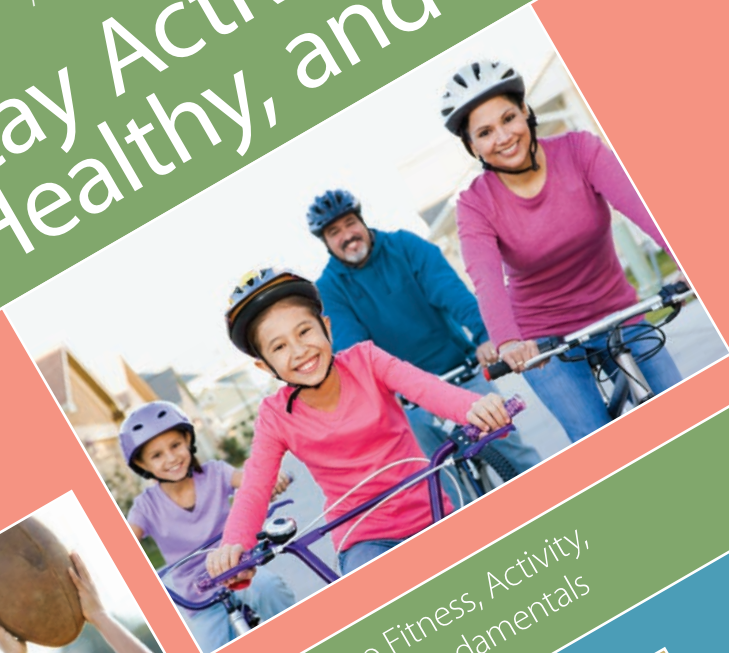




The President's Challenge
Physical Activity, Nutrition & Fitness
Awards Program

Stay Active, Eat Healthy, and Be Fit



A Guide to Fitness, Activity,
and Eating Fundamentals



A Program of the President's Council
on Fitness, Sports & Nutrition,
U.S. Department of Health and Human Services



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Acknowledgment

Stay Active, Eat Healthy, and Be Fit

A Guide to Fitness, Activity, and Eating Fundamentals

The President's Challenge is a program of the President's Council on Fitness, Sports & Nutrition, U.S. Department of Health and Human Services, offered through a cosponsorship with the Amateur Athletic Union. This booklet can be downloaded from the President's Challenge website (www.presidentschallenge.org).

To order multiple copies of this booklet, call the President's Challenge office at 800-258-8146 or visit www.presidentschallenge.org.

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A Message from the President's Council

The mission of the President's Council on Fitness, Sports & Nutrition (PCFSN) is to empower and motivate all Americans to be healthy through regular physical activity and good nutrition. There are a lot of things in life that you can't control, but you can improve your health and fitness.

Study after study has conclusively shown that keeping active—whether through sports, exercise, or everyday chores—will help you to live longer and enjoy each day more. Active people who make healthy food choices further reduce their risk of heart disease, obesity, diabetes, and some forms of cancer. They generally have a more positive outlook on life and the energy to get things done and make things happen. That's a pretty good return on investment!

However, it can be tough to be active and to make healthy food choices in today's world. But studies show that you're most likely to get and stay fit if you:

- pick a convenient activity that you enjoy
- set realistic goals
- record your progress
- seek out recognition when you meet your goals

That's why the President's Council on Fitness, Sports & Nutrition initiated the President's Challenge physical activity awards—to help Americans of all ages and abilities set and reach their health and fitness goals.



The President's Challenge is a program of the President's Council on Fitness, Sports & Nutrition, U.S. Department of Health and Human Services.



How Heathy Is Your Lifestyle?

Have you been thinking about changing some aspects of your life? Here's a quick self-assessment to help you think about which aspects of your life you might want to improve:

- Are you physically active on a regular basis (for example, at least 30 minutes a day, 5 days a week)?
- Do you regularly exercise to increase your strength?
- Do you smoke?
- Do you take drugs or medicine on a regular basis?
- Is your weight what it should be?
- Do you eat a variety of healthy foods at every meal and for snacks?
- Are you able to cope with day-to-day stress?
- Can you deal with big emotional problems—or do you eat, drink, or take drugs to relieve stress when troubles arise?

The answers to these questions indicate that the lifestyle of many of us isn't up to par. If you see your lifestyle lacking in any of these areas, reading this booklet can help get you on the right track. There are a number of things you can do to improve your health. If you're ready to make some positive changes in your life, we're here to help you.

Physical Activity and Exercise and Why They Are Important

An active lifestyle improves your health and decreases your risk of premature health problems. Regular activity improves fitness. Contrary to what many people believe, fitness isn't just about being muscular or maintaining a recommended body weight. It's also about aerobic fitness, flexibility, muscular strength and endurance, and proper body composition.

Aerobic fitness (also called cardiovascular or cardiorespiratory fitness) refers to your body's ability to utilize oxygen to do sustained physical activities like walking, bicycling, and swimming.

Flexibility and muscular strength and endurance are essential to being able to carry out the tasks of everyday living, such as carrying in the groceries or reaching for a book.

Body composition refers to your body's percentage of muscle, fat, and bone. Your total weight isn't as important as how much fat you are carrying.



Set Your Goals and Make Them Happen

For most of us, it takes a specific sequence of events to change eating patterns and develop fitness habits that will last a lifetime.

The fact that you are reading this booklet signifies that you want to learn more about taking control of your health. What other steps can you take?

1. Decide to improve your health.
2. Find out your physical status and get advice from health and fitness professionals. If you have a chronic disease or other condition, get your doctor's OK before you increase your activity level.
3. Select a fitness program that's right for you, taking into account your age, physical condition, and lifestyle.
4. Take a look at what you are eating on a regular basis. Do you need to increase or vary the amount or types of vegetables you are eating or could you switch your refined grains, such as white bread or white rice, with whole-grain products, such as brown or wild rice or whole-wheat bread? Review the healthy eating goals below and consider areas where you can improve.
5. Take a fitness test to find out how fit you are now.
6. Participate in physical activities that you enjoy.
7. Undergo periodic fitness testing to gauge your progress.
8. Modify your activities often so that your workout is interesting and remains challenging.

Healthy Eating Goals



Make half your plate fruits and vegetables.



Make at least half your grains whole grains.



Switch to fat-free or low-fat (1%) milk, yogurt, or cheese.



Drink water instead of sugary drinks.



Choose lean sources of protein.



Compare sodium in foods like soup, bread, and frozen meals and choose the option with the lower number.



Work toward eating at least 2 servings of seafood each week.



Enjoy your food, but eat less. Avoid oversized portions.

Choosing Activities

The American College of Sports Medicine (ACSM) suggests you take the following factors into account to zero in on a fitness plan you'll stick with:

Convenience: Can you do it? Some activities require expensive equipment, are seasonal, or are not readily available in certain locations. Choose an activity or mix of activities that you can afford to do year-round, and that you can do near your home or office.

Skill: Is it too hard? Workouts that require a high level of skill may discourage you if they're too challenging. Focus on activities that fit with your skill base (for example, inline skating might be difficult for you if you don't have good balance, but traditional roller skating may work). Allow yourself time to develop the skills you need for an activity to become enjoyable.

Social Factors: Are you having fun yet? For many individuals, working out with others makes exercise sessions more fun and increases the likelihood of continuing a fitness program over the long term. If you prefer social activities, you might choose to walk or run with a friend or neighbor, or take exercise classes at a local gym or recreation center. Some people, however, prefer working out alone, away from phones, beepers, and other people. The key is to find what suits your personality.

Choose the healthier option

Instead of soda or other sugar-sweetened beverages, opt for water or water flavored with berries, lemon, orange, or cucumber slices.



Different Activities, Different Benefits

If you want to lose weight... Did you know that higher intensity workouts burn more calories than lower intensity workouts? Moderate-intensity activities like walking contribute to weight loss. However, if you only have 45 minutes a couple of days each week for physical activity, you'll burn many more calories if you do high-intensity activity (such as running or swimming laps) during this time, instead of moderate-intensity activity. Studies also suggest that even if the total number of calories you burn is slightly lower, high-intensity workouts can create a modest "after-burn" effect, so you'll burn fat even after you end your physical activity session.

If you want to build muscle... Do men really build muscle more easily than women? In most cases, yes. However, whether you're male or female, you can develop strong muscles. Both men and women need good muscle strength. Improving muscle strength is possible without excessive time in the gym. In one study, women who lifted weights for 25 minutes just two to three times a week gained an average of two pounds of muscle (and lost about four pounds of fat) over an eight-week period.

If you want to tone up... Strength training is a great way to sculpt muscle, but if you want to be sleek and strong, why not give Pilates or lifting weights a try? Many fitness experts believe that Pilates can help you develop long, strong muscles, a flat stomach, a strong back, and improved posture. And like working out with weights, Pilates strengthens connective tissue (tendons and ligaments) and may help reduce your risk of osteoporosis. Check out your local gym or recreation center to find a Pilates or a weight lifting class near you.



If you want to improve your balance...

Give tai chi or qi gong a try. Both activities involve physical movement, mental focus, and deep breathing. Many park and recreation centers offer classes in one or both disciplines. In addition to improving balance, tai chi or qi gong can improve overall fitness, bone health, and quality of life. Some research suggests sleep may also improve and persons suffering from osteoarthritis and fibromyalgia may have a decrease in pain associated with the condition.

