



# THE ADULT FITNESS TEST

The following pages contain instructions and tips on performing each part of the fitness test. You can do the adult fitness test events alone, but they are easier to do with a partner. Find a partner who would like to do these tests with you. In addition, exercising with a partner is a good way to stay active in the long run.

When you are ready to test, use the data collection form at the back of this booklet. You do not have to complete all the tests at once. Be sure to do a short warm-up of easy stretching and slow walking before you perform each event.

After you have completed all the testing events, enter your data online to receive an evaluation. Later, you can take the test over again and compare your results to see how your fitness has changed.

## FITT

The adage “use it or lose it” says it all. For example, not using your muscles results in a loss of strength and function. Please refer to the FITT box for more information. A FITT box is provided with each test item to help you improve.

**F (Frequency)** How many times you do an exercise each week or month.  
(For example, I walk 7 days a week; I lift weights 3 times a week.)

**I (Intensity)** How strenuous or heavy the exercise is in terms of weight lifted, speed of movement or effort exerted. (For example, I walk at 3.5 miles per hour; I lift weights that are 70% of the maximum I can lift.)

**T (Time)** How long you do the exercise per session. (For example, I walk for 30 minutes; I lift the weight 10 times with a 1-minute rest at the end, and repeat that twice.)

**T (Type)** What kind of exercise you do (for example, biking vs. walking, or lifting weights vs. doing push-ups).

# Aerobic Fitness

Aerobic fitness is also known as cardiovascular fitness. It relates to the heart, blood vessels, and lungs working together to deliver oxygen-rich blood to the muscles during exercise. A high level of aerobic fitness is associated with lower risks of several diseases, including high blood pressure and coronary heart disease.

To measure aerobic fitness, perform either the one-mile walk test, 1.5-mile run, or 400-meter test:

## 1-Mile Walk

**Alert!** We suggest that you 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.

## 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. We recommend that you do the test with a partner who can help with timing and recording the results. When you take the walk test, you will need to have a 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

This 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 one 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 six to have 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."

## **1.5-Mile Run**

**Alert!** 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. We recommend that you take this test with a partner who 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 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").
6. The partner records the pulse rate for 10 seconds and multiplies by six to have heart rate in beats per minute.
7. The partner records the time in minutes and seconds.
8. The runner cools down by jogging slowly until walking for at least one lap.

## **400-Meter Walk Test**

**Alert!** We suggest that you DO NOT take this test unless you are routinely walking for 15 to 20 minutes several times per week. This test is designed for older adults between the ages of 60 and 90 years.

In order to complete the test, you will need to place markers 20 meters apart, and then walk 10 laps around the markers. The test requires a location where you can walk at least 20 meters (21 yards 31 inches = 65 feet 7 inches) in a straight line, such as an indoor or outdoor hallway or outdoors on a flat surface.

Check with your health care provider to determine whether or not walking the 400-meter course as quickly as possible is safe for you.

### **Equipment/Test Setting**

You may want to do the test with another person. This test requires counting laps around a course, timing how long it takes to walk 400 meters, and counting the number of steps to walk 20 meters. It is easier and safer if another person counts and times the test for you.

To set up the course, you need two small cones or other objects to mark 20 meters and a tape measure for measuring the course. You'll also need a stopwatch.

### **Directions**

Stop the test if you experience significant symptoms such as chest pain, leg pain, trouble breathing, shortness of breath, dizziness, faintness, or exhaustion.

1. To set up the course, place two small cones spaced 20 meters apart. If you don't have cones to mark the course, choose a marker that you can't easily trip over, like chalk.
2. Warm up by slow or usual pace walking until you feel ready to do the test.
3. Next, walk from the start cone to the second cone (20 meters) as quickly as possible; counting how many steps it takes. The final step to count is the step where the toe of either foot first passes the second cone. Record the number of steps.
4. After recording the number of steps, take practice laps. Walk around the course as quickly as you can for about 1.5 minutes.
5. Rest for about 30 seconds after the practice laps.
6. Take the test. Walk 10 laps around the course as quickly as possible. Time how long it takes in seconds and record the time.
7. If you know how to take your heart rate, do so after you complete the test. This step is optional. Write down your heart rate in beats per minute. If you take drugs that control your heart rate, such as beta-blocker drugs, ignore this option. When asked to enter data on heart rate, don't enter anything—just leave it blank.

