

PERSONAL TRAINING QUARTERLY

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*Personal Training Quarterly* (PTQ) publishes basic educational information for Associate and Professional Members of the NSCA specifically focusing on personal trainers and training enthusiasts. As a quarterly publication, this journal's mission is to publish peer-reviewed articles that provide basic, practical information that is research-based and applicable to personal trainers.

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## CONTACT

Personal Training Quarterly (PTQ)  
1885 Bob Johnson Drive  
Colorado Springs, CO 80906  
phone: 800-815-6826  
email: [matthew.sandstead@nsca.com](mailto:matthew.sandstead@nsca.com)

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## RESISTANCE TRAINING—GENERAL VS. SPECIFIC EXERCISES

NICK TUMMINELLO

Research on a kinetic and electromyographic comparison of the standing single-arm cable press and bench press showed that performance is limited by the activation and neuromuscular coordination of torso muscles, not maximal muscle activation of the chest and shoulder muscles (4). In other words, like the bench press, standing single-arm cable press performance also relies on the strength of shoulder and chest musculature; however, what presents the major limitation in force generation is whole-body stability and equilibrium together with joint stability. The results of this study highlight the fact that although both are upper-body pushing exercises, the standing pushing action is more of a whole-body exercise, whereas the bench press is more of just an upper-body exercise. Therefore, the two pushing actions involve very different force production and neuromuscular coordination patterns. This has potentially important implications for exercise classification and program design for enhancing human performance, which is what this article highlights.

### STRENGTH TRAINING FOR ENHANCED PERFORMANCE IS ALL ABOUT TRANSFER

The goal of exercise programming for enhancing human performance is to maximize training transfer. What the research results discussed above demonstrate is that some exercises have an obvious and direct transfer into the improved performance of sporting actions and overall functional capacity, while other exercises offer a less obvious transfer, known as indirect transfer. Functional capacity can be summarized as how broad one's range of ability is; in other words, a person capable of performing a

broader range of specific tasks can be considered to possess a high functional capacity.

This article proposes that all resistance training exercises—not just pushing movements—can be classified as either “specific” or “general.” How to classify each exercise type and the unique benefits they offer is expanded upon below.

### WHAT ARE SPECIFIC EXERCISES?

Specific exercises have an obvious and direct transfer into improved performance and functional capacity because they are based on the principle of specificity. According to Dr. Everett Harman in the *NSCA's Essentials of Strength Training and Conditioning* (3rd Edition):

“The concept of specificity, widely recognized in the field of resistance training, holds that training is most effective when resistance exercises are similar to the sport activity in which improvement is sought (the target activity). Although all athletes should use well-rounded, whole-body exercise routines, supplementary exercises specific to the sport can provide a training advantage. The simplest and most straightforward way to implement the principle of specificity is to select exercise similar to the target activity with regard to the joints about which movement occur and the direction of the movements. In addition, joint ranges of motion in the training should be at least as great as those in the target activity,” (1).



It is important to note that most of the “assistance” exercises powerlifters use to help maximize their strength in the bench press, squat, and deadlift all replicate the specific force generation patterns of these lifts. Specific exercise applications for other sports also utilize the same wisdom. In short, specific exercise movements are essentially assistance exercises for the specific movement patterns that form the foundation of athletics. In the case of upper-body pushing exercises, the standing single-arm cable press would be classified as a specific exercise for an athlete that utilizes this movement pattern.

## WHAT ARE GENERAL EXERCISES?

General exercises are essentially conventional strength training exercises and may consist of compound or isolation movements using free weights, cables, or machines. In the case of pushing exercise applications, the bench press, incline press, and shoulder press could be classified as general exercises. Since these exercises do not necessarily reflect the specific force generation patterns of many common movements in athletics, the ability of these applications to positively transfer into improved performance potential is less obvious, which has led some personal trainers and coaches into mistakenly labeling them as “non-functional” and therefore not valuable. This is a false belief. Just because the exercise application is less specific to replicating the specific force generation patterns of a given target movement does not make the exercise less functional; it simply makes it more general. Both specific and general exercises offer a unique set of benefits that transfer into improvements in performance and overall functional capacity.

## BENEFITS OF SPECIFIC EXERCISES

The principle of specific adaptation to imposed demands (SAID) comes into play when stressors are applied such as biomechanical, neurological, and physiological stress (2). In other words, the adaptations to the training stimulus will be specific to the demands the training puts on the body. Specific exercise applications create a more ideal environment than general exercises for enhancing the specific force generation and neuromuscular coordination patterns of target movements in athletics such as the standing horizontal pushing environment.

The universal principle of specificity dictates that to maximize improvements in standing pushing performance, one must utilize standing pushing exercises such as the standing single-arm cable press (Figures 1 and 2) and the angled barbell press (Figures 3 and 4), or use pushing exercises like the one-arm push-up (Figures 5 and 6), that create whole-body stability and integrate the hips and core along with the upper body.

## BENEFITS OF GENERAL EXERCISES

In most cases, general exercises create a more ideal environment than specific exercises for stimulating increases in overall muscle strength and size. Therefore, these applications offer a general transfer into improvements in human performance by increasing muscle hypertrophy, motor unit recruitment, bone density, and connective tissue strength, which can reduce injury risk. It is widely recognized that improving overall strength (i.e., the ability to produce, reduce, and control force) through strength training methods can improve performance and functional capacity,

but the performance benefits offered by increasing muscle size (i.e., hypertrophy) via bodybuilding-style methods often go unrecognized.

Research has shown the performance benefits of increasing muscle hypertrophy and that horizontal pushing forces from a standing position under ideal mechanical conditions (i.e., the subject was able to maintain a stiff and stable body position to push from) are limited to 40.8% of the subject’s bodyweight, rather than the subject’s bench press (4).

This aspect of the study demonstrates the functional benefits of gaining muscle mass. The use of general exercise applications, like the bench press and dumbbell press along with isolation exercises, may improve one’s ability to produce more horizontal (and diagonal) pushing force from the standing position because one has more mass (into the ground) to push from (4). In other words, the more muscle mass an individual has, potentially the more ability they will have to produce pushing force (strength) when standing. Not only does this provide an athlete an advantage from a strength standpoint, but it also applies to avoiding getting knocked over or off-balance.

Additionally, a study of baseball pitchers found that increased bodyweight is highly associated with increased pitching velocity (6). This means that pitchers with larger body masses tended to throw the ball faster than those who weighed less. It is important to note that the sequencing of rotation required when throwing a baseball is a very similar total-body action to throwing a punch and to swinging an implement like a racquet, club, or bat. When the arms, which are responsible for the accuracy component of the individual sport skill of striking the target, are taken out of the equation, each of these athletic actions involve a force generation pattern that comes from the ground up (including the hips, trunk, and arms).

It is important to note that since sporting actions such as throwing and punching involve a coordinated effort of the entire body to summate force (a sum of the total individual muscles added together), increasing general muscle strength may increase the force producing capability of each muscle group. Therefore, allowing them to each make greater contribution to the summation force and increasing power production.

## COMMON CONFUSION ASSOCIATED WITH SPECIFIC EXERCISE APPLICATIONS

It is important to not confuse working on sporting skills with the specific exercise applications and working on improving specific force generation patterns, which transfer into target movements. Some strength and conditioning professionals have athletes and clients add load to their specific sports skill (such as attaching a resistance band to the end of a golf club or hockey stick and swinging it, or having a boxer shadow box while working against bands that are strapped around their back) and call these “sport-specific exercises” or “functional exercises.” Put simply, loading specific sports skills is a misapplication of the principle of specificity, and therefore a misunderstanding of how to properly use specific exercise applications.

# RESISTANCE TRAINING—GENERAL VS. SPECIFIC EXERCISES

The reality is that improving one's ability to perform certain sporting skills is not about replicating what that specific movement looks like, but rather it is about replicating the specific force generation patterns involved within that movement pattern. In other words, when the focus is only on what the exercise looks like, one can easily make the mistake of loading sport-specific skills instead of working on improving the specific force generation patterns used to perform sporting movements.

The problem with this is that the movement skills required in sports have accuracy components that are exact—not similar. For instance, research examining the validity of baseball players swinging a weighted bat before taking their turn to hit found that although a weighted bat does not influence actual swing speed, it may alter the batters' perceptions of bat heaviness and swing speed (3). Another study found the normal swing pattern of experienced batters was altered and their swing speed slowed down for up to five swings following a warm-up with a weighted bat (5).

One can test this by shooting 10 free throws with a regular basketball. Then, taking 10 more free throws with a 4 – 5 lb medicine ball. One will quickly find that the motor pattern used to throw the heavier ball is completely different, as the first few throws will likely come up short until adaptation to the new weight occurs. Then, if one goes back to a normal basketball and shoots 10 more shots, the first few shots are likely to go over the backboard because shooting the much lighter basketball involves a much different motor sequence than shooting the medicine ball.

## CONCLUSION

Both methods of training offer effective training options for improving important, interdependent fitness and performance components that the other type may miss. Therefore, a training program that combines both specific and general exercises will be more comprehensive and more likely to provide superior results than exclusively using only one type of training method. For example, performing the bench press can certainly provide benefits as a general strengthening exercise along with many other conventional pressing exercises. And exercises like one-arm push-ups, one-arm cable presses, and the angled barbell press make for effective specific exercises. These specific exercises complement the general exercises and may help in gaining benefits in the areas where the general exercise applications fall short.

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## ABOUT THE AUTHOR

Nick Tumminello is the owner of Performance University, which provides practical fitness education for fitness professionals worldwide, and is the author of the book "Strength Training for Fat Loss." Tumminello has worked with a variety of clients from National Football League (NFL) athletes to professional bodybuilders and figure models to exercise enthusiasts. He also served as the conditioning coach for the Ground Control Mixed Martial Arts (MMA) Fight Team and is a fitness expert for Reebok. Tumminello has produced 15 DVDs, is a regular contributor to several major fitness magazines and websites, and writes a very popular blog at PerformanceU.net.



FIGURE 1. STANDING SINGLE-ARM CABLE PRESS – START



FIGURE 2. STANDING SINGLE-ARM CABLE PRESS – FINISH



FIGURE 3. ANGLED BARBELL PRESS – START



FIGURE 4. ANGLED BARBELL PRESS – FINISH



FIGURE 5. SINGLE-ARM PUSH-UP – DOWN POSITION



FIGURE 6. SINGLE-ARM PUSH-UP – UP POSITION



# MEAL FREQUENCY AND WEIGHT LOSS—IS THERE SUCH A THING AS STOKING THE METABOLIC FIRE?

DYLAN KLEIN

Within the fitness community there has been a prevailing dogma over the past few decades which asserts that eating meals at higher frequencies throughout the day (e.g., 6 – 7 meals instead of the standard 3 – 4 meals per day) will impart additional and beneficial effects on metabolism and fat loss. This is colloquially referred to as “stoking the metabolic fire” and largely stems from epidemiological research dating back to the early 1960s that showed that there was an inverse relationship between meal frequency, bodyweight, and skinfold thickness—in other words, the more frequently a person eats, the leaner they become (8,11). More recently, and diametrically opposite to this viewpoint, another nutrition camp suggests a protocol that calls for the individual to fast for an extended period of time (usually 16 – 18 hr) and then eat their remaining calories within a given window that usually follows an exercise bout and lasts about 6 – 8 hr. This is commonly known as intermittent fasting (IF) and has gained a lot of popularity over the past 10 – 15 years, both from fitness enthusiasts and researchers alike. Within the concept of IF there are multiple different fasting protocols, most of which are aimed at reducing bodyweight. One such popular protocol entails complete fasting for 24 hr, followed by ad libitum (at liberty) feeding the following day—this is termed alternate day fasting (ADF). For the sake of simplicity, this review will regard IF as any dietary protocol that encompasses the lower end of meal frequency (i.e., 1 – 2 meals per day) with prolonged periods of fasting in between. While both methods of dieting—IF and the “stoking of the metabolic fire” diet protocol—promote weight loss, neither have ever defied the one ultimate requisite for a successful weight loss program: “calories in – calories out = weight loss (or gain).”

