITION VS. FRIENDLY SUPPORT

And the winner is … competition. In a randomized controlled trial, researchers examined several methods to improve attendance in workout programs via an online social network. The study published in *Preventive Medicine Reports* [2016; 4, 453–58] found that competitive ranking features (leader boards, anyone?) provided greater incentive than did pep talks (via an online chat tool) from supportive peers.

THE SWEET SMELL OF SUCCESS

Spearmint and orange essential oils were found in a very small study (of 20 physical education students) to improve lung status when administered via nebulizer (diluted with saline) before a 1,500-meter running test, according to the *Journal of the International Society of Sports Nutrition* [2016; 13, 36]. The students who nebulized also showed significant reductions in average running time. Researchers recommend further investigation due to the small sample size, but that doesn't mean you can't enjoy a whiff of one these scents before your own workout (consult your physician regarding nebulizer use). **AF**

A WHIFF OF *CITRUS SINENSIS* FLOWERS AND *MENTHA SPICATA* MAY IMPROVE PERFORMANCE.

LAURA QUAGLIO *has more than 18 years of experience as a writer and editor for numerous magazines, books and websites on such diverse topics as wellness, nutrition, fitness, finance, after-school activities and parenting. She is also a mother of two, second-degree black belt, adventure-race fan and costume designer for the local high school's musicals.*

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CONDITIONING CAN KEEP KIDS OFF THE SIDELINES BY IMPROVING SKILLS AND REDUCING INJURIES.

GETTING YOUNG ATHLETES OFF TO A STRONG START

Wonder if youth can benefit from strength training and how you can help them? Here, evidence regarding the misconceptions, perks and strategies specific to young competitors.

BY MIKE BRACKO, EDD, CSCS, FACSM

You've probably heard that today's youth are lazy, overweight and addicted to gaming. Don't believe it. Hundreds of thousands of kids compete in multiple sports (Bracko 2015). Many of them crave the guidance of fitness professionals who understand the needs of young athletes. They want to be stronger and more competitive, just like their adult counterparts.

These young athletes are playing not only basketball, football, soccer and baseball. They also are participating in nontraditional sports like BMX racing, snowboarding, mountain biking, field hockey, softball and skiing. They understand that being stronger improves performance and reduces the risk of injury.

Furthermore, lots of teams need youth strength and conditioning coaches. Think about the spring ice hockey teams in the United States and Canada that parents are organizing as an adjunct to winter hockey. Kids are motivated to learn how to play, train and perform better, and their parents are eager to support their efforts.

Many teams budget money for a trainer. This is great news for qualified youth trainers, who have the opportunity to guide young players on every aspect of their sport—be it through inspiring words, teaching foundations of strategy and technique, or guiding athletes on appropriate rest and recovery. And there's always a need for fitness professionals trained to help children and adolescents improve their basic fitness and control weight.

Misconceptions About Youth Strength Training

People have a lot of misconceptions about the hazards of strength training for youth and adolescents. Allegedly, strength training stunts growth, damages bones and growth plates, or just doesn't help young athletes. These are all misconceptions (Faigenbaum 2016; Faigenbaum & Myer 2010). I confronted the myth of strength training stunting growth in a conversation with a personal trainer at a fitness

conference. The trainer's physician told him he would be 2–4 inches taller if he had not strength trained as a young athlete. And the trainer believed his physician. Fitness professionals need to verify such statements, even when they come from a seemingly authoritative source.

Faigenbaum (2016) says there is no evidence that strength training stunts the growth of children. If sports and strength training are performed for less than a combined total of 15 hours per week with moderate intensity, growth is not affected (Haff 2003).

Injuries to the growth plates *can* occur—usually because of improper technique and too much resistance—but they rarely affect normal growth (Haff 2003). To prevent injury, youth and adolescents should not attempt a 1-repetition maximum. It is better to count maximum pushups (or other strength move) completed in one minute.

Though strength training applies some torque to young bones and joints, a lot more force happens when an athlete makes a tight turn in ice hockey, lands a jump in BMX cycling or skateboarding, maneuvers through a half-pipe in snowboarding, dismounts in gymnastics, or kicks a ball in soccer (Malina 2006).

Benefits of Strength Training for Youth

Strength training may not improve sport-specific precision skills such as pitching a strike in baseball, scoring a goal in soccer, hitting a jump shot in basketball or serving an ace in tennis. But it can improve motor skills for activities such as the long jump, 30-meter dash, agility running and squat jump (Falk & Mor 1996; Lillegard et al. 1997; Christou et al. 2006). And Gorostiaga et al. (1999) found that strength training improved European handball throwing velocity in adolescent players.

More generally speaking, the National Academy of Sports Medicine says that young athletes who strength train can improve gross motor skills, reduce body fat, increase muscle mass and improve psychosocial well-being (NASM 2012). Strength training also increases bone mineral density of girls (and boys), decreasing the risk of developing osteoporosis as they age. And the short, high-intensity effort of strength training can pique the interest of children with excess weight who generally do not like continuous low-intensity exercise (Faigenbaum et al. 2009). Strength training may also indirectly reduce the risk or severity of sports-related injuries (Dahab & McCambridge 2009).

Despite these evidence-based benefits, many people mistakenly believe that strength training doesn't help young people because they don't have enough testosterone to increase muscle hypertrophy. A study contradicting this myth was conducted by Faigenbaum et al. (2002),

Vital Knowledge About Young Athletes

Fitness professionals know how essential it is to customize a client's workout to their unique needs, abilities, compensations and even something as simple and variable as how they're feeling on a particular day. This is perhaps even more true for young athletes, who differ not only in these areas, but also in maturity, psychological and psychosocial needs, and anatomy and physiology (and not just in terms of physical growth).

The NASM Youth Exercise Specialization provides the age-specific knowledge and tools necessary to enable trainers to meet the growing demand for youth fitness expertise. The program explains how to adapt the NASM Optimum Performance Training™ (OPT™) model to children's fitness, delivering and expanding upon information like that offered in this article. Subjects such as overweight/obesity, psychological considerations, and nutrition are also covered, and guidelines are supplied for assessments, flexibility, core and balance training, cardio, plyometrics, resistance training, and speed, agility and quickness work. Online resources include a downloadable course manual and programming manual, as well as an exercise library, online quizzes and an online exam—all of which make it easy for trainers to access the information wherever it's most convenient. Here is just one example of the applied science found in the "Anatomical and Psychological Considerations for Youth" chapter of the YES manual.

THERMOREGULATION FOR YOUNG ATHLETES

It may not surprise fitness professionals to learn that children are less able to thermoregulate, or regulate their body temperature. However, many children and adults don't give this much thought during summertime sports training. In part, thermoregulation is more difficult for children because, due to their smaller size and blood volume, their body holds less total water than does that of an adult. The result: Children begin to feel the effects of fluid loss sooner than an adult might. Another factor is metabolic rate: Anyone who has seen an adolescent eat knows that kids are fuel-burning factories. This also means they warm up more quickly. For these reasons, it's important that trainers pay particularly close attention to the vital signs of young athletes in very hot (and cold) climes—and that rest, shade and hydration are provided when necessary to bring down an elevated body temp (NASM 2012).

To learn more about the YES ($199 and 1.0 CEUs from NASM, NCSA and ACE), go to www.nasm.org/yes.

who found that boys and girls ages 7–12 who strength trained one or two times per week significantly improved their chest press and leg press (compared with age-matched controls). Children gain strength through neural adaptations, not muscle hypertrophy (Ramsey et al. 1990). Increases in strength result from improved motor neuron recruitment and firing rate (Ozmun et al. 1994).

Key Elements for Effective Youth Strength Training

Successful youth strength training depends on having a strength coach who is trained to work with young athletes (see "Vital Knowledge" box). It also requires proper supervision for instruction and feedback, age-specific instruction and safe training protocols. Youth and adolescents should never use strength training equipment without supervision from a qualified strength training professional (Faiganbaum et al. 2009). Here are some additional elements to keep in mind.

PROGRAM DESIGN AND EQUIPMENT. It is important to train the upper and lower body and the core muscles (NASM 2012). A successful technique is circuit training, in which athletes perform exercises for 20–40 seconds and count the repetitions. The resistance can come from free weights and machines, but non-traditional forms of resistance—such as rubber tubing, medicine balls, ropes, sandbags and body weight—can make training more fun and less intimidating. For the trainer, non-traditional resistance equipment is also typically easier to use and transport, and it is less expensive (NASM 2012).

SAFETY. It is important to be safety conscious about slips, trips and falls. The floor of the training facility must be clear of tripping hazards, with no water or water bottles on the training floor. All gym bags must be kept in the locker room or stored away from the training area.

TECHNIQUE. It is important to teach—and insist on—correct exercise technique. A trained youth exercise specialist can detect errors in exercise technique and give immediate feedback and guidance (and remember to give positive feedback when an exercise is done correctly).

PSYCHOSOCIAL FACTORS. It is important to understand that young athletes have a psychosocial uniqueness that makes proper communication important. Finally, a youth exercise specialist has to be able to make exercise fun (NASM 2012).

Program Design for Young Athletes

Whether they're into soccer, hockey or BMX racing, young competitors—and their parents—need the guidance of professional trainers. The following strategies can provide a science-based starting point for fitness professionals seeking to design programming for young athletes, including warm-up specifics and application of the NASM Optimum Performance Training™ (OPT™) model.

WARM-UP FOR YOUTH STRENGTH TRAINING

Warm-ups can be 10–15 minutes and should not make the athletes too tired for the workout. A proper warm-up before strength training can consist of the following:

- A combination of short static stretching and dynamic stretching to start the muscles moving
- Body-weight training exercises such as pushups, squats, front planks and lunges

- Low-intensity interval running (Faigenbaum & Myer 2010)
- Foam rolling (According to NASM 2012, this can be introduced as part of a young athlete's warm-up.) Exercises using this are introduced in NASM's Youth Exercise Specialization text (see "Vital Knowledge" box).

THE NASM OPT MODEL AND YOUNG ATHLETES

The NASM OPT™ model progresses through three levels: stabilization, strength and power. (See table for recommendations on sets, reps, intensity and recovery time for each level.) You can follow objective weight and repetition goals to decide when an athlete can increase resistance. However, it might help to determine resistance increases by "training age maturity" and athletic ability improvements. Faigenbaum (2016) suggests that young athletes earn the right to lift more by improving their resistance training skills. Here are additional ways to apply the OPT model to young athletes.

Stabilization Exercises

The stabilization endurance phase focuses on foundational exercises to develop motor programs for compound exercises and prime moving muscles. When young athletes learn exercises, they can use body-weight training to emphasize correct body position, form and technique (Dahab & McCambridge 2009).

Young athletes must learn how to perform four key training exercises that are building blocks for more advanced training:

- Front plank, on knees or toes, maintaining neutral spine
- Pushups, on knees or toes, maintaining neutral spine
- Squats, keeping head up and upper body still, with movement from hips, knees and ankles
- Lunges

Other stabilization exercises (with somewhat unstable body positions) include:

- Seated dumbbell overhead press, on ball

GENERAL GUIDELINES FOR YOUTH RESISTANCE TRAINING

Level	Sets	Reps	Intensity	Recovery
Stabilization	1–3	12–15	Low	0–30 seconds
Strength	1–3	6–15	Moderate	30–90 seconds
Power	1–3	3–6	High	1.5 seconds–3 minutes

Faigenbaum 2009

- Single-leg tubing row

- Forward lunge to single-leg balance
- Step-up to single-leg balance to dumbbell curl to overhead press (NASM 2012)

Strength Exercises

When young athletes have developed a motor program for near-perfect exercise technique and improved stability, they can progress to exercises designed to further boost muscle strength. In the OPT model, Phase 2: Strength Endurance includes exercises that are performed in more stable body positions to focus on improving strength of the prime movers. (Phases 3 and 4 of the Strength Level—hypertrophy and maximal strength—generally aren't goals applied to young athletes.) Here are some strength exercises that are appropriate for young athletes:

- Medicine ball squat to overhead press

- Staggered stance tubing chest press
- Seated tubing row
- Seated dumbbell overhead press, on bench
- Dumbbell squat

Power Exercises

Power exercises use explosive movements, so young athletes need to prove they are ready to progress to this phase. They do that by showing competence in exercise technique, physical and mental "exercise maturity," and resistance training skill (Faiganbaum 2016). Power exercises include the following:

- Medicine ball chest pass
- Medicine ball soccer (overhead) throw
- Medicine ball oblique (lateral) throw

- Squat jump

- Speed squat to overhead press, using medicine ball or tubing

The OPT model provides a safe and effective way for trainers to help children and adolescents improve their overall performance in their sports of choice, as well as enjoy numerous additional gains that will improve them psychologically, psychosocially and physically. Start with this solid foundation of evidence-based strategies, add your creativity and you can set up today's youth for a lifetime of health and well-being. **AF**

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BUILD YOUR TRIBE WITH A BRANDED PROGRAM

Group exercise clients demand quality and consistency. Here's how branded programming makes it easier to deliver the goods.

BY SHANNON FABLE

Group fitness participation is at an all-time high, with 86% of studiogoers having multiple memberships (2016 Health Club Consumer Report, IHRSA). To gain and retain members' attention, it's more important than ever to provide group exercise classes that are top-notch. Time, too, is at a premium for today's ultra-busy members and instructors. Branded programming offers the consistent quality that club members crave, plus time-saving shortcuts for instructors at all levels.

Group fitness superusers are no longer loyal to one format, one location or one instructor. They seek out the best options to get results and are happy to drive around town to make it happen.

For years, health club visits have held steady at an average of twice a week (2016 Health Club Consumer Report, IHRSA), and members want the most from the time they have. Unfortunately, group-ex programming is not the most consistent product. Group fitness programs vary greatly from instructor to instructor, format to format, and club to club.

The most successful studios have solved this problem. By offering robust in-house training for instructors, centralized programming and strict delivery guidelines, the *program* has become their product, and the product is what's marketed. Instructors are celebrated for delivering a consistent customer experience versus trying to stand out. This philosophy is

BRANDED WORKOUTS LIKE ZUMBA MEAN INSTRUCTORS CAN FOCUS LESS ON PREP AND MORE ON SAFETY, RESULTS AND FUN!

the essence of branded programming.

The program-as-product concept has existed for decades. It was introduced to health clubs in the late 1990s beginning with BODYPUMP® by Les Mills. Since then, many companies have followed suit with branded programming options. Today, the popularity of such programs is on the rise. Not all instructors believe this is for the best, but some industry experts believe it's a necessity.

"Les Mills predicts the market for branded programming will increase over the next few years. Facilities need quality and consistency in the group fitness space, as the market is demanding it. The branded programming world should not be seen as moving backwards when the need is so great," explains Reanna Dempsey, vice president of instructor experience for Les Mills U.S.

What Is "Branded" Programming?

Branded, simply put, makes programming centralized. Branded programming is the opposite of freestyle programming, where instructors create and deliver their classes. With branded programming, the programming is predetermined—delivered but not created by the instructor. This can occur in several ways:

- Several prominent health club chains and studios invest in their own branded programming. Class concepts created at the national level get passed down to instructors through internal channels (e.g., Equinox®, Life Time™ Fitness, Orangetheory® Fitness).
- Clubs license branded programming from a company specializing in developing, training and marketing group fitness (e.g., Les Mills).
- Clubs contract instructors who are trained in branded programs that are directly licensed to the instructor (e.g., Zumba®, Beachbody® LIVE!)

Branded programming can be either prechoreographed or preformatted. *Prechoreographed* programming provides all necessary ingredients, the recipe, and guidelines for presentation. Much like recipe-delivery services that are so popular these days, everything shows up in a box. You simply put it together. Because branded programs create *everything*, you can focus attention on giving participants all they need to feel successful and have an enjoyable experience. Over time, new instructors will develop an understanding of the how and why behind the programming, possibly enabling them to develop their own workouts.

Preformatted programming provides a bit more individuality with a healthy dose of guidance to ensure a good finished product. Much like a visit to Chipotle, you know the available ingredients and there's a suggested method for *constructing* the burrito, but no two burritos end up exactly the same. Preformatted programs differ in how much structure they provide, but the work is still heavily underwritten by the third party, making your life a lot easier.

Petra Robinson, fitness industry adviser and trade show productions at Zumba Fitness LLC, explains how Zumba applied the preformatted program approach: "In the early 2000s, it was clear clubs were beginning to resist paying licensing fees. When the first Zumba Basic Level 1 instructor training program was designed, we decided to go 'old school' and teach attendees how to put together a great workout using the Zumba Formula, which

TRY BRANDED PROGRAMMING OR TELL A FRIEND

AFAA PROS AND ZUMBA ZIN MEMBERS ENJOY SPECIAL PRICING

What happens when you combine the strengths of two great education brands like AFAA and Zumba?

Everyone wins—fitness professionals, participants, facilities and the reputation of the fitness industry in general! Delivering experiences that are safe, smart and fun is what will help exercisers make progress, avoid injury and keep coming back for more.

Expanding a partnership that began last year, AFAA professionals will enjoy a 25% discount on a Zumba® Basic 1 Training, and ZIN™ Members will receive special pricing of $99 on the AFAA group exercise instructor course (details below). While these discounts are appealing, just think of what it means to add the powerful combination of AFAA's primary group exercise certification plus a Zumba Instructor license to your experience! It amplifies your array of skills in the view of both participants and employers. Upon completion of both programs, professionals will have the ability to teach in a wide variety of formats (including freestyle), with the bonus of knowing the formula for leading Zumba—one of the top specialty group exercise formats in the world.

Both AFAA's and Zumba's leadership believe that layering the boundless energy and enthusiasm of Zumba instructors with the strong, science-based education foundation of the AFAA group exercise certification makes for a group exercise instructor that is unparalleled.

A Zumba Basic 1 Training offers the four cornerstones of making a workout into a party:

- **BASIC STEPS:** The basic steps and variations to four of the Zumba core rhythms: Merengue, Salsa, Cumbia, and Reggaeton.
- **MUSIC AND CHOREOGRAPHY:** The music and moves to successfully lead a class, plus a take-home review CD/DVD to reinforce the curriculum.
- **THE ZUMBA FORMULA:** The knowledge to identify the different parts of a song and understand how to use them to build an effective dance-fitness workout.
- **YOUR ZUMBA TEACHING LICENSE:** Receive your license to begin teaching Zumba classes!

