

ACSM **FIT** SOCIETY. PAGESupported by  Liberty Mutual.**THEME: DIY EXERCISE****DIY: How a Smartphone Can Benefit Your Health**

by Thomas Altena, Ed.D.

If you have never searched health-related smartphone apps, you may find yourself overwhelmed by the thousands that exist. You must first choose an app that meets your needs. Then you can become familiar with the features and maximize the functions you use. Some apps take considerable setup time—not only requiring personal information but goals and objectives as well—and some may require continual data input after eating or working out. Although smartphone apps* have potential as tools for maximizing our health, they should never replace fitness and nutrition professionals who possess knowledge and experience beyond what apps can provide.

Distance and GPS Apps

There are many apps for calculating distance that use a Global Positioning System, or GPS. The basics of these apps are distance, time and average pace, but some also estimate calories burned. Some of these apps are simplistic, but most have features beyond what most of us need. For Android phones, Endmondo Sports Tracker and iMapMyRUN are two apps that store workout history with personal best performances, and they also give you encouraging comments during your workout. Both link with social networking sites like Facebook so you can share your workouts with friends, and iMapMyRUN allows people to track their progress online with real-time maps.

There are two common problems with these types of GPS apps. First, satellite signals can be lost in wooded areas, tunnels, or even when phones are stored in pockets, so you could get an inaccurate data set for that workout. Second, a phone's battery life is used more quickly when the GPS is activated, which could be a problem during extended workouts. Apple partnered with Nike to create an

*(continued on page 2)***INSIDE THIS ISSUE:**

- 1** | Letter from the Editor
- 1** | DIY: How a Smartphone Can Benefit Your Health
- 2** | Q&A with ACSM
- 3** | DIY: A Strength Training Program for Your Home

- 5** | DIY: Improving Your Flexibility and Balance
- 6** | DIY: Stress Management for the Modern Adult
- 7** | DIY: Improving Your Nutrition in Four Simple Steps
- 8** | The Athlete's Kitchen

**Letter from the Editor**

by Dixie L. Thompson, Ph.D., FACSM

Welcome to the winter 2012 edition of the **ACSM Fit Society, Page, supported by Liberty Mutual**. The benefits of regular exercise and a nutritious diet need not be limited to those who can afford a gym membership or personal nutrition consultant. While these specialized, knowledgeable professionals have a wealth of information to offer their clients, there are many steps you can take on your own to improve your health and fitness this year. The theme of this issue is "Do-It-Yourself Exercise." We'll share the basics for strength training, flexibility and balance training, stress management, nutrition, and using smart phone apps to maximize your efforts. We'll give you several ideas for things you can do in the comfort of your home to be healthier and more active.

Please look over this information that ACSM experts have prepared for you and share it with friends and family. We hope these articles will help you understand your unique needs and identify the exercise program that's right for you!

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iPhone app that uses a sensor placed in Nike+ shoes. The sensor synchronizes with your iPhone or iPod, performing many of the same features as the others, and works with compatible Nike+ cardio equipment at the local gym. These apps will synchronize with music stored on your smart phone, and they will even select music playlists for motivation. In addition to the smartphone apps that detail distance, mapping programs like Google Maps are wonderful if you are exploring new places while walking, running, cycling or hiking. If you get lost along the way, maps and GPS tools are helpful for getting you home safely.

Noteworthy Distance and GPS Apps: iMapMyRide, My Tracks, iMapMyFitness, Cardio Trainer, Sports Tracker, cityRUNNER, pace calc

Fitness Apps

The choices also seem endless if you are seeking an app for resistance training and

flexibility. Body Fitness and Jefit give you resistance training workouts, ranging from beginner to advanced, to meet your goals of general muscle toning or bodybuilding. These two specific apps provide workout information with sets and repetitions per exercise and also let you customize the app to meet your fitness goals. Two recommendations for these apps are: first, take plenty of time when you set up these apps with your personal information, goals and current fitness level; second, enter exercise data into the app after each workout is completed so it will continue to give progressive workouts over time. Both of these apps, and others like them, give users the freedom to choose which specific muscle groups they'd like to work on, and they will generate a list of exercises associated with that muscle group and the user's goals. If nothing else, apps like these can provide additional information and stimulate workout creativity that could prevent workout stagnancy and ultimately increase fitness.

Apps directed towards flexibility also have many different options. The Yoga app gives yoga sessions on your phone, and there are other apps focused specifically on Tai-Chi. Stretch On-The-Go provides flexibility movements that can stretch a single muscle or region of the body, and it includes instructions, pictures and video depicting how the stretch is to be performed. Some flexibility apps offer a timer for each stretch.

