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Create Safe, Effective Indoor Cycling Classes

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GFI SERIES

CREATE SAFE, EFFECTIVE Indoor Cycling Classes

BY KAREN ASP

I'M TAKING AN INDOOR CYCLING CLASS WHEN THE INSTRUCTOR DOES SOMETHING THAT IS NOT ONLY UNUSUAL, BUT ALSO POTENTIALLY DANGEROUS: SHE ASKS PARTICIPANTS TO TAKE ONE FOOT OUT OF THE CLIP OR CAGE, PLACE IT ON THE CENTER OF THE BIKE, AND PEDAL WITH ONE LEG. PARTICIPANTS REMAIN HERE FOR SEVERAL MINUTES, INCREASING RESISTANCE PER THE INSTRUCTOR'S URGINGS (THEY ARE SUPPOSED TO FEEL AN INCREDIBLE BURN IN THEIR QUADS), BEFORE RESUMING TWO-LEGGED CYCLING. THEY THEN SWITCH LEGS.

I'm convinced the instructor doesn't realize how ill-advised this move is, as she does it in every class. Yet one-legged cycling isn't the only mistake instructors are making. Other mistakes—everything from push-ups on handlebars and isolations to jumps and out-of-control pedaling—are regularly being made in indoor cycling classes.

Unfortunately, some of these moves are neither safe nor effective and could lead to injuries among participants. That's why we've tapped leading experts from various indoor cycling programs to shed light on some of these contraindicated moves. They'll also reveal what it takes to create a good cycling class—and why coaching is more important than instructing—so you'll never have to rely on these moves again.

Five Common Mistakes

One of indoor cycling's biggest advantages is its simplicity. "You sit or stand, change resistance and pedal," says Julz Arney, lead master trainer for Schwinn Cycling and a fitness educator in Costa Mesa, Calif. "It doesn't get much more difficult than that."

Yet in recent years, instructors have made cycling more difficult, and several reasons may be to blame. For starters, many cycling instructors come from aerobic fitness backgrounds, and transitioning from the aerobic arena into indoor cycling can be challenging. "Group fitness instructors are often [accustomed] to such complex choreography that when they face the simple design of cycling classes, they're lost," says Luciana Marcial-Vincion, M.A., Spinning Master Instructor and Master Instructor Team Manager for Mad Dogg Athletics.

Another problem? "Instructors have this perception that participants are getting bored riding bikes," Marcial-Vincion says. As a result, instructors employ creativity and make up moves that aren't real to the road.

While these moves might seem like fun to participants, they aren't always good for them. "Some of these moves are contraindicated, which jeopardizes participants' health," Marcial-Vincion says, adding that she's seen many insane things in cycling classes, including a national TV show that removed the saddle so participants couldn't sit.

Continued on page 4

KAREN ASP, a health and fitness writer and ACE-certified fitness professional, writes regularly for numerous publications, including *Self, Shape, Women's Health, Fitness, Prevention, Real Simple, Men's Fitness, Woman's Day* and *Natural Health*. She's also a contributing writer for AOL and Oxygen.

So what are some of these contraindicated moves? Take a look at five of the top offenders:

Out-of-control cadences: If you've never cycled outside, it's easy to ride indoors with cadences that are too fast. Yet if you were to ride that quickly on the road, you wouldn't get anywhere. Plus, super-fast pedaling doesn't provide much of a challenge for your body. "You might have the perception that you're working hard, but you're only as productive as the power you're producing," Marcial-Vincion says. If you use lower resistance and higher cadences, you have lower power output, which means you're not challenging the cardiovascular and muscular systems as much and will have a harder time reaching your goals. Super-fast cadences also pose dangers to the hips, knees and ankles.

To keep participants in control, do cadence checks where you ask participants to count pedal strokes. For instance, do a 10-second count and then have them multiply by six to determine their revolutions per minute (RPM). Schwinn, for instance, recommends that cadences not exceed 110 RPM. If you or your participants are going faster than that, add resistance to slow the legs.

You might also do what Arney's done and replace the word "sprint" with "surge" or "power surge." "To most students, the word 'sprint' means pedal as fast as you can, which is a recipe for disaster," she says. Instead, to do this right, make sure participants have enough resistance on their bikes. Then ask them to add more leg power to that already-challenging resistance, and you'll successfully execute a surge.

Conversely, pedaling too slowly (under 50 RPM per Schwinn), can cause the legs to fatigue before achieving much of a cardiovascular benefit. Arney suggests that if you keep cadences between 60 and 90 RPMs in class, "you'll always be able to find the workout intensities that make indoor cycling such a great workout."

One-legged cycling: Professional cyclists will do one-legged cycling on machines that measure force output produced by each leg. Yet in an indoor cycling class, explains Arney, power output typically is not measured so the value of one-legged cycling is questionable. Besides, cycling is a two-legged sport, and reducing it to one leg makes no sense.

More importantly, though, removing one foot from the cage or clip increases the likelihood of getting hit in the calf by the pedal and causing serious injury, says Marcial-Vincion. The risk increases in dimly lit studios where participants can't see their bodies clearly. Regardless of light level, however, instructors should never ask participants to remove their feet from the pedals while they're riding.

Push-ups on the handlebars: Have you ever seen a cyclist do this on the road? Then why do it in class? Besides, doing push-ups on a bike doesn't provide enough challenge to build strength, and they make participants move unnaturally on the bike, which could put them in compromising positions. "Save push-ups for when you're on the floor and grounded to the earth," Marcial-Vincion says.

Jumps: "Jumps are a poor choice and should be replaced with simple riding techniques and great coaching," Arney argues, citing three reasons. First, even if you've mastered jumps with resistance, the majority of your participants have not. So, to keep up with you, they often decrease resistance and sacrifice fitness benefits in exchange for a maneuver that's neither functional nor effective. Secondly, "one of the most stressful moments for the knee joint in cycling occurs when a rider gets up out of the saddle, so any perceived benefit of jumping is outweighed by the potential overuse damage that can result from getting in and out of the saddle," Arney explains, adding that this is especially true with super-fast jumps. Besides, if you want to keep recruiting new participants into indoor cycling classes—which, according to Arney, has been losing ground in recent years—you should eliminate intimidating moves like jumps that may scare people away.

Isolations: You might love telling students to freeze their upper body while in a standing position so they feel a burn in their quads. Yet the long-term ramifications could be tremendous. "You're placing undue stress on the hips, knees and ankles," says Mancial-Vincion, "which could cause serious injury." Instead, find ways to challenge the quadriceps more safely. One suggestion: Move into a standing position, but increase the resistance and cadence slightly so it feels like a difficult road. You'll then feel that same burn without the dangers.

Designing Classes With Safety and Efficacy in Mind

Now that you know what doesn't work, let's look at what does work in indoor cycling classes, tackling this important question: How do you create safe, effective and fun indoor cycling classes without these moves?

For starters, brush up on your knowledge of cycling. If you can get outside to ride so you can get a feel for what true cycling is like, go for it. Otherwise, read cycling books or watch DVDs so you get an idea of what the sport is all about, suggests Marcial-Vincion. You should also take continuing education workshops so you can experience first-hand how to deliver a simple riding experience and how to coach participants through your classes. Another easy option?

Take cycling classes at your club and learn from your colleagues. This will give you a feel for what you like and don't like as a participant.

Then take time to make a plan before you step into class. Your first step? Setting a goal for each of your classes. "You need to have an objective for your classes, whether it's for the entire class or each song," Arney says. Think about any successful sports coach—one reason that coach is so effective is because for every training session, he has a plan for the day. Your cycling classes should be no different. For instance, will that first five-minute song after the warm-up be five minutes of steady, comfortable endurance work? Or will you ask participants to challenge their strength by doing a moderate hill climb?

Once that goal is defined, you can create a plan to meet your objectives, which includes choosing appropriate music to convey your message, picking terrain that meets the goal and, perhaps most importantly, using motivational coaching cues. "If you want to be successful," says Marcial-Vincion, "you need to learn how to be a better coach."

That might seem an unusual transition at first, especially if you're accustomed to barking orders at participants in your step and boot-camp classes. Yet it may not be as tough as you think.

First, don't think you need to talk the entire class. "One of participants' top complaints is instructors who talk too much," Arney says, adding that most participants prefer to hear what they should be doing and then be left alone.

Second, provide enough information to participants so they can answer three questions at any time in your class:

1. What's the goal? (e.g., Are they trying to pass five riders to make it to the top of the hill first?)
2. How should the work feel? (e.g., Comfortable? Hard?)
3. And finally, how long will the work last? (e.g., Thirty seconds? Four minutes?)

Arney calls this the triple-link technique and says you can do this for each song or link several songs together. "After that, you can be relatively quiet and reinforce the answers to those questions," she says.

For instance, here is a triple-link, "big picture" example from Arney that would set the tone for the entire class: "In our 50-minute ride today, there will be four stages, each stage ending with a five-minute climb. We'll work at a good endurance pace to get up the hills, then push to breathlessness to reach the top of each one."

And here is an example of how the triple-link technique might work for just one song. At the beginning of the song, you might say something like: "You have seven minutes to reach the base of the climb. Work at a comfortable pace until we get there so you can use everything you've got to be the first rider to the top."

