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THEME: MEN'S HEALTH

Physical Activity for Men with Osteoarthritis

by A. Lynn Millar, PT, Ph.D., FACSM

decreasing pain and stiffness. The ACSM guidelines identify the basic components of an exercise program as aerobic, resistance, flexibility (range of motion), and neuromuscular activity. Individuals with arthritis are typically less active when compared to individuals who are the same age, but do not have arthritis. Luckily, OA does not impair your ability to improve fitness if you get started in a regular program. Importantly, improvements in fitness will also decrease pain and improve function.

A minimum of 2.5 hours per week (divided into five or more days) is recommended to improve aerobic capacity. Aerobic activities include walking, jogging, cycling, swimming and other whole-body rhythmic activities. Select an activity that you like and are willing to commit to, or perhaps use an activity as a base for something you do like, such as golf or basketball. Walking is an excellent aerobic activity that does not require special equipment, and it is very functional. You will want to make sure that you have good, supportive walking shoes, particularly if you have lower-extremity arthritis. It is best to start walking on flat, even surfaces, then progress to hills, etc. If you have not been exercising on a regular basis, start with five-to-10-minute sessions, two times a day if possible. Start with what you consider to be a mild intensity, and slowly progress intensity and time. ACSM guidelines recommend a moderate to vigorous intensity for the best training effect. Again, select an activity you will stick with and that does not make your symptoms significantly worse.

Strength, especially in the lower extremities, is thought to help absorb forces to the joints during weight-bearing activities. As with aerobic activity, participation in a resistance training program will decrease pain and improve function. Body-weight-only activities, such as partial squats, push-ups, etc. are a good way to start improving strength. Elastic tubing is a useful, low-cost training tool to start upper-extremity training. ACSM guidelines **(continued on page 2)**



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The most common form of arthritis is osteoarthritis (OA) — joint-specific degeneration which causes pain and stiffness. Approximately 27 million adults in the U.S. have OA. While men have lower rates of OA as compared to women, it is still one of the leading causes of disability and movement limitation. The most common symptomatic joints for men include the knee, hip, and hands, with the knee being the most common (13.5% in men 45 years or older). Guidelines for management of OA include physical activity, weight control and joint protection.

Regular, moderate-intensity physical activity will improve function and quality of life, while



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Letter from the Editor

by Dixie L. Thompson, PhD, FACSM

Welcome to the January 2014 edition of the *ACSM Fit Society® Page*, sponsored by Liberty Mutual. Most of us wish to be physically fit or currently are striving to achieve personal health goals. Among the myriad of health programs, fitness products, gyms and training regimens, it's not always easy to determine what choices are best for promoting personal health and wellness.

In this issue, our ACSM experts address specifically issues relating to men's health and fitness, including finding work-life balance, advice for high-intensity exercise and weekend warriors, and recommendations for exercise with arthritis. Although we wrote this issue with a focus on men, the information provided can be useful for all those seeking to be more fit.

After you have read this information that ACSM experts have prepared for you, please feel free to share it with friends and family. We hope these articles will help you overcome challenges and achieve your personal fitness goals.

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INSIDE THIS ISSUE:

- 1 | Letter from the Editor
- 1 | Physical Activity for Men with Osteoarthritis
- 2 | Q&A with ACSM

- 3 | High-Intensity Interval Training
- 3 | Low Testosterone and Exercise in Men
- 4 | Combating Work-Life Imbalance
- 5 | Weekend Warrior Woes
- 6 | The Athlete's Kitchen

Osteoarthritis (continued from page 1)

recommend two to three days per week for resistance exercise. Start easy — for example, 10-15 repetitions with low resistance. While activity will often cause your joint symptoms to increase slightly as you get started, the pain should not persist after the activity, or get worse. If it does, then you need to reduce the intensity (amount of resistance and repetitions). If you prefer to start at a gym, attempt to locate a trainer who is knowledgeable about arthritis and has experience working with clients with arthritis.

