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National Federation of
PROFESSIONAL TRAINERS

Athletes and Eating Disorders

Kids on the Move...

and into the Gym

Toning the Abs

by reducing belly bloat

...AND MORE

CEC Self Test Packet: June 2017

NFPT SELF- TEST

JUNE 2017 EDITION

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Athletes and Eating Disorders – Where to Draw the Line

BY: Cathleen Kronemer

When clients come to us with a high level of motivation already in place, our jobs become much easier. Having passed right over the Pre-contemplative and Contemplative stages of readiness, we can help them jump right into achieving the goal on which they have set their sights. For a client who is trying to lose weight, we present ideas on healthy meal planning combined with prudent exercise. Is it always that simple? For many dedicated athletes, a message with good intentions sometimes gets misconstrued, often to a dangerous extreme.

Startling Statistics

Back in 2004, a study was conducted by a group of researchers in Norway. Their mission was to establish a possible link between athletes and eating disorders. The data indicated that athletes are close to 3x more likely to develop an eating disorder than the general population. Dr. James Greenblatt, Chief Medical Officer and Vice President of Medical Services at Walden Behavioral Care in Waltham, Mass., claims these statistics are still witnessed today.

When potential clients enter the gym, they are most often seeking strength, toning, weight loss, lean muscle mass development, or some combination thereof. Some trainers, however, focus solely on clients who are serious high school athletes hoping for a scholarship, or collegiate athletes seeking to excel in their chosen sport. It is these particular clients, male or female, who need us to be able to recognize the warning signs of a budding eating disorder.

Taking A Wrong Turn

Similarly to what is witnessed in any addictive condition, denial figures prominently in individuals with eating disorders; sadly, many coaches unknowingly foster the illness. When a competitive athlete is winning consistently, yet still demonstrates obvious signs of an eating disorder, many coaches and trainers choose to turn a blind eye to the situation rather than risk losing their star. By proceeding in such a manner, they unwittingly fuel such denial within the athlete. Collegiate coaches especially fall prey to this dynamic. After all, their own reputations often fly on the wings of their exceptional athlete's success. Perhaps as Fitness professionals we do not fully embrace the life-threatening severity that frequently accompanies an eating disorder. The annual mortality rate associated with anorexia nervosa is more than 12 times higher than the death rate of all causes for females 15 to 24 years old. In fact, of all recorded psychiatric disorders, anorexia and bulimia carry the highest rate of death.

Leaning Toward Perfection

Eating disorders can be found among athletes in almost any sport. However, they are most commonly observed in the realm of competitive sports that favor the lean athlete. These are the sports that establish weight classes for competitive athletes, such as boxing and wrestling. Many sports abilities may be made more advantageous with a leaner physique: gymnastics, ballet, track, cycling and rowing. Among sports that are judged, the National Association of Anorexia Nervosa and Associated Disorders reveals that 13 % of competitive athletes suffer some form of eating disorder, as compared with only 3% of those who participate in recreational refereed sports.

Aside from deep denial, most eating-disordered athletes exhibit the drive for perfection. To fully comprehend this concept, think no further than the recent Summer Olympic Games. As we watch, holding our breath, as yet another tiny gymnast leaps over the vaulting horse, turns flips while standing on a very narrow beam, or hopes to stick a perfect landing at the conclusion of a death-defying performance on the uneven bars, television announcers regale us with words of praise such

as “perfect execution”, “flawless performance”, “precision movement”, and the like. No doubt the girls’ coaches have used these exact phrases during their rigorous training sessions. Are they being encouraging, fostering confidence? Could they also be part of the problem and not the solution? Consider the athletic role models with which many of us have grown up. Aside from such sports as dance and cheerleading, most of our well-recognized and highly revered role models are male. Spending a bulk of their childhood and developing teen years surrounded by such a message, female athletes may feel more pressure to “masculinize” their bodies by becoming leaner and more muscular. With such changes can come the cessation of menstrual periods, which sadly has great appeal to female athletes striving for the ultimate control and mastery over their bodies. As she sees her performance increase, she becomes fueled by a false and very unhealthy ideal.

How Trainers Can Help

As trainers, we might consider re-thinking our own behaviors when training serious young athletes. Unbeknownst to our conscious minds, our subconscious may harbor certain values and attitudes regarding weight, dieting, and body image. Being aware of what messages we are conveying, no matter how subtly, to our clients, can help us keep their perspective on a healthy track. It is our job to promote and help foster a positive self-image in such athletes. Keep in mind that any athlete who exhibits outward signs of the importance of winning being dominant over the crucial need for health, or who do not take care of their bodies, may be at a high risk of losing their entire athletic careers due to eating-disorder-related illnesses or severe injuries. As the incidence of eating disorders continues to be on the rise in this country, it is important for trainers to be able to recognize signs and symptoms of eating disorders, such as weight loss, fatigue, over-training, refusing to eat with the team, frequent injuries, and low self-esteem. A first step in a healthier direction is purposely not weighing an athlete, thus not enabling her to consider the number as defining her excellence. If we focus on positive aspects such as increased strength, or observing an increase in an athlete’s mental capabilities when in a competitive arena, we can begin to build a dynamic of striving for excellence instead of perfection.

Open Doors, Open Minds

If we are training a team of competitive female athletes, the importance of *meeting these young women where they are* takes on an even greater importance. By striving to create an atmosphere of safety, both physical and emotional, a trainer instantly becomes more approachable. Encourage the competitors to speak out when they feel a training session has become overly rigorous or demanding, *truly listen to what is being said*, and be willing to alter regimens accordingly. Consider enlisting the help of a sports psychologist, ideally one who has been trained in working with athletes and eating disorders. Often they can present ideas in a different light, one that may be well received by young teens. Above all, remember that our success is not dependent upon an athlete winning a gold medal. We must always, first and foremost, consider the athlete’s health, physical and emotional safety, and self-image while training and coaching.

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Baby Onboard: Modifying Exercises for Effective Prenatal Workouts

BY: Cathleen Kronemer

"My husband and I are expecting our first baby!"

These words are exciting for any friend or relative to hear. As a Personal Trainer, however, you may feel a sense of trepidation creeping into your soul upon learning your client's blessed news. Questions may begin to flood your brain:

- Should I allow her to continue her current workouts?
- Is she / are we being prudent and safe?
- How can I help her remain healthy and active while still protecting the unborn child?

Keep Moving, But Carefully

These are all valid concerns, especially if you have never had the opportunity to work with pregnant women. I have trained many expectant mothers through the years, and helped them achieve healthy pregnancies and uncomplicated deliveries. These clients' bodies also tend to return more easily to their pre-pregnancy status when compared to their sedentary counterparts. If you plan to continue training an expectant mom, a little advance planning on your part can make all the difference to your client as she journeys through the next 7 or 8 months.

Over the last 5 decades, theories on pregnancy and activity have come a long way. When our moms were expecting, the prevailing notion was to stay off of one's feet and get as much rest as possible. Today's women are remaining much more active further into their pregnancies than ever before. Still, there always remains a lingering thought as to just how safe this practice might be for the developing fetus.

Preemie Risk Addressed

A recent study examined the controversy surrounding the possibility that exercise during the course of a woman's pregnancy might increase the risk of preterm delivery. Was there in fact a potential cause-and-effect relationship between exercise engaged in during the 2nd and 3rd trimesters and the birth of a premature baby?

Scientists separated their female subjects into categories. In the first group, expectant women engaged in a supervised training regimen consisting of half an hour of toning and very light resistance exercises 3 times a week. Training was implemented at 13 weeks' gestation and continued through week 39. The second group of women served as a control and did not engage in any exercise. The data points revealed **no significant differences** between the 2 groups of subjects in terms of the mean gestational age of the child at birth.

Stress Awareness Above All

While this may alleviate some of the worry associated with training a pregnant client, it is important to remember that every woman is unique. There are those who successfully continue the workouts they enjoyed prior to becoming pregnant, including participation in boot-camp-type classes, step aerobics, strength training, and running marathons. Others find a need, either due to their own levels of comfort

or at the urging of a medical professional, to significantly modify their pre-pregnancy fitness programs.

It is always a good idea to frequently urge your clients to *pay attention*…not only to how they feel during and after a training session, but also to more overt signs that require promptly discontinuing the exercise and consulting their medical professional.

Among these potential warning signs are vaginal bleeding, dizziness or fainting, chest pain or heart palpitations, abdominal pain unrelated to core-strengthening exercises, calf pain, and leaking of amniotic fluid. As the months go on and the pregnancy progresses, complete with the obvious physical changes, it becomes increasingly important for a trainer to assess the client regularly so that any necessary modifications to the workout can be made before a problem presents itself. Always ensure that she is maintaining a safe level of hydration, and use prudent caution while training during periods of extreme heat and humidity.

The Balancing Act

There are many aspects of a pregnancy that will effect women who adhere to their favorite exercise and training programs. The first change most women report is an altered sense of balance. As your client's center of gravity shifts with the growth of the fetus, her balance will shift as well, rendering certain exercises unsafe. If your client expresses unease due to her balance being off-kilter, you might consider discontinuing activities such as downhill skiing, skating, horseback riding, and hiking in the woods over potentially uneven terrain. Instead, she may wish to substitute swimming or water aerobics as a way to maintain her level of cardiovascular endurance.

Because the baby is growing and becoming more vulnerable if a fall or a blow to the abdomen should occur, a healthcare provider may recommend stopping ball sports (soccer, basketball, racquetball etc.), contact sports, and outdoor biking. (Note that because of an expanding abdomen, a recumbent bike might be more comfortable than a traditional stationary bike).

Position Transitions

After your client's first trimester has passed (along with the accompanying fatigue and morning sickness!), lying on her back during exercise should be avoided. This position has the potential to decrease the flow of oxygen to the baby. While this may put a damper on performing traditional crunches or sit-up's there are many other alternatives for helping a pregnant woman continue strengthening her ever-expanding midsection. Remind her that beneath all of the extra fluid and tissue in that area, which are necessary for a growing fetus, abdominal and core muscles are in fact still there.

Suggest training on a stability ball or an inclined workout bench. Remaining in a supine position for extended periods of time can affect not only the baby but the mom as well. The additional weight of the uterus, particularly during the second and third trimesters, adds undue pressure to the inferior vena cava. This often leads to lightheadedness and dizziness, brought on by a decrease in venous return to the client's heart. Some researchers still question the idea that lying on the back might lead to a decrease in fetal blood supply. Until further studies can be performed and a accurate assessment confirmed, it will be safer to keep in mind that supine exercises should be approached with extreme caution, and only performed in very short bouts, if at all.

Take any opportunity possible to have the client share her “awareness” of how she is feeling and if she is experiencing any unusual symptoms. Your communication skills need to be highly cultivated, starting in the first trimester, so that you and the client are completely at ease sharing these details as the pregnancy progresses.

Bracing For The Load

Planks have become a pregnant woman’s greatest ally in terms of core strengthening throughout these exciting 9 months. As additional midsection load becomes cumbersome, try having your client

perform a modified plank with her toes on the floor and her chest and forearms resting on a stability ball. Another option is to place the client on hands and knees while holding a position where the left arm and right leg are off the floor, extended in opposite directions. This position activates the abdominal muscles, and forces the core to work at stabilizing balance. Switch to the right arm and left leg after holding the first position for 5-10 seconds.

Towards the latter stages of pregnancy, abdominal bracing can be accomplished by performing the “cat stretch”: from a hands-and-knees position, the expectant mother rounds her back while drawing her abdominals toward the ribcage. Holding that pose for 5-10 seconds, she then releases and relaxes into an arched back.

Less Obvious Changes Are still Important To Address

As the growth of a pregnant woman’s belly continues, she often displays an increased anterior pelvic tilt. This is brought about due to the fact that her glutes and hips are becoming weakened, which in turn is a result of excessively tight hip flexors. By strengthening the client’s gluteus medius and minimus, you can facilitate the stabilization of her the sacroiliac joint, which can become loosened and unstable during pregnancy. The side-lying clamshell exercise is both safe and easy to perform throughout the remaining months of her pregnancy. With her pelvis perpendicular to the floor and a knee bend of 45-90 degrees, instruct the client to brace her core and keep her feet together. As she engages her glutes, the top knee is lifted off the bottom knee, moving this top knee toward the ceiling, as her comfort allows. Keep a careful eye on the woman’s pelvis: if it begins to move, or if her hips roll back, stop the progression of the lift. Have the client hold the position for 5-10 seconds, lower the knee, and repeat. This exercise may be performed on both sides of her body.