Marcial-Vincion also encourages instructors to use language that's motivational and perhaps even life-changing. "Use words that are empowering that help students discover something deep within themselves that they wouldn't have had a chance to discover in a step class or another workout," she says. If you need help finding the words, read inspirational books by political, sports, academic or religious leaders and listen to how they phrase things. Then apply your own experiences to your language.

Once you learn how to become a better coach, you'll no longer have to rely on contraindicated or questionable moves to fill time in your cycling classes. No doubt you'll also hear how much more participants are enjoying your classes. In the end, you may even boost the numbers in your cycling classes, and that's the ultimate compliment any instructor can receive.

FEATURE STORY

EXERCISE AND ADDICTION

BY CARRIE MYERS

A staggering 23 million Americans suffer from addiction* to drugs or alcohol.

—survey by the U.S. Dept. of Health and Human Services

WHEN TODD CRANDELL WAS TWENTY-SOMETHING, HE WAS A TALENTED, HANDSOME ATHLETE ON HIS WAY TO A PROFESSIONAL HOCKEY CAREER—EXCEPT FOR ONE OBSTACLE—DRUG AND ALCOHOL ADDICTION.

"Addiction was absolute hell for me," says Crandell. "I would wake up each day and not thank God for life or be excited for what the day would bring. Rather, I'd be pissed off that the drugs I took the night before didn't kill me. I lost everything from my addiction—education, family, friends, spirituality, self-respect. The difference between living and dying was nonexistent."

Fast-forward several years later. Now in his early 40s, Todd is happily married with three children, and is the founder and executive director of The Racing for Recovery Foundation, based in Sylvania, Ohio, and author of *Racing for Recovery: From Addict to Ironman*. Perhaps most importantly, though, he's clean and sober—and living.

When Crandell decided to enter recovery after 13 years of drug and alcohol abuse, he went the traditional route, attending 12-step support groups, reading anything and everything he could get his hands on regarding recovery, watching movies and TV shows on the topic, and forming friendships with other recovering addicts. But he felt something was missing.

"Twelve steps were good and are good for people who like that approach," he explains. "I just got to the point where I was like, 'Okay. Let's put this into practice.'"

He also had a few other hang-ups regarding traditional programs that place the emphasis on abstinence above all else. "I don't believe once an addict always an addict and I certainly don't believe I am powerless over drugs. I have complete control over whether I put that stuff in my system or not. Saying I'm an addict and I can't help myself just is not true."

Like fitness, one size does not fit all when it comes to recovery programs. While 12-step programs have and continue to help millions of addicts recover from addiction, "saying that you have to do the 12-steps to achieve sobriety is like saying you can only drink one kind of beer to get drunk," says Crandell. "There are many ways to become addicted to drugs and there are many ways to recover."

Many recovery programs are now taking a more holistic approach when it comes to recovery. While some may still incorporate the 12-step approach, they're supplementing it with lifestyle changes, including exercise, healthy eating, stress management and optimal rest.

"Exercise is an essential part of the recovery process," says Mitchell Wallick, Ph.D., executive director of CARE in North Palm Beach Florida. "At our center we have a gym with a physical trainer three days a week. We also do yoga and massage therapy. The concept is that a whole mind in a whole body is part of what is required to recover."

Crandell craved something more and fell back on what he knew from his hockey days—working out. "When I first got sober I got back into lifting weights, but then decided to pick up my hockey career again, so there was a lot of hockey and running. Then I found Ironman and added swimming and biking to my daily routine. This helped improve myself not only physically, but spiritually, emotionally and intellectually, as well."

The daily ritual of working out helps an addict in many ways. First, it provides structure and meaning, something many addicts lose while in active addiction. It also fills time and keeps their minds busy. The process of getting fit or participating in training for an event also builds confidence and gives a recovering addict goals to work toward. And since depression and addiction go hand-in-hand and exercise has been shown to ease symptoms of depression and anxiety, it's one more reason to add exercise to one's recovery plan.

"Most addictions result in an imbalance of the neurotransmission system," explains Wallick. "Consequently, patients suffering from drug-induced depression are helped by the release of dopamine and serotonin from exercise. It's also a very important part of the recovery process in terms of increasing self-esteem and generally feeling better."

CARRIE MYERS is the fitness coordinator at the Mt. Washington Resort in Bretton Woods, N.H., and has been a freelance writer for 10 years.

*For the duration of this article, "addiction" refers to addiction to drugs and/or alcohol.

Emerging Research on Exercise and Addiction Recovery

While very little research has been done regarding exercise and addiction recovery and prevention, it is gaining scientists' attention and there are some studies underway. The National Institute on Drug Abuse (NIDA) has offered $4 million in grant money for additional research into whether or not regular vigorous activity can actually prevent addiction. There have also been studies that have shown success in treating people with nicotine addiction. A Brown University study, for instance, reported that the success of smokers trying to kick the habit increased most among those who attended the greatest number of workouts. Scott Winnail, Ph.D., who authored a study published in the December 1995 edition of the *Journal of School Health,* concluded that increases in physical activity levels were associated with decreases in teens' use of tobacco and marijuana. Another study published in the December 2001 issue of the *Journal of Substance Abuse Treatment* suggested that regular exercise reduced tension and stress among those in treatment for alcohol use disorders, and that the exercisers also had a more positive outlook and higher self-esteem.

"Anecdotally I can tell you that exercise works extremely well in contributing to recovery," says Wallick. "In our practice we have noticed that those patients who maintain an exercise regime after graduation do significantly better in terms of recovery than those who do not."

At a 2008 NIDA conference, the following findings were emphasized:

- One study concluded that rats whose cages contained running wheels were less likely to ingest amphetamines than were more sedentary rodents.
- Exercise in humans is known to trigger the release of dopamine, a brain chemical that has been associated with mood improvements and depression relief. Certain drugs, such as cocaine, replace the brain's natural supply of dopamine, so that the brain stops producing its own and looks to the drug to get it.
- Studies have shown that elderly individuals who exercise have improved brain function and may, as a result, be less susceptible to the effects of dementia (the correlation here being the improved brain function, as drug use alters brain chemistry).

The Role of the Fitness Professional

As a fitness professional you may find yourself working with a recovering addict. Or perhaps you'll find you have a real passion for this population and make it one of your target clientele. Either way, it's important to become educated on addiction and recovery. There are many misconceptions about the disease, so choose credible sources to glean your wisdom from (see sidebar, right). Aside from books, visit your local addiction treatment centers and request information. Volunteer at the centers so you can get to know the people and learn more about addiction. Check out local recovery support groups—for the addict, as well as for friends and families of addicts.

"The more you understand, the better, because it's a very unpredictable situation," says Morteza Khaleghi, Ph.D., author of *Free From Addiction: Facing Yourself and Embracing Recovery* and founder of Creative Care, Inc. in Malibu, Calif. "Emotionally, when you stop drinking and using drugs, you've created a vacuum and are dealing with a lot of emotional aches and pains, so it makes for an unpredictable and unstable situation. The more you, as a fitness professional, understand about this process, the better equipped you'll be to deal with it."

Keep in mind, too, that scientists are still trying to figure out this disease. Just as human beings have many dimensions to who we are, diseases of addiction have many variables that contribute to the cause—and recovery—of them. Recovery plans—like fitness programs—should be tailored to the individual.

Crandell, who did his first Ironman Triathlon in 1999, just completed his 16th Ironman in western Australia in a time of 12 hours, 20 minutes—his best time yet. "And this was after doing a three-day Ultraman event!"

Where does he see his path taking him? "I'll always be physically active in some capacity. I'll just have to find other ways besides the Ironman. Every step I take improves me not only physically, but mentally and spiritually, as well," he explains. "I also want to deliver my Racing for Recovery message [to as many people as possible] so it's a part of my business to stay active."

And what is that message? "With sobriety anything is possible!"

According to the National Institute on Drug Abuse:

- Every 30 minutes someone in the United States is killed in an alcohol-related traffic accident.
- The fourth leading cause of death among people ages 10 to 24 is alcohol, and alcohol and drug abuse are major factors in the first three (suicide, motor vehicle crashes and homicide).
- Four out of 10 criminal offenders report alcohol as a factor in violence; it's also involved in one out of three incidents of spousal violence.
- According to the National Council on Alcoholism and Drug Dependence, alcohol and drug abuse cost the American economy an estimated $276 billion per year in lost productivity, healthcare expenditures, crime, motor vehicle crashes and other problems.

Resources

- *Racing for Recovery: From Addict to Ironman* by Todd Crandell and John Hanc
- *Addiction—Why Can't They Just Stop?: New Knowledge, New Treatments, New Hope;* edited by John Hoffman and Susan Froemke; based on the HBO documentary series, produced in association with the Robert Wood Johnson Foundation, the National Institute on Drug Abuse, and the National Institute on Alcohol Abuse and Alcoholism
- *Free From Addiction: Facing Yourself and Embracing Recovery* by Morteza Khaleghi, Ph.D., with Constance Gove
- *The Alcoholism and Addiction Cure: A Holistic Approach to Total Recovery* by Chris Prentiss

FEATURE STORY

WHEN PANCREATIC CANCER STRIKES:

What is the Role of Lifestyle in Prevention and Treatment?