Weight Loss Success

Just like being active is important for weight loss, so is eating well. Here are some keys to helping with weight loss success:

- Learn what to eat from each food group.
- Focus on how much you eat. Know your portion sizes.
- Choose “nutrient-dense” foods. These are foods packed with the healthy things you need. Review the Nutrient-Dense Food Choice Options chart on page 6.
- Track what you eat each day. You may wish to weigh yourself each week so you can note your progress.
- Create a personalized daily eating plan for free on the USDA Choose My Plate website: www.choosemyplate.gov/myplate/index.aspx.

Nutrient-dense food choice options

Instead of . . .	Decrease fat and calorie intake by choosing . . .
Dairy Group	
Sweetened fruit yogurt Whole milk Natural or processed cheese	Plain fat-free yogurt with fresh fruit Lowfat or fat-free milk Lowfat or reduced-fat cheese
Protein Foods Group	
Beef (chuck, rib, brisket) Chicken with skin Lunch meats (such as bologna) Hot dogs (regular) Bacon or sausage Refried beans	Beef (loin, round), fat trimmed off Chicken without skin Lowfat lunch meats (95% to 97% fat free) Hot dogs (lower fat) Canadian bacon or lean ham Cooked or canned kidney or pinto beans
Grain Group	
Granola Sweetened cereals Pasta with cheese sauce Pasta with white sauce (alfredo) Croissants or pastries	Reduced-fat granola Unsweetened cereals with fruit Pasta with vegetables (primavera) Pasta with red sauce (marinara) Toast or bread (try whole grain types)
Fruit Group	
Apple or berry pie Sweetened applesauce Canned fruit packed in syrup	Fresh apple or berries Unsweetened applesauce Canned fruit packed in juice or "lite" syrup
Vegetable Group	
Deep-fried french fries Baked potato with cheese sauce Fried vegetables	Oven-baked "french fries" Baked potato with salsa Steamed or roasted vegetables
Solid Fats	
Cream cheese Sour cream Regular margarine or butter	Light or fat-free cream cheese Plain lowfat or fat-free yogurt Light or diet margarine
Added Sugars	
Sugar-sweetened soft drinks Sweetened tea or drinks Syrup on pancakes or french toast Candy, cookies, cake, or pastry Sugar in recipes	Seltzer mixed with 100% fruit juice Unsweetened tea or water Unsweetened applesauce or berries as a topping Fresh or dried fruit Experiment with reducing amount and adding spices (cinnamon, nutmeg, etc.)

Source: United States Department of Agriculture www.choosemyplate.gov/STEPS/nutrientdensefoodchoices.pdf



Getting Started

Regular physical activity is important throughout your life. Healthy habits are more influential than genetic factors in avoiding the kinds of health problems traditionally associated with aging. The information below shows how much and the types of physical activity you should do on a weekly basis in order to gain health benefits (lower risk of heart disease, high blood pressure, colon and breast cancers, depression, etc.).

The following are general recommendations for all adults aged 18 and older. For more information on the amount of activity for older adults, pregnant and postpartum women, and persons with specific health conditions, please see pages 12–14.

- All adults should avoid inactivity. Some physical activity is better than none, and adults who participate in any amount of physical activity gain some health benefits.



- For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) per week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Aerobic activity should last at least 10 minutes, and preferably, it should be spread throughout the week.
- For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) a week of moderate-intensity or 150 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity activity. Additional health benefits are gained by doing even more physical activity.
- Adults should do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week.

Adults with disabilities should follow the recommendations for adults aged 18 and older, to the extent that they are able. Adults with disabilities who are unable to meet the general recommendations should engage in regular physical activity as their body and disability allow and should avoid inactivity. Talking with a healthcare provider about the amounts and types of physical activity appropriate for an adult with a disability is encouraged.

Source: 2008 Physical Activity Guidelines for Americans
(www.health.gov/paguidelines)

Follow this four-phase plan to help you get fit and firm.

Phase 1

Begin Doing Something Every Day

The first step is to increase your physical activity as part of your daily life. You can do this by walking or biking to visit friends or to run errands that are not far from home. When you go to the mall or movie theater, park farther away and walk across the parking lot. Take the stairs instead of the elevator. Work in your yard or garden, or take a walk with family or friends after dinner and on the weekends. Even housework, such as vacuuming and washing windows, is good for you. Be active with your kids, and do things they enjoy. One reason Americans aren't as fit today as in previous generations is that we have so many labor-saving devices. So cut your grass with a push mower, rake your leaves, sweep the walk . . . simply putting everyday activity back into your life is helpful.

Phase 2

Start Walking (or Another Low-Impact Activity) to Build Your Endurance

In addition to becoming more active in your daily life, incorporate some moderately intense activities as well. Walking is one of the easiest activities you can do. It is low cost, all you need is a good pair of walking shoes, and it can be done just about anywhere, any time of the year. If you haven't been very active lately, here's how to ease your way into an active lifestyle that will allow you to build up gradually toward the recommended amount of daily exercise. Unless you have a chronic condition such as heart disease or diabetes, or have symptoms of these conditions, you do not need to seek the advice of your healthcare provider before beginning to exercise. The key is to start out slowly and listen to your body.

Gradually increase the amount of physical activity over time. For example, every two weeks, increase the duration of your aerobic workout by five minutes. Add five minutes of total-body stretches to the beginning and end of your workouts (for a total of 10 minutes of stretching). Just be sure your muscles are warm before you start stretching. To warm up your muscles, you can walk or bicycle for 3 to 5 minutes. In other words, you can do the activity of your main aerobic session, just at a lower intensity. Improving your flexibility will make activities of daily living easier, and may also help improve your workouts, since you will be able to achieve a greater range of motion.



A sample plan for improving fitness

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Weeks 1–2	20-min bike to park	15-min walk at lunch w/ 5-min jog <i>Strength</i> 10-min circuit train w/weights, 5-min stretching	45-min water aerobics class	20-min walk at lunch w/ 5-min jog, 5-min cool-down walk	15-min walk to morning meeting <i>Strength</i> 10-min circuit session (push-ups, dips, lunges, core exercises)		60-min yard/house work 30-min walk w/ 1-min fast walking every 5 min, 5-min cool-down w/stretchers
Weeks 3–4	Basketball game	10-min walk at lunch w/ 10-min jog, 5-min cool-down <i>Strength</i> 10-min circuit train w/weights, 5-min stretching	45-min water aerobics class	10-min walk at lunch w/ 10-min jog 5-min cool-down walk and stretching	15-min walk to morning meeting <i>Strength</i> 10-min circuit session		60-min yard/house work 30-min walk/jog: 4-min walk, 2-min jog, 5-min cool-down w/stretchers
Weeks 5–6	Basketball game	20-min walk/jog: 8-min jog, 2-min walk (repeat) 5-min cool-down walk <i>Strength</i> 10-min circuit train w/weights 5-min stretching	45-min water aerobics class	20-min walk/jog: 8-min jog, 2-min walk (repeat) 5-min cool-down walk and stretching	15-min walk to morning meeting <i>Strength</i> 15-min circuit session	30-min yoga class	20-min walk/jog: 8-min jog, 2-min walk (repeat) 5-min cool-down walk and stretching
Weeks 7–8	30-min hike at park	20-min jog 5-min cool-down walk <i>Strength</i> 10-min circuit train w/weights 5-min stretching	45-min water aerobics class	20-min jog 5-min cool-down walk and stretching	15-min walk to morning meeting <i>Strength</i> 15-min circuit session	30-min yoga class	20-min jog 5-min cool-down walk and stretching

min = minute/s

Phase 3

Exercise at the Right Intensity and Duration for Your Age and Health

Once you get into the habit of stretching and doing at least 30 minutes of aerobic activity most days of the week, consider mixing up your activities to include both moderate- and vigorous-intensity activities throughout the week.

After exercising moderately for a month, add a five-minute, vigorous-intensity workout three days a week. See the sample plan on page 9 for some suggestions.

- You can do an entire session of vigorous activity. To get health benefits, you would need to do 25 minutes of vigorous intensity activity at least 3 days per week.
- Do strength training (1–2 sets with 8 to 15 repetitions) using all major muscle groups, two days a week.

Phase 4

Enjoy a Variety of Activities

If you haven't already experienced the pleasure of participating in a sport or performance activity (such as tennis, soccer, or dancing), by Phase 4 you'll be fit enough to enjoy new activities and succeed.

Although you can continue with your walking/jogging and strengthening activities, adding other activities may provide the variety and challenge you need to keep going.



Should you exercise when you have a cold?

If you have a stuffy nose or sore throat, it's okay to work out, but it's a good idea to avoid the gym (out of consideration for others). During the first two or three days of a cold, you can easily infect others by sneezing. During this period, you might want to do yoga, stretching, or a low-intensity aerobic workout at home, or exercise outdoors, weather permitting.

Skip your workout if you have a fever, lung congestion, body aches, or general weakness; your workout won't enhance your fitness and the activity is likely to

make you feel worse. Use this rule of thumb: If your cold affects you above the neck, you've got the green light to exercise. If you feel it from the neck down, take some time off and give your body a chance to rest and heal.

If you have asthma or a dry cough, avoid exercising in cold, dry air, which can exacerbate inflammation in your lungs. (You might feel all right during the workout, but your cough may worsen afterward.) Swimming indoors often works well.

Why You Should Vary Your Activities

We've all heard the term "cross-training," but what does it really mean and why is it important? Cross-training is simply a way of adding variety to your exercise program and reducing your risk of injury. Cross-training makes sure that the same muscles, bones, and joints are not continuously subjected to the stresses of the same activity. Cross-training also makes your fitness routine more interesting and easier to maintain. It improves your overall fitness and, over time, may lead to improved performance.