ZIN™ Members will be eligible to enroll in the AFAA group ex instructor course for only $99. This fee includes the certification exam at no additional cost—a $200 savings. To receive this special offer, ZIN™ Members should call AFAA at 800-466-2322. AFAA will donate 10% of these $99 purchases to Zumba's Party in Pink campaign to fight breast cancer.

Information about becoming a licensed Zumba instructor is available at zumba.com. For information about AFAA group ex instructor certification, visit afaa.com.

Beto [Perez] created. Instructors receive the framework to create unique workouts, or they can follow our lead from start to finish. The result is the consistency of branded programming with individuality."

Instructor Benefits

The path from earning a primary group fitness certification to delivering a good freestyle class can be long and challenging. Members expect the same experience whether you are a veteran or a new instructor. Because freestyle instructors develop and deliver their own classes, they must be the screenwriter, actor, director and producer all at the same time.

In a perfect world, mentoring programs would be readily available to help instructors progress from book knowledge to practical excellence. Unfortunately, this is a luxury for most clubs these days. Enter branded programming, which provides an approachable training format to help new instructors.

Even if you are a seasoned pro, the shortcuts are a lifesaver. Leading a class, for most, is very part-time, and preparation comes amid full-time jobs, parenting and endless to-do lists. Having part of the prep already done for you allows you to focus on what matters most: delivering safe and effective programs, producing results and ensuring everyone enjoys the experience.

Club Benefits

While promoting individual instructors as part of a bigger marketing strategy can be impactful, if *people* are your product, you run the risk of members following instructors to other clubs. With branded programming, you can attract members for the *class*, which is easier to maintain over time. Several branded programs provide member-facing marketing tools to help you minimize the effect of instructor turnover. Quite a few branded programs even have consumer recognition *outside* of the traditional club setting. Providing programs that people ask for by name is a great way to expand your reach. Beachbody, a well-recognized brand in the home fitness market, made the leap into fitness facilities about 4 years ago. Barb Brodowsky, senior director of field operations for Beachbody LIVE, explains: "Our strong brand recognition of programs such as INSANITY® and P90X® helps attract new classgoers. When a customer is ready to move from the basement to the bright lights of the studio, our formats are familiar."

Providing programs people ask for by name is a great way to expand your reach.

BODYPUMP BY LES MILLS LAUNCHED THE BRANDED PROGRAMMING TREND IN THE LATE 1990S, AND IT'S STILL GOING STRONG!

PHOTOGRAPHY: LES MILLS

Consumer Benefits

Most members seek a repeatable experience that allows for progress and is offered multiple times a week. Branded programs solve these issues by providing professionally designed programs on a regular schedule and ensuring all instructors use the same playbook.

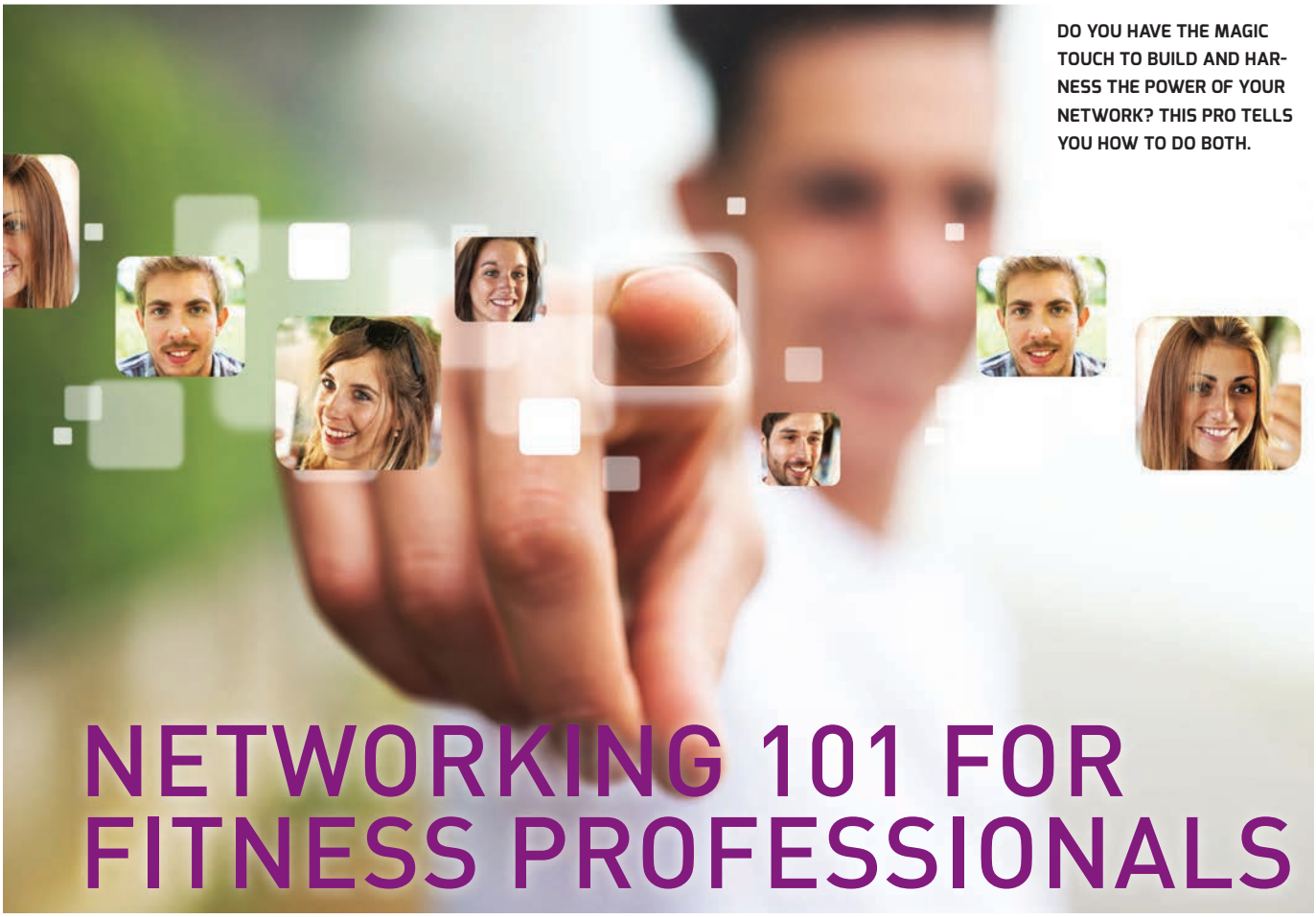
"Consumers are constantly pressed to find the time to dedicate to exercise and fail to see results because their workouts are not effective. Les Mills' scientifically backed programs provide the right formula for participants to get a great workout with inspiring music that helps drive the results they are looking for," says Dempsey. "Even though the class construct is always the same, [which increases] the participants' confidence, the movement patterns and repetitions change frequently to challenge the body. We take care of all of this *for* the instructor."

Ultimately, Customers Rule

While you may not yet embrace branded programming, there are certainly lessons to be learned. Now, more than ever, we should seek to understand the benefits branded programs can provide in efforts to deliver more consistent experiences to meet the needs of millions worldwide.

Of course, we cannot hold branded-fitness companies solely responsible for the success or failure of our group fitness departments. Ultimately, it's up to us: Clubs, managers and instructors need to set the bar high and we must hold one another accountable for providing memorable experiences that keep members coming back. **AF**

Recipient of multiple prestigious industry awards, **SHANNON FABLE** *is a fitness business and programming consultant who has helped brands such as Anytime Fitness®, Schwinn®, Power Systems® and BOSU® over the last 20 years. As an experienced educator and certified Book Yourself Solid® business coach, she helps fitness entrepreneurs navigate the industry and make more money. Fable is the owner of GroupEx PRO®, a cloud-based group fitness management tool, and Balletone®.*



DO YOU HAVE THE MAGIC TOUCH TO BUILD AND HARNESS THE POWER OF YOUR NETWORK? THIS PRO TELLS YOU HOW TO DO BOTH.

NETWORKING 101 FOR FITNESS PROFESSIONALS

How to make connections strategically and meet people who can boost your career.

BY FRED HOFFMAN, MED

Professional networking—we all do it. Sometimes it's deliberate and sometimes it happens by accident, but in either case, it's pivotal to our professional development.

This is especially true in an inherently social industry like health and fitness. It won't be just the merits of your certifications or perfect form that propel you to success. It will be your network of colleagues who help you hone your craft—and who, along with family, friends and clients, will clue you in on crucial career opportunities.

What Exactly Is Networking?

Networking means developing and maintaining contacts and personal connections with people who can help you and your career. Effective networking is all about establishing, cultivating and nurturing professional relationships. It goes far beyond a two-person exchange of giving and getting.

Your network is based on trust and honesty—and it grows over time. Networking can happen anywhere, anytime and with anyone.

Networking events target specific people and professions, so you know what you're in for when you attend them. But don't rule out the potential for casual encounters that lead to conversations about common professional interests. Chance meetings can turn into networking opportunities while you're in line for the bus, waiting for coffee or sweating at the fitness center.

When and Where Can We Network?

Successful networking requires planning and a strategy. First, determine your goals. Are you networking to find a job or change companies? To recruit for your business? To share thoughts and ideas with like-minded people? Are you moving to another area of the country or abroad and need to meet people in your new home? Or are you simply looking for additional people to reach out to for specific advice or help? After you've worked out your goals, start looking for networking opportunities that will help you achieve them.

ATTEND AN INDUSTRY EVENT

Attending an industry-specific event such as IDEA World (where this year you can obtain CEUs in the AFAA-NASM educational track—see page 6 for details) or a fitness fair, or a health and wellness trade show. All of these provide fantastic networking possibilities. Be sure to attend social events, join focus groups and wander

the trade show to speak with vendors. And don't hesitate to approach featured speakers and presenters, who should be happy to chat with you.

Also, conference and convention organizers always need help, so you may consider volunteering in exchange for a free or reduced registration and a chance to participate in classes and lectures. That'll give you access to many of the speakers, put you in contact with hundreds of participants and show you the behind-the-scenes workings of a major event.

Not sure which events are best for you? Go online and narrow your search with specific keywords, or ask colleagues to recommend their favorite events.

BE A LOCAL EXPERT

Another great networking tactic is to establish yourself as a local expert. Your nearby Red Cross or American Heart Association chapter would be happy to have you give a free lecture or fitness class, as would the local chamber of commerce or city council.

For other local networking opportunities, look for events at nearby community centers, places of worship, schools and universities. Meetups (www.meetup.com) also help you find people with common interests—just go to the website and do a quick online search for interesting networking possibilities near you.

GO ONLINE

The internet can connect you with people around the world, many of whom you'd never meet otherwise.

Start with social media sites like Facebook, Instagram and LinkedIn, and look for industry-specific groups that will connect you with other fitness pros who can provide exercise tips, help solve a problem with a client or provide a sounding board for work-related issues and challenges.

You also can attend online networking events like the ones offered to university alumni, or participate in a Google Hangout or a Twitter party with a specific theme and audience. The beauty of these is that you can access them from anywhere with a computer or mobile device (tablet or smartphone) and an internet connection. And after joining, if you realize a group or event is not for you, it is simple to leave just by unsubscribing or signing out.

Top 5 Tips for Networking Success at a Convention or Conference

There are a number of professional fitness conferences and conventions coming up this summer (check out some event ideas on page 6 to start your wish list!). Get ready to put your best networking foot forward!

1. **PREPARE YOUR OPENING LINE.** Arrive prepared with a welcome introduction and a few questions to get a conversation started. This could be as simple as asking where a person is from and why they're at the event. Follow up with a question about their work situation.

2. **SIZE UP THE ROOM (OR CROWD).** At social events, get a drink or something to eat and observe what is going on around you. Scan the room for people with whom you may want to speak. Avoid approaching people who are deeply engaged in conversation, as an interruption may be counterproductive.

3. **SIT BESIDE STRANGERS.** At lectures or presentations, sit next to people you don't know. Say hello, introduce yourself and ask why they are attending the session. The same applies to a group fitness class or activity session.

4. **PARTICIPATE IN GROUP ACTIVITIES.** When an instructor asks you to "work in twos" or "turn to the person next to you," seize the moment. This is the time to introduce yourself and strike up a conversation.

5. **KNOW WHEN TO MOVE ON.** If you see that a conversation is going nowhere or you realize the person is not interested, excuse yourself and leave, or just end the conversation by not asking more questions. Most important, don't take offense. Networking opportunities can misfire for any number of reasons, so remember that it is not personal. There will be many more opportunities for meaningful exchanges.

How Do You Share Your Message?

It's not enough to have a savvy networking strategy. You have to know how to implement it and make sure your efforts aren't wasted.

For starters, you must be able to introduce yourself and describe your professional activity clearly, precisely and quickly (in 30 seconds or less). You want to leave a lasting impression, so try to say something noteworthy or intriguing that people won't forget.

Chance meetings can turn into networking opportunities while you're in line for the bus or waiting for coffee.

Once you've introduced yourself, it's time to practice active listening. Give your new contact your entire focus and listen closely. Remember, it is a two-way exchange. The conversation should never be just about you and your interests.

As you talk, be yourself and be genuine. Take risks and be curious, but always remain respectful. Make sure the conversation is going in the direction you want it to, and don't let it go off the rails. (For more on sparking conversations, check the Top 5 Tips sidebar.)

If you exchange business cards, read the card before putting it in your pocket or bag. You may notice something on the card that you want to comment on or ask about. As soon as possible after the conversation, make a note on the back of the card that includes details to help you remember them, what you discussed, and what, if anything, you want to follow up on. (An example could be: "short red hair, lives in San Francisco, teaches Pilates, send her a list of my services.") You don't want to arrive back home or at your hotel room with a slew of business cards and realize you have no idea whose card is whose.

Then, follow up: Do what you said you'd do—in a timely manner. Always remind the person where you met and what you talked about. If you are requesting something, offer something in exchange, even if it is just an open invitation for that person to contact you anytime.

What Marketing Materials Are Key?

Business cards are NOT old school. Carry them with you everywhere. You never know when you might want to give one to someone.

Before creating your card, decide what you want it to say. For contact information, provide the most efficient way to get in touch with you. If you don't want people sending things to your home address, then don't include it. If you noted several means of contact (phone, email, social media), be clear as to which one is the best.

Business cards do not need to cost a lot of money. There are many inexpensive card services available. A word of caution though: Your card represents you and your brand, so opt for a quality that reflects that.

You should also have a marketing portfolio available digitally and, on short notice, in printed form. It should include the following:

- An updated resume or CV (digital version)
- A current headshot photo and several fitness action shots (professional or high-quality)
- Two versions of your personal biography (a short summary of who you are, what you do and several accomplishments). The most common word counts requested for brochures and other marketing materials are 25 words and 50–75 words.

Boosting Your Fitness Career

Networking is crucial to finding the most promising opportunities in the health and fitness industry. Your networking should reflect your desired outcome: what you want to do, where you want to do it (company and/or location), where to look for opportunities and how to find people who can help make this happen. Prepare properly, seize opportunities and exploit them professionally.

But remember, networking is an art form. It must be developed, practiced and allowed to evolve over time. **AF**

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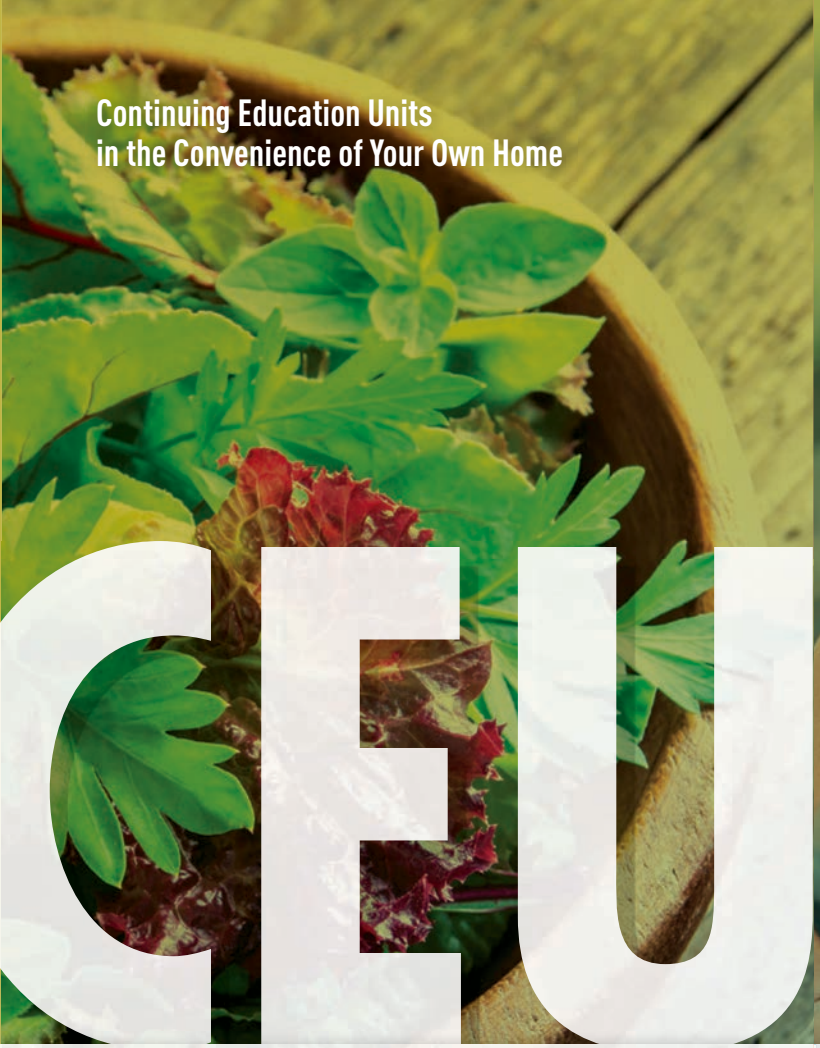

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THIS ISSUE'S CEU CORNER AND QUIZ FEATURE IS:

NUTRITION & EXERCISE

Timing Is Everything

BY LEE MURPHY, MPH, RD, LDN

LEARN & EARN CEUs

Nutrition & Exer

cise:

TIMING IS *Everything*

CAREFUL SCHEDULING OF EATING AND WORKOUTS CAN IMPROVE PERFORMANCE AND PREVENT INJURIES.