In other words, both ways of dieting work because they reduce caloric intake relative to expenditure and thereby induce a caloric deficit. If increased or decreased meal frequency were better for weight loss than the traditional 3 – 4 meals per day, then either of the two diets would have to affect one or both factors of weight loss (calories in or calories out). Assuming a sufficient and equal caloric deficit in both conditions, the caloric intake part of the equation can be eliminated and the focus can be turned solely on caloric expenditure. The remainder of this article will look at how

meal frequency, either increased or decreased, must affect caloric expenditure in order to affect weight loss to a greater extent than that of moderate meal frequency, and if this is even possible.

## CALORIES OUT

There are four factors that affect a person’s overall caloric or energy expenditure (EE) throughout the course of a day (24EE). Those factors are basal metabolic rate (BMR), the thermic effect of food (TEF), energy expended due to structured exercise (EEx), and non-exercise activity thermogenesis (NEAT) (13,19). Mathematically it looks like the following:

$$24EE = BMR + TEF + EEx + NEAT$$

If increasing or decreasing meal frequency does lead to an increase in metabolic rate, and therefore, an increase in fat loss, it would have to affect one of the above factors.

## MEAL FREQUENCY, EEX, AND NEAT

To date, there is no evidence to suggest that increasing or decreasing meal frequency, independent of caloric reduction and weight loss, has any effects on EEx or NEAT. However, it has been shown that reductions in bodyweight do promote an unconscious reduction in spontaneous activity and therefore a reduction in caloric expenditure (12,14,20). Thus, any diet that reduces bodyweight will likely produce a reduction in EEx and NEAT, unless the person consciously compensates by increasing their training volume. Theoretically, if someone increases their meal frequency, it is conceivable that they may increase their NEAT as a factor of preparing more food over the course of the day. Assuming that approximately 50 – 100 kcals are expended due to cooking, this could amount to a couple hundred extra calories burned over the course of 24 hr (13). However, this is completely speculative and most likely would have negligible effects on the overall caloric deficit from reducing caloric intake and a conscious increase in EEx.

## MEAL FREQUENCY AND BMR

Can altering meal frequency affect BMR? The main component in the average person’s 24EE, assuming a relatively low EEx and NEAT, is fat-free mass (FFM), which is the primary driving



force behind BMR (5,18). Thus, the majority of a person's 24EE is dictated by their BMR. Given that BMR is largely dependent upon FFM, an alteration in meal frequency would have to indirectly increase BMR through increases in FFM. This, however, is irrelevant given that there is no indication that eating smaller meals at a more frequent rate increases FFM to a greater extent than does eating an isocaloric and isonitrogenous diet with fewer but larger meals.

Recently, some research has explored 24-hr muscle protein synthesis (MPS) rates following a bout of resistance training with varying protein intake frequencies (two, four, and eight per day) of 80 g of whey protein (3,15). However, these studies were acute in design and did not lend good evidence that these protein intake protocols will lead to significant differences in muscle mass over time. Further, it is the moderate frequencies of protein consumption (four per day) that resulted in slightly higher MPS rates, compared to the lower (two per day) or higher (eight per day) frequencies.

With an isocaloric, isonitrogenous, and hypocaloric diet (1,200 kcal per day), one recent study showed that a diet consisting of six meals per day could better attenuate muscle losses than following a diet of two meals per day (1). However, a moderate meal frequency was not used in this study, so it is hard to say whether or not 3 – 4 meals per day could be just as effective as six. Nevertheless, despite this limitation, previous research has consistently shown little differences in overall weight loss with varying meal frequencies (ranging from 1 – 9 meals per day), which suggests that meal frequency does not matter assuming that adequate protein is being ingested (2,6,23,25,26).

Finally, some equivocal research suggests that BMR and TEF increase following exercise (17,21). Most of the research has been done in previously untrained men and women; therefore, extrapolations for highly trained, young individuals are speculative at best. As it stands, meal frequency does not appear to affect BMR to any significant degree.

## MEAL FREQUENCY AND TEF

Quite simply, TEF averages to approximately 10% of an individual's total caloric intake (7). Thus, if a given person ingests 2,000 kcal over the course of the day, approximately 200 kcal will be lost as heat through obligatory processes such as absorption, digestion, and storage (18). Interestingly, early research has shown that obese individuals actually have lower values of TEF (e.g., < 10%), possibly increasing their risk for weight gain (7,22).

Will altering meal frequency have any effect on TEF? According to current research, the answer is no (24). In fact, in the acute studies showing non-significant increases in TEF based on meal frequency, it was shown that lower meal frequencies actually yielded the higher values of TEF (4,16). This is completely opposite of what many bodybuilders and fitness enthusiasts believe. Thus, increasing or decreasing meal frequency does not affect TEF to any significant degree compared to moderate meal frequency.

## OTHER FACTORS TO CONSIDER WITH MEAL FREQUENCY

From a practical standpoint, increasing meal frequency is a great way to try to increase an athlete's caloric intake or to reduce a

dieter's feelings of hunger on a hypocaloric diet. Furthermore, there is research to suggest that the body anticipates mealtimes based on fixed meal patterns (10). This is manifested through an increase in ghrelin signaling in the brain and stimulating feelings of hunger because the person is "expecting" a meal at a certain time (10). Therefore, those who might be considering dropping the number of meals they eat per day may experience an initial increase in hunger due to the contribution of ghrelin on their previous feeding pattern. This will eventually subside after the body adapts to the new routine.

## CONCLUSIONS AND REMARKS

As shown, no strong evidence suggests that an increase or decrease in meal frequency leads to an increase in metabolic rate and body fat loss. Indeed, when calories are controlled and meal frequencies are varied (anywhere between 1 – 6 or more meals per day), there appears to be no significant difference in metabolic rate or overall fat loss. Thus, the real question regarding meal frequency is, "which diet protocol most fits with each individual's lifestyle and dietary preferences?" Nevertheless, whether an individual eats 1 – 3 times per day with prolonged fasts in between, or six or more meals spaced 2 – 3 hr apart, the effects on metabolism and fat loss will essentially be the same. BMR is dictated by FFM, and TEF is essentially unaffected by the frequency or timing of meals. Some aspects to consider when it comes to meal frequency are increased feelings of hunger with fewer meals during a hypocaloric diet and the possible increased feelings of hunger with a shift in feeding pattern from higher frequency to lower. Nevertheless, at the end of the day it comes down to personal preference and the individual's fitness and performance goals.

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## ABOUT THE AUTHOR

Dylan Klein earned his BSc in Nutritional Sciences, Dietetics from Rutgers University in 2013 where he is currently pursuing his Doctorate in Nutritional Biochemistry and Physiology. His research currently focuses on the molecular adaptations of skeletal muscle to exercise. In addition, Klein was also the Head Nutritionist for the Rutgers football team for the 2012-2013 season and the Assistant Nutritionist for the 2011-2012 season. In addition, he was the Head Nutritionist for the Rutgers' Army ROTC program from 2011 to 2013. Outside of his role as a nutritionist on campus, Klein also works with the lay public, both in person and via email/phone correspondence where he specializes in fat loss, muscle gain, and body re-composition. He also provides more information on website/blog called "Calories in Context."

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## CLINICAL APPLICATION OF ECCENTRIC TRAINING

JONATHAN MIKE, PHD, CSCS,\*D, NSCA-CPT,\*D, USAW

**D**ynamic muscular contractions can be characterized by two primary actions, concentric and eccentric contractions. A concentric contraction results in muscle shortening and occurs when the torque produced during a contraction exceeds the force applied to the muscle. Alternatively, an eccentric contraction occurs when the muscle is forcibly lengthened or elongated. Put another way, an eccentric contraction results when the force produced inside the muscle is less than what is applied to the muscle externally and results in active lengthening of the muscle fibers under some level of load (3). Eccentric training is mainly incorporated in an indirect manner by strength and conditioning professionals, and as a result, it is often underused and undervalued. Many discuss the aspect of eccentrics for its application to strength training and conditioning, and while the field of strength and conditioning certainly benefits from eccentric training, its application extends heavily into the clinical field as well. The purpose of this article is to address both the implications and clinical applications of eccentric training, how eccentric training affects the outcomes within various clinical populations, general exercise guidelines, and future directions within eccentric training and clinical populations.

### CLINICAL BENEFITS OF ECCENTRIC TRAINING

Incorporating eccentric training and proper programming into a resistance training program can facilitate numerous benefits that extend well beyond increases in strength and hypertrophy. This includes populations ranging from athletes desiring peak performance to clinical patients involved in physical rehabilitation as well as various other clinical populations. Eccentric exercise

is generally considered a highly effective mode of conditioning for strength and hypertrophy, but also extends these benefits to various clinical populations.

For example, research from LaStayo and colleagues documented that eccentric exercise has successfully been explored for cancer survivors, adults with metabolic disorders such as type 2 diabetes, and in neurological conditions such as Parkinson's disease and cerebral palsy in children (8). It has also been used in rehabilitation after knee surgery, in particular, replacement surgery for an injured anterior cruciate ligament (ACL) as well as knee arthroplasty (8). In addition, the energy cost of eccentric exercise is relatively low, despite the high muscle force being generated (8). The authors contend that the major defining properties of eccentric muscle contractions, the high force generating capacity of the muscle, and the low energy cost makes eccentrics an appealing strategy and represents a unique training environment and effective countermeasure for muscle wasting in many clinical populations where muscle atrophy is of concern (8). Further, the aging process results in a progressive and continual reduction in muscle strength. Research indicates that due to sarcopenia and other age-related muscle loss, muscle mass and strength decrease approximately 10% per decade after the age of 50 (5,14,16,18). For this reason alone, incorporation of eccentric training can be considered in an elderly population for its known ability to improve muscle strength and power while also reducing the risk for falls and potential bone fractures (9,10).

In addition, those within the clinical populations can benefit from incorporating eccentric training, particularly if the patient



exhibits a low level of strength and is just beginning a resistance training or rehabilitation program. For example, research involving patients with a medical history of stroke and chronic obstructive pulmonary disease demonstrated a significant preservation of eccentric strength when compared with age-matched healthy controls (4,13).

## **ECCENTRIC EXERCISE AND CLINICAL OUTCOMES**

Strength and conditioning professionals often have to develop resistance training programs to accommodate clients and athletes who may possess certain clinical conditions that need attention through eccentric exercise. Eccentric loads can be appropriately dosed and increased over time, meaning that eccentric exercise training can be used safely and effectively in rehabilitation of serious medical conditions and clinical applications. Therefore, this section will highlight a variety of clinical and rehabilitation circumstances in which eccentric training has had a beneficial effect or has been used as an effective treatment strategy.