Noteworthy Fitness Apps: Jefit, Body Fitness, Fitness Buddy, Yoga, Tai Chi

Diet and Weight Management Apps

There is no shortage of diet and weight management apps on the market. If you are concerned with the food you put into your body, one or more of these apps might be a useful tool to consult while grocery shopping, trying out a new recipe or eating out. Fast Food Calorie Lookup is a great app for anyone who wants to make

(continued on page 10)

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Q&A

by Anthony Luke, M.D., FACSM

Q: I have heard about using devices and mobile apps to help me lose weight. Do these tools really work?

A: There is good evidence that use of self-monitoring tools—whether a monitoring device, an online software program or mobile phone—helps with reminding individuals to exercise. In a study published in *Medicine & Science in Sports & Exercise*[®], researchers from the University of Pittsburgh demonstrated that overweight individuals who used self-monitoring entries on paper, on a personal digital assistant (PDA), and on a PDA with daily tailored feedback messages all increased their activity levels significantly after a six-month program with daily reminders. The individuals who received personalized reminders were more likely to follow their exercise programs. The people who were better at self-monitoring had a larger percentage of weight loss with exercise. This trend has been supported by similar studies that show compliance with use of self-monitoring tools is related to better adherence to medical recommendations.

There are numerous approaches available for self-monitoring, from the simple pedometer to a GPS watch or smartphone.

Newer technologies include personalized monitoring devices with accelerometers (technology that can assess your movements) that you can wear. The heart rate monitor is commonplace and useful for gauging exercise intensity. Some even have other functions to monitor health variables such as weight and blood pressure.

Ultimately, using online or mobile tools to gather data on health can be useful to promote self-awareness regarding your health goals, whether that means exercising regularly, taking medications or controlling blood sugar. Of course, the effort you put into using new technologies is likely the same willpower you need to take care of yourself and succeed in reaching your goals.

Q: I have a gym membership, but I've had difficulty exercising regularly. I'd like to be motivated to be more active, but I've had trouble getting energized. What can I do to get on track?

A: From what you described, it sounds like you have a goal to exercise, but you're having difficulty meeting it. There are many resources to get you motivated to improve your health. Each person probably responds best to specific methods. A nice goal-setting approach is the SMART Method. In the SMART Method, coined by

(continued on page 9)

DIY: A Strength Training Program for Your Home

by Stephen Ball, Ph.D.



Muscular strength and endurance is a component of fitness that is necessary for optimal well-being and quality of life. Unfortunately, the cost of joining a health club or gym is a major barrier for many people who want to do resistance training. Membership costs vary depending on the city and facility's services, but fees generally range from \$25 to \$100 per month. Additional initiation fees may run into the hundreds. In addition, the inconvenience of traveling to a facility and working out with strangers is not appealing to everyone.

A cost-effective and convenient alternative to a gym membership is turning your living room or basement into your own personal training facility. Of course your home gym will not have expensive strength training machines, such as hip sleds or assisted pull-up machines. However, with a moderate investment and a good imagination, you can get a great workout in the comfort of your own home.

What You Need

1. Space. You'll need an open space that allows freedom of movement and is void of hazards that you might step on, bump into or trip over. A rearranged living room or an open garage stall with adequate traction will work well. You will need about 100 square feet (10' x 10').

2. Equipment. Invest in a few dumbbells (new about \$0.50 per pound) or resistance bands (\$10-\$20) and a stability ball (\$30). Most strength training exercises can be performed with this basic equipment. An adjustable bench that changes angles for your upper body is not necessary, but it would offer additional variety.
3. Plan. Don't begin resistance training until you have developed a plan. It is important that you have a structured program that includes 8-10 exercises to target the major muscle groups of the body. It is always wise to consult a local fitness expert and follow the ACSM guidelines for strength training. If you are a novice, a fitness professional will be able to give you advice beyond what is described here. Perform 1-3 sets of 8-12 repetitions at least twice a week. Make sure to do a brief warm-up before starting your session.

