NFPT

CEC Self-Test Packet

What's the Rush?

The Benefits of Slow Jogging

Keeping Clients Motivated

Building a motivational climate

VELOCITY BASED TRAINING

An advanced strength and conditioning technique

BIANNUAL EDITION: December 2020

Continuing Education Articles for Personal Trainers
from www.nfpt.com/blog

National Federation of Professional Trainers

NFPT SELF - TEST

DECEMBER 2020 EDITION

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Hernia Healing: Start with Prevention

Each year, hernias affect more than 5 million Americans. Unfortunately, many individuals either choose to self-diagnose/treat or ignore the symptoms, both of which can have serious implications. Still, in the United States alone, over 800,000 hernia operations are performed each year. Since June constitutes Hernia Awareness Month, *how can we keep our clients safe and injury-free?*

Understanding the Different Types of Hernia

A hernia can occur at a variety of locations in the human body. Regardless of where it hits, this condition results in great discomfort, due to either an organ or surrounding tissue slipping through a weakness or tear in the muscles. Depending upon location, each specific type of hernia displays its own unique characteristics:

- **Abdominal Hernia**–a protrusion typically occurring above the "belt line", most often resulting from weakness in the abdominal wall.
- **Hiatal Hernia** – often found in conjunction with a paraesophageal hernia, associated with gastric esophageal reflux.
- **Umbilical Hernia** – a bulging outward, either in or around the navel.
- **Incisional Hernia** – found along the line of a previous surgery, usually a result of weakness caused by surgical cutting of skin/muscle/tissue.
- **Femoral Hernia** – occurring more often in females, presenting at the top of the leg or groin area.
- **Inguinal Hernia**– more common in men, occurring below the "belt line" and on either/both sides of the groin/scrotum; the most common of all hernias, often with a tendency to recur despite successful surgical repair.

Common Causes

Regardless of location, all hernias share a common set of risk factors, most notably activities associated with an increase in intra-abdominal pressure. Chronic lifting without stabilized abdominal muscles, improper lifting techniques, and straining associated with prolonged constipation rank high on the list of culprits. A pregnancy accompanied by significant weight gain or scar tissue from past surgeries, can likewise contribute to the onset of a hernia.

Never Ignore Nagging Symptoms

Many bodybuilders learn over the years to deflect pain associated with strenuous exercise or heavy lifting, considering it an unavoidable consequence of building muscle mass. While perhaps true to some extent, certain warning signs can indicate a condition requiring medical attention:

- Pain in the affected area, especially when bending over, coughing or lifting
- Burning, gurgling or aching in the area of the hernia bulge
- Weakness, pressure or a feeling of heaviness in the abdomen

An untreated hernia does not disappear on its own. If left unaddressed, hernias can enlarge, leading such serious complications as bowel obstruction or the hampering of blood flow.

The Unique Sports Hernia

One category of hernia not addressed above deserves our attention: the sports hernia, also referred to as *athletic pubalgia*, a casualty resulting from a muscular injury or tendon/ligament tear near the groin. "In inguinal hernia,

part of your intestine protrudes through a weak section in the abdominal wall, causing a bulge or lump. In the case of sports hernia, the intestine is not involved at all," says Prof Wong Wai Keong, Senior Consultant at Singapore General Hospital.

Sports-Specific Injury

Certain particularly strenuous sports, those involving rapid twisting movements of the body, tend to bring on sports hernia, particularly wrestling, hockey or even soccer. While pain always accompanies the onset of such an injury, an athlete may assume that a period of rest will fix the problem. However, as soon as he resumes the activity, the pain returns…a sure sign to seek medical intervention. Diagnosis of a sports hernia begins with a physical exam. Sometimes a coach or athletic trainer may attempt to diagnose by observing the athlete in motion, to determine which specific movements incite the groin pain. Most often, however, accurate diagnosis relies on an MRI.

Repair and Recovery Options for Athletes

Surgical repair of most hernias remains the successful option of choice for a full recovery and return to action. Rather than radical surgery, the more popular laparoscopic procedure eliminates the need for major cutting, and patients typically return home on the same day. However, many serious athletes debate the necessity of surgery, opting instead for a more homeopathic healing process.

The effectiveness of this choice remains controversial; but one factor stands out as vitally important, regardless of the repair path one chooses. A 2012 study, published in the International Journal of Sports Physical Therapy, revealed a *direct correlation between onset of injury/subsequent diagnosis and successful non-surgical outcomes*. As always, consulting a sports medicine professional must take top priority before making any decisions.

Fault of the Squat or the Form?

In discussions surrounding causes of hernia, athletes commonly ask if performing squats might lead to such an injury. New clients may also touch on this subject prior to beginning a strength-building lower body workout. As long as *one always adheres to proper form* during each and every squat, one can and often does avoid sports hernias. However, within just a few months' time, repeated poor form leads to uneven muscle development, lack of abdominal engagement, and perhaps worst of all, *bad habits*.

Even when a hernia heals post-surgery, the risk of recurrence increases dramatically if improper form continues. Rehabilitation exercises aimed at strengthening surrounding muscles and tissue play a key role in returning to normal exercise movement. As one would expect, this process involves gradual steps, often spanning 6-10 weeks. Beginning the rehab process as soon as sufficient healing permits offers one the best chances of success.

How We Can Help

This month, take the time to understand the hernia process, and remind clients to stay vigilant in their form and body alignment as you progress through the workouts. Review spotting techniques if necessary, to prepare yourself for any situation, especially when coaching novice clients. Raising awareness of this all-too-commonplace injury goes a long way toward prevention, as well as the building of a strong core foundation!

Velocity Based Training: An Advanced Strength and Conditioning Technique

Velocity based training is a valuable tool for fitness professionals and advanced athletes seeking that ever-changing competitive edge or to enhance workouts for our daily clientele. Learn how to incorporate this technique into your current training repertoire!

How Velocity Based Training Works

Velocity based training, or VBT, uses technology such as linear position transducers, laser optic devices, and wearable accelerometers to measure *movement velocity,* or simply how quickly a movement takes place, during an exercise. This provides the coach and athlete with information regarding exercise performance, enabling the coach to provide his client with highly specific feedback (e.g. "lift the barbell faster" or "go for a more explosive effort").

Identifying Intensity and the 1-RM

When strength and conditioning coaches, personal trainers, physical therapists, and other fitness practitioners design resistance training programs, they often manipulate training variables such as intensity, volume, rest, frequency and tempo. While some of these assessments quantify easily, such as rest intervals between sets or recommended training frequency, other variables prove more challenging.

As a case in point, consider the following situation: If two identical athletes possessing the same strength abilities each performed a lift at 80% of a 1-rep max, but one only lifted the bar with maximal effort, *could we consider the intensity of these lifts equivalent*?

Absolutely not – the greater degree of *intensity* belongs to the athlete who lifted with *maximal effort*. But how to we determine maximal effort?

In order to accurately predict an athlete's 1-RM, coaches can develop a *load-velocity profile.* By recording the client's movement velocities *at each load*, the coach can observe the *speed at which s/he can lift* at any given percentage of 1-RM. Load-velocity profiling uses a series of repetitions to produce a force-velocity profile for any specific exercise.

Experts recommended measuring the mean velocity over 4-6 lifts, each lift heavier than the previous one, with loads ranging from 45% to 95% of 1-RM. The assessment ceases once the athlete hits failure. Coaches may need to remind the client to move the weight *as quickly as possible during the concentric phase* of the exercise, while also stressing the importance of maintaining near-perfect form.

Accounting for Daily Shifts in Strength

The "traditional" or "percentage-based" approach to calculating training intensity reflects the flaw of assuming that one's strength remains the same from day to day. In truth, one's strength capabilities vary greatly within an average training week, depending upon many external and internal factors. Fluctuations as large as 18% above *and* below the previous assessment can occur, translating into a potential variation of up to 36%– a significant difference!

Velocity-based training takes such daily fluctuations into consideration, thereby eliminating or at least decreasing these drastic variations. The coach can proceed to adjust that day's training, in accordance with what he determines as the athlete's "freshness/readiness" in terms of strength.