BY LEE MURPHY, MPH, RD, LDN

Diet and exercise are the primary pillars of a healthy lifestyle plan. But can coordinating eating and workout schedules improve our fitness results? And if so, how should our eating patterns differ before, during and after activities?

Melding a top-notch diet with stimulating exercise can be quite a challenge. Eating at different times, skipping meals, overeating, snacking in between, working out irregularly, suffering from injuries … life gets in the way of our "healthy lifestyle plans." While flexibility can be a necessity and a virtue, keeping to a diet-and-exercise schedule has remarkable advantages. Eating regularly (5–7 times) throughout the day maintains proper blood sugar and energy levels, while regular exercise consistently burns consumed calories (Alencar et al. 2015). Indeed, proper timing of nutrition and activity helps lay the foundation for optimizing physical results.

Does Fast-and-Burn Work for Weight Loss?

As we explore the benefits of coordinating workouts with food intake—both quality and quantity—your first question might focus on breakfast (as in, should you skip it) or some other fast-and-burn routine.

Some studies suggest intense physical activity such as running, swimming or bicycling on an empty stomach can increase fat burn and promote weight loss (Schisler & Ianuzzo 2007). However, many experts caution against pre-exercise fasting. Running on empty *may* help burn fat faster, but it won't leave enough energy for more rigorous training. It also can increase the risk of strains, sprains, stress fractures and other injuries from exercise-related fatigue. Furthermore, letting the body get too depleted may cause people to overeat afterward, undoing the benefits of exercising in the first place.

Therefore, adequate fueling before exercise is the better route to improving performance (Rosenbloom & Coleman 2012). This keeps the body fueled, providing steady energy and a satisfied stomach. Knowing the why, what and when to eat beforehand can make a significant difference in your training.

Training and Nutrient Timing Before Events

A diet plan is crucial for maximizing daily workouts and recovery, especially in the lead-up to the big day. And no meal is more important than the one just before a race, big game or other athletic event. Choosing the wrong foods—eating or drinking too much, consuming too little or not timing a meal efficiently—can dramatically affect outcomes. Eating the ideal pre-race/event meal can help ensure that all of the hard training and dedication pay off. Similarly, maintaining an appropriate daily sports-nutrition plan creates the perfect opportunity for better results.

WHY EAT BEFOREHAND?

The main goal of a pre-event/workout meal is to replenish glycogen, the short-term storage form of carbohydrate. This supplies immediate energy needs and is crucial for morning workouts, as the liver is glycogen depleted from fueling the nervous system during sleep. The

Quick Tips for Eating and Drinking Before a Race/Event

- **NUTRIENTS:** Most should come from carbohydrates. Consume only small amounts of protein; limit fats and fiber.
- **HYDRATION:** At least 4 hours before an activity, aim for 5–7 milliliters of water per kilogram of body weight.
- **TIMING:** Ideal for most people is to eat 2–4 hours before an activity, up to about 1,000 nutritious calories. Consume 300–400 calories if lead time is much shorter (e.g., early morning workouts). Drinks or smoothies are preferred if you're starting in less than 60 minutes.

Fast fix: You can positively affect event outcomes by eating the right foods in the right amounts at the right times.

muscles, on the other hand, should be glycogen-loaded from proper recovery nutrition the previous day.

The body does not need a lot, but it needs *something* to prime the metabolism, provide a direct energy source, and allow for the planned intensity and duration of the given workout. But what is that *something?* That choice can make or break a workout. It is a good idea to experiment with several pre-exercise snacks/meals and stick with the few that work best under given circumstances.

WHAT TO EAT BEFOREHAND?

The majority of nutrients in a preworkout meal should come from carbohydrates, as these macronutrients immediately fuel the body. Some protein should be consumed as well, but not a significant amount, as protein takes longer to digest and does not serve an immediate need for the beginning of an activity. Fat and dietary fiber also should be marginal to minimize the potential for gastrointestinal upset during the activity (Smith & Collene 2015).

Research has demonstrated that the type of carbohydrate consumed does not directly affect performance across the board (Campbell et al. 2008). Regular foods are ideal (e.g., a bagel with peanut butter), but convenience foods (energy bars or replacement shakes) may be helpful because you can determine the calories and the desired mix of carbohydrates, protein and fats. Exercisers might also supplement with a piece of fruit, glass of low-fat chocolate milk or another preferred carbohydrate, depending on needs.

Pre-exercise fluids are critical to prevent dehydration. To allow time to excrete excess fluid, start at least 4 hours before an activity and aim for an intake of 5–7 milliliters of water per kilogram of body weight (Rosenbloom & Coleman 2012). Before that, the athlete should drink enough water and fluids so that urine color is pale yellow and dilute—indicators of adequate hydration.

WHEN TO EAT BEFOREHAND?

Timing is a huge consideration for preworkout nutrition. Too early and the meal is gone by the time the exercise begins; too late and the stomach is uncomfortably sloshing food around during the activity. Although body size, age, gender, metabolic rate, gastric motility and type of training are all meal-timing factors to consider, the ideal time for most people to eat is about 2–4 hours before activity. This much lead time can allow people to safely eat up to about 1,000 nutritious calories that will be ready for fueling the activity (Smith & Collene 2015). If lead times are much shorter (a pre-7 a.m. workout, for example), eating a smaller meal of less than 300–400 calories about an hour before the workout can suffice.

It is customarily recommended that exercisers consume about 1 gram of carbohydrate per kilogram of body weight 1 hour before working out, and 2 g of carbohydrate per kg of body weight if 2 hours before exercise, and so on (Dunford & Doyle 2008).

For a 150-pound athlete, that would equate to about 68 g (or 4–5 servings) of carbohydrate, 1 hour before exercise. For reference, 1 serving of a carbohydrate food contains about 15 g of carbohydrate. There are about 15 g of carbohydrate in each of the following: 1 slice of whole-grain bread, 1 orange, ½ cup cooked oatmeal, 1 small sweet potato or 1 cup low-fat milk. This 150-pound athlete could consider consuming: ½ cup oatmeal, 1 small apple, ½ cup

low-fat yogurt and 4 ounces 100% fruit juice—all approximately 1 hour before working out.

It is generally best that anything consumed less than 1 hour before an event or workout be blended or liquid—such as a sports drink or smoothie—to promote rapid stomach emptying. Bear in mind that we are all individuals and our bodies will perform differently. It may take some study to understand what works best for you. Athletes should experiment with the size, timing and composition of pre-event/activity meals to determine what will be best tolerated.

HOW TO EAT BEFOREHAND

Preworkout foods should not only be easily digestible, but also easily (and conveniently) consumed. A comprehensive preworkout nutrition plan should be evaluated based on the duration and intensity of exertion, the ability to supplement during the activity, personal energy needs, environmental conditions and the start time. For instance, a person who has a higher weight and is running in a longer-distance race likely needs a larger meal and supplemental nutrition during the event to maintain desired intensity.

Determining how much is too much or too little can be frustrating, but self-experimentation is crucial for success. The athlete ought to sample different preworkout meals during various training intensities as trials for what works. Those training for a specific event should simulate race day as closely as possible (time of day, conditions, etc.) when experimenting with several nutrition protocols to ensure optimal results.

What About During Activity?

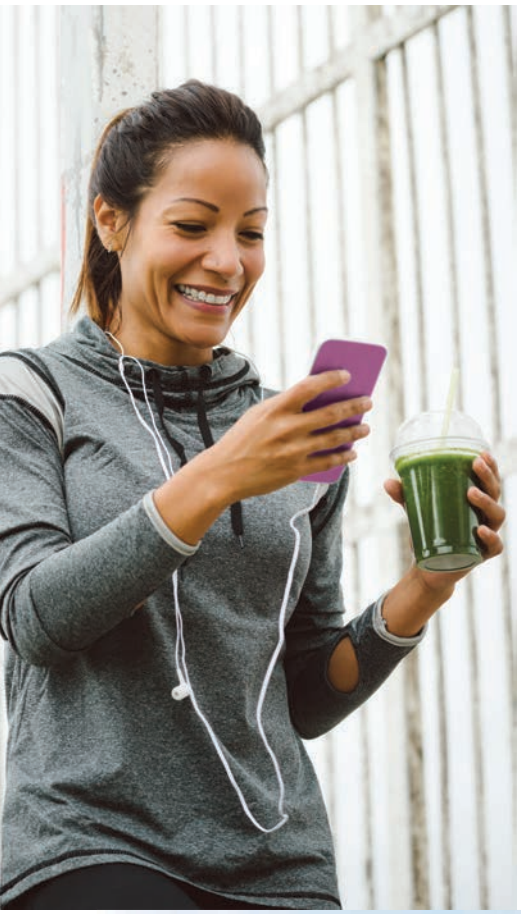
Supplemental nutrition may not be necessary during shorter or less-intense activity bouts. Athletes may need to eat during the activity if exertion lasts more than roughly 1 hour and/or environmental conditions require glycogen to be restored to maintain intensity and/or duration. If so, carbohydrate consumption should begin shortly after the start of exercise. The general recommendation is based on the maximum rate of glucose absorption, which is to consume about 30–60 g of

Recovery Foods and Fluids

A good way to start recovery is to consume a snack with carbohydrates and a moderate amount of protein, plus fluids and sodium, within 30 minutes after exercise. If you have no appetite post-exercise, a recovery beverage may be a good option.

Examples of recovery meals (with varying calories) include:

- **FRUIT SMOOTHIE made with a variety of frozen/fresh fruit and low-fat milk/yogurt, and possibly protein powder (depending on needs)**
- **ENERGY BAR containing 15–20 grams of protein, with 100% fruit or vegetable juice**
- **WHOLE-GRAIN BAGEL or English muffin topped with peanut butter and banana, with 100% fruit or vegetable juice**
- **WHOLE-GRAIN PASTA or cheese ravioli and tomato-based sauce, with whole-grain bread, steamed vegetables, low-fat/nonfat milk, and fruit**
- **GRILLED CHICKEN sandwich on whole-grain bread, with cottage cheese and a baked sweet potato**
- **BAKED OR GRILLED LEAN BEEF, chicken, turkey or fish, with steamed brown rice, a whole-grain dinner roll, cooked greens, low-fat yogurt and fruit**



carbohydrate per hour during prolonged exercise (Rosenbloom & Coleman 2012). One popular sports-nutrition trend is to use multiple carb sources with different routes and rates of absorption to maximize the supply of energy to cells and lessen the risk of GI distress (Burd et al. 2011).

Sports drinks with 6–8% carbohydrate are quick and convenient sources of fluid, carbohydrate and electrolytes during extended bouts of exercise. Consuming 6–12 ounces of such drinks every 15–30 minutes during exercise has been shown to extend the exercise capacity of some athletes (ACSM 2007). However, athletes should refine these approaches according to their individual sweat rates, tolerances and exertion levels.

Some athletes prefer gels or chews to replace carbohydrates during extended activities. These sports supplements are formulated with a specific composition of nutrients to rapidly supply carbohydrates and electrolytes. Most provide about 25 g of carbohydrate per serving and should be consumed with water to speed digestion and prevent cramping.

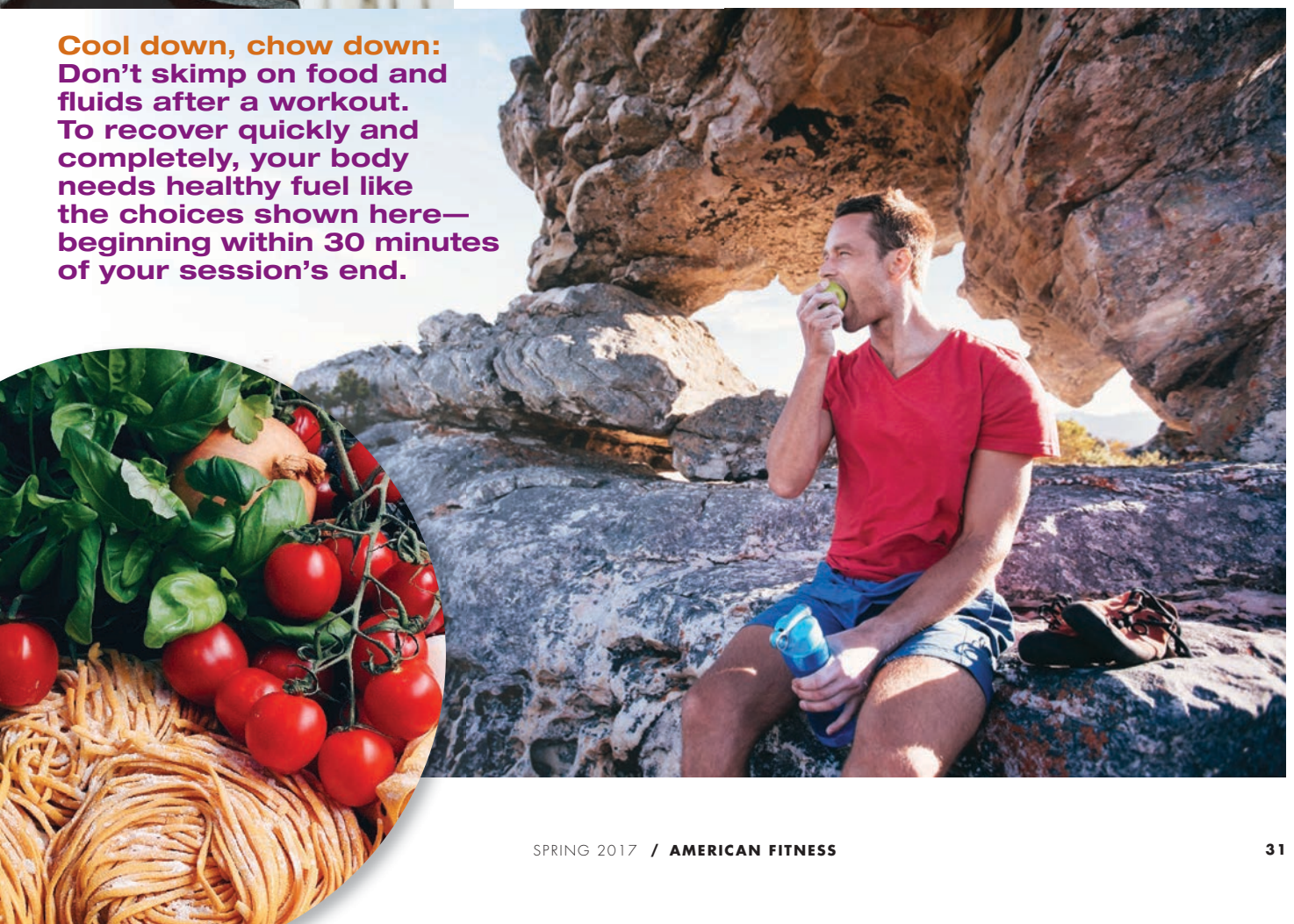
Basics on Recovery

To improve fitness and endurance, we must anticipate the next episode of activity as soon as one exercise session ends. That means focusing on recovery, one of the most important—and often overlooked—aspects of proper sports nutrition.

An effective nutrition recovery plan supplies the right nutrients at the right time. Recovery is the body's process of adapting to the previous workload and strengthening itself for the next physical challenge. Nutritional components of recovery include carbohydrates to replenish depleted fuel stores, protein to help repair damaged muscle and develop new muscle tissue, and fluids and electrolytes to rehydrate.

A full, rapid recovery supplies more energy and hydration for the next workout or event, which improves performance and reduces the chance of injury. Rapid recovery is especially crucial during periods of heavy training and anytime two or more training sessions happen within 12 hours (Smith & Collene 2015).

Cool down, chow down: Don't skimp on food and fluids after a workout. To recover quickly and completely, your body needs healthy fuel like the choices shown here—beginning within 30 minutes of your session's end.



WHEN TO START REPLENISHING CARBS AFTER ACTIVITY

Training generally depletes muscle glycogen. The first 30 minutes or so after exercise provide an important opportunity for nutritional recovery due to factors like increased blood flow and insulin sensitivity, which boosts cellular glucose uptake and glycogen restoration (Rosenbloom & Coleman 2012).

To maximize muscle glycogen replacement, athletes should consume a carbohydrate-rich snack within this 30-minute window. The recommendation for rapidly replenishing glycogen stores is to take in foods providing 1.0–1.5 g of carbohydrate per kg of body weight within 30 minutes of extended exercise (Smith & Collene 2015). For a 150-pound athlete, that equates to between 68 and 102 g of carbs (or ~ 4.5–6.5 servings of carbs) immediately after exercise. Since this can be difficult to consume in whole foods shortly after activity, liquid and bar supplements may be useful and convenient after exercise.

Ideally, athletes should repeat this carbohydrate load for 2-hour intervals for up to 6 hours, or transition to carbohydrate snacks and meals if another intense training session will occur within 24 hours (Smith & Collene 2015). Consuming smaller amounts of carbohydrates more frequently may be prudent if the previous recommendation leaves the athlete feeling too full.

WHAT ABOUT PROTEIN?

Muscle tissue repair and muscle building are important for recovery. Whether you're focusing on endurance or strength training, taking in protein after a workout provides the amino acid building blocks needed to repair muscle fibers that get damaged and catabolized during exercise, and to promote the development of new muscle tissue. Although daily protein requirements vary among individuals, consuming 15–25 g of protein within 1 hour after exercise can maximize the muscle rebuilding and repair process (Rosenbloom & Coleman 2012).

Recent research has further demonstrated that a similar amount of protein (approximately 15–30 g) after resistance exercise may even benefit athletes on calorie-restricted diets who also want to maintain lean body mass (Areta et al. 2014). It is important to note that some literature emphasizing extremely high levels of protein intake—well beyond these recommendations—for strength training may be dated and lack quality research (Spendlove et al. 2015).

REHYDRATE EFFECTIVELY WITH FLUIDS AND SODIUM

Virtually all weight lost during exercise is fluid, so weighing yourself (without clothes) before and after exercise can help gauge net fluid losses. Replace fluids by gradually (within 4–6 hours) drinking 16–24 fluid ounces of a recovery beverage, sports drink or water for every pound of weight lost (Smith & Collene 2015). It is important to restore hydration status before the next exercise period. Rehydration will be more effective when sodium is included with the fluid and food consumed during recovery—especially in hot/humid conditions. However, water may be all you need if exercising for less than 1 hour at a low intensity.