The Role Of *Relaxin*

Such loosening of joints is a commonality shared by virtually all expectant moms at some point during the pregnancy. A hormone appropriately called *relaxin* becomes elevated in the woman’s bloodstream, which helps prepare her for the work of childbirth by relaxing all of the joints and ligaments throughout the body. While at first it may seem advantageous to possess increased flexibility, caution your client that she is also at a greater risk of injury due to unintentional overextension. Keep this in mind as you have the client engage in cool-down stretches.

How Safe Are Yoga And Strength Training?

Prenatal yoga classes are often touted as wonderful alternatives to traditional exercise during a woman's pregnancy. If your client should inquire about the safety and efficacy of beginning such a program, be ready with an answer. Yoga does indeed offer many prenatal benefits, but some poses are contraindicated during pregnancy. If your client was already enmeshed and comfortable in a regimen of yoga before conceiving, she may safely continue, as long as she is aware of a few caveats. Explain to her that it is advisable to avoid performing *downward facing dog* (in her third trimester), as well as *crane pose, cobra pose and upward facing dog* at any point during her pregnancy. Although it may seem intuitive to you as a Personal Trainer, always mention to your client that she avoid inverted poses, backbends, and lying on her stomach once she has passed the first trimester.

Strength training is safe and beneficial during pregnancy, as long as your client adheres to the aforementioned refraining of supine position and awareness of compromised balance issues. Vigilance on your part requires paying closer attention to her posture and spinal positioning. The heavier load currently being placed upon a pregnant woman's midsection stresses her spine, potentially leading to an arching of the back and rounding of the shoulders. Even with you spotting your client, during this time in her life it is safest to avoid lifting heavy weights that may cause her to facilitate the lift by leaning. Always make sure that her spine is in neutral alignment and her posture remains upright.

Safer Support While Running

I have read articles about marathon runners who continue to exercise throughout their pregnancies. Most medical professionals will endorse this practice as long as the pregnancy is progressing without any health complications to either mother or baby. While this is great news, the limiting factor for many pregnant women is the growing degree of discomfort as the months go on. If your client is such a running enthusiast, suggest she take some simple strides toward support. A high-quality sports bra is a must as her breast develop and begin to prepare for lactation. In addition, a support belt placed directly under her abdomen can help stave off lower back pain. If running simply becomes too awkward or causes unwelcome fatigue, you may suggest running/walking intervals, or simply brisk walking. Swimming and rowing, too, are safe and effective cardiovascular alternatives to running.

Spreading The Information, Dispelling The Myth

While fitness professionals and their clients are highly tuned in to the necessity of fitness at almost any stage of life, this message unfortunately is not always delivered to the entire population. It has been found that prenatal exercise may decline during pregnancy for several reasons. Sedentary women are not likely to begin an exercise program upon receiving confirmation of a positive pregnancy test, often due simply to the physical changes of pregnancy. There is also the unfortunate case of women shying away from exercise due to a combination of social and psychological factors. It is sometimes awkward being the only expectant mom in a group exercise class. If a woman perceives herself as "under-performing" due to limitations imposed by her condition, she may feel inferior to her fellow aerobics participants and begin to cultivate a lack of self-efficacy, which leads to abandonment of her fitness program.

Is it possible that some of the readily available health education information (the Internet, for example) may be failing to correct outdated perceptions of the risks associated with physical exercise in pregnancy?

As Personal Trainers, we must naturally respect the boundaries of our scope of practice. However, without dispensing direct medical advice, we do possess the ability to improve both the quantity and quality of information dispensed to the public with regard to prenatal exercise. Your gym or fitness center may consider offering seminars on the topic, to correct inaccurate perceptions and elucidate the benefits of fitness to both maternal and fetal health. Inviting a medical or other guest speaker to your gym can also alleviate fears and generate interest in personal training among expectant moms.

Participation in a carefully planned, moderate physical activity program during the first, second, and third trimester of a woman's pregnancy can go a long way toward improving her "maternal perception" of health. If the focus is kept on safety, both the mom's and that of the baby, we have the potential to enhance this already magical time in the life of our female clients.

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Kids on the Move…and into the Gym

BY: Cathleen Kronemer

Not too long ago, a team of scientists from the University of North Texas presented some fascinating data at the *American Psychological Association's 122nd Annual Convention.* Through their research, they were able to demonstrate how physically fit females in the 6th grade were less likely to report feeling depressed upon entering the 7th grade. According to the *World Health Organization*, adolescent depression is often coupled with poor school habits and later health issues. If depression is caught early enough, and addressed in a proper fashion, parents and professionals can minimize chances of chronic or recurring depression in adulthood.

Are Club Sports Enough?

While it is surely a good start, participation in a seasonal sport but remaining sedentary the rest of the year is not enough to alleviate the symptoms of depression in young people. **Fitness** is a result of regular and prolonged physical activity.

Today's obesity epidemic (and concurrent body image/depression issues) seems to be encroaching upon our adolescent population at an alarming rate. As fitness professionals, we must recognize this, along with the understanding that not every teen enjoys running, cycling, court sports or swimming. What can we do to foster kids' fitness programs that might have a broader appeal?

A Different Approach

As more and more bodybuilding associations have begun including a Teen Division in their competitions, many young athletes are beginning to sit up and take notice. While not everyone aspires to hit the stage, scantily clad, while a panel of judges determines which trophy he will be taking home, the overall message of health, dedication, proper training and clean nutrition just might be able to help stem the obesity tide as well as bridge the gap between inactivity and "becoming a verb".

As a result, we are seeing a select, decidedly younger demographic emerging in our clientele base. If, up to this point, we have only been working with an adult population, this phenomenon is bound to induce a bit of hesitancy on our part, knowing that a young developing body cannot handle the same type of training that we expect of our adult clients. However, with proper education and understanding, training an adolescent with athletic ability can be a mutually rewarding experience.

Joining The Resistance Movement

By definition, the term "resistance training" refers to a manner of physical conditioning. For our adult clientele, we typically utilize machines, free weights, DynaBands and medicine balls. While the same may hold true when designing programs for a young individual, it is important to educate this population appropriately. A solid starting ground is to clarify with the potential client that "resistance training" is *not* the same as weightlifting, bodybuilding or powerlifting. The next step is to address how we might best serve the client's needs safely, in a manner that takes into consideration not only his age and stature, but also the demands of any specific sport in which he is currently participating.

weights. The top injuries cited were anterior shoulder strains or pain and anterior thigh pain. A deeper look into these findings showed estimated injury rates of 0.053 and 0.055 per 100 participant hours. This data, coupled with the observation that relatively short durations of rest were required for adequate and safe muscle repair, corroborates the safety of resistance training in our active youth population. Furthermore, various muscle tissue testing and blood work determined that there was no evidence of musculoskeletal injury or muscle necrosis in children following completion of 14 weeks of progressive resistance training.

If we decide to incorporate a resistance- training program to complement a budding young athlete's sport-specific training, we must take into consideration the potential for overuse syndrome and the ensuing soft tissue injuries. According to reports from emergency rooms, it would seem as if the trunk is the most commonly injured body part for both males and females, even as young as 14 years of age. Other data upholds the idea that the lower back region is a frequent site of injury in adolescent athletes who engaged in resistance training. Since the goal is always to enhance the young person's abilities, and therefore foster even more success in his sport of choice, being mindful of such injuries can help deflect any potential problems.

While engaging in a resistance-training modality, injury to the growth cartilage has not been reported in any study, provided proper guidance and techniques are being followed. There is also no firm evidence to indicate that resistance training will in any way negatively impact the potential growth in height that takes place in early adolescence. A risk that becomes more of a concern is when young athletes perform jumping/landing activities that cause ground reaction forces of 5-7X the body mass of most adolescents.

Certainly we are aware that among adolescent athletes, high school football players open themselves up to a greater potential for injury, as do hockey players and gymnasts. Knowing that the training required for these sports is already quite taxing to the bodies of young people, it is important to note that the addition of resistance training to the total hours of their training/practice should be carefully considered. It may be prudent to solicit information from school coaches and trainers, so that we can design programs that avoid placing undue chronic stress on a young developing musculoskeletal system. We must attempt to control the intensity, volume and frequency of training. Proper form and execution must always be taught and by the trainers, since an eager athlete may not realize that his resistance training could be pushing the boundaries of safety and recovery.

Who Should Be Training Kids

Just as is seen in the arena of adult one-on-one training, a majority of resistance training-related injuries associated with young individuals are the result of accidents, improper technique or the lack of appropriate training undertaken by the personal trainer. This last factor is perhaps every bit as important as observing gym floor etiquette. It has been postulated that only those trainers who have obtained a national certification of "Certified Strength and Conditioning Specialist", in addition to a national certification as a Personal Trainer, should consider undertaking resistance training with adolescents. In addition, having a thorough understanding of the physiological as well as psychosocial issues accompanying this age demographic is a huge benefit. Prior to agreeing to the training of a young athlete, consider the following very carefully:

Does the prospective client display sufficient emotional maturity to follow your instructions?

- Are you familiar enough with developing bodies to provide dynamic warm-up activities?

- Does your workout program include exercises for all of the major muscle groups and not just those targeted during sports-specific motions, including the hips, abs and lower back?
- Are you prepared to stress the importance of prioritizing proper technique rather than the amount of weight lifted?
- Do you possess sufficient knowledge to know how and when to modify a training program as needed?
- Have you taken into consideration, and addressed, the variety of lifestyle factors that may help or hinder fitness performance (adequate pre-workout and post-workout nutrition, hydration, sufficient amount of sleep, etc.)?

If you feel comfortable with all of these parameters and are ready to take on a younger clientele, know that you will truly be making a difference in the development, health and overall well being of the next generation of fitness enthusiasts. Congratulations!

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SDT: Start Dedicated Training with Self-Determination

BY: Cathleen Kronemer

This is the time of year for change. Whether it is changing weather patterns, changing wardrobes, or the simple act of hanging a brand-new calendar on the side of the refrigerator, January seems to bring out the best intentions in people. This extends to the arena of health/fitness/exercise.

As personal trainers, we see our fair share of newly motivated individuals at the gym and community centers as January unfolds. All eager and excited, these are the folks who claim they want to change and say they are 100% committed to a new lifestyle, only to fall by the wayside when they learn what is actually involved. As it turns out, social science has much to do with this phenomenon; if we can learn the mindset behind such behavior, we will possess the power to help clients over motivational hurdles.

Experts have coined the term "Self-Determination Theory", or SDT, to explain this mode of action and its accompanying thought processes. **Self-determination theory** suggests that people are motivated to grow and/or change by the fulfillment of innate psychological needs. The theory identifies three key psychological needs that are believed to be both innate and universal:

~ The need for competence (gaining mastery of tasks and learning different skills)
~ The need for connectedness (social context: needing to experience a sense of belonging and attachment to others within the same environment)
~ The need for autonomy (feeling in control of one's own behaviors and goals)

While many individuals are motivated to act or change by virtue of *external* rewards, such as money, prizes, or acclaim (known as extrinsic motivation), self-determination theory focuses primarily on *internal* sources of motivation, such as a need to gain knowledge or independence (known as intrinsic motivation). Goal contents are differentiated according to the extent to which their pursuit is likely to satisfy basic psychological needs. The concept of intrinsic motivation, or doing things purely for their own sake, plays an important role in self-determination theory. Experts suggest that when individuals experience and fulfill the aforementioned 3 goals, they become self-determined and therefore more capable of developing the intrinsic motivation necessary to pursue activities of interest.

How Can We Help?

As personal trainers, we must establish the following as part of building a rapport with clients:
~ Provide a meaningful rationale for the various aspects of training
~ Acknowledge the individual's feelings
~ Convey choice, thereby helping to promote the subsequent self-regulation of behavior

Motivation is a critical factor in supporting sustained exercise, which in turn is associated with important health outcomes. Accordingly, research on exercise motivation from the perspective of self-determination theory (SDT) has grown considerably in recent years. Originating from a "humanistic perspective", being fundamentally centered on the fulfillment of needs, self-actualization, and the realization of human potential, self-determination theory helps us to unravel the mysteries of human personality and motivated behavior. Once we master the tasks of listening carefully and honing in on what drives a client, we can plan training programs that truly respect where a client lies on the exercise continuum.

What Seems To Be Missing?

Many people lack sufficient motivation to participate in the recommended 150 minutes of moderately intense exercise or physical activity per week. Studies conducted in other countries reveal that approximately 40% of Europeans agree with the following statement:

"Being physically active does not really interest me – I would rather do other things with my spare time".

Why is this the case?

The answer to this query has many dimensions. First of all, such sentiments could stem from the notion that individuals may not be sufficiently interested in exercise, or value its outcomes enough, to make it a priority in their lives. Secondly, some people may not feel sufficiently competent at physical activities, perceiving themselves neither physically fit nor skilled enough to exercise, possibly compounded by health limitations that present a barrier to movement.