### **TENDINOPATHIES**

Multiple studies have shown that eccentric exercise can be very promising as a potential non-operative training modality for tendinopathies. Although “tendonitis” is often used as a general term for tendon injuries, early work by Leadbetter previously defined tendonitis as a symptomatic degeneration of a tendon with vascular disruption and inflammatory repair (11). However, more recently, the term “tendinopathy” has been used as an all-encompassing term for tendon injuries. Over the past decade, eccentric training has been effectively used as a treatment for tendinopathies. An earlier study by Alfredson investigated eccentric exercise on diseased tendons, and the protocol used in that study has been used in many studies on eccentric training (2). In his original report, 15 athletes with chronic Achilles tendinosis performed three sets of 15 repetitions of eccentric-only bent-knee and straight-knee calf raises twice a day, seven days per week over a 12-week period. Subjects were told to work through pain, only ceasing exercise if pain became disabling. The load was increased in 5-kg increments with the use of a backpack that carried the weight once bodyweight was pain free. Researchers found that all 15 patients returned to pre-injury levels of activity (2). Additionally, the subjects had a significant decrease in pain with a significant increase in strength (2).

Similar results by Shalabi et al. found that eccentric training resulted in decreased tendon volume and decreased intratendinous signal, which correlated to improved clinical outcomes (17). Langberg et al. found similar results in a population of soccer players (7). Due to the incidence of injury and emphasis on recovery, it is advised that the load should not be determined by a one-repetition maximum (1RM). For a training application, in general, load and volume should be progressed gradually and should be dictated by the amount of pain the client or athlete experiences.

### **ELDERLY POPULATION**

Eccentric training is an effective training strategy for elderly exercise-intolerant individuals and those at risk of falling and sustaining injury. LaStayo et al. found greater strength increases following eccentric training that resulted in improved balance, stair descent, and risk of falling when compared to traditional resistance exercise (9). It should be noted that the significant increases in

strength in eccentric training groups in the elderly population seem to be linked to an increase in fiber cross-sectional area (9).

The use of heavier eccentric loading is an appealing strategy to help combat the age-related muscle and type II fiber loss that is often accompanied by old age. However, the value of eccentric exercise has often been questioned considering those individuals unaccustomed to this type of exercise can likely experience muscle soreness and muscle damage. This is of particular concern in the elderly or in patients with neuromuscular disease; although, many believe the response to damage may be overstated. Nonetheless, recently, Lovering and Brooks concluded that exercise (including eccentric components) is generally recommended in elderly populations; however, there are currently no common recommendations for all individuals, and guidelines for eccentric exercise are still lacking (12).

### **OSTEOPENIA**

It has been suggested that eccentric training, due to its high force production, also yields increases in bone adaptation (1,6,15). Hawkins et al. found that following 18 weeks of maximal effort eccentric exercise on one leg and concentric exercise on the other leg (using a leg dynamometer), 12 women between the ages of 20 – 23 significantly increased mid-femur bone mineral density by 3.9% in the eccentrically trained leg, while a non-significant increase of 1.1% was noted in the concentrically trained leg (6). This finding suggests that eccentric training elicits a greater osteogenic stimulus than concentric resistance training. While these results show a positive response on bone from eccentric training, additional investigation into the osteogenic effects and potential outcomes of eccentric training is needed.

## **ECCENTRIC TRAINING GUIDELINES**

While the clinical benefits of eccentric training extend beyond what has been discussed in the previous sections, it is important for the strength and conditioning professional to apply eccentric training guidelines to potential clients that experience any number of the clinical conditions outlined, as long as it is within the professional's scope of practice. Suggested progressions and guidelines are provided depending on the training background and abilities of clients. LaStayo and colleagues suggest the following (8):

- An eccentric exposure-adaptation phase must be employed initially to avoid unnecessary muscle damage; therefore, this phase can help to prepare the muscle to experience the higher forces that often accompany the progressive eccentric negative work phase (Table 1).
- In general, the expectation is that the loading goal during the progressive eccentric work phase should exceed an isometric maximum load, and the eccentric exercise duration should be performed for up to 20 – 30 min per session, 2 – 3 times per week for 6 – 12 weeks. Repetition and set ranges will need to be determined according to each individual's ability and goals.
- During the progression and incorporation of eccentric work, the goal should be to progressively resist higher loads for prolonged periods. Specifically, the exercise load being resisted should surpass the participant's isometric

# CLINICAL APPLICATION OF ECCENTRIC TRAINING

maximum load (i.e., the load should exceed that which can be moved concentrically).

- Eccentric exercise can be implemented with traditional resistance exercise equipment or with the use of bodyweight alone. In addition, functional weight-bearing activities, such as moving from standing to sitting, can be used as an eccentric activity.

## CONCLUSION

A number of eccentric training strategies exist that can allow for a wide variety of applications across nearly all populations, particularly in the case of clinical patients. From a clinical perspective, in terms of eccentric exercise and its acute and chronic effects on healthy and diseased tendons, evidence does suggest eccentrics as a first line of treatment for some conditions. The strength and conditioning professional should assess each client individually in order to potentially incorporate eccentric training into a client's training program.

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## ABOUT THE AUTHOR

Jonathan Mike completed his PhD in Exercise Physiology from the University of New Mexico in Albuquerque, NM. He received his Bachelor's and Master's degrees in Exercise Science from Western Kentucky University in Bowling Green, KY while also serving as a Strength and Conditioning Assistant. He also worked at the University of Louisville as a Strength and Conditioning Assistant and has been a frequent contributor and guest host of several websites and radio shows. He is a member of the National Strength and Conditioning Association (NSCA) Exam Development Committee for the NSCA-Certified Personal Trainer® (NSCA-CPT®), Job Analysis Committee, and a member of the Personal Trainers Special Interest Group (SIG). Mike has authored or coauthored various works related to sports nutrition and strength and conditioning. Further, he has been published in the *Strength and Conditioning Journal* and has both authored and coauthored multiple book chapters in areas of sports nutrition and strength training and conditioning. His research interests include strength and power development, functional movement, exercise and energy metabolism, and areas of sports nutrition. In addition, he writes for numerous fitness and bodybuilding consumer magazines and outlets.

**TABLE 1. SAMPLE PROGRESSION OF TOTAL VOLUME OF ECCENTRIC WORK ON ECCENTRIC ERGOMETER OVER 12 WEEKS (8)**

EXPOSURE-ADAPTATION PHASE (WEEKS 1 – 2)		PROGRESSIVE ECCENTRIC WORK PHASE (WEEKS 3 – 12)
<b>Frequency</b>	2 – 3 times per week	2 – 3 times per week
<b>Duration</b>  *Duration may be substituted with sets and repetitions of different eccentric movements	5 – 8 min per session	10 – 12 min per session (weeks 3 – 4)
		14 – 16 min per session (weeks 5 – 6)
		18 – 20 min per session (weeks 7 – 12)
<b>Intensity</b>	Very light	Fairly light (weeks 3 – 5)
		Moderately hard (weeks 6 – 12)



# THE IMPORTANCE OF SETTING UP SYSTEMS FOR A SMALL FITNESS BUSINESS

JOSH LEVE

Small fitness business owners have to juggle everything from marketing to accounting to human relations, all on top of the programming and training of their clients. So how do they do it all? How do they make it all work while generating the revenue necessary to pay the bills today and live the lifestyle they want tomorrow?

## SETTING UP SYSTEMS

While it is one thing to map out sales and marketing strategies, they will not work without the systems in place to take a small business to the next level. It is not uncommon to hear members state that they do not have enough time to implement said strategies. A typical rebuttal to this is “you need to find the time.” “Not having enough time” is the excuse clients give personal trainers. And just as a personal trainer will tell their clients, “finding the time” is a management skill and all about setting priorities.

For example, a child runs into his father’s office at home and says, “Dad, can you come out and play with me?” The father says, “No, not right now son, I’m busy.” Then, a while later, the child returns and says, “Dad, I hurt myself real bad, I’m bleeding.” The father now redirects his attention to his son because it has now become a priority; he needs to take action. The same thing needs to be done when it comes to setting up systems in a small fitness business.

Simply put, creating systems can help to build a business. They encompass just about everything and they are everywhere. Here is a great exercise to get started: for a full week, take notes on every single thing that is worked on. This means how long work-related tasks take to complete, and the number of tasks in a given week. This could result in a list of nearly 20 or more, when finished. Some common examples may include:

- Cleaning
- Accounting
- Training
- Phone calls/emails
- Marketing

- Teaching classes
- Recruiting
- Laundry
- Miscellaneous

Upon completion of this list, it is now time to begin strategizing and asking the following questions: Can certain tasks be delegated to others? Are there any business partners who could be doing more? Would it be more efficient to outsource certain tasks such as accounting or cleaning?

Once you have begun to delegate and move things around, complete this exercise again after a month and compare it to the previous list. How have the changes affected the budget and time usage? Remember, it is important to continue to increase efficiency of a small fitness business, especially if the plan is to expand the business to take on more classes, personal trainers, programs, etc.

Another exercise is to look at the business from the outside in. How is the brand of the business being represented? Here are some examples of questions that should be asked about a small fitness business:

- When a new member or client signs up, do they receive a welcome pack, an outline of the mission statement, and a list of core values? What can a new or returning client expect next?
- When someone walks in the door, how are they greeted? What information do they receive? What is their experience? How does it compare to the competitor down the street?
- When someone answers the phone, is it the same welcome greeting over the phone as in person? What is the process when someone leaves a message? Does it take a long time to return the message?



These types of questions should become part of a larger goal within the business. Every action item needs to have a clear system to ensure that the desired results are attained.

## CANCELLATION/RESCHEDULING POLICY

One of the biggest headaches that comes with being a personal trainer, coach, or studio owner is the issue of how to effectively handle cancellations. Unfortunately, most people in this field have a lot of experience with this situation. All small fitness businesses should have a system in place that protects the personal trainer and the business from this scenario. From personal experience, what I have seen work the best is a 24-hour cancellation policy that is sent, in writing, from the client to the personal trainer. If they give notice less than 24 hours in advance, then they get charged. It should be that simple and straightforward.

In addition, the personal trainer should never fall victim to the “nice guy” mentality in terms of cancellation. This could happen when a client tries to guilt the personal trainer into not charging them for a cancelled training session.

The Association of Fitness Studios (AFS) spoke with numerous personal trainers, coaches, and studio owners to determine four ways to handle late cancellations:

1. It's all about setting up expectations from the start. It's on the bottom of every email I send underneath my signature. If there's no confusion about the policy, they won't question it.
2. I say that this policy is in place to “protect my time.” The most important thing to say though is that judging cancellations on a case-by-case basis would be completely unprofessional and compromise my integrity. Because otherwise your clients will think you will make a special exception for them because their situation is special.
3. Here is a rough outline of what I say to clients (sometimes I soften it up if I am talking to clients I know well): “as you know, we have a 24-hour cancellation policy here for all training sessions so you will be charged for the session you missed today. I set time aside and prepare for each appointment I have and I am only paid for the appointments that I complete, so, this policy is in place to protect my time. Judging cancellations on a case-by-case basis would be completely unprofessional so I apply the policy uniformly and fairly to all my clients. I am sure you can understand how important this is in terms of protecting my professional integrity.”
4. In an attempt to be as understanding and flexible as possible, I always allow my clients to make up the session within the week that they cancelled if there is a time that works conveniently for both our schedules.

## CONCLUSION

It takes a lot of work, but sometimes all that is necessary is to patch broken systems or create new systems that are individualized for the specific small fitness business. Remember, systems can build a business; however, how quickly it grows is up to the personal trainer and the staff of the business.