BY NATALIE DIGATE MUTH, M.D., M.P.H., R.D.

PANCREATIC CANCER IS AMONG THE MOST TALKED ABOUT, FEARED AND POORLY UNDERSTOOD HEALTH AILMENTS OF THE PAST FEW YEARS. WELL-KNOWN FIGURES INCLUDING RANDY PAUSCH, LATE PROFESSOR AT CARNEGIE MELLON AND WIDELY RESPECTED FOR HIS "LAST LECTURE"; ACTOR PATRICK SWAYZE; APPLE GURU STEVE JOBS; AND SUPREME COURT JUSTICE RUTH GINSBERG ALL HAVE HAD TO FACE PUBLIC BATTLES WITH THE DEADLY CANCER.

Thousands more quietly suffer from the fourth leading–cause of cancer mortality in the United States (Jemal et al., 2008). With a five-year survival rate of 5 percent and a one-year survival of 20 percent (Jemal et al., 2008), a diagnosis of pancreatic cancer is devastating. While there are few known causes and limited preventive measures, some evidence suggests that lifestyle and dietary factors may play a role in the development of the disease and perhaps in the success of its treatment.

Pancreatic Cancer Basics

The pancreas is a large organ (see Figure 1) that serves two major functions: the *exocrine* portion of the pancreas secretes enzymes important for digestion, and the *endocrine* portion secretes hormones that regulate sugar metabolism. When cancer strikes any part of the pancreas, it is broadly defined as "pancreatic cancer," though, in reality, there are as many as 20 different possible types of tumors.

Cancer arises when cells of the pancreas mutate, grow uncontrollably and resist cell death; no one fully understands what causes this to happen. Some cancers of the pancreas cause dramatic symptoms, which can alert the affected per-

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son that something is wrong. For example, acinar cell carcinomas may produce excess amounts of digestive enzymes leading to unusual skin rashes and joint pain. Endocrine tumors, which are very rare and referred to as *islet cell tumors*, can produce excessive amounts of the pancreatic hormones insulin (insulinoma) or glucagon (glucagonomas) resulting in hypoglycemia or a striking skin rash, respectively. They typically are more treatable and have a more favorable prognosis. In fact, most are benign.

Adenocarcinoma, the most common and deadly type of pancreatic cancer, is an exocrine tumor that often presents without warning. Adenocarcinomas form glands in the cells that line the ducts of the pancreas. The rapidly growing glands can invade nerves (which may cause back pain) and spread to the liver or lymph nodes (at which point the tumor is unresectable; that it, surgery is no longer an option). Symptoms that may arise with advanced disease include upper abdominal pain that radiates to the back, yellowing of the skin and whites of eyes (jaundice), loss of appetite and unexplained weight loss (typically about 5 pounds per month) (Freelove and Walling, 2006). Notably, these symptoms are not specific to pancreatic cancer, but anyone with these symptoms should immediately receive a thorough evaluation by a physician.

A physician typically diagnoses pancreatic cancer with a CT scan of the abdomen. The CT scan and various other tests are used to stage the extent of disease and determine the most appropriate treatment. Pancreatic cancer treatment remains challenging with the cancer mortality rate almost equaling the rate of new cases each year (Jemal et al., 2008). Various clinical trials are underway to uncover more effective treatment and therapy. Meanwhile, minimizing risk is the best insurance to protect against this ruthless disease.

Risk

Smoking, obesity, advanced age and family history of pancreatic cancer or other related diseases, such as hereditary nonpolyposis colorectal cancer and hereditary breast and ovarian cancer, are established risk factors for pancreatic cancer (ACS, 2008). Chronic pancreatitis (ongoing inflammation of the pancreas) and diabetes also increase risk, though there is speculation that these conditions may be early signs of pancreatic cancer rather than risk factors, or that the diseases all share a common cause (Anderson et al., 2009). Other possible risk modifiers that are the subject of ongoing scientific investigation include allergies (possibly decrease risk), various nutrients and foods, and physical activity (Anderson et al., 2009). Clearly, some risk factors are nonmodifiable, but individuals may protect themselves with some important lifestyle choices, starting with quitting smoking.

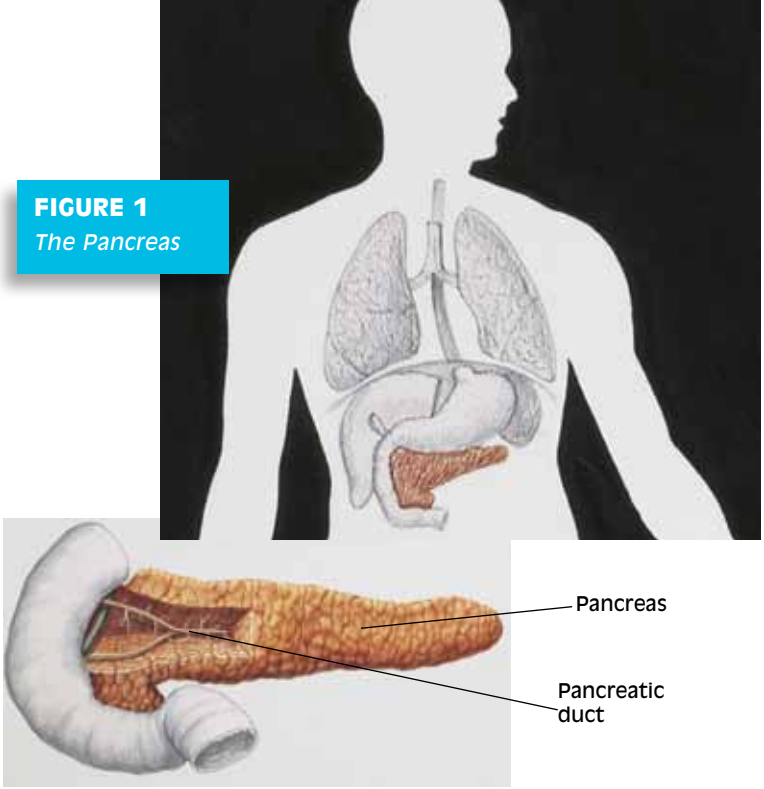

FIGURE 1
The Pancreas

Pancreatic Cancer and Smoking

Smoking and use of smokeless tobacco are well-established risk factors for pancreatic cancer; smokers have double the rate of disease compared with nonsmokers (ACS, 2008). The most important precaution a smoker can take to avoid a run-in with this deadly disease is to quit smoking immediately.

Pancreatic Cancer and Obesity

Another unequivocal risk factor for development of pancreatic cancer is overweight and obesity with a probable linear relationship; that is, the heavier someone is, the more likely he or she is to develop the cancer (Berrington de Gonzalez et al., 2003). In women this also applies to abdominal fatness as measured by waist circumference (Stolzenberg-Solomon et al., 2008). Achieving a healthy body weight is an important goal for anyone serious about minimizing risk of pancreatic cancer and myriad other diseases and illnesses. Moreover, not only does obesity increase risk of pancreatic cancer, it also worsens the prognosis as a growing body of research suggests that surgery outcome is poorer for people who are obese (Fleming et al., 2009).

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Web Resources for More Information

- **Pancreatic Cancer Action Network (Pancan.org) –** an advocacy group that aims to increase awareness of pancreatic cancer and funding for research. Website contains information about pancreatic cancer as well as how you can get involved to fight the disease.
- **Confronting Pancreatic Cancer (pancreatica.org) –** a nonprofit organization which maintains the website with the goal of providing the latest news on available treatments, resources, and advocacy opportunities for people with pancreatic cancer.
- **National Cancer Institute (cancer.gov) –** provides detailed information on pancreatic and other cancers.
- **American Cancer Society (cancer.org) –** offers detailed information on pancreatic and other cancers as well as links to other resources for further information.

Pancreatic Cancer and Exercise

It is unclear whether physical activity helps to protect against pancreatic cancer. Early observational studies appeared to demonstrate a protective role of exercise of various types; however, later, more rigorous studies have failed to find a relationship (Bao and Michaud, 2008). In its comprehensive report on nutrition and physical activity in the prevention of cancer, the World Cancer Research Fund (WCRF)/American Institute for Cancer Research (AICR) concluded that limited and inconsistent evidence suggests that the risk of pancreatic cancer may be lower with increased physical activity of various types (2007). On the other hand, a systematic review of the literature through mid-2008 concluded that there is not strong evidence for an association between physical activity and risk for pancreatic cancer (Bao & Michaud, 2008). The true effect, if any, of exercise in risk is an area of ongoing research.

Pancreatic Cancer and Nutrition

Countries in which a typical diet is high in fat have higher rates of pancreatic cancer; however, no clear link exists between intake of high-fat foods and pancreatic cancer (ACS, 2008). The WCRF/AICR report (2007) found various relationships between food intake and cancer risk, including:

- Foods containing folate (such as leafy green vegetables, cauliflower, broccoli and lentils) are associated with decreased risk.
- High fruit intake probably decreases risk.
- High red meat intake probably increases risk.
- Coffee intake is not associated with risk. Studies of caffeine intake and risk have had inconsistent results.