The Power of Observation and Verbal Feedback

While incorporating this technology into training significantly raises the results/coaching bar, experts strongly advise trainers not to develop reliance, which often leads to the risk of neglecting the more fundamental aspects of our industry. Numbers and data have a way of overwhelming one's senses.

We must never lose sight of the importance of *basic coaching aspects*: observing technique, providing verbal cues/feedback, and the all-important building and maintaining of coach-athlete relationships. Staying mindful that technical devices may interfere with such processes enables coaches to remain mindful of their industry's trusted values and tenets.

Limitations of Velocity Based Training

Velocity-based training is not necessarily and solely a method of improving dynamic strength at higher velocities. While the use of VBT devices points coaches in the direction of implementing higher velocity strength work, keep in mind that velocity-based training offers an objective method of evaluating **intensity at a given movement in time**. Unless a client requests training geared specifically toward participation in one-rep lift competitions, such as in Olympic Lifting, assessing the movement process as a whole provides a clearer path towards other fitness goals, as well as strength.

Pros and cons exist for each method of prescribing intensity when coaching for pure strength. The use of velocity, intensity, or subjective RPE comes down to preference and logistics. However, the auto-regulatory benefits of RPE without the flaws of subjective monitoring, in conjunction with advantage of easily assessing day-to-day strength changes, make VBT the top choice of training tools for an abundance of professionals.

Experiment on Yourself First

Before plunging headlong into prescribing training loads for athletes and clients, a coach might wish to implement these methods on himself and his personal workouts, allowing him to establish a strong comfort and confidence level prior to instructing clients.

What's the Rush? The Benefits of Slow Jogging

The well-known fable of the tortoise and the hare has ***science*** behind it! Learn about the advantageous experience of slow jogging. Your running aficionado clients may never race again!

Dr. Hiroaki Tanaka, a health sciences professor from Japan's Fukuoka University, wants to change our perspective on "the need for speed". Tanaka co-wrote "Slow Jogging: Get Fit, Lose Weight, Stay Healthy, and Have Fun with Easy Running" with Magdalena Jackowska, a marathon runner and slow jogging advocate. He sums up his theory with one simple suggestion: *Run only as fast as your body lets you smile.*

The frequently referenced "talk test", easily conversing with a running partner, typically ensures an appropriately slow jogging pace. The Japanese phrase "*niko niko* pace" encompasses what Tanaka considers a smiling cadence, one that helps lower blood pressure while boosting overall fitness. "*Niko niko* pace can be very different for each one of us," he says. For some beginners, this pace may even resemble a walking speed, approximately 2-4 mph.

Slowing Down for Health

A slow distance run offers many benefits:

- Establishes efficient form
- Strengthens muscles
- Promotes efficiency of respiratory, cardio, and muscular systems
- Fosters handling of physical discomfort/improves discipline
- Facilitates adaptation of ligaments, tendons, bones and joints to the stress of running
- Increases size/number of mitochondria, thereby improving use of oxygen and glycogen storage
- Burns more calories than high-intensity sprints
- Helps body flush toxins resulting from muscle fatigue

Deciding on Slow Jogging Distance and Time

Experts define distance runs as 50% further (or longer in duration) than an average training run. If a client typically runs 3x/week, extending one of these into a slower distance run builds endurance and strength. For clients looking to recharge their running protocols, suggest they try 10-15 minute increases every week. Those fairly new to the sport may try experimenting with slow runs lasting 30-45 minutes.

Pace and Injury Prevention

Overuse injuries often result from strenuous training; yet many runners simply stretch, then begin running as hard and fast as possible. Any official coach-led training plan builds in slower, longer runs for good reason. Hard-core sprinters may scoff at this approach, but only due to a lack of understanding of the benefits. By sharing our knowledge with these clients, we can protect the longevity of their running capabilities.

The *Road Runners Club of America* coaches have outlined some helpful guidelines for determining a slow jogging pace:

- If a client completes a 5K in 30 minutes, maintaining 9:40 per mile, a slower run targets a pace of 12-minute miles.
- If he can run a half marathon in under 2 hours, maintaining 9-minute miles, he might aim for 10 minutes, 22 seconds per mile on slower days.

- For clients who monitor heart rate versus mileage or time, a "*niko niko*" pace would usually hit anywhere from 110 to 140 bpm.

Slow Distance Running

Clients new to distance running find the lower intensity of such steady-state cardio works well for building endurance. By keeping heart rates in a moderate "work zone", runners avoid the highs and lows associated with sprints/HIIT. While training for 5K's or half-marathons, a steady-state pace works optimally. While fewer calories get burned *per minute*, the longer duration of such events leads to a greater total caloric burn. Such a moderate level of intensity lessens trauma to the joints, thereby shortening recovery time.

Mixing up the speed and distance of running workouts can help clients avoid progress plateaus. Periodic slow jogging or even leisurely walks make for ideal active recovery workouts. Helping clients find their ideal blend fosters both endurance and speed, with minimal down time due to soreness/injury.

Leveraging Weight Loss

While acknowledging the gap between caloric burn from slower jogging versus fast running, research indicates that both training methods can lead to weight loss. An adult weighing about 200 pounds utilizes just over 500 calories during a half-hour run averaging 7 miles per hour. While fewer calories get burned running at 5 mph for the same 30 minutes, this pace might prove sustainable for *up to an hour*, thereby burning approximately 680 calories!

5 Principles of Running

As Dr. Tanaka mentions, jogging slowly should easily elicit a smile, a perfect Number 1 principle. Happy runners turn into consistent runners who make progress. Principle Number 2 involves the foot-strike. During a run at average or fast speeds, the runner's foot fall lands on the heel, as opposed to slow jogging, where the strike lands on the mid-foot, a more natural movement pattern. Interestingly, when jogging slowly, participants report a stride length 2/3 shorter than during traditional running.

Posture ranks as the third principle. When viewed from the side, a runner's carriage propels him straightforward, eyes focused ahead, with a slightly uplifted chin. Breathing, the fourth principle of running, remains "natural", often described as "intuitive breathing patterns".

Building in Active Recovery Days

The final principle requires nothing more than dedication and adherence to the continuity of training. Most serious runners, regardless of pace, strive for 30-60 minutes per training day. On alternate days, coaches suggest resistance training, flexibility work, or casual walking, maintaining the habit of daily movement while ensuring adequate blood flow to sore muscles.

Tapping into the Natural "High"

Research studies conducted in the 1990's indicated that under certain conditions, the human body releases *endocannabinoid*, a marijuana-like substance which increases sensations of pleasure and mitigates pain. The scientists then compared the serum concentration of this substance for a variety of running speeds.

Perhaps as expected, walking did not lead to any uptick in concentration of the body's serum. **Slow jogging, however, resulted in dramatically high levels of endocannabinoids, while even jogging at a *medium* pace elicited**

only a slight increase. In spite of the highly touted "runner's high", a faster running pace did not induce endocannabinoid production whatsoever.

Aerobic versus Anaerobic Energy Systems

Running slowly allows one's body to improve its aerobic energy system. When sprinting or running full-tilt, the body soon reaches *aerobic threshold*, having exhausted the available oxygen supply. At this point, the body must shift to the anaerobic system for energy. In the absence of sufficient oxygen, working muscles must convert glycogen into energy, causing the runner to fatigue more quickly, reduce his pace or discontinue his run. **A training regimen comprised of fast runs interspersed with slow jogging sessions allows the body to maximize/improve the aerobic energy system.**

Defining Slow Jogging

Each runner must learn to calculate the unique pace needed to maximally tap into his aerobic capacity. Rather than relying upon the often-used "220-minus-your-age" theory of determining bpm within which to exercise, a modified version suggests multiplying age by 0.7, then subtracting this number from 208. The resulting value closely approximates a safe maximum heart rate. With this number in mind, runners can then determine a heart rate in line with a slow yet productive jogging pace.

A final note: I recently tested this theory on a Sunday run, beginning (naturally!) with a smile on my face. Ignoring the climbing temperature, I found myself smiling frequently and easily as I embraced this slower pace. I run for endurance rather than mileage; that morning I hit a record-long run. Still feeling great the rest of the day, and experiencing no soreness the following morning, I felt rested enough to run again on Tuesday *and* Thursday…hitting yet another record-long jogging session. To me, this ranks as a winner of an exercise experience!