A key symptom of arthritis is joint and muscle stiffness. Morning stiffness is one of the clinical criteria for diagnosing OA. You may notice stiffness after sitting for a prolonged period. Regular range-of-motion exercise is the key to reducing stiffness on a temporary basis. A joint that has arthritis should be moved through its complete range several times (5-15, depending on the amount of stiffness) in succession, and numerous times throughout the day. If your work involves sitting, you should get up regularly and move the joints that cause symptoms. When possible, even moving the

joint while sitting will help. For example, if you have knee OA, slide your foot back and forth several times. You should do such range-of-motion exercises on a daily basis.

Also related to motion is flexibility, which describes the ability of a muscle to move through its full range, regardless of stiffness. Some muscles are prone to becoming tight, such as the hamstrings (back of the thigh). Stretching improves flexibility but only for up to 24 hours. There are several ways of stretching a muscle, and no technique has been proven to be superior. Static stretches are easy and involve moving into a position that causes a gentle pull on the muscle. To be effective, hold the stretch between 15 to 30 seconds, and if a muscle is extremely tight, the stretch should be repeated three times. You can use a towel or rope to assist with a stretch, and use a shorter duration. Regardless of the type of stretch, it is important not to stretch too forcefully or past the normal range for a joint.

To improve function, you might also add some balance activities, as lower-extremity arthritis

will decrease balance. You can work on balance at home by doing simple weight shifts from one leg to the other. Progress the activity to standing on one leg, first with support, then later without support. Tai chi is a popular group activity that is good for balance. Some Tai chi programs have been adapted to meet the needs of individuals with arthritis.

If you have arthritis, starting a regular exercise program can provide you with multiple benefits. Check with your physician if you are not sure whether there should be any specific movement or activity restrictions. You may find it easier to get started by going to a group class or working with a fitness professional. If so, try to find someone with knowledge about arthritis. Finally, pay attention to how you are feeling. While there may be a temporary increase in joint discomfort, the pain should not be intense, be persistent or get worse. You may need to use shorter training sessions, with intervals at the beginning, but remember, regularity is the key — keep moving!

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Q&A

by Anthony Luke, MD, FACSM

Q: I'm a pretty healthy guy who works out a couple of times a week. I could be better by losing a few pounds. Should I ask my doctor what to do? I'm in my 40s and I just don't know what to read to get some information to take better care of myself.

A: It's funny that not as much self-help information exists for men in comparison to women. It may be that men don't like asking for help as much, or some assume that men think less about their health. However, knowing that men have a lower life expectancy than women and higher premature death rates, guys need to make their long-term health a priority. A great first place to start is with your family doctor, who can give you recommendations based on your individual medical history and general health. Your doctor can also help you sort through the information you may see in magazines, books and online to determine what plan is best for you. Also, as long as your doctor says it's ok, consider contacting an ACSM-certified personal trainer in your area to help you meet your health and fitness goals.

Q: My doctor asked me if I wanted to get my prostate checked with a PSA (prostate specific antigen) test. I thought that test wasn't performed anymore. Should I do it?

A: The use of the prostate specific antigen (PSA) test has been an area of controversy in



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medicine since its beginning. The basic premise is that prostate cancer cells produce PSA, so a high PSA may suggest that cancer cells may be present. The problem is that many prostate cancers are not dangerous and a positive test may lead to further testing and procedures that may not be necessary. For example, screening harms may result in bleeding, bruising and anxiety related to further testing. More serious, but rare, side effects could include infection

(continued on page 7)

High-Intensity Interval Training

by Yuri Feito, Ph.D, MPH, ACSM-RCEP, ACSM-CES



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High-intensity interval training (HIIT) refers to training that includes exercises performed at high intensity for brief periods of time (e.g., 30 seconds) with some period of recovery — either full rest or light-intensity exercise. Over the last several years this training modality has become a hot topic in the fitness industry, with the introduction of commercial programs such as Insanity®, P90X® and CrossFit®. However, high-intensity interval training is not new. Frequently coaches have used this approach to train athletes, but until recently HIIT had not been commonly used among non-athletes. The efficiency of getting an intense workout in a short period of time is one of the most appealing aspects to this approach.