Even if you don't belong to a gym or play sports, there are lots of fitness activities you can do for a great cross-training program. You can vary your routine from workout to workout, or try adding a new activity to your routine. One of the easiest ways to start is to alternate activities—walk one day, swim or ride your bicycle the next.

You can also incorporate muscle-strengthening activities. Calisthenics are a no-cost, equipment-free way to add variety to your physical activity routine that work your muscles as well as your heart and lungs. Calisthenics include lunges, jumping jacks, push-ups, crunches, squats, and calf-raises. You can establish a 10- to 15-minute routine whereby you go through a series of calisthenics for either a set amount of time (20 seconds up to 1 minute) for each exercise or for a set number of repetitions (10-15) and take a 10- to 30-second rest in between each exercise depending on your overall level of fitness.

For example:

Walk 5–10 minutes (warm up)
6 lunges (each leg)
Rest 10–30 seconds
12 push-ups (straight leg or bent knee)
Rest 10–30 seconds
20 jumping jacks
Rest 10–30 seconds
Crunches (12) or plank (hold 10–20 seconds)
Rest 10–30 seconds
Squats (12)
Dips (12)
Rest 10–30 seconds
Calf-raises (12)
Rest 10–30 seconds
Repeat series 1–2 more times

Once you are comfortable doing each movement for the designated number of times, increase the number of each exercise and/or decrease the amount of rest after each exercise.

Nuts and seeds

Choose unsalted nuts or seeds as a snack or as a protein replacement in salads and main dishes. Nuts and seeds are a concentrated source of calories, so be sure to eat small portions.



Activity for Every Stage of Life

Older adults, children, women who are pregnant, and people with certain health problems all benefit from physical activity. Here's a quick look at the recommendations for special populations.

Older Adults

All older adults should avoid inactivity. Some physical activity is better than none, and older adults who participate in any amount of physical activity gain some health benefits. Older adults should follow the recommendations for adults aged 18 and older listed on page 7.



Exercising with Children

When it comes to kids and exercise, the emphasis should always be on fun and variety. For younger children, this means playing games like tag, leap frog, and chase; doing activities, such as soccer, t-ball, swimming, dancing, and gymnastics; and enjoying free play, such as playing on a playground, at the park, or in a pool. For older children and teenagers, variety may include planned exercise sessions, such as running on a treadmill and strength training. When you monitor a child's workout, remember that kids can overheat more easily than adults, and they may have so much fun that they exercise to exhaustion. Keep kids cool and remind them to take breaks when necessary.





Children ages 6–17 should do 60 minutes of physical activity every day. Most of the 60 minutes should be aerobic activity (running, jumping, swimming, bicycling). Children also need to do activities that strengthen muscles and strengthen bones on at least 3 days each week. These activities can be included in the 60 minutes of total activity each day. Generally speaking, children who are able to participate in organized sports such as baseball, soccer, or gymnastics are ready to do some elementary strength training. For younger children, push-ups, sit-ups, and other exercises that use a child's own body weight as resistance will yield the best strength results with the lowest risk of injury. Climbing trees, swinging on playground equipment, push-ups, and pull-ups are examples of activities that strengthen muscles.

Children with disabilities should try to meet the guidelines (60 minutes of physical activity a day). Work with your child's healthcare provider to identify the types and amounts of physical activity best suited for your child. At the very least, children with disabilities should avoid being inactive and should engage in as much activity as possible.

Pregnant Women

Both mother and child benefit from exercise during pregnancy.

Healthy women who are not already highly active or doing vigorous-intensity activity should get at least 150 minutes (2 hours and 30 minutes) of moderate-intensity aerobic activity per week during pregnancy and the postpartum period (about 6 weeks following birth). Preferably, this activity should be spread throughout the week.

Pregnant women who regularly engage in vigorous-intensity aerobic activity (running, fast walking, swimming laps) or are highly active can continue physical activity during pregnancy and the postpartum period, provided that they remain healthy and discuss with their healthcare provider how and when activity should be adjusted over time.

It's easier to get overheated when working out while pregnant, so wear appropriate clothing, drink plenty of fluids, and select the proper environment.

Additionally, there are some activities and movements that may put mother and baby

at risk, such as lying flat on your back (supine) and some yoga poses (downward dog). In general, most activities are safe as long as you keep your heart rate in check and do not get overheated. However, if you are unsure what is best for you, talk with a certified personal trainer or your healthcare provider.

Specific Chronic Conditions

Asthma

If you have asthma, you can—and should—exercise, but you should do so with caution. Studies show that people who have asthma and perform regular exercise tend to experience asthma attacks less frequently, can improve their lung function, and may lose weight and feel better overall. Work with your doctor to be sure you're using the appropriate medication to control your condition during activities. It's always important for people to choose activities that they enjoy, but it's worth noting that certain types of endurance sports (such as long-distance running) might be more likely to aggravate an asthmatic condition, while moderate activities (such as swimming, walking, and jogging shorter distances) are less likely to lead to breathing problems.



Diabetes

If you have diabetes, both moderate-intensity aerobic activity and strength training are highly recommended. It's important to wear well-made athletic shoes that fit properly and wear cotton socks, because there may be some loss of sensitivity in the feet. Check your feet for blisters and other signs of injury from time to time.

Arthritis

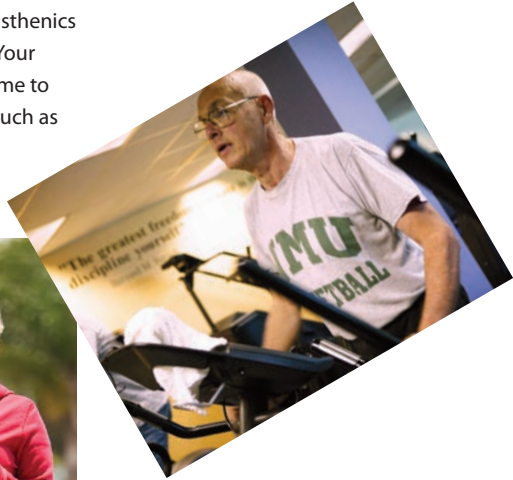
For those with arthritis, exercise is considered the most effective non-drug treatment for reducing pain, increasing range of motion, and improving movement. Speak with your doctor to find out which fitness activities are best suited to your condition. Generally speaking, the best activities for people with arthritis are those that don't expose the joints to the stress of repeated impact. Walking, biking, tai chi, swimming, and water-based aerobics are all good options. Consider developing an exercise program with the help of a physical therapist or personal trainer skilled in working with people who have arthritis.

A Typical Workout

Workouts should start off easy, become more intense, and then taper to cool down.

There are a variety of ways you can warm up or cool down. Try doing parts of your regular workout, but at a lower intensity. For example, if you run during your workout, then walk to warm up; if you walk during your workout, do gentle calisthenics (jumping jacks, push-ups, lunges). Your cool-down phase is a convenient time to do muscular endurance exercises, such as curl-ups or crunches.

Don't cut corners on your warm-up and cool-down. If your workout needs to be shorter than usual, reduce the main body of the workout, and be sure to allow 5–10 minutes for the warm-up and cool-down portions.



Stretching

Stretching once your muscles are warm helps you get the most from your exercise program and improve low-back function. Muscle and joint discomfort can occur when you don't adequately warm up and stretch before working out, or cool down and stretch after working out. In addition, stretching after your main aerobic workout, while your muscles are still warm, may increase physical and mental relaxation, release muscle tension, and reduce your chance of having sore muscles.



What to Do

Try the following exercises. Repeat each one, holding it for 20 seconds; gradually build to 30 seconds if you still feel tight.



▲ To **stretch your calf (back of lower leg)**, stand with feet hip-width apart, back straight, and stomach tight. Keep the knees slightly bent. In a straight line from head to the left heel, lean forward, keeping the left heel on the floor. Place both hands on right thigh. Repeat on other side. The front leg should be kept over the ankle. Do not let the front knee push out beyond your toes.



▲ For a **hamstring stretch (back of thigh)**, stand up straight, with your right foot slightly behind hips. Slowly bend the rear leg as if sitting backward. Keep the front leg straight with a very slight bend at the knee. Place hands on right thigh. Push buttocks backward, slowly, until you feel a slight tension in your hamstring. Keep your neck in line with your spine. Never place your hands on the front leg. Make sure your feet are correctly positioned for balance before stretching.

Stretching tips

- Only do static stretching after the muscles are warm.
- Only stretch to the point of mild tension. Stretching should never be painful.
- Don't bounce or use jerky movements when you are stretching.
- Do not hold your breath. Breathing normally will help you relax.

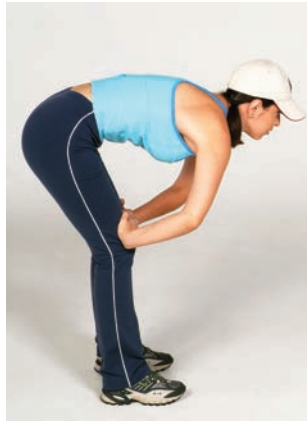
▼ To **stretch the front of your thigh (quadriceps)**, stand with feet together, bend your left knee and with your left hand lift the left foot toward your buttocks. Bend slightly on the supporting leg. Keep the knees close together. Tilt the pelvis forward and keep the back straight. Always keep the support leg bent. Use a wall or other object for balance. Keep your back straight and stomach tight.





◀ For **chest and shoulders (pectorals and deltoid) stretch**, stand with feet shoulder-width apart and knees slightly bent. Place both hands on the buttocks and gently ease the shoulders backward. This should give a feeling of the chest “opening.” Hold.