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## ABOUT THE AUTHOR

*As Co-Founder and President of the Association of Fitness Studios (AFS), Josh Leve is responsible for strategic business operations of AFS. Leve brings more than 10 years of sales, consulting, advertising, marketing, operations, and retail fitness experience to AFS. Prior to AFS, Leve successfully turned around the financial performance of three different big box facilities in Chicago while providing consultative services for smaller fitness studios. His grandfather Mort (a member of the Handball Hall of Fame) founded the National Court Clubs Association (NCCA), and was Executive Director of the U.S. Handball Association (USHA). His father Chuck (a member of the Racquetball Hall of Fame) and 40-year industry veteran, was Executive Director of the U.S. Racquetball Association, a founding employee of the International Health, Racquet, and Sportsclub Association (IHRSA), and developer of six fitness start-ups including IHRSA. Prior to his health club experience, Leve worked with Corbett Accel—the largest healthcare communications/advertising company in the U.S.—where he launched products for major pharmaceutical companies such as Merck, Bristol Myers Squibb, and Sanofi-Aventis. Leve holds a BA in Journalism from the University of Kansas.*



# TAKING THE TRAINING OUTDOORS

CHAT WILLIAMS, MS, CSCS,\*D, CSPS, NSCA-CPT,\*D, FNSCA

The summer months create an excellent opportunity for personal trainers to take advantage of the warmer weather and to refresh and change up the program design for their clients. Outdoor workouts can be tailored to specific clients and incorporated into their training regimen or added on as supplemental workouts that can challenge multiple clients in a group training setting. The overall goal of group training should be to promote team building, while also providing support, a sense of accomplishment, and motivation from positive feedback. The program design can focus on specific fitness components and motor skills or a circuit-style program with various stations encompassing all aspects of training variables. Here are just a few examples of training goals that may be included into a circuit: total body power/strength and endurance, lower body power/strength and endurance, upper body power/strength and endurance, core, and speed/agility. The difficulty of the circuits can be tailored in many ways regarding intensity and volume. These two variables can be manipulated by changing up sets, repetitions, distances, weights, and the amount of time at each station (Table 1).

The following exercises are just a few examples that can be incorporated into a training program that is performed outdoors. There can be some crossover between power, muscular strength, and muscular endurance due to the different pieces of portable equipment that are used in the circuits. There are some limitations due to not using the large pieces of strength and conditioning equipment that are not practical to transport to an outdoor setting.

## POWER/MUSCULAR STRENGTH

### SLED PUSH AND SLED PULL WITH HARNESS (FIGURES 1 AND 2)

When performing a sled push, hold the handles or base of the sled with the arms fully extended and drive the legs while extending the knees and hips. Then the sled can be pulled back to the starting point using the attached harness. Keep the shoulders back and keep the chest up while driving the legs back with hip extension and staying low to the ground in a partial squat position (5).

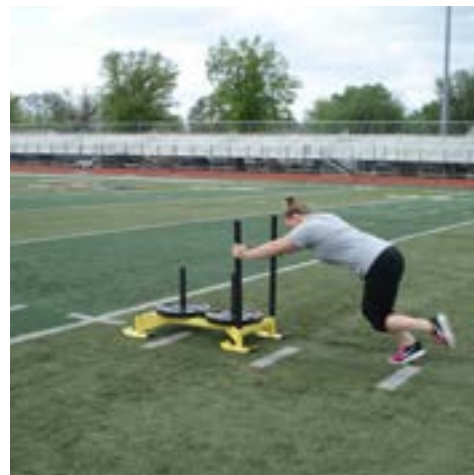


FIGURE 1. SLED PUSH



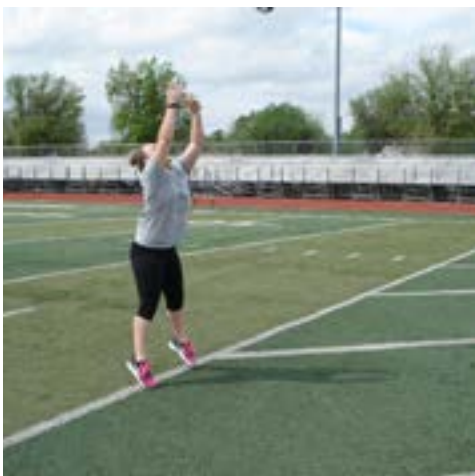
FIGURE 2. SLED PULL WITH HARNESS



**FIGURE 3. SCOOP TOSS SLING – START**



**FIGURE 4. SCOOP TOSS SLING – TOSS**



**FIGURE 5. SCOOP TOSS SLING – RELEASE**

### **SCOOP TOSS SLING (FIGURES 3 – 5) AND ROTATION POWER TOSS WITH MEDICINE BALL/SLING**

Start with the medicine ball between the feet and in one quick explosive movement, squat down and hold the sling in between the legs. Swing the arms forward and explosively jump straight up, launching the ball as far as possible at approximately 45 degrees. This movement can also be performed with a reverse scoop toss as well. The rotation power toss starts by squatting and bending the knees, then decelerating at the bottom of the movement and explosively rotating the upper body through the transverse plane to release the sling and the ball.

### **MUSCULAR STRENGTH/ENDURANCE**

#### **CHEST PRESS (MANUAL RESISTANCE) (FIGURE 6)**

**Trainer:** Start by standing behind the trainee with feet staggered or shoulder-width apart, holding the center anchor of a resistance band or suspension trainer in order to serve as the anchor for the trainee. The handle should be held directly behind them (2).

**Trainee:** Holding both handles, start with a staggered stance with feet shoulder-width apart, and elbows out to the side and just below shoulder-height with the palms facing down. Press one hand forward, controlling the resistance with the other arm. Repeat the movement with the other arm by pressing the other handle forward. Be careful not to go back too far as this can place strain on the front of the shoulder (2).



**FIGURE 6. CHEST PRESS (MANUAL RESISTANCE)**



## TAKING THE TRAINING OUTDOORS

### PARTNER ROWS (MANUAL RESISTANCE) (FIGURE 7)

Trainer: Start with feet staggered or shoulder-width apart. Hold center point of a resistance band or suspension trainer in order to serve as the anchor for the trainee. The anchor should be held directly in front of them.

Trainee: Start with the feet shoulder-width apart with one handle in each hand and the palms facing each other. Pull one arm back in a rowing motion along the side of the body and then repeat while alternating with the other arm (2).



FIGURE 7. PARTNER ROWS (MANUAL RESISTANCE)

### PUSH-UPS (ON GLIDERS) (FIGURES 8 AND 9)

Start in a push-up position with the body off of the ground and feet on the gliders. Lower the body to the ground and slide the feet laterally to the sides of the body while maintaining a flat back and keeping the spine neutral. Perform a push-up and bring the feet back to the center supporting the body in the starting position.



FIGURE 8. PUSH-UPS (ON GLIDERS) - START



FIGURE 9. PUSH-UPS (ON GLIDERS) - FINISH

### BATTLE ROPES (SQUAT SLAMS) (FIGURES 10 AND 11)

Start in a squat position holding a rope in both hands. Begin the movement by flexing at the shoulders and raising the rope above the head while extending the lower body. Simultaneously squat and slam the rope to the ground (3).

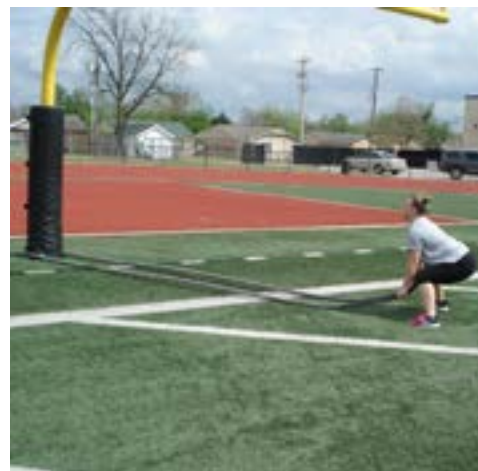


FIGURE 10. BATTLE ROPES (SQUAT SLAMS) - START AND FINISH



FIGURE 11. BATTLE ROPES (SQUAT SLAMS) - TOP OF MOVEMENT



**BATTLE ROPES (WAVES) (FIGURE 12)**

Start in a squatting position while grasping the rope in each hand. In a quick powerful motion, alternate slamming the rope to the ground to create a wave like motion with the rope. Maintain the same torso position throughout the entire exercise (3).



**FIGURE 12. BATTLE ROPES (WAVES)**

**BATTLE ROPES (CIRCLES) (FIGURES 13 AND 14)**

Start in a standing position with the knees slightly bent, grasping the rope in each hand. Swing the rope to the side of the body in a circular motion and squat down slightly as the rope is slammed downwards. The circles will start above the shoulder and go back down to approximately thigh level.



**FIGURE 13. BATTLE ROPES (CIRCLES) – TOP OF CIRCLE**



**FIGURE 14. BATTLE ROPES (CIRCLES) – BOTTOM OF CIRCLE**

**CORE****PARTNER STANDING ROTATIONS (MANUAL RESISTANCE) (FIGURES 15 – 17)**

Trainer/Trainee: During the rotations, both individuals will be performing the same type of movement. They will be facing the same direction standing side by side. Each of them will have two handles of a resistance band or suspension trainer directly out in front of their chest. They will simultaneously rotate to the same direction, one will perform the concentric action and the other will perform the eccentric action to apply the resistance (2).



**FIGURE 15. PARTNER STANDING ROTATIONS (MANUAL RESISTANCE) – START**

## TAKING THE TRAINING OUTDOORS



**FIGURE 16. PARTNER STANDING ROTATIONS (MANUAL RESISTANCE) – TO LEFT**



**FIGURE 17. PARTNER STANDING ROTATIONS (MANUAL RESISTANCE) – TO RIGHT**

### **STANDING CHOPS (MEDICINE BALL) (FIGURES 18 – 21)**

The trainee will stand with arms extended to the side of the body. They will then perform an upward chopping motion from the hip to the opposite shoulder. The trainee will then raise the ball above and slightly behind the head, which eccentrically loads the core. Then, follow through by slamming the ball to the ground under control (1).



**FIGURE 18. STANDING CHOPS (MEDICINE BALL) – START**



**FIGURE 19. STANDING CHOPS (MEDICINE BALL) – ACROSS SHOULDER**



**FIGURE 20. STANDING CHOPS (MEDICINE BALL) – ABOVE HEAD**



**FIGURE 21. STANDING CHOPS (MEDICINE BALL) – FINISH**

#### **STANDING ROTATIONS (MEDICINE BALL) (FIGURES 22 AND 23)**

The trainee and the trainer will both be standing facing the same direction with the trainee in front of the trainer. The trainee will rotate the core through the transverse plane allowing the hips to move freely with arms extended to catch the ball. Then the trainee will explosively toss the ball back to the trainer. The trainer will return the ball to the other side and repeat the alternating pattern (2).



**FIGURE 22. STANDING ROTATIONS (MEDICINE BALL) – START**



**FIGURE 23. STANDING ROTATIONS (MEDICINE BALL) – RELEASE**

#### **SPEED/AGILITY**

##### **MARCHING KNEE DRIVES (FIGURE 24)**

Arms (elbows) will be held close to the body with the arms extended and a firm grasp on the medicine ball to control any force generated from the knee drives. Start by marching, then drive the knee into the medicine ball by raising the thigh so it is parallel to the ground. Alternate each knee drive to the medicine ball in a rhythmic tempo. As coordination and balance improves, strike the ball with more force and/or at a faster tempo. This can be performed for repetitions or distance (4).