HIIT can be performed with aerobic exercise equipment (cycles, treadmills, etc.) and can sometimes also include muscle-strengthening exercises. Sometimes HIIT routines are performed with no equipment at all. The wide variety of HIIT workouts is considered an advantage to those who like to ‘mix it up’ to avoid boredom with their workouts. The basic design of HIIT is that multiple intervals of maximal effort for 20-45 seconds are followed by a recovery period. This type of high-intensity stimulus has proven effective in enhancing oxygen delivery to the working muscles, improving utilization of stored fats and insulin action, and increasing overall exercise capacity. Significant reductions in waist and hip circumference have been observed after two weeks of HIIT training.

Although the benefits of regular moderate physical activity are well established, fewer than half of U.S. adults meet the physical activity guidelines established by the U.S. Department of Health & Human Services of 150 minutes

of moderate physical activity per week. Another approach to meeting physical activity recommendations is to accumulate 75 minutes of vigorous-intensity exercise. Given lack of time is the number one reason people give for not exercising regularly, HIIT may decrease barriers for those who choose to exercise intensely, but for a shorter period of time.

Things to Consider:

Non-athletes can do it – Although most people would consider HIIT programs as best suited to elite-caliber athletes, this is far from the truth! People of differing fitness levels can use HIIT, but you will need to choose the program that fits your goal and your fitness level. Consulting with a trained fitness professional is a great first step if you are unsure how to begin.

Consider your health and any underlying medical conditions – Make sure there are no underlying medical conditions that may be aggravated with exercise training. If you are apparently healthy and DO NOT have any medical conditions such as diabetes, high blood pressure, asthma, etc., or are NOT taking medications for any of these, you could begin introducing HIIT components to your exercise routine. If you DO have a medical condition or are taking medications, it is recommended that you consult with your health care provider prior to beginning high-intensity training. Remember, this is high-intensity training, so your cardiovascular and musculoskeletal systems will be placed under high stress. Injury rates are higher with this type of exercise. So, if you have vulnerabilities (for example osteoarthritis of the knee), it is important that you don't make underlying problems worse.

Start slow – Before doing an entire HIIT routine, you might consider just adding a few bursts of high-intensity activity into your moderate-intensity activity. Adding one or two maximal effort intervals to any routine you are currently doing can help prepare your body for more intense workouts. For example, if you typically go for a 20-minute walk at your own pace, add two or three 30-second intervals of fast walking in order to provide an additional challenge to your workout. This will let you experience how your body will react to a maximal effort. As your body adapts, you'll find that these bursts of high-intensity work will be more tolerable.

Recovery periods – During HIIT training, the recovery periods are as important as the working intervals. As you improve, you will require less and less recovery time between intervals. Although you may be able to reach a 1:1 work-to-recovery ratio — for example, do high-intensity for 30 seconds, rest 30 seconds and repeat — this is not typical and requires a high degree of fitness. Most programs have recovery periods that are about twice as long as the work

periods. Both the work and recovery intervals can be manipulated to customize your workout.

A warm-up and cool-down is important – Because you will be pushing your body to perform maximally, it is important that you warm-up prior to and cool-down after the workout. Use moderate-intensity activity to warm-up your muscles and prepare your cardiovascular system for the stress. Additionally, don't neglect your range of motion exercises. You want to ensure that your range of motion is maintained, or even improved, as you build your other fitness components.

There are infinite possibilities with high-intensity interval training. Consider looking for a qualified exercise professional to help you get started, but the idea is to have fun and get better with time.