In addition to those who are unmotivated, another source of short-lived persistence in exercise behaviors comes from people who express personal motivation to exercise regularly and do in fact initiate exercise behaviors, but with little follow through. Specifically, a significant percentage of people may exercise because of *controlled motivations*, whereby participation in activities like going to the gym or running regularly is based upon a feeling of *"having to"* rather than truly *"wanting to"* participate. Controlled forms of motivation, which by definition are not autonomous, exist predominantly when the activity is perceived simply as a means to an end, such as an insulin-dependent diabetic losing weight to improve A1C levels. We also see this phenomenon associated with motives or goals such as improving appearance; we all know the client for whom fitting into that little black dress for an upcoming high school reunion is the driving force behind her gym attendance. In fact, the pervasiveness of social and medical pressures toward weight loss, while presented with the best of intentions, prove ill suited to promote *sustained* increases in physical activity levels. Since a disproportionately large number of individuals are either unmotivated / not sufficiently motivated to exercise, or are driven by external factors that will not lead to sustained activity, it is incumbent upon personal trainers to challenge this outlook. There is obviously a need to more closely examine goals and self-regulatory features associated with adherence to exercise and physical activity. Self-determination theory helps explain the effects of qualitatively different types of motivation that can underlie behavior.

What Drives Your Clients?

When intrinsically motivated, a client may report feelings of enjoyment, personal accomplishment, and excitement. Participation in a recreational sports league purely for the enjoyment, camaraderie or challenge of the activity illustrates this point. In contrast, extrinsic motivation refers to doing an activity to obtain some outcome separate from the activity itself. Controlled forms of extrinsic motivation sometimes regulate or motivate short-term behavior, but lack the impetus to sustain maintenance over time. Yet not all extrinsic motives are controlled. When a person engages in an activity not for its inherent satisfaction but rather because of its personal value and utility (i.e., maintaining good health), we see evidence of a more autonomous form of behavioral regulation. In self-determination theory, identified and integrated forms of behavioral regulation are defined as those in which one's actions are self-endorsed because they are personally valued. As we can see, these different forms of motivation lie along a continuum, as will our clients.

Based upon the concept of meeting psychological needs, **self-determination theory can evolve into a personal trainer's strongest ally**. Understanding and providing the support necessary for high quality, autonomous forms of motivation, we can offer clients the premise that participation in exercise can be conducive to having their psychological needs realized. Consequently, the design of health behavior change interventions —-in our case, appropriately tailored workout programs — that enhance satisfaction of participants' basic needs becomes extremely important. As more and more scientists undertake research in this field, it turns out that the vast majority of studies using measures of relative autonomy reported positive associations with exercise behavior.

In one such study, conducted by Drs. Koestner and Losier in 2002, results showed that in behavioral domains encompassing a range of activities (such as a weight-training program) varying in their intrinsic appeal, internalizing the value of the outcomes is likely to lead to greater persistence than being intrinsically motivated alone. Exercise participation is one such behavioral domain.

Campaigns to promote fitness typically market exercise in terms of health-related outcomes rather than in terms of its intrinsic value. In such cases, self-determined motivation among active individuals might come from a valuing of these outcomes, even if they also find exercise intrinsically enjoyable. Conversely, in contexts where enjoyment in and genuine interest for exercise is emphasized over the outcomes, intrinsic motivation was a more consistent predictor of adherence to a dedicated fitness plan. Thus, conceptually, being concerned about health or fitness per se cannot be easily defined as either intrinsic or extrinsic, as it depends upon what the motive means to the individual.

In accordance with self-determination theory, one study examined the relationship between autonomy support, psychological need satisfaction, motivational regulations, and exercise behavior. Fulfillment of the 3 basic psychological needs (i.e., competence, autonomy, and social connectedness) showed a positive relationship to self-determined motivational regulations. For participants of Group Exercise classes, perceptions of and subsequent feedback regarding autonomy support provided by instructors led to the predicted psychological need satisfaction. These findings support the efficacy of self-determination theory in the exercise domain.

It Starts With You

If this premise seems simple and straightforward, why do so many new fitness center members disappear by mid-February? How can trainers prevent the typical fading of interest that these clients must experience prior to quitting the gym? Is there a preferable method to go about fulfilling those three psychological needs?

It is important to realize that the psychological growth described by self-determination theory does not simply happen automatically. While people *lean toward* such growth, it requires continual sustenance. The key lies in that critical social support. Through our relationships and interactions with our clients, we can either foster or thwart wellbeing and personal growth. To that end, we must also be aware of actions that might be hindering gym performance. According to leading self-determination theory scientists, providing extrinsic for already intrinsically motivated behavior can actually undermine an individual's autonomy. As the behavior becomes increasingly controlled by the external rewards, clients will begin to feel less in control of their own behavior, thereby diminishing intrinsic motivation. If you observe this relationship, offering unexpected positive encouragement and feedback regarding performance on a particular exercise can help get the client back on track with his intrinsic motivation.

As much as we want to succeed in our athletic pursuits, so too do our clients. They may not realize the internal machinations behind their attitudes, so we must be patient, compassionate, and willing to create the best possible paths to cultivate a positive attitude and its resulting success.

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How to Teach Clients to Read a Food Label

BY: Erin Nitschke

The food label, or Nutrition Facts Panel (as it's formally called) is a type of blueprint or map. The purpose of the nutrition facts panel is to provide the consumer a snapshot of the nutrient value of a particular food. The information contained on the food label is intended to be a summary of key facts. Unfortunately, labels do not include a simplified means of evaluating a food's overall quality. Until there's a "red light, yellow light, green light" approach, we have to look a little closer to gain that insight. That said, there are significant changes coming by 2018 that will improve the label reading experience for consumers. This lesson will provide you with helpful hints and tricks to getting your clients comfortable with label reading.

What a food label reveals

The Nutrition Facts Panel contains the following information; however, this will change by 2018.

- Number of servings and the serving size
- Calories per serving
- Total Fat (usually includes a breakdown of Saturated, Trans, Mono & Polyunsaturated)
- Cholesterol
- Sodium
- Total Carbohydrate (includes fiber and sugars)
- Protein
- Vitamin D, Calcium, Iron, & Potassium
- % daily values

That's a lot of information to take in and evaluate. The good news is, clients don't need to scrutinize every aspect of the label to make an informed and healthy decision. There are some key areas you can encourage clients to review before adding an item to their carts.

Teaching Clients the Basics

Use the following focal points and accompanying Nutrition Facts Panel Worksheet to practice this skill under "teaching clients the basics". Once clients have mastered this, take them to the grocery store and have them apply what they've learned with you there as a guide.

Step 1: Serving Sizes
Serving size is critical because it often differs from a client's portion size. Use this area of the food label to help clients differentiate between the two.
Consider having a set of measuring cups, a digital scale, and measuring spoons available. By nature, humans cannot easily identify a 4 oz serving without some sort of tool to provide an accurate measure.

Step 2: Calories
The calories per serving give insight into how "energy dense" a food is. If a client is focusing on reducing overall caloric intake, consuming fewer calorie dense foods is wise. This is where you can quickly reference the percent of daily value column on the right. While food labels provide information based on 2,000 calorie diets, you can still help clients understand that a food product that contains 45% of a person's daily value of fat may not be the best choice.

Note: 5% or less of the daily value is considered "low" while 20% or more of the daily value is considered "high". The take home rule here is keep saturated fat, trans fat, cholesterol, added sugar and sodium in the "low" category. Keep the consumption of vitamins, minerals, and fiber in the high category.

Step 3: Evaluate Macronutrients.
This will be very goal-dependent and client-specific. Is a client aiming to increase protein intake or reduce fat intake? Take a look at the ratio of protein, fat and carbs comparatively and see if a particular food meets the client's overall nutrition goal.

Step 4: Ingredients – Identify the worst offenders.
Ingredients are listed by weight and are listed in descending order. Here, you can help your clients identify products with trans fat, added sugars and processed grains. Help them focus on keywords such as, *partially hydrogenated oils, evaporated cane juice, sugar, enriched bleached flour, etc.* The ingredient list is also helpful for clients with specific allergies or food sensitivities. A quick skim of the ingredient list can help the client pick out "red flags" in the food.

Download the Nutrition Facts Panel Worksheet (https://www.nfpt.com/wp-content/uploads/Nutrition-Facts-Panel-Worksheet.pdf) to guide you in helping your clients!

Helping Clients Overcome the Dialysis Drain

BY: Cathleen Kronemer

Receiving a diagnosis of acute renal failure, or end-stage kidney disease is a frightening experience. Unlike many cancers, which respond well to radiation treatments and chemotherapy, the only real cure for acute renal failure is a near-perfect donor match and a successful kidney transplant. Sadly, 40% of individuals awaiting a donor organ will pass away before such a match becomes available. In an effort to prolong life, or at the very least improve its quality, many individuals will eventually begin dialysis (also known as hemodialysis). This is a 3x/week undertaking, with each session lasting 3-4 hours. Having spent time with my mom during her sessions, I was able to witness how draining this can be, both physically and emotionally.

A Simple Solution?

Deconditioning and disability are major concerns when facing end-stage renal disease. In an effort to improve ambulation, a recumbent-cycling-during-dialysis program was developed in 1991, for individuals receiving dialysis treatment in an outpatient facility. The program remains in use today. In a facility set up for this program, a patient can cycle while in a semi-recumbent position, with little or no risk of interfering with his fistula while dialysis is in progress. The program can remain at a low level, or be progressive, with 5 levels of cycling ranging from 3 to 40 minutes. Patients report many positive benefits, including increased fitness and energy levels, ease of mobility and a lessening or cessation of muscle cramps suffered as a result of the dialysis process itself.

Strength = Health Improvements

Muscle wasting is another extremely common and unfortunate side effect experienced by patients with end-stage renal failure. It also appears to be one of strongest risk factors for premature death. “Dialysis patients are very inactive in general and commonly burdened by all of the health risks associated with inactivity, particularly type 2 diabetes and cardiovascular disease,” says Dr. Cheema, Ph.D. at the University of Sydney, Australia. His results, published in the May *Journal of the American Society of Nephrology,* show that performing high-intensity weight-lifting exercise during dialysis sessions confers great improvements in muscle mass, strength, quality of life, and other important outcomes in patients with end-stage renal disease.

In Dr. Cheema’s study, one group of dialysis patients was randomly assigned to perform high-intensity weightlifting exercises—while seated in the dialysis chair—during their regular three-times-weekly dialysis sessions. Using equipment such as dumbbells and ankle weights, the patients performed supervised exercises chosen to target all major muscle groups. The exercises were designed within the ranges of “hard” to “very hard”—rated 15 to 17 on the 20-point Borg Perceived-Exertion Scale. The control group did not participate in any physical activity during dialysis.
By the end of the 12-week study, those patients who had been assigned to the weight lifting protocol showed improved muscle mass, measured on computed tomography (CT) scans. The CT scans also showed decreased fat deposits within the muscles, suggesting the formation of new muscle tissue—an adaptation we know to be positive, and in this case being particularly associated with improved insulin sensitivity and a longer lifespan.

Dr. Cheema concludes, “Performing regular exercise during dialysis provides an ideal opportunity for these patients to improve their health status and quality of life, and we believe that exercise should be

integrated as standard practice in hemodialysis units worldwide. Health care personnel in this setting could easily be trained to carry out supervised weight-lifting exercise, as we have done in this research study." As a general rule, nephrologists who specialize in end-stage renal disease suggest lifting no more than 5 to 10 pounds with the arm where the fistula has been inserted. In Activities of Daily Life (ADL), this translates roughly to 1 gallon of milk, which generally weighs 8 pounds. Even lifting lighter weights every other day can help increase patients' blood flow, build muscle, and facilitate their ability to gain both strength and energy.

A New Direction For Trainers

This might soon become another business avenue for Personal Trainers to explore. There is nothing more rewarding than making a difference in the life of another; engaging dialysis patients in beneficial exercise during a time frame where they are essentially "held captive" could help redirect their health as well as their attitudes in a more positive direction. If trainers are at all interested in a venue outside the traditional gym or fitness center, dialysis treatment facilities are an untapped market. Delve into the research, and create a unique niche for your business!

