

Educational Materials Reviewed with Study Participants at Baseline and Week 8 Study Visits

Please note: The 1996 Physical Activity and Health Report of the Surgeon General was originally published by United States Centers for Disease Control and Prevention (CDC). The materials are available through the CDC for no charge online at <https://www.cdc.gov/nccdphp/sgr/adults.htm>. Reference to specific commercial products, manufacturers, companies, or trademarks does not constitute its endorsement or recommendation by the U.S. Government, Department of Health and Human Services, or Centers for Disease Control and Prevention.

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Physical Activity and Health

At-A-Glance

1996

**A NEW VIEW OF
PHYSICAL ACTIVITY**

This report brings together, for the first time, what has been learned about physical activity and health from decades of research. Among its major findings:

- People who are usually inactive can improve their health and well-being by becoming even moderately active on a regular basis.
- Physical activity need not be strenuous to achieve health benefits.
- Greater health benefits can be achieved by increasing the amount (duration, frequency, or intensity) of physical activity.

**THE BENEFITS OF REGULAR
PHYSICAL ACTIVITY**

Regular physical activity that is performed on most days of the week reduces the risk of developing or dying from some of the leading causes of illness and death in the United States. Regular physical activity improves health in the following ways:

- Reduces the risk of dying prematurely.
- Reduces the risk of dying from heart disease.
- Reduces the risk of developing diabetes.
- Reduces the risk of developing high blood pressure.
- Helps reduce blood pressure in people who already have high blood pressure.
- Reduces the risk of developing colon cancer.
- Reduces feelings of depression and anxiety.
- Helps control weight.
- Helps build and maintain healthy bones, muscles, and joints.
- Helps older adults become stronger and better able to move about without falling.
- Promotes psychological well-being.

**A MAJOR PUBLIC
HEALTH CONCERN**


Given the numerous health benefits of physical activity, the hazards of being inactive are clear. Physical inactivity is a serious, nationwide problem. Its scope poses a public health challenge for reducing the national burden of unnecessary illness and premature death.



WHAT IS A MODERATE AMOUNT OF PHYSICAL ACTIVITY?

As the examples listed in the box show, a moderate amount of physical activity* can be achieved in a variety of ways. People can select activities that they enjoy and that fit into their daily lives. Because amount of activity is a function of duration, intensity, and frequency, the same amount of activity can be obtained in longer sessions of moderately intense activities (such as brisk walking) as in shorter sessions of more strenuous activities (such as running):†

EXAMPLES OF MODERATE AMOUNTS OF ACTIVITY

Washing and waxing a car for 45–60 minutes	
Washing windows or floors for 45–60 minutes	
Playing volleyball for 45 minutes	
Playing touch football for 30–45 minutes	
Gardening for 30–45 minutes	
Wheeling self in wheelchair for 30–40 minutes	
Walking 1 3/4 miles in 35 minutes (20 min/mile)	
Basketball (shooting baskets) for 30 minutes	
Bicycling 5 miles in 30 minutes	
Dancing fast (social) for 30 minutes	
Pushing a stroller 1 1/2 miles in 30 minutes	
Raking leaves for 30 minutes	
Walking 2 miles in 30 minutes (15 min/mile)	
Water aerobics for 30 minutes	
Swimming laps for 20 minutes	
Wheelchair basketball for 20 minutes	
Basketball (playing a game) for 15–20 minutes	
Bicycling 4 miles in 15 minutes	
Jumping rope for 15 minutes	
Running 1 1/2 miles in 15 minutes (10 min/mile)	
Shoveling snow for 15 minutes	
Stairwalking for 15 minutes	

*A moderate amount of physical activity is roughly equivalent to physical activity that uses approximately 150 Calories (kcal) of energy per day, or 1,000 Calories per week.

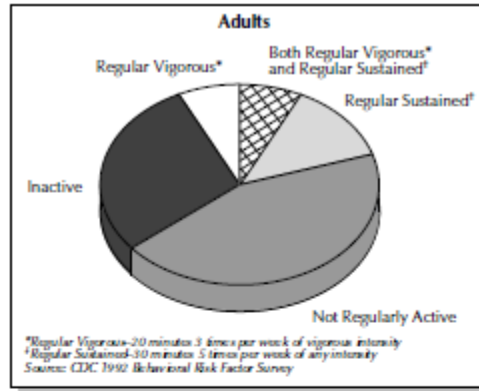
†Some activities can be performed at various intensities; the suggested durations correspond to expected intensity of effort.