Listen to Your Body's Timing Signals

While these recommendations are a good starting point, there are no absolute sports nutrition rules that satisfy everyone's needs…so paying attention to how you feel during exercise and how diet affects performance is of utmost importance.

You may have to use different timing and alternate routines to create a nutrition and exercise combo that works best. Timing certainly is critical in sports nutrition, and optimizing that can make all the difference! **AF**

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CEU QUIZ: Nutrition & Exercise

LEARNING OBJECTIVES: After reading the article, you should be able to:

- Discuss the science of adequate fueling and hydration before exercise.
- Understand how to time eating to avoid discomfort and maximize performance.
- Explain what amounts of nutrients are needed before, during and after exercise.
- Describe an effective nutrition recovery plan, including ideal timing and amounts.

1. Which of the following is a benefit of eating regularly throughout the day?

A. blood sugar regulation
B. lowered blood sugar
C. lowered metabolism
D. muscle catabolism

2. Compared to exercise in a fed state, fasting before exercise can potentially do all of the following EXCEPT:

A. increase fat burn during exercise
B. reduce risk for injury during exercise
C. increase risk for overeating later
D. reduce potential energy levels for exercise

3. The primary goal of a pre-exercise/event meal is to fill:

A. the stomach
B. the gastrointestinal tract
C. fat stores
D. glycogen stores

4. What's the role of glycogen stores?

A. secondary fat storage
B. short-term carbohydrate storage
C. short-term protein storage
D. long-term energy storage

5. The majority of nutrients from a pre-exercise meal should come from:

A. fats
B. protein
C. carbohydrates
D. dietary fiber

6. Research has demonstrated that the _____ of carbohydrate chosen does not directly affect performance.

A. amount
B. timing
C. type
D. frequency

7. At least 4 hours before activity, people should aim to hydrate with _____ milliliters of water per kilogram of body weight.

A. 1–2
B. 2–3
C. 3–5
D. 5–7

8. Which of these is considered a reliable indicator of proper hydration status?

A. dark urine
B. concentrated urine
C. pale yellow urine
D. lack of urine

9. Generally, people should consume about ___ gram(s) of carbohydrate per kilogram of body weight 1 hour before exercise.

A. 1
B. 2
C. 3
D. 4

10. One serving of a primarily carbohydrate food (such as a slice of bread) contains approximately how many grams of carbohydrate?

A. 5
B. 10
C. 15
D. 20

11. Which of these is most likely to warrant nutritional supplementation during the activity?

A. leisurely mile walk
B. 20 minutes at low intensity on an elliptical trainer
C. lifting hand weights for 10 minutes
D. intense 2-hour cycling bout

12. The general recommendation for nutrition during exercise is based on the maximum rate of glucose absorption, which is to consume about _____ grams of carbohydrate each hour during prolonged activity.

A. 10–20
B. 15–30
C. 30–60
D. 60–80

13. The consumption of _____ ounces of sports drink every _____ minutes during exercise has been shown to extend exercise capacity of some athletes.

A. 2–4; 15–30
B. 6–12; 15–30
C. 6–12; 45–60
D. 2–4; 45–60

14. To maximize the rate of muscle glycogen replacement, athletes should ideally consume a carbohydrate-rich snack within at least how many minutes after an activity?

A. 30
B. 60
C. 90
D. 120

15. Muscle growth stimulation can be enhanced by consuming _____ grams of protein within 1 hour after exercise to maximize muscle rebuilding and repair.

A. 5–15
B. 15–25
C. 30–55
D. 50–65

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PETRA KOLBER'S CURE FOR TOXIC PERFECTIONISM

Kolber had everything—fame, success and a career she loved—but fear of mistakes almost took it all away.

BY RYAN HALVORSON

Perfectionism, arguably, is not inherently evil. In fact it helped make Petra Kolber one of the biggest names in fitness.

In a career spanning three decades, she has spread her infectious energy to more than 30 countries, led more than 1,000 presentations, worked with multinationals like Reebok® and *Health* magazine, and won a raft of prestigious awards. She choreographed and starred in over 100 workouts featured on television shows, DVDs and VHS tapes.

There was only one hitch: Her relentless push for perfection was ruining her life. Her public face was all energy and enthusiasm, but inside, rising anxiety was morphing into sweat-drenched panic attacks. Something had to be done—not just to rescue her career, but to free her from the vise of perfectionism.

PHOTO BY TRACY BIRDSELL

SIGN OF PROGRESS: KOLBER TRADED "I'M NOT ENOUGH," FOR "I AM ENOUGH," BUT THE STORY DOESN'T END THERE.

> *"Great ideas die in isolation and thrive in collaboration."*

So she developed Perfection Detox® to deal with her own perfectionism issues and to help others do the same. Her story is an inspiration for those who find themselves pushing so hard that it's draining all the joy out of their lives.

UNCERTAIN BEGINNINGS

Kolber made her name in the aerobics boom of the 1990s, but she originally wanted to be a musical theater dancer. Born and raised in England, Kolber moved to the United States in the early 1980s. She found work as a dinner theater dancer in Miami and dreamed of hitting it big on Broadway in New York City, but she hadn't given much thought to aerobics until a friend invited her to take his class.

"At the time I had pooh-poohed aerobics," Kolber says. "But I went to take his class and it was freaking unbelievable. I was amazed because it was just like a dance class." Her heart was in dance, but her mind calculated she could be an aerobics instructor if her dance career fizzled.

Then she visited the Big Apple on a vacation.

"I wasn't quite up-to-date as far as how talented the dancers in New York were," she recalls. "So, in 1990, I signed up to take a group fitness certification."

KOLBER'S FIRST AEROBICS CLASS HAD ONE PARTICIPANT; TODAY, HER CLASSES, PODCAST AND KEYNOTES REACH AND INSPIRE MANY THOUSANDS.

Back in Miami, she passed her first certification exam and then heard about a step workshop in nearby Fort Lauderdale led by Gin Miller and Peter Francis. "I had no idea who these people were. But I thought, 'Why not? I'll sign up,' " says Kolber.

Things worked out. She liked step aerobics so much that she decided to look for a job leading classes in Miami. She visited gym after gym trying to get somebody interested in adding step to their group exercise programs. At last, she met a manager willing to give her a try.

"I was told to not expect anyone to show up," she says. "Honestly, I don't know how I had the guts because I'd never taught before. That first class had one

PHOTO BY RYAN KELLY

KOLBER'S SECRETS OF HAPPINESS

As a 25-year veteran fitness instructor, Kolber has collected an epic novel's worth of wisdom. Here are a few of the things she's learned along the way about how to boost the happiness quotient:

ON SOCIAL MEDIA AND INSECURITY: "The reason we suffer from insecurity is because we're busy comparing our backstory to everybody else's highlight reel [an idea Kolber credits to pastor and author Steven Furtick]. Social media exacerbates this. But we can also change how we look at it. Is it possible to see someone's post and simply think, 'I'm so happy for them' without comparing yourself to them?"

ON BEING SELF-CRITICAL: "I think we need to achieve some balance and be a little less harsh on ourselves and maybe, as leaders, ask, 'Can I talk to myself as I would my favorite client?' "

ON COMPETITION AND JUDGMENT IN THE FITNESS INDUSTRY: "We're really quick to judge each other. [I wish] we could become more compassionate to each other in this industry—and stop viewing one another as competition. There are [plenty of] people who need our help. We need to come together to create change together because great ideas die in isolation and thrive in collaboration."

ON THE IMPORTANCE OF HUMAN CONNECTION: "As humans, we're designed to be around others and to be in community. And as much as we have communities online, it can never replace human connection. I don't care how many apps, happy apps, mindfulness apps you have—true happiness comes from when we're around other people and, even more than that, when we're in service of something greater than ourselves."

ON HOW TO SUCCEED IN FITNESS: "If you want to be more successful and retain clients, your job is going to change. You're going to be a connectivity coach; you'll be a compassion coach, an empathy expert, a connector. That's what people are craving; they just don't know it. And if you're a trainer who shows up with that skillset and can combine it with being fully present, you will have more clients than you know what to do with."

ON GIVING YOURSELF A BREAK: "If what you do personally—your workout, your diet—brings you joy, don't change a thing. But if your diet is so restrictive, if your workouts are so intense, that every moment you are worrying about your six-pack—I think you're missing out. If you ease up a little bit, you will get more clients and experience more joy because you will be able to connect on a deeper level with those people who struggle—because we connect through our cracks."

To hear more of Kolber's insights, check out her "Perfection Detox" podcast at petrakolber.com/podcast.

> *"I bring all of me to the stage these days—my highlight reel and my backstory."*

PHOTO BY JOE BURULL

person. The next week there were five. Then there were 20. And then you couldn't get into the class."

Eventually, she moved to New York, auditioning for fitness pioneers such as Molly Fox.

"I knew how competitive dance was in New York, but I had no idea about this aerobics thing," she says. "It was booming in the early '90s. Had I any idea who these people were, like Molly Fox, I would never have been so bold as to audition for them. That was a blessing, I think. Molly gave instructors room to try new things—and fail—without the fear of getting fired."

In the early days, Kolber loved the work but didn't consider herself an expert. "I didn't know so much that I became paralyzed." The paralysis came later.

THE "EXPERT" TRAP

Working in some of the most respected boutiques in New York put Kolber's name on the map. She developed a passionate following and started landing major gigs with big companies. Soon she was a sought-after presenter for fitness conferences worldwide.

That's when the anxiety started to kick in.

"As I became more well-known in the industry, I got so concerned with knowing more—and feeling like I didn't know enough," she says. "I began to wonder if I should get a master's or a PhD."

Lurking below the surface of Kolber's positive, happy exterior were severe anxiety and panic attacks. The more she learned, the less confident she was that she belonged on the stage.

In a recent TEDx Talk, she put it like this: "I've been on many DVDs, starred along with 'Body by Jake' on television shows. I've worked with George Foreman, Nancy Kerrigan and Dara Torres. I've traveled around the world speaking to thousands of people and taught to packed classes in New York City. I've won pretty much every fitness accolade there is to win. I don't say this to brag, but to let you know that I [still] never felt as though I was enough."

Kolber eventually realized she'd developed an obsession with perfection that was creating a rift between

KOLBER AND *DAILY BURN* HOST JD ROBERTO HAD A BLAST FIELDING VIEWER QUESTIONS ON A DAY KOLBER LED THE SHOW'S WORKOUT.

PHOTO BY RYAN KELLY

KOLBER STOPPED HIDING BEHIND THE "GRAY CURTAIN" OF PERFECTION AND STARTED DEVELOPING A MORE REALISTIC CONNECTION WITH HER AUDIENCES.

her and the people she was aiming to inspire.

"What I thought people wanted from me as a trainer began to separate me from them because nobody can relate to perfect. It paralyzed me as a presenter and didn't allow me to do my best work because I was always two steps ahead, wondering if someone will question me or if I was going to make mistakes. So there was always a sense of anxiety around it," says Kolber.

These realizations helped trigger a shift in her perception. She stopped hiding behind the "gray curtain" of perfection and started developing a more realistic connection with the people she stands in front of.

"Most of the time I can show up and the person who I am on stage now is the essence of who I am off stage," she says. "I bring all of me to the stage these days—my highlight reel and my backstory."

FINDING THE MISSING PIECE

Over the years, through all the fame and the emotional ups and downs, Kolber noticed a troubling constant in her classes. "I would see the same people and hear the same questions from women in my class who, from the outside looking in, looked perfect—and they'll come up to me and point to their arms or waist and ask, 'How do I lose this one pound?' "

She had become an instructor to help people feel more joy, but that didn't seem to be why they were exercising with her. Something was missing; finding it would launch the next phase of her career.

As she searched for that missing thing, "the term, 'positive psychology' kept coming up," she recalls. Eventually she took a yearlong course and earned a certificate in positive psychology under the leadership of Tal Ben-Shahar, PhD, and the Wholebeing Institute. At the same time, CreativeLive, on online education platform that broadcasts live classes, asked Kolber to lead a 2-day fitness workshop.

"I told them that I was pivoting out of [fitness], but that I'd created a new program called 'Moving to Happiness®.' "

Kolber felt renewed and invigorated—and *scared.* This was uncharted territory because Moving to Happiness didn't exist. She had no Molly Fox or Gin Miller for guidance.

"This is the first time in 25 years that I've never had footsteps to follow. There is no one that I know who has done this," she says. A conversation with longtime friend, colleague and fitness expert Jay Blahnik helped put things into perspective. "He told me I was in a space where I was in the white powder creating the footprints, and that gave me the courage to move ahead."

She put her fears aside and spent the next 8 months building a program combining her knowledge of teaching group exercise and her study of positive psychology.

"The main premise was, 'I'm not here to change your workout; I'm here to change *why* you work out," she explains. "I think our industry needs to take weight loss and jean size off the table as a goal forever. It can be a stepping stone, but that's where we went wrong. We made how we look the definition of success, instead of how we live as the definition of success."

Her new program aims to change all of that.

THE PERFECTION DETOX

In a year, Kolber went from a fitness maven to a purveyor of happiness who helps individuals and groups gain more satisfaction from life. Tackling the concept of perfection is one of her top priorities.

Perfectionism isn't a problem, she says, if it's helping you improve your life. "If, however, the idea of having the perfect life, body, being the perfect wife, teacher, trainer—if that makes you sick to your stomach, then this is what I want to talk about."

Her TEDx Talk and her podcast encourage those who experience the latter to go through what she calls a "perfection detox."

"I hear so many people say things like: 'It needs to be the perfect day to start my diet.' Or 'It needs to be the perfect outfit to be a good date. It needs to be the perfect meal so I am disciplined.' Or 'I need to manage my time perfectly, or have my idea, workshop or presentation perfect before I can share it with others.'

"Hearing this makes me want to hide in bed under the covers. There's a sense of 'I'm not enough.' That inhibits people. [But I'm also] not a believer in the concept of 'I'm enough and that's it,' either. Instead I look at it like, 'I'm enough, and there's still work I want to do.' I want to change the conversation."

Dismantling the need to be perfect gives happiness and joy a chance to flourish, she says. She shares this message with colleagues, corporations and, recently, a retirement home.

"My talk was 'Flourishing After 50,' " Kolber says. "The youngest person in the room was 70 and I thought, 'What am I going to tell these people that they don't already know?' I really was quite nervous."

To her surprise and delight, her messages were well received.

"At the end of my talk, a 94-year-old woman came up to me and she said, 'I want to thank you so much for today. I learned so many things that will make me feel happier as I move forward.' My heart cracked open." **AF**

RYAN HALVORSON *is an award-winning writer, editor and content consultant based in San Diego.*

PHOTO BY TRACY BIRDSELL

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Grow & Thrive IN THE FITNESS INDUSTRY AT *Age 50* AND BEYOND!

Ever questioned whether you can sustain a career in this industry after age 50? Here, five standouts prove it's possible to inspire yourself and others for decades, through pure love of the game we call fitness.

BY LUCIA VITI

Many of the fitness industry's baby boomer superstars thrive on a passion for their chosen path, a thirst for knowledge, and the good sense to navigate ever-changing trends. Their fitness-business acumen drives them to learn—and do—even more.

American Fitness recently caught up with a handful of the industry's top 50-plus leaders. Common ingredients in the secret sauce of each pro include compassion, curiosity, a yearning to help others, patience, positive energy, good self-care practices, and lifelong learning.

What you won't see? Ego, hubris, selfishness or a habit of passing the buck. These pros are always the first to jump in and get their hands dirty.

Learn what's on their minds and what's in their robust plans for the future.

Be Open-Minded and Willing to Change

The 2010 IDEA Fitness Instructor of the Year award recipient, NASM-certified personal trainer and group trainer Carol Murphy conducts continuing education programs and certification workshops globally. Murphy's client list is prestigious: Reebok, Drums Alive®, Flexi-Sports®, Qignition, Tabata Bootcamp™, Barre Above™ and TRX® are just a handful of brands for which she's developed programs. In addition to operating her own studio for 15 years, she has been featured in magazines and fitness DVDs, and she has created instructor training courses, online fitness and DVD courses, lectures and articles.

Murphy remains active as a personal trainer and group exercise instructor while working as the group fitness coordinator for the YMCA of the Greater Rochester Association in New York. She is determined to age strong within the fitness industry.

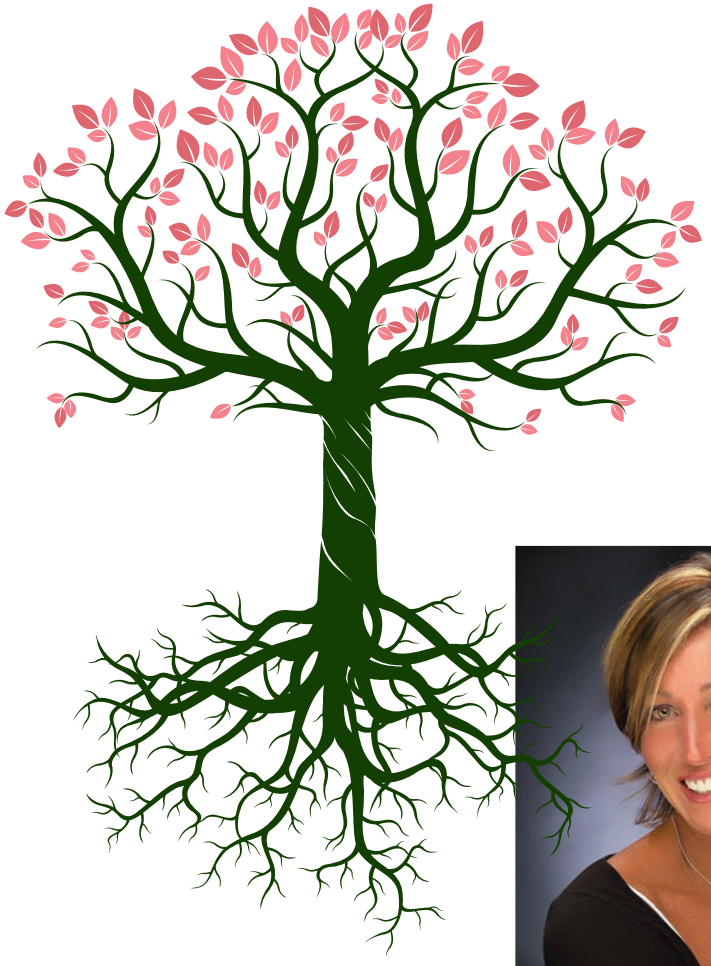
"I'm committed to the industry pulse," she says. "I remain connected to my peers by experiencing new programs, attending classes, traveling to conferences and reading. I reinvent myself by partnering and working with leading companies. As a member of a team of course instructors and master trainers, I have the opportunity to collaborate [with] and learn from the best in the industry."