Problem Areas for Special Needs Clients and How to Target Them

Studies have demonstrated that people with disabilities, compared to people who are able-bodied and neurotypical, are more likely to become unhealthy and generally unwell due to a lack of resources for the special needs population. Personal trainers and fitpros are in a unique position to serve as perhaps the only resource for their special needs clients and should leverage this position to help them target and resolve the problem areas that may otherwise go unaddressed.

Individuals with disabilities need human services and wellbeing programs for similar reasons any other person does—to remain well. Albeit a lower rate than individuals without incapacities, a great many people with disabilities report their wellbeing to be acceptable.

The goal to keep in mind is the same for us all—get and remain healthy so we can lead full dynamic lives. That implies having the resources to make solid decisions and understanding how to forestall disease. For individuals with disabilities, it likewise implies realizing that medical issues associated with a disability indeed can be dealt with. These issues may involve physical pain, depression, or more life-threatening hazards, like heart disease, diabetes, and obesity. Here are the problem areas for special population clients and how to target them:

Health Conditions Related to Special Needs

Individuals with disabilities frequently are at more serious risk for medical issues that can be prevented or for which risk can be mitigated. The presence of a particular sort of disability, for example, a spinal cord injury, spina bifida, cerebral palsy or multiple sclerosis, other physical or emotional well-being conditions may be present or develop.

These are some of common health-related conditions or problem areas for special population clients:

- Fatigue
- Injury
- Psychological unwellness and wretchedness
- Overweight and obesity
- Physical pain
- Pressure sores or ulcers

Fatigue Fatigue is an inclination towards exhaustion and sluggishness or absence of vitality. Exhaustion can influence the manner in which an individual thinks and feels. It can likewise meddle with an individual's everyday living.

As a trainer, you know that exercise can help, but starting the workout routine will be a struggle, initially, for special populations clients. Start small — walking, stretching — and celebrate small victories to boost confidence and motivation.

Psychological Unwellness and Depression Psychological well-being is the way we think, feel, and go about as we adapt to life. **Individuals with disabilities report higher paces of depression and sadness than individuals without disabilities.** There are various approaches to treating depression. Exercise can be helpful for certain individuals, though, of course, it's not the end-all, be-all treatment.

Daily exercise for a short period of time can help, but you're not likely to see your clients every day. We recommend at least three sessions with special population clients to rev up their dopamine and serotonin.

Weight Gain and Obesity Youngsters and grown-ups with disabilities are less likely to be of optimal weight than those without disabilities. This is due to normalized sedentary lifestyles observed among members of the s special needs community. Being overweight and obese can have genuine wellbeing ramifications for all individuals, especially people with disabilities who are already at risk.

In addition to instructing your clients during sessions, also suggest small ways they can change their daily habits when you're not together; ADL's provide an opportunity to squeeze in more "exercise" like taking the stairs instead of the elevator (for people with cognitive disabilities) or stretching while watching TV (for people with physical disabilities).

Physical Pain Pain is ordinarily detailed by individuals with numerous kinds of disabilities. For a few, it can hinder their ability to work or even enjoy leisurely activities. The time span an individual encounters pain can be named either long-term (likewise called interminable) or present moment.

If your special needs client experiences chronic pain, then the best you can do is be sensitive to their situation. If your client says they can't perform an exercise in that moment, believe them. This is not the time to push them to "do better."

Remember: You are not a doctor and should not offer advice on chronic conditions. Advise your client to speak with their primary medical professional.

Pressure Sores or Ulcers Pressure ulcers—otherwise called bedsores, pressure injuries, or decubitus ulcers—are wounds brought about by consistent weight on the skin. They, for the most part, form on body parts like the elbow, heel, hip, shoulder, back, and back of the head. Individuals with disabilities who are confined to a bed or utilize a wheelchair are in danger of creating pressure sores.

As you're instructing your clients, you'll need to be mindful of their sores. Always ask before offering hands-on assistance; not only is it more respectful, but it could also be painful for your client if you touch them without their permission first. You can also advise your client on ways to shift in their wheelchair to keep sores from forming.

Additional Special Needs Concerns, Conditions, and Prevention

Many related health conditions and ceaseless maladies can be forestalled with exercise and good nutrition. Interminable maladies are among the most widely recognized and expensive of all medical issues, despite the fact that many of these "constant" ailments can be avoided by visiting a medicinal services supplier for preventive checkups and routine screenings, and determining the best approach to oversee medical problems.

Joint pain **Joint pain—or joint irritation—is the most widely recognized cause for disability among people dwelling in the United States.** It limits regular exercises for 24 million Americans. Individuals with disabilities can be at greater serious risk of having joint pain.

Encouraging movement can help with this issue. Advise your clients to give their joints a gentle massage, and show them some stretches that can help bring them some relief.

Chronic Fatigue Syndrome Chronic Fatigue Syndrome (CFS) affects around one million people in the US. It is much more typical among adult women than men. Individuals of both genders, of all races, ethnicities, and ages (including youth) can develop CFS.

Of course, a great way to stave off this condition is to exercise regularly, yet very moderately and under supervision of a care provider. Once you get to know your clients better, you can recommend some ways they can stay active

when you're not in session together. If you know your client loves to dance, for example, show them some YouTube tutorials that will inspire them to move in ways that make them feel better.

Diabetes Diabetes is an ongoing condition for which care and treatment can help individuals to carry on with ordinary and gainful lives. In any case, Type II Diabetes can still restrict people in their day-to-day lives. Individuals with diabetes report higher rates of disability than those detailed by the general U.S. populace.

By encouraging your clients to stay active and to eat healthier, you can help your special population clients avoid diabetes.

Practicing ABA Procedures with Special Needs Clients

Many special needs clients will undergo irritable moods or socially inappropriate outbursts. Disregard these and endure them. Some portion of your disappointment can be assuaged by taking part in the redundancy; however, now and again it's enough for your client to realize that you're tuning in, or they may or may not even be doing it get your attention. It may be just "stimming" or a self-alleviating technique.

You can utilize visual guides to clarify up and coming exercises with your client. Taking photos of them doing a specific exercise and afterward showing them the image is an incredible method for instructing them into the activity once more. Try to voice your praise when they are making progress on their wellness objectives, inspiring them to do the exercises, utilizing reward frameworks when appropriate.

For instance, you may say, "If you can do 10 sit-ups for me, you can hop on the tiny trampoline for cardio," in the event that you realize this is something your customer appreciates.

Try Behavioral Therapy Techniques

While special treatment is employed with clients that have cognitive imbalance, the standards within it very well may be utilized generally with numerous different kinds of special needs. In our special needs certification course, Special Education encourages an aptitude called "offering choice."

It's extraordinary to spend the initial meetings with a client, permitting them to pick half of the exercises. It emphatically influences the self-viability of our customers for the better to state something like, "Listen, we have to do cardio on the treadmill and free weights. Which might you want to do first?"

When a client is permitted to share the control, we can let them make more choices. It's improbable that they are often able to make their own choices in everyday life situations, so we can make our work in the gym a more pleasant experience for them.

Keeping Fitness Clients Motivated

Motivation is a key ingredient in a client's program adherence. If a client is motivated to adhere to a program, he or she is more likely to achieve lasting behavior change. That said, what motivation looks like and how we engage with clients may vary between a face to face, "on the ground" setting and a virtual or online experience. Here are some ways in which you can keep all fitness clients connected and motivated.