PRECAUTIONS FOR A HEALTHY START

To avoid soreness and injury, individuals contemplating an increase in physical activity should start out slowly and gradually build up to the desired amount to give the body time to adjust. People with chronic health problems, such as heart disease, diabetes, or obesity, or who are at high risk for these problems should first consult a physician before beginning a new program of physical activity. Also, men over age 40 and women over age 50 who plan to begin a new **vigorous** physical activity program should consult a physician first to be sure they do not have heart disease or other health problems.

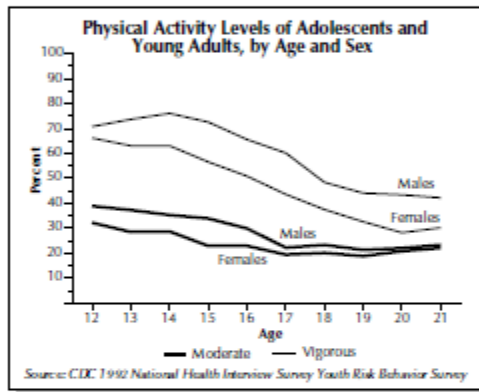
Adults

- More than 60 percent of adults do not achieve the recommended amount of regular physical activity. In fact, 25 percent of all adults are not active at all.
- Inactivity increases with age and is more common among women than men and among those with lower income and less education than among those with higher income or education.



Adolescents and Young Adults

- Nearly half of young people aged 12–21 are not vigorously active on a regular basis.
- Physical activity declines dramatically with age during adolescence.
- Female adolescents are much less physically active than male adolescents.



High School Students

- In high school, enrollment in daily physical education classes dropped from 42 percent in 1991 to 25 percent in 1995.
- Only 19 percent of all high school students are physically active for 20 minutes or more in physical education classes every day during the school week.

This report identifies promising ways to help people include more physical activity in their daily lives.

- Well-designed programs in schools to increase physical activity in physical education classes have been shown to be effective.
- Carefully planned counseling by health care providers and worksite activity programs can increase individuals' physical activity levels.
- Promising approaches being tried in some communities around the nation include opening school buildings and shopping malls for walking before or after regular hours, as well as building bicycle and walking paths separated from automobile traffic. Revising building codes to require accessible stairwells is another idea that has been suggested.

Older Adults

No one is too old to enjoy the benefits of regular physical activity. Of special interest to older adults is evidence that muscle-strengthening exercises can reduce the risk of falling and fracturing bones and can improve the ability to live independently.

Parents

Parents can help their children maintain a physically active lifestyle by providing encouragement and opportunities for physical activity. Family events can include opportunities for everyone in the family to be active.

Teenagers

Regular physical activity improves strength, builds lean muscle, and decreases body fat. It can build stronger bones to last a lifetime.

Dieters

Regular physical activity burns Calories and preserves lean muscle mass. It is a key component of any weight loss effort and is important for controlling weight.

People with High Blood Pressure

Regular physical activity helps lower blood pressure.

People Feeling Anxious, Depressed, or Moody

Regular physical activity improves mood, helps relieve depression, and increases feelings of well-being.

People with Arthritis

Regular physical activity can help control joint swelling and pain. Physical activity of the type and amount recommended for health has not been shown to cause arthritis.

People with Disabilities

Regular physical activity can help people with chronic, disabling conditions improve their stamina and muscle strength and can improve psychological well-being and quality of life by increasing the ability to perform activities of daily life.

For more information contact:

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Division of Nutrition and Physical Activity, MS K-46
4770 Buford Highway, NE
Atlanta, Georgia 30341
1-888-CDC-4NRG or 1-888-232-4674 (Toll Free)
<http://www.cdc.gov>

The President's Council on Physical Fitness and Sports
Box SG
Suite 250
701 Pennsylvania Avenue, NW
Washington, DC 20004

The Best Food Choices

Today we know more about nutrition than ever before. There is a great deal of information out there and it can be hard to sort through sometimes. So how do we navigate it all? For starters, it will help to know the general principles of healthful eating listed below.

Eat more vegetables, especially [non-starchy vegetables](#).

- Choose fresh, frozen, and canned without added salt or fat.
- Include a variety of types and colors.

Choose [whole grain foods](#) over foods made with refined grains and flours.

- Try to make at least half the grains you eat whole grains.
- When buying pasta, breads, tortillas, crackers, and cereal, choose those with a whole grain listed as the first ingredient.
- Switch from sugary cereals to unsweetened whole grain cereal or oatmeal.

Choose [lean protein foods](#).