The authors surmised that, to date, evidence is inconclusive for vegetables, tea, alcohol, milk and dairy products, vitamin C and folic acid supplements (WCRF/AICR, 2007). A more recent study of 1,149 participants found that heavy alcohol use is associated with a moderately increased risk of pancreatic cancer (Jiao et al., 2009). Emerging evidence suggests vitamin D may help to protect against pancreatic cancer, though some studies have failed to find a relationship (Stolzenberg-Solomon et al., 2009)

Understanding of the role of various nutrition factors in pancreatic cancer risk continues to evolve with studies showing inconsistent and unclear results. While adopting an overall healthy lifestyle that includes fruits and vegetables and other nutrient dense foods, and limiting those that provide little nutrient value, provides numerous health benefits, its role in pancreatic cancer is uncertain.

Recommendations to Clients

The reality is that little is known about how to best prevent and treat pancreatic cancer. Survival rates are dismal, partly because the disease is usually detected late. Only 7 percent of pancreatic cancers are detected early before the disease has spread (ACS, 2008). Treatments are usually stopgap; for most, the disease returns soon after surgical removal of parts of the pancreas and other nearby organs or after other treatments (Nieto et al., 2008). Even the most fit, healthiest, nonsmoking, fruit-and-vegetable-loving middle-aged man or woman can develop the cancer. Still, everyone can take a few important precautions to lower their risk of disease, or detect it in its earliest stages (see "Advice to Clients to Help Decrease Risk of Pancreatic Cancer").

Advocating for More Funding

Ultimately, to better detect and treat pancreatic cancer, more attention and resources should be directed toward this relatively uncommon, but highly lethal disease. While pancreatic cancer ranks 4th in number of annual deaths from cancer, it ranks 11th in National Institutes of Health funding. Much more research is needed to better understand this disease and learn how to effectively manage it. After all, survival rates have not budged in years (Nieto et al., 2008).

Representatives Eschoo (D-CA) and Brown-Waite (R-FL) introduced the Pancreatic Research and Education Act (H.R. 745) in the U.S. House in early 2009 to allocate more funding to pancreatic cancer research. The House passed a bill allocat-

Advice to Clients to Help Decrease Risk of Pancreatic Cancer

- Stop smoking. Smoking greatly increases risk of pancreatic cancer while stopping smoking greatly reduces risk.
- Lose weight. People with higher BMI and higher waist circumference have higher risk of pancreatic cancer.
- Get annual medical check-ups. This is especially important with increasing age.
- See a doctor immediately if any of the following symptoms arise: upper abdominal pain that radiates to the back, yellowing of the skin and whites of eyes (jaundice), loss of appetite, weight loss and depression. Be aware that early-stage pancreatic cancer often is asymptomatic.
- Eat ample fruits and high-folate foods.

ing $3 billion to the NIH while the senate bill allocated $10 billion. Fitness professionals who support directing more money to cancer research should write their local U.S. legislators asking them to support the bill, and advocate that funds go toward better understanding the roles of physical activity and nutrition.

Patrick Swayze wrote the following in a *Washington Post* editorial (February 8, 2009): When I was growing up in Texas, my family had a simple response for challenges like this: "Stop talking about it, and *do* something about it." That's how I feel about finding more money for cancer research. My hope is that some day, the words "a cure" won't be followed by the words "is impossible."

Increasingly, the fitness professional's role extends beyond teaching people how to exercise and providing health information in a one-on-one setting to advocating for health on a larger scale. In the case of pancreatic cancer, perhaps the most critical role we can play is to speak up.

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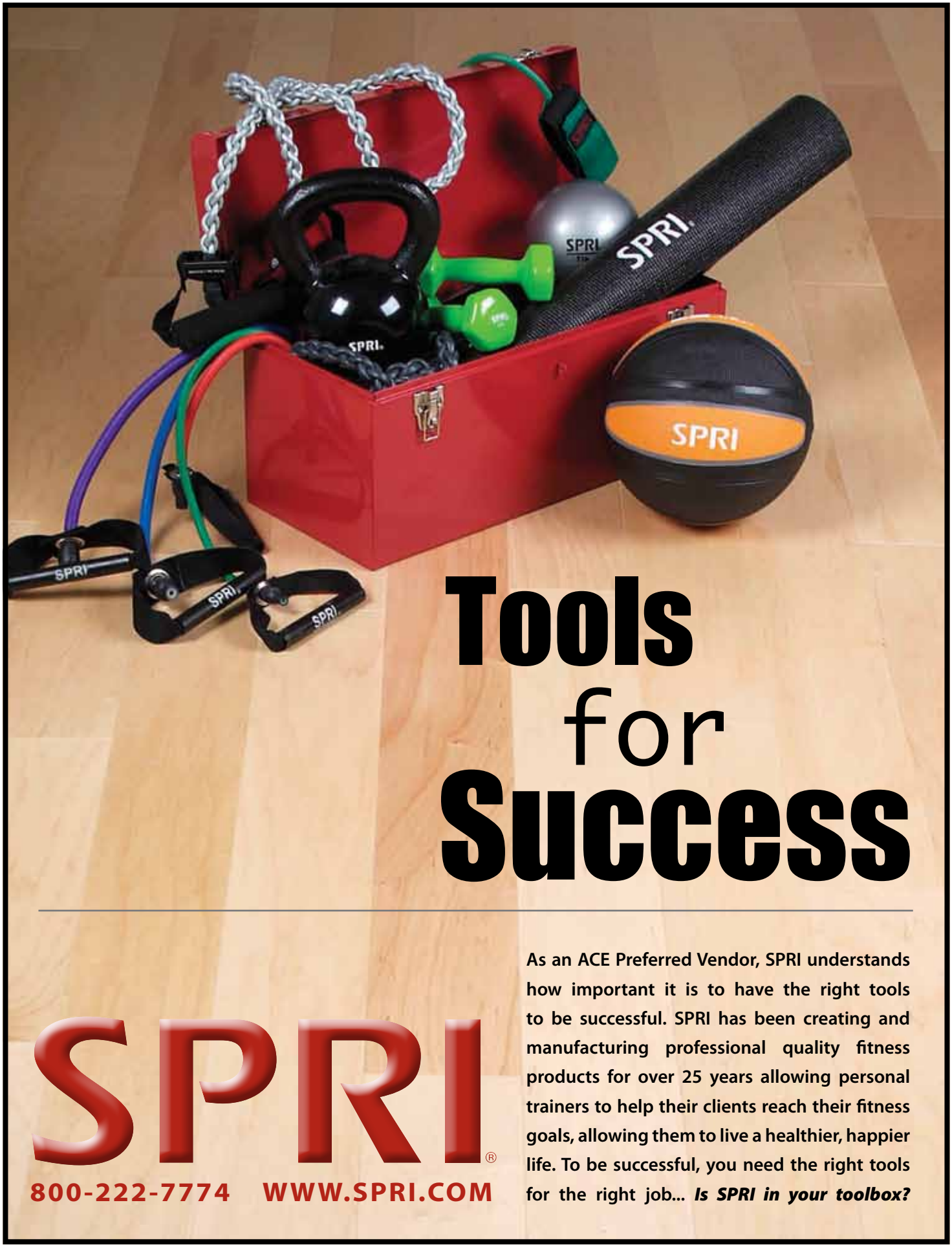

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3 PART SERIES

Part three

Training the Lower Extremities:

FOCUS ON THE ANKLE/FOOT COMPLEX

BY SCOTT CHEATHAM, D.P.T.

THIS IS THE FINAL INSTALLMENT IN A THREE-PART SERIES ON THE LOWER-EXTREMITY KINETIC CHAIN. THE FIRST TWO ARTICLES DISCUSSED COMMON HIP AND KNEE PROBLEMS AND THEIR EFFECTS ON THE KINETIC CHAIN. IN THIS ARTICLE, WE FOCUS ON THE THIRD LINK IN THE CHAIN: THE ANKLE AND FOOT.

The ankle/foot complex has a dual role of absorbing shock and then becoming a rigid lever for propulsion. For example, during the initial phases of gait, the foot pronates (i.e., flattens) to absorb shock, then quickly re-supinates (i.e., increases arch height) to become a stiff level to allow the foot to push off. This unique role can predispose the ankle/foot to different injuries. Three common pathologies that occur at the ankle/foot complex are ankle sprains, plantar fasciitis and Achilles tendonitis.

Ankle Sprains

Ankle sprains, which account for 10 percent to 30 percent of sports-related injuries in young athletes, occur most frequently during sports such as basketball, volleyball, soccer and ice skating (Ivins, 2006). While there is little data regarding risk factors for ankle sprains, a history of ankle sprains does appear to increase one's risk of additional sprains. Foot type, general laxity and gender have also been linked to incidents of ankle sprains (Ivins, 2006).

Lateral or inversion ankle sprains are the most common ankle sprain. In fact, 85 percent of ankle sprains are to the lateral structures of the ankle (Garrick, 1982; Balduini, 1982). The mechanism is typically inversion with a plantar flexed foot. The lateral ankle ligaments, which include the anterior talofibular ligament (ATFL), calcaneofibular ligament (CFL) and posterior talofibular ligament (PTFL), are the most commonly involved structures.