Rapport

Before tackling the construct of motivation, remember the principle of rapport. The foundation of any solid practice includes rapport and empathy. If a client does not feel connected to you or feels judged, a commitment to behavior change is lost. Put yourself in the client's shoes – empathize with their journey and offer supporting guidance. Your clients will appreciate your attempts to personalize their experience. Engage in caring conversations with your clients throughout your work together. Be mindful of your verbal *and* nonverbal communication skills and consistently seek client feedback. **Finally, keep in mind that rapport building is not a single or isolated event rather it is a process that continuously unfolds throughout the relationship.**

Motivation

As self-determination theory suggests, there are two types of motivation: **extrinsic** (or controlled) and **intrinsic** (or autonomous). When a client is intrinsically motivated, he or she is performing exercise because they want to. In contrast, individuals who are extrinsically motivated are performing a behavior due to outside pressure or tangible reward. Fitness clients usually do not display a single type of motivation but experience a combination. A personal trainer must seek to understand the source of their clients' motivation. A personal trainer must further respect the notion that the trainer is the exercise expert while the client is the expert on her or himself and is in charge of their individual process of behavior change.

Building a Motivational Climate

Ultimately and regardless of the source of motivation, your clients want what everyone wants – to be cared for. Your clients must feel that the environment in which you are training them (virtual or otherwise) is safe, supportive, caring, and collaborative. According to Jo (2020), fitness professionals should focus on "creating a caring, task-involving climate". This type of environment includes the following elements and principles:

- A perception of a safe and supportive setting (caring)
- A sense of belonging (caring)
- Leaders display genuine concern for clients' wellbeing (caring)
- A focus on best effort and self-improvement (task-involving)
- Learning from mistakes (task-involving)

Implementation

Related to the core elements of a caring, task-involving climate, the same author offers simple strategies fitness professionals can immediately incorporate into their daily practices.

First, always greet your clients enthusiastically and warmly and in a personalized manner. Jo suggests revisiting a comment a client noted during the previous session. For example, "I loved your idea of incorporating more dynamic stretches at the beginning of the session, so today we will work on some hip mobility movements to prepare for our lower body session."

A second approach to creating a motivational climate is to "foster a sense of belonging". This might include introducing clients to other like-minded clients or establishing virtual chat groups in a virtual space. Clients want to feel as if they aren't alone in the pursuit of their goals. This is also a way to foster social support for clients who may not know many people or who do not have a strong social support network initially.

In addition to enthusiastic greetings, conversations, and fostering social support networks, **remember to continue to celebrate and praise clients' efforts**. For a face-to-face interaction, simply note what your client has accomplished or highlight something you observed from a food or exercise log (i.e. "I see you did an extra hour of activity this week. Great job!").

In a virtual space, you could record video messages to your clients and send them or post them (depending on the platform you use). But acknowledging clients' efforts isn't the end – remember to ask for *and* use client feedback to make program changes. You can do this by saying something like, "You mentioned you'd like to see elements of Yoga incorporated into your weekly plan, so I made some program adjustments."

Jo (2020) further notes the importance of focusing on process rather than outcome-based goals (accomplishing a behavior versus losing a pound), observing immediate positive effects (better sleep, increased energy, etc.), celebrating progress while not comparing to others, and learning from mistakes (if mistakes are made, we use the information to establish next steps).

Successful personal training transcends beyond the science it's founded upon. A fitness professional's success (and his or her clients' success) is rooted deeper in the quality of the environment in which the act of training takes place. Implementing these strategies, among others, can elevate your practice and enhance the client experience.

High Blood Sugar Lowers Aerobic Fitness

Although exercise is essential for good health, high blood glucose, or blood sugar, levels can undermine or even cancel out the benefits of aerobic exercise.

Hyperglycemia and Workout Capacity

Individuals with consistently high levels of blood sugar seem to derive less benefit from their workouts than their non-hyperglycemic counterparts, according to a cautionary new study of nutrition, blood sugar, and exercise. Consuming a diet high in processed foods could also alter how well our bodies respond to exercise.

Many clients open up to trainers during an initial assessment, not only regarding fitness goals but also other health struggles. Trainers have no doubt noticed throughout their careers that often clients who reveal issues with hyperglycemia tend to be deconditioned and overweight, placing them at a greater long-term risk for heart disease and Type 2 Diabetes, if these aren't already factors. Epidemiological studies indicate that people with elevated blood sugar often also have a diminished aerobic capacity, closely linked to a high risk of premature death.

Blood Sugar Factor: Causation or Correlation?

Most studies linking blood sugar and fitness have identified correlations between the two; however, they fall short in clarifying how either condition influences the other. **The answer to this key question has yet to be determined : Does hyperglycemia precede and lead to a reduced level of fitness, or does a lack of aerobic capacity foster high blood sugar levels?**

The results of a recent study, documented and published in the journal *Nature Metabolism*, aim to shed light upon these very questions. Researchers at the Joslin Diabetes Center in Boston, in collaboration with other institutions, sought to explain how elevated blood sugar levels in mice affected their exercise capabilities, if at all.

Vascular Remodeling

With regular aerobic exercise, the muscles of the control animals exhibited an abundance of healthy, new muscle fibers, along with increased blood vessels. **Optimal vascularization such as this facilitates the shuttling of additional oxygen and fuel to the muscle tissues.** In comparison, the same tissue in mice with elevated blood glucose levels displayed mostly new deposits of collagen, a rigid substance that crowds out new blood vessels, thereby preventing the muscles from "remodeling" and contributing to improved levels of fitness.

Finally, the scientists repeated this protocol with a test group of 24 young adults. During treadmill fitness testing, the subjects whose bodies displayed the worst blood-sugar *control* also exhibited diminished endurance. Upon microscopic examination of their muscle tissues following the exercise sessions, researchers noted the presence of proteins that actually inhibit improvements to aerobic fitness. The scientists propose that high levels of blood sugar may prevent muscle remodeling in part by modifying the "extracellular matrix" proteins in the region of blood vessel formation. **This less-vascularized muscle tissue explains the observed lack of increase in aerobic fitness, in spite of diligent exercise.**

Focus on Clients' Overall Health

Sarah Lessard, an assistant professor at the Joslin Diabetes Center and Harvard Medical School and lead author of this study, advocates *a combination of diet and exercise for optimal health*. "The good news is that although our hyperglycemic mouse models did not improve aerobic fitness through exercise, they did achieve other important

health benefits from exercise, including a reduction in body fat and improved glucose metabolism," says Dr. Lessard. Therefore, regular aerobic exercise remains a key recommendation for maintaining health, regardless of blood glucose levels.

The adaptation of this muscle tissue points to the precise reason why the relative comfort of frequent and regular participation in exercise replaces that initial overwhelming exhaustion, Lessard says. **With time, any vigorous aerobic exercise can alter muscle fibers towards a greater oxygen utilization during aerobic workouts.** "We also grow new blood vessels to allow more oxygen to be delivered to the muscle, which helps to increase our aerobic fitness levels," she says.

Caring, Sharing, and Fostering Results

Clearly, this new scientific data points to chronic hyperglycemia as a potential negative regulator of aerobic adaptation. Such knowledge leads us to realize the importance of dietary/metabolic health in conjunction with exercise. We can share this with clients when discussing food choices, raising awareness about today's soaring incidence of high blood sugar, both in adults and children. Addressing this topic early in the trainer/client assessment can foster trust as well as the evolution of more successful outcomes of their exercise-related goals.

Practical Tips for Fitness Professionals in the New "Normal" Post-COVID-19

Before COVID-19 hit the world, the health and fitness industry was experiencing tremendous growth. Streaming workouts, virtual-live workouts, and virtual personal training and health coaching were all part of the landscape. Since COVID-19, the industry has continued to grow and reimagine the delivery of its existing services to meet the needs of clients in these uncertain times. While fitness professionals are working diligently to grow their business and exist in a "new normal", there are hurdles to overcome and frustrations to manage. Consider these 5 practical tips fit pros can use to function successfully in this new "normal" of a post-COVID-19 world.

1. Master your budget and expenses

No doubt, independent studios and even big box gyms have taken a financial hit as a result of the pandemic and mandatory lock-down orders. Now is the time to build your business sense and sharpen your financial skills. If you are in a situation where your revenues are down, be thoughtful about looking at and limiting current expenses. **Examine your overall budget and categorize the expenses according to "must-have", "nice to have" and "bucket list" items.** Reduce or eliminate the "nice to haves" for the interim period and move them to the "bucket list" category to earmark for later incorporation.