- Try to include fish twice per week.
- Choose vegetarian sources of protein often such as beans and soy-based products.
- Eggs and egg substitute are also great sources of protein.
- Remove the skin from chicken and turkey.
- Choose lean cuts of beef and pork, such as those that end in "loin" (pork loin and sirloin).

[Fruit](#) is also a great option and can curb your sweet tooth.

- Choose fresh, frozen, or canned fruit without added sugars.

Choose [low-fat milk and dairy](#).

- 1% or skim milk, or unflavored soy milk are best.
- Non-fat or low-fat yogurt (plain or sweetened with artificial sweetener).
- Opt for reduced-fat cheeses or cottage cheese.



Choose healthy fats in moderation and limit unhealthy [fats](#).

- Healthy fats include vegetable oils, mayonnaise, trans-free margarine, margarine with plant sterols and stanols, [avocado](#), olives, nuts, and seeds.

Some additional guidelines:

- Cut back on high calorie snack foods and desserts.
- Reduce intake of chips, cookies, cakes, full-fat ice cream, etc.
- Watch your portion sizes.
- Eating too much of even healthful foods can lead to weight gain.
- If you choose to drink [alcohol](#), do so in moderation. (Two or less drinks per day for men and one or less drinks per day for women.)

More information on these food groups can be found in our [What Can I Eat?](#) section.

Think about the foods you usually eat and compare them to the choices listed on each page. Are you making the best choices most of the time or is there room for improvement?

- See more at: <http://www.diabetes.org/food-and-fitness/weight-loss/food-choices/the-best-food-choices/#sthash.jBN4USXR.dpuf>

Be More Active

Along with healthy eating, being active can help manage diabetes.

Being active can lower your:

- blood glucose (sugar)
- blood pressure
- cholesterol

It also:

- lowers your risk for heart disease and stroke
- relieves stress
- makes your heart, muscles, and bones strong
- helps insulin work better
- improves your blood flow
- keeps your joints flexible

What kinds of physical activity should be part of my routine?

You should include three kinds of activities:

- aerobic exercise
- being active throughout the day
- strength training

Real-Life Stories from People with Diabetes

These people chose to add physical activity to their daily routine. Here's why:

Darlene S.: My little girl wanted me to walk with her to the playground. When I told her I couldn't walk that far, she said we should start walking a little each day so I'll be healthy and live a long time.

Charlie M.: After my heart attack, I started walking almost every day but I didn't keep it up. I remember how great I felt—I had lots of energy. I'd like to get back into that routine so I can feel that great again.

Rosita S.: The day I couldn't fit into my size 14 pants, I said to myself, "That's it! It's time for me to lose weight."

Sadie E.: I want to set a good example for my grandson so he won't get diabetes. He's only 9 but he's already heavy and the kids make fun of him. Maybe we can go for walks together.

How about you? Do you have a reason to become more active? Write it here:

Aerobic exercise

Aerobic exercise is activity that gets your heart rate up and helps your body use oxygen better. For most people, it's best to aim for a total of about 30 minutes a day, at least 5 days a week of aerobic activity. If you are trying to lose weight, you may need to do at least 60 minutes a day.

If you haven't been very active recently, start out with 5 or 10 minutes a day. Work up to more time each week. Or split up your activity for the day. Try a brisk 10-minute walk after each meal. Make it fit your schedule. Check what you'd like to try:

- take a brisk walk
- go dancing
- take an exercise class
- go swimming or do water aerobics
- ride a bike
- play basketball or soccer

What are some other ways you could get aerobic exercise?

Being active throughout the day

In addition to formal exercise, there are many ways to be active throughout the day. Being active helps burn calories. If you sit all day, think of ways to move more. Place a check mark next to things you'd like to try:

If You Sit At Work

- Take the stairs instead of the elevator
- Walk during your lunch break
- Get up once an hour and take a quick walk
- Stand up and stretch often
- If you take the bus, get off a stop early and walk the rest of the way
- Use a speaker or cell phone so you can pace around when on the phone
- Try some chair exercises

At Home

- Take the dog for a walk
- Do yard work such as gardening, mowing the lawn or raking leaves
- Do housework such as vacuuming, dusting, or washing dishes
- Play catch or throw a Frisbee with your kids or grandkids
- Walk in place during the commercials of your favorite television show
- Carry things upstairs or from the car in two trips instead of one
- Walk around the house or up and down stairs while you talk on the phone

While You're Out and About

- Walk instead of drive, if you can
- Park farther away from the store and walk
- When on a car trip, stop every few hours to stretch and walk around

What are some other ways you could be active during the day?