Medial or eversion ankle sprains account for less than 10 percent of all ankle injuries and result from forced dorsiflexion and eversion of the ankle. The medial deltoid ligament is the most commonly involved structure, and injury often requires further examination to rule out a fracture (Anderson, 2005).

Common Complaints

With lateral ankle sprains, the individual can often recall the mechanism and hearing a "pop" or "tearing" sound. Specific signs and symptoms for lateral ankle sprains can be described by the following grading system (Anderson, 2005):

- A Grade I ankle sprain involves the ATFL ligament with pain and mild swelling over the lateral aspect of the ankle. Typically, weightbearing is tolerable after injury.
- A Grade II ankle sprain involves both the ATFL and CFL ligaments with more severe pain and swelling over the lateral ankle. Weightbearing may be limited due to pain.
- A Grade III ankle sprain is considered a complete tear of one or more of the lateral ligaments. Rapid and severe pain, swelling and discoloration occur and individuals are unable to bear weight.

Medial ankle sprains rarely happen in isolation. They are often associated with fibular fractures, severe lateral ankle sprains and fractures to the medial malleolus. To date, there is no specific grading system for medial ankle sprains. The individual is often unable to recall the specific mechanism, but can reproduce discomfort by dorsiflexing and everting the ankle. There may be medial swelling with tenderness over the deltoid ligament (Anderson, 2005).

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Early Intervention

Lateral and medial ankle sprains generally require a physician's visit for further diagnosis and treatment. Grade I and II lateral sprains are often immobilized with an ankle brace for several days, while Grade III lateral sprains are usually immobilized with a removable cast boot for up to three weeks (Brotzman, 2003). Early intervention can begin one to three weeks after injury unless a severe ankle sprain has occurred that requires further immobilization (Brotzman, 2003). The individual may be sent to physical therapy to improve strength, flexibility, proprioception and endurance.

Restorative Exercise Program

The fitness professional may begin to see the client for gym activity as soon as one to two weeks for Grade I, two to three weeks for Grade II, and three to six weeks for Grade III injuries (Brotzman, 2003). During this time, the client is ready to transition to gym activity even though he or she may still be in physical therapy. The individual's program should be progressed according to his or her tolerance to exercise. In other words, pain should be the guide, although it is not uncommon for the injured ankle to have mild-to-moderate discomfort and swelling after increased activity.

Flexibility

Stretching of the gastrocnemius and soleus muscles may be beneficial if the client has tightness and decreased length after immobilization. Stretching the ankle in motions that stress the injured ligaments is not recommended. For example, stretching into ankle inversion or eversion can stretch the healing ligaments, resulting in local pain and irritation. General stretches for the lower extremity should be included to maintain adequate flexibility throughout the whole kinetic chain.

Strengthening

Strengthening the muscles of the kinetic chain, with particular emphasis on the muscles that control the foot and ankle, will be beneficial. Exercises using resistive bands are a good way to isolate the muscles that control the ankle (Figure 1).

Strengthening programs should be tailored to the specific needs of the client. As mentioned in parts one and two of this series, exercises for the hip and knee should be included to address any strength deficits and to help maintain control of the lower kinetic chain during activity.

Functional Integration

Functional activity can begin once the client has adequate strength, ROM and, most importantly, proprioception. The functional progression for these clients should include a combination of closed kinetic chain (CKC) and open kinetic chain (OKC) activity to achieve optimal benefits. The client should be safely progressed through the program while wearing protective bracing for the injured joint. Clients who have suffered ankle sprains may have deficits in balance. CKC exercises that integrate balance are a key element in challenging the kinetic chain and re-establishing the proprioceptive feedback that is required for multiplanar activity. A commonly used progression is to challenge the lower kinetic chain in the sagittal plane first, the frontal plane second, and the combined planes last. The frontal and combined planes may need to be introduced slowly to prevent reinjury.

FIGURE 1

Ankle Inversion

Ankle Eversion

Ankle Dorsiflexion

Ankle Plantar Flexion

Cardiovascular activity such as the bike or the elliptical trainer can be added to the program to build or maintain basic cardiovascular fitness. Higher-loading activity such as running, sprints or agility drills should follow the progression outlined above after proper clearance has been obtained.

Plantar Fasciitis

Plantar fasciitis is an inflammatory condition of the plantar aponeurosis or fascia located on the sole of the foot. This condition is the most common cause of heel pain and accounts for 10 percent of running injuries. The prevalence is highest among 40- to 60-year-olds and up to one-third of all individuals with plantar fasciitis experience pain in both feet (Buchbinder, 2004). Plantar fasciitis is more common in obese individuals and people who are on their feet for long periods of time (Cole, 2005).

Several intrinsic and extrinsic risk factors have been associated with plantar fasciitis. Intrinsic or non-modifiable risk factors include pes planus (excessive pronation or low arch height) and pes cavus (high arch height). Extrinsic or modifiable factors include overtraining, improper shoe wear, obesity, decreased strength and poor flexibility of the calf muscles, and unyielding surfaces (Buchbinder, 2004). Any of these factors can cause excessive loading of the plantar fascia and lead to pain and dysfunction.

Common Complaints

Typically, individuals report pain on the plantar, medial heel at its calcaneal attachment that worsens after rest, but improves after 10 to 15 minutes of activity (Buchbinder, 2004). Individuals will commonly report excessive pain during the first few steps in the morning, and may also experience stiffness and muscle spasms in the lower leg with tightness in the Achilles tendon (Buchbinder, 2004).

Individuals with plantar fasciitis may be limited in their activity due to pain. Activities that excessively load the fascia, such as running or jumping, should be avoided due to increased exacerbation of the condition. Plantar fasciitis presents a unique challenge due to the fact that pain relief occurs with basic activity and symptoms reoccur after a period of rest. The fitness professional needs to monitor changes in symptoms and refer the client to an appropriate specialist, if necessary. Management of this condition may include modalities (e.g., ice), oral anti-inflammatory medication, heel pad or plantar arch, and stretching and strengthening exercises. A physician may prescribe physical therapy, a night splint or orthotics, or inject the area with cortisone (Buchbinder, 2004; Cole, 2005).

Restorative Exercise Program

The client may be cleared to exercise immediately to tolerance or may have some restrictions. The role of the fitness professional is to design a program that helps to meet the client's overall goals, but does not excessively load the foot. Integrating specific foot exercises into a general fitness program often provides the best results. This allows the client to work toward his or her fitness goals while also addressing their foot problems.

Flexibility

Stretching of the gastrocnemius, soleus and plantar fascia is beneficial and has been shown to help relieve symptoms (Buchbinder, 2004; Cole, 2005). Proper stretching of the calf complex will restore adequate muscle length and prevent compensatory pronation at the ankle. Self myofascial–release techniques include rolling the foot over a baseball, golf ball or dumbbell, which may help to break-up myofascial adhesion in the plantar fascia.

Strengthening

Strengthening the intrinsic muscles of the feet may help to improve arch stability and help to unload the stresses imposed across the plantar fascia. Some examples of exercises include towel crunches and marble pick-up (Figure 2). Strengthening of the gastrocnemius, soleus, peroneals, tibialis anterior and tibialis posterior may be needed to help improve strength at the ankle. The client may have done similar exercises in physical therapy and should be progressed accordingly. Exercises for the hip and knee should be included as needed.

Functional Integration

Returning to functional activity may be a challenge for these clients. A slow, pain-free return to activity is indicated for this condition. As mentioned above, high-loading activity should be limited to avoid further exacerbation of the injury. Low-loading cardiovascular activity such as the bike, elliptical trainer, or water aerobics are preferred over higher-loading activity such as running.

FIGURE 2

Towel crunch

Marble pick-up

Achilles Tendonitis

Injury to the Achilles tendon is common among athletes, particularly runners, gymnasts and dancers, as well as the active population. Typically, the older athlete is more affected by Achilles tendonitis than teens or children, and it occurs most often among 30- to 50-year-old men (Mazzone, 2002). There are various intrinsic and extrinsic factors that are associated with this condition. Intrinsic factors include age, bodyweight, pes cavus, pes planus, leg length discrepancies and lateral ankle instability. Extrinsic factors include errors in training, prior injuries, poor footwear, muscle weakness and poor flexibility. (Paavola, 2002; Kader, 2002; Mazzone, 2002). Furthermore, Achilles tendonitis can eventually lead to rupture if not addressed appropriately.

Common Complaints

Individuals often complain about pain that is 2 to 6 cm above the tendon insertion into the calcaneus. The typical pattern is initial morning pain that is "sharp" or "burning" and pain with more vigorous activity. Rest will often alleviate the pain, but as the condition becomes worse the pain becomes more constant and begins to interfere with activities of daily living (Mazzone, 2002; Brotzman, 2003).

Early Intervention

Early intervention may include a referral to physical therapy with a goal of controlling pain and inflammation by using modalities (e.g., ice), rest and oral anti-inflammatory medication (Mazzone, 2002). Management of the condition may include modified rest and addressing specific risk factors. Proper training techniques, losing weight, proper shoe wear, orthotics, strengthening and stretching can help alleviate pain and prevent progression of the condition (Paavola, 2002; Mazzone, 2002; Brotzman, 2003).