Next, perform a line by line review of business expenses and look for less expensive options. Finally, if you manage a team or employ other individuals, review who is on your team. Ask yourself, "Are there individuals on this team who I would not rehire?" Budget adjustments are never easy – especially when we are looking at reducing expenses instead of adding to the bottom line but it is a necessary first step in helping you and your business (and ultimately your clients) thrive.

2. Control the message and communicate openly.

It's clear – there's a panic epidemic amidst the global pandemic. Your general messaging needs to change and be based on safety, trust, reassurance, and security. **What was selling 6 months ago is not continuing to sell now because the psychographics, or attitudes of our consumers (why they buy), have changed.** In your next social media post, challenge yourself to reflect on how you are contextualizing your message.

Reassure consumers that your sanitation methods are sound and follow established guidelines. Show these procedures and create videos about trust and safety. Make it comfortable for clients to return and engage with your services. Further, strive to be calm in your communication (even if you're a bit scared yourself). Recognize the challenges people are facing right now such as working from home, home-schooling children, lack of social engagement, etc. Find ways to connect with your consumer base and encourage them to stay active and connected to each other and to you. As fitness professionals, we need to instill confidence, speak heartfeltly to our clients, and be transparent in our actions and message. Use simple, easy, and clear language to accomplish this.

3. Diversify services.

Critically evaluate the services you offer. Are there services that can be shelved for the interim? Are there options that are less popular and you feel you're having to push, pull, and drag them into the next phase of your business? If so, now is the time to let them go or amend them. It's also the time to add more "in-demand" services. **Research what your customers want and what they need to continue to be active and engaged.** It might mean you offer on-demand 5-minute movement videos, promote a 20-day challenge, or create other innovations that clients want to try and buy.

4. Evaluate your customer types or client personas.

Whether you're an independent contractor, studio owner, or an employed fitness professional, we all share the same purpose: to change lives through fitness and health. Don't forget this purpose when responding to the reality we are facing as an industry. **Examine your business model and ask if you're too focused on the process that you're forgetting the purpose?** In doing so, remember to look at your consumer base with thoughtful consideration.

Generally, client types fall into one of the following categories: Those who prefer private one-on-one sessions; those who like semi-private sessions; small group fitness participants; those who gravitate towards a virtual experience; others who want on-demand videos and classes; and low-budget clients.

What client types do you have and how can you address their needs? Also, it's crucial to remember clients who have experienced a layoff as a result of the pandemic. What does your cost structure look like and how can you cater to all clients individually? The key here is to recognize client needs and address them effectively.

5. Reimagine marketing strategies to include all customer types.

Related to tip number four, different markets and consumer types respond to different messaging. **Curate a contact database and adjust your marketing messages and strategies according to each consumer type**. Create a variety of "try before you buy" low-cost options that are designed to "hook" existing and potential clients. Remove barriers to participation (extreme time-commitment, high cost, travel time to a gym, etc.) and watch your membership and consumer base increase.

The bottom line is – no one has *all* the *right* answers as to how to function effectively in the new normal. We are facing a new existence – a forced evolution, if you will. Much of what we, as fitness professionals, are doing is based on trial and error – and that's ok. We find ways that work and we discover ways that don't work – all of which provide valuable insight into consumer attitudes, thoughts, and needs. The critical first step is to examine your individual business and make small, but feasible adjustments to effectively recognize concerns, acknowledge fears, and meet the needs of our clients.

Injury Prevention: The Fundamentals of Assessing Risky Movement Patterns

Physical therapists and sports medicine professionals often use the term "overuse injuries" to describe the unfortunate result of repetitive actions executed with sub-standard technique. Trainers witness this time and time again, as eager exercisers misuse fitness equipment or lack the strength and/or mobility required to properly lift a heavily loaded barbell, for instance. Often not immediately recognized, poor form leads to overstretching of soft tissue or improperly loading a compromised joint. If not corrected, over time these individuals may find themselves requiring time off to nurse and rehab a more serious injury…one they may have circumvented by awareness, prehab, and programming adjustments. Here is how trainers can apply an injury prevention approach to training.

An Ounce Of Injury Prevention

In most countries where so-called Western medicine is practiced, we observe a greater emphasis on seeking cures rather than methods of prevention. In much of the rest of the world, preventive medicine seeks to alter lifestyles and habits in an effort to thwart the development of disease, thereby negating the crucial need for cures/rehabilitation.

The world of sports medicine provides a perfect breeding ground for the study of prevention. FIFA, the governing body for the worldwide soccer industry, undertook the challenge of developing an athletic training program aimed at reducing many of the more commonly encountered injuries suffered by soccer players. In 2008, FIFA's Medical Assessment and Research Center introduced their injury prevention program. Their protocol focused solely on a warm-up which included running, core strength, active stretching, lower body power, and other sport-specific exercises. If implemented by coaches at least twice a week, researchers predicted a significant lessening of injury occurrence over the course of an athlete's competitive season, or even spanning an entire career.

While the injury rate indeed decreased as a direct result of this new warm-up, other positive factors also surfaced. Athletes observed greater performance, leg strength (particularly in the hamstring area), and an uptick in neuromuscular control. **Might such a prehab protocol hone an athlete's body to overcome/eliminate potentially risky patterns of movement?**

Predicting Injury Risks

Once again focusing on prevention rather than post-injury treatment, experts can now identify and correct key movement patterns in older adults that render them prone to injuries. A protocol known as *Functional Movement Screen*, or FMS, looks at one's ability to easily and properly execute particular daily movements, including lunges, squats, and leg raises along with core strength and joint range of motion. An individual's limited capabilities in any of these movements could potentially lead to such common structural pitfalls as tendonitis and various sprains and strains, all of which seem exacerbated as we age.

By The Numbers

In this ground-breaking analysis, scientists recruited close to 600 volunteers, healthy males and females in their 60's, and asked them to perform the aforementioned FMS movements, 7 in all. Each was given a grade of 0-3, depending on the fluidity of execution, with a maximum possible score of 21. In the study group, men fared slightly less favorably than the women, amassing an average score of 11.7 as compared to the females' average of 11.9.

Since previous research indicated that a score of less than 14 points aligned with increased risk of injuries, the researchers at the Cooper Center went a step further, and looked at other health risks that might also correlate to

lower performance scores. They identified obesity, diminished “good” cholesterol and, not surprisingly, sedentary or minimally active lifestyles as potential problems leading to incorrect movement patterns.

Non-Verbal Cues and Faulty Movements

While analyzing a client’s cholesterol levels lies outside of a personal trainer’s scope of practice, we certainly see our share of overweight, deconditioned individuals. In addition to helping such clients ease into exercise, trainers can pay close attention to any potential subpar movement patterns early on, before attempting to introduce more complicated motions.

Most clients want nothing more than to please their trainers, and often hesitate to reveal just how much difficulty they have in executing certain moves. By knowing what *non-verbal cues* to look for – tense body posturing, sweating, even a facial expression revealing distress – perceptive trainers can learn to discern when a client experiences *undisclosed pain or lack of stability.* Making note of signals such as this can then pave the way toward implementing more corrective-type exercises into the client’s training regimen.

Once the basic movement patterns seem properly achieved, moving toward safe exercise variations involves careful planning with measured progressions. Very often trainers wish to accelerate clients’ capabilities and therefore tend to push too hard, too soon. By never sacrificing form in favor of weight load or advanced movements, trainers can foster confidence while adhering to critical injury-preventive ideals.

Learning and Applying Injury Prevention Techniques

Before even reaching a coach-driven level of competition, personal trainers can assist athletically inclined clients in perfecting basic movements by including them in regular workout sessions. Most popular competitive collegiate sports, for example, rely heavily on balance, core stabilization, lower body strength, and flexibility. If we consider football, soccer, basketball, volleyball, and gymnastics, we can easily imagine all of these qualities as necessary for optimal performance on the court, field, or the balance beam. Injuries are not the only end product of poor technique. Performance also suffers… *the last thing athletes need during a critical championship event!*

Take-Home Message

Slow and steady won the race between tortoise and hare. The same principle applies to clients who present with improper movement patterns. As anxious as we get to start new clients on their journey to adding muscle and building endurance, follow the tortoise’s example. If we slow down the clients’ first few sessions long enough to keep an eye on the specific movement patterns covered here, we can retrain functional basics and prevent injuries.