Murphy noted the value of evidence-based research for developing training solutions. Challenged to test her ability and inspired to help others, Murphy strives for relevancy that translates into everything she does.

"Staying relevant requires us to become lifelong learners," she says. "We must be adaptable and remain open to new discoveries and methods. We must be willing to change." For that reason, Murphy encourages fitness professionals to embrace new avenues of all things fitness. "Fresh moves, music and motivational strategies will keep you and your participants excited and wanting more," she says.

Passionate to make fitness fun, Murphy intends to be a "catalyst in a movement that brings a higher level of respect, appreciation and compensation for our valuable work as fitness professionals."

Paying it forward by mentoring is part of her plan to remain timeless. "I want to share what I've learned and deliver inclusive experiences that foster positive and powerful experiences," she says. "I want to end obesity and inactivity. I want to be a/the game changer."



"I want to be a trusted resource who helps fitness pros and consumers sift through the fads and recognize the trends. Regardless of age, we can be trendsetters. We can create solutions that work."

—Carol Murphy,
Fairport, New York

"It's life-changing to see clients do what they couldn't do before. Because Parkinson's affects everyone differently, the population is unique and interesting. These are committed, hardworking, goal-driven individuals looking to preserve their quality of life. They show up for every session. They fight—and fight hard. It's gratifying to work with them."

—Karl Sterling, Syracuse, New York

Find a Specialty—and Learn All You Can

Karl Sterling is an NASM Master Trainer and educator who specializes in working with clients with neurological disorders, particularly Parkinson's disease. An instructor for the Brookbush Institute of Human Movement Science, he also works as a master instructor for the Evidence Based Fitness Academy and owns PhysioChains Education—an education company that offers Parkinson's Regeneration Training courses worldwide.

Why is he so passionate about working with a special population?

"Training the healthy in need of losing weight simply isn't enough [for me]," Sterling says. But that wasn't always the case. In fact, he was initially hesitant when approached about training his first client with Parkinson's disease. "I was reluctant, but I plugged into a network of neurologists, armed myself with research, and together we trained," he says. "We made significant progress in my client's mobility, stability—he hasn't fallen in over 5 years—and his overall quality of life. I was hooked."

Sterling notes that, while Parkinson's can be debilitating, data shows that exercise helps manage symptoms by improving movement patterns like gait, grip, balance, stability and strength. Improvements in motor control and mobility help to reduce falls, injuries and various other complications of the disease, he says.

It's a bit surprising to learn Sterling has not been a fitness professional for his entire career. He got his start just a few years ago, when he was 48 and enjoying a successful career as a rhythm and blues jazz drummer. There was only one problem: He was 6-foot-2 and his weight had ballooned to 270 pounds. A visit to a doctor revealed serious health problems.

He left his doctor's office and literally the next day began working with a trainer and a dietitian, he recalls. "I lost weight and quickly got healthy. Honestly, I just got scared straight and got smart quick."

Sterling credits NASM's Optimum Performance Training™ model for getting him physically fit. "I lost 70 pounds in months," he says. "Inspired, I decided to become a trainer and did so through NASM. Yes, it's an odd career switch, but the more specialized I become, the more I work with anomalies that force me to be creative, the more jazz musician I see. Music and training are both creative arenas. I creatively work with clients who differ in what they can and can't do. It's a different kind of jazz music that stimulates my brain and my spirit."

Today, Sterling is deeply involved in the learning side of the fitness business—taking classes, workshops and certification courses. He shadows doctors, hosts podcasts and conducts YouTube "Ask The Expert!" interviews. Sterling also attends California University of Pennsylvania as a full-time undergraduate student in sport management studies.

"I'm working to bridge the gap between neurology and physical therapy to initiate a functional life that improves the quality of life," he says. "My motto—'It ain't about me, it's about everyone.'"

Sterling advises newcomers to get a reputable certification such as those offered by NASM. "There are a handful of good certifications and 60-plus questionable ones. Keep learning. A certification doesn't mean you're there. Find your favorite clientele, dive in and learn everything you can about their needs. Find the experts, find informative courses and get results."

"Education will always be a huge part of what I do, and movement drives me. I never miss an opportunity to educate fitness professionals and consumers to the benefits and power of moving, even just 10 minutes a day. Performed functionally, movement allows everyone to move for the rest of their lives."

—June Kahn, Boulder, Colorado

Create Functional Programs That Make Sense

Thirty-five years into her fitness career, June Kahn, founder of June Kahn's Bodyworks, is still launching new businesses. Most recently, she opened Center Your Body Pilates, a boutique Pilates and movement studio in Boulder, Colorado, her hometown. Certified through the PhysicalMind Institute, she is a Pilates rehab practitioner at Masso Whole Body Health Therapeutics and an Elite Master Trainer for Savvier™ Fitness, A Barre Above™ and Tabata Boot Camp™. Kahn's accolades include the 2009 IDEA Fitness Instructor of the Year award, and her programming accomplishments for well-known industry brands could fill a conference brochure.

The former jazz dancer fell in love with "aerobics" in the early 1980s. Sporting a college degree in physical education and a minor in dance, Kahn attended an AFAA 3-day certification, "before the industry had truly come to play." Kahn's ability to move impressed everyone, especially AFAA pros. "Before I even knew if I passed the exam, I was approached by the AFAA team to work as an industry consultant," she says. "Mentored by industry icons Linda Shelton and Joy Prouty, my career as an educator catapulted."

Kahn opened her first fitness studio in 1989 in St. Louis, Missouri. She worked with step creator Gin Miller until a series of injuries steered Kahn to Pilates. Despite Pilates' grueling certification process—a 3-day workshop followed by 800 hours of shadowing a master teacher, tailed by an *additional* 800 hours of teacher training—this exercise system had yet to find solid ground within fitness.

"Between the '80s and '90s, yoga and Pilates didn't mix with the fitness industry," she explains. "Sara Kooperman, founder of SCW Fitness and Mania®, asked me to create a Pilates program to bridge the gap between fitness professionals and Pilates. So, I did. I took what was current and blended it with my knowledge, experience and expertise to create the first Pilates mat certification for fitness professionals."

Today, Kahn champions the Movement Heals campaign for cancer patients and survivors. The two-time cancer survivor attributes her recovery to an active lifestyle and clean eating. "I attribute my ability to move with my ability to heal. I can't say that movement cured me [from two bouts with cancer], but I can say that movement allowed me to keep my body healthy to withstand the treatments while keeping my mind positive."

Kahn's words of wisdom for all fitness professionals: "Find a mentor, learn the secrets of practical application, and create programming that makes the body function better. Avoid gimmicks but become familiar with new products. Never limit yourself to what you already know. Think out of the box to apply a well-rounded, safe, and functional program."

Keep Learning: Research Leads the Industry

Charlie Hoolihan has an extensive and impressive resumé. The former Louisiana State University champion swimmer began his coaching career in 1971 as a high-school swim coach. He segued into the health club industry in 1984, collecting accolades every step of the way. Having earned the NASM Personal Training Certification, Corrective Exercise and Performance Enhancement Specializations, today Hoolihan is personal training director of Mandeville, Louisiana's premier Pelican Athletic Club. He works extensively with corrective exercise and stroke postrehabilitation clients. In addition to delivering presentations for IDEA, NSCA and the American Swimming Coaches Association, Hoolihan writes regularly for trade journals, industry textbooks, magazines and newspapers.

"Working as a coach, a trainer and a teacher is natural for me," he says. "I'm an athlete. I understand establishing goals and the drive to succeed. Every coaching and training session helps people improve. And watching people improve is my favorite aspect of working in the fitness industry."

Hoolihan compares personal training to solving a puzzle that gives perspective on helping people not only to move, but to move *better*. "Whether you're helping high jumpers jump higher or rehab patients walk 10 feet, you're *helping* others," he continues. "Trainers change what happens to the human body."

Fitness professionals must apply changing trends, literature and science to their practice, an approach that drives Hoolihan to stay deeply committed to his own learning process. "With today's emerging science on bioindividuality, we witness individual variances and responses to training techniques and nutritional patterns," he says. "This effective process requires trainers to carefully discern a client/athlete's ability to improve and perform well. And that improvement is a life enhancement."

Hoolihan acknowledges NASM for exposing fitness professionals to a variety of "exciting, entertaining and intriguing" ideas. He says science can help trainers distinguish between current fads and methods that will become industry standards. "Some fads become standards while others become temporal," he says. "Following science and research is key to understanding the difference between the two. Research leads the industry."

Although Hoolihan's professional tenure spans decades, he considers himself young by industry standards. "If you count coaching, I've worked as a fitness professional for over 46 years," he says. "But fitness is still new and exciting for me. My work is my passion.

"Age? Fitness isn't just a young person's trade. There's plenty of room for experience. Reinvention? We don't necessarily reinvent ourselves. We simply stay current with industry knowledge that grows daily. Longevity? Industry longevity is based on client progress. People become healthier and naturally increase their longevity."

Hoolihan's advice to newcomers: "Pace yourself. Maintain a perspective of caring for yourself the way you care for your clients."

"How can you not be passionate about helping others? I give people the gift of health. We all do. I tell my fitness pros, 'You're going to save someone's life one day in one way or another.' Fitness is a vital industry."

—Charlie Hoolihan, Mandeville, Louisiana

"Like-minded thinkers pay attention to changing trends and lifestyles. Like-minded professionals ask, 'Who are we? What do we stand for? How can we help others think differently in ways that affect their lives? How do we effect change in fitness levels, nutrition, stress and happiness? How can we be the difference in the lives of others?'"

—Celeste Reeves, Dacula, Georgia

Allow Your Interests to Evolve

Celeste Reeves, a life coach (in her most recent industry foray) is a well-rounded fitness veteran whose career has covered the gamut: group fitness instructor, sports director, coach, personal trainer, facility consultant, and leader of fitness and nutrition workshops. She also was a personal trainer on the Discovery Channel's *The Body Challenge* and has owned Georgia's Functional Fitness Personal Training for 20 years.

An avid athlete, Reeves began her fitness career in the early 1980s to subsidize the cost of a gym membership in Atlanta's "top-of-the-line, throbbing point of all things new in aerobics." Reeves joyously discovered that teaching provided a free membership *and* a paycheck. Thus began a 25-year stint that included leading classes in step, high-low impact, kickboxing and stability and BOSU. Reeves recently transitioned into personal training full-time, including working with middle-aged and older populations.

"I've always carefully monitored personal training trends within my business," she says. "I understand the importance of small-group—no more than four—and one-on-one training, regardless of one's fitness and wellness level. The niche of working with a middle-aged and older clientele evolved as I did. Recently becoming a wellness coach opened my eyes to address and progress within these special populations."

Attending to those who "fall between medical care and physical therapy," Reeves stressed the importance of identifying medical requirements and limitations caused by health issues and diseases—multiple sclerosis, ataxia (lack of muscle coordination) or Parkinson's disease. "My success is based on understanding and addressing client needs," she continues. "Whether it's postrehab for elite athletes, the middle-aged, seniors or the simply fit, we work with clients who can't train by themselves. We're the sweet spot, the missing link between the doctor, the physical therapist and clients living their lives."

Reeves also noted the merit of establishing relationships. "We ask questions about careers and hobbies: 'Who are you in the real world?'" she says. "Relationships, camaraderie and friendships are just as important as one's health. You can't fine-tune someone's life without making a connection." **AF**

LUCIA VITI *is an ACE certified 37-year fitness veteran and freelance journalist now living in Carlsbad, California. The native New Yorker teaches at 24Hour Fitness' Carlsbad Super Sport and at the Bay Club Carmel Valley in San Diego. Contact her at luciaviti@roadrunner.com.*

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[1]IBISWorld, Personal Trainers in the U.S. - Industry Market Research Report, Feb. 2015 [2]Results of study conducted by MarketLab, a third-party researcher, in May-June 2016, sampling U.S.-based Club Managers
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UPLIFTING NEWS: JUST 4 WEEKS OF RESISTANCE TRAINING CAN DECREASE BODY FAT AND WAIST SIZE.

Supersets: Lift Weight to Lose Weight

BY KYLE STULL, DHSC, MS, LMT, NASM-CPT, CES, PES, CSCS

Resistance training builds strength, stability and endurance as it helps clients create a leaner physique. Phase 2 of NASM's Optimum Performance Training™ model ensures these perks through the use of well-planned supersets.

Everyone needs at least *some* strength work in their training program, regardless of their goals. Increasing strength helps to create strong bones, decreases the chance of common injuries, improves quality of life and helps to control weight by increasing calories burned daily. For the two-thirds of the U.S. population who want to lose weight this spring, strength training is a key component of long-term success. This article briefly explains Phase 2 of the OPT™ model that is used in the NASM Certified Personal Trainer program and how it contributes to a leaner look, while also improving strength, work capacity and joint stabilization.

Shifting to OPT Phase 2

We've written on NASM's OPT model, specifically how Phase 1 (Stabilization) establishes a solid foundation for the client to safely progress. The next phases focus on developing strength.

Phase 2 of the OPT model is Strength Endurance training, a bridge from lower-intensity stabilization training to more intensive strength training. Phase 2 recommends combining two exercises back-to-back in a superset. The first exercise is more traditional, focused on increasing strength in a stable environment. Therefore, an individual would lift more weight (70–80% 1-repetition maximum) and follow up with a similar exercise at a lower intensity (50–70% 1-RM) in an unstable environment. The first exercise in the superset could be a bench press for the chest, a seated cable row for the back, or a squat for the legs. These exercises demand more from the larger muscles, thus helping to increase strength. The second exercise in the sequence uses the same muscle groups but incorporates stabilization in a less stable (but controllable) environment.

For the chest superset, a bench press can lead directly into a standing cable press or a pushup. These still use the chest muscles while also engaging the muscles around the legs, hips and core. Similarly, for the legs, a barbell squat can precede a single-leg squat or a lunge to balance.

The nature of supersets makes Phase 2 a lot of fun, while incredibly demanding and effective. These are some of the benefits of Phase 2:

- Increased lean body mass (Clark et al. 2012)
- Increased prime mover strength
- Enhanced joint stabilization
- Improved overall work capacity

Let's discuss each of these in more detail.

How Does Phase 2 Increase Lean Body Mass?

In essence, Phase 2 increases lean body mass in these key ways:

- Adding small amounts of muscle
- Increasing resting metabolic rate
- Boosting metabolism after a workout, thus burning more calories for several hours

Here are proven reasons Phase 2 will help clients meet weight loss goals:

MUSCLE LOOKS LEANER

First, understand that lifting weights does not make a person "bulky." Getting bulky reflects three specific factors: calories, hormone profiles and hypertrophy-specific training. Calories matter because a human must have lots of energy coming in to increase size. Hormone profiles play a role, as we know more testosterone is associated with more muscle mass. Finally, resistance training for hypertrophy must be very specific (this is Phase 3 in the OPT model), using specific ranges of intensities, rest periods and proper exercises. Even then, an exerciser may expect to gain somewhere between 0.25–0.50 pounds of muscle every several weeks.

Increasing strength helps build strong bones, decreases the chance of common injuries, improves quality of life and helps control weight by increasing calories burned daily.

Continued on page 54

Strengthen Your Base of Knowledge

Good science is the key to helping clients achieve their goals. At times, making sense of the science can be a little frustrating and confusing for clients and fitness professionals alike. That's why the NASM Certified Personal Trainer program presents complex science concepts in real-world scenarios, and it breaks down the information into easy-to-understand, easy-to-digest segments.

Here is just one example of the applied science found in Module 12: Applying Strength in the NASM-CPT program.

FINDING A HEALTHY BALANCE

Clients may view resistance training solely as a muscle-building activity. However, the Strength Level of the NASM OPT model emphasizes the importance of a training program being well-rounded. This means combining strength work with flexibility, core and balance training protocols.

A look at balance training, for example: According to the NASM-CPT text *NASM Essentials of Personal Fitness Training* (McGill & Montel 2017), "Research has shown that balance training improves sports performance and reduces sport-related injuries, and restores proprioception and neuromuscular function compromised by injuries (Bernier & Perrin 1998; Elis & Rosenbaum 2001; Hertel et al. 2006; Hewett, Meyer & Ford 2005; McKeon & Hertel 2008; Mansfield et al. 2015; Lesinski et al. 2015; Zech et al. 2009)." In the Strength Level of the NASM OPT model, clients are progressed from stabilization exercises to ones that require "dynamic control in the mid-ROM, with isometric stabilization at the end ROM." Phase 2, which is discussed in this article, should include balance strength exercises during the movement prep part of the workout, aiming for 1–3 such exercises, up to 4 times per week (2–3 sets of 8–12 reps). Some examples include the following:

- Single-leg squat
- Single-leg squat with touch
- Single-leg Romanian deadlift
- Single-leg lift and chop
- Multiplanar lunge to balance

In the NASM-CPT program, fitness professionals will gain a deeper understanding of concepts like this, as well as instruction on the correct performance of the exercises, while being exposed to the science from which they originate. As part of this 16-module course, fitness professionals will have access to online reading material, an exercise library, predesigned workouts, and concise videos including lectures, introductory concepts, and exercise techniques. Users can also access case studies, learning activities, quizzes and practice exams. To learn more about the NASM-CPT program options, go to www.nasm.org/cpt.

The systematic and integrative OPT™ model progresses clients safely and effectively.

Sample Superset Workout

START WITH a Phase 2 warm-up with foam rolling and active stretching followed by core, balance and plyometric training with 2-3 sets of 10 reps. In the supersets, below, the first exercise should hit 80% intensity for 8 reps with a tempo, in seconds, of 2/0/2 (eccentric/isometric hold/concentric). The second exercise is done at body weight or 50% intensity for 12 reps with a 4/2/1 tempo.