Tips for Strength Training

- Control the weight. It is important to perform each exercise in a controlled manner. Lower the weight slowly since you are working the same muscles as when you are lifting. To control speed of movement, try using a one-two-three count. The up phase (concentric or lifting) is completed quickly to a count of "one," and the down phase (eccentric or lowering) is completed slowly to a count of "two-three."
- Breathe. Ideally, you should exhale when the weight is being raised and inhale when the weight is being lowered. Don't ever hold your breath. It might help to count out loud the one-two-three count during the movement.
- Go to failure. An estimated 70 percent of strength gains can occur in the first set of training if performed to failure, otherwise called "rep out." Failure or "repping out" means doing as many reps as possible for whatever resistance selected. Going to failure is challenging, but it will maximize your fitness response in a minimal amount of time. The takeaway is that you can get away with doing only one set if you perform that set to failure. Ideally, you should select a weight so that you fail between 8-12 repetitions. As you get stronger, you will need to increase the weight or the repetitions to elicit more gains.
- Progress slowly. The famous saying "Rome wasn't built in a day" applies here. Don't expect miraculous results immediately. Rather, work toward your goals slowly, and appreciate the process of being active. During your first few workouts, use a light resistance, focus on

your form and don't go to failure just yet. Also, be sure to allow time for recovery between sets (30-120 seconds) and between workouts (1-2 days). Your first few workouts might only last 15-20 minutes.

- Include variation. It is not unusual for workouts to become stale and for fitness gains to level off. These plateaus are expected and indicate that you are becoming more trained. Don't get discouraged. If your workout gets old and boring, try different exercises and vary the number of repetitions, the weight or resistance, and the amount of rest between sets. These changes are likely to stimulate muscle adaptation and promote greater enjoyment of exercise.
- Add on. Creating your own home gym is not a massive financial obligation and will not take much space. Over time, add more equipment to your collection, and continue to expand the possibilities of your home training center. For example, build on to your collection with a medicine ball, Bosu® ball or additional free weights.
- Do something. When it comes to strength training—and exercise in general—doing something is truly better than continuing to be sedentary. Of course, more is better than some, and it's possible to train too much. It is not necessary to join a gym to enjoy the benefits of strength training. You can definitely do some in the comfort of your own home.

Full Body—A Sample Home Workout Plan

Squat—for hips, thighs and buttocks



1. From the sitting position with your feet shoulder-width apart and your toes in front of your knees, lean forward slightly and stand up without locking your knees.
2. Slowly lower your body back to a seated position where your upper legs are approximately parallel to the floor.
3. Alternative—Place a stability ball between your middle-back and a wall, and lean back into the ball while performing these same movements.

(continued on page 4)

Chest Press—for chest muscles and triceps



1. Lie on your back with your feet flat and knees bent.
2. Grip dumbbells and extend upward but don't lock the elbows. Slowly lower to the starting position.
3. Alternatives—Sit on a stability ball and perform same movement. Simple push-ups also work these muscles. A variation in push-ups could be putting your feet on a chair simulating an incline chest press.

Back Extension—for buttocks (gluteals) and low back



1. Lie face down on the floor.
2. Raise left arm and right leg off the floor with head and neck in line with the arm. Hold for 1-2 seconds, and then slowly lower the arm and leg back to the starting position. Repeat this movement for the right arm and left leg.
3. Alternative—Perform the movement on all fours or lying face down on a stability ball.

Standing Lunges—for front of thighs (quadriceps) and buttocks



1. With one leg, step backward until the thigh of the forward leg is parallel to the ground or as far as feels comfortable. Your back knee should come close to the floor but not touch it.

2. Push with the front leg, driving your heel into the floor, to return to the starting position.
3. Alternative—Using a regular-height chair, do bench step-ups from the floor in an “up-up-down-down” pattern. To increase resistance in this exercise, hold dumbbells in your hands.

DB Shoulder Press—for shoulders



1. Perform this movement sitting in a regular chair, standing or sitting on a stability ball. Hold a dumbbell in each hand with an overhand grip. Make a 90-degree angle with your arms by raising the dumbbells so they are level with your ears.
2. Slowly raise dumbbells over your head until arms are fully extended, but do not lock your elbows. Slowly lower the dumbbells to the starting position.
3. Alternative—Perform a lateral raise by lifting the arms to the sides with a slight bend in the elbows. Keep the weights and arms below shoulder height. You will likely need lower weight for this exercise compared to shoulder press.

Pelvic Tilt—for abdominals and buttocks



1. Lie on the floor with feet flat on the ground and knees bent. Keep arms at your sides with palms facing the floor.

2. Raise your pelvis so your buttocks and lower back are off the floor. Pause, and then slowly lower your pelvis to the floor.
3. Alternatives—Perform a standard crunch while sitting on a stability ball or on the floor. Try a reverse curl by lying on your back and place arms to the side with the palms face down and knees bent. Raise the knees to the chest lifting the hips off the floor.