Note: Once the marching knee drive is mastered, the trainee can perform a knee drive punch to the trainer. The trainer will return the ball while both individuals are moving in sequence forwards and backwards simultaneously.



**FIGURE 24. MARCHING KNEE DRIVES**



# TAKING THE TRAINING OUTDOORS

## RESISTED SPRINTS (FIGURE 25)

Start with the trainee standing in front of the trainer. The trainee will have the strap around his/her waist and the trainer will apply resistance from behind by holding both handles of the resistance band or suspension trainer once the trainee starts to run. Appropriate resistance should be applied so that the trainee can still maintain proper sprinting technique and form.



FIGURE 25. RESISTED SPRINTS

## 7-CONE DRILL (FIGURES 26 – 28)

The trainee will start in the middle of seven cones that are set in a straight line (spanning approximately 10 yards total). Start by sprinting to the far cone to the left or right, then decelerate and explosively drive off the foot back across to the far cone on the opposite side. After reaching the far cone on the other side the trainee will sprint to the second farthest cone. This movement pattern will be replicated until the individual reaches the middle cone, which completes the drill.



FIGURE 26. 7-CONE DRILL - START



FIGURE 27. 7-CONE DRILL - TO LEFT



FIGURE 28. 7-CONE DRILL - TO RIGHT

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TABLE 1. PROGRAM DESIGN CIRCUIT EXAMPLES

CIRCUIT	EXERCISE	SETS/REPS	TYPE
<b>Circuit 1</b>	Scoop toss slings	3 x 8	Lower body power
	Chest press/partner row (manual resistance) combos	3 x 20 s	Upper body muscular endurance
	Partner standing rotations (manual resistance)	3 x 10 each side	Core
	Marching knee drives	3 x 20 yards	Speed development
<b>Circuit 2</b>	Sled pushes	3 x 25 yards	Lower body power and strength
	Push-ups (on gliders)	3 x 10	Upper body strength/endurance
	Standing chops (medicine ball)	3 x 6	Upper body power/core
	Resisted sprints	3 x 25 yards	Linear speed
<b>Circuit 3</b>	Sled pulls with harness	3 x 25 yards	Lower body power/strength
	Battle ropes circuit: squat slams, waves, and circles	3 x 10 each	Upper body muscular endurance
	Standing rotations (medicine ball)	3 x 8 each	Upper body power/core
	7-cone drill	3 x 2	Speed and agility



## HELPING MOTIVATE CLIENTS—APPLICATIONS OF THE SELF-DETERMINATION THEORY

BROOK SKIDMORE, MS, CSCS

**P**ersonal training can be extremely rewarding, particularly when a client is just starting to exercise for the first time. However, it can be equally frustrating when clients give up and stop exercising, despite their initial enthusiasm and worthy intentions. Why do some people exercise on a regular basis (even when the weather is bad or when they are tired, stressed, or busy), while others just cannot seem to stick with a regular exercise routine? A personal trainer is in a prime position, not only to provide a client with a structured and safe workout routine, but also to provide the client with tools and strategies to enhance motivation and to decrease the likelihood of giving up. The self-determination theory (SDT) provides a greater understanding of how to implement such strategies and incorporate them as fundamental components of a training program (3). The purpose of this article is to provide practical suggestions based on the SDT that personal trainers can use to help their clients become and stay motivated to stick with their exercise routine.

### OVERVIEW OF THE SDT

Understanding the basic principles of motivation is essential for personal trainers, especially with regard to clients who are starting to exercise for the first time, or who are trying to become more active after a break from physical activity. This point becomes particularly more salient when considering that 50% of people who start a new exercise program will drop out within six months (4). What can personal trainers do to prevent their new clients from falling prey to this alarming common scenario?

Personal trainers might be tempted to attempt to motivate clients with external rewards, such as t-shirts, selecting their favorite

exercise, or giving permission to eat something they should not eat. Unfortunately, such external rewards rarely have the desired effect of promoting increased, lasting intrinsic behavior (1). According to motivation researchers Richard Ryan and Edward Deci, there are three basic psychological needs that must be met in order for a person to be sufficiently motivated to take action in a volitional behavior (3). Specifically, those needs are autonomy, competence, and relatedness; these three needs make up the primary components of the SDT (3). A description of these three needs can be found in Table 1. Because people are naturally inclined to fulfill these three needs, if any of the needs are not being fulfilled, it can threaten a person's motivation to pursue a particular task, including sticking to an exercise program.

In regards to autonomy, the SDT further delineates different types of motivation (2). A person could be described as being intrinsically motivated when their reasons for participating in an activity are related to the inherent pleasure and satisfaction that comes from participating. Using the example of a distance runner, one could say that a runner is intrinsically motivated to run because running helps to relieve stress and provides a sense of enjoyment. In contrast, a person could be said to be extrinsically motivated when their reasons for participating come from some source other than the inherent pleasure of the activity itself. Contrary to what is often assumed, extrinsic motivation is not necessarily a bad thing. However, how extrinsic motivation is regulated may be of the utmost importance. Using the example of a distance runner, if a person considers running to be a part of their identity, or if the person runs with the desire to achieve a personal goal (e.g., to run a 5K without walking),

then the desire to run could be described as autonomous motivation. In other words, the person's decision to run is a result of their own free will. On the other hand, if the person is running because they feel obligated, want to avoid feeling guilty for not running, or want to run simply to lose weight, then the desire to run could be more accurately described as controlled motivation. In other words, the person chooses to run because of the pressure brought on by some outside influence. In essence, it is crucial that clients feel they have volition in their exercise program and that autonomous motivation is promoted. The more clients feel controlled by outside forces (e.g., a spouse, the media, or a personal trainer), the less likely they will stay sufficiently motivated to continue exercising.

## **PRACTICAL APPLICATIONS OF THE SDT**

For many personal trainers it is difficult to understand how anyone could not be motivated to exercise. Indeed, there tends to be a notable difference between regular and irregular exercisers in regard to the reasons why they engage in physical activity (Table 2). It might be helpful for personal trainers to pay attention to these familiar comments and variations of them, as these types of statements might give trainers more clues as to where their clients are in terms of their motivation for exercise. Because one of the ultimate goals of a personal trainer is to encourage lifelong physical activity and health in their clients, perhaps the personal trainer should also tune their clients into their own comments related to exercise, particularly in the way exercise makes them feel. People are more likely to choose to engage in a behavior when it is intrinsically motivating, and when they feel like they are the ones making the decision to do it. On the other hand, people are less likely to choose that behavior when they feel controlled to perform it (2). Therefore, it seems prudent to emphasize and direct clients' attention to those autonomously motivating realizations when clients become aware of and vocalize such statements so commonly heard among regular exercisers. Table 3 provides a list of several helpful tips for personal trainers to practically apply aspects of the SDT when attempting to motivate new clients to be consistent with physical activity.

## **USING THE SDT TO INCREASE A CLIENT'S INTRINSIC MOTIVATION—SAMPLE CASE**

A fundamental part of the training plan for each client should include built-in components to enhance the client's autonomous motivation. The following sample case can help to illustrate how a personal trainer might implement the SDT into a training plan for a new client.

Beth is a part-time office secretary who is seeking a workout routine to help her "lose weight and tone up." She is 38 years old, married, and the mother of three teenagers. She admits she has tried to start exercising multiple times in the past but has never been able to stick to a plan for longer than a few weeks. When asked what she has tried in the past, she describes how she tried running and kickboxing because she heard that these were the best ways to lose weight fast, but both of these activities were too difficult for her and not enjoyable. She only did them because she felt like she had to in order to lose weight. She has also tried various exercise videos that she did at home alone, but these got boring pretty quickly, so she gave them up after a few attempts.

Most personal trainers are familiar with clients like Beth who have a general goal of losing weight, but who also have a history of being unable to successfully achieve consistency in their exercise habits. It could be predicted that it will be very difficult for Beth to reach any sort of fitness goal when she is not engaging in physical activity on a regular basis. Therefore, for clients like Beth who are struggling to stick to a regular program of physical activity, perhaps the ultimate goal should be to assist them in increasing their intrinsic motivation and autonomous motivation, as described in Table 4.

## **CONCLUSION**

Popular media and even some well-known commercial fitness venues have the tendency to try to persuade people that the most efficient and fail-proof way to be fit and to feel satisfied with body image is by succumbing to the demeaning, aggressive, and often brutal commands of callous, belligerent, tyrannical-style fitness. However, according to the SDT, the pain, discomfort, and humiliation that can be inflicted by such training tactics, though seemingly effective in the short-term, are rarely effective for most clients in the long-term. On the other hand, when applying the SDT to a training program, the aim is not to coddle or baby the client, as there will likely be multiple occasions when constructive feedback and detailed instruction are necessary. However, in order to increase the likelihood that a client will stick with an exercise program, personal trainers must ensure that the three basic parameters of the SDT are being met on a consistent basis. Even if personal trainers have the knowledge and skills to create the perfect training plan, if a client is not willing to adhere to it, the plan is essentially worthless. When an exercise program is intrinsically motivating and contains high levels of autonomous motivation for a client, personal trainers stand a much greater chance of successfully influencing their clients to stick to a habit of regular exercise for life.

# HELPING MOTIVATE CLIENTS—APPLICATIONS OF THE SELF-DETERMINATION THEORY

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## ABOUT THE AUTHOR

Brook Skidmore is a former physical education instructor for the College of Southern Idaho. She is currently finishing her second Master’s degree in Sport Psychology at Western Washington University. She has trained a wide range of athletes and exercisers in the roles of personal trainer, group fitness instructor, and strength and conditioning coach. In addition to her own training as an endurance athlete, she also conducts fitness classes for the general public and for older adults.

TABLE 1. PRIMARY COMPONENTS OF THE SELF-DETERMINATION THEORY (3)

BASIC PSYCHOLOGICAL NEED	DESCRIPTION
Autonomy	The behavior is volitional (meaning the client has a choice of what the program involves); the client is not simply being ordered by the personal trainer to do various exercises
	The task to be carried out reflects the client’s values and interests, not the trainer’s
	There is no feeling of being controlled by another individual
Competence	The client feels capable of accomplishing the task
	The client has high confidence regarding the behavior
	The client feels a sense of growth and mastery over the task at hand
Relatedness	The client feels that they are cared for and respected by the personal trainer
	As opposed to feeling like an outsider, the client feels there is a sense of belonging and connectedness during the exercise program
	The client feels they have worth as an individual

TABLE 2. REASONS FOR WORKING OUT IN REGULAR AND IRREGULAR EXERCISERS

WHY DO REGULAR EXERCISERS WORK OUT?	WHY DO IRREGULAR EXERCISERS WORK OUT?
<ul style="list-style-type: none"><li>• “It just feels good”</li><li>• “It’s a great way to socialize with my friends”</li><li>• “It’s who I am; I’m an active person and I value my health”</li><li>• “I want to be able to swim a mile without resting”</li><li>• “It helps me clear my head and relieve stress”</li><li>• “It gives me energy”</li></ul>	<ul style="list-style-type: none"><li>• “I need to lose weight”</li><li>• “I feel guilty when I don’t work out”</li><li>• “I’m supposed to work out every day; I do it because I have to, not because I want to”</li><li>• “I want to look good in my swimsuit this summer”</li><li>• “I exercise so I can eat ice cream after dinner”</li></ul>
<i>*Regular exercisers exhibit high levels of autonomous motivation in their reasons for being active</i>	<i>*Irregular exercisers exhibit high levels of controlled motivation in their reasons for being active</i>



TABLE 3. TIPS TO HELP WITH MOTIVATION FOR NEW CLIENTS

DO THIS...	INSTEAD OF THIS...
Emphasize how the client feels before and immediately after a workout. Make it a point to tune the client into their energy levels, mood, and overall sense of well-being at these times.	Emphasize how clients look, how much weight they have lost, or how many calories they are burning with each exercise. Focus on how guilty or ashamed they should feel for missing a workout or eating certain foods.
Use supportive and encouraging language when working with client.	Use demeaning or authoritative language with the intent of pressuring the client.
Assume the role of collaborator, by being responsive and involved with each portion of the client's routine.	Assume a "supervisor" role, by simply watching the client work out.
Provide your client with tasks that are optimally challenging.	Give the client tasks that are too easy or too difficult.
Reward clients with positive feedback when they achieve a goal or perform an exercise properly.	Criticize, put down, or blame clients for their actions or behavior.
Focus on the task itself, and the effort the client is giving during the workout.	Focus solely on the outcome of their workouts (i.e., weight loss).
Emphasize and celebrate with them what their bodies can do (e.g., increased strength).	Emphasize and celebrate what their bodies look like (e.g., weight loss, body shape/size).
Treat clients with empathy and warmth. They should feel valued as individuals and respected where they are at on their journey in fitness and health.	Use a position of power to act cold or superior to the clients. Threaten the client with "punishments" if they do not perform a certain task according to prescribed standards.