▶ To **stretch overall**, stand with feet shoulder-width apart and knees slightly bent. Raise your arms overhead and bring your hands together. Slowly begin to stretch upward.



▲ The **lower back stretch** starts when you stand with feet shoulder-width apart, knees bent, with your hands on thighs. Shoulders should be slightly apart. Slowly pull stomach in and curl upward (similar to a cat). Hold. Be sure your weight is supported by placing your hands on your thighs. Be careful to slowly uncurl to original position. Keep chin up and eyes focused in front of you.



▲ To **stretch your upper back**, stand with feet shoulder-width apart and knees slightly bent. Clasp your hands in front of you at shoulder height with the palms away from the body. Gently push the palms outward, without locking the elbows. Keep your back straight and the stomach tight, knees slightly bent.



▲ Another way to **stretch your shoulder** is to take the right arm across the body at shoulder height, keeping the shoulder relaxed. Place the left hand or forearm on the right arm slightly above the elbow and gently bring the right arm toward the chest. Keep the back straight and stomach tight. Make sure the knees are slightly bent at all times. Keep head facing forward. Repeat with left shoulder.



▲ To **stretch your hips**, sit on a mat with your right leg straight in front of you. Bend your left leg and cross it over your right leg so that your left foot is alongside your right knee. Bring your right elbow across your body and place it on the outside of your left thigh near the knee. Slowly twist your body as you look over your left shoulder. Your right elbow should be exerting pressure against your left thigh. Repeat in the other direction.

The Basic Aerobic Workout

The emphasis in any fitness program should be to start slowly and, when in doubt, do too little rather than too much. Begin with easy workouts, and gradually increase the amount or intensity of the activity you do.

How Hard Is Right for You?

Aerobic exercise intensity is a measure of the effort you experience in a workout, usually expressed as a percentage of maximal heart rate or oxygen consumption. How hard do you have to work to increase the functional capacity of your cardiovascular and respiratory systems? Intensity can also be expressed in terms of the level of effort you need to exert to do the activity. Less fit people generally require a higher level of effort than fitter people to do the same activity. Relative intensity can be estimated using a scale of 0 to 10, where sitting is 0 and the highest level of effort possible is 10. Moderate intensity activity is a 5 or 6. Vigorous-intensity activity is a 7 or 8.

Heart rate can also be used to identify an appropriate level of effort for you to exert during moderate or vigorous aerobic activity. Gains in cardiorespiratory fitness have been shown to occur in exercise programs in which the training intensity is 75 to 90 percent of maximal heart rate (use 50 to 70 percent if you have been sedentary). This range is called your target heart rate range.

Target Heart Rate Training Is Efficient

Working out within your target heart rate range will give you the best results if you're trying to burn fat and lose weight. Working out below your range won't raise your intensity to fat-burning levels, and exercising above your range means your body is no longer working aerobically (but anaerobically instead, which will help you build endurance, but not burn fat).

Once you determine your target heart rate (see *How to Calculate Your Target Heart Rate*, page 21), you can use subjective judgment to determine whether the intensity of your workout should be higher or lower. This is called your rating of perceived exertion (RPE). Using your RPE can be almost as accurate (and a lot less expensive) than buying a heart rate monitor.



If you're just starting an exercise program, use the lower part of the target heart rate range. If you are more active and in good health, use the upper part of the range. Whatever your fitness level, if your workout is so easy that you're able to do the work without effort, you should increase the intensity. On the other hand, be sure your workout isn't so taxing that you're short of breath, feeling pain, or can't go the duration you planned. If it is, decrease your intensity.

How to Calculate Your Target Heart Rate

Here's how you would calculate your target heart rate if you were a 45-year-old:

Estimate your maximal heart rate ($220 - \text{your age} = 220 - 45 = 175$).

Take 70 percent and 90 percent of that value: 70 percent of 175 beats per minute = 122 beats per minute; 90 percent of 175 beats per minute = 158 beats per minute.

So for 45-year-olds, the target heart rate range is between 122 and 158 beats per minute.

Since your actual maximum heart rate may be higher or lower than 220 minus your age (this formula is just a good estimate for beginners), the target heart rate range should be used as a guideline. If it seems too hard, use a lower intensity. If it seems too easy, then go to a higher intensity.

For older adults and those who haven't been very active, shoot for 50 to 70 percent of your maximum heart rate.

For most others, exercising at 70 to 90 percent of your maximum is optimal. The key is to go at an intensity that allows you to exercise for the duration needed. Exercise intensity and duration must be balanced so that you can exercise long enough to expend 150 to 400 kilocalories per day, in order to achieve good heart and lung function and body composition goals.

Measuring your pulse

To see if you are exercising within your target heart rate range, count the number of times your heart beats during 10 seconds of exercise. Multiply this number by 6 to see whether you are exercising within your target range.

A digital watch or watch with a second hand can be helpful. Check your pulse at your wrist or neck. The radial artery can be found on the thumb side of either wrist, just below the base of the thumb. Apply gentle pressure with your fingers until you feel the pulse. Begin your count with "zero"

on the starting time mark; then count the pulses for 10 seconds.

Your carotid pulse is taken on your neck just below the jaw beside the windpipe. Use the fingertips of the index and middle fingers to press gently. Do not move your fingers around in a massaging motion while trying to find your carotid pulse. This can lower your blood pressure and cause dizziness. The same counting system used for the radial pulse check can be used for the carotid pulse check.

Perceived Exertion Measures Success

If you're not using a heart rate monitor during your exercise session, you can adjust the intensity of your activity based on your rating of perceived exertion (RPE). It's normal to sense effort, and maybe even discomfort, but you should never be in pain during a workout. Your fitness goals and the state of your health should determine your appropriate rate of exertion.

Plan your workout intensity based on your rating of perceived exertion.

Warm-ups and cool-downs should be from very easy (you can converse with no effort) to easy (you can converse with almost no effort).

Three to four times a week you should exercise moderately so a conversation requires a bit of effort.

Two or three times a week do short workouts that are so vigorous that conversation requires a lot of effort.

Perceived Exertion Scale

6	
7	Very, Very Light
8	
9	Very Light
10	
11	Fairly Light
12	
13	Somewhat Hard
14	
15	Hard
16	
17	Very Hard
18	
19	Very, Very Hard
20	

Adapted from Borg (1998).



The Basic Strength-Training Workout

For many years, strength training was used primarily by adult athletes to enhance sports performance and increase muscle size. However, strength training (also known as resistance training) is now recognized as an important method of enhancing health and fitness for people of all ages and abilities. Strength training is not the same as the competitive sports of weightlifting, power lifting, or bodybuilding and will not result in large, bulky muscles. Regular strength training can help adults develop a more toned appearance and help clothes fit better. For older adults, strength training has multiple benefits including the ability to maintain independence and help with participation in aerobic activities including walking, swimming, or bicycling.

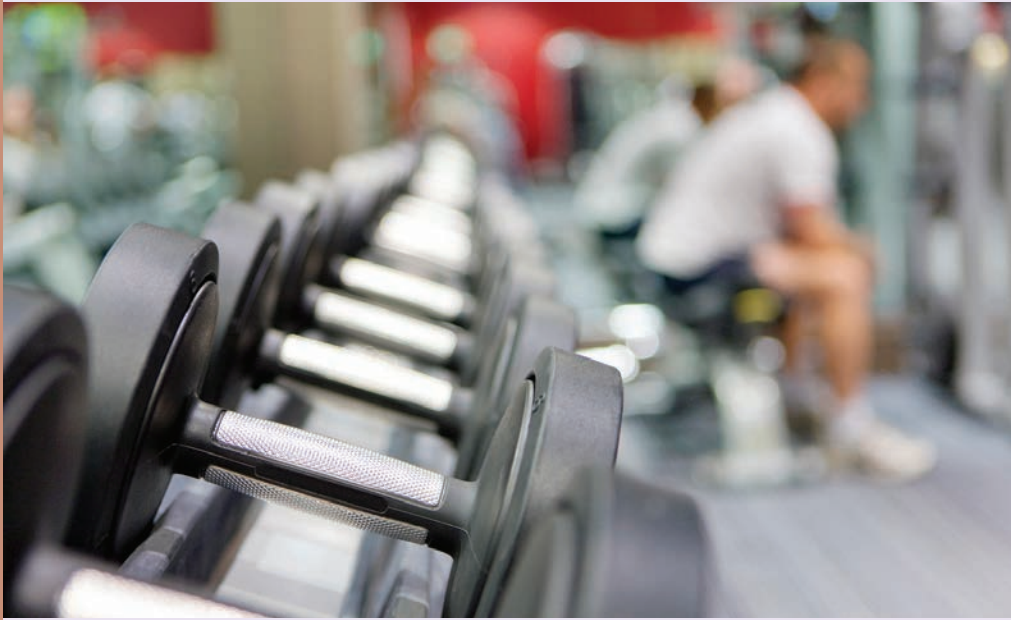
Strength training can improve your ability to perform daily tasks like carrying in the groceries or lifting up a child for a hug. And the more muscle you have (as opposed to fat), the more calories you burn—even at rest.

A wide range of loads and a variety of training tools are used in strength training, including free weights (barbells and dumbbells), weight machines, elastic tubing, medicine balls, stability balls, and a person's own body weight. On pages 25–30 are some good exercises that will help you increase your strength and don't require equipment. You will benefit from these workouts but you will be able to affect more muscles using free weights, weight machines, or stretchy bands, which are available at low cost in many stores. Choose from a variety of strength-training options.