Low Testosterone and Exercise in Men

by Amy R. Lane, M.A. and Anthony C. Hackney, Ph.D., D.Sc., FACSM



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It is practically impossible to discuss men's fitness without having some discussion concerning testosterone. This hormone plays such a critical role in male physiology as it has both anabolic actions (muscle growth and development) and androgenic actions (sexual characteristics and function) in men. It is also nearly impossible to turn on a television these days without seeing a commercial talking about low testosterone in men. One might suspect from the frequency of these commercials that an epidemic in hormonal dysfunction is sweeping the country. Low testosterone conditions most certainly exist and do affect some men, and with aging there is a natural and gradual reduction in the testosterone levels of men (associated with male “andropause”). While not an epidemic, the condition is more widespread than most

(continued on page 4)

Testosterone (continued from page 3)

people may think. In a study reported in the *International Journal of Clinical Practice* the prevalence of adult men (45 years of age or older) with low testosterone conditions was 39%, which translates to nearly 14 million men in the U.S. having low testosterone (also referred to as testosterone deficiency). The prevalence of low testosterone also increases in men who have certain medical conditions, such as obesity, diabetes and metabolic syndrome, which regrettably are occurring at greater levels in the U.S. population.

A common question asked by men is “Does exercise affect my testosterone levels?” The simple answer is yes, but not all forms of exercise have identical influences. For example, evidence suggests that resistance exercises and strength training help to promote small but significant increases in testosterone levels. This hormonal response most certainly can help support a more anabolic (tissue-building) status within the muscles, and when training is performed correctly and in combination with proper nutrition it will facilitate improved muscular development and function. These types of actions can be highly beneficial for improving daily activities and quality of life, especially as an individual ages. That is, as men (and women) get older they start to lose muscle mass, a condition known as sarcopenia. In men, the development of sarcopenia is associated with the gradual reduction in testosterone that occurs with aging. Thus, promotion and maintenance of testosterone with resistance/strength training slows the rate of sarcopenia development. While there is research to suggest testosterone supplements can increase hormone levels, it is important to recognize that exercise is a critical component in muscle maintenance, and supplementation alone is not sufficient in preventing the development of sarcopenia.

Interestingly, aerobic exercise designed to improve the cardiovascular system may have slightly opposite effects on testosterone in certain scenarios, but even so is considered an integral part of a well-balanced exercise program. For example, evidence shows that long-distance runners such as marathoners can have 10-35% reductions in their resting testosterone levels compared to men of similar ages who are not involved with such exercise. However, it is important to recognize that this seems to occur only in runners who have been performing endurance running or similar training on a chronic basis for a long time. Furthermore, most of these men have maintained their testosterone well above the diagnostic level (“cut-point”) for clinically defined low testosterone set by the Endocrine Society (≤ 300 ng/dL). On rare occasions, however, some of these men do develop sub-clinical low testosterone levels and subsequently

can develop some health problems (e.g., low sperm counts). Certainly this last statement could be alarming to some men; however, the benefits of aerobic exercise far outweigh the miniscule chance of impacting testosterone levels to the point that physiological processes would be disrupted. It is necessary to recognize that the volume, intensity and duration of training to bring about such reproductive dysfunction is well above that recommended by the American College of Sports Medicine for healthy adults attempting to improve their health and physical fitness. In fact, lifestyle interventions involving exercise and diet that result in weight loss, especially in sedentary overweight or obese men, typically result in significant increases in testosterone. The effects of these interventions are further improved when combined with smoking cessation and avoidance of excessive alcohol intake.

It is important to know that regardless of the form of exercise you participate in, when done to excess it can disrupt the normal balance of hormones in the body. Excessive exercise training, also called overtraining, results in an almost universal decrease in testosterone levels. When coupled with low energy intake due to insufficient caloric consumption, the effect is magnified. Typically these hormonal disturbances are very temporary and if an individual allows himself a period of rest and complete recovery from the overtraining the hormones return to normal levels. But, if persistent, overall fatigue, muscular soreness and lack of motivation (all signs of overtraining) continue even after multiple days of rest and recovery, then you may need to seek guidance from your health care provider.