TOTAL BODY SUPERSET

SET 1: SQUAT TO PRESS

1A

Stand, feet hip-width apart, elbows bent, holding a dumbbell in each hand at shoulder height.

1B

Keeping chest upright, bend knees and squat until thighs are parallel to the floor.

1C

Stand while pressing dumbbells overhead until arms are straight. Slowly return to starting position. That's 1 rep.

SET 2: SINGLE-LEG DUMBBELL SCAPTION

2A

Stand, feet together, arms straight, holding a dumbbell in each hand. Lift one leg, keeping it beside the other leg.

2B

Keeping thumbs pointed up, slowly raise arms to the front at about a 45-degree angle. Slowly lower to starting position. That's 1 rep. Alternate the balance leg for each set.

BACK SUPERSET

SET 1: SEATED CABLE ROW

1A

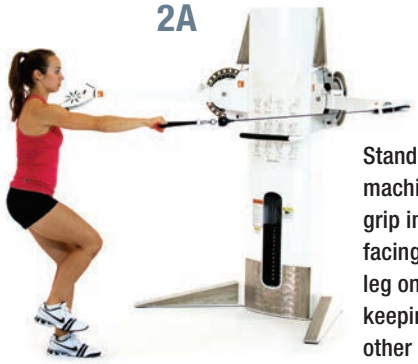
Sit facing a cable machine, feet on the floor and toes pointing forward. Hold the cable grips with arms extended.

1B

Bend elbows and pull back on grips, drawing shoulder blades together and down. Slowly return to starting position. That's 1 rep.

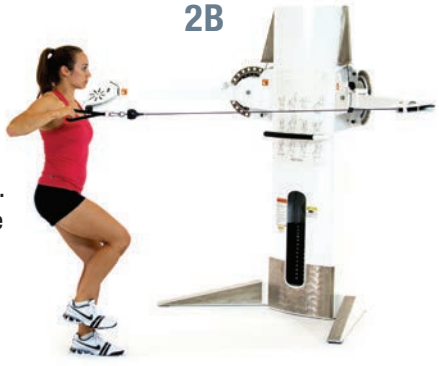
SET 2: SINGLE-LEG, SINGLE-ARM CABLE ROW

2A



Stand facing a cable machine with cable grip in one hand, palm facing floor. Lift the leg on the same side, keeping it beside the other leg.

2B



Bend elbow to pull grip toward chest. Keep foot raised while slowly returning to starting position. That's 1 rep. Alternate sides for each set.

CHEST SUPERSET

SET 1: BENCH PRESS

Lay down on a bench, elbows bent, holding a barbell just above the chest. Palms should face the feet and elbows should be directly below wrists.

Press up, raising barbell straight over chest until arms are straight. Slowly lower to starting position. That's 1 rep.

SET 2: STABILITY BALL PUSHUP

Begin with chest and hands on stability ball and feet extended back, balanced on toes. Keep hips and knees in a straight line and engage core.

Press up through palms, maintaining balance while straightening arms.

Extend to full pushup. Slowly lower to starting position. That's 1 rep.

LEGS SUPERSET

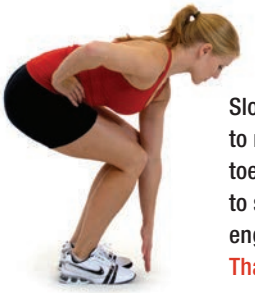
SET 1: BARBELL DEADLIFT

Stand, feet wider than shoulder-width apart, and hold a barbell in front of you, arms extended. Bend knees slightly until weight is mid-thigh. Keep back flat and knees slightly bent.

Bend forward at hips and lower bar to floor, knees bending slightly. Return slowly to starting position, extending hips. That's 1 rep.

SET 2: SINGLE-LEG SQUAT WITH TOUCH

Stand, feet shoulder-width apart, and toes straight ahead. Lift chest, pull back shoulder blades and engage core. On raised-leg side, keep arm straight; place other hand on hip.



Slowly bend forward to reach fingertips to toes. Slowly return to starting position, engaging core. That's 1 rep.

Continued from page 51

Staron et al. (1985) found no significant increases in muscle size for up to 8 weeks of heavy-resistance training. Therefore, those who specifically do not want to get bulky can rest assured that Phase 2 won't do it. Resistance training does add small amounts of muscle, and more over time for those who decide to train specifically for hypertrophy. When the body contains slightly more muscle, it doesn't look large. In fact, time and time again, those who add weight training into weight loss programs say they look and feel leaner.

A study with 29 women found that 4 weeks of resistance training decreased body fat, decreased waist and hip circumference and improved overall health (Jee & Kim 2016). Fat takes up more space per pound than muscle, so more muscle is a leaner look.

A study with 29 women found that 4 weeks of resistance training decreased body fat, decreased waist and hip circumference and improved overall health. Fat takes up more space per pound than muscle, so more muscle is a leaner look.

MUSCLE BURNS MORE CALORIES THAN FAT

A body with more muscle also burns more calories than a body with more fat. Studies have found that resistance training can increase resting metabolic rate and daily energy expenditure, assisting in weight loss (Kirk et al. 2009; Washburn et al. 2012). This works simply by increasing fat-free mass, usually called muscle mass.

This notion is supported by research which found that 9 months of resistance training increased resting metabolic rate by an average of 5% or about 158 calories per day (Aristizabal et al. 2015). That is more than 50,000 calories per year! Therefore, the superset design of Phase 2 allows the client to increase small amounts of muscle mass while expending large amounts of calories, thus becoming a lean muscle mass machine.

RESISTANCE TRAINING BOOSTS POST-EXERCISE CALORIE BURN

Finally, resistance training that increases lean body mass elevates excess post-exercise oxygen consumption, or EPOC. The body's need for oxygen often remains elevated for several hours after a training session, which in turn elevates the metabolism (Gaesser & Brooks 1984). This hypermetabolic period is thought to play a key role in managing body weight because the body needs to keep burning calories to return everything to a normal state.

When Haddock & Wilkin (2006) compared endurance training and weight training, they found that weight training required more recovery energy and longer EPOC, therefore burning more calories. Another study comparing high- and low-intensity resistance training found the high-intensity group had increased EPOC for up to 24 hours after training—again, burning more calories (Paoli et al. 2012).

How Does Phase 2 Increase Strength?

Strength reflects many factors: the nervous system, the size of the muscle, the types of fibers, the joints involved, how quickly the muscle can contract, and the body type of the individual. Weier and colleagues (2012) found that the initial weeks of strength training change the brain's motor cortex, which sends nerve impulses that cause voluntary activity. This research also suggests that these changes occurred only after repetitive stimulation. Thus, strength training exercises must be repeated.

This explains why someone who looks small can be incredibly strong: Their nervous system has learned to recruit more motor units very quickly. In essence, that is the definition of strength: the "ability of the nervous system to provide internal tension and exert force against an external resistance" (McGill & Montel 2017). This also tells us exercisers will see small increases in strength when they begin any form of resistance training, but unless they progressively overload—putting more weight on the bar—strength increases will quickly plateau.

Phase 2 offers a slow, safe progression of intensity by gradually increasing the weight lifted over 4–6 weeks and keeping the much-needed stabilization exercises.

How Does Phase 2 Enhance Joint Stabilization?

Joints are not inherently stable: They're stabilized by ligaments, tendons and muscles. Most stabilizing muscles are smaller, quicker and respond better to lower intensities. Consider the rotator cuff of the shoulder: Muscles here should contract rapidly, before the larger muscles of the deltoid and pectorals, to ideally stabilize the head of the humerus in the shoulder blade. Phase 1 accomplishes much of the training of these stabilizers.

Phase 2 progresses this training by first fatiguing the prime mover. In many cases, the larger muscles will overwork the smaller ones. Therefore, performing a higher-intensity lift first causes the larger muscles to fatigue, "forcing" the stabilizers to continue stabilizing. This further increases the body's ability to maintain postural stabilization and to stabilize joints during movement (Clark et al. 2012).

PERFORMING EXERCISES IN AN UNSTABLE ENVIRONMENT IMPROVES NEUROMUSCULAR EFFICIENCY, STABILIZATION AND FUNCTIONAL STRENGTH.

How Does Phase 2 Increase Work Capacity?

Work capacity is simply the total work an exerciser can perform. Phase 2 increases work capacity because the exercises must be done for long times with no rest. For discussion's sake, consider a workout involving the chest, back and legs. NASM suggests following a process called "vertical loading" to save time by eliminating unnecessary rest. The first exercise uses a controlled pace (~4 seconds/rep) for about 10 repetitions, followed by a slower second exercise (~7 seconds/rep) for about 12–15 repetitions. Simple math suggests this is about 2 minutes, 25 seconds of work with no breaks—just for one body part.

When vertical loading, the individual does 1 set of chest, 1 set of back and finally 1 set of legs, then repeats the cycle in the sets that follow. After the first set, the client has been "doing work" for almost 8 minutes nonstop. After a small break, the next 8-minute set begins. This demanding process quickly encourages the body to increase aerobic and anaerobic capacity to keep up.

Look Better, Feel Better, Move Better!

All of these benefits combine to prepare the client to continue progressing through the OPT model, reaching any goal they have. After Phase 2, exercisers may like the idea of more muscle and progress to Phase 3: Hypertrophy. Or maybe they jump to Phase 5: Power, for the next level of intense training.

The bottom line is that strength is fundamental to all great training programs, and Phase 2 is a safe and effective way to build strength. With summer approaching and many wanting to get the "lean" look, be sure to consider adding strength endurance training to the program. At completion, your client will look better; feel better; have better endurance, stamina and strength; and be ready for the next training challenge! **AF**

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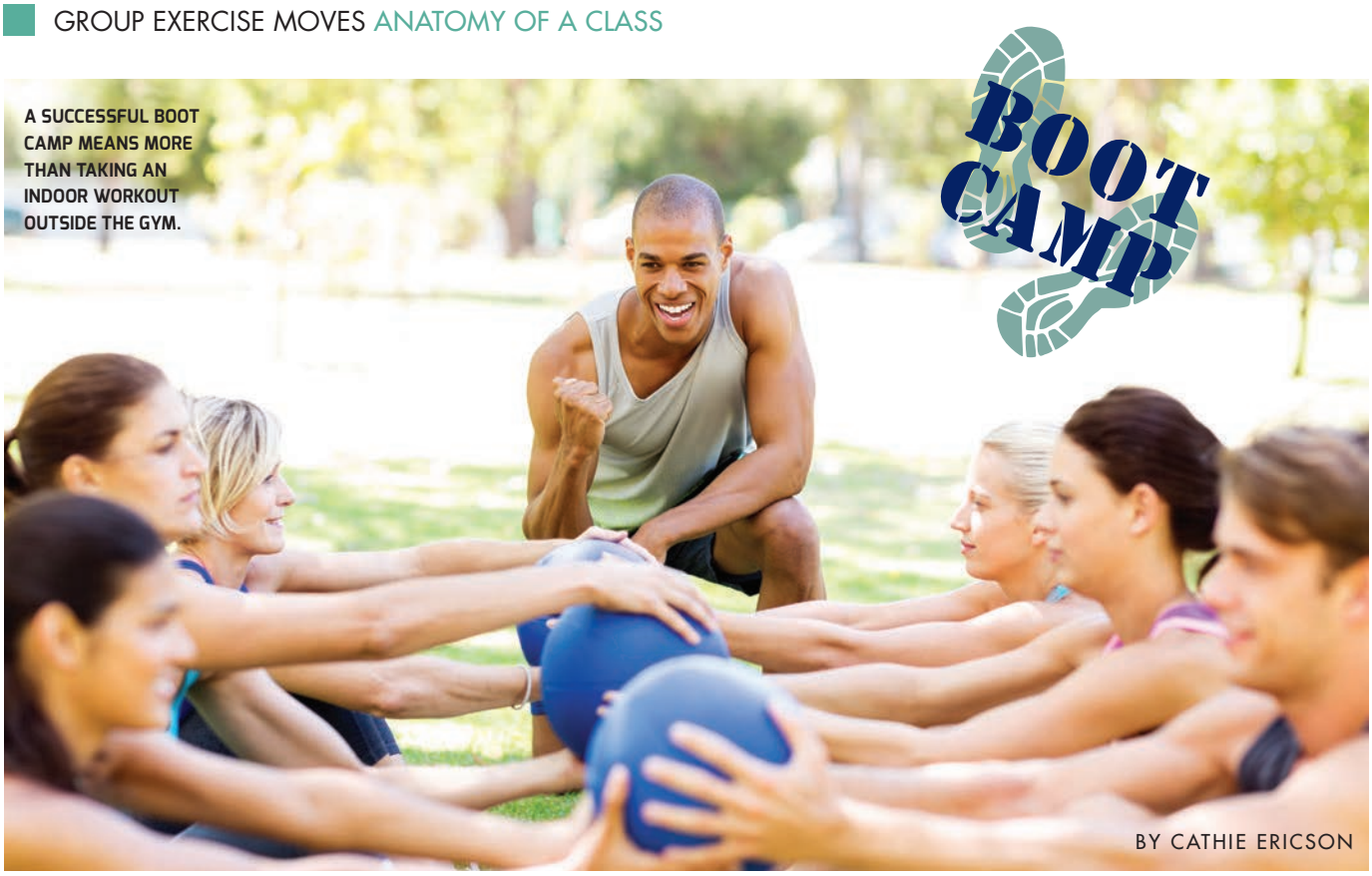

A SUCCESSFUL BOOT CAMP MEANS MORE THAN TAKING AN INDOOR WORKOUT OUTSIDE THE GYM.

BY CATHIE ERICSON

It's Spring—Throw the Doors Open and Get Outside!

Time to amp up the energy in your group exercise lineup for spring or summer? Take your mission—and your clients—into the fresh air with a boot camp.

Outdoor boot camps are soaring in popularity, due in large part to their reputation for delivering challenging workouts that incorporate group camaraderie in a natural setting. A variety of studies have shown that escaping the confinement of the gym to exercise outside (especially for those who have been indoors all winter) can not only make the workout feel easier and more enjoyable, but also improve self-esteem and mood (Logan & Selhub 2012; Kerr et al. 2012; Thompson et al. 2011).

Ready to hit the great outdoors? We talked to some experienced instructors to bring you the 4-1-1 on getting your outdoor boot camp in gear.

A Boot Camp by Any Other Name...

If you're picturing a format heavy on military-style calisthenics like burpees, pushups and other body-weight exercises, you're on the right track. Though a boot camp workout *can* be military-inspired, it doesn't have to be, says Ariane Hundt, an instructor who calls herself "head of butt-kicking operations" for Brooklyn Bridge Boot Camp. "A boot camp can simply be a tough workout that's structured in a way that challenges participants to build muscle, strength, endurance and better mental strength in a group setting," she explains.

Boot camps are a great way to mix participants of different skill levels because the exercises are typically easy to modify. "With beginners, we lower the intensity, maybe having them walk up a hill rather than sprint, or use lighter weights while more advanced exercisers push themselves harder," says Angela Hirschy, owner of Key Intensity Fitness & Nutrition Boot Camp in Atlanta.

Participants tend to be adventurous, and just like in military boot camp, they rely on the camaraderie of their workout partners to get them through, says Michelle Brown, owner and program director of Gumsaba boot camps in the East Bay area of California.

Ready to learn how to build your own boot camp business? Here are five steps to help you launch your mission this spring.

1. CHOOSE YOUR BATTLEFIELD

Most outdoor boot camp organizers look no further than their local park, field or school. But if you think you're going to just head out to a park and start coaching triceps dips on the nearest bench, you'd better do some more homework on the requirements. Most parks require a permit, so check with the parks department or your city offices.

But you can turn that cost-of-doing-business into a marketing plus, as Brown does. "Since our inception in 2010, we have paid our local parks and schools between $20,000 and $30,000 in annual rent. That adds up to a lot of support for our community, which our clients benefit from and appreciate."

If you're using private grounds, seek permission and make sure you carry adequate liability insurance. (Speaking of permission slips, be sure all participants sign waivers before their first workout. Hundt suggests finding preliminary forms online and then customizing them as needed or recommended by an attorney.)

2. GEAR UP FOR SUCCESS

Most outdoor boot camps use the structures naturally available in the park environment such as benches, stairs, walls, fences and grassy areas and hills, notes Hundt. Body-weight exercises like planks and lunges work well in that setting, and Brown recommends adding variety with resistance bands, medicine balls, kettlebells, battle ropes and Suspension Training® straps, if there's a place to secure them properly.

If that sounds like a daunting amount of equipment per person, consider dividing up participants into groups, with just three to five per station, which can help reduce equipment needs.

Or, to help with startup costs and convenience, some classes request that clients bring their own equipment: Hirschy's students bring a mat, medicine ball and hand weights.

3. ROUND UP THE TROOPS

Now it's time to do a little recruiting. A few things to remember here:

CONSIDER THE HEADCOUNT. It can be tempting to make your class as big as possible, but capping it at about 15–20 is considered ideal. Hundt limits her class to about 15 participants to ensure everyone gets proper instruction, form correction and encouragement.

Fewer than five boot-campers, though, and you're going to lose money, cautions Hirschy. Besides, bigger classes create more group energy and motivation. Having more participants can also make it easier to split up the group into small circuits—for example, three by five in a class of 15.

GET THE WORD OUT. Word-of-mouth is the best (and cheapest) form of marketing. "Make your customers happy, deliver results, ensure they see success, and be there to support them on their journey, and before you know it, they'll bring their friends, family and co-workers along," says Hundt.

Of course, social media is a key way to market, as well as offer regular communication about fitness challenges, occasional free workout plans and newsletters with educational material. Encouraging participants to post selfies or group photos and tag your organization blends social media with word-of-mouth, as their followers are bound to be intrigued by the cool workout. First-timer specials, referral bonuses and class packages can also help bring in new recruits.

4. FIND YOUR PRICE POINT

"In this day and age, boot camps can be found on every corner, so your price has to take into account your market size, your competition and the uniqueness of the experience you offer," Hundt says. (The average boot camp workout is $10–$35 per participant per class.)

Never Led a Small Group or a Boot Camp?