Strength Training 101

In order to increase your muscle strength (how much you can lift) or muscular endurance (how many times you can lift), you must lift more weight or do more repetitions than your muscle is used to lifting or doing. This is called overload. For example, if you can easily complete 20 repetitions with 25 pounds while performing a barbell curl, then increase the weight or the number of sets to improve your arm strength or endurance.

Once you can comfortably lift a weight a number of times, a reasonable guideline is to increase the training weight about 5 percent, and decrease the repetitions by two to four. For example, if you can easily do 16 repetitions while performing the chest press exercise using 100 lbs., increase the weight to 105 lbs. and decrease the repetitions to 12 to make gains in muscle strength and endurance.



Comparing different tools for strength training

Will you get a better workout if you use hand weights or a weight machine? A medicine ball or stretchy resistance bands? The truth is, each mode of training has its own pros and cons. Here's how they stack up against one another:

	Weight Machines	Free Weights	Weighted Balls	Stretchy Bands	Body Weight
Cost	High	Low	Relatively low	Very low	No cost
Portability	Very low	Variable	Excellent	Excellent	Excellent
Ease of Use	Excellent	Variable	Variable	Variable	Variable
Muscle Isolation	Excellent	Variable	Variable	Variable	Variable
Exercise Variety	Low	Excellent	Excellent	Excellent	Low
Space Requirements	High	Variable	Low	Low	Low

Adapted from Faigenbaum & McInnis (2003).

What to Do

The strength and conditioning exercises below will help you increase your muscle mass, and they can all be done with no equipment. You can divide the exercises in half and work your upper body one day and your lower body the next. Or do them all, but every other day. Try starting out with 10 repetitions of each exercise, and each week increase your repetitions by 2 until you can do 16. You can also break the workout into 2 sets of 8 repetitions. Gradually increase your reps until you can do 2 sets of 10 to 15 reps.



► You can work on your shoulder and neck muscles with **shrugs**.

With your arms at your sides, shrug your shoulders to an “I don’t know” posture, then relax and let your shoulders drop. This is more effective with resistance, but you don’t need to buy anything. Begin by holding cans of food in your hands with your arms hanging by your sides; then progress to buckets of sand, or anything you have handy that weighs a few pounds.





▲ **Push-ups** are great for your chest muscles. Here are several ways to do them:

The military-style push-up is performed with your body horizontal and nothing touching the ground except your hands and toes. An easier version of the push-up can be done with knees bent so that hands and knees touch the ground throughout the exercise.

For variety, try incline push-ups, which emphasize upper chest. Perform these with hands elevated on a couple of thick books or a box.

For lower chest emphasis, perform decline push-ups, with feet elevated instead of hands.



▲ Work your trunk with a **rotational movement**. Stand with your hands on your hips, elbows pointed outward.

From the waist lean your body one way as far as you can, then rotate so that your head swings forward at about waist level, across to the other side, and then back up.

► You can get a great abdominal workout with **bent leg sit-ups** or **crunches**.

Bend your knees so that your feet are comfortably flat on the floor, fold your arms across your chest, and raise your shoulders about a foot off the ground.



▼ Work your upper back with **scapular retractions**.

Sit upright and pull your shoulders back to squeeze your shoulder blades together, trying to make them touch in the middle of your back. Hold a few seconds, then relax.

▼ For your lower back, try prone **lumbar extensions**.

Lie on your stomach with your arms and legs stretched straight out. Raise your arms and legs off the ground a few inches, hold a few seconds, and then lower them.

As you repeat this move, try to get your arms and legs higher off the ground.



Don't neglect your forearm muscles—they control wrist movement. These wrist exercises will help to keep your forearms strong:

▼ In **wrist extension** (below left), raise one hand as far as you can bend your wrist, and push your fingers back on the palm side, using the other hand. Now push the fingers of the first hand against this resistance until you feel the muscle tension in your lower forearm muscles.

▼ For **wrist flexion** (below right), bend your hand downward so that your wrist is fully bent in the opposite direction, and push on the backs of your fingers with the other hand. Push the fingers of the first hand against this resistance until you feel muscle tension in your upper forearm muscles.

Alternate extension and flexion exercises for each forearm, holding each position for several seconds.

▼ You can work your biceps with **arm curls** using either cans of food for dumbbells, or pushing with the other hand for resistance.

Rest your upper arm down the front of your body and pull your lower arm up until the clenched palm is close to your shoulder.



▼ **Dip exercises** are good for the triceps at the back of your upper arms.

Begin by sitting on the ground in front of a chair or stool. Reach your arms out behind you and grasp the edge of the chair, palms down. Raise your hips off the ground and straighten your body. Now lower and raise your body by bending your elbows.



▲ For your front thigh try **wall squats**.

Stand with your back straight against a wall with your feet a thigh's length in front of your body. Slide your back down the wall until you are in a parallel squat position, thighs horizontal. Hold until your thigh muscles begin to burn, and then push up to the starting position. As you build strength, increase the amount of time you hold the squat position.





▲ **Lunges** are good for your legs and front hips, favoring the hamstrings and gluteal muscles (backs of upper legs and buttocks).

Stand upright and take a big stride forward. Your trunk should go down close to the floor, and your planted leg should trail straight and almost horizontal behind your body, raised on the toes. You can take several short steps to bring your front leg back to the starting position.

Repeat on the other leg.

▼ You can work your calves with **toe raises**.

Stand on both feet, with one hand on a rail for balance and your weight on the balls of your feet. Lower and raise your heels through the full range of motion of your ankles. A dozen of these will give your calves and Achilles tendons a good workout, and they are good for your ankles, too. As you build your calf strength, you can make these more challenging by doing them on a step or block.



Tools for Basic Training

Once you've decided to get in shape, you may decide to join a fitness program at a local recreation center, health club, workplace, or place of worship. Whatever you choose, you'll want to invest in a few basic pieces of equipment.

Proper Footwear

Choose a pair of athletic shoes designed for the activities you plan to participate in. Running and walking shoes are made for people to move forward and backward, and provide stability for this type of movement. They are also more cushioned for impact while running and walking. Tennis, basketball, and cross-training shoes, on the other hand, are made for both front-to-back and side-to-side movements. What does this mean? Get running shoes for running or walking. Use walking shoes or cross trainers for walking. Try cross trainers or tennis or basketball shoes for strength training and other activities.

Pedometer

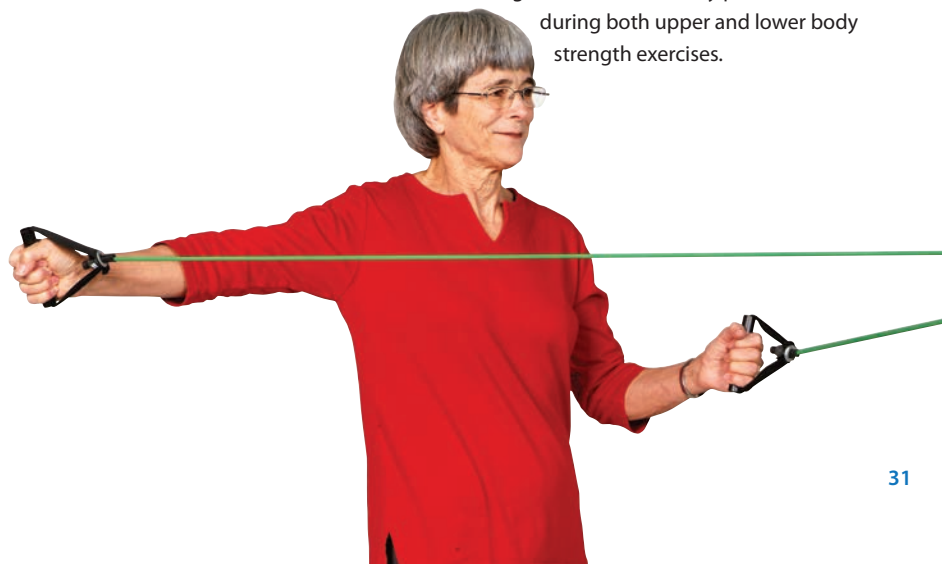
A pedometer should be comfortable to wear all day and be held securely by its clip. An extra safety leash can help. The display should be easy to read without removing the unit from your waistband. The simplest pedometers count your steps and display steps or distance; others estimate calories burned and provide times.

Hand Weights

Get two sets—one light, one heavy. Beginners should try 2- or 3-pound weights and 5-pound weights. If you have a good base of upper-body strength, try 5- and 8-pound weights, or 8- and 10-pound weights.

Stretchy Resistance Bands

These inexpensive latex bands often come in sets of three—light, medium, and heavy resistance—along with directions for using them instead of hand or ankle weights. They can be purchased at many sporting goods stores, and they provide resistance during both upper and lower body strength exercises.



Modifying Your Workout

If you're planning to stay active for the rest of your life (and you should be), you need to work out in a way that's safe and prevents injury.

Modify your fitness activities according to the weather or other environmental conditions where you are working out, or if you have specific health problems. And, when injuries occur, learn to treat the minor ones, and know when to seek professional care.

Your heart rate is one indication of the proper exercise intensity. Environmental factors such as heat, humidity, pollution, and altitude cause your heart rate and your perception of effort to increase during an exercise session. This could shorten your exercise session and reduce the chance of your expending sufficient calories to experience a training effect. By monitoring your heart rate or perceived exertion and slowing down your workout to train within your target range, you will be able to keep on exercising in a variety of conditions.



It's Cold Out There!