Side Effects Become More than Just Physical

As you can well imagine, undergoing dialysis so frequently is simply not fun. No matter how sunny of a disposition these patients project, they may not realize the strong possibility of underlying depression setting in, due in large part to an unhealthy quality of life and bleak long-term survival outlook. A recent study published in the *Clinical Journal of the American Society of Nephrology* has revealed that aerobic activity can not only improve a dialysis patient's physical status, but also their mental health. Dr. Antonio Alberto Lopes, a lead scientist in this research, had this to say, "Our results call attention to opportunities for potentially improving the health of patients on hemodialysis through counseling for physical activity and the promotion of exercise programs in nephrology clinics." Two similar studies published in the same prestigious journal also found an association between symptoms of depression (predicated by kidney failure) and overall health status. One study revealed that dialysis patients who experienced the onset of depression were at an increased risk for being hospitalized. The second study found a plethora of non-disease-related health concerns faced by older people with poor kidney function, including cognitive impairment, exhaustion, frequent falls and impaired mobility. These individuals were also at a higher risk for hospitalizations, emergency room visits, and premature death.

Many trainers prefer to work with budding competitive athletes as well as the general "I want to get into the best shape of my life" clients. However, if your creative talents lean toward improving one's emotional wellbeing through exercise, senior adults with chronic illnesses may become your newest population of choice. Rather than being pitied, many of these individuals simply wish to feel better, to move through their days with more comfort and ease, and to engage the services of a professional who possesses the sensitivity necessary to set them on a good path.

Having seen my mother's strength falter over the course of 6 ½ years on dialysis, I was surprised to learn that push-ups are among the exercises mentioned on the *"Calisthenics for People on Dialysis"* list, authored by one of the largest dialysis providers, DaVita HealthCare Partners Inc. As our experiences have taught us, there are many impactful varieties of push-ups, including wide arm (standard push-up) and modified (pushing up from bent knees for less resistance) push-ups. If this is an exercise with which your client's healthcare provider feels comfortable, explore all the push-up options to find the right fit for your client's needs.

Heeding The New Guidelines

As of November 2015, a new set of recommendations has been put forth by the American College of Sports Medicine and the American Heart Association, specifically targeted for older individuals as well as those with chronic diseases such as renal failure. This new model addresses pre-participation health screening based upon factors that have been identified as having an influence on exercise-related cardiovascular events:

- An individual's current level of physical activity
- Presence of signs or symptoms and/or known cardiovascular, metabolic or renal disease
- Desired exercise intensity

With these in mind, the objectives of exercise design are twofold: first, eliminating unnecessary barriers so that an individual can begin and maintain a regular exercise program within the confines of dialysis; and secondly, encouraging healthy lifestyles through habitual physical activity. Even if a trainer feels very confident in his abilities to be of help, conferring with the client's nephrology team is vital prior to embarking on any new exercise regime, whether aerobic or strength-based in nature. Expand your business …and your horizons: familiarize yourself with the ravages of end-stage renal failure and its inherent complications, then set yourself on a course of action. The changes you make in the life of another will be profound, and mutually uplifting!

Links for related content:
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Seeing Red: Advocating for Women's Heart Health

BY: Cathleen Kronemer

As we are all aware, healthy lives do not begin and end with fitness alone. Lifestyle, dietary habits, genetics and stressful work environments also figure into the equation. Our clients look to us for guidance, not only in the gym but also in these other aspects of daily life. Many avid exercisers are no doubt trying to promote wellbeing along with strength and endurance, which is a fabulous goal. However, we would be doing our female clients a disservice if we recognize but fail to address risk factors for potential life-threatening situations.

Gender Differences

We've all seen the way cardiac arrest is portrayed in the movies: a man gasps, clutches his chest and staggers to the ground. In reality, a heart attack victim could just as easily be a woman, in which case such a scene may not be quite as dramatic. According to Dr. Nieca Goldberg, Medical Director for the Joan H. Tisch Center for Women's Health at NYU's Langone Medical Center and an American Heart Association volunteer, "Although men and women can experience chest pressure that feels like an elephant sitting across the chest, women can experience a heart attack without chest pressure." Instead, they may experience shortness of breath, pressure or pain in the lower chest or upper abdomen, dizziness, lightheadedness or fainting, upper back pressure or extreme fatigue."

It's In The Science

Just as a cardiac event will present differently in men and women, heart disease affects the genders differently. Biology is the significant issue at play here. The hormonal differences between men and women contribute to the manner in which heart disease develops and progresses. Studies have shown that post- menopausal women are at an even greater risk for heart disease, since circulating levels of estrogen seem to promote better cholesterol profiles.

Even though both women and men succumb to heart attacks caused by blockages in the main arteries leading to the heart, the method in which the clots develop often differs.

Women tend to develop plaque erosion, in which smaller pieces of plaque break off, become exposed and cause the formation of smaller blood clots. These clots may or may not cause total occlusions all at once, which helps to explain a female's cardiac event having a more subtle presentation.

Risk factors also differ by gender. High blood pressure is more strongly associated with heart attacks in women than in men. For young women with diabetes, the risk for heart disease is four to five times higher than for a man of the same age. Race, too, is an issue. Compared to Caucasians, women of color have a higher incidence of heart attacks across all age categories; young black women have greater odds of dying even before being discharged from the hospital.

"Can This Really Happen To Me?"

Even when the signs are subtle, the consequences can be deadly, especially if the victim doesn't get help right away. Women often chalk up such symptoms to less life-threatening conditions like acid reflux, the flu or part of the normal aging process.

They react this way mostly out of fear, or because women are accustomed to always prioritizing their families over themselves. Often there is an accompanying sense of denial; many women would not even consider a heart attack as a possibility.

Raising The Red Flag Of Awareness

The Annual *Wear Red Day* is a nationwide public awareness event, held each year on the first Friday in February. The goal of the day is to urge females from all walks of life to "go red" in an effort to draw attention to the leading killers of women – heart disease and stroke. *National Wear Red Day* promotes the *Red Dress* symbol, the icon of women's heart health, and provides an opportunity for the public to unite in life-saving awareness-to-action plans. Today, 1 in 3 women, or nearly 44 million American females, are affected by heart disease. Despite its prevalence, only 1 in 5 women are aware that heart disease poses their greatest health risk. While we have made great strides in reducing cardiovascular death rates in women over the past 2 decades, the need to continue education and advocacy is real. Such work begins with recognizing and accepting the fact that heart disease kills more women than all types of cancers combined. While most women fear succumbing to breast or uterine cancer, the harsh reality is that a female's greatest health risk stems from heart disease and stroke.

Hit The Gym…And The Kitchen

One of the first small but effective changes women can make in their lives revolves around prudent food choices. The question that most often creeps into a female's mind is: Can nutritious become delicious? It certainly can be accomplished, and relatively easily. As it turns out, food does not have to lose flavor in order to benefit heart health. Preparing foods in such a manner simply translates to creating dishes that are low in saturated fat, *trans* fat, cholesterol, and moderate in total fat. As an added bonus, these dishes have fewer calories than their higher-fat counterparts. Educating our clients about the importance of fresh produce, whole grains, fiber, and lowering sodium can become as vital to their health as learning their way around the weight room.

How To Get Involved

This February, consider planning an event for *National Wear Red Day* within your local community or at your fitness center. Organize informal lectures delivered by cardiac professionals (wearing red, ideally!) where participants can learn and also share heart-healthy advice. If you are a Certified Health Coach in addition to a Personal Trainer, you may wish to distribute flyers addressing healthy nutrition, the importance of stress reduction, and maintaining physical activity as a lifestyle goal. Remind attendees to start small: making even simple changes will help to reduce their risk for heart disease.

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Does Training Together Benefit a Relationship?

BY: Cathleen Kronemer

Ever thought to invite cupid to the gym? After all, love is in the air, Valentine hearts seem to be dominating every retailer's shelves, and of course, the price of roses creeps higher. If it seems like Dr. Phil has covered just about everything there is to say about romance, think again. It might be time for a new perspective.

Is Fitness The Missing Link?

According to Amy Baglan, CEO and founder of MeetMindful.com, "Relationships and fitness go hand in hand. They are both hard work but worth it." We might not have made this connection previously, but in truth, many couples enjoy bonding over fitness. "A romantic relationship that is worth something is always going to be hard work, just like getting in shape and becoming healthier require time and effort", Baglan reminds us.

Is it possible that exercise can trigger positive emotions that transcend the endorphins with which we are already familiar? Can a "runner's high" be linked to improvements in a relationship? If we take into consideration that exercise releases dopamine, a happiness-inducing neurotransmitter, such a line of reasoning just might be worth pursuing.

The Next Level Of "Intimacy"

If you and your partner are currently in a good place in terms of emotional compatibility, you must already be doing many things correctly. Recognizing that there is always room for improvement, contemplate approaching a relationship in a similar fashion to how you might set fitness goals. Should you choose to do this with your partner, you open up a new and dynamic world of potential in terms of bonding and communication.

It is one thing to have a consistent "workout buddy"; but it pales in comparison to celebrating your partner's physical successes or helping him/her through difficult plateaus. "Working out with your partner can create the feeling of a shared experience, which *Psychology Today* reports helps couples feel more satisfied with their relationships and more in love with their partner", shares Jeana Anderson Cohen, an ACE certified personal trainer.

Embarking on a joint fitness journey requires somewhat of a roadmap. Both individuals need to communicate and lend support. When each partner is willing to place himself in a position of potential vulnerability and exposure, it paves the way for a relationship breakthrough. By embracing new lifestyle changes together, bonds are forged that can ultimately lead to embracing each other. Starting an exercise routine, along with adopting a healthy meal plan, may raise energy levels, promote more restful sleep and fuel a positive way of regarding oneself. How can all of these changes help but improve the emotional aspects of a relationship?

Exercise As An Aphrodisiac

A research study conducted at the University of Arkansas found that exercise frequency might be attributed to an enhanced feeling of attractiveness, which can increase sexual desirability and performance. Another study reported that women were more sexually responsive following 20 minutes of vigorous exercise. Men similarly observe an uptick in testosterone levels following even a short bout of intense exercise.

"When a couple works out together, the actual exercise itself has a positive impact," explains Dr. Jane Greer, a marriage and relationship psychotherapist in New York City. "Both partners come away with feelings of synchronicity, cooperative spirit and shared passion." It matters not what the exercise entails; it could be running, cycling, or even making it through a tough Circuit Training class together.

Simply sharing the experience of exertion seems to be enough to lead to improved relationships, and this often translates to greater levels of physical intimacy. Research demonstrates that exercise increases blood flow throughout the *entire* body—and that includes the "private parts" — leaving one more responsive to stimulation.

It Works At Any Age

Couples who work out together are typically highly motivated and committed to staying fit and healthy. In a Harvard University study consisting of 160 male and female swimmers ages 40 to 60+, regular physical activity was associated with an increased frequency and enjoyment of sex. The science behind this is fairly straightforward. Exercise induces symptoms that resemble those of physiological arousal, such as a faster pulse and shortness of breath.
If fitness can mirror the thrill of a new romance, imagine how wonderful this becomes when your workout partner is also your intimate life partner! Remember that this joint venture is less about competing with your mate, and more about honoring each other's likes and dislikes. Even if you arrive at the gym together but head in opposite directions to participate in different activities, the sheer fact of having set aside this mutual time to become healthier and more vital leads to better communication and the forging of stronger bonds within the relationship.

Skip The Singles Bar

If you are currently unattached and seeking a romantic involvement, focusing on wellness is often overlooked as an element of finding a match. Those who share a commonality might be more inclined to strike up a relationship with a like-minded individual. Over time, this might even lead to discovering a new gym partner. Experts in the matchmaking field suggest individuals take these aspects into consideration:

- Become a Better Version of "You".
- Exercise can make you feel better about yourself, and making positive choices for your body will boost confidence.
- This outlook radiates from you and becomes obvious to those around you.
- When you feel better about yourself, you more easily attract others who reinforce your positive energy.

These statements are geared toward reminding us that physical attributes are only part of the bigger picture of relating to others. Wellness as a concept and a lifelong practice is what makes an individual desirable, and just like a toned body or sculpted muscles it sets the stage for Cupid's entrance. Confidence is very appealing, to both genders. Cultivate it in the gym, in your food/meal choices, and in the company you seek. Wear it proudly, and it will be reflected back to you.

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Splitting the Difference – One Way to Program for Endurance and Muscle Growth

BY: Erin Nitschke

One way to program for endurance and muscle growth is by splitting the difference. There are thousands of ways to structure an exercise program and all require consideration of each client's individual skills, abilities, experience, enjoyment, and current fitness level. I love the art and science of program design because it's unique to each person and to each goal.

How to design a hypertrophy workout program

A thoughtful way to approach programming design includes **7 general steps** (give or take based on the school of thought and training philosophies you gravitate towards).

Step 1: Needs Analysis. This step focuses on – you guessed it – the needs of the individual or athlete. Such questions as the following are addressed before programming is determined.