In discussing testosterone and exercise there is a need to mention performance enhancing drugs (PEDs) as testosterone-like agents are prevalently mentioned in news reports when athletes are caught doping. The World Anti-Doping Agency (WADA, which oversees and regulates the testing of athletes in many sporting events such as the Olympics and World Championships), along with the major professional leagues (MLB, NFL, NHL, NBA), all list testosterone and its anabolic derivatives as banned substances and use by an athlete is ground for suspension and loss of all awards, prizes and pay. The testing procedures for these PEDs are well-developed, highly sensitive and specific; thus, detection is extremely accurate. Obviously, recent revelations about doping by professional athletes suggest that a substance being banned and the consequences imposed are not a surefire deterrent for preventing abuses, as in some peoples’ minds “the ends justify the means.” The illegality of PED use in sport is not due exclusively to the unfair performance advantage it may provide an athlete, as the misuse of testosterone and similar anabolic

derivatives can have severe health consequences and be detrimental or, in some cases, life-threatening.

Finally, the Internet is an amazing source of information readily accessible to nearly everyone. Regrettably, however, some of the information concerning hormones and exercise, especially relative to testosterone, is somewhat suspect and less than credible. It is important to “do one’s homework” and make certain that the source of their information on the Web is a reliable and trustworthy scientific/medical site. If you have concerns, speak with your primary-care physician rather than relying exclusively on the Internet.

THEME: MEN'S HEALTH

Combating Work-Life Imbalance

by Greg Chertok, M.Ed., CC-AASP



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As a sport and exercise psychology consultant, I explain to my clients the importance of “balance.” Balance requires dedicating adequate amounts of time to both training/work and recovery/rest. A person in balance is likely to experience increased performance and a decreased risk of burnout. Achieving balance is difficult, and it is important to acknowledge this challenge and look for strategies to assist with this goal.

To help my clients visualize where they are pouring their time, attention and energy, I ask them to imagine themselves as a bottle of water. The areas of life into which they are expending effort are a series of cups. Energy is like water: both are dispensable, but limited. In other words, there is only so much of it you can use at any given time. You must replenish after a while.

Most of us have several cups to balance: a work cup, a family cup, and a personal health and fitness cup, to name a few. The more cups, the more difficult it becomes to navigate the balance and pour the right amount of water (energy) into the right cups. Because you only

(continued on page 5)

Imbalance (continued from page 4)

have so much energy to expend, all areas affect the others. Pouring more energy into one area means less can be expended on others. For instance, if Anthony is forced to skip a family function to stay late at work, he will not only experience guilt for missing family commitments, but also feel less satisfied with his job. Below are several ideas that may be helpful in combating work-life imbalance.

Ask yourself: in your life, are your actions aligned with your passions and values? In other words, are you pouring energy (water) into areas that are truly important to you (often this includes spending time with family, engaging in creative and interesting projects at work, dedicating time to the gym), or do you find yourself pouring energy into areas that are not personally important (surfing the Internet, TV, social media)? Setting self-regulated rules about how to live your life will get you on track — for instance, a maximum of 30 minutes per day on Facebook, or a minimum of 30 minutes per day at the gym.

Many justify long work hours by claiming it to be the best way to support their family, although in reality the tedious work takes them away from the people they value and the activities about which they are passionate. Recently, a preliminary link was found between workaholics (quantified by some as working more than 50 hours per week) and reduced physical and mental well-being. Workaholics, the research found, were more likely to have reduced physical well-being as measured by skipped meals, and reduced mental well-being as measured by a self-reported depression score.

It seems only rational, then, to stop working so much. And yet, confounding the issue are separate findings revealing that cutting the work week by several hours on average may have no significant impact on workers' overall job and life satisfaction. This suggests that increased work intensity, because of cutting work hours, completely offsets any positive effects a reduction in hours might have.

Consider your own work experience. Perhaps you can pinpoint instances in which working fewer hours didn't necessarily increase your well-being if the intensity with which you worked was too great. The highest performers in their respective fields — surgeons, athletes, chess players, concert musicians — typically work with *focused, controlled* intensity in uninterrupted sessions that last no more than 90 minutes. After 90 minutes, focus tends to lapse, and mental (and, depending on the field, physical) fatigue sets in. Adopting this practice increases productivity and job satisfaction while reducing job-related stress.