Health Messaging and Recommendations: Spreading the Correct Information

When you think of a typical personal training client, who comes to mind? Is it the hardcore, three days a week with you/two on her own HIIT warrior? Or is it the overweight, middle-aged non-athlete who had to muster up months of courage to even walk in the gym doors, let alone set up a training session. Who needs your help more? Recent research has indicated that the prevalent online health messaging that the general population is exposed to is not only inaccurate but poorly tailored to who comprises the general population.

What *Are* the Proper Exercise Recommendations?

Aerobic Exercise

Personal trainers may be so attuned to our clients aesthetic goals, and also acclimated to those who are regularly exercising, that we may actually forget that the overarching message is to get more people to simply *move more,* otherwise known as increasing *baseline activity* as described by the 2008 Physical Activity Guidelines for Americans published by the Department of Health and Human services. Baseline activity, or activities of daily life (ADL's) are associated with increased caloric output, improve bone health, and essentially color physical movement as a social norm.

The recommendations for adults beyond moving more at baseline are to accumulate between 2.5 and 5 hours of *moderate* aerobic exercise spread out through the course of a week. Note that this is distinct from CDC recommendations that suggest 30 minutes of moderate activity 5 days a week, which illustrates a level of specificity that may be a perceived barrier for some. For someone who is currently sedentary, spreading out 150 minutes of activity every day of the week amounts to 21 minutes a day of brisk walking (at minimum). Alternatively, vigorous activity can be performed for a cumulative 75 minutes a week. Each bout of activity should last at least 10 minutes. Theoretically, one could participate in three bouts of 10 minutes of moderate-intensity activity 5 days a week to meet the guidelines.

For children and adolescents, the guidelines shift to include at least 60 minutes of moderate to vigorous activity a day and should involve at least three days of activity that rises to the level of vigorous. In addition, youngsters are not too young for muscle strengthening exercise! Any part of those 60 minutes a day can and should include some kind of strengthening.

There are additional set guidelines for pre-/post-partum women, seniors, those with disabilities, and those with chronic medical conditions. It is worth it for every fitness professional to read and memorize all of these!

Bear in mind, the benefits of physical activity increase as time spent moving increases, but bear in mind that most unhealthy Americans are in the precontemplation phase of exercise, i.e., they're not even considering it yet. If all they see on Instagram are Crossfit athletes doing kipping pull-ups, and all they read in the headlines of online news publications are workouts for a better butt, why would they even consider walking briskly an option unless someone tells them "it counts"?

Resistance Training

The same publication suggests incorporating muscle-strengthening activity into one's routine at least 2 days a week. It does not specify how long to participate in this kind of exercise, simply that it must "involve a moderate to rhigh level of intensity or effort and work the major muscle groups of the body".

The above-mentioned publication goes into much greater detail and is worth a read, and might even be something we pass along to our brand new clients new to working out.

The Health Messaging People Actually See

Thomas and Cardinal (2020) looked closely at how many online sources accurately conveyed just *one* consistent message in alignment with any of the present guidelines on physical activity by conducting Google searches. There were looking for any one of 17 guidelines, and found that of the 72 sources they located, the rate at which the articles lacked consistency with just one recommendation consistent with current guidelines ranged from 61 to 100%. Which means, if you googled, "How often should I exercise?" the first article that came up would probably offer information that is completely inconsistent with the guidelines. That's not good.

How Trainers Can Help

The audience we're most concerned about here is doubtfully those who are paying you good money to come and train with you in a gym, or perhaps today, schedule virtual training. Many people who are sedentary and need to understand the importance of physical activity and exactly how much they need to gain meaningful benefit are also low-income; personal trainers aren't exactly on the menu of options.

Does that mean we don't have a responsibility to disseminate important information that is accurate and will also reach those who need it the most? Of course not! Here are some ways you can get the right health messaging and information out to the masses:

1. **Familiarize yourself.** Don't be part of the problem. Learn and understand the messaging so it's at the tip of your tongue, ready to be shared.
2. **Talk about it**. You're a fitpro. You live and breathe health and fitness, presumably. So in interactions you have with your clients, your family, and friends, don't be afraid to work these topics into conversation. People love to ask trainers questions about fitness. Answer them freely and enthusiastically and weave in nuggets that they can walk away with and share with others. This normalizes the message.
3. **Get social.** Use your social media as an outlet to broadcast positive and accurate health messaging. If you have a captive audience, educate them and use hashtags that others who aren't necessarily following you would happen upon.
4. **Publish a blog.** If you have a blog already, great! You're ahead of the game. Perhaps you write on topics that are more relevant for your current clientele, but now you should consider reaching those who may never secure your services, yet whom will benefit from your knowledge.
5. **Offer free services.** Find out where the need is in your community. Perhaps conduct group training for underprivileged youth. Not only will you be laying a foundation for the kids, but it is an opportunity to help set an example for parents. If that won't fit into your schedule, consider just drafting up some flyers or brochures with relevant information and highlight physical activity guidelines. You might even partner with a local business to hold a short presentation for employees or even pose a workplace movement challenge based on the recommendations.
6. **Create new options**. For potential clients who are considering working with a trainer, but don't want to commit offer distance programming or accountability coaching as an affordable alternative to one on one training.

There are plenty of options and limitless ideas trainers can help people become more active and open their hearts and minds to exercising consistently. Knowledge is power, and in this case, it starts with those of us in the health and fitness industry. The more we can share it with the world, the more improvements in wellness our society will enjoy.

Fitness Trackers for "Techorexia"

Today's "gym attire" extends well beyond the latest in designer Lycra clothing. Wearable technology encircles the wrists of a number of clients and fitness enthusiasts seeking to improve their health, endurance, muscle mass, or running speed. Accuracy aside, a potentially dangerous pattern may be brought on by these gadgets and deserves our attention. Here's how something as seemingly benign as fitness trackers can be cause for concern and what trainers can do.

Today's market offers a multitude of devices for monitoring workouts as well as other wellness parameters. Many individuals find this serves as a "wearable coach", helping them stay motivated to boost activity intensity while also managing weight loss goals. However, constantly tracking intake and output may serve to propagate and/or worsen eating disorders, if not create compulsive behaviors that weren't already present. In fact, a new study found that for *some* users, fitness trackers can do more harm than good.

Those living with eating disorders, particularly anorexia nervosa, already have unhealthy relationships with food and exercise. For these individuals, fitness trackers may exacerbate obsessive behaviors such as calorie counting, rigorous exercise compulsions, and an unrelenting quest for body perfection, often at a significant cost to their health.

Disordered Eating & Exercise Addiction

Behaviors associated with eating disorders (binging, purging, over-exercising, and starvation) serve a purpose for the affected individual. Also referred to as process addictions, the powerful compulsion forces the individual to repeatedly engage in such behaviors despite their negative toll on one's physical and mental health. Scientists believe that these ritualistic behaviors create a sense of positivity or euphoria in the brain's reward center. Therefore, *even as these actions provide the illusion of control, such addictions paradoxically preside over an uncontrollable demon.*

Some clients may present as wholly dedicated to their gym time, never missing a workout session in spite of their declining energy levels. The most common process addictions found within the eating disordered population relate to exercise addiction. **Up to 48% of individuals enslaved to an eating disorder also suffer from some form of compulsive over-exercising syndrome, making "cross-addictions" more of the rule and not the exception.** Such clients may prattle on in casual conversation about food, cooking, and recipes, while meeting every frightening criterion of obsessive over-exercise. When in doubt about a client, think seriously about how best to approach him/her. If you suggest easing up on the cardio, his/her defenses may flare. If you sense a real problem, a private consultation away from the fitness floor may work well.

Fitness Trackers Linked to Obsession

A small body of research exists that correlates the *link between fitness trackers and disordered body image*. For individuals with a genetic predilection toward developing eating disorders, these gadgets can lead to life-threatening situations. As many as 65% of patients with anorexia nervosa admit to using calorie counting apps, leading to unhealthy increases of compulsive exercising.