- Does the client have any health conditions or pre-existing injuries that may limit his/her ability to execute the exercises within the program? Note any contraindications.
- Examine what equipment is available to help you determine the types of exercises you will select.
- What is the client's schedule? This will help you identify frequency.
- What are the priority muscle groups? Ideally, yes, a program will target all major muscle groups, but the point here is to clearly identify any imbalances the client may have initially that will require attention.
- Is the client training for general fitness and health, performance, or an event? Note: if the client is an athlete, principles of programming related to the athlete's season will apply.
- What does the client enjoy?

Step 2: Exercise Selection. The types of exercises selected are often dictated by the desired type of resistance exercises, movement patterns of a particular sport (if the client is an athlete or training for an event), and the client's overall "training age" or experience.

Step 3: Frequency. To determine the training frequency or the number of training sessions you will include, you must first know what the client's training status is. Beginners train 2-3 times each week, intermediate train 3-4 times a week and advanced train 4-7 days a week.

Step 4: Exercise Order. As is common knowledge, there's a method to the madness. Exercise sequencing is an important variable in program design. Primarily, we do not want one exercise to compromise the client's ability to execute a subsequent exercise; therefore, we consider how to order exercises in such a way a client will derive maximum benefits. Common ordering patterns include alternating push and pull exercises, alternating upper body and lower body movements, large muscle groups before small, etc.

Step 5: Training Load & Reps. Training load is the amount of weight per exercises and reps are the number of times an exercise will be performed. Important: Reps are inversely related to load. The lighter the load, the greater the reps. The load can be determined by a percentage of 1RM or by estimating the 1RM. It is not generally recommended to ask a client (recreational exerciser) to perform maximal lifts. Save that approach with the serious athletes and advanced performers. You can also determine progression at this stage

Step 6: Volume. Volume refers to the total amount of weight lifted in a training session. One way to approach this is to assign load based on the training goal (strength, power, hypertrophy, muscular endurance or combo).

Step 7: Rest Periods. This variable is dependent on the training goal, the training status of the client, and the load. If a client is in poor physical condition, longer rest periods may need to be allocated until a base fitness level can be achieved.

Four-Day Split for Muscle Size and Endurance

An example: Ross is a 30-year-old recreational exerciser who has slipped into a period of random activity patterns. He sporadically visits the gym one to two times a week and doesn't have much of a program to follow. He enlists your help. His primary goals are to increase muscle size and improve endurance. He is an intermediate exerciser in that he does have moderate experience with weights and used to work out with a personal trainer a little over a year ago. Ross has no pre-existing injuries or other health conditions. Given his schedule and training goals and the other information obtained in the needs analysis, you decide a four-day split routine would be beneficial.

Muscle Groups	**Sets x reps**	**Muscle Groups**	**Sets x reps**
Days 1 & 3 (Monday/Thursday)		Days 2 & 4 (Tuesday/Friday)	
Legs/Back/Biceps (Include exercises such as the squat, lunge, lat pull, seated row, curls, back extension, etc.)	3-4 sets of 10-12 reps Load ~ 70-85% of estimated 1RM	Chest/Shoulders/Triceps/Core (Include exercises such as bench press, chest fly, military press, lateral raise, overhead triceps extensions, etc.)	3-4 sets of 10-12 reps* Load ~ 70-85% of estimated 1RM *Core – higher reps – 25+

Notes: *Encourage warm-up sets as needed for large, multi-joint movements such as the squat and bench press. Allocate about 45 seconds of rest in between each set. Since endurance is part of his goals, encourage 3 cardio sessions a week to begin and dedicate Wednesday to Yoga or some other at-home flexibility routine outside of the cool-down stretches performed during the training sessions. Lastly, plan for progression. A conservative rule is the "2 for 2" rule. If the client can perform 2 extra reps beyond what is originally assigned, increase the weight.*

Design workout programs that combine creativity and science

Remember – switch up the angles (i.e. think internal and external rotation with the hip joints) of an exercise as different angles will target different parts of the same muscle group (adductors, hamstrings, pecs (incline, decline, flat, etc.) This layout is one of thousands of examples aimed at the same training goals (hypertrophy and strength). The two most important aspects of safe, effective, and enjoyable program design are to apply all 7 steps (the science) and be creative (the art). Don't shy away from using various exercise implements in new ways. How can you incorporate band work or balance discs to add an extra challenge? What speaks to your client? What gets them excited and keeps them hungry for the next session? In other words, keep it legit, but keep it fresh and fun. Rewrite the program every 6-10 weeks (this depends greatly on each client's status and overall goals and is not meant to be a hard and fast rule).

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Toning the Abs by Reducing Belly Bloat

BY: Guest Author

As a personal trainer, you probably get more requests for a flat stomach than you do for a healthy G.I. tract. It turns out that the two are intertwined. Afterall, nobody achieved great abs from being bloated and constipated all the time! Are your clients consuming gut friendly bacteria?

Fit Pros and Probiotics Working Together

With the recent rise in individuals suffering from chronic belly woes you may find yourself working with more clients who can't beat the bloat. These tummy troubles can affect your client's progress, self-esteem and stamina while in the gym. The solution here may be small, and I mean microscopic small, but don't be fooled by its size, these tiny guys are loaded with powerful forces to fight stomach offenders! You may have heard of them, and if not, then I'd like to properly introduce you: give a warm welcome to probiotics.

What puts the PRO in probiotic?

Probiotics are the "good" bacteria naturally found in your gut, also known as live cultures. Their job is to support intestinal health by maintaining a balance of healthy gut flora. Many people are low in this friend-worthy bacteria which is why additional intake of these live microorganisms can be beneficial. Think of it this way: picture your intestines as a war zone, where it's "good" bacteria vs. "bad". If the ratio of "bad" bacteria to good is off kilter, this is when tummy trouble stirs. Probiotic consumption acts as the extra armed forces your gut needs to defeat the offending troops and protect the fort from future invaders. Say hello to smooth sailing for your digestive system!

Where are these gut warriors?

Luckily, with the rising popularity of probiotics there a plenty of sources readily available at your local grocery store to choose from. Check these out:

- Yogurt (containing live active cultures)
- Kefir
- Kombucha
- Fermented vegetables (i.e. sauerkraut, kimchi, pickles)
- Fermented soybean products (i.e. tempeh, miso, natto)
- Probiotic Liquid or capsule supplements

What about prebiotics?

Just as it suggests in the name, PRE-biotics come before probiotics, acting as food and fuel for the probiotics. Going back to the war zone analogy in your intestines, think of prebiotics as added ammo your good bacteria need to more efficiently fight off the bad guys. Together, this dynamic duo is your ticket for optimal gut health!

Prebiotics can be found in foods containing fructooligosaccharides, which in layman's terms is basically just a certain type of carbohydrate comprised of fructose sugars. These can be found in foods such bananas, onions, soybeans, whole wheat products, leeks, artichokes, and asparagus. Try pairing some of these sources with your favorite probiotic foods for a tasty and gut-powered meal!

My personal go to probiotic

1 cup of goat's milk plain yogurt, 1 medium sliced banana, and a sprinkle of whole grain granola. Voila! The ultimate gut friendly goodness crammed into your morning breakfast bowl.

How do you pick the best one and what to look for?

Word on the street is out and probiotics are hotter than ever! It can a bit overwhelming though when shopping for probiotics due to the surplus of gut friendly products out on the market right now. So how do you choose the right one? And what's the best option? In reality, there is no easy answer to this question, as everyone's body is individualized, especially when it comes to our digestive system. So let's just start with the most sought out member of the probiotic family– good ole fashioned yogurt! Yogurt is still touted by many as the best source of probiotics and for good reason too! As mentioned earlier probiotics are live cultures which means they have an expiration date and can be easily destroyed by heat and an acidic environment. Dairy products are similar in that they have a short shelf life, so you are more likely to consume the probiotics at their highest potency before it goes bad. Plus, dairy foods and probiotics work synergistically—dairy acts as a buffer against stomach acid, increasing absorption of the beneficial bacteria.

Not all yogurt is created equal

Here is what to look for when choosing a probiotic rich yogurt source:

- Contains at least 3 of these strains: Bifidobacterium lactis, Lactobacillus bulgaricus, Lactobacillus acidophilus, Streptococcus thermophilus under the ingredients list
- Reads: "Contains live active cultures" on the container
- 12 gm or less of sugar (you don't want the sugar to overpower the amount of good bacteria—too much sugar is not beneficial for both gut and overall health)
- Refrigerated—yogurt loses its beneficial probiotic properties when it is exposed to heat which kills the live active cultures (try consuming yogurt fresh out the fridge for increased benefits)

Many people ask what the difference is between Greek yogurt and plain yogurt. The biggest difference you may notice is the texture of Greek yogurt is a lot smoother and creamier than plain. This is due to different processing techniques. Some products strain the liquid whey and lactose from plain yogurt, giving it that thicker consistency, while others add thickeners such as gelatin, corn starch or whey concentrates.

The health pros of Greek yogurt is it contains higher amounts of protein in comparison to plain yogurt, however, the cons is it looses some of its vitamins and minerals such as Calcium in the former process. Keep in mind when choosing the right product for you to look at the nutrition label.

For those who prefer the supplement form or are unable to consume dairy, it's important to understand what these two terms on the label mean when choosing the right product:

In regards to strains, the different types of bacteria contained within the supplement which each have different benefits and potency (examples of different strains: Bifidobacterium, Lactobacillus bulgaricus, Lactobacillus Acidophilus, Streptococcus thermophilus, B. longum, S. thermophilus)

CFU (colony forming units) – the total amount of beneficial bacteria in the supplement —look for ones in the billions range or above

When choosing the right probiotic it may require a bit of trial and error to see which one works best, as all our bodies react differently and each of our guts may be lacking in different strains of healthful bacteria. Once finding a source that does work, your clients will see the reason behind probiotics recent claim to fame and their belly will personally thank them for it (and you too for helping them discover it)!

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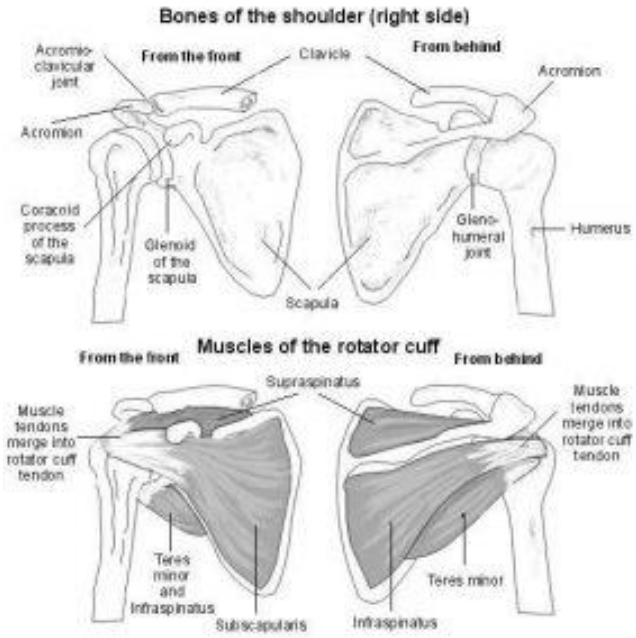
Shoulder Injuries: Anatomy and Considerations

BY: Dr. David Brancato

When strength training, it happens. That twinge in the soft tissue, that pop of the ligature, that pitch fork stab in the muscle. *"I'm okay"* you tell yourself, then the pain, the inflammation and the aching begins to disrupt your recreation, work and further workouts. What are you to do?
Say you or a client have shoulder pain. It affects lifting, sparring and day-to-day activity. Now what? You need the inner stamina to know that the body can correct injury provided you understand what to do. View the diagrams below. Where is the pain? You may be fooled because pain can be referred, meaning the point of origin of the pain is not where the pain is felt. For example, the muscle tendons merge into the rotator cuff tendon and if inflamed can radiate pain into the bicep.



Where is your shoulder pain?

Is it in the glenoid of the scapula, the coracoid process of the scapula, the acromio-clavicular joint, one of the four muscles comprising the rotator cuff (supraspinatus, infraspinatus, subcapularis or teres minor)?
There may be no obvious reason for your shoulder pain. The symptoms of rotator cuff disorder include pain that comes on suddenly. The cause of the pain to the rotator cuff includes tears, subacromial impingement, calcific tendonitis. Damaged subacromial space leads to tears and weakness in the shoulder. A tear can be viewed on an ultrasound or MRI but not on an x-ray.

Who is at Risk?

Power lifters are particularly prone to shoulder injury. Why? Because the heavier weights place pressure on the ball/socket joint of the shoulder. Injury to the rotator cuff causes the head of the humeral bone to not be pushed down under the acromion properly. Impingement follows, causing pain. The acromion can have bone spurs or be arthritic, causing pain. Another cause of impingement is from calcific tendonitis affecting the working of the rotator cuff.