# HELPING MOTIVATE CLIENTS—APPLICATIONS OF THE SELF-DETERMINATION THEORY

TABLE 4. SELF-DETERMINATION THEORY COMPONENTS OF SAMPLE PROGRAM

Autonomy	Because one of Beth’s goals is to “tone up,” or gain muscle mass, provide her with information on why resistance training is necessary to reach that goal. Give her a reason to “buy in” to the workouts together.
	Instead of simply writing out a prescribed workout, provide Beth with a series of options that she can choose from. These options could also be offered in the warm-up and/or cool-down portions of the workout, as well as in the intensity of an exercise.
Competence	Be sure that each workout is optimally challenging for her, yet still realistic.
	Identify potential barriers to Beth’s scheduled workouts and brainstorm strategies to overcome them with her.
	Provide her with positive feedback regarding participation and performance (not appearance or weight) during her workouts.
Relatedness	After establishing her goals, steer Beth in the direction of which goals are actually within her control.
	Listen to her without judging when she expresses concerns or struggles.
	Discuss which individuals in Beth’s life are a positive support for her goals to be physically active.
	Help her feel like she belongs in the gym and in the program. Point out how she is similar to others who also attend there.



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# IN THE BUSINESS OF BUILDING A CLIENTELE, THE REFERRAL IS KING

ROBERT LINKUL, MS, CSCS,\*D, NSCA-CPT,\*D

**T**he personal training industry has many different business and marketing strategies to generate leads, however, most personal trainers rely heavily on referrals for new clients.

Referrals are the primary resource a new potential client utilizes when inquiring about working with a fitness professional (1). The potential client feels a certain level of trust and value in a personal trainer if they are referred by a friend, colleague, or family member that has had a successful and professional experience with said trainer (3). Many fitness professionals find the referral to be such an effective tool that it is the only resource they use to generate new business (2).

This is most commonly found in studios or with independent contractors who build their business over a long period of time (1 – 5+ years). Their business strategy is simple: if a current client loves their training experience, they will tell three other people how great their training is. Conversely, if they do not like their experience they will tell 10 people how horrible it is.

Most people are happy to pile on bad experiences and oversell positive ones. It is “the positive three” people that personal trainers want to focus their referral efforts toward in an attempt to earn new clients. Here are three techniques in which a trainer can potentially gain access to those “positive three” leads and start the process of converting them to life-long and committed clients.

## DO NOT BE AFRAID TO ASK: THE REACH OF THREE

One of the best referral resources a trainer has is already available to them on a daily basis. Trainers work hard on building a quality and lasting relationship with their current clientele. This relationship can be so strong that a trainer might have a client for 15 years or more. There is no better resource to reach out to than an already established, committed, and die-hard group of believers that make up a personal trainer’s current clientele.

Oftentimes, personal trainers are simply afraid or shy of the idea of asking their steadfast clients for help; however, these are exactly the people the trainer should ask (2). Most of these clients believe in their personal trainer because they are products of the program design, they are the success stories, and they are champions of the trainer’s philosophies (4). Many of these clients

want to show ownership to their training program and would jump at the opportunity to talk positively about it to others if only they were asked to do so.

Every client has a circle of people which they involve in their life. These individuals include family members, friends, and colleagues. These three categories create a group of people that a potential client will look to first when seeking out possible referrals (Table 1) (3).

## COOL CLIENTS REFER COOL NEW CLIENTS (...MOST OF THE TIME)

Websites, flyers, massive group discounts, and radio ads are great at generating leads for general monthly gym memberships (4). These tools are typically very successful in generating clientele, yet there is no pre-existing connection between the trainer and the client prior to them walking in the door. On the other hand, a referral brings in a new client who already has at least one thing in common with the personal trainer—a connection to the referring client.

Oftentimes, both the referring client and the potential client will come in together for the new client’s first session. If this happens, the current client can help to create a very welcoming environment for the new client as they are already familiar with the facility, the tempo of the training session, and the cues used by the trainer. Also, they can assist the trainer in demonstrating and teaching some basic components of the program design to a certain degree. This gives the current client some pride and ownership to their unique way of exercising with their trainer while lowering the walls of the new client who may be nervous, defensive, or even scared about the whole process.

Social interaction with a friend, family member, or colleague may assist in making the new client’s first experience a friendly and memorable one, which may help in retaining them. Networking and social interaction is a great way to introduce a mass of new potential clients to the gym as well. A personal trainer can achieve this by hosting an event like a free group workout or a fundraiser.



## HOST NETWORKING AND SOCIAL EVENTS

A training session with a fitness professional is much like purchasing a product from Costco. At the end of each aisle a customer has the opportunity to try a new product. Costco provides the consumer the opportunity to experience the product firsthand and free of charge. Now the customer knows if they like the product or not. This can be a great advertising tool, because in many cases the customer likes the product so much that they purchase it.

Much like Costco, a personal trainer can allow a potential new client to try their product for free with the hope that they will enjoy it and want to purchase a package of training sessions. Free workouts can be offered in many different forms that are both effective and fun opportunities for current and potential new clients. These sample workouts include large group workouts, charity training sessions, holiday workouts, etc. Current clients usually enjoy these events because they get to bring a partner to see what they experience on a regular basis and to share in the fun, and it may possibly lead to referrals.

## CONCLUSION

There are many techniques that a personal trainer can use to earn quality referrals that build their clientele. A schedule full of dedicated life-long clients, also known as “lifers,” are every career-driven personal trainer’s ultimate goal. In order to achieve this, personal trainers should take all the proper steps to ensuring their client is being trained appropriately, professionally, and specifically toward achieving their personal goals (3). Remember, the secret is not getting new clients, it is keeping them.

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## ABOUT THE AUTHOR

Robert Linkul was the National Strength and Conditioning Association's (NSCA) Personal Trainer of the Year in 2012. He is currently a volunteer with the NSCA as their Southwest Regional Coordinator and Committee Chairman for the Personal Trainers Special Interest Group. Linkul is the Career Development columnist for the NSCA's Personal Training Quarterly (PTQ) publication and speaks internationally on career development techniques for personal trainers. Linkul mentors personal training students and rookie trainers entering the industry on business strategies, client retention, and professional longevity. Linkul has been in the industry since 1999, and owns and operates his own personal training studio in Sacramento, CA.

TABLE 1. A CLIENT'S NETWORK OF POTENTIAL REFERRALS

Family	Friends	Colleagues
Spouse	Neighbors	Bosses
Siblings	Sport teammates	Co-workers
Parents or grandparents	College roommates	Employees
In-laws	Childhood friends	Volunteers

TABLE 2. EXAMPLES OF NETWORKING AND SOCIAL EVENTS

TYPE OF EVENT	EXAMPLE
Free session	Solo
Free group session	Two or more clients
Bring your “_____” to work out day	Family, friends, or colleagues
Community social gatherings	Barbeque bench press party
Holiday workouts	Thanksgiving, Christmas, New Year's Day, etc.
Community fundraiser	Free group workouts to the winner
Charity athletic event	Client donates a bag of clothes to “pay” for their workout
Charity athletic event training program	Training session(s) for the American Lung Associations Fight for Air Stair Climb



## INCORPORATING VARIETY WITH BULGARIAN BAGS

BRIAN JONES, PHD, CSCS, NSCA-CPT, AND JULIE BOGGESS

Personal trainers are required to constantly challenge their clients physically and mentally. In order to retain customers, trainers must improve or maintain their client's fitness levels while keeping them interested in the process. For this reason, incorporating variety into the training program can be an invaluable tool. Research has found that a major predictor of whether people continue to exercise is how much they enjoy it (1,7,9,13). Results simply are not enough motivation if they are not having fun. The Bulgarian Bags, developed by Bulgarian wrestling coach Ivan Ivanov, provide a unique way to add interest to any client's workout program (8,11).

These bags are similar to sandbags and have many of the same benefits, but the unique shape allows for the performance of some movements that are difficult to perform with most weighted bags (2,4,10). The unique shape of the bag combined with the different grips and handles make it an extremely versatile tool. It allows for many different rotational exercises that are often not possible with other exercise equipment. The bags are portable enough for travel workouts and ideal for personal trainers who travel to their clients' homes.

Many of the same movement patterns popular in kettlebell training can be done with the Bulgarian Bags. This means that clients can learn proper kettlebell movement patterns using the Bulgarian Bags with less potential injury risk and the bags may be less intimidating than kettlebells for some people. Currently, there is no direct research on the effectiveness of the Bulgarian Bags, but several studies have found similar training with kettlebells to be effective for developing strength, power, and cardiovascular endurance (1,3,5,6,12).

### LOWER BODY TRAINING

Nearly any lower body training exercise, including squat and lunge variations, can be loaded effectively with the Bulgarian Bag. The crescent shape is ideal for front and back squats (Figures 1 and 2). A client can perform squats, squat jumps, lunges, or step-ups just as they would when using other types of resistance or loads. In addition, the front hold position (Figure 3) is excellent for developing core stability and teaching clients to maintain a more upright trunk position.

More dynamic total body work includes the swing and the swing squat. The technique for the Bulgarian Bag swing (Figures 4 – 6) is much the same as for the kettlebell swing, but with a wider stance to allow the bag to clear the knees. The swing exercise may be useful in helping to develop hip and core strength, power, and endurance. Only advanced clients should perform the swing squat (Figures 7 – 9). To start the exercise, the client should grip the bag by bringing the handles together. They should swing the bag between the legs while extending the knees, then they should drive the bag forward using the hips while descending into a squat. Maximal depth in the squat should occur just as the arms and bag are parallel with the floor.

### UPPER BODY TRAINING

Nearly any upper body barbell or dumbbell exercise can also be performed with the Bulgarian Bag, including presses, rows (Figures 10 and 11), and cleans. The different handles allow a variety of single and double handed grips for both unilateral and bilateral training. Additionally, two bags can be used by having one held in each hand.

Push presses (Figures 12 and 13), jerks (Figures 14 and 15), high pulls, and snatches can be performed with the Bulgarian Bags as well. These exercises teach power transfer from the lower to the upper body and are an efficient means of total body training. With higher repetition sets, full body exercises such as the push press, jerk, and thruster can act as effective conditioning training exercises.