Strength training

Do strength training 2 to 3 times a week. It helps build strong bones and muscles. This makes everyday chores like carrying groceries easier for you. Strength training can also help to prevent weight gain. Here are some ways to do it:

- Lift light weights at home.
- Use an exercise video that shows you how to use canned foods to lift weights.
- Join a class that uses weights, elastic bands, or plastic tubes.

What are some ways you could do strength training?

What should I do to get started?

These steps will help you get ready for a routine that's safe and fun.

- **Talk to your health care team about what is safe for you.**
- **Choose what you'll do and make a plan.**
Think about what activities you think you can do. Start slowly. Write down exactly what you'll do, where and when you'll do it, how often, and for how long. Plan how you'll reward yourself for your efforts. For example, some people treat themselves to a movie when they meet their goal for the week.
- **Learn your blood glucose response to exercise.**
Everyone's blood glucose response to exercise is different. Checking your blood glucose before and after exercise can show you the benefits of activity. You also can use the results of your blood glucose checks to prevent low blood glucose or high blood glucose.
- **Learn how to avoid low blood glucose or hypoglycemia.**
Keep in mind that low blood glucose can occur during or after physical activity. Low blood glucose is most likely if you:
 - take insulin or certain diabetes pills
 - skip a meal
 - exercise for longer than usual
 - do strenuous exercise

If you often have trouble with low blood glucose when you are active, eat a snack before exercise. Talk to your health care team about what you can do. You may need a change in your medicine.

If your blood glucose is high before you exercise (above 300 mg/dl), physical activity can make it go even higher. So be cautious about doing something active.

Treating Low Blood Glucose

During activity, check your blood glucose if you are hungry, nervous, shaky, or sweating. If your blood glucose is 70 mg/dl or below, have 4 to 6 glucose tablets. You can also have 1/2 cup (4 ounces) of fruit juice or regular soft drink to raise your blood glucose. After 15 minutes, check your blood glucose again. If it's still below 70, have another serving and repeat these steps until your blood glucose is at least 70.

Safety Tips

- **Plan to have water and snacks handy during activity.**

Drink plenty of water before, during, and after activity. If you are at risk for low blood glucose, always carry a source of carbohydrate so you'll be ready to treat low blood glucose.

- **Wear a medical identification bracelet, necklace, or a medical ID tag to protect yourself in case of emergency.**
- **Wear shoes that fit well and socks that do not irritate your feet.**
- **Decide how you'll keep track of your progress.**

You may find it helpful to write down what physical activity you've done each day. You can write it in your journal. For example, you can make a note of what you did and how long you did it. Some people enjoy using a step counter, also called a pedometer, to see how far they've walked.

What keeps you from being active?

If you're not active, it's likely that you have at least one reason why. Perhaps you've never been very active. Maybe you're afraid you'll get low blood glucose. Think about what's keeping you from being active. Then look into ways to overcome the barriers.

Barriers	Solutions
• I don't have time to exercise for 30 minutes a day.	Do as much as you can. Every step counts. If you're just starting out, do 10 minutes a day and add more little by little. Work up to 10 minutes at a time, three times a day.
• I'm too tired after work.	Plan to do something before work or during the day.
• I don't have the right clothes.	Wear anything that's comfortable as long as you have shoes that fit well and socks that don't irritate your skin.
• I'm too shy to exercise in a group.	Choose something you can do on your own. Try to follow along with an aerobics class on TV. Or, go for a walk.

Barriers	Solutions
• I don't want to have sore muscles.	Exercise shouldn't hurt if you go slowly at first. Choose something you can do without getting sore. Learn how to warm up and stretch before you do something active and how to cool down afterward.
• I'm afraid I'll get low blood glucose.	If you're taking a medicine that could cause low blood glucose, talk to your health care provider about ways to exercise safely.
• Walking hurts my knees.	Try chair exercises or swimming.
• It's too hot outside.	If it's too hot, too cold, or too humid, walk inside a shopping center.
• It's not safe to walk where I live.	Find an indoor activity, such as an exercise class at a community center.
• I'm afraid I'll make my condition worse.	Get a checkup before you get started. Learn what's safe for you to do.
• I can't afford to join a fitness center or buy equipment.	Do something that doesn't require fancy equipment, such as walking or using cans of food for weights.
• Exercise is boring.	Find something you enjoy doing. Try different activities on different days.
• What are your barriers?	What are some solutions?
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• **Be flexible with your plan.**

For example, you could plan to get off the bus one stop earlier. Don't be too hard on yourself if you can't. For example, if it's raining, you may not want to walk outside. On those days, choose something else. It's more important to reach your long-term goal than to follow the plan from day to day.