Another effective way to combat the work-life

imbalance is to use avoidance strategies. This may seem counterproductive, as our intuitive notion of avoidance is that we are running away from our problems. While wishing for work- or home-related problems to magically disappear is, in fact, counterproductive, the process of taking one's mind off the problems at hand — in other words, not dwelling on them — makes us better able to manage conflict across work, family and other tasks, and therefore to experience more satisfaction.

Much of our success in using avoidance strategies begins with our ability to *unplug* and *disconnect* from work while at home, and vice versa, in the most literal sense. Smartphones and social media are often culprits in the mixing of work and life cups. Removing unnecessary technology from the family dinner table or from the office desk while engaged in a project that doesn't require its usage are both prime examples of avoidance. Truly *being at work* while *at work* and *being at home* while *at home*, in both body and mind, requires practice. Removing needless distractions from the task at hand is a helpful start.

Behaving in a manner consistent with your values; working with a focused, controlled intensity for short chunks; and strategically avoiding distractions are all potentially helpful ways to combat the work-life imbalance.

THEME: MEN'S HEALTH

Weekend Warrior Woes

by Michele Olson, Ph.D., FACS, CSCS



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Clocking a 12-mile run followed by a 40-mile bike ride on Saturday, then hitting the gym for a CrossFit-style weight workout, an hour of lap swimming and 90 minutes of hot yoga on Sunday certainly brings the word "warrior" to mind. Some weekend warriors regularly log hours of biking before work, rising at 4:00 a.m. on weekdays before heading off to yet another, two-day weekend mountain biking event. For

many, loading volumes of exercise or competitive events into the two-day weekend is a lifestyle. But it is it a good one? Are there strategies that can help you balance the two?

Weekend warrior undertakings that involve multiple activities, such as triathlons, can help participants balance their workouts and competitions. Even though multiple events may be jammed into a single day, athletes will reap key benefits associated with cross-modality exercise. This limits the amount of repetitive movement, often the key cause of overuse injuries from performing one single form of exercise, such as long-distance running, for extended time periods. Choosing varied activities and setting realistic goals, such as completing or finishing events versus setting personal records in every race, can reduce the chance of injury and undue fatigue, and may be important in immune system health.

Even with the best of strategies in mind, the risk for incurring strain, pain and outright injury is high for the weekend warrior. A high-performance, two-day weekend routine makes it difficult for the musculoskeletal system and other physiological systems to develop the strength and endurance generally needed to withstand the compacted period of pronounced physical stresses, so it's important to know where the body is vulnerable. For running, tennis matches on hard courts, and sports such as volleyball where jumping is involved, the lower kinetic chain is at risk. Foot, ankle, shin and knee problems are common, including stress fractures, plantar fasciitis, Achilles tendonitis, ankle sprains, shin splints and patellofemoral pain.

Biking can leave the knee, hip and low back vulnerable to injury. For those who jam in miles of swimming, day-long outings of tennis and golf, or engage in seasonal weekend softball tournament, wear and tear can wreak havoc in the upper extremities. The shoulder can experience rotator cuff problems and the forearm and elbow area can develop epicondylitis commonly known as tennis or golfer's elbow.

To prevent or remedy these injuries, the solution is not to train these vulnerable areas with heavy weight lifting or advanced yoga-style flexibility moves, since joints and muscles that are already stressed and strained can easily become more seriously injured.

A simple training routine during the week can help guard against weekend warrior injuries. Adding short (10- to 15-minute) bouts of core training during the week is quite doable and will also develop strength and endurance in the hips, back, trunk and shoulder girdle. Those areas, which are the major parts of the core, serve as the axis for a variety of movements across

(continued on page 6)

Warrior (continued from page 5)

the skeleton and give the knees, ankles, and shoulder joints a foundation to withstand high rates of exertion. Simple body weight exercises such as push-ups, abdominal planks, hamstring and gluteal bridges, and standing squats and lunges target the core muscles in a functional way. This means that these exercises, like sport skills, involve movement patterns and a harmonious activation of two or more joints and muscle groups at a time. The core muscles are also endurance muscles. So, a high-repetition, low-resistance load approach helps to prepare the core muscles for lengthy events. Training with near-maximum weight loads and low reps is less effective for improving the functional and protective role that the core muscles can provide.