A Shoulder Stretch

The trainer may demonstrate this stretch by standing tall, hands clasped behind their back, palms of the hands facing up with fingers interlocked, then, pushing the hands toward the floor which expands the shoulder and opens that ball/socket so there is no impingement at the point of the acromion.

Using Ice and Heat for Shoulder Injuries

When injury occurs you often see athletes with bags of ice on their shoulders. The ice will reduce inflammation, swelling and pain. However, this doctor is not a proponent of continuous cold therapy, i.e. 20 minutes at a time. Rather, my suggestion is alternating heat and cold, meaning one minute as hot as you can stand it and one minute as cold as you can stand it.

Alternate hot/cold alternating 1 minute at a time for 7 cycles totaling 14 minutes. This allows movement of the blood, releasing the stagnant blood carrying inflammatory toxins away from the area, Reducing inflammation/swelling is critical, which can be accomplished naturally by rubbing magnesium oil on the injured area, placing arnica salve on the injured area, as well as taking anti-inflammatory herbs like turmeric and ginger. Further, the inflammation is reduced by eliminating all processed foods, simple sugars and foods that lead to acidity in the body.

One word of caution. You must have a professional determine if cervical or thoracic vertebrate is the origin of your shoulder pain. For example, herniated disks can be the origin to shoulder pain and/or scapula pain from thoracic vertebrate injury. This will require neck and or thoracic MRI.

My first recommendation is hot/cold therapy and inflammation reduction, provided there is absence of thoracic/cervical subluxation and/or herniated disks.

Physiotherapists recommend:

1. Painkillers
2. Anti-inflammatory painkillers. [Dr Dave's caution: use of anti-anxiety drugs with anti-inflammatories will cause and/or exacerbate depression. Also NSAIDS are known to lead to microscopic tears in the intestines causing undigested food particles to enter the blood stream, leading to circulating immune compounds, causing autoimmune reactions.]
3. Ice packs
4. Physiotherapy, leading to specific exercises to strengthen the shoulder.
5. Steroid injections. This is to reduce the inflammation in the subacromial space.
6. Surgery for subacromial impingement known as arthroscopic subacromial decompression, which increases the amount of space between the acromion and the rotator cuff. There is also ultrasound barbotage for calcific tendonitis, involving the injection of the calcium deposit with salt water and sucking it out through syringe.

Summary

As a trainer, holistic practitioner, physiologist I have a protocol that I have always engrained in the individuals I have trained, i.e. with proper supervision you can work through the pain and envision that your recovery will occur. An athlete never quits. They only get better. Therefore in summary: (1) have a professional determine the origin of your pain, (2) if needed that determination can be made by having a MRI, (3) reduce inflammation, swelling and pain through hot/cold therapy, decompression of the vertebrate (I like inversion tables), (4) herbs that reduce inflammation; and, (5) supportive exercises rebuilding the musculature so they do not atrophy during recovery.

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How Personal Trainers Can Help Clients Prevent Osteoporosis

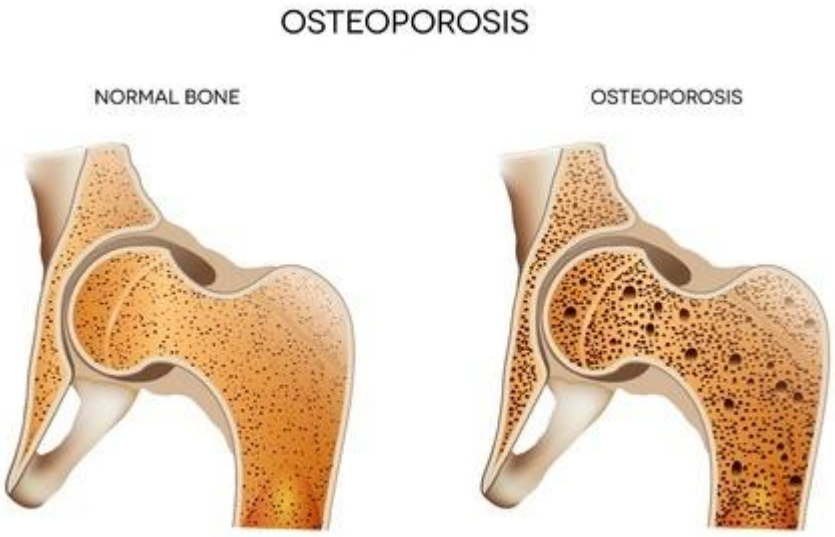
BY: Mike Kneuer

Approximately 54 million Americans have osteoporosis or low bone mass, placing them at increased risk for osteoporosis. This often-silent disease causes bones to become weak and fragile. Typically, there are no symptoms to indicate someone is developing osteoporosis. Oftentimes, people aren't diagnosed until they have a fracture, and by that point its too late. As a personal trainer, we are an important part of helping our clients prevent osteoporosis. We'll get more into how we can help later. Weak bones easily fracture, the most common fractures occur in the hip, spine, and wrist. Each year over a million fractures are attributed to osteoporosis costing over $17 billion in acute and long-term care expenses. Post fracture recovery can be difficult and it can create a diminished quality of life Our female clients are most affected by this disease although osteoporosis can affect anyone. Woman at the greatest risk are Asian woman who are over 70 years old.
There are two different types of risk factors, modified and fixed. Having one of the risk factors or even a few does not mean that you are destined to develop osteoporosis, however your odds are increased.

Fixed risks for osteoporosis

Although these risks are fixed and not much we can do as trainers to help there are precautions that can be taken to reduce bone mineral loss.

- Age – Risk becomes greater with age
- Gender – Women are at higher risk
- Family History
- Previous Fractures
- Ethnicity – Asian and Caucasians are at higher risk
- Menopause
- Rheumatoid Arthritis
- There are many health issues that can rob your bones of calcium, be sure to talk to ask your Dr. about keeping your bones healthy.



Modifiable risks for osteoporosis

Through lifestyle modifications we can help our clients reduce their risk by taking the following steps.

- Alcohol – Eliminate or Reduce Intake
- Smoking – You shouldn't be smoking anyway! Don't you see the commercial of the lady talking through her throat tube? Come on!
- Low Body Mass Index – Being underweight increases risk
- Poor Nutrition – Not getting enough minerals in your diet
- Vitamin D Deficiency – Over 50% of women diagnosed had low D levels
- Eating Disorders
- Insufficient Exercise – Weight bearing exercise increases bone density
- Not Eating Enough Protein – Protein is 50% of your bone.
- Low Calcium Intake – Calcium is a very important mineral for bone health. If you don't get enough from your diet consider supplementation.
- Certain medications can cause increased bone loss, be sure to check with your Dr. and give them a full history of the medications you are taking

Preventing osteoporosis

There are steps our clients can take to greatly reduce the risk of developing osteoporosis, however, it is not 100% preventable. Although diagnosing osteoporosis is their physicians job, it is important to bring up the issue especially if your client has any risk factors mentioned above. Here are some ways to help them minimize their risk of developing osteoporosis in your role as a personal trainer.

- Pull the Plug on added Sugar. Sugar doesn't have any nutritional benefit and furthermore, it depletes your body of phosphorus, which is an important mineral for calcium absorption.
- Consume a minimum of 1,200mg per day of Calcium. Foods rich in calcium are greens: collard greens, turnip greens, Chinese cabbage, kale, okra, dandelion greens, and broccoli. Spinach, although it has calcium, contains oxalates, which rob the mineral from your body so it is not advisable on an osteoporosis diet.
- Resistance training (NOT CARDIO) will help increase your bone density.
- The main way our bodies create Vitamin D is from exposure to sunlight. When the rays hit our skin our bodies naturally create vitamin D. But most of us don't get outside enough and when we do we lather on toxic sunscreen that blocks the production of vitamin D. Eat a diet high in vitamin D –foods such as wild salmon, grass fed beef, egg yolks, dairy, and organ meat or consider supplementation. Make sure to get vitamin D with K2.
- Don't Drink or Smoke. If you are at high risk or have osteoporosis cut these out immediately.
- Reduce or Eliminate Caffeine if you get an adequate amount of calcium in your diet, one cup of a caffeinated beverage is OK. You lose about 6mg of calcium for every 100mg of caffeine.
- Ask your Dr. for a Bone Mineral Density Test of BMD to determine your current state of bone health.

Personal trainers who pay attention enhance prevention

Millions of people will find out too late that they have Osteoporosis. It's your job as trainers to help your clients reduce their lifestyle related risk factors. Most of these are things that we are already telling our clients such as don't smoke, limit sugar and caffeine, and doing resistance training. Breaking a hip is often the start of the slippery slope that can end in your client losing their independence and you losing a client. Encourage your clients with high risk factors to get tested, pay attention to the modifiable risk factors and give them the best chance for a long, healthy and active life.

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Hip Flexor Muscles and Anatomy for Personal Trainers

BY: Beverly Hosford

How many of the 11 muscles involved in hip flexion can you name from memory? It's hard to remember them all! Yet it's easy to see why so many muscles are needed for this motion. You hip flex every time you sit, squat, walk or ride a bike. And your clients are flexing their hips constantly during workouts while lunging, crunching, stepping up, etc.
To make it easier for your memory, here are tips on how to study according your level of anatomy knowledge. Pick which works for you and then we'll review the muscles!

Beginner hip flexor muscle anatomy

If you're just starting your anatomy journey, work on remembering the names of all 11 hip flexor muscles. Use acronyms to help you. Here are the letters to work with: AAA I GG PP R S T. Scroll down to see the muscle names that go with these letters.
Here's a sample acronym: **GAGA RAP TIPS**
So, what are Lady Gaga's rap tips? I'm not sure, but creating acronyms is helpful and fun!

Intermediate hip flexor muscle anatomy

Once you've memorized the 11 hip flexor muscles, see if you can learn the bones that each muscle attaches to. Making flashcards is an easy way to practice.
All of the hip flexor muscles attach from the **pelvis** or **spine** to the **femur** or **tibia**, which is how they influence hip flexion. Bypass the tricky bony landmark terms for now and familiarize yourself with just the two bones each muscle attaches to.
The **bolded words** in the descriptions below are there just for you intermediate anatomy student! Knowing which bones each muscle attaches to is helpful for creating basic hip flexor exercises and stretches. More to come on that in a future article…

Advanced hip flexor muscle anatomy

If you know all the hip flexor names and bones they attach to, that's an awesome accomplishment! Now you're ready to learn the specific bony landmarks for each of the 11 hip flexors. This is not a feat for the faint of heart!
The landmarks are tricky to learn, but they're the key to really effective exercise programming. Some of the hip flexors are better at creating hip flexion when the hip is internally or externally rotated and some better in neutral. Abduction and adduction also influence the way these muscles function. So does the degree that the hip is flexed.

With advanced anatomy knowledge, you can create stretches and exercises that are strategic, specific and help clients overcome muscle imbalances quickly. Unfortunately, there's no quick way to learn the exact muscle attachments.

Find each specific muscle attachment listed below on yourself and a partner. Place the ends of a balloon, string or rubber band on each attachment site. Move the bones into internal and external

rotation with hip flexion. Try adding some abduction or adduction with hip flexion. This will clue you in to the muscles abilities, which change as the position of the bones change. You'll start to see the possibilities as you solidify your knowledge of the attachments and specific abilities of each muscle.

For example, psoas major and iliacus seem to be involved in external rotation of the femur because the lesser trochanter lines up with the other side of the muscle attachment more when the femur is externally rotated. In other words, it comes closer to the anterior (front) side of the body.

Hip flexor muscles and attachments

Each muscle below has the bones in **bold** for intermediate learners and the specific bony landmarks for advanced learners. I skipped origin vs. insertion because that just makes it more confusing and your muscles don't really identify themselves that way anyhow... You can reference these amazing hip flexor muscles in any anatomy book. Anatomy coloring books are a fun choice if you're in the market.