Leg Curl—for back of thighs (hamstrings)



1. Stand behind a chair, and with your foot flexed, slowly bend one leg at the knee, raising your heel up toward your buttocks. Keep your support leg slightly bent.
2. Slowly lower your foot back to the ground. Add ankle weights to increase resistance or use a resistance band.
3. Alternative—Perform a hamstring roll using a stability ball. Lie on your back with your knees bent and your heels on the ball. Raise your hips off the floor and roll the ball away from you until your legs are straight. Roll the ball inward and outward.

Dumbbell Row—for back musculature and biceps



1. Stand with feet shoulder-width apart. Hold a dumbbell in each hand with elbows slightly bent. Bend forward at the waist and keep a slight bend in the knees.
2. Pull dumbbells up to your sides until your upper arms are almost parallel to the ground. Slowly return the dumbbells to the starting position.
3. Alternative—With resistance bands, stand on the band in its most middle section while holding the ends of the resistance band with your hands.

(continued on page 5)

Biceps Curl—for biceps



1. Stand with a dumbbell in each hand and your palms facing your thighs.
2. Slowly lift the weights and rotate your forearm so that your palms end up facing your shoulders at the top of the movement. Slowly lower to the starting position so that your palms are facing your thighs.
3. Alternative—With resistance bands, stand on the band in its most middle location while holding the ends of the resistance band with your hands while performing the movement.

Side Plank—for core



1. Lie on your side with left leg on top of the right. Raise upper body and place right elbow beneath the right shoulder.
2. Your elbow should be bent at a 90-degree angle and resting on the ground. Hold for up to 60 seconds.
3. Alternative—Perform a standard plank by lying face down resting on the forearms with your palms flat on the floor. Rise up onto your toes and rest on your elbows, keeping your back straight and flat.

The exercise photos under "Full Body—A Sample Home Workout Plan" were provided by Stephen Ball, Ph.D., and the University of Missouri.

THEME: DIY EXERCISE

DIY: Improving Your Flexibility and Balance

by A. Lynn Millar, P.T., Ph.D., FACSM



Two parts of fitness that are often overlooked are flexibility and balance. This may be because of conflicting information regarding their importance or relevance. However, both can play a vital role in overall fitness and function. Tight muscles can contribute to back pain or difficulty performing simple tasks, such as putting objects into overhead cupboards. While poor balance is known to increase the risk of falls in older persons, it may also affect sports performance in younger individuals. Luckily, it is very easy to work on both flexibility and balance on your own.

To train flexibility, stretching or repeated movement through a joint's complete range of motion will work to increase joint range or prevent loss of motion, respectively. To stretch a muscle, it should be put in a position that produces a slight pull on the muscle but not to the point of pain. With a static stretch, the position in which a slight stretch is felt should be held 15-30 seconds, and each stretch should be repeated 3-5 times on each side of the body. The primary note regarding stretch position is that it should not cause pain or take the joint past the normal range. There are several forms of dynamic stretching, with the key difference being that dynamic stretches take the joint and muscles through the full range of motion, often repeatedly.



ACSM guidelines recommend that stretching activities be done at least two days per week. If you have lost some joint motion or feel stiff, range of motion or stretching activities should be done daily. The muscles that are most often tight are the hamstrings, hip flexors, calves and chest muscles. Each of these can be stretched using different positions, and some general motions may stretch more than one muscle group. For simplicity's sake, only common static stretches will be described below.

- Hamstrings. Sit on the ground with legs straight in front of you. Gently lean forward from the hips (try to keep the back fairly straight) until a stretch is felt on the back of the thighs.
- Hip flexors. Stand on one foot, and bring the other foot to the buttocks. Pull back gently, while keeping your knee pointed at the ground and your hip straight. If needed, hold onto a counter or chair to keep your balance.
- Calves. Step forward with one leg. Shift your weight toward the front leg while keeping the back heel on the ground. If you press the hip of your back leg forward, this will also help stretch the hip flexors.
- Chest muscles. Standing in a corner, bring hands up to shoulder height and place against the wall on either side. Keeping hands in position, lean body forward until a stretch is felt in the front of the chest. This can also be done using a doorway, turning away from the hand that is on the wall.