Restorative Exercise Program

The client may be cleared to exercise immediately to tolerance or may have some activity restrictions. The role of the fitness professional is to design a program that helps to meet the client's overall goals without exacerbating his or her condition. The client's physician and physical therapist can provide key information about how the client is responding to treatment and what he or she is currently doing for exercise.

Flexibility

Restoring proper length and elasticity to the calf muscles can reduce strain on the muscle-tendon unit and decrease symptoms (Kader, 2002). The goal of stretching should be to restore general

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FEATURE STORY

Pointers for Writing Blog Posts

By Amanda Vogel, M.A.

BLOGGING IS A GOOD WAY TO BUILD A COMMUNITY OF FOLLOWERS, MARKET YOURSELF INEXPENSIVELY ONLINE, POSITION YOURSELF AS AN EXPERT, AND EDUCATE THE PUBLIC ABOUT HEALTH AND FITNESS. YOU'VE PROBABLY HEARD OF FREE BLOGGING SERVICES SUCH AS WORDPRESS.COM AND BLOGGER.COM THAT ALLOW YOU TO QUICKLY AND EASILY SET UP YOUR VERY OWN BLOG. SO WHAT'S HOLDING YOU BACK?

If you want a blog, but need guidance on getting started, or you've set up a blog but don't know what to post on it, this article is for you. Read on, and add blogging to your fitness marketing repertoire once and for all.

Finding Your Focus

Before you start a blog, you must determine how to brand it, and how to brand yourself as a blogger. Home in on what will make your blog just a little different from others like it. To help you find your voice in the blogosphere, envision your target visitors and what you want to say to them, says Scott Tousignant, a fitness professional in Belle River, Ontario, who runs several blogs, including www.unstoppablefatloss.com/blog. Be clear about your target visitors' average age, gender, fitness level and goals for reading your blog.

Then stay on course. If your blog is about Pilates, resist blogging about loosely related topics, such as kettlebell workouts (unless you can convincingly relate kettlebells back to Pilates!). While there are successful blogs with very diverse posts, these blogs tend to have multiple authors. If it is just you doing the posting, you stand to confuse readers and dilute your message when your posts are too scattered. The more you stay true to your blog's theme, the easier it will be to attract followers and also to write posts.

"Blogs are like radio stations," says Biray Alsac, an international fitness and wellness consultant in Arizona, who helps fitness professionals find their way around the Web. "You may like all styles of music, but you may not want to listen to a radio station that plays everything," she says. "If your blog is too broad, your readers may change 'stations' or lose interest."

The theme you choose for your blog will probably be closely tied to the services you offer as a fitness professional, which means you're already connected to a network of potential readers: your clients. However, set your sights on the bigger picture; blogging allows you to reach practically anyone on the Web who has an interest in your content. "Finding your voice of passion on a topic and letting it loose on a blog will lead to one of the key components of a successful blog, which is to create a following of raving fans," says Tousignant.

Once you've settled on your blog's theme, just be yourself. "Don't try to please everyone because it's impossible," says Tousignant. "You're better off having 50 percent of your visitors hate you and 50 percent absolutely love you and rave about you than having 100 percent of them think that you're just OK," he says.

AMANDA VOGEL, M.A., human kinetics, is a fitness pro in Vancouver, B.C., and the owner of Active Voice, a writing, editing and consulting service that helps fitness pros and organizations improve the quality and effectiveness of their promotional and educational material. For more tips on writing better blog posts, get Amanda's free e-book, *51 Need-to-Know Writing & Marketing Tips for Fitness Pros,* at www.ActiveVoice.ca. You can visit Amanda's blogs at: http://FitnessWriter.blogspot.com and http://AmandaVogelPresents.wordpress.com.

Overcoming Blogger's Block

Even if you enjoy writing, you might be intimidated about debuting a blog. For one thing, you have to generate a steady flow of new and interesting ideas if you want to keep your blog alive. Plus, blogging can be time consuming.

Generating ideas. "Ideas can come from virtually anywhere," says Alsac, whose blog can be found at www.befitwithbiray.com. "It's just a matter of keeping your eyes and ears open," she says. For example, take cues from those around you. "I often take questions I receive in e-mails; or comments on my blog; or questions from friends, family or clients and turn them into posts," says Tousignant, who also garners ideas from free subscriptions to news feeds and blog feeds. (Click "more" on Google's homepage and select Google Alerts; then subscribe to keywords related to your blog's theme.)

"News feeds may report on a new study, which you can research and share your opinion on," says Tousignant. "And blog feeds allow you to see what your competitors' opinions are." You could then disagree or agree, offering your own perspective.

Finally, consider using current events as a springboard. Tousignant tied Barack Obama's presidential campaign to a post about the importance of embracing change.

The time it takes. Coming up with ideas is half the battle. But you still have to sit down and write. Even if you struggle in the beginning to write quickly, keep at it; the more you write, the easier it gets (sort of like exercise). Remember, also, that it's best to write in a casual, conversational tone, which helps make the writing process go more smoothly.

No one expects your blog to be a literary masterpiece; however, do your best to rid posts of typos and spelling mistakes. Finally, save time and hold readers' attention with brief posts. There's no rule about how long a blog post should be, but the average seems to be around 250 to 500 words.

SEO and Your Blog

In addition to capturing the attention of your blog visitors, you must write your posts with the major search engines in mind if you want your blog to be found through sites such as Google. This is where search engine optimization (SEO) comes into play. Alsac notes that if your blog is only complementary to your business efforts and doesn't serve to directly generate revenue, increasing SEO might not make a significant difference to your bottom line. Still, you never know when you might pick up new clients from traffic to your blog.

You can increase SEO in a number of ways. "The more often you update your blog, the more likely your blog rank will increase, making it easier to find in a search," says Alsac.

You can also focus on specific keywords for each individual blog post. "For example," says Tousignant, "if you write a blog post on how to slam dunk, include the phrase 'how to slam dunk' in the post title, the first paragraph, throughout the post and in the tags." Bear in mind, though, that you're ultimately writing for humans, not Google. "When you force keywords into your blog posts just to satisfy the search engines, you run the risk of turning your visitors off," says Tousignant.

Another method for increasing blog traffic is to incorporate outbound links. For instance, if you post about being ACE certified, you could add a hyperlink to the American Council on Exercise Web site. "The more outbound links you include within a blog post, the more likely these links will track back to your blog and increase traffic to your site," says Alsac. In addition to ensuring that outbound links open in a new window (you don't want to lead people away from your blog), use a permalink to avoid "dead" links. A permalink is a permanent url that won't change even when a blog entry or news item is no longer displayed on a Web site's front page. And use outbound links within reason to avoid distracting readers.

Another trick for increasing SEO is to link to other posts within your blog, says Tousignant. Take the previous example about "how to slam dunk." You could create a hyperlink using those words—e.g., how to slam dunk—that leads from one of your posts to another one of your posts. "Search engines look highly upon this type of internal linking within a blog," says Tousignant.

Exercise Your Writing "Muscle"

To become good at blogging, you've got to exercise your writing "muscle" so your posts are clear, informative and entertaining. Open a line of communication with your readers. "Besides being true to your topic, purposeful in your content and authentic to your professional voice, remember that blogging is a starting point to a conversation with your audience—so keep them engaged!" says Alsac.

More Blogging Tips

- Take a stance; don't be afraid to express your opinion.
- Encourage readers to comment on your posts; interaction helps keep a blog alive.
- Wait about 20 minutes before you publish a post—this gives you time to go back and do a proper edit.
- Make your posts reader-friendly with lists and bullet points.
- Post pictures and other forms of media, such as video and audio.
- Ensure you have the right to use images; www.istockphoto.com (low-cost photos) and Flikr (search for Creative Commons–licensed photos) are two popular choices among bloggers.
- If you post digital pictures you've taken, be sure to get written permission to do so from anyone who appears in the photos.
- Post as often as you can; even several times a week or month is better than not at all.

ACE in the News

Serving as *America's Authority on Fitness*®, the American Council on Exercise and its extended spokesperson network are featured or quoted in print, online and broadcast media, reaching more than 450 million people each year. Check out these recent highlights:

Glamour.com (March 17, 2009) – In *Glamour* magazine's popular online health and fitness blog, *Vitamin G*, ACE's Jessica Matthews shares with readers which fitness experiences people should make time for over the course of their lives. Matthews' list, featured in "The 7 Fitness Experiences Every Woman Should Try," includes taking a yoga class, working with a personal trainer and signing up for a fitness boot camp. Read the full blog post to find out all of her recommendations.

Men's Health (April 2009) – "There are a ton of bad products out there…" said Fabio Comana, ACE Educational Curriculum Developer, when asked about exercise equipment in a recent *Men's Health* article titled, "The Best New Fitness Gear." Here, Comana and other industry experts discuss which fitness products will give you the most bang for your buck, and offer equipment recommendations that are both effective *and* safe for you and your clients.