Psoas Major

Spine: bodies of transverse processes of lumbar vertebrae
from/to
Femur: lesser trochanter

Iliacus

Pelvis: iliac fossa
from/to
Femur: lesser trochanter

Tensor fasciae latae

Pelvis: iliac crest, posterior to the ASIS
from/to
Tibia: iliotibial tract

Sartorius

Pelvis: anterior superior iliac spine (ASIS)
from/to
Tibia: proximal, medial shaft at pes anserine tendon

Rectus femoris

Pelvis: anterior inferior iliac spine (AIIS)
from/to
Tibia: tibial tuberosity (via patella and patellar ligament)

Gluteus medius (anterior fibers)
Pelvis: gluteal surface of ilium between posterior and anterior gluteal lines, just below the iliac crest
from/to
Femur: lateral aspect of greater trochanter

Gluteus minimus
Pelvis: gluteal surface of ilium between anterior and inferior gluteal lines
from/to
Femur: anterior aspect of greater trochanter

Adductor longus (assists)
Pelvis: pubic tubercle
from/to
Femur: medial lip of linea aspera

Pectineus (assists)
Pelvis: superior ramus of pubis
from/to
Femur: pectineal line

Adductor brevis (assists)
Pelvis: inferior ramus of pubis
from/to
Femur: pectineal line and medial lip of linea aspera

Adductor magnus (assists)
Pelvis: inferior ramus of pubis, ramus of ischium and ischial tuberosity
from/to
Femur: medial lip of linea aspera and adductor tubercle

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Prepare Clients for Weight Loss Success With 5 Dietary Tips

By: Guest Author

Misconceptions about how to lose weight are in no short supply. Heighten your success with clients by preventing them from falling victim to the hype that clever advertisers put on labels like “diet friendly”. In this post we’ll debunk some of the misinformation out there so you can feel good about coaching clients on the best practices for weight loss. Here is the truth behind 5 top diet myths.

1. You should only consume low-fat products if you are trying to lose weight.
For decades we’ve been told eating too much fat will lead to weight gain and in some cases obesity. This may sometimes be true, but usually the culprit here is not so much fat individually but rather those refined carbs and added sugars you find in highly processed foods. When we have too much of these products they then get stored as fat in the body. Think about it this way, how easy is it to scarf down a box of doughnuts (refined carbs and sugars) vs. a jar of peanut butter (fat)? Time to reexamine this low-fat falsity.

Several studies were actually done comparing the effect of a low-fat diet vs. a low-carb diet and results showed participants on the low-carb diet lost an exponential amount of weight in comparison to the low-fat group (1,2).

Not only does eating a high fat diet show improved weight loss but it can also reprogram your metabolic state to burn through fat. A study showed how a high-fat diet shifted the act of storing fat in the body to utilizing it as energy in between meals (3).

Takeaway: Fat is not the enemy here. Most of the excess fat in the body comes from consuming highly processed carbohydrates and added sugar. A high-fat diet can help you burn through fat rather than store it. Say it out loud: “Fat is my friend”.
Fat Friends: nut butters, avocado, raw nuts, coconut oil, olive oil, ghee, and cheese (i.e. feta, mozzarella string cheese, swiss, cottage cheese, cheddar, goat cheese, parmesan)

2. You won’t lose weight unless you’re counting calories.
For starters this is not a realistic or long lasting method for weight loss for many people. Not only is it time consuming but it takes the joy out of meal time. And this whole idea that all calories are created equal is absolute nonsense! Snacking on 300 calories worth of chocolate chip cookies is the not the same as snacking on 300 calories of walnuts and a slice of cheddar cheese.
Instead of focusing on how many calories you’re consuming, bring your attention to the types of foods filling your plate during each meal. If your plate is well-balanced (i.e. includes whole food groups: protein, whole grains, fruits, vegetables, healthy fats) you can be rest-assured you’re getting a healthy dose of nutrients and won’t overdo it. When you’re eating meals consisting of a variety of whole foods you’ll find yourself filling up on less because your plate is loaded with fiber, healthy fat, and protein to keep you full.

Takeway: Not all calories are created equal and for sustainable weight loss counting calories is not realistic. Stick to meals consisting of whole foods to take the guess work out so you can relax and thoroughly appreciate the food you’re putting into your body.

3. Protein bars are healthy.
Protein bars are marketed as a healthy snack alternative or meal replacement for when you're on the go. Problem is though, many protein bars are extremely high in sugar and usually low in fiber which helps keep you full. AND to top it off some aren't even very high in protein!
A comparison was done between a Snickers Bar and a Luna Protein Bar (Nutz Over Chocolate) and calorically both were actually equivalent based off of the serving size (4). Though the sugar content was higher in the Snickers Bar, two of the biggest ingredients contained in the Luna Bar were organic brown rice syrup and organic dried cane syrup which are just fancy words for sugar (don't let the word organic in the ingredients list fool you).

When putting the Luna Bar head to head with good ole plain Greek yogurt though, there's very little competition. The Luna Bar contains 9 grams of protein and 10 grams of sugar per serving, whereas 1 cup of greek yogurt contains 17 grams of protein and 6 grams of sugar — can't argue with the winner here!

Takeway: Most protein bars on the market are high in sugar which can lead to weight gain. Sticking to whole foods is always your best bet to getting in an adequate amount of protein.
Grab and Go High Protein Snack: When you're on the go and need a high protein and low sugar snack, make batches of homemade trail mix using your favorite mixed raw nuts with bits of dark chocolate and put a handful in a container. Pair it with a piece of string cheese for an easy protein-powered and low sugar snack!

4. You should ditch the yolk of the egg and only consume egg whites when trying to lose weight.
Egg yolks have received such a bad rap because of their high cholesterol content. Cholesterol actually plays a very important role in the body. We need cholesterol to digest fat, and to produce hormones and Vitamin D. Eggs are actually one of the few foods naturally high in Vitamin D which is a vitamin many people are low in. The yolk essentially is the most nutritious part of the egg.
The yolk contains:

- Protein
- Carbohydrates
- Essential fatty acids
- Cholesterol
- Fat soluble vitamins (A,D, E, K)
- Selenium, calcium, phosphorus, and zinc

Egg whites on the other hand only consist of mainly protein with very little amounts of vitamins and minerals. Meanwhile egg whites are getting all the praise on your local diner's "Lite Breakfast Fare" menu!

Studies reveal the cholesterol in egg yolks actually raises HDL (the "good" cholesterol) in the body, as well as transforming the LDL (the "bad" cholesterol) into a subtype not associated with cardiovascular disease. In fact, studies show there is no evidence that consumption of eggs is associated with the risk of cardiovascular disease (5,6). Perhaps the new saying should be, "An egg a day keeps the doctor away?".

Takeaway: Eggs are actually extremely nutritious, yolk and all! The high amounts of cholesterol is not something to fear because it is actually beneficial in improving cholesterol levels as well as an asset to the body's maintenance of good health.

5. If it's diet, it's good for me.
Just because something is labeled "diet" does not mean it is a healthy alternative to it's non-diet counterpart.

Many diet drinks are made with artificial sweeteners such as aspartame (Equal, NutraSweet), saccharin, acesulfame-k (Sunett, Sweet One) or sucralose (Splenda) which provide a zero calorie alternative to sugar. Even though these substitutes are less caloric than real sugar, evidence does not show it being beneficial for the waistline. A study through the University of Texas Health Science Center San Antonio showed diet soft drink consumption is correlated with a greater waist circumference (7).

Other research showed that participants drinking diet soda were at higher risk for diabetes and metabolic syndrome than those who consume non-diet products (8,9).
A lot of this may have to do with the signals these zero calorie sweeteners send to the brain. These sweeteners trick your brain into thinking you're feeding it all these calories and once it realizes that's not the cause, you may find yourself feeling unsatisfied and reaching for something else high calorie to satisfy your taste buds.

The biggest reason drinking diet drinks is not beneficial to losing weight though is because they are empty calories. There is very little to no nutritive value to most diet soft drinks.

Takeaway: Diet soft drinks are not a healthy alternative when trying to lose weight because not only can they can cause you to crave more sweets and increase your waistline but they have also been linked to diabetes and metabolic syndrome. Plus, diet soft drinks provide no nutritional benefit. Though research in the nutrition realm is constantly changing, especially when it comes to what's "best" for losing weight and keeping it off, one thing remains the same: a *whole* plate of *whole* foods is always a *whole* lot better for you.

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Rhabdomyolysis: The Life-Threatening Effects of Muscle Breakdown

Author: Cathleen Kronemer

How far will some individuals go to claim a title?

As a burgeoning bodybuilder, an athlete can train hard, abide faithfully by the trainer/coach's instructions, eat clean, and take in all the proper supplementation in an effort to increase muscle mass. And while the scope of a developing physique is largely predetermined by its genetic make-up, bodybuilders soldier on.

When something goes awry in the game plan, when the body seems to betray itself and head down a path of destruction, the questions begin to surface. Was it the pre-competition diet? Was cardio insufficient? Was additional muscle mass required? *Or…was the trainer ill equipped to take a client from the gym to the competition stage?*

A fellow athlete shared her story with me many years ago, actually while I was fully engaged in competitive bodybuilding. It is one that has stuck with me for years. Now, as a personal trainer, I am taking a look at this through different eyes…and mine are now wide open. The goal of this article is to illustrate just how easily we can derail a client's progress without ever having the intention to do so. It isn't thoughtfulness that some coaches lack; rather it is a deeper understanding of the physiology of the human body as it proceeds through arduous stage-perfect preparation.

The Frightening Forecast

After placing 4th in her first competition, this athlete was hooked on the sport. In an effort to build a larger and stronger physique to present on stage for her 2nd competition a brief 3 months later, she followed her trainer's instructions to the letter, only to be rewarded with a tremendous amount of pain in the quads and calves. The discomfort was so intense that it interfered with scheduled cardio sessions on the elliptical machine. Conquering the pain and rising above it, she continued to prepare for the show; but at 11 weeks out became quite ill and suffered a 4-week setback.

Taking several weeks to rest, she now had only 3 weeks to go before hitting the stage. Complete exhaustion as well as swelling in the abdomen, calves and feet appeared with a vengeance. Muscles soreness was so severe that rolling over in bed took everything out of her. The pre-competition program set forth by the coach was extreme: 90 minutes of cardio each morning and afternoon, with an additional 60 minutes every evening.

Nutritional intake had been reduced to chicken, fish, mushrooms, and spinach. Complex carbs had been drastically slashed to a mere ¼ cup of oats and ¼ cup of rice for the entire day. The abdominal swelling caused her trainer to reprimand her, accusing her of "cheating" and not adhering 100% to the meal plan.

Coaching vs. Competition Prep?

The 3rd competition went extremely well; yet afterward, instead of celebrating with fellow athletes, the competitor could barely move off the bed upon returning to her hotel room. Despite the irrepressible fatigue, sleep was elusive. Muscle spasms interspersed with dry heaves, and even days later, she

was barely able to walk up and down stairs. Soon a strange new phenomenon had presented itself – her urine had turned from the usual yellow to a frightening shade of dark brown.

Ultimate Mechanical Failure

How could this have happened to a young athlete who took such pride in caring for her body? The answer: exertional rhabdomyolysis. This is predominantly a disease of the musculoskeletal system, in which rapid destruction of muscle tissue leads to the leakage of myoglobin into the urine, rendering it the brown color she had observed. Myoglobin is a protein component of the muscle cells that is released into the blood when skeletal muscle is destroyed.

One of the dreaded complications of rhabdomyolysis is kidney failure. This can occur for a variety of reasons. Direct injury to the kidney, and plugging of the kidney's filtering tubes by the muscle proteins being released, are among the major causes of kidney function impairment in the presence of rhabdomyolysis. This might have explained this competitor's unusual bloating and swelling.
The etiology of rhabdomyolysis is complex; yet upon reading a list of the most common causes, one cannot help but think that perhaps a misguided training regimen lead the athlete to this dangerous place. The list includes:

- muscle trauma
- physical torture
- extreme physical activity
- low circulating electrolyte levels (phosphate, potassium, or magnesium) in the blood

Be Honest, Be Safe

Today, this brave former competitor continues to remain as active as her condition allows, but has prudently taken weightlifting down to a more reasonable and safe level. The best advice she could give me was this*: research and KNOW your trainer/coach. Placing complete and unwavering trust in an individual with little or no experience in competitive training can prove very dangerous.*

I share this story not to scare you away from personal training serious clients. Rather, I urge you to do YOUR research before agreeing to take a client to the stage. Know the individual's health history, prior competition experience…but most of all, ask the client just how much he/she is willing to risk by placing his/her body under extreme duress for the next 13 weeks.

Ask yourself how prepared and competent you feel to address every single issue that may arise in regard to this sort of training regimen. Pride in your talents has no place here, so be certain of your answer. A client's welfare must take top priority over the glory of coaching a 1st place winner.

program. Yet, it's easy to get into a fitness programming groove. Especially because exercises like lunges and squats are staples in most fitness routines.

Leave fitness favoritism at the door

We all have our favorite exercises. These are the ones we have mastered for ourselves and the ones we suggest when writing client programs. While this may feel like a safe, tried-and-true approach, there will certainly come a time when one of those exercises is contraindicated, due to a client's injury/surgery/recovery/disability. Even a client with no mechanical issues may have hit a plateau and desire a new way to "shock" his muscles. A willingness to think outside of the box, to open your mind in terms of new and different approaches, will always be appreciated by clients.