For lower-extremity-dominant activities (e.g., running) standing heel (calf) raises and half squats while standing on a stability device such as a Bosu will build the muscular endurance and stability in the feet, ankle, and shins. For tennis, swimming, golf or overhead sports such as volleyball or softball (throwing), shoulder shrugs, deltoid raises and rowing moves are in order and can be done with light dumbbells or resistance bands. This makes all of these preventive exercises easy to do anywhere and doesn't require going to the gym.

Serious mishaps for the weekend warrior can result from not being acclimatized to the environmental conditions. Ask an experienced, high-level college or professional athlete and they can recount that, despite being in top condition, going to altitude or a more humid environment not only can destroy a good performance but also can cause heat injuries such as severe dehydration and serious muscle dysfunction such as cramps and spasms. Maintaining adequate hydration is critical for performance and avoiding heat injury. The amount of fluid needed depends on the intensity and duration of the activity, as well as the environmental conditions. To avoid problems, drink fluids before, during and after bouts of exercise. During events a thumbnail guide is taking in about four ounces of fluid every 15 minutes.

On the upside, weekend warriors can burn high levels of calories — as much as a thousand or more per weekend day — helping to prevent weight gain, which increases the risk of many lifestyle-related disease such as heart disease and type 2 diabetes. Pounding the pavement and pushing on bicycle pedals every weekend may also release stresses that can build during the work week. Though trainers and exercise physiologists favor a regular, progressively graded schedule of exercise spread over three to five days a week, most agree that the weekend warrior approach works well for some people.

However, as is the case with undertaking any

exercise or sport training, keeping safety in mind is imperative. Individuals who are overweight or those who have other risks of heart disease are much more likely to experience a heart attack or other serious medical emergency during strenuous or prolonged events that extend well beyond needing RICE therapy (Rest, Ice, Compression and Elevation). So, to optimize the chance of incurring the benefits of high weekend physical activity, add a “P” to RICE and include many of the Protective and Preventive tips outlined above to any weekend warrior routine.

THE ATHLETE'S KITCHEN

Getting Older, Day by Day

by Nancy Clark, MS, RD, CSSD



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Like it or not, every one of us is getting older, day by day. As a fitness exerciser or an athlete, you might wonder how aging impacts performance — and what you can do to retain youthful fitness. The following information is gathered from a workshop (www.sportsnutritionworkshop.com) presented by Dr. William Evans, an exercise physiologist and expert on aging, muscles and protein. This information can help you chart a healthy course into your future.

The average person loses about 1% of their fitness per year. Aerobic capacity goes down, particularly after age 60. Staying active helps maintain a slighter higher ability to uptake oxygen than a non-athlete, but the rate of loss is the same.

Muscle is an active tissue, meaning that it takes energy to maintain it. The more muscle you have, the more calories you need to maintain your body weight. As we get older, we lose muscle. This muscle loss creates a subtle change in metabolism that can contribute to weight gain with aging.

We lose muscle as we age with a steady decline year after year. This loss often begins to become

most evident after middle age. To treat this age-related loss of muscle, you need to lift weights or do other forms of resistance exercise. Yet, even strong athletes still lose some muscle with aging.

With aging, the average person loses more fast-twitch muscle fibers (used in sprinting) than slow-twitch fibers (used for endurance). This loss starts early in life and explains why elite sprinters peak in their early 20s. In comparison, elite distance runners maintain their slow-twitch muscle fibers until about age 40. But even top athletes notice they slow down after age 40, at which time the nerves that connect to muscles start to become impaired, resulting in a loss of both slow- and fast-twitch fibers. Athletes can lose about 20% of their muscle fibers between ages 40 and 70.