## What the results mean

Aerobic fitness is a measure of how much oxygen your body uses during exercise or physical work. The score is your maximal oxygen uptake and the higher the value, the better your aerobic fitness.

Higher levels of aerobic fitness have been related to reduced risk of many chronic diseases and conditions (for example, high blood pressure, diabetes, stroke, obesity, depression, some cancers). Higher fitness is also related to improved quality of life (for example, better mood, better ability to process thoughts and information, and enhanced bone health). Hence, we recommend that healthy adults with low fitness establish a goal of achieving at least the 25th percentile of aerobic fitness.

### How to improve aerobic fitness

Regular participation in moderate-to-vigorous physical activity will improve and maintain your aerobic fitness. The President's Challenge Presidential Active Lifestyle Award (PALA) can help you maintain a regular program of physical activity. We suggest that you complete the six-week PALA program before retesting your aerobic fitness.

### Re-testing your aerobic fitness

Periodically, you can repeat the one-mile walk or 1.5-mile run to determine if you have improved your aerobic fitness. Typically, you will be able to walk the mile or run the 1.5-miles faster, with your heart rate being the same or lower than in the first test if you have been following the FITT principles. Both changes (faster walk; lower heart rate) point to improvements in your aerobic fitness. Give yourself 6 - 12 weeks of consistent physical activity to allow for improvements.

## FITT

### Moderate and vigorous physical activity:

**Frequency:** 5+ days a week for moderate activity, 3-4 days a week for vigorous activity

**Intensity:** Moderate activity that is somewhat hard and elevates the heart rate above resting levels. Vigorous activity that is hard and elevates the heart rate above that for moderate levels, but you should not be breathless. An example of moderate physical activity is brisk walking; an example of vigorous physical activity is running.

**Time:** Moderate - At least 30 minutes each session (you can break this into three 10-minute or two 15-minute sessions); Vigorous - 20-30 minutes per session. Begin each session with a warm-up and finish with a cool-down.

**Type:** Activities that use large muscle groups (that is, arms, legs) such as walking, cycling, dancing, or swimming.

# Muscular Strength and Endurance

Muscular strength and endurance is 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.

This section describes two fitness tests for muscular strength and endurance: the Half Sit-Up and the Push-Up.

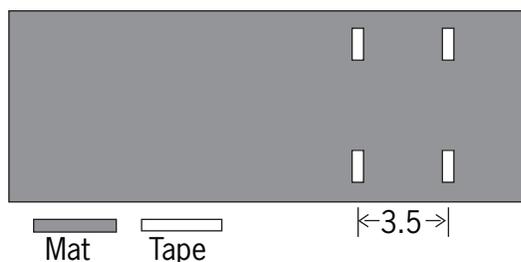
## The Half Sit-Up Test\*

One of the most frequently measured muscle groups is the abdominal (stomach) muscles. Several tests (for example, sit-up and curl-up tests) have been developed to measure mainly abdominal muscular strength and endurance. We are going to use an abdominal muscular strength and endurance test 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

You’ll need a mat or rug, stopwatch or watch with a second hand and four strips of tape to place 3.5 inches apart on mat or rug to provide a start and end position for the curl-up.

Placement of Tape Makers for YMCA Half Sit-up



Prepare the mat or rug with the tape strips as shown in the picture. You need to be able to feel the tape as your fingers move across the mat or rug from the starting and ending positions. We recommend that you do the test with a partner.

### Directions:

1. Lie face-up on mat or rug with knees at a right angle (that is, 90 degrees) 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 re-printed 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.*

## **Standard and Modified Push-Up\***

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

The muscles of the upper body and shoulders are another frequently measured muscle group. Several tests (for example, pull-up and push-up) are used to measure the strength and endurance of these muscle groups. 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 weight 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. Anyone unable to do a standard push-up should do a modified push-up to achieve a full range of motion. Females can choose a modified push-up test that reduces the load by having their knees touching the floor and acting as the pivot point or a full body (standard) push-up test. In this modified push-up test, only the upper body is the load.