Finding time to be active takes planning. You can do it. The rewards are big! If you need help getting started, talk to your health care team.

Looking for healthy recipes and food tips?
 Sign up for our **FREE** online resource,
Recipes for Healthy Living at diabetes.org/recipes.

1-800-DIABETES
(1-800-342-2383)
www.diabetes.org

Fast Food Tips

It's easy to eat an entire day's worth of fat, salt, and calories in just one fast-food meal. But it's also possible to make wise choices and eat a fairly healthy meal. What you order is the key. Here are some tips to get you started:

General Tips

- Order the smallest size for sandwiches, burgers, and sides.
- Split larger sandwiches or sides, like French fries.
- Ask for a salad or fruit instead of French fries.
- Avoid breaded and fried meats.
- Look up nutrition information on your phone or online before you go.

Drinks

- Drink water or other sugar-free drinks like unsweetened tea, coffee, light lemonade or diet soda.
- Avoid sugary drinks such as regular soda, sports drinks, sweet tea or coffee drinks with sugar and cream.

Sandwiches and Burgers

- Order the smallest sandwich or burger.
- Ask for grilled instead of fried chicken.
- If grilled is not available, remove breading and skin from chicken.
- Add extra vegetables like lettuce, tomato, and onion.
- Order it without cheese, bacon, mayonnaise or special sauces.
- Use mustard, salsa, hot sauce, or ketchup instead.
- Get sauces on the side and add it yourself so you use less.
- If available, ask for a whole wheat bun, wrap or bread.
- Scoop out some of the bread if it is a large bun or roll.

Sides

- Ask for fruit or a side salad instead of fries or chips.
- If you order fries, order a small and split it with someone.

Salads

- Ask for grilled chicken instead of fried.
- Ask for a lowfat dressing.
- If lowfat dressing is not available, ask for a vinegar and oil mix. It doesn't stick to the lettuce leaves as easily so you eat less.
- Always ask for the dressing on the side and plan to use less than half.
- Dip your fork into the dressing and then stick the food.
- Ask for salad without cheese and bacon.
- Avoid macaroni, potato and other salads with mayo or dressing.

Fast Food Meal Makeover

Your choices make a big difference. See our meal makeovers to help you make healthier choices.

FAST FOOD BURGER MEAL MAKEOVER

Original	Better Choice	Best Choice
Large hamburger, large fries, large coke	Hamburger, small fries, diet coke	Hamburger, side salad with lowfat Italian dressing, water
1330 calories	470 calories	300 calories
51 g fat	19 g fat	9 g fat
188 g carbohydrate	62 g carbohydrate	41 g carbohydrate
1230 mg sodium	610 mg sodium	690 mg sodium

▶ The best choice saves over 1,000 calories, 40 grams of fat, 145 grams of carbohydrate and 540 mg sodium.

- Choose a smaller burger.
- Add mustard instead of mayonnaise.
- Choose a side salad instead of fries.
- Add a sugar-free drink.

FAST FOOD FRIED CHICKEN MEAL MAKEOVER

Original	Better Choice	Best Choice
Fried chicken breast (with skin), fries, large coke	Grilled chicken breast (no skin), fries, diet coke	Grilled chicken (no skin), green beans, water
1330 calories	510 calories	245 calories
54 g fat	22 g fat	7 g fat
179 g carbohydrate	35 g carbohydrate	4 g carbohydrate
2,195 mg sodium	1,635 mg sodium	990 mg sodium

▶ The best choice saves over 1,000 calories, 45 grams of fat, 175 grams of carbohydrate, and 1,200 mg sodium.

- Change to a grilled chicken instead of fried.
- Remove the skin from chicken.
- Choose a side salad instead of fries.
- Add a bottle of water or other sugar-free drink.

FAST FOOD SUB SANDWICH MEAL MAKEOVER

Original	Better Choice	Best Choice
6-inch cheesesteak sub, chips and large coke	6-inch turkey breast sub, chips, diet coke	6-inch grilled chicken sub, apple, water
920 calories	440 calories	315 calories
27 g fat	13 g fat	4 g fat
164 g carbohydrate	61 g carbohydrate	52 g carbohydrate
1465 mg sodium	855 mg sodium	670 mg sodium

▶ The best choice saves over 600 calories, 23 grams of fat, 112 grams of carbohydrate and 800 mg sodium.

- Change to a lean type of protein.
- Add mustard instead of mayonnaise.
- Choose fruit instead of chips.
- Add a bottle of water or a sugar-free drink.

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