USA Today (March 30, 2009) – The tremendous success of Nintendo's Wii Fit has many wondering if working out to video games is as good as, or better than, going to the gym or participating in a sporting activity. In "'Exergames' Fit to Be Tried," *USA Today* columnist Kim Painter interviewed Dr. Cedric Bryant, ACE Chief Science Officer, to get an expert's opinion on the phenomenon. For a more in-depth look at the topic, check out the ACE-sponsored research study,"As Good as the Real Thing?" at www.acefitness.org/getfit/studies/WiiStudy, which appeared in the July/August 2008 issue of *ACE FitnessMatters* magazine.

For access to articles and media coverage featuring ACE's helpful tips and advice, visit www.acefitness.org/media.

ACE Continuing Education Courses Help You Train in a Group Setting

Continuing education courses offered through ACE's ConEd Center cover a wide range of topics. If you're already a group fitness instructor or personal trainer with an interest in training in a group setting, check out the following ACE courses when working toward earning CECs for certification renewal:

Traditional Aerobics & Step Training (0.5 CEC) – $89.97
This course focuses on developing safe, effective and fun choreography in both step training and traditional aerobics classes, including discussions of musical interpretation, movement patterning and choreographic building techniques. Includes book, DVD and online quiz.

Group Strength Training (0.4 CEC) – $69.95
Ideal for personal trainers or group fitness instructors who would like learn how to incorporate group strength training into their exercise programs, this course explains how to safely and effectively integrate group strength training into an exercise program and design and lead a balanced class or workout that targets all major muscle groups. Includes book, DVD and quiz.

Pilates Mat Training (0.4 CEC) – $69.95
Learn the six traditional Pilates principles and how they combine to form the basis of Pilates movements, as well as how modern exercise science has influenced these traditional teachings. Also included is a detailed review of proper technique and exercise modifications for various populations. Includes book, DVD and online quiz.

Kickboxing Fitness (0.4 CEC) – $69.95
This course covers the key elements of a safe and effective kickboxing workout, focusing on proper technique for individual movements and smooth transitions, in both equipment-based and non-equipment-based workouts. Includes book, DVD and quiz.

Mindful Exercise Overview for Fitness Professionals (0.1 CEC) – $19.97
This online course provides research-based evidence of the effectiveness of various mind-body fitness modalities, including yoga, qigong, and tai chi, along with newer forms including Pilates and the Alexander Technique.

Visit www.acefitness.org/continuing education to access these and nearly 3,000 other courses.

Group Fitness Sessions at the ACE Fitness Symposium

Be sure to register for the ACE Fitness Symposium 2009 at www.acefitness/symposium. You won't want to miss out on the following group fitness sessions:

Intervals for Addicts, by Chris Freytag
Work out smarter, not longer! Combine strength and cardio and learn to create 20-, 30- and 45-minute express workouts using slanted risers, Xertubes® and hand weights. Sweat, burn calories and strengthen using multi-muscle group exercises followed by a short rest to set up the next move in these exciting intervals.

No Limits Circuit, by Kimberly Spreen
Come challenge yourself with fun, high-energy athletic circuit workouts that are easy to set up, easy to follow and FUN! Learn to create an experience where everyone feels successful and gets results through challenging but doable exercises, and teach them to measure intensity through individual heart rate and/or RPE. Bring your HR monitor if you have one!

Boot Camp Complete, by Todd Durkin
Boot camps are both challenging and dynamic, providing trainers with a great opportunity to maximize time and profitability in an extremely positive and energetic environment. Examine several key factors for conducting boot camps including marketing, retention, safety, equipment needs and more. Then wrap up with a high-energy boot camp class!

The Abs Have It, by Chris Freytag
Are you bored with the typical ab routine? Come get the Abs Advantage and learn new, fresh core body moves using SPRI® Xertubes and Ultratoners, and Pilates moves you can integrate into any class format. Re-energize your class with these fun, focused core body exercises—and work your powerhouse!

F.I.R.S.T. Progressions, by Keli Roberts
Go beyond the basics and examine methods and techniques that functionally strengthen the body with integrated exercise progressions and partner drills involving coordination, balance and body control. Learn critical body alignment, movement pattern and cueing techniques for each exercise progression and partner drill in an interactive, hands-on training session.

Safe Yoga, by Beth Shaw
Learn the essentials of hatha yoga biomechanics and related anatomy to keep the body safe during your yoga practice. This workshop will teach you about YogaFit's Seven Principles of Alignment (SPA) and how to build strength and flexibility safely. Bring your yoga mat!

Strength in Numbers, by Kimberly Spreen
Learn the benefits of promoting, being involved with and delivering a top-notch overall group fitness program. We'll also discuss how the true integration and cross promotion of personal training and group fitness can have a huge impact on your bottom line and create a win-win for all.

Body Bar Complex Training, by Keli Roberts
Harness momentum and enhance athleticism with progressive explosive movement drills and Body Bar functional exercise. Effective teaching strategies demonstrate how to increase fitness and motor control. Practice the "stop-before-you-go" drills and learn how to improve overall performance and injury prevention. High-intensity complex training guarantees an amazing, sweat-inducing workout!

REALIZE THE BENEFITS OF A DUAL PERSONAL TRAINER + GROUP FITNESS CERTIFICATION: Already a personal trainer and thinking of becoming an ACE-certified Group Fitness Instructor? Don't miss Bob and Jolyn Esquerre's presentation, **Survival of the Fittest: Meet the New Fitness Hybrid.** Learn how you can gain new skill sets that are critical to offset the impact of a global recession. For information, study materials and exam dates for the ACE Group Fitness Instructor Certification, visit www.acefitness.org/getcertified.

Functional Training Workshop

Cost: $175 **CECs: 0.8**
Date: July 25, 2009
Locations: Atlanta, GA, Chicago, IL, New York, NY, San Francisco, CA

Functional training continues to grow in popularity as the foundation for fitness and sports conditioning programs. Training to improve posture, movement efficiency and overall muscular performance related to a variety of activities defines functional training. Enhance your knowledge and applied skills with the latest tools and techniques in personal training to stay ahead of the game.

The one-day (8.5-hour) ACE Functional Training workshop teaches the important concepts of functional training by instructing personal trainers on how to:

- Conduct postural assessments and movement screens
- Develop core-training progressions
- Design exercise progressions for postural compensations
- Implement effective dynamic warm-ups
- Introduce sport-conditioning principles into your clients' training programs

Heartsaver First Aid with CPR and AED Workshop

Cost: $99 **CECs: 0.6**

ACE and the American Heart Association (AHA) have teamed together to deliver a dynamic message of hope — the hope of saving lives. New treatments have improved the possibility of survival from cardiovascular emergencies, cardiac arrest, and stroke in a fitness setting where individuals are most at risk when exercising. Increasing public awareness of the importance of early intervention and ensuring greater public access to defibrillation will save many lives.

The seven-hour Heartsaver First Aid with CPR and AED training course will provide fitness professionals with the critical lifesaving skills needed to care for a victim of an illness or injury until EMS arrives.

Course materials will be shipped to you prior to the live workshop date. Please review the materials and bring them with you to the workshop.

The course runs from 9:00 am to approximately 3:30 pm on the date selected.

July 25, 2009
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Effects of Weekend Lifestyle Patterns on Body Weight

Racette, S.B. et al. (2008). *Obesity*, 16, 8, 1826–1830.

SATURDAY CAN BE THE WORST ENEMY FOR our waistlines, according to research conducted at the Washington University School of Medicine in St. Louis and supported by the National Institutes of Health. Researchers found that study subjects on strict diet and exercise programs tend to lose weight more slowly than expected because they eat more on weekends than during the week.

Past research has confirmed that people tend to gain weight during the holidays, particularly between Thanksgiving and New Year's, but this is the first study to carefully monitor daily body weight, calorie intake and calorie expenditure for several weeks throughout a year, and to demonstrate that increased caloric intake isn't just a problem during the holidays. It also happens on most weekends.

Researchers followed 48 adults between the ages of 50 and 60 who took part in the CALERIE (Comprehensive Assessment of Long-term Effects of Reducing Intake of Energy) study. Body mass index (BMI) was used to rank subjects as overweight or healthy weight when the study began. None of the study participants were classified as obese.

Following the premise of earlier studies that have demonstrated that mice and rats live longer, healthier lives when on a calorie-restricted diet, the CALERIE study was designed to determine whether taking in fewer calories over a long time period will slow down or reverse some of the common markers of aging and disease.

Study participants were divided into three groups: the first lowered their daily calorie intake by 20 percent, a second increased daily physical activity by 20 percent, and a control group did not change diet or activity levels. All three groups were monitored for one year. They kept food diaries, tracked exercise with accelerometers and were weighed regularly. According to the researchers, individuals in the study didn't always realize they were eating significantly more food on weekends.

The researchers were surprised by the consistency of their findings, which showed a dramatic slowing of weight loss on weekends throughout the course of the study, not just at the holidays. Subjects in the diet group lost weight during the week, but stopped losing weight on the weekends because they were consuming more calories.

Before the interventions began, the researchers established "baselines" for each study participant's exercise and eating habits. This pre-intervention data determined that participants consumed the most calories on Saturdays. An average of 36 percent of their total calories came from fat on Saturdays, but less than 35 percent came from fat during the rest of the week. The typical weekend weight gain before the diet and exercise interventions began would have led to an average increase of 9 pounds a year.