HERE IS ONE WAY YOU CAN GET STARTED ON YOUR OWN BOOT CAMP OR SMALL GROUP TRAINER MISSION. There is an art and a science to leading and inspiring group exercise—no matter how many participants there are. It can be deceptive to imagine how easy it might be, but until you actually take on the responsibility of "herding the cats" in a group, you might not realize how much finesse and knowledge it takes to succeed.

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>> acquire the necessary communication and coaching skills for a dynamic group setting
>> successfully teach, train and motivate all participants
>> effectively transition group personal training into your business practice
>> develop a strategic business plan to maximize financial success

The online course includes an online manual, video demonstrations and lectures, interactive study materials, 120 downloadable group personal training programs, online quizzes, and an online CEU exam. Take a glimpse into your future today: www.nasm.org/gpts.

STEP OUTSIDE FOR YOUR STEP-UPS AND TAP-UPS!

SAMPLE

WORKOUT

OUTDOOR BOOT CAMP

Courtesy of Brooklyn Bridge Boot Camp's Ariane Hundt, this workout is designed for a park with benches and trees. After a dynamic warm-up, give these moves a try. (Modify as needed, based on client safety and ability.)

Forward lunge with twist: Reach arms straight front; lunge forward with right leg. Hold lunge; rotate arms over right knee, twisting from thoracic spine (engage abs). Reset. Repeat on left side.

Plank to side lunge with twist: Plank with arms straight. Step left foot next to left hand. Balance on right hand; reach left arm toward sky; twist toward it to look at hand, open up chest. Reset. Repeat on the right side.

Star jump: Jump up so arms reach up and legs open wide like a five-point star. Land in a squat. Reset. Repeat.

Step-up: Place right foot on bench. Step up and down 10 times with left leg, keeping right foot on bench.

Tap-up: Place both feet on bench. Lower left foot to tap ground and return to bench, holding on to back of bench as needed (fatigues quads quickly). Reset. Repeat with right leg.

Tree squeeze: Sit with tree trunk between feet. Lift both legs 10 inches above the ground; squeeze tree trunk as hard as possible between feet (firms adductors, challenges abs).

Wall sit: "Sit" with knees at 90-degree angle, back against wall. Hold, squeezing glutes and thighs.

PARK BENCH STATION 1: Pushups and Mountain Climbers

>> 10 pushups (hands on bench)
>> 30 mountain climbers
>> 10 pushups (hands close together on bench; focus on triceps, upper back)
>> 30 mountain climbers
>> 10 pushups (hands on ground, feet on bench)
>> Progress to 30 slow mountain-climber crossovers (feet on bench) instead of pushups for final set.

ACTIVE REST: Jog for 3 minutes to a big tree.

TREE STATION 1: "Wall" Sits and Forward Lunges With Twist

>> Wall sit for 1 minute (back against tree)
>> 20 forward lunges with twist
>> 20 burpees
>> Wall sit for 30 seconds (back against tree)
>> 20 star jumps

ACTIVE REST: Jog for 3 minutes to a park bench.

PARK BENCH STATION 2: Step-Ups and Tap-Ups

>> 10 step-ups (right foot on bench)
>> 20 tap-ups (right foot on bench)
>> 10 step-ups (right foot on bench)
>> Switch to left foot on bench and repeat sequence.

ACTIVE REST: Jog for 3 minutes to a big tree.

TREE STATION 2: Tree Squeeze and Planks

>> Tree squeeze for 20 seconds.
>> Plank for 1 minute (arms straight).
>> Tree squeeze for 30 seconds.
>> Plank for 1 minute (arms straight).
>> Tree squeeze for 30 seconds.
>> Plank for 1 minute (arms straight).

SPRINT SEQUENCE FINISH: Sprint for 30 seconds with all-out effort. Recover with 60-second slow jog. Repeat 5 times.

COOL-DOWN

>> Jog at leisurely pace for a few minutes.
>> Flow from downward-facing dog to upward-facing dog a handful of times, focused on deep inhales and exhales.
>> 10 x plank to side lunge with twist (Hold each for 15 seconds.)
>> Lie in a figure-four stretch (loosens hips and glutes). Reset. Repeat on other side.

DONE! HIGH-FIVES ALL AROUND!

"The instructor needs to ensure the pricing is enticing, while conveying that the workout is worth the investment," she says, adding that a long-term customer paying $10 per session is better than a client who pays $30 but comes only once or twice. That's why Brown has her clients commit to a monthly contract.

Hirschy keeps her prices relatively low because she is competing with gyms that are open all day and provide all the equipment. She charges $64.50 monthly for three workouts per week.

5. COMMUNICATE LIKE A FRIEND, NOT A DRILL INSTRUCTOR

In a boot camp setting, it's a must for instructors to be involved with their clients and provide constant communication, focusing on an inspiring and encouraging tone. Some more tips:

BE INCLUSIVE. Brown says to definitely make sure you're addressing each student by name and not just focusing on your regulars or standouts. The number-one objective for a boot camp class is to make every single client feel like they're succeeding. "If participants feel forgotten or ignored, that's a disaster," she says.

SHARE INFORMATION. Clear communication is also needed outside of the class. Many boot camps set up Facebook pages or group chats, and Brown recommends having a mechanism in place to communicate in case of an emergency—or if, say, illness or car trouble delays the instructor.

It's also important to make sure that new participants know what to expect. "We tell them to come prepared for the weather and remind them that they might get wet or muddy—much different than in a gym setting," Brown says.

OFFER MOTIVATION. She also stresses that some of the challenges you present might push clients out of their comfort zone: "They might not love everything we do, but it's just like in life: You have to figure out how it's benefiting you and making you stronger."

That can-do attitude is also emphasized by goal-setting activities that many boot camps encourage, as well as accountability, which Hirschy believes is one of the main benefits of the outdoor boot camp formula. "When a client doesn't show, people ask where he or she is. People need accountability to stay on track," she says.

BOOT CAMP

Deliver Results!

When you combine these five goals with camaraderie and a sense of purpose, it's easy to see why outdoor boot camp instructors find it so rewarding to create an environment that allows participants to end each session with the confident feeling of "mission accomplished." **AF**

CATHIE ERICSON *is a freelance writer who specializes in health/fitness and business topics. She's also a group exercise class devotee, who loves boot camps—just not at the crack of dawn. Find her @cathieericson.*

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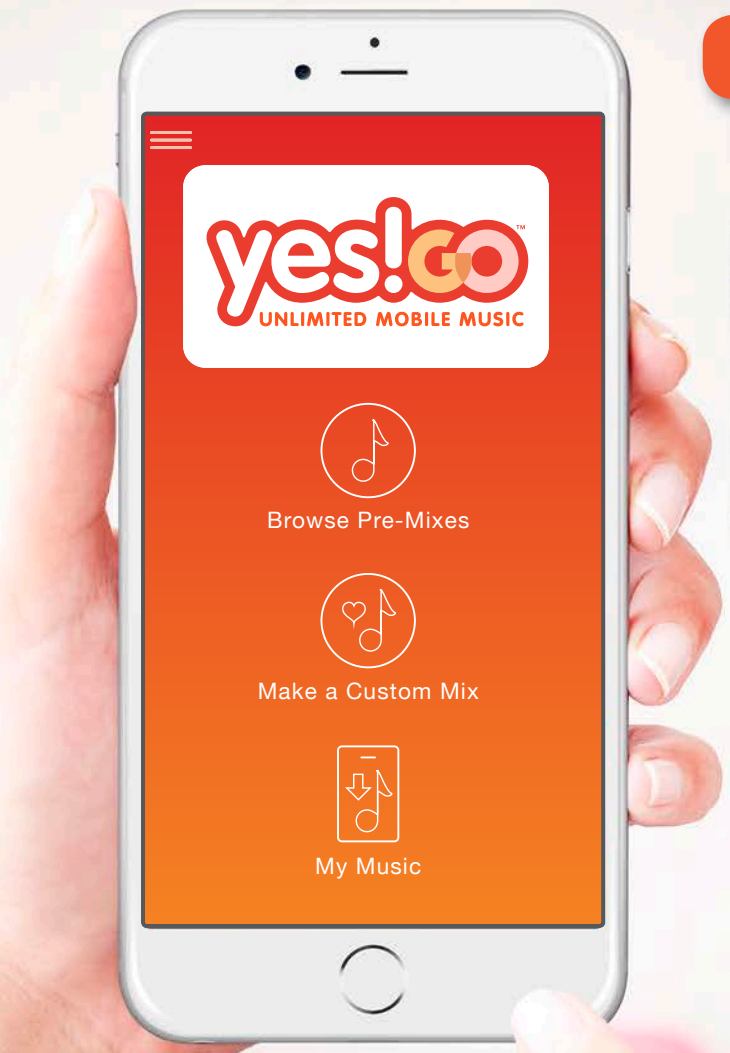
IT'S OKAY FOR CLIENTS TO BREAK RANKS: MODIFY AS NEEDED SO EVERYONE SUCCEEDS.

Class starts here!



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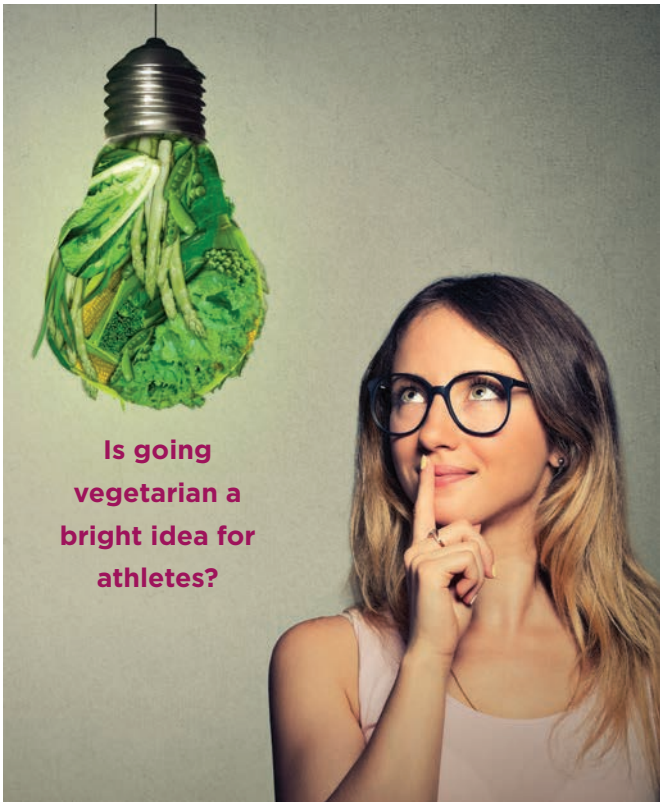
BY ALEXANDRA WILLIAMS, MA

Running (AND LIFTING) on Plant Protein

Whether you're an omnivore or not, it's increasingly likely that some of your clients will be switching from animal- to plant-based food sources, or at least will be changing the ratio they consume. In fact, Mintel Trends reported that 33% of German adults said they were actively cutting back on red meat in 2015, and 19% were incorporating more vegetarian foods into their diets. However, many athletes and trainers have concerns regarding the nutrient adequacy of a vegetarian diet. In what may come as a surprise, researchers at Arizona State now have evidence suggesting that not only can such a diet "adequately support strength and cardiorespiratory fitness development" but it "may even be advantageous for supporting cardiorespiratory fitness," especially among women.



Is going vegetarian a bright idea for athletes?

In a cross-sectional study published in the November 2016 issue of *Nutrients,* these researchers examined the impact of a vegetarian diet on athletic performance. They compared elite endurance athletes—27 vegetarian and 43 omnivore—by testing VO_2max on the treadmill, and strength during leg extensions. They also assessed dietary data using 7-day food logs.

Looking particularly at diet, the authors found that total protein intake was lower among the vegetarians, yet protein intake as a function of body mass didn't differ between the groups. Regarding the VO_2max tests, the women who ate a vegetarian diet had better results, while no significant difference existed between the male vegetarians and meat eaters. In the strength measurements during leg extensions, there was also no statistically significant difference between the two diet groups for either gender.

It's true that vitamin B_{12}, creatine, protein, carnitine, iron and zinc are generally less bioavailable in plant versus meat food sources; however, vegetarian diets are typically higher in antioxidants and carbohydrates, which can be beneficial for athletic performance. As stated by the study authors, who called for larger future trials, "many factors affect an athlete's sports performance, and there is no dietary substitute for quality training. However, our study contributes to the literature about cardiorespiratory and strength comparisons between vegetarian and omnivore endurance athletes, and may provide a rationale about the adequacy of vegetarian diets for sport performance."

IF YOU GIVE A KID A COOKING CLASS...

Kids in the Kitchen

If you want children to eat more produce, it may be time for a cooking class. The *Journal of Nutrition Education and Behavior* recently published research conducted by the University of Chicago that evaluated the effect of a "community-based, experiential cooking and nutrition education program" on the amount of fruits and vegetables consumed by students from low-income families. Researchers also hoped to examine the classes' impact on the kids' nutrition knowledge and cooking ability, as well as the family's attitudes and habits related to healthy eating.

The study invited 271 students (94% of whom were eligible for free/reduced lunch) in grades 3–8 to participate in a 10-week chef-led cooking class in their school cafeteria kitchen. Lessons covered a variety of healthy-eating topics, including meal composition and the health benefits and negatives associated with various foods. They also learned kitchen skills, including safety and sanitation, and life skills such as how to decipher a nutrition label. Parents and students completed surveys prior to the program's start and again 6 months after the final class. Questions measured nutrition knowledge ("With what should you fill half your plate?"), food preferences ("Number of times vegetables/fruits/chips/soda were consumed yesterday."), attitudes ("Willingness to try new foods.") and behaviors ("Frequency of student helping cook dinner at home.").

Results were statistically significant for "vegetable consumption," though the kids did not report liking these foods more. They also saw improvements in "increased nutrition knowledge," "cooking self-efficacy," and "communication about healthy eating." Areas that saw little to no change included chip and soda consumption and "adults cook dinner," though the "child helps cook dinner" number did show a slight increase. Also encouraging: Parents reported that their child's participation in the cooking program increased both family conversations about healthy food and the value the parents placed on eating as a family. The parents also reported a more favorable perception of their own ability to prepare a healthy meal.

While further studies and interventions are, sadly, needed to discover a way to help kids cut back on junk food and soft drinks, this study is very encouraging for those who work with children or have kids of their own.

GIVE PEAS A CHANCE (BEANS, TOO)

Recently, Scandinavian researchers reported that low-protein meals based on legumes (beans and peas) ranked higher in satiety (feelings of fullness) than high-protein meals centered on pork, veal or legumes (*Food and Nutrition Research, Oct. 2016*). The 43 healthy, young, normal-weight men did say, however, that the high-protein options were more of a feast for the senses, rating them higher in taste, aroma and appearance.

Restaurants Are Taking

YOU MAY HAVE HEARD that the U.S. Food and Drug Administration recently instituted requirements for certain chain restaurants (those with 20 or more locations) to post calorie information on menus and menu boards, as well as supply written stats on other nutrients (such as saturated fat, fiber, carbs, sugars, protein, and the like) upon request. Having this info readily available will make it somewhat easier for athletes, fitness professionals—everyone, really—to make informed decisions when they order. That's especially powerful when you consider that one-third of Americans' calorie intake typically occurs outside the home.

Though this statute was originally due to take effect on December 1 of last year, that date didn't give eateries the required amount of time to comply. So start looking for these updates around May 5, when the FDA begins enforcing the rules. Note: Affected locations include those that offer take-out, sit-down meals, drive-thru orders, serve-yourself buffets, fresh-baked goodies and movie popcorn, among others.

SPECIAL DIETS ARE ON THE RISE

In the recent Nielsen Global Health and Ingredient-Sentiment Survey, half of U.S. respondents reported adhering to a restricted diet—one that limits or prohibits certain foods or ingredients. It's only logical to expect that some of these consumers may be looking to fitness professionals for help regarding their grocery list. "Consumers want to eat more healthfully, but they can't do it alone," says Andrew Mandzy, the director of strategic health and wellness insights at Nielsen, which polled more than 30,000 people in 63 countries. The survey sought to understand how consumers feel about the foods and beverages available on store shelves, including those appealing to people with specific dietary restrictions.

WHAT'S ON YOUR CLIENT'S GROCERY LIST...AND WHY?

Noteworthy U.S. Stats

Among American respondents, the most common category of food restrictions that was reported was "sugar conscious," with 22% reporting a need to limit or avoid foods with sugar. "Low sodium" was next (21%), followed by "low fat" (19%) and "low carbohydrates" (15%). At just 8%, "wheat/gluten free" was lower than might be expected, given the recent media attention, while the category "lactose/dairy free" followed close behind at 7%. Tied at 6% each were "vegetarian" and "flexitarian" (a diet that's plant-based but includes occasional meats). At 4%, Kosher eaters also warrant awareness, as do those who follow a Halal diet, particularly for fitness pros who work with clients in or from the Middle East. Though just 3% of Americans follow a Halal diet, 48% of the African/Middle Eastern respondents said that they do, making it the most commonly cited diet in the survey. At 2%, vegan was the least popular of the special diets, which is an interesting statistic, considering it has garnered more media attention than the more common Halal diet.

Factors Contributing to Healthier Eating

It's helpful to note the four main reasons for a worldwide increase in attention on healthy, clean eating, according to the Nielsen survey:

GLOBAL GRAYING. The U.S. Census Bureau predicts that the growth of the world's older population will outpace that of the younger over the next 35 years.

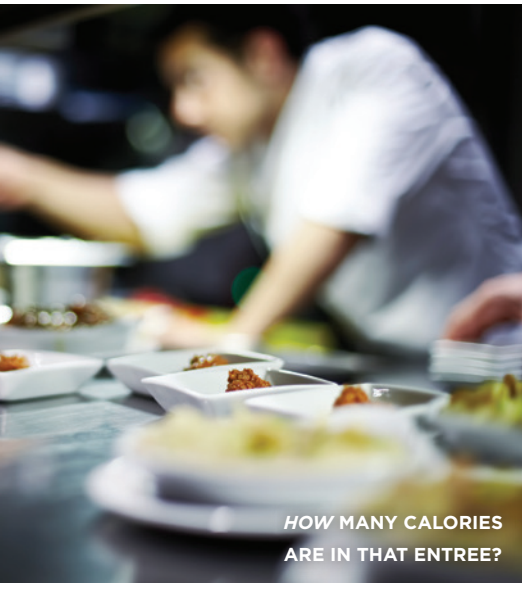
CHRONIC HEALTH CONDITIONS. The leading causes of death and disability—cardiovascular disease, type 2 diabetes, respiratory diseases and cancer—are expected to account for 73% of deaths globally by 2020, up from 60% in 2001.