Problems with tripping or falling often indicate difficulty with balance. Ideally, you should be able to stand on one leg for at least 20 seconds unsupported for static (not moving) balance. Balance activities can be started with simple position shifts for those that already have balance issues. Shifting should take place in all directions, including angles, with different placements of the feet. Improving balance requires a progressive challenge. This can be done by increasing the number of repetitions or

(continued on page 6)

the length of a balance activity, adding movement to make the activity more dynamic, or by reducing input from other senses, such as by closing the eyes. In addition, the amount of support from the arms can be progressed by using both hands, then one hand, then one finger, and finally no assistance. ACSM guidelines suggest such activities be done at least two days per week. A simple progression at home might be:

- Weight shifts. Step side-to-side, forward and backward. Then step forward and backward at an angle.
- Single leg stance. Stand next to a counter or chair for support. Stand on one leg and touch the toe of the other leg to the front, side and back.
- Single leg stance with movement. Stand next to a counter or chair for support. Stand on one leg and perform a partial squat. Repeat five times with each leg. This will also help with thigh strength. Alternative: turn slightly to the left, then right, moving only at the hip. Repeat five times with each leg.

Other activities can also be used for flexibility and balance. Tai chi, an activity based on martial arts, is excellent for balance because it uses multiple types of weight shifts as well as standing on one leg for short periods of time. Yoga uses different body positions and more sustained holds, thus it can also be used to improve static balance and flexibility. There are numerous DVDs and other aids available for those wishing to learn one of these activities. The key to any stretching or balance program is regularity, and these activities are not meant to be done at a high intensity.



THEME: DIY EXERCISE

DIY: Stress Management for the Modern Adult

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



When addressing your overall health, it's critical to view mental health as a key component. Your mental health is based upon a number of factors, one of which is your ability to manage stress. Stress is what happens when we perceive an event in a way that causes negative emotions, anxiety and tension. If not managed quickly or properly, a great deal of your bodily energy and resources will be consumed by stress, and this will compromise your immune system and may lead to physiological effects such as impaired sleep, headaches, muscle pain, depression and more. It serves us well, then, to learn how to effectively manage stress, as doing so greatly improves our overall wellness. Below are convenient do-it-yourself strategies that can help.

Breathing Exercises and Muscle Relaxation Exercises

Many people respond positively to both, which are considered “muscle-to-mind” relaxation strategies. Breathing properly is relaxing, in part because it increases the amount of oxygen in the blood. Oxygen plays a key role in supplying energy to the body's muscles, and good circulation facilitates the removal of waste products from the tissues. Unfortunately, many individuals have never learned deep, diaphragmatic breathing, and most are unaware that their breathing patterns are

disrupted under stress (we tend to either hold our breath or breathe quickly and shallowly from the upper chest when anxious).

Do it yourself: Put one hand on your abdomen and the other hand on your upper chest. If you are taking a proper deep breath from the diaphragm—the thin muscle that separates the chest and abdominal cavities—the hand on your abdomen should move out while inhaling. While exhaling, the hand on your chest should remain relatively still. Once you're comfortable with the breath cycle, commit to taking several minutes per day to simply concentrate on your breathing. This meditative break in the day can induce very calming relaxation.

Progressive muscle relaxation, a technique developed by in the early 1920s, is another strategy that involves the tensing and relaxing of key muscle groups. Since muscle tension accompanies anxiety, learning to relax the muscular tension may effectively reduce anxiety.

Do it yourself: Sit or lie in a comfortable position. With your eyes closed, tense the muscles in your legs for 10 seconds, then release the tension for 20 seconds, noticing the difference between the feelings of the tension and relaxation. Try this with other muscle groups, particularly those in the abdomen, chest, arms and face. Find time to practice once a day for 10 minutes. The technique becomes more effective with practice, so stay committed!

Stretching

Stretching has a positive effect on physical and mental health. Stretching promotes mind/body awareness, as successful completion of each physical stretch requires mindfulness of your bodily positions, breathing and control of your tension level. Stretching also improves circulation and range of motion, decreases muscle tension and reduces pain and soreness after exercise. A stretched, lengthened muscle is typically less likely to strain or tear than a tight, shortened one.

Do it yourself: Dedicate 10 minutes per day to stretching your muscles, particularly those in your legs, arms and neck. Engaging in relaxation breathing during the stretch will help maximize the activity.

(continued on page 7)

Cardiovascular Exercise

Individuals who exercise aerobically report fewer symptoms of anxiety and depression and lower levels of stress and anger. Exercise appears to affect particular neurotransmitter systems in the brain like an antidepressant would. Cardiovascular exercise may also reduce one's fear of bodily sensations, such as a racing heart and rapid breathing. Both of these, perhaps once associated with losing control or high anxiety, may now become an indication of health-enhancement and physical success. ACSM suggests that we engage in 150 minutes per week of moderate-intensity activity.