The science indicates that females can choose to do either modified or standard push-ups for a test of upper body and shoulder muscular strength and endurance. Those females, 50 years or younger, are able choose to do either modified or standard push-ups for the test. Females 60 years or younger have the option of either test but will measure the standard push-ups at the 40 to 49 norm tables. Females 60 years and older should be using the modified push-up test as the science indicates norms for this test.

We are going to use standard push-ups and modified push-ups as our tests for upper body and shoulder muscular strength and endurance.

## 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 can choose to do a modified push-up or a full body (standard) push up. Modified push-ups start 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.

\* 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.

## What the results mean

**Half Sit-Up.** The half sit-up test is mainly an indicator of your abdominal muscular strength and endurance. However, you also use other muscle groups while performing the test. Scoring in the “below average” to “very poor” category shows that your muscular strength and endurance may be low and needs to improve. Low abdominal muscular strength and endurance may lead to muscle fatigue and may lead to back injury.

**Push-Up.** The push-up test score is an indicator of your upper-body and shoulder muscular strength and endurance. Scoring in the “below average” or “poor” category shows that your muscular strength and endurance may be low and needs to improve. Poor upper-body and shoulder muscular strength and endurance may lead to shoulder pain. Remember, better strength and endurance make everyday activities easier to do.

### How to improve muscular strength and endurance

You can improve your strength and endurance by repeating the same exercise more often, or by working against a heavier load and keeping the number of repetitions the same.

You can repeat the half sit-up movement and vary the load by having your arms in front of you (easiest) or placing them folded across the chest or behind your head (more difficult).

You can repeat the push-up movement and make them easier by doing them against a wall or harder by doing the standard push-up (most difficult).

## FITT

### Muscular strength and endurance:

**Frequency:** Do exercises at least three days a week.

**Intensity:** Vary the intensity (as mentioned in the “How to improve muscular strength and endurance” section above), but only as long as you can maintain the proper posture during the movement and keep movements controlled.

**Time:** Gradually do more push-ups or half sit-ups until you can do three sets of a movement. For half sit-ups, work towards doing three sets of 25 half sit-ups, and for push-ups work towards doing three sets of 10-20 push-ups (taking a short rest between each set).

**Type:** Start by mastering the testing movements (half sit-up and standard or bent knee push-up). Gradually add in more exercises and consider using equipment such as balance balls, barbells or dumbbells, or elastic tubing.

# 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 it restricts movement of the pelvis.

## The Sit-and-Reach Test

**Alert!** 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 <sup>1</sup>. 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 (zero 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 further. 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.

## What the results mean

The test score gives you an idea of how flexible you are for this particular task. Having a low score indicates that more work is needed to improve the ability of the hamstring muscle group to stretch when you do the sit-and-reach movement. Keep in mind that if the muscles in your low back are tight, that can also limit the score on this test.

## How to improve flexibility

Each joint is different and we need to do exercises specific for each joint to maintain or improve its unique range of motion. There is no test of “overall flexibility,” so you should plan a program of stretching exercises that involves most of your joints.

There are a variety of exercise programs (for example, Pilates and yoga) that naturally include stretching activities. However, many do not. For example, if you are a walker, runner, or cyclist you need to perform a group of specific stretches to work all of your joints.

There are a wide variety of stretches you can do to improve your flexibility. For some suggestions, please visit the links noted below as 1 and 2.

## FITT

### Flexibility: \*

**Frequency:** Do flexibility exercises at least three days a week.

**Intensity:** Take static stretches<sup>1</sup> to the point of tension, not pain.

**Time:** Hold each stretch for 10 to 30 seconds; repeat one or two more times.

**Type:** Begin with static stretches. Add dynamic stretches<sup>2</sup> to increase variety.

\* The sit and reach test is re-printed 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.

<sup>1</sup> **static stretches:** refer to [www.adultfitnessstest.org/testInstructions/flexibility/interpretImprove.aspx](http://www.adultfitnessstest.org/testInstructions/flexibility/interpretImprove.aspx) for instruction on static stretches

<sup>2</sup> **dynamic stretches:** refer to [www.adultfitnessstest.org/testInstructions/flexibility/interpretImprove.aspx](http://www.adultfitnessstest.org/testInstructions/flexibility/interpretImprove.aspx) for instruction on dynamic stretches

# 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. <sup>1</sup> 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 who have a muscular build, and
2. It may underestimate body fat in older persons and others who have lost muscle mass.