Exercising in the cold isn't a problem if you plan ahead and dress appropriately. But problems develop quickly if you don't take the necessary precautions. Hypothermia is a decrease in body temperature that happens when your body's heat loss is more than its heat production. Your body temperature is affected by environmental factors, such as air temperature, wind, and whether air or water are involved; insulating factors, such as clothing and fat under your exposed skin; and the capacity for sustained energy production. Surprisingly, the environmental temperature does not have to be below freezing to cause hypothermia. Wind and water can be bigger factors than temperature.

Mix it up yourself

Skip the pre-made trail mix and whip up your own. That way, you control what's included and it's cheaper! You can use unsalted nuts and seeds, dried fruits (apples, cherries, apricots, pineapple, bananas, cranberries, or raisins), whole grain cereals, and/or low-salt or unsalted pretzels. For a little sweetness, add carob chips, which are caffeine free and provide small amounts of fiber and calcium.





Too Hot to Trot?

Overheating can be a life-threatening situation. Recognize the stages of heat illness: from heat cramps to heat stress to heat stroke. Although treatment of these problems is important, prevention is a better approach.

By monitoring your intensity level (either by heart rate or rate of perceived exertion), you can greatly reduce your risk of heat illness. On a hot day, if you see or feel your heart rate climbing at a faster than normal or higher than normal pace or if your regular workout seems harder than normal, slow down. Heart rate is a sensitive indicator of dehydration (not enough water in the body), environmental heat stress (impacted by things like air temperature, humidity, and clothing), and acclimatization (adjusting to environmental changes).

Symptoms of heat illness include excessive sweating (or no sweat), fatigue, dizziness, racing heart, and confusion. If you feel the effects of the heat, get to a cooler place, drink cool fluids, fan yourself to enhance sweat evaporation, and if necessary, place ice on your body or get into a cool pool.

The rate of heat loss at any given temperature is directly influenced by wind speed. Wind increases the rate of heat loss. If you are running, cycling, or cross-country skiing into the wind, you may experience even greater heat loss than if the wind is at your back.

What you wear during exercise can make a big difference in how your body handles cold temperatures. The key is to dress in layers. Mixing and matching layers will help you stay dry and wind resistant and allow you to adjust your clothing (e.g., remove a hat, open a zipper, take off a wind jacket) as your body warms up. Your inner layer should be something that wicks (or pulls) sweat away from your body. Cotton doesn't do the trick, but wool and synthetic fibers (often identified as quick dry or cool mesh) do. The middle layer should keep you warm. A lightweight fleece may serve this purpose. Finally, the outer layer should keep you dry and protected from the wind.

Symptoms of cold stress include numbness, tingling, fatigue, and pain. If hypothermia occurs, get out of the cold, wet, and wind; remove wet clothing; drink something warm; and get into a warm environment, such as in a sleeping bag or bed.

Prevent Heat Issues

- **Get Fit:** Fit people have a lower risk of heat injury, can tolerate more work in the heat, and acclimatize to heat faster.
- **Get Acclimated:** The National Athletic Trainers' Association recommends 10 to 14 days to adapt to exercising in the heat. Exercising in the heat increases your capacity to sweat, initiates sweating at a lower body temperature, and reduces salt loss. Body temperature and heart rate responses are lower during exercise, and the chance of salt depletion is reduced.
- **Drink Up:** Not drinking enough fluids (such as water or sports drinks) reduces sweat rate and increases the chance of heat injury. Generally, during exercise the focus should be on replacing fluids. Drink water and other fluids regularly throughout the day, as well as before, during, and after your workouts.
- **Watch the Thermostat:** Exercising in temperatures greater than skin temperatures (98.6° F or 37° C) results in a heat gain. While evaporating sweat cools



the body, you still may not be able to keep up with the heat gain.

- **Dress for Success:** As much skin surface as possible should be exposed to encourage evaporation (but use a sun block to reduce exposure to dangerous UV rays). Wear light-colored clothing made from fabrics that wick sweat to the surface for evaporation; materials impermeable to water will increase the risk of heat injury and should be avoided.
- **Hot and Humid:** Heat is one thing, but high humidity is another. High humidity can impede the body's ability to cool itself because your sweat won't evaporate quickly.
- **Watch Your Intensity:** During times of high heat and humidity, your heart rate increases as your body tries to combat the heat. A typical workout may not seem typical. Monitor your intensity and avoid racing or demanding workouts in the heat.
- **Wind:** Although wind increases your risks during cold weather exercise, it can decrease them in hot weather—as long as you are well hydrated. Wind increases the rate of evaporation, which in turn can help keep you cooler. But don't be misled by the wind; sun block, water, and monitoring your heart rate are still important.

Veggie snacks

Cut up a batch of vegetables to eat as a snack or toss on a salad. Red peppers, cucumbers, carrots, cauliflower, and broccoli are easy options to keep on hand.



Cold weather safety

- Wear appropriate clothing in layers that provide insulation.
- Remove layers of clothing as you warm up.
- Stay as dry as possible.
- Don't exercise in extreme cold. Take your workout indoors.



Hot weather safety

- Learn how to deal with heat illness symptoms (cramps and lightheadedness, for example).
- Exercise during the cooler parts of the day to avoid heat gain from the sun, or from building or road surfaces heated by the sun.
- Gradually increase exposure to heat and humidity over a period of 7 to 10 days.
- Drink water before, during, and after exercise.
- Wear only shorts and a tank top to expose as much skin as modestly possible (and use sun block for protection from UV rays).
- Don't wait until you feel thirsty to start drinking fluids; if you're thirsty, dehydration has already begun.

Air quality

- Do reduce your exposure to pollutants prior to exercise, because the physiological effects are time- and dose-dependent.
- Do avoid areas where you might receive a large dose of carbon monoxide, such as smoking areas, high-traffic areas, and urban environments.
- Don't schedule activities during the times when pollutants are at their highest levels, such as during morning or evening rush hour.



Get Fit, Not Injured

It's a fact of life that when you exercise, you run the risk of injuring yourself.

However, that risk is less than the harm you cause your body by not exercising. People who participate in highly vigorous activities for a long duration (longer than 40 minutes at a time) and do so more than four times a week have an increased risk of injury. But that doesn't mean that exercise is not safe. The key is to exercise wisely and to remember to start slow and gradually build the amount of activity you do.

Always listen to your body; if you experience unusual soreness or fatigue, take a break, and return to your workout at a lower intensity or duration once the discomfort is gone.

Does It Hurt?

When you begin a new activity, it's normal to experience some muscle soreness 24 to 72 hours afterward. If you continue to do the activity at low intensities, you should be able to do it without soreness. That said, you may have an injury if you experience any of the following:

- Extreme tenderness when a body part is touched.
- Pain while at rest, pain that does not disappear after warming up, joint pain, or increased pain when moving the body part.
- Swelling or discoloration.
- Changes in normal body function.

At the first sign of any of these symptoms, try some self-treatment. Remember, the **PRICE** is right for self-treatment:

- **Protect** the body part from further damage. Stop exercising or reduce the intensity with which you exercise.
- **Rest** the body part: Do not try to "walk off" the injury.
- **Ice** the injured area to reduce the blood flow to the injured site (several minutes at a time periodically, for 24 to 72 hours).
- **Compress** the area firmly while holding the ice in place. After the ice is removed, you may want to wrap the injured area.
- **Elevate** the injured body part whenever possible to reduce swelling and blood flow to the injured area.

These methods can be used for minor acute injuries. However, a medical professional should check extreme tenderness, pain, swelling, or discoloration. Or if you have a minor ache or pain that doesn't go away after a week or so of treatment, check with your doctor.

Too Much, Too Soon

Many sports injuries occur because you try to do too much too fast. They occur when you have excessive frequency, volume, or intensity of training combined with inadequate rest and recovery. How do competitive athletes train so hard and not get hurt? They increase their workouts gradually. You'd be amazed how much you will be able to do if you gradually increase your training load over time. Just monitor your progress and if you notice your heart rate or exertion level going up when it shouldn't, or if you notice pain when you exercise, slow down or rest for a bit.

Measuring Your Improvement

You may want to ask an exercise specialist at your local gym or recreation center to test your cardiovascular function, body composition, muscular strength, endurance, and flexibility.

If you don't have access to a club or recreation center, the Adult Fitness Test can be your guide. This free, web-based test provides you with an estimate of your aerobic fitness, muscular strength and endurance, flexibility, and your body composition. The results on each test provide you with a measure from which you can track your progress in each area as you become more physically active.

Taking the Adult Fitness Test is very easy and requires minimal equipment. The website (www.adultfittestest.org) gives you all the details and instructions you need, or you can follow the instructions below. Enter your scores on the website and receive feedback on your effort.

Aerobic Fitness

One-mile walk or 1.5-mile run

Muscular Strength/Endurance

Half sit-ups

Push-ups

Flexibility

Sit and reach

Body Composition

Body mass index (BMI)

Aerobic Fitness

The less aerobically fit you are, the quicker you tire out when you exercise. You can tell your aerobic fitness is improving when you can work out longer or harder than before. As your aerobic fitness improves, you will be able to do the same workout with less effort and at a lower heart rate, because your heart and circulation are working at a more efficient level.

The One-Mile Walk Test

DO NOT take this test until you are routinely walking for 15 to 20 minutes several times per week.

In order to complete the one-mile walk test, you need to be able to take your pulse. Your pulse can be found on the inside of your wrist at the base of your thumb (see page 21).