There is little room for debate when it comes to performing lunges in a leg workout. When properly executed, lunges are highly effective at developing and empowering several of the lower body muscle: quadriceps, calves, hamstrings and glutes, while also offering a rise in heart rate. In working one leg at a time, the properly executed lunge requires balance, agility and in some cases significantly more leg strength than other leg exercises.

That is not to say that we recommend a "Go lunge or go home!" approach to our client! As the professional, the client looks to us to design the safest and most effective workout regardless of what he may be experiencing.

Expanding Your Exercise Horizons

There are many lower body exercises that can be substituted for lunges. Provided there are no hip-related concerns, squats are a fundamental exercise that will target the same muscles as the lunge, but are often a preferable choice since squats require significantly less strength and balance. Many clients who are new to squats may need reminding of proper body positioning: chest and head are held upright, and the focus is directly ahead. Although many professional bodybuilders perform squats to the point of their thighs descending past parallel to the ground, the safest way to approach this exercise is to recommend stopping the lowering phase when the quads are parallel to the floor, with the knees behind the toes.

Reverse the lunge by stepping up

To reinforce the idea of stepping on the entire foot when ascending a staircase, driving the heel into the floor with each step to activate the glutes, it is easy to arrange a step with as many risers on each side as you deem safe for the client. Performing the up-up-down-down motion calls much of the lower body musculature into play. A knee-lift can be added as stability increases.

Now, get down

While many trainers feel as if they must always use machines or free weights with clients, there are a variety of excellent leg exercises that can be performed on the floor, utilizing only the client's body weight. Starting with a gold-standard favorite, the basic glute bridge, clients typically progress fairly

Now, get down

While many trainers feel as if they must always use machines or free weights with clients, there are a variety of excellent leg exercises that can be performed on the floor, utilizing only the client's body weight. Starting with a gold-standard favorite, the basic glute bridge, clients typically progress fairly quickly to a glute bridge/hamstring curl combination, placing heels on a large stability ball. When performed in this manner, the core and glutes as well as the hamstrings are required to work.

If isolation exercises are more to your liking, the clamshell may be an ideal choice. Training in this manner recruits the outer thigh, which is often neglected when the quadriceps take over. Legs are stacked, knees are bent, feet are glued together; torso remains upright with support coming from the forearm. With each opening of the "clamshell", glutes get contracted, so this exercises becomes increasingly effective when performed slowly.

Getting hip with a new approach

Keeping in mind that core stability and hip movement are key in cultivating lower body strength, a deadlift is a powerful alternative to lunges, while focusing more on the back of the leg. As an added bonus, deadlifts also strengthen the muscles in the lower back.

The biggest roadblock to performing lunges that I have run across with clients is a knee-related issue. In this case, lateral band walks fit the bill perfectly. With the resistance band secured at about the middle of the shins and tension being applied during each side step, a client can safely yet effectively engage the glutes, quads and hip.

By moving away from a one-size-fits-all mentality regarding lower body workouts, we can successfully customize a program that is creative, effective and safe. The client will be grateful, especially when injuries begin to heal and new strength gains are made!

ABOUT THE AUTHORS

Beverly Hosford is a fitness entrepreneur who believes that fitness, wellness, emotional health and satisfaction with life are all intertwined. Bev has her master's degree in exercise psychology, is a certified personal trainer, health coach and muscle activation techniques specialist. She teaches and coaches fitness professionals around the world from her laptop in Montana.

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David Brancato PhD, ND, CPT. Dr. Brancato's cumulative experience in nutrition, alternative medicine, chemistry, toxicology and physiology directed him to holistic approaches in human physiology to correct system imbalances. He maintains his professional certifications as a Naturopath from the American Naturopathic Medical Certification and Accreditation Board; the National Federation of Professional Trainers; Black belts in Kick Boxing and Kenpo.

SELF-TEST: June 2017

Athletes and Eating Disorders – Where to Draw the Line

1. How much more likely are athletes to develop an eating disorder than the general population?
    a. No difference
    b. 2 times
    c. 3 times
    d. 10 times

2. What % of competitive athletes suffers some form of eating disorder?
    a. 5
    b. 13
    c. 31
    d. 50

3. Which of the following is not a symptom of eating disorders?
    a. Weight loss
    b. Fatigue
    c. Over-training
    d. High self-esteem

Baby Onboard: Modifying Exercises for Effective Prenatal Workouts

4. Which of the following are potential warning signs to discontinue exercise and consult a medical professional?
    a. Vaginal bleeding
    b. Calf pain
    c. Leaking of amniotic fluid
    d. All of the above

5. During pregnancy, what hormone is elevated in the woman's bloodstream to help prepare her for the work of childbirth by relaxing all of the joints and ligaments throughout the body?
    a. Relaxin
    b. Glucagon
    c. Insulin
    d. All hormones are elevated

6. Which yoga pose is not recommended during pregnancy?
    a. Downward facing dog
    b. Crane pose
    c. Cobra pose
    d. All of the above

Kids on the Move…and into the Gym

7. What is the result of regular and prolonged *physical activity*?
    a. Fitness
    b. Health
    c. Well-being
    d. None of the above

8. What is the most commonly injured body part for both males and females?
    a. Shoulder
    b. Thigh
    c. Torso
    d. Neck

9. Which of the following statements is true?
    a. There is no firm evidence to indicate that resistance training will in any way negatively impact the potential growth in height that takes place in early adolescence.
    b. There is firm evidence to indicate that resistance training will negatively impact the potential growth in height that takes place in early adolescence.
    c. This correlation has never been really studied.
    d. None of the above

SDT: Start Dedicated Training with Self-Determination

10. Self-determination theory identifies which of the following?
    a. The need for competence
    b. The need for connectedness
    c. The need for autonomy
    d. All of the above

11. Which of the following is an example of intrinsic motivation?
    a. Knowledge
    b. Money
    c. Prizes
    d. Acclaim

12. Which of the following best describes controlled motivations?
    a. Actions are based upon wanting to rather than having to
    b. Actions are based upon having to rather than wanting to
    c. Actions are based upon both having to and wanting to equally
    d. None of the above

How to Teach Clients to Read a Food Label

13. The Nutrition Facts Panel is changing by when?
    a. It's not changing anytime in the near future
    b. It just changed
    c. 2018
    d. 2020

14. What is the first step in teaching clients the basics?
    a. Serving size
    b. Calories
    c. Macronutrients
    d. Ingredients

15. Which of the following is NOT on the Nutrition Facts Panel?
    a. Fats
    b. Carbohydrates
    c. Proteins
    d. Gains

Helping Clients Overcome the Dialysis Drain

16. What percentage of individuals awaiting a donor organ will pass away before such a match becomes available?
    a. 20%
    b. 40%
    c. 60%
    d. 80%

17. Which of the following is a non-disease related health concern faced by older people with poor kidney function?
    a. Cognitive impairment
    b. Exhaustion
    c. Impaired mobility
    d. All of the above

Seeing Red: Advocating for Women's Heart Health

18. What % of women are affected by heart disease?
    a. 25%
    b. 33%
    c. 50%
    d. 75%

19. What foods should women choose to lower their chance of heart disease?
    a. Low saturated and trans fats
    b. Low cholesterol
    c. Moderate in total fat
    d. All of the above

20. When is the annual wear red day for women's heart health awareness?
    a. First Friday in February
    b. First Friday in March
    c. First Friday in April
    d. First Friday in May

Does Training Together Benefit a Relationship?

21. Starting an exercise routine, along with adopting a healthy meal plan, results in which of the following?
    a. Raise in energy levels
    b. More restful sleep
    c. Fuel a positive way or regarding oneself
    d. All of the above

22. Studies indicate that training together benefits a relationship.
    a. Yes
    b. No

23. What does exercise do to the entire body?
    a. Decrease blood flow
    b. Increase blood flow

Splitting the Difference – One Way to Program for Endurance and Muscle Growth

24. Which of the following is a factor in step 1, needs analysis, of the 7 general steps of programming design?
    a. Does the client have any health conditions or preexisting injuries?
    b. What equipment is available?
    c. What is the client's schedule?
    d. All of the above

25. Which of the following is true of reps and training load?
    a. Reps are inversely related to load
    b. Reps are directly related to load
    c. There is no relationship between reps and load
    d. The relationship depends on the exercise

26. When should you increase the weight for your client?
    a. Every time you train them, you need to increase the weight at least a little
    b. Every 6-10 weeks
    c. When the client can perform 2 extra reps beyond what was originally assigned
    d. None of the above

Toning the Abs by Reducing Belly Bloat

27. Which of the following is a good source of probiotics?
    a. Yogurt containing live active cultures
    b. Fermented vegetables
    c. Fermented soybean products
    d. All of the above

28. Which of the following is NOT a good food source of prebiotics?
    a. Bananas
    b. Soybeans
    c. Apples
    d. Whole wheat

29. What should you look for when choosing a probiotic rich yogurt source?
    a. Contains live active cultures
    b. 12 grams or less of sugar
    c. Refrigerated
    d. All of the above

Shoulder Injuries: Anatomy and Considerations

30. When the point of origin of the pain is not where the pain is felt, what is the pain called?
    a. Inverse pain
    b. Indirect pain
    c. Referred pain
    d. None of the above

31. How many muscles make up the rotator cuff?
    a. 1
    b. 2
    c. 3
    d. 4

How Personal Trainers Can Help Clients Prevent Osteoporosis

32. Approximately how many Americans have Osteoporosis?
    a. 400,000
    b. 4 million
    c. 54 million
    d. 104 million

33. Which of the following is not a modifiable risk for osteoporosis?
    a. Alcohol and smoking
    b. Low body mass index
    c. Previous fractures
    d. Certain medications that cause increased bone loss

34. Which of the following is a way to help prevent osteoporosis?
    a. Eliminate added sugar
    b. Resistance training
    c. Eat a diet high in vitamin D
    d. All of the above can help

Hip Flexor Muscles and Anatomy for Personal Trainers

35. Which of the following is true?
    a. All of the hip flexor muscles attach from the pelvis or spine to the femur or tibia
    b. All of the hip flexor muscles attach from the pelvis or femur to the spine or tibia
    c. All of the hip flexor muscles attach from the pelvis or tibia to the femur or spine
    d. None of the above

36. How many hip flexor muscles are there?
    a. 3
    b. 8
    c. 11
    d. 14

37. What acronym does the author use to help remember all 11 hip flexor muscles?
    a. RAPA SAMS TABS
    b. GAGA RAPS TIPS
    c. Both can be used
    d. Neither of these

Prepare Clients for Weight Loss Success with 5 Dietary Tips

38. Where does most of the excess fat in the body come from?
    a. Highly processed carbohydrates and added sugar
    b. Fat
    c. Both a and b
    d. None of the above

39. Which of the following does the yolk of the egg contain?
    a. Protein
    b. Essential fatty acids
    c. Vitamins A, D, E, K
    d. All of the above

40. Which of the following is true of diet soda?
    a. Diet soft drink consumption is correlated with a greater waist circumference
    b. Diet soft drink consumption leads to a higher risk for diabetes and metabolic syndrome
    c. Both a and b are true
    d. Neither a nor b are true

Rhabdomyolysis: The Life-Threatening Effects of Muscle Breakdown

41. When the skeletal muscle is destroyed, what protein component is released into the blood?
    a. Myoglobin
    b. Globin
    c. Elastin
    d. Hemoglobin

42. What kind of failure can result from Rhabdomyolysis?
    a. Heart
    b. Kidney
    c. Liver
    d. All of the above

43. Which of the following is a cause of Rhabdomyolysis?
    a. Muscle trauma
    b. Extreme physical activity
    c. Low circulatory electrolyte levels in the blood
    d. All of the above

Some Clients Need Lunge Exercise Alternatives

44. What muscle groups does the lunge target?
    a. Quadriceps
    b. Calves
    c. Hamstrings and glutes
    d. All of the above

45. Which alternative exercise to lunges will target the same muscles as the lunge?
    a. Squats
    b. Sprints
    c. Deadlifts
    d. None of the above

SIDE 1

○ RESCORE ○ MARK ✓ ○ TOTAL ONLY/BOTH SIDES

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48	A	B C D E
49	A	B C D E
50	A	B C D E

KEY ITEM COUNT

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MARKING INSTRUCTIONS

Use a No. 2 Pencil

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Fill circle completely

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SCORE		# CORRECT
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SUBJECT June 2017 Self Test

PERIOD _____ DATE _____

TEST ANSWER SHEET B

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