## CORE WORK

All of the standing exercises previously described create a strong training stimulus for core stability. More direct core work can include weighted sit-ups, side bends, Russian twists (Figures 16 and 17), and the more advanced Bulgarian Bag spin exercise. The Bulgarian Bag spin (Figures 18 – 22) exercise involves a strong rotation with the core as the arms lock the bag into position. The client should pivot using the hips and move the bag in a circular motion around the head keeping the spine fairly neutral throughout. The client should perform equal work in both directions to ensure even development.

## WORK CAPACITY EXERCISES

These bags can also be useful for performing “finisher” exercises that come after the primary exercises are completed. Finishers should involve the whole body and can be incorporated into the program during higher intensity days or when the client wants to push themselves harder at the end of a workout. Finisher exercises can be done for a certain number of sets or timed intervals.

Two excellent finisher exercises are bag slams and bag throws. To perform Bulgarian Bag slams (Figures 23 – 26), use a heavy bag, tire, or other rebounding surface to slam the bag onto. The client should hit the surface as hard as they can with the Bulgarian Bag by using a coordinated upper and lower body effort. As it rebounds, the client should have the bag circle around their head and come to rest in the starting position.

There are a number of different ways to throw a Bulgarian Bag, for example: push throw, underhanded throw forward, twisting throw to the side, or overhead backward throw. The client could throw the Bulgarian Bag for maximal distance with good form, walk or run to the bag, and then repeat. Using either repetitions or time intervals work well for Bulgarian Bag throws.

## PROGRAMING

Bulgarian Bags can be used as a stand-alone training tool as they are made in weights ranging from 6 – 85 lb. They also make excellent additions to existing training programs that utilize more traditional methods. Table 1 provides a sample workout for a client using only Bulgarian Bags and bodyweight resistance exercises. The repetition ranges listed are basic guidelines and sets should continue only as long as the client can maintain proper form. Table 2 demonstrates how the Bulgarian Bag exercises can be incorporated into a weekly strength training program. For this routine, the Bulgarian Bag exercises are prescribed in time intervals with the goal of muscular endurance and metabolic conditioning.

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# INCORPORATING VARIETY WITH BULGARIAN BAGS

## ABOUT THE AUTHOR

Brian Jones is an Assistant Professor of Exercise Science in the department of Kinesiology and Health Studies at Georgetown College in Kentucky. He has worked as a strength coach for several different D-I athletic teams at the University of Kentucky and has strength coaching experience with high school and professional athletes. Jones has authored three books, two book chapters, and numerous articles on strength training, supplementation, and other exercise science topics. Jones has served as the NSCA State Director for Kentucky and currently sits on the Advisory Board for Kentucky and the Great Lakes Region. He has a 2nd degree black belt in Brazilian jiu-jitsu and is the owner and head coach of Valhalla Academy, a jiu-jitsu school in Frankfort, KY.

Julie Boggess is President and Head Coach of the Louisville Kettlebell Club in Louisville, KY. She is a certified kettlebell and Bulgarian Bag instructor, and a Kettlebell Sport competitor in which she earned the title of Candidate Master of Sport in 2014. Boggess is a life-long athlete, having played scholastic softball and field hockey, and currently maintains a 4.0 rating by the United States Tennis Association. Her clients include active competitors and those just interested in improving general fitness. Boggess enjoys working with clients of all backgrounds and abilities to bring out their best.



FIGURE 1. BULGARIAN BAG BACK SQUAT – START



FIGURE 2. BULGARIAN BAG BACK SQUAT – FINISH



FIGURE 3. BULGARIAN BAG FRONT HOLD POSITION



FIGURE 4. BULGARIAN BAG SWING – BOTTOM OF SWING





**FIGURE 5. BULGARIAN BAG SWING – MIDDLE OF SWING**



**FIGURE 6. BULGARIAN BAG SWING – TOP OF SWING**



**FIGURE 7. BULGARIAN BAG SWING SQUAT – BOTTOM OF SWING**



**FIGURE 8. BULGARIAN BAG SWING SQUAT – MIDDLE OF SWING**



**FIGURE 9. BULGARIAN BAG SWING SQUAT – TOP OF SWING WITH SQUAT**

## INCORPORATING VARIETY WITH BULGARIAN BAGS



FIGURE 10. BULGARIAN BAG ROW – START



FIGURE 11. BULGARIAN BAG ROW – FINISH



FIGURE 12. BULGARIAN BAG PUSH PRESS – START



FIGURE 13. BULGARIAN BAG PUSH PRESS – FINISH



FIGURE 14. BULGARIAN BAG JERK – START



FIGURE 15. BULGARIAN BAG JERK – FINISH



FIGURE 16. BULGARIAN BAG RUSSIAN TWIST - RIGHT



FIGURE 17. BULGARIAN BAG RUSSIAN TWIST - LEFT



FIGURE 18. BULGARIAN BAG SPIN



FIGURE 19. BULGARIAN BAG SPIN



FIGURE 20. BULGARIAN BAG SPIN



FIGURE 21. BULGARIAN BAG SPIN

## INCORPORATING VARIETY WITH BULGARIAN BAGS



FIGURE 22. BULGARIAN BAG SPIN



FIGURE 23. BULGARIAN BAG SLAM



FIGURE 24. BULGARIAN BAG SLAM

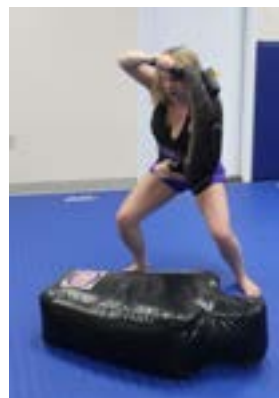


FIGURE 25. BULGARIAN BAG SLAM



FIGURE 26. BULGARIAN BAG SLAM



TABLE 1. SAMPLE BULGARIAN BAG PROGRAM

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Joint mobility warm-up  “Basic bag protocol” (4 sets or for time) <ul style="list-style-type: none"> <li>• 10 spins (both sides)</li> <li>• 10 snatches</li> <li>• 10 shoulder throws (both sides)</li> <li>• 10 push-ups</li> </ul>	Rest and mobility work	Joint mobility warm-up  Tabata circuit (8 rounds per exercise; 20 s work and 10 s rest) rest 1 min between exercises <ul style="list-style-type: none"> <li>• Alternating front lunge (bag on shoulders)</li> <li>• Snatch</li> <li>• Overhead press</li> <li>• Straight-arm front raise</li> <li>• Front squat</li> <li>• Triceps extension</li> </ul>	Rest and mobility work	Joint mobility warm-up  “The 500” (4 sets: 1st set x 10 reps per exercise, 2nd set x 20 reps, 3rd x 15 reps, and 4th x 10 reps) <ul style="list-style-type: none"> <li>• Spins</li> <li>• Swing snatch</li> <li>• Romanian deadlifts</li> <li>• Side bends</li> <li>• Jumping split squats</li> <li>• Front raise</li> <li>• Halos</li> <li>• Triceps extensions</li> <li>• Hammer curls</li> <li>• Push-ups</li> </ul>

*\*Maintain a consistent repetition count for each time interval*

# INCORPORATING VARIETY WITH BULGARIAN BAGS

TABLE 2. SAMPLE BULGARIAN BAG PROGRAM TO INCORPORATE WITH RESISTANCE TRAINING

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p>Warm-up</p> <p>Back squat (5 x 5 reps)</p> <p>Romanian deadlift (3 x 8 reps)</p> <p>Weighted sit-ups (5 x 10-15 reps)</p> <p>Bulgarian Bag circuit (3 rounds with 1 min rest)</p> <ul style="list-style-type: none"> <li>• Squat swings (x 20)</li> <li>• Spins (x 10 each way)</li> <li>• Forward push throw (x 10)</li> </ul>	<p>Warm-up</p> <p>Bench press (5 x 5 reps)</p> <p>Weighted pull-ups (5 x 6 – 8 reps)</p> <p>Neck work</p> <p>Bulgarian Bag routine (minimal rest)</p> <ul style="list-style-type: none"> <li>• Snatch (x 20)</li> <li>• Bag slams (x 20)</li> <li>• Thrusters (x 20)</li> <li>• Russian twist (x 20)</li> <li>• Turkish get-ups (x 10 each side)</li> </ul>	<p>Rest</p>	<p>Warm-up</p> <p>Power clean (5 x 3 reps)</p> <p>Front squat (5 x 5 reps)</p> <p>Hanging leg raise (5 x max reps)</p> <p>Bulgarian Bag track circuit (minimal rest)</p> <ul style="list-style-type: none"> <li>• Carry bag while jogging (2 rounds with 2 min rest between rounds)</li> <li>• Swings (x 20)</li> <li>• 200-m walk/jog</li> <li>• Burpees with bag (x 10)</li> <li>• 200-m walk/jog</li> <li>• Bag rows (x 20)</li> <li>• 200-m walk/jog</li> <li>• Triceps extensions (x 20)</li> <li>• 200-m walk/jog</li> </ul>	<p>Warm-up</p> <p>Standing push press (5 x 5 reps)</p> <p>Row (5 x 10 reps)</p> <p>Neck work</p> <p>Bulgarian Bag circuit (3 x 5 min with 1 min rest; max rounds for time)</p> <ul style="list-style-type: none"> <li>• Jerk (x 10)</li> <li>• Front squat (x 10)</li> <li>• Overhead throw (x 5)</li> <li>• Underhand throw (x 5)</li> </ul>

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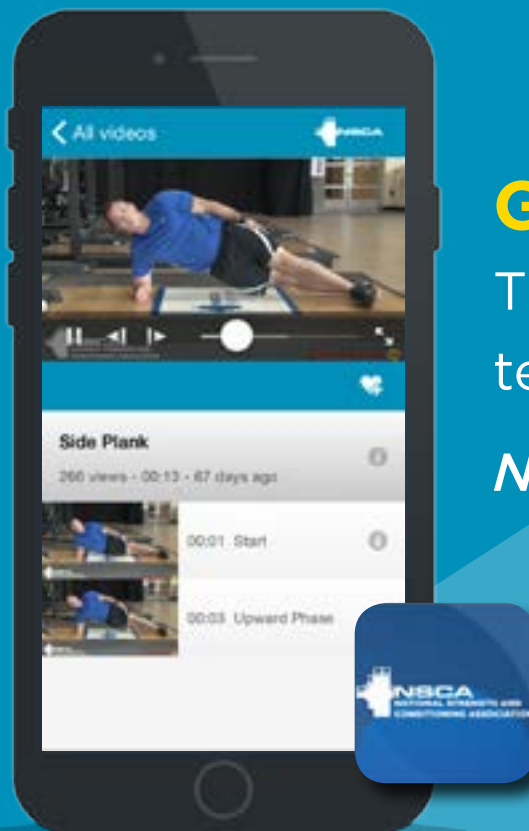
## CALLING ALL MEMBERS: MAKE YOUR VOICE HEARD

The NSCA's 2015 Board of Directors Election begins May 1 and voting closes at noon, Eastern Standard Time on July 10 at the National Conference in Orlando. This year members can vote for two positions on the Board of Directors, two positions on the Nomination Committee, and two proposed bylaw changes.