Equipment/Test Setting:

For this test you must walk at a brisk speed for one mile (4 laps around a standard quarter-mile track, located at many schools and in some parks), and take your heart rate at the end of the test. A partner can help with timing and recording the results. When you take the walk test, you will need to have a watch or stop watch that you start at the beginning of the test and stop at the finish line. Your partner will need to have a separate watch with a second hand so he or she can count off 10 seconds while you count your pulse rate for 10 seconds, immediately as you cross the finish line.

Using a Treadmill:

The one-mile walk test can be performed on a treadmill. When walking on the treadmill, be sure to let your arms swing freely at your sides (do not hold on to the handrails). Keep the incline of the treadmill level (at zero). You or your partner need to record the time on the treadmill when you complete 1 mile and then follow steps 4–7 below.

Directions:

1. Walker starts the stopwatch to begin the one-mile walk.
2. The partner counts the laps and lets the walker know how many laps are left.
3. The walker stops the stopwatch while crossing the finish line.
4. The walker finds his/her pulse immediately and the partner provides a 10-second count using the stopwatch (“Ready, begin,” and at end of 10 seconds, “Stop”).
5. The partner records the pulse rate for 10 seconds and multiplies by 6 to calculate heart rate in beats per minute.
6. The partner records the time for the one-mile walk in minutes and seconds.
7. The walker completes one more lap at a slower speed to cool down.

The 1.5-Mile Run Test

Do not try to take this test unless you run at least 20 minutes continuously three or more times a week. If you do not do any type of physical activity (walking, swimming, bicycling), DO NOT try to take this test.

Equipment/Test Setting:

For this test you must run all out for 1.5 miles (6 times around a standard quarter-mile track, located at many schools and some parks) and record your time. Keep in mind the need to pace yourself for the full 1.5 miles. A partner can record your time and count laps. You may also want to keep track of your time using your own watch as a back-up.

Using a Treadmill:

This test can be performed on a treadmill. When running on the treadmill, be sure to let your arms swing freely at your sides (do not hold on to the handrails). Keep the incline of the treadmill level (at zero). You or your partner need to record the time on the treadmill when you complete 1.5 miles at your testing speed (keep in mind it takes a few seconds to increase the speed of the treadmill).

Directions:

1. Runner completes a warm-up of slow jogging.
2. The runner starts on the partner’s command—when the partner starts the watch. Runner runs as quickly as possible for 1.5 miles.
3. The partner counts the number of laps and lets the runner know how many laps are left.
4. The partner stops the watch when the runner crosses the start/finish line and records the time.
5. The runner cools down by jogging slowly until walking for at least one lap.

Muscular Strength and Endurance

Muscular strength and endurance are critical to both your health and ability to carry out daily activities, such as performing household tasks (yard work, carrying groceries) or job-related tasks (lifting or moving heavy objects). There are many ways to measure your muscular strength and endurance, often with a focus on a specific group of muscles. The half sit-up and push-up tests are quick and easy ways to measure upper body and abdominal (stomach) strength.

The Half Sit-Up Test*

This test is called the “YMCA Half Sit-Up” test, which is a curl-up test since you lift your trunk only partially off the floor.

Equipment/Test Setting:

To get the best results, consider placing four small pieces of tape 3.5 inches apart on a mat or rug to identify how far up you should raise when doing the half sit-up. The piece of tape for the start position should be at the end of your fingertips when you are lying flat on your back. The second (ending) piece of tape should be 3.5 inches from the starting tape. You need to be able to feel the tape as your fingers move across the mat or rug from the starting and ending positions. A partner can help with counting the number of half sit-ups you do.

You will need:

- Mat or rug
- Stopwatch or watch with a second hand
- Four strips of tape



Directions:

1. Lie face-up on mat or rug with knees at a right angle (that is, 90°) and feet flat on the ground. The feet are not held down.
2. Place hands palms facing down on the mat or rug with the fingers touching the first piece of tape.
3. Flatten your lower back to the mat or rug, and half sit-up so that your fingers move from the first piece of tape to the second. Then return your shoulders to the mat or rug and repeat the movement as described. Your head does not have to touch the surface. Keep your lower back flat on the mat or rug during the movements—if you arch your back, it can cause injury.
4. Your partner will count the number of half sit-ups performed in one minute. Pace yourself so you can do half sit-ups for one minute.
5. Record your results.

* The half sit-up test is reprinted from the YMCA Fitness Testing and Assessment Manual, 4th edition, 2000, with permission of YMCA of the USA, 101 N. Wacker Drive, Chicago, IL 60606.

The Push-Up Test (Standard and Modified*)

If you have shoulder, elbow, or wrist pain, doing this test may aggravate your condition.

Less muscular strength and endurance of the upper body and shoulder group may increase the chances that a person may have shoulder pain in middle or older adulthood.

In the standard push-up test, you push your body up and down using muscles in your arms, shoulders, and chest, while keeping your body straight with your feet serving as the pivot point. Your body weight is your workload. Females can reduce the load by having their knees touching the floor and acting as the pivot point. In this test, only the upper body is the load.



Directions:

1. Males start in the standard push-up position (elevated). Hands should be shoulder width apart, arms extended straight out under the shoulders, back and legs in a straight line, and toes curled under. Females do a modified push-up with knees bent and touching the floor. Starting in the up position, hands should be slightly ahead of the shoulders so hands are in the proper position for the downward motion.
2. Lower until the chest is about 2 inches from the floor and rise up again.
3. Perform the test until you cannot complete any more push-ups while keeping your back straight and, if you are a male, keeping the legs straight as well. The key to completing the test properly is to maintain a rigid position and keep the back flat. If necessary, you can take a brief rest in the up position (not lying on the floor).
4. Record your results.

Plant-based proteins

Eat plant-based protein foods more often. Beans and peas (kidney, pinto, black or white beans; split peas, chickpeas, or hummus), soy products (tofu, tempeh, veggie burgers), nuts, and seeds are naturally low in saturated fat and high in fiber.



* Normative data for the push-up and modified push-up are based on a population that is 20 years of age and older. These data and the test protocol are used with permission of The Cooper Institute, 12330 Preston Road, Dallas, TX 75230.

Flexibility

Being able to move all of your joints through their full range of motion is important for good joint function as well as being able to walk, lift, and step normally. For example, if your knees cannot extend all the way, walking with bent knees puts extra stress on the hip and low back. The ability to move a joint through its normal range of motion is affected by the condition of the joint itself (for example, if you have arthritis) and the muscles and connective tissues surrounding the joint. A short (tight) muscle limits the joint's ability to move normally. If the hamstrings (muscles on the back side of the upper leg) are too short, they limit the ability of the pelvis to tilt, which directly affects the lower (lumbar) spine and can lead to low back pain.

One of the most common fitness tests used to measure flexibility is the sit-and-reach test. This test, while not perfect, provides some information about the hamstring muscle group. The more the hamstrings allow one to reach forward, the less restricted is movement of the pelvis.



The Sit-and-Reach Test

If you have low-back pain, doing this test may aggravate your condition.

Equipment/Test Setting:

Tape measure or yardstick and tape and a partner to help record your score.

Directions:

1. Perform a series of static stretches. These stretches should focus on stretching the trunk and legs. Following the stretches, you may also want to do some brisk walking.
2. Place a yardstick on the floor and put a long piece of masking tape over the 15-inch mark at a right angle to the yardstick.
3. Remove your shoes and sit on the floor with the yardstick between the legs (0 mark close to your crotch), with your feet about 12 inches apart. Heels should be at the 14-inch mark at the start of the stretch to account for the fact that the legs tend to move forward when performing the stretch.
4. With the fingertips in contact with the yardstick, slowly stretch forward with both hands as far as possible, noting where the fingertips are to the closest inch. Exhaling when you stretch forward and dropping the head may allow you to stretch a bit farther. Do not use fast and sudden motions, which can injure your hamstring muscles.
5. Perform the stretch three times with a few seconds of rest between stretches.
6. Record the best measurement.

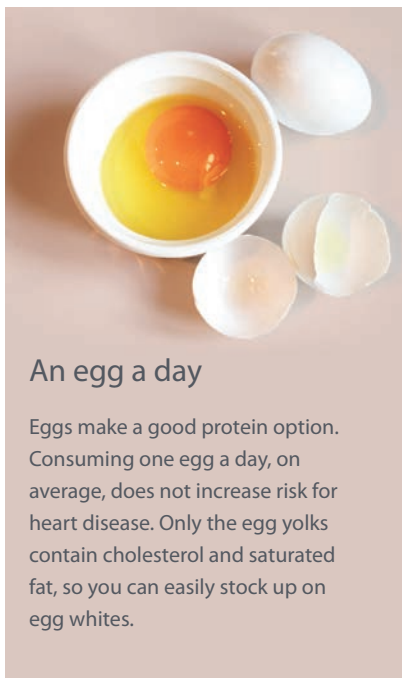
Body Composition

Body Mass Index (BMI)

BMI is a number that is based on a person's weight and height. It can be used to identify people at risk for some health problems. Higher BMI values indicate greater weight per unit of height.

BMI is related to the risk of disease and death. The score is valid for both men and women, but it does have some limitations:

1. It may overestimate body fat in athletes and others with a muscular build, and
2. It may underestimate body fat in older persons and others who have lost muscle mass.



An egg a day

Eggs make a good protein option. Consuming one egg a day, on average, does not increase risk for heart disease. Only the egg yolks contain cholesterol and saturated fat, so you can easily stock up on egg whites.

BMI Directions:

Weight:

1. Weigh yourself with shoes off.
2. Record this measurement.

Height:

1. With shoes off, stand with your back to the wall, heels close together and as close as possible to the wall.
2. Have your partner place the yardstick on top of your head such that it touches the wall and is parallel to the floor. Partner makes a small mark on the wall under the yardstick. Measure the distance from the floor to the mark (in feet and inches).
3. Record this measurement.