Do it yourself: Walk or jog on the treadmill/elliptical, swim, dance or bike for 30 minutes per day, five days per week. Working out to an exercise DVD can also act as a convenient substitute.

Massage

Therapeutic massage may also act as a valuable tool in relieving the psychological and physical suffering of stress. Psychologically, the touch of the therapist helps relieve anxiety and fear, which aids the individual in regaining some sense of control over a stress-inducing situation. Physically, a skillfully applied massage sends soothing, pleasant sensations to the brain, which slows the secretion of stress hormones, slows and deepens one's breathing, lowers blood pressure, slows one's pulse rate and relaxes the body to the point that it begins to recover and rejuvenate.

Do it yourself: While you may be able to massage some muscles (like your calves), you may choose to turn to a professional masseuse to get the full effect. Treat yourself to a 30-60 minute professional massage, and reap the benefits of relaxation.

Yoga

Researchers have found that yoga may be superior to other forms of exercise in its positive effect on mood and anxiety. Research reveals an association between yoga postures and decreased depression and other widespread anxiety disorders.

Do it yourself: Purchase a yoga DVD—an introductory disc will do—and practice three times a week for one hour each session.

THEME: DIY EXERCISE

DIY: Improving Your Nutrition in Four Simple Steps

by Pamela S. Hinton, Ph.D.



Improving your diet doesn't require significant resources to invest in a nutritionist or personal trainer. Whether you need a complete diet overhaul or minor adjustments, you can positively affect your health with just a few simple changes to your diet and eating habits. Follow these do-it-yourself nutrition tips to achieve a healthy body weight, reduce your risk of chronic disease and maybe even spice up your daily plate.

Achieve a healthy body weight.

For most people, this means reducing daily energy intake by several hundred calories to sustain weight loss. Although this task sounds daunting, just one or two small changes will do the trick if they are maintained over time. For example, you can:

- Substitute water for sugary soda and fruit drinks. If it's the carbonation you crave, choose unsweetened, carbonated water.
- Beware the coffee-based drinks that are made with whole milk, sweetened with syrup and topped with whipped cream. Ask for your latte with skim milk and "no whip" to cut calories.
- Reduce the amount of added fat. At 100 calories per tablespoon, salad dressing, butter, margarine, cream cheese and peanut butter are energy-dense. You can save a significant number of calories by using these sparingly or selecting low-fat alternatives.

- Use less fat in cooking and baking. Substitute fruit purées for a significant portion of the oil or butter in baked goods. Thicken soups and sauces with vegetable purées. Buttermilk is an excellent substitute for sour cream or whole milk in cream soups, sauces or mashed potatoes. And, for your holiday pies, try a crust of ground almonds with a minimal amount of oil and syrup rather than lard or butter.
- Revamp your snacks. Rather than snacking on chips, crackers, cookies or candy, which are high in fat, trans fat and calories, opt for a piece of fresh fruit, baby carrots, air-popped popcorn or a cup of low-fat yogurt. If you crave a salty snack, like chips or crackers, choose the baked or reduced-fat version.

Reduce your intake of saturated fat, trans fat, sugar and sodium.

Not only do added fat and sugar pile on unwanted calories, but consumed in excess, they contribute to weight gain and chronic diseases such as cardiovascular disease, diabetes and some types of cancer. In some people, too much sodium leads to high blood pressure. To combat these problems, you can:



- Limit your intake of processed grains and snack foods, such as cookies, crackers, corn and potato chips, and snack cakes. Although these snacks are highly palatable, they are also laden with trans fat, sugar and sodium. Instead, choose unprocessed foods for snacks, such as dried fruit, pretzels or nuts.
- Limit your intake of processed meats—such as bacon, lunch meat and sausage—and of cheese and pizza, which are also high in saturated fat and sodium. Instead, prepare lean cuts of fresh meat and choose low-fat cheese. Several times per week, choose beans, legumes or tofu as a source of protein in place of meat.
- Use less salt at the table and during cooking. In place of salt, enhance the flavor of your food with added herbs and spices.

(continued on page 8)

- Sodium, sugar and trans fat often hide in unsuspected foods. For example, canned soups can be surprisingly high in sodium, and sugar is often added to pasta sauce. Likewise, trans fats are ubiquitous in processed foods. It pays to read food labels. Avoid products that have added sugar (sucrose, glucose, high-fructose corn syrup) or trans fat (hydrogenated or partially hydrogenated oil).