With age, we not only lose muscle but also tend to gain fat. As we age, our metabolism slows and our activity patterns change, but most people don't adequately adjust their eating and thus gain fat. A study of obese people suggests they sat three hours more per day than their lean peers; accounting for about 350 calories a day. The more sedentary we are, the more likely it is that we will gain fat.

Body fat secretes adipokines (hormones) that have negative effects on muscle strength and contributes to increased inflammation, particularly after ages 60 to 70. Inflammation leads to heart disease and diabetes. Hence, fatness can be a powerful predictor of disability in people ages 50 to 75. Stay lean!

When young people gain weight, about one-third of the weight gained is lean muscle. When older people (older women in particular) gain weight, it's all fat. When older people lose weight (due to illness or a low-calorie diet), half of the weight lost is muscle. Hence, yo-yo dieters who gain fat and lose muscle are on a downward spiral. Being fat but fit is preferable to going on and off diets.

Muscle loss is a key reason why older people become frail and end up in nursing homes. When they stop exercising, they experience a steep drop in strength. The good news is they can do something about frailty: lift weights! Even in elderly individuals, doing resistance training can lead to increases in strength. This is a critical advantage in maintaining daily function.

Research shows that even 90-year-olds in a nursing home can triple their strength in 10 weeks. This increase in strength allows them to walk faster, perform more activities of daily living (dressing, bathing, etc.), be less depressed, and stay in the independent living part of elder-care housing.

How much weight should people lift to build muscle? The answer is determined by the person

Q&A (continued from page 2)

and other urinary problems associated with the testing and treatments. There are also factors that can cause a falsely elevated level of PSA, again leading to over-treatment. On the positive side, PSA screening did find more prostate cancers both early and advanced.

The American Academy of Urology suggests that men under 40 should not be tested, and men ages 40-50 needn't worry about the test, either, if they aren't high-risk. Individuals such as African-American men and those with a family history of prostate cancer should review the need for testing with their doctors at all ages. Men ages 55-69 may consider this test, since some research has shown it can be helpful in early detection. Once testing begins, the present suggestion is that the test should be given every two years for screening. Males over 70 and with less than a 10-to-15-year life expectancy usually do not need any PSA testing. If you have questions, it's always good to discuss with your doctor.

Kitchen (continued from page 6)

in question. Children, young adults, and older adults all need to challenge their muscles, but the approach will likely be different based on the specifics of the situation. For the young healthy adult, one approach is to use three sets; the first two sets should have eight reps; the final set is to exhaustion. If you can lift a weight 12 times in the final set, you need to lift heavier weights the next time. Use slow steady lifts throughout the range of motion. For children, engaging in healthy, active play that involves running, jumping, etc. will increase muscle strength. For older individuals the exercises might involve resistance bands and/or hand weights. There are many approaches that can help maintain muscle strength, the important thing to remember is to provide a stimulus to the muscle.

Most strength gains occur in the first three months of starting a lifting program, due to early neuro-muscular changes. The nervous system learns how to recruit muscles more efficiently and this stimulates more muscle cells.

Strength training helps prevent bone loss. In a year-long study with post-menopausal women, all of the women who lifted weights improved

their bone health. Those who did not lift weights lost about 2% bone density in one year. Lifting weights has many advantages for older adults, the most obvious are increased bone and muscle strength, which improves function and promotes independence.

Our nutritional intake is also important as we age. About 25 to 33 percent of people older than 65 years are eating too little protein. This results in loss of muscle and bone and leads to expensive medical problems. The goal is to eat at least 0.55 grams of protein per pound of body weight each day to maintain and build muscle. For a 140-pound person, this equates to about 75 grams of protein, or 25 grams per meal (for example, Breakfast: 3 eggs; Lunch: 1 can tuna; Dinner: 4 oz. chicken).

The Bottom Line: Stay young by staying active and by lifting weights or doing some type of resistance exercise to strengthen both muscles and bones. And remember the words of gerontologist Water Bortz: "No one really lives long enough to die of old age. We die from accidents and most of all, from disuse." Use it or lose it!



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