As the star feature of their software, *fitness trackers implore users to constantly mov*e. For those clients already living with self-critical tendencies, the drive to increase activity levels or reach a particular weight-loss goal fast-tracks them to even more problematic behaviors. Many feel these devices create feelings of guilt when users fall short of a goal or fail to hit the progress level expected…or even when a friend burns more calories in a day than s/he. *The mindset moving from "I want to exercise" to "I MUST exercise" waves a red warning flag which, if unheeded, can easily lead to a full-blown eating disorder.*

Unintended Consequences

In attempting to gain a better understanding of the effects these devices have on exacerbating underlying eating disorders, researchers Courtney C. Simpson and Suzanne E. Mazzeo recruited a sizeable representative sampling of

college students: 345 females and 148 males. The volunteers completed questionnaires regarding disordered eating habits, degree of fitness participation, and calorie counting. Participants also reported whether they used any sort of fitness tracking technology and/or calorie-tracking apps. The scientists reported a link *between fitness tracking and symptoms of anorexia nervosa, but to a lesser extent with calorie trackers*. They concluded that the monitoring of energy expenditure with wearable devices correlates more strongly with eating disorder behaviors than the counting of calories, their intended purpose.

When Self-Regulation and Recovery Go Awry

When working with clients, experienced trainers learn that *proper motivation will evoke changes in behavior, which inevitably leads to progress*. The creators of fitness trackers operate on the same logistical platform. **At what point, in either scenario, does well-meaning motivation lead to damaging self-regulation?**

Those suffering from an active eating disorder, as well as clients displaying the first overt symptoms of pivoting from "disordered behaviors" to a life-threatening illness, already know the damage that can result from seemingly innocuous control devices. In fact, even the most dedicated attempts at recovery from anorexia nervosa can get derailed by overzealous reliance on data.

"Techorexia" seems a fitting term for individuals overly enmeshed in wearable tracking devices while simultaneously attempting to navigate recovery from anorexia nervosa. The word sums up the antithesis of the goals set forth by inventors of health-driven technology. The emphasis on calories burned or minutes/intensity of exercise completed directly conflicts with any attempts on the part of individuals in recovery, especially flying in the face of the Herculean task of releasing their stronghold on numbers. For these men and women, fitness-related numerology equates to self-worth. Just when patients in recovery have learned to stop weighing and measuring everything that enters their bodies, counting numbers of calories expended per workout can become a new dysfunctional fixation.

Balancing Fitness Trackers With Healthy Goals

When clients seek out your opinion on fitness trackers, so many success stories probably come to mind. We hear every day how wearable technology helped motivate people to get off the couch during COVID-19 quarantine, often leading to pounds shed and increases in energy. Even setting up friendly competition between fellow fitness trackers can serve as tremendous motivation. But like many things in life, if a little works well, a lot might send some clients over the cliff's edge. If you sense clients are fixating more than they should on the numbers on their wrist, remind them of the qualitative nature of their fitness journey, and the non-data driven results their looking for: feeling better, having more energy, and improving their health.

Food Sensitivities: Could Your Fitness Clients Benefit from a Food Sensitivity Test?

Diet and exercise are both highly personal practices; individuals can have food sensitivities that remain undetected unless intentionally examined. This means your clients could be making all the "right" healthy choices but have sensitivities to the foods they are consuming. If you have a client who sees a halt in their progress or who consistently experiences certain, marked symptoms, it might be worth asking if they've considered testing for food sensitives and/or allergies.

Food Sensitivities vs. Allergies

The primary difference between a sensitivity and an allergy is the way the body responds when a food is consumed. **A food sensitivity refers to the inability to digest and process a given food item and consumption of a trigger food results in *non-life threatening* but uncomfortable symptoms. Allergies, in contrast, trigger a more dramatic immune response and are often more severe than a food sensitivity** (Harvard Health).

Symptoms of Food Sensitivities

While reactions related to food sensitivities are not likely dangerous, they are certainly disruptive. Some common symptoms associated with food sensitivities include bloating, gas, joint pain, stomach pain and general gastrointestinal distress, fatigue, difficulty losing weight, rashes, cognitive disruption or fog, headaches or migraines, depression, and anxiety. Some individuals experience a cluster of symptoms depending on if their sensitivity is high, moderate, or low

Common Trigger Foods

Sensitivities to foods – even healthy options – are common. Some of the most common offenders include eggs, soy, corn, dairy products, shellfish, foods high in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAP), gluten-containing products, food additives, and meat coming from animals raised on corn and soy.

Testing and Diagnosing

It's obvious not within a fitness professional's scope of practice to recommend any specific test or diagnose someone with any condition. It is, however, within your scope to have the conversation with your clients if they seem to be experiencing odd reactions to foods that are, by nature, intended to be healthy and supportive. If they are experiencing symptoms, you might encourage them to speak to their primary care physician or a registered dietitian about their options.

A food sensitivity test is generally done through a finger-prick blood test and the IgG (Immunoglobin G) response level is measured and foods are commonly categorized as "high reactive", "moderately reactive", and "low reactive".

Personal Testimonial

After the birth of my first child, I observed strange reactions to foods I normally consumed – eggs, Greek yogurt, oatmeal, bananas, and chicken. Early on, I dismissed it assuming I was still in a recovery phase after giving birth. The longer it went on, the more evident it became that something was amiss.

Eventually, I decided to examine what I was eating and determine if foods I was consuming, although healthy and balanced, were simply no longer in agreement with my system. I was tested for both allergies and sensitivities and discovered *no* allergies but 19 food sensitivities that were causing physical issues for me. I eliminated my trigger foods and symptoms disappeared. Thankful and relieved, I reimagined my daily plate and have had great success since putting my daily intake under a microscope.

SELF – TEST: December 2020

1. Which description below best describes a hernia?
    a. A condition resulting in great discomfort due to either a organ or surrounding tissue slipping through a weakness or tear in the muscle
    b. A diseased state of increasing soreness in the abdominal area caused by a disruption of liver function
    c. A problem with one of the rubbery cushions that sit between the individual bones causing discomfort and tearing of the spinal cord muscles
    d. A serious medical condition of multiplying bacteria in which the appendix becomes inflamed and painful

2. Which of the following is the most common type of hernia?
    a. Abdominal hernia occurring above the belt line resulting from a weakness in the abdominal wall
    b. Hiatal hernia associated with gastric reflux
    c. Inguinal hernia occurring more frequently in men on either or both sides of the groin/scrotum
    d. Umbilical hernia associated with a building outward, either in or around the navel

3. All hernias share common risk factors. Some of these are:
    a. Chronic improper lifting
    b. Prolonged constipation
    c. Weakness caused by surgical cutting
    d. All of the above are risk factors for hernias

4. Most often, an accurate diagnosis of a hernia relies on a:
    a. X-ray
    b. Pelvic exam
    c. Trigger point test
    d. MRI

5. Velocity based training uses technology/devices to measure:
    a. Active endurance, or how active an athlete is while enduring pressure
    b. Velocity intensity, or the weight that can be moved between intense intervals
    c. Mobility transitions, or how capable an athlete is transitioning between exercises
    d. Movement velocity, or how quickly a movement takes places during an exercise

6. Load-velocity profiling uses a series of repetitions to produce:
    a. A force-velocity profile for any specific exercise
    b. An intensity level at any given amount of weight
    c. A movement velocity measure for each set
    d. None of these describes load-velocity profiling

7. Measuring intensity at a given movement in time describes an objective method for:
    a. Percentage based strength training
    b. Velocity based training
    c. Subjective RPE
    d. Active endurance

8. Slow distance running/jogging offers many benefits that include:
    a. Muscle strengthening
    b. Increasing size and number of mitochondria
    c. Burns more calories than high-intensity sprints
    d. All of the above are benefits of slow distance running

9. If you/your client are new to slow distance running/jogging, then it may be best to start with a slow run that lasts:
    a. Between 30-45 minutes
    b. Between 45-60 minutes
    c. More than 60 minutes
    d. None of the above

10. During a slow distance run, the heart rate should remain in a moderate work zone for:
    a. a greater total caloric burn
    b. less trauma to the joints
    c. shorter recovery time
    d. all of the above