FOOD AS MEDICINE. Seventy percent of the survey respondents said they actively make dietary choices to help manage or prevent health conditions.

EDUCATED CONSUMERS. Modern consumers want transparency regarding where and how their products are made, raised or grown. Nearly 75% feel better about companies that freely supply this information.

By staying informed about dietary trends and restrictions, you can be better prepared to answer client questions on these topics.

New Orders



HOW MANY CALORIES ARE IN THAT ENTREE?

The Economics of Food Selection

In collaboration with the U.S. Department of Agriculture's Food and Nutrition Service (FNS), the Economic Research Service (ERS) works to apply "behavioral economic theories and concepts to improving food choices." Translation: Together, they look at how finances affect what we put on our plate.

To support that goal, the ERS has established two university-based research centers: The New Duke-UNC-USDA Center for Behavioral Economics and Healthy Food Choice Research, and the USDA Behavioral Economics/Child Nutrition Research Initiative (BECR) at Cornell.

The BECR Center will "facilitate innovative research on the application of behavioral economic theory to healthy food-choice behaviors that would *enhance the nutrition, food security, and health of American consumers*," while the Behavioral Initiative focuses specifically on "identifying behavioral economic-based *strategies to encourage children to select and consume the healthy foods available to them* through USDA's National School Lunch Program and its other child nutrition programs."

The research that comes from these two centers will help fitness pros understand what behavioral interventions can best be used with clients to improve their dietary choices. Visit ben.cornell.edu for info from the children's research studies, and becr.sanford.duke.edu for news about BECR Center research findings.

BREAKFAST:

It's Not Just for Breakfast Anymore

According to the National Restaurant Association, 72% of all adults wish they could order breakfast throughout the day. This news might create opportunities for fitness pros who help clients with eating plans, sell food in their facilities, or are asking clients to create a food journal. Maybe it's time to expand your coffee offerings or make fresh juices available at the club all day. Perhaps it's an opportunity to recommend whole-grain toast or high-fiber cereal for "breakfast-supper" instead of fatty meat. And for those who like to cook, it could be the perfect time to offer a class on creating quick and easy breakfasts that can be packed for lunch or quickly assembled at dinner. **AF**

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Social Media and Body Image: #Fitspiration at Its Worst

HELP CLIENTS FOCUS ON REAL EATING AND EXERCISE CHANGE, NOT FANTASY PHOTO POSTS.

BY NANCY CLARK, MS, RD, CSSD

Food is fuel. But food is (seemingly) fattening. If you think you are too fat, the "obvious" solution is to go on a diet, restrict calories—and deprive your body of valuable nutrients. The problem is diets do not work. (If diets worked, then everyone who has ever been on a diet would be lean.) Plus, your body deserves better than to be denied and deprived of valuable nutrients.

No matter how many times you're told these truisms, just peeking into Instagram, Facebook or YouTube tells you something else: You need a perfect physique, and all these diet and exercise tips will help you get it. Unfortunately, social media posts have a powerful impact on how we see ourselves (flawed!)—particularly if we spend hours each day comparing ourselves to The Ideal Body. No longer do we ask mirrors on the wall who is the fairest of us all. Rather, we scroll through photos on smartphones to figure out which body we'd like to clone.

The trouble is that seeing image after image of skinny, toned bodies leads to diet pills, quick diet fixes, magic cleanses and myriad forms of food restriction that claim to fix any body flaw. None of this is healthy. Research on the impact of social media on women's body image verifies that exposure to images of attractive celebrities and peers harms their self-image (Brown & Tiggemann 2016). Comparing yourself to your friends, and friends of friends, on social media can easily put you in a bad mood, harboring negative thoughts about your body. The alleged fix: restricting food and exercising excessively.

#Fitstagrams = #NotScience

If you explore social media, you're bound to find "fitstagrams" that share the fitness journey of people of all ages, sizes and

SNAP DECISION: EATING DISORDERS MAY BE LINKED TO REPEATED EXPOSURE TO IDOLIZED ONLINE IMAGES.

shapes. Yes, these posts inspire some people—hence, the hashtag #fitspiration—and may motivate them to stay on track with a healthy eating and exercise program. But for others, the same messages can backfire, making them feel inadequate, anxious and preoccupied with perceived body flaws. Such reactions can pave the path to exercising too much and/or eating too little. Hence, it's no surprise that folks who spend too much time on social media are at risk for developing eating disorders (Cohen & Blaszczynski 2015). The drive for thinness can easily override the desire for health.

Social media messages aren't typically backed by science. And self-taught fitness gurus are not health professionals. Unfortunately, seemingly innocent messages can do unintended damage including bad mood and body dissatisfaction (Brown & Tiggemann 2016). You'll find militaristic posts ("You can have results or excuses, not both.") that grab attention but also breed inadequacy. A more compassionate post might read: "You can totally improve your health and fitness—and occasionally make excuses not to work out every single day. That's fine and normal" (Van Hare 2016).

#BodyDissatisfaction Studies

Body dissatisfaction is one of the most consistent and robust risk factors for developing an eating disorder. It is associated with low self-esteem and depression, which puts it at the core of our physical and mental health. A German study showed that almost half of 25- to 74-year-old women and one-third of men of the same age had body dissatisfaction (von Lengerke 2012).

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While most research on the effect of social media on body image has involved women, men also have body-image struggles. A survey of more than 2,000 Canadian male high-school students found that about 30% were dissatisfied with their bodies. Though some wanted to lose weight, the majority wanted to gain weight. Males tend to be more concerned about muscularity and how to gain bulk (Sampasa-Kanyinga et al. 2016).

Unfortunately, the thinness in social media posts is thinner than the women we see in real life. A survey of 600 Instagram images indicates the vast majority of pictures showed only one body type: thin and toned (Tiggemann & Zaccardo 2016). Repeated exposure to these idolized physiques leads us to believe that lean, toned bodies are normal, attainable, expected and central to attractiveness. The end result: overwhelming dissatisfaction with one's own body (Grabe et al. 2016). And we all know what that leads to: dieting that can be more harmful than helpful.

Getting to #BodyPositive

Social media doesn't have to erode people's body image. It can also be a way to rebel against social pressures to look a certain way. Michigan State runner Rachele Schulist did just that. She used Instagram to speak out about athletes and body stereotypes:

"The idea that you have to look a certain way and be thin to be a fast runner is bulls***. …. In our society, body image is such a hard thing due to social media because you can see a picture and just compare. I was constantly comparing. … I wasn't confident in how I looked. I'll be honest. I spent a lot of nights crying just because I was so anxious, sad and hungry all the time. It was hard—really hard."

After posting her story on Instagram, she received an overwhelming number of supportive responses. She had no idea how many other athletes shared her struggles, and she was able to give them a voice (Chavez 2016). Social media can also make a positive impact!

Changing Clients' #SelfTalk

As fitness leaders, you have a huge opportunity to teach people that humans come in differing sizes and shapes. The

dog kingdom has this figured out: The Saint Bernard does not look like a greyhound—nor does it yearn to be one. The Labrador does not envy the poodle, nor does the beagle want to be a Chihuahua. Each dog is proud of its size and genetics. Can't we be at least as smart as our dogs?

If your clients believe they have flawed bodies, tell them they might be wrong. We are all born with perfect bodies that are likely still perfect. After all, beauty comes from the inside out. If they feel ashamed because they wear clothing that is bigger than, let's say, size 2, they are still "size beautiful," not ugly and horrible as they may see themselves. An Instagram post from kellyufit says it all: "Eat like you love yourself. Move like you love yourself. Speak like you love yourself. Act like you love yourself. #SelfLoveWins."

Look for Body Love in the Right Places

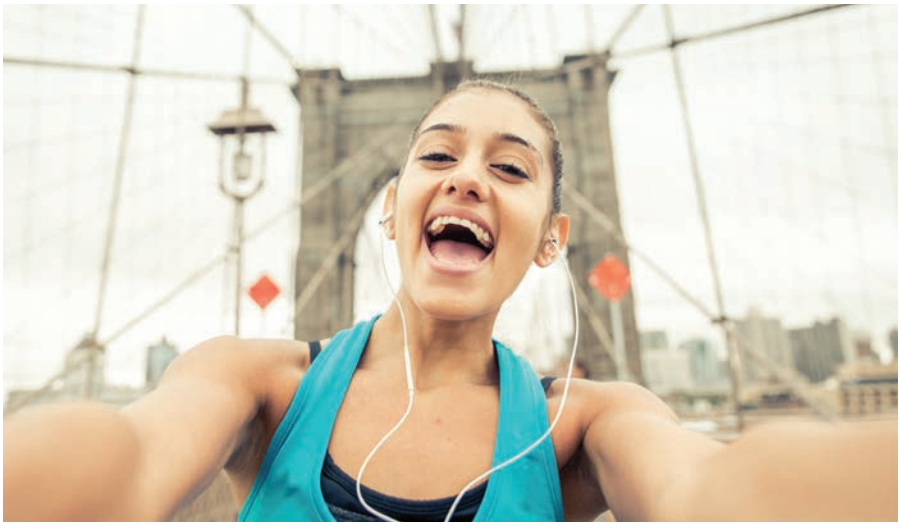
It's time to rebel against the idea that people need to look strong, lean, sculpted and shredded to be accepted. Instead of spending hours on social media, people who struggle with body image could better spend their time with a sports nutritionist who is a registered dietitian (RD) and can offer professional, personalized weight management advice. The referral network at www.scandpg.org can help you find a local sports RD.

For clients who cannot seem to break the social media habit, at least encourage them to look at positive social media options. Good news: These messages can have a positive impact. Body dissatisfaction among women and girls is decreasing. Boys and men, however, are still caught up in wanting to be more muscular (Karazsia et al. 2016).

Model true #fitspo on social media by liking and using posts that are more positive and approachable:

#ImNoAngel
#PlusIsEqual
#AerieREAL
#bodykindness
#fatpositiveparenting
#YouAreEnough
#curves
#loveyourbody
#bodybeautiful
#bigandbeautiful
#flauntyourflaws

Praise the effort put into eating well and exercising for health. Be comfortable modeling your authentic body; make no disparaging comments about your "fat thighs." Stop any fat talk and body shaming; focus on the positive. Encourage gratitude for all your body allows you to do.



Rethink Your #PepTalks

As a fitness leader, you may want to think twice before commenting on a client's body. Does "you look great" mean the client must have looked horrible before? Praise the effort put into eating well and exercising for health. Be comfortable modeling your authentic body; make no disparaging comments about your "fat thighs." Stop any fat talk and body shaming; focus on the positive. Encourage gratitude for all the good things your body allows you to do. And for certain, discourage your clients from spending hours on the internet looking for body love in the wrong places. **AF**

Sports nutritionist **NANCY CLARK, MS, RD, CSSD,** *has a private practice in the Boston area, where she helps fitness enthusiasts and competitive athletes win with good nutrition. Her popular* Nancy Clark's Sports Nutrition Guidebook *(Human Kinetics 2011) has sold over 600,000 copies and is a valued resource for both health professionals and active people. For more information, see www.NancyClarkRD.com*

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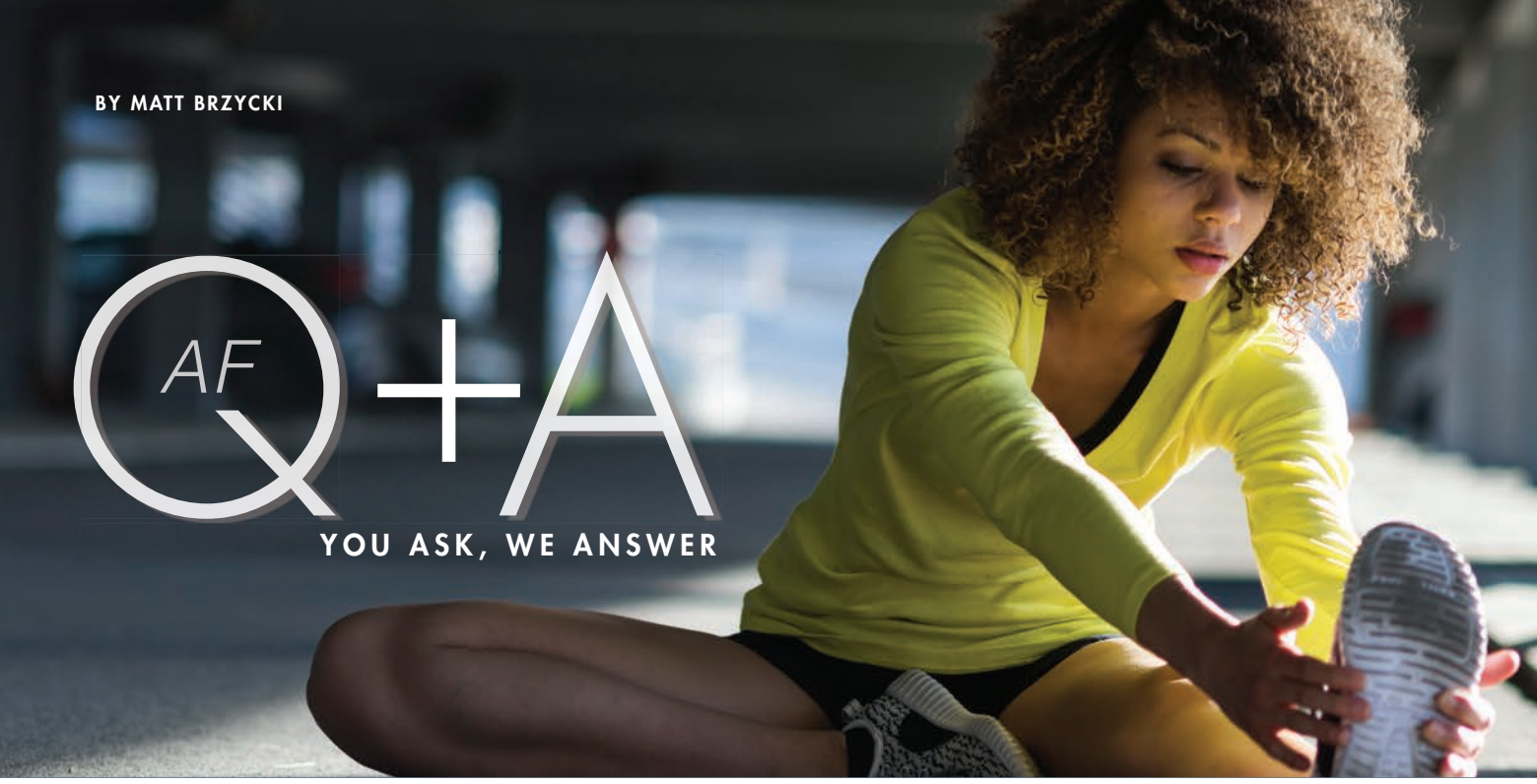
BY MATT BRZYCKI



AF Q+A

YOU ASK, WE ANSWER

NEW FINDINGS ON WEIGHT GAIN, CONCURRENT TRAINING AND MUSCLE CRAMPS.

WHAT CAN PREVENT MUSCLE CRAMPS ASSOCIATED WITH EXERCISE?

Exercise-induced muscle cramps are those that occur during or immediately after exercise. As is typical of all cramps, they are painful, spasmodic and involuntary contractions, and they can range in severity from mild to extreme. Some individuals are more susceptible to exercise-induced muscle cramps than others. Interestingly, males are more prone to these cramps than females.

The two most popular theories as to the cause of these cramps have been dehydration and an electrolyte imbalance. But the strongest scientific evidence shows a link between them and the way in which the body responds to neuromuscular fatigue. This may explain why the best way to treat exercise-induced muscle cramps is with stretching. (Oddly enough, voluntary hyperventilation has also been shown to be effective.) For preventing these cramps, a small study showed that Kinesio Taping is an effective means. Interestingly, little or no evidence supports any other strategies for cramp prevention or relief, including massage, use of compression garments, or ingestion of salt tablets, magnesium or pickle juice.

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IS THERE AN ASSOCIATION BETWEEN EATING POTATOES AND GAINING WEIGHT?

For years, potatoes have been one of the carbohydrates that have been fingered as suspects in the obesity epidemic. Recently, researchers conducted a systematic review of the relevant literature and found five studies that examined the relationship between potatoes and the risk of overweight/obesity in healthy adults. Two studies showed no relationship and, in two others, the connection was trivial. In one of those studies, increasing potato intake by 1 serving per day resulted in a gain of only about 1.28 pounds in 4 years. (The fifth study focused on french fries.) Potatoes that were boiled, baked or mashed were associated with the least weight gain, while french fries were associated with the most.

In short, potatoes *can* be part of a balanced diet. That's encouraging, since they are a good source of fiber, vitamin C, potassium, phosphorus and magnesium.

REFERENCE: Borch, D., et al. 2016. Potatoes and risk of obesity, type 2 diabetes and cardiovascular disease in apparently healthy adults: A systematic review of clinical intervention and observational studies. *The American Journal of Clinical Nutrition, 104* (2), 489–98.

DOES CONCURRENT TRAINING LIMIT INCREASES IN MUSCLE SIZE?

Many fitness enthusiasts engage in both strength training and aerobic training, separating these activities by minutes, hours or days. This is referred to as *concurrent training*. Individuals whose main focus is to increase muscular size often avoid aerobic training, believing that it will interfere with gains in muscle mass. But research actually shows otherwise.

In fact, there's growing evidence that concurrent training may *assist* with increasing muscle mass, provided that the volume and frequency of training aren't excessive and that recovery is adequate. One study that examined a 21-week training period found that concurrent training (with aerobic and strength training each twice per week on different days) produced nearly twice the increase in quadriceps size as compared with strength training alone. Also of interest: Low-impact activities such as cycling seem to be more favorable choices for aerobic training when an increase in muscle size is the primary goal. **AF**

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