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# TECHNOLOGY AND THE PERSONAL TRAINER— INTERVIEWS FROM EXPERTS IN PERSONAL TRAINING

CARMINE GRIECO, PHD, CSCS

**A**s I have watched the evolution of technology within the fitness profession over the last 20 years I am shocked by the rapidity of change, particularly over the last decade. When I first entered the profession of personal training in 1996, new technology included a new treadmill, a CD player, or using a heart rate monitor to gauge exercise intensity. If you had a computer and internet access you were ahead of the technology curve and probably considered an “early adopter.” Cell phone technology was still in its infancy and the concept of the smartphone was nothing more than wishful thinking among the digerati.

For example, consider a few of the things we take for granted today that simply did not exist in 1996: streaming anything online, Google, blogs, Bluetooth, Wi-Fi, MP3, YouTube, Twitter, Facebook, Pinterest, LinkedIn, Instagram, apps, broadband internet, and even the great grandfather of social media, MySpace. Not to mention the online journal article that you are reading right now.

Even as we see fitness trends emerging that are seemingly retro, such as the resurgence of kettlebells, yoga, or primal movement, the reality is that technology is permeating and changing the entire fitness industry and, more specifically, how personal trainers deliver their services. Importantly, though, the expectations of clients are changing as well. As consumers embrace technology in all aspects of their lives, they are also expecting (and demanding) that same incorporation of technology into their exercise programs. For that reason, I chose to explore technology in personal training in this second article in a four-part series of “best practices in personal training.”

Through my experience in the industry, I have come across many personal trainers and allied fitness professionals that are embracing technology and pushing the boundaries of technology in the fitness industry so it was a tough proposition to limit myself to only a few expert sources to interview. Nevertheless, I think this panel of experts brings an impressive breadth of knowledge and I thank them for their willingness to share their knowledge and experience.

The expert panel includes:

- Josh Proch (JP), CSCS, the co-owner of Defined Fitness (a 2,100 sq ft hybrid fitness facility that specializes in functional training fitness coaching)
- Mark Nutting (MN), CSCS,\*D, NSCA-CPT,\*D, the 2009 National Strength and Conditioning Association (NSCA) Personal Trainer of the Year and the Personal Training Director at Saco Sport and Fitness
- Shirley Archer (SA), NSCA-CPT, the author of 12 books, including “Fitness 9 to 5: Easy Exercises for the Working Week”

## HOW IS TECHNOLOGY CHANGING THE PROFESSION OF FITNESS?

**JP:** “We are already seeing it change the way people workout and do business. They track everything from calories to daily movement to workout effort. There are some really cool products out there that monitor sleep quality and rhythms. We see many of our members using Fitbits® or other similar devices. I have also heard of some top college football programs using tech to monitor effort output in practice to see which players are giving their all and which players are slacking.”

**MN:** “Keep in mind I have been in the fitness business for 35 years, back then we were still lifting rocks for a workout. Probably email was the first thing that made communication easier. Even cell phones, the fact that we can get back to a client immediately has been a huge thing. Cell phones made life easier, particularly for trainers that are on the go. Obviously, business software came in as computers became more accessible. Booking programs are big as well, and means that trainers do not have to literally write down a client appointment. I think most of the changes happened at the club level at first. Websites are a nice billboard for your business, but not interactive. Blogs have started the greatest interactivity of the internet.”



Over the last 10 years, things have changed so rapidly. It is imperative that we are a part of the technology. Whether we think they are necessary or not, the public thinks they are very cool right now so for that reason we have to be able to use them.”

**SA:** “Technology is changing fitness in the same way that it is transforming many aspects of our daily lives. Since consumers have access to such a broad scope of free tools for training as well as for tracking fitness parameters, fitness professionals will need to step up to add value to client’s lives. It will not be enough to simply teach exercise. Personal trainers will likely evolve toward a more integrated health coaching approach; helping people by making sense of data, to achieving identified goals, and offering support and motivation.”

## HOW HAVE YOU INCORPORATED TECHNOLOGY INTO YOUR BUSINESS?

**JP:** “We use a lot of technology in our gym. We have an active Facebook page which we post on once per day. We usually schedule our post for a week out to save time. So this way we only have to write content one time per week and then just schedule when we want the posts to go out automatically. You can do this directly through Facebook. We also have a Twitter account; it is linked to our Facebook page so that whenever something gets posted to our Facebook page it automatically gets posted to our Twitter page too. We also use Instagram to post pics.”

**MN:** “Everything I do is technology. From email to Facebook, and everything in between. The fact is tech is changing every day and the capabilities we are getting are outstanding. I have been using computerized nutritional analysis programs for 20 years. In the club, everything from the service desk to booking clients is dependent on technology. A lot of it is accountability and measurability. The overall statement is you can get left behind and miss out on great opportunities, but there are some very neat things coming down the road that will make our jobs easier and allow us to reach more people. Your reach can be so great; it is a very neat thing. The reason we are in this business is to help as many people as we can.”

**SA:** “I have lived in Silicon Valley for over 15 years and worked at Stanford University and was fortunate to be exposed to many technologies while still in beta testing. I use technology in every aspect of my business from marketing, communications, management and assessment; and I am an ‘early adopter.’ [Technology] requires commitment to stick with the learning curve and in some cases, it can be expensive or cost prohibitive.”

## HOW IMPORTANT IS SOCIAL MEDIA AND HOW HAVE YOU INCORPORATED IT INTO YOUR BUSINESS?

**JP:** “When setting up social media for your business, you need to have all of it direct the viewer to the same end goal. For us, this is our 30-day trial, and it needs to get them to take action, (e.g., contact us to buy a trial). We post to Facebook once per day, every day except Sunday. We post to Twitter a couple times per week and also Instagram a couple times per week. We also blog about once per week, rotating between content, information, and offers. Just be sure to offer more content than offers or no one will read it. People do not like to read a lot of content any more, they would rather watch and/or connect with your business via social media. That being said, you still need a website, it just should not be content heavy. What we have done is provide the basic info

about our gym, a trailer video to watch, and links to our Facebook and YouTube pages. We also use Facebook to market through the use of running ads and boosting posts. [Social media] is important to our business as it allows us to connect in real time with our members and audience. The clients/consumer expects this stuff, so if you are not doing it and the guy down the street is, he is going to beat you. The consumer expects more from the business and faster responses.”

**MN:** “Social media, it is the quickest and farthest reaching way of creating relationships and that is what marketing is about these days. There are a lot of trainers that want to build their business beyond what they currently have. When you rely on face-to-face contact you can only deal with so many people at one time. But with social media, one post can be seen by thousands of people. And it is economical as well. What we are trying to do really is relationship building. It is the ease and the reach that social media has that makes it so beneficial.”

**SA:** “I am always building my social media presence. All the social media helps you to share information and to build relationships and community (all positive things to support a fitness professional’s business). One needs to create a strategy, however, as you cannot do all things. For me, it has been an iterative process. I now use Facebook, Twitter, Pinterest, Instagram, and Google+ regularly, and use LinkedIn, YouTube, and Tumblr less frequently. It is time consuming, but well worth it in terms of building your brand, for networking and for attracting business.”

## IN WHAT OTHER WAYS HAVE YOU EMBRACED TECHNOLOGY?

**JP:** “We use YouTube and Vimeo for video posting. If you post a video to Facebook you will get more views if you post it directly to Facebook, rather than posting the YouTube link. Facebook and YouTube are direct competitors and Facebook will not show the YouTube videos as often. We just ran a one minute video demonstrating the kettlebell goblet squat, posted it to Facebook, and then boosted the post to a target audience for five dollars and we got a new 12-month member within one week. So for five dollars we got a \$2,700 return on the investment (ROI). This will not always happen that easily, but it is probably one of the best ROI marketing things you can be doing. The clients love the videos as well.

Also, we use ClubApps [now known as Netpulse]; they designed the app [for us] and what we wanted on it. The design cost was \$1,600 and there is a monthly fee of \$199. We use it to connect with members. They can enter their member card into it and then scan their phone to check in when they come each time. We have a punch card on if for shakes so once they’ve bought so many shakes they get a free one. We also use it to send out notifications and reminders about club happenings. Having one [app] makes us look more professional and it definitely sets us apart from other competitors who do not.

We also use an app that is a free download. This allows us to send out push alerts about upcoming events and offers. It also gives them [our members] access to our online scheduler, videos, social media, and nutrition log. We require all members to schedule their sessions and this is done online through the use of Mindbody software.”

# TECHNOLOGY AND THE PERSONAL TRAINER— INTERVIEWS FROM EXPERTS IN PERSONAL TRAINING

**MN:** “We now have a virtual tour of our club on our website. We had someone from Google walk through our club while filming a virtual tour. We have also just moved from doing skinfold pinching to using ultrasound for measuring body fat. It is less invasive, which people appreciate, and so quick and easy. It is working out well so far. We also do blood work here at the club. It is just a finger prick device, but with a very small amount of blood dropped into this analyzer we are able to determine total cholesterol, high density cholesterol, ratio of good-to-bad cholesterol, etc. That is very cool to be able to do that at the club level. Plus, the electronic device we use is only the size of my hand.”

**SA:** “In today’s market, a website is important to establish your credibility and to help prospective clients to find you. I am on my fifth website. I continue to update it and integrate it with other social media platforms.”

## HOW HAVE YOU INCORPORATED TECHNOLOGY INTO YOUR FITNESS TRAINING?

**JP:** “We have an online nutrition program through the use of dotFIT that allows the member to track their food and see what they are eating. This is provided to every member with their membership. For heart rate monitoring, we use the MyZone system, which projects the member’s percent max heart rate, calories burned, and overall effect up on to television screens throughout the gym for them to gauge how hard they are working and how well they are recovering on rest periods. When they complete their workout, the system then emails them their workout results. Each month we post our 1,000 MEP Club Members, 2,000 MEP Club Members, 3,000 MEP Club Member, and 4,000 MEP Club Members in the club. A ‘MEP’ is a MyZone Energy Point: for every minute they are in the 60% max heart rate zone they get 1 point, 70% equals 2 points, and 80% and 90% equal 3 points. We also run challenges periodically based on total MEPs for the month. To use this system, they must purchase a heart rate monitor for \$89.”

**MN:** “One of the tools I use most is my camera; I take a photos of what I see and I show that to my client. Also, I like to use Dartfish or Coach’s Eye [motion analysis apps] because you can record the client’s movements, go through it with slow motion frame by frame, and show them. For example, ‘here is where you lost your position.’ It is a four or five dollar app. That immediate feedback is helpful, I have used that with young athletes to help them to understand their body position better. It is a great tool because of the instant feedback.”

## CONCLUSION

Technology is changing at an accelerated pace and, like it or not, the demand is placed upon fitness professionals to continue adapting. As Mark Nutting so succinctly put it, “A lot of trainers or clubs will not get into technology, but it is easy to get left behind.” Indeed, it is easy to get left behind and as the pace of technological change quickens, it will become even easier. The twenty-first century poses many challenges, and opportunities, for the personal training profession. Like the human body adapting to the stimulus of exercise, so too must the modern personal trainer adapt to ever-expanding technological innovations.

## ABOUT THE AUTHOR

*A personal trainer with over 15 years of experience, Carmine Grieco recently made the transition from personal trainer to college professor. Recently an Assistant Professor of Exercise Science at Glenville State College, Grieco received his Doctorate degree in Human Movement Sciences from Old Dominion University in 2012. Grieco recently accepted a position at Colorado Mesa University. He is the National Strength and Conditioning Association (NSCA) West Virginia State Director and is passionate about the profession of fitness. Grieco is now focusing his time and energy on training the next generation of fitness professionals.*

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