Increase your intake of fruits and vegetables, whole grains, fish and dairy products

These foods contain a multitude of vitamins, minerals and other compounds (*i.e.*, fiber and antioxidants) that promote health. We recommend that you:

- Eat more fruits and vegetables at meals and snacks. Fruits and vegetables are excellent sources of vitamins, minerals and dietary fiber. They also add color, which not only makes our plate more visually appealing, but adds the antioxidant power of phytonutrients.
- Swap whole grains for processed ones. Choose brown rice and whole wheat pasta. Experiment with quick-cooking grains like quinoa and millet. Read food labels to select baked goods and cereals that are made with whole grains.
- Choose fat-free or low-fat milk, yogurt and cottage cheese as a high-protein snack that is also packed with calcium and vitamin D. As an alternative to dairy products, select soy milk or orange juice that has been fortified with calcium and vitamin D.
- At least two times per week, choose seafood rather than meat to increase your intake of omega-3 fatty acids.

Be a conscientious consumer when eating out.

- Ask for salad dressing, butter, sour cream and sauces on the side, so you can control how much is added.
- Avoid dishes that are prepared with cream or served with a cream sauce.
- Select foods that have been steamed, broiled or baked, rather than fried or sautéed.
- Restaurants are notorious for serving excessively large portions. Don't hesitate to ask for a take-home container.
- For dessert, choose fruit sorbet or pie (and leave the crust), or share your dessert with a friend.

THE ATHLETE'S KITCHEN

Winter Nutrition— Fueling for Cold Weather Exercise

by Nancy Clark, M.S., R.D., C.S.S.D., FACSM



If you are a winter athlete, you want to pay careful attention to your sports diet. Otherwise, lack of food and fluids can take the fun out of your outdoor activities. These tips can help you fuel wisely for cold weather workouts.

Winter Hydration

- Failing to drink enough fluids is a major mistake made by winter athletes. A study comparing hydration status of athletes who skied or played football or soccer reported the skiers had the highest rate of chronic dehydration. Before one competition, 11 of the 12 alpine skiers showed up dehydrated.
- Some winter athletes purposefully skimp on fluids to minimize the need to urinate. There's no doubt that undoing layer after layer of clothing (ski suit, hockey gear, etc.) can be a hassle. Yet, dehydration hurts performance and is one cause of failed mountaineering adventures.
- Cold blunts the thirst mechanism; you'll feel less thirsty despite significant sweat loss and may not think to drink.
- Winter athletes (especially those skiing at high altitude) need to consciously consume fluids to replace the water vapor that gets exhaled via breathing. When you inhale cold, dry air, your body warms and humidifies that air. As you exhale, you lose significant amounts of

water. You can see this vapor ("steam") when you breathe.

- Unless you are hot, you do not want to drink icy water (*i.e.*, from a water bottle kept on your bike or outside pocket of your back pack). Cold water can cool you off and give you the chills. The better bet is having an insulated water bottle or a bottle filled with hot sports drink then covered with a wool sock to help retain the heat.
- Dress in layers, so you sweat less. Sweaty clothing drains body heat. As the weather becomes "tropical" inside your exercise outfit, make the effort to strip down. You'll stay drier and warmer. Simply taking off a hat is cooling; 30 percent to 40 percent of body heat gets lost through the head.

Winter Fuel

You need adequate pre-exercise fuel to generate body heat. Hence, you want to fuel up before you embark on winter exercise, particularly before you ski, run outside or embark on any outside activity in extreme cold.

- Food's overall warming effect is known as thermogenesis (that is, "heat making"). Thirty to sixty minutes after you eat, your body generates about 10 percent more heat than when you have an empty stomach. Hence, eating not only provides fuel but also increases heat production (warmth).
- Aerobic workout can increase your metabolism by 7-10 times above the resting level. This means that if you were to exercise hard for an hour and dissipate no heat, you could cook yourself in the process. In the summer, your body sweats heavily to dissipate this heat. But in the winter, the warmth helps you survive in a cold environment. Exercise is an excellent way to warm up in the winter.
- If you become chilled during winter exercise (or even when swimming, for that matter), you'll likely find yourself searching for food. A drop in body temperature stimulates the appetite and you experience hunger. Your body wants fuel to "stoke the furnace" so it can generate heat.
- For safety's sake, you should always carry some source of emergency food (such as an energy bar) with you in case you slip on the ice or experience some incident that leaves you static in a frigid environment. Winter campers, for example, commonly keep a supply of dried fruit, chocolate or cookies within reach, in case they wake up cold at 3:00AM.

(continued on page 9)



Energy Needs

Cold weather itself does not increase energy needs, but you will burn extra calories if your body temperature drops and you start to shiver. Shivering is involuntary muscle tensing that generates heat.