When study participants were asked either to cut calories by 20 percent or to increase activity by a similar amount, the pattern remained the same. Those in the calorie-restriction group consumed more calories on Saturday. Those in the exercise group ate more on both Saturday and Sunday. As a result, people in the calorie-restriction group stopped losing weight on weekends, and those in the exercise group actually gained weight on weekends.

These findings help to explain why people on diets often don't lose as much weight as one might predict or expect. The investigators recommend moderation and careful planning to avoid weekend pitfalls. Helpful tips include packing healthy snacks when running errands, eating a small meal before heading out to a weekend party and packing a light lunch before going to the kids' ballgames in an effort to skip the concession stand or fast-food restaurant altogether. In addition, portion control can help enable individuals enjoy the weekend without sabotaging their weight-control efforts.

RESEARCH AT-A-GLANCE

BY CEDRIC X. BRYANT, PH.D.

The Influence of Resistance and Aerobic Exercise on Hunger, Circulating Levels of Acylated Ghrelin and Peptide YY in Healthy Males

Broom, D.R. et al. (2009). *AJP Regulatory Integrative and Comparative Physiology*, 296, R29–R35.

A RECENTLY PUBLISHED STUDY FOUND THAT AEROBIC exercise is better at suppressing appetite than non-aerobic exercise and provides a possible explanation for how that happens. A vigorous 60-minute workout on a treadmill affects the release of two key appetite hormones, ghrelin and peptide YY, while 90 minutes of resistance training affects the level of only ghrelin.

There are several hormones that help regulate appetite, but researchers in this study looked at two of the major ones, ghrelin and peptide YY. Ghrelin is the only hormone known to *stimulate* appetite, while peptide YY *suppresses* appetite.

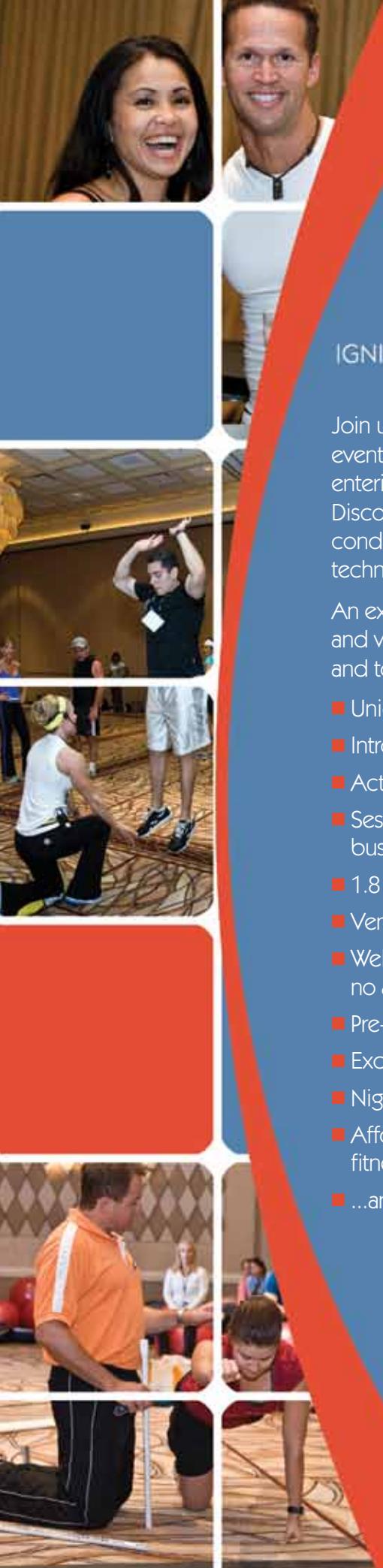
In this experiment, 11 male university students were evaluated over three eight-hour sessions. During one session they ran for 60 minutes on a treadmill, and then rested for seven hours. During another session they did 90 minutes of resistance training, and then rested for six hours and 30 minutes. During another session, the participants did not exercise at all.

During each of the eight-hour sessions, the participants filled out surveys in which they rated how hungry they felt at various times. They also received two meals during each session. The researchers measured ghrelin and peptide YY levels at multiple points throughout the respective sessions.

They found that the treadmill (aerobic) session caused ghrelin levels to drop and peptide YY levels to increase, indicating that the hormones were suppressing appetite. However, the resistance training (non-aerobic) session produced a mixed result. Ghrelin levels dropped, indicating appetite suppression, but peptide YY levels did not change significantly.

Based on the participants' hunger ratings, both aerobic and resistance exercise suppressed hunger, but aerobic exercise did so to a greater degree. The changes the researchers observed were short term for both types of exercise, lasting approximately two hours, including the time spent exercising. This study's findings confirm previous studies that indicated that strenuous aerobic exercise transiently suppresses appetite, but also suggest that a similar, although slightly attenuated, response occurs with resistance training.

While the study showed that exercise suppresses appetite hormones, the next step is for researchers to establish whether this change is actually responsible for the suppression of eating. This line of research may eventually lead to more effective ways to use exercise to help control body weight.



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JUNE/JULY 2009

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Circle the single best answer for each of the following questions.

1. Eighty-five percent of ankle sprains _____.
   A. Occur during sports activities
   B. Are to the lateral structures of the ankle
   C. Require immediate medical assistance
   D. Are to the medial deltoid ligament

2. Which of the following is **NOT** an established risk factor for pancreatic cancer?
   A. Smoking
   B. Obesity
   C. Family history
   D. Inactivity

3. Exercise can benefit individuals suffering from drug-induced depression because it _____.
   A. Provides the individual with a healthy addiction
   B. Facilitates the release of dopamine and serotonin
   C. Creates a negative energy balance
   D. Reduces the need for medication

4. Which of the following is associated with an increased risk of pancreatic cancer?
   A. Caffeine
   B. Red meat
   C. Sugar
   D. Alcohol

5. Individuals diagnosed with pancreatic cancer generally have a five-year survival rate of _____ and a one-year survival rate of _____.
   A. 5 percent; 20 percent
   B. 10 percent; 25 percent
   C. 20 percent; 40 percent
   D. 25 percent; 50 percent

6. Scientists are still trying to understand the mechanisms of addiction, which is why recovery programs _____.
   A. Should be standardized to help as many people as possible
   B. Have very little chance of actually helping the addicted individual
   C. Should be tailored to the individual
   D. Should be administered by physicians or trained researchers

7. Which of the following is **NOT** considered an extrinsic risk factor for plantar fasciitis?
   A. Overtraining
   B. Obesity
   C. Improper shoe wear
   D. High arches

8. Which of the following describes a Grade II ankle sprain?
   A. Pain and mild swelling; tolerable weightbearing
   B. Severe pain and swelling; limited weightbearing
   C. Swelling and discoloration; complete tear of one or more ligaments
   D. Rapid and severe pain; no weighbearing

9. Which of the following is **NOT** a mistake commonly made by indoor cycling instructors?
   A. One-legged cycling
   B. Out-of-control cadences
   C. Pedaling out of the seat
   D. Isolations

10. A study examining the effects of resistance and aerobic exercise on hunger and appetite suggests that _____.
    A. Aerobic exercise is more effective in reducing appetite
    B. Resistance exercise is more effective in reducing appetite
    C. Aerobic and resistance exercise reduce appetite equally
    D. Aerobic and resistance exercise are ineffective in reducing appetite

Answer Key: 1. B 2. D 3. B 4. B 5. A 6. C 7. D 8. B 9. C 10. A

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Training the Lower Extremities: FOCUS ON THE ANKLE/FOOT COMPLEX

Continued from page 15

lower-body flexibility with an emphasis on calf mobility. The client should be cautioned to stretch to tolerance and avoid overexertion. Overstretching of the Achilles tendon can cause irritation to the muscle-tendon unit and should be avoided.

Strengthening

Strengthening of the gastrocnemius/soleus complex should be the focus of training. In fact, studies have demonstrated that eccentric strengthening is beneficial for relieving symptoms (Wasielewski, 2007). Progressively loading can be beneficial for the client, but may be even more effective when combined with other exercises to strengthen the knee and hip. The client should be cleared by his or her physician prior to training to prevent further injury.

Functional Integration

Returning to basic functional and sports activity after an Achilles tendon injury can be challenging, and a return to activity should be a gradual, pain-free process. Modifications in training techniques and environment should be addressed with an emphasis on client education. CKC exercise combined with eccentric loading can progressively challenge the client, but should not create pain. Furthermore, any deficits in balance can be addressed as needed. Simply adding an unstable surface such as a foam pad to CKC exercises can challenge the client's balance. Finally, cardiovascular activity should be progressed with caution; low-loading activity should precede higher-loading activity to avoid pain or re-injury.

Summary

This three-part series briefly discussed the common pathologies that can affect the hip, knee and ankle. Understanding the importance of each link in the lower kinetic chain is essential for proper exercise program design for the injured client. As a fitness professional, you must have a basic understanding on how to manage these pathologies. More in-depth coverage of these topics can be found in the *ACE Advanced Health & Fitness Specialist Manual.*

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