11. An adult weighing about 200 pounds, will burn over _____ calories during a half-hour run averaging 7 miles per hour.
    a. 200
    b. 500
    c. 800
    d. 1000

12. Which of the following is a simple 'rule' for slow running/jogging that will create a more consistent and positive attitude, ultimately leading to progress.
    a. Always listen to loud music while running
    b. Keep a smile on your face while running
    c. Sing to yourself and others while running
    d. Stop by a neighbors house to say hello

13. Scientific studies show that slow jogging results in dramatically higher levels of _____ than a faster pace.
    a. Endocrineaphids
    b. Seritonin
    c. Endocannabinoids
    d. Endorphinoids

14. Special populations clients more often present with common health-related conditions, including:
    a. Fatigue
    b. Psychological unwellness
    c. Injury and physical pain
    d. All of the above are common with special needs clients

15. With special needs clients, it is important to:
    a. Start small
    b. Start big
    c. Never talk about it
    d. Always talk about it

16. Dependent on your client's disability, whether it be cognitive or physical, you can suggest small ways to change their ADLs in order to squeeze in more exercise. Some examples of this include:
    a. Taking the stairs instead of the elevator
    b. Stretching while watching TV
    c. Walking the dog around the block
    d. All of these are small things that make a big difference in the ADLs of your special needs client

17. Typically more common in women, CFS affects around one million people in the U.S. and is best staved off by regular very moderate and supervised exercise. What is CFS?
    a. Clinical Functional Suppression
    b. Chronic Failing Systems
    c. Chronic Fatigue Syndrome
    d. Clinically Facing Symptoms

18. Before tackling the construct of motivation, remember the principle of _____ whereby a client feels connected to you and therefore more committed to behavior change.
    a. Coaching
    b. Rapport
    c. Encouragement
    d. Love

19. A type of motivation is:
    a. Extrinsic (motivation due to outside influence or pressure)
    b. Intrinsic (motivation to do something because you want to)
    c. Both A and B are types of motivation
    d. Neither A nor B are types of motivation

20. One way to implement a motivational climate with your client is to:
    a. Greet client with enthusiasm and a smile
    b. Be warm and personally engaged with your client
    c. Revisit a comment that your client noted in the last session in a positive way
    d. All of the above are ways to implement motivation

21. In the context of trainer motivating a client, what does it mean to say 'focus on process rather than outcome-based goals.'?
    a. A focus on accomplishing a behavior versus losing a pound
    b. A focus on the goal at hand and how long it takes to get there
    c. A focus on past daily process and how it could have been done better
    d. A focus on removing all processes from daily living that do not align with goals

22. Epidemiological studies indicate that people with elevated blood pressure:
    a. Always have diabetes
    b. Often have a diminished aerobic capacity
    c. Have less risk for heart disease
    d. Are always overweight

23. Studies in mice with elevated blood glucose levels displayed mostly new deposits of _____ thereby preventing the vascular 'remodeling' of muscles.
    a. Proteins
    b. Collagen
    c. Calcium
    d. Fat

24. With time, any vigorous aerobic exercise can alter muscle fibers towards a greater oxygen utilization during aerobic workouts.
    a. True
    b. False

25. During the COVID pandemic, it is important to communicate with messages that consider psychographics. What is psychographics?
    a. Changes in demographic due to hardship
    b. Emotional responses from seller's advertising
    c. Placement of psychologically moving imagery in ad messaging
    d. Attitudes of consumers impacting why they buy

26. Which of the following are tips that can be used to function successfully in a post-COVID world?
    a. Master your budget
    b. Diversify your services
    c. Reimagine your marketing strategies
    d. All of the above are tips for re-working business strategies in a 'new normal'

27. Overuse injuries are the result of:
    a. Repetitive actions with poor technique
    b. Training outside of targetHR zone
    c. Working out 7 days a week
    d. Not training hard enough

28. Research shows a significant lessening of injury occurrence when:
    a. An athlete participates in more than one sport consistently
    b. The coach requires vigorous agility training more than 4x per week
    c. An athlete eats more frequently
    d. The coach implements a warm up protocol at least 2x per week

29. Which of the following is a test that looks at one's ability to easily and properly execute particular daily movements.
    a. Functional Movement Screen
    b. ADL Measures
    c. Fitness for Function Test
    d. None of the above

30. Which of the following is an example of a client's non-verbal cue demonstrating undisclosed pain or instability?
    a. The shrugging of shoulders
    b. Tense body posturing
    c. A wink in the mirror
    d. Tripping on shoelaces

31. Personal trainers can assist athletically inclined clients in perfecting basic movements by:
    a. Including sports specific movements in their workouts
    b. Including the opposite of their sports specific movements into their workouts
    c. Postponing workouts until the off season
    d. Keeping workouts to aerobic training only

32. Simply stated, getting people to 'move more' is also known as:
    a. Decreasing baseline activity
    b. Increasing baseline activity
    c. Deceasing baseline laziness
    d. Increasing foundational laziness

33. The basic recommendation for adults to move more is to:
    a. Accumulate between 1 and 2.5 hours of high intensity aerobic exercise spread out over three days
    b. Accumulate between 3 and 6 hours of low intensity anaerobic exercise spread out over one week
    c. Accumulate between 2.5 and 5 hours of moderate aerobic exercise spread out over one week
    d. Accumulate between 5 and 8 hours of moderate aerobic exercise spread out over 5 days

34. What is the 'precontemplation phase' of exercise?
    a. Not even considering it yet
    b. Considering it but not ready to start
    c. Wanting to but not wanting a commitment
    d. Contemplating every possible scenario

35. Which of the following contributes most to NOT moving past precontemplation?
    a. Satisfying lifestyle habits without the willingness to quit
    b. Happiness with current health condition even if it's in an unhealthy state
    c. Perceived view of unattainable body perfection displayed in popular media
    d. Perception of fitness minded people as being too motivating

36. Getting the right health message to the masses is an important element of the business of personal training. Which of the following is a way to get your message out there?
    a. Talk about it when interacting in friendly conversations with people
    b. Publish a blog on topics that are most relevant to your services and your clients
    c. Create new options and affordable alternatives to your training services
    d. All of these are ways to get your message to people and create interest in what you offer

37. Fitness Trackers can do more harm than good for some users. How so?
    a. Propagate and/or worsen eating disorders
    b. Create or worsen a body image obsession
    c. Removes enhancements in self regulation
    d. All of the above can be unintended consequences of fitness trackers, for some

38. Scientific findings conclude that the monitoring of energy expenditure with wearable devices correlates more strongly with eating disorder behaviors than the counting of calories.
    a. True
    b. False

39. Wearable technology helps people to get off of the couch, and often helps to increase energy levels and motivate users. However, for personal trainers working with clients who use these devices, it is important to:
    a. Encourage the consistent daily, even hourly, use and monitoring of the device
    b. Be aware and observant of obsessive use of the device that may cause your client more harm than good

40. The primary difference between a food sensitivity and an allergy is:
    a. A food sensitivity refers to a given food item that triggers non-life threatening but uncomfortable symptoms. Allergies, in contrast, trigger a more dramatic immune response and are often more severe than a food sensitivity
    b. A food allergy refers to a given food item that triggers non-life threatening but uncomfortable symptoms. Food sensitivity, in contrast, triggers a more dramatic immune response and are often more severe than a food sensitivity

Thank you for completing this NFPT Self Test. Our thoughts and best wishes are with you!

SIDE 1

○ RESCORE | ○ MARK ✓ ○ TOTAL ONLY/BOTH SIDES

Trans-Optic® forms by NCS Pearson MM19641-2 654321

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KEY ITEM COUNT

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1 FEED THIS DIRECTION

NFPT ID

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MARKING INSTRUCTIONS

Use a No. 2 Pencil

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Fill circle completely

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Erase cleanly

SCORE		# CORRECT
		% CORRECT
RESCORE		# CORRECT
		% CORRECT
ROSTER NUMBER		SCORE
		RESCORE

NAME _____

SUBJECT **DEC 2020 CEC Self Test**

PERIOD _____ DATE _____

TEST ANSWER SHEET B
Form No. 19641

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