- When you first become slightly chilled (such as when watching an outdoor football game), you'll find yourself doing an isometric type of muscle tensing that can increase your metabolic rate two to four times.
- As you get further chilled, you'll find yourself hopping from foot to foot and jumping around. This is nature's way to get you to generate heat and warm your body.
- If you become so cold that you start to shiver, these vigorous muscular contractions generate lots of heat—perhaps 400 calories per hour. Such intense shivering quickly depletes your muscle glycogen stores and drains your energy. This is when you'll be glad you have emergency food with you.
- Your body uses a considerable amount of energy to warm and humidify the air you breathe when you exercise in the cold. For example, if you were to burn 600 calories while cross-country skiing for an hour in 0° F weather, you might use about 150 of those calories to warm the inspired air. In summer, you would have dissipated that heat via sweat.
- If you wear heavy clothes, you will burn a few more calories carrying the extra weight of skis, boots, heavy parka, snow shoes, etc. The Army allows 10 percent more calories for heavily clad troops who exercise in the cold. If you are a runner,

however, the weight of your extra clothing is minimal. Think twice before chowing down!

Winter Recovery Foods

- To chase away chills, replenish depleted glycogen stores and rehydrate your body, enjoy warm carbohydrates with a little protein, such as hot cocoa made with milk, oatmeal with nuts, lentil soup, chili or pasta with meatballs. The warm food, added to the thermogenic effect of eating, contributes to rapid recovery.
- In comparison, eating cold foods and frozen fluids can chill your body. That is, save the slushie (ice slurry) for summer workouts; it will cool you off. In winter, you want warm foods to fuel your workouts. Bring out the mulled cider or thermos of soup!



Winter Weight Gain

Many athletes bemoan winter weight gain. Some eat too much because they are bored and less active. Others experience seasonal affective disorder (SAD), and the change of seasons has a marked effect upon their mood. Changes in brain chemicals increase carbohydrate cravings and the desire to eat more. The temptations of winter holiday foods can also contribute to weight gain.

To limit winter weight gain, stay active. Exercise helps manage health, weight and the winter blues. The tricks are to invest in proper clothing, fuel well and prevent dehydration so you can stay warm and enjoy winter's outdoor wonderland.



George T. Doran in 1981, each letter outlines a quality of the approach: S stands for specific; M for measurable; A for attainable or achievable; R for relevant or realistic; and T for timely.

A specific goal will usually answer these five "w" questions:

- What: What do I want to accomplish?
- Why: What are the specific reasons, purpose or benefits of accomplishing this goal?
- Who: Who is involved?
- Where: Where will this take place?
- Which: Which requirements and constraints should I consider?

Try answering these questions to see how you can achieve your personal goals. This approach to setting and solving personal goals will help you measure and quantify success. It's better to set an achievable goal than aim unreasonably high. Don't forget to set a reasonable timeline which can help you frame the challenge at hand. Go ahead and set a new goal for 2012!

healthy choices and monitor caloric intake with fast food. This app has about 140 different restaurants in its database and is constantly being updated. No food calorie app will have all the eateries in your city, but most chain restaurants are listed in Fast Food Calorie Lookup. Some seasonal specials might not be listed, though. For people monitoring their points, the Ultimate Weight Watchers Diary and Weight Watchers Calculator add up dietary points, exercise points and points remaining in your daily intake. When you are grocery shopping, WW ScanCalc will give you nutritional information based on a barcode then relate it to Weight Waters points. Further, there are apps with grocery lists and recipes for people on a diabetic or hypertensive diet. Be careful to not just trust the apps for the information but be a knowledgeable consumer, as some apps unintentionally misreport nutritional information.

Noteworthy Diet and Weight Management Apps: MyNetDiary, Calorie Counter & Diet Tracker

As you might assume, using your smartphone with various apps can make for a great training partner, give terrific workout ideas, provide valuable dietary information, or even find you a new cooking recipe. There are a few things you should note about using your smartphone for health and fitness, though. Using your smartphone as your music player during exercise can be enjoyable, but it can increase your risk of being distracted. If you carry your smartphone while you exercise, use a Ziploc plastic bag around the phone, so sweat won't ruin it. Every fitness app will be better if you take the time to set up the app thoroughly. Finally, remember that smartphone technologies are wonderful tools to enhance your fitness, but they can never replace a



fitness professional with years of accumulated experience, education and wisdom.

**Note: product reviews presented in this article reflect opinions of the author and do not necessarily reflect positions or policies of ACSM.*



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