



ACSM Information On...

## Selecting and Effectively Using a Pedometer

The pedometer is a device about the size of a small cellphone that typically attaches to the belt or waistband and is designed to count walking or running steps. Some new pedometers are also capable of counting steps while placed in a shirt pocket or in a bag, as long as it's held snug to the body.

### A COMPLETE PHYSICAL ACTIVITY PROGRAM

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:

- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross country skiing
- Swimming.

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

Leonardo da Vinci is credited with the invention of the pedometer. Although the early mechanical pedometers were deemed unreliable, the electronic pedometer developed in the early 1990s is significantly more accurate and reliable. Pedometers are capable of recording ambulatory activities such as walking, jogging or running. They will not count steps during activities such as cycling, rowing, upper body exercise, etc. Pedometers can differ in the cost, internal mechanism and features.

### COST

Depending on the features, pedometers typically range in cost from \$10-\$50.

### FEATURES

Some devices calculate both distance walked and calories burned. In general, pedometers are most accurate in counting steps, less accurate in calculating distance walked and even less accurate at estimating caloric expenditure. The calculation of distance walked requires the input of the user's stride length while the caloric expenditure feature requires the input of the user's body weight. Because steps are the fundamental unit of a pedometer, all other features are dependent upon the device's step-counting accuracy. Some of the newer devices also



estimate the total time spent walking at a moderate intensity.

### CHOOSING A PEDOMETER

The following questions should be considered when selecting a pedometer:

- **What feature(s) am I most interested in?** Pedometers are best at counting steps; therefore, purchasing an accurate step counting pedometer should be a primary objective.



habitually active, do not start during this one week period. You can use this step index to classify your activity level based on steps per day (Keep in mind that if you regularly participate in non-ambulatory activity, your steps per day will not accurately represent your activity level):

| Number of Steps | Activity Level  |
|-----------------|-----------------|
| 0-5,000         | Sedentary       |
| 5,000-7,499     | Low Active      |
| 7,500-9,999     | Somewhat Active |
| 10,000-12,500   | Active          |
| 12,500 or more  | Highly Active   |

*\*Developed by C Tudor-Locke and DR Bassett Jr. (2004)*

For most healthy adults, 10,000 steps per day is a reasonable goal. If your baseline steps fall short of this value, try to increase your activity level by 1,000 steps per day every two weeks until you reach your goal. To put your step count into perspective, there are about 2,000 steps in a mile.

Pedometers can also be used to motivate children or youth to become more physically active. Typically active children should accumulate between 12,000 and 16,000 steps per day.



To increase your daily step counts, look for opportunities to be more active. For example, take the stairs rather than the elevator, park at the far end of the parking lot (if it is safe to do so) or go for walking breaks at work. The instant feedback that a pedometer provides can serve as a motivator to accumulate more steps. Every step counts, so even small increases added into your daily routine can make a big difference.

• **How can I test a pedometer's accuracy?** One way to test a pedometer's accuracy is to perform a 20-step test. To do this, position the device on your belt or waistband in line with your knee on either side of the body, and reset your pedometer to zero. Take 20 steps at your typical walking pace. Check to see if the pedometer reads between 18 and 22 steps. If it does, it is likely a reasonably accurate step counter. If not, reposition it on your belt or waistband, and try the test again. If your pedometer repeatedly fails this test, look into purchasing a different type.

• **What can affect a pedometer's accuracy?** Studies have shown that a variety of factors can potentially affect a pedometer's step counting accuracy (i.e. walking speed, waistband type and abdominal size). In general, most pedometers are fairly accurate step counters at speeds of 2.5 mph and above. Even some of the most accurate pedometers miscount steps at slower speeds. Pedometers are generally more accurate step counters when attached to a firm waistband in an upright position. Loose waistbands typically result in a significant underestimation of steps. Abdominal size can also affect accuracy. Pedometers are vulnerable to miscounting steps if the tilt or angle at which the pedometer sits when fastened to the belt or waistband is off.

### HOW DO I USE A PEDOMETER TO SUPPLEMENT MY WALKING PROGRAM?

Determine your baseline physical activity level. To do this, wear the pedometer for one full week without altering your typical routine. If you are routinely active, continue being so; however, if you are not

### STAYING ACTIVE PAYS OFF!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity – such as 30 minutes a day of brisk walking – significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more – regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

### THE FIRST STEP

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you're ready to begin an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance from dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have recently been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin exercising.

### PRIOR TO EXERCISE

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.



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