Calculate your BMI using this formula:
 $w(\text{kg}) / h(\text{m})^2$

Or use the online calculator at:
www.presidentschallenge.org
(click Get Motivated, then BMI Calculator)

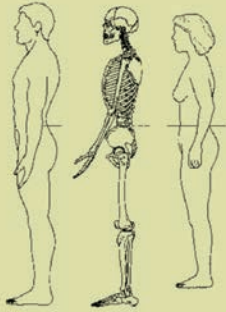
Waist Circumference

Equipment:

Scale, tape measure or a piece of string, yardstick, pencil.

Waist circumference can serve as another indicator for some health risks for individuals who may have a BMI classification of normal or overweight (a BMI score between 18.5 and 29.9). A high waist circumference (more than 40 inches for males and more than 35 inches for females) is associated with an increased risk for type 2 diabetes, elevated blood lipids (fats like cholesterol and triglycerides), hypertension, and cardiovascular disease in patients with

Disease risk relative to normal weight and waist circumference



Measuring Tape Position for Waist (Abdominal) Circumference

	BMI (kg/m ²)	Men ≤102 cm (≤40 in.) Women ≤88 cm (≤35 in.)	Men >102 cm (>40 in.) Women >88 cm (>35 in.)
Underweight	18.5	—	—
Normal+	18.5–24.9	—	—
Overweight	25.0–29.9	Increased	High
Obesity	30.0–34.9	High	Very High
	35.0–39.9	Very High	Very High
Extreme Obesity	≥40	Extremely High	Extremely High

Source: National Heart, Lung, and Blood Institute, NIH, Obesity Education Initiative: Electronic Textbook, www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/4142.htm

a BMI between 25 and 34.9. Recording changes over time in waist circumference is important since it can change even when body weight remains the same. The chart above can help you interpret your results.

Waist Circumference Directions:

1. Stand upright and have your partner wrap the tape measure or a piece of string around your bare abdomen just above the hip bones (see diagram, above). Pull the string or tape measure so it's snug, but not compressing the skin. Keep the tape level.
2. Your partner holds thumb and finger on the measuring tape or string where the two ends meet. If you use a piece of string, have a yard stick or other measuring device handy so you can measure the string.
3. Record this measurement (in inches).

Are You Active Enough?

One of the greatest rewards for an active lifestyle is seeing improvement. How can you monitor and evaluate your progress?

Measure Your Physical Activity

The Presidential Active Lifestyle Award Challenge

The Presidential Active Lifestyle Award: Activity + Nutrition (PALA+) is a good way to help you make and keep a commitment to being active and eating right. It helps you set realistic goals to encourage regular physical activity and healthy eating habits for a lifetime. This program is especially for those who are not already active on a regular basis. The PALA+ challenge is also a good tool to use to help you prepare to take the Adult Fitness Test, if you are not already regularly active.

1. Choose a start date.

You can take the PALA+ challenge by yourself, or together with friends and family. Choose activities that you enjoy and make you feel good. You can log activities as routine as riding your bike to work or walking to the market. If you are trying a new physical activity through your recreation department or gym, you may want to plan your start date to coincide with the date of your first class to help you get started on the right track.

2. Get active.

You need to meet your daily activity goal of 30 minutes a day at least 5 days per week, for a total of 6 weeks. You may also enter the number of steps you take each day tracked on a pedometer (at least 8,500 steps each day). You can take up to 8 weeks to complete the program. So, if you get off track one week or are sick, don't worry. You can complete the challenge.

3. Make healthy eating choices.

Living an active and healthy life means fueling your body with the good foods it needs to help you feel and be your best. There are eight healthy eating goals for you to choose from. The first one you choose is one you will work on the entire 6–8 weeks of the challenge. You'll add on a new healthy eating goal each week. Some goals you should try to follow on a daily basis, for each meal and snack. Other goals are weekly reminders or things to think about when shopping for groceries.

4. Track your activity.

An online activity log makes it easy for you to select and track your healthy eating goals and the time you are physically active. You can log your time as often as you want. If you don't want to log your activity online, a free paper log is available, too. Keep in mind that using the paper log means there won't be an online record of the activity points you earn that could apply to other programs in the President's Challenge (the Presidential Champions challenge).

Visit www.presidentschallenge.org to get started. To access the paper log, click on Download Tools & Resources, then Forms.

5. Earn your award.

When you reach your goal, the Active Lifestyle program recognizes your accomplishment with special awards. Awards are available online, or by mail, fax, or phone. You can then continue earning awards in the PALA+ program or move on to the Presidential Champions challenge.

The Presidential Champions Challenge

The Presidential Champions challenge is for anyone who doesn't need to be reminded to be active most days each week and wants a longer term challenge. Taking part in the program takes just a few simple steps:

1. Create your log.

The Presidential Champions challenge can be completed online only. Visit www.presidentschallenge.org to get started. If you already have an online log you started through the PALA+ challenge, you can easily switch your setting to start the Champions challenge.

2. Challenge a friend or family member.

The website allows you to create and join groups. Knowing someone else is in it with you can help to keep you on track.

3. Get active.

Your goal is to see how many points you can earn through activity. You'll earn points for every activity you log, from a 10-minute bike ride to a 55-minute water aerobics class. Points are based on the amount of energy each activity burns. So the more active you are, the more points you'll get.

4. Earn your award.

The Presidential Champions program recognizes your accomplishments with special awards. The first goal to aim for is a bronze award. Then you can keep going for a silver and gold. Awards are available online, or by mail, phone, or fax.

Hydration

Drinking water with and between meals can help keep calories in check. If water just won't cut it, enjoy the beverage of your choice, but choose a small portion.





You'll find all the program details online at www.presidentschallenge.org. The only thing left to do is to log on and sign up.

Presidential Champions Gold Award

For anyone who earns 160,000 points in the Presidential Champions Program.

Presidential Champions Silver Award

For anyone who earns 90,000 points in the Presidential Champions Program.

Presidential Champions Bronze Award

For anyone who earns 40,000 points in the Presidential Champions Program.

Feeling Fit!

Another way to evaluate your physical activity program is to actually see and feel the difference an active lifestyle makes. You will be able to feel your aerobic improvements when you do a typical activity (like going up stairs) and it seems easier. In addition, you will experience more energy in your daily routine. You'll have more vitality to enjoy your family and more vigor to get a task accomplished.

Be reasonable with your expectations of weight loss when you start exercising. First, know that you will get health benefits whether you lose weight or not. Second, you won't see much weight loss if you start eating more with exercise. Third, it will take time for any weight loss to occur. But once you are fit, you have more flexibility in how to attain a healthy weight, since you can increase your level of activity and/or decrease your caloric intake (although it is best to do both). Also, weight loss is not the only issue. Physically active people, on average, gain less weight as they age.



Changes in flexibility will be obvious as you find it easier to do routine tasks (such as reaching for items) and you will find that you have a larger range of motion. You can change your movements suddenly and you may not be so stiff in the morning.

As you improve your muscular strength and endurance, everyday tasks become easier. It won't be an issue to carry the groceries or run to catch the phone.

Your ability to continue to use your muscles with less fatigue shows improvement in muscle strength and endurance. You'll be able to keep up with your kids. You will also see that you can use more resistance in your strength training and still do the same number of reps.

Perhaps most important, you should "feel good" after you exercise, sleep better, and have extra strength and energy to do those things that enrich your life. You may also be less depressed and find it easier to cope with some stressors as a result of your active life. Many people who are fit and maintain a healthy weight have reduced risk of disease and get sick less often.

Stay Active for Life

The many benefits of an active lifestyle can be lost with a return to sedentary living. Thus, it is important to find activities that are enjoyable at all ages. What you enjoy at age 10, you may not enjoy at 20. And again, in midlife you may like to play tennis, while as you get older walking may make you feel good. It doesn't matter what you do, it matters that you do it. Be a role model for children, youth, and older adults, as you help them see how important regular activity is to you, and plan activities to keep you active for life.

Fruit treats

Salad bars aren't just for salads. Instead of ordering a calorie-laden dessert when dining out, try grabbing some fruit from the salad bar.



Resources

<http://go4life.niapublications.org>

(exercise and physical activity tips from the National Institute on Aging)

www.acefitness.org

(fitness information from the American Council on Exercise)

www.acsm.org/access-public-information/newsletters/fit-society-page

(health and fitness e-newsletter from the American College of Sports Medicine)

www.americanheart.org

(heart-healthy tips from the American Heart Association)

www.insulindependence.org

(tips on diabetes management and exercise)

www.eatright.org

(food and nutrition information from the Academy of Nutrition and Dietetics)

www.fitness.gov

(news and healthy lifestyle information from the President's Council on Fitness, Sports and Nutrition)

www.myplate.gov

(nutrition guidelines and other helpful eating tips from the U.S. Department of Agriculture)

www.nhlbisupport.com/bmi

(body mass calculator from the National Heart, Lung, and Blood Institute)

www.presidentschallenge.org

(fitness programs for all Americans from the President's Challenge)

www.usda.gov

(food and nutrition information from the U.S. Department of Agriculture)





Improve and maintain your vigor and the quality of your life by keeping active and making healthy food choices.

The President's Challenge is here to help Americans of all ages and abilities set and reach their health and fitness goals.

www.presidentschallenge.org





The President's Challenge

Physical Activity, Nutrition & Fitness Awards Program

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