**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 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 a BMI between 25 and 34.9. <sup>2</sup> Recording changes over time in waist circumference is important since it can change even when body weight remains the same.

## BMI and Waist Circumference

**Equipment:** Scale, tape measure or a piece of string, yardstick, pencil

### Directions:

**Weight:** 1. With shoes off, measure your weight on a scale.

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.

## Waist circumference:

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 at [http://www.nhlbi.nih.gov/guidelines/obesity/e\\_txtbk/txgd/4142.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/4142.htm)). 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).

To find your BMI, use the chart on the next page.

## What the results mean

Classification	BMI	Disease risk * relative to normal weight and waist circumference	
		Men less than or equal to 40 inches Women less than or equal to 35 inches	Men greater than 40 inches Women greater than 35 inches
Underweight	less than 18.5		
Normal	18.5-24.9		
Overweight	25-29.9	Increased	High
Obese	30-34.9	High	Very High
Obese	35-39.9	Very High	Very High
Extremely Obese	greater than 40	Extremely High	Extremely High

\* Disease risk for Type II diabetes, hypertension, cardiovascular disease

**Source:** National Heart Lung and Blood Institute Obesity Education Initiative Guidelines on Overweight and Obesity Electronic Toolkit. [http://www.nhlbi.nih.gov/guidelines/obesity/e\\_txtbk/txgd/4142.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/4142.htm) Accessed: November 30, 2006

<sup>1</sup> More information available at <http://www.cdc.gov/nccdphp/dnpa/bmi/>; Accessed November 30, 2006.

<sup>2</sup> National Institutes of Health, National Heart Lung and Blood Institute. Obesity Education Initiative Guidelines on Overweight and Obesity Electronic Toolkit. Available on-line at [http://www.nhlbi.nih.gov/guidelines/obesity/e\\_txtbk/txgd/4142.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/4142.htm) Accessed: October 3, 2006.



## **How to improve BMI and Waist Circumference**

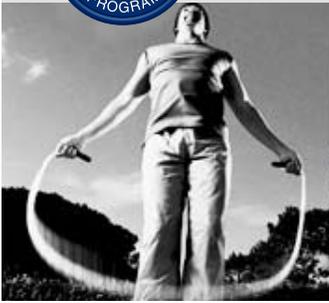
You can improve your BMI and waist circumference by losing weight.

Whether you gain or lose weight depends on caloric balance. The Dietary Guidelines for Americans ([www.mypyramid.gov](http://www.mypyramid.gov)) recommend at least 30 minutes of moderate-intensity activity, above usual activity done at home or work, most days (5+) of the week to reduce the risk of chronic disease. You can gain greater health benefits from doing more activity. To help manage your body weight and prevent gradual weight gain, 60 minutes of moderate to vigorous activity most days (5+) of the week is necessary. In order to sustain weight loss, 60-90 minutes of daily moderate-intensity activity may be necessary. For both weight maintenance and weight loss, it is important to keep food intake (calories) to a level that is equal to or less than the amount of calories you burn through daily activity.



THE PRESIDENT'S CHALLENGE

# ADULT FITNESS TEST



## Get Your Adult Fitness Test Score!

As you complete each of the testing events, enter your data into the fields below. When all testing events are completed, transfer the data to the online data entry form and submit your data.

Please complete the form below. Mandatory fields are marked \*

### PERSONAL INFORMATION

State \*

Gender \*  Male  Female

Age \* yrs

### AEROBIC FITNESS

Must enter data for the 400-meter walk, 1-mile walk, or 1.5-mile run.

400-Meter Walk Time

minutes

seconds

Number of Steps:

Heart Rate (after walk)

beats per minute

### OR

Mile Walk Time

minutes

seconds

Heart Rate (after walk)

beats per minute

Weight

lbs required for result calculation

### OR

1.5-Mile Run Time

minutes

seconds

### MUSCULAR STRENGTH

Half Sit-Ups

(in one minute)

Push-Ups

### FLEXIBILITY

Sit and Reach

inches

### BODY COMPOSITION

### BMI/BODY MASS INDEX

Enter height in feet AND inches.

Height:

feet

inches

Weight:

lbs

Waist Measurement:

inches