

## How Do I Use a Pedometer to Supplement My Walking Program?

First, 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 but, if you are not 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 value will not accurately represent your activity level):

Steps per day	Activity Level
<5,000	Sedentary
5,000-7,499	Low Active
7,500-9,999	Somewhat Active
10,000-12,500	Active
>12,500	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.

Children can also benefit from the use of pedometers. Typically active children should accumulate between 12,000 and 16,000 steps per day. Pedometers can be used to motivate children or youth to become more physically active.

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), go for walking breaks at work, etc. 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 difference.

### Complete Physical Activity Program

A rounded program of physical activity includes aerobic exercise, strength training exercise and flexibility training—but not necessarily in the same session. Create a pattern that you'll stick to and that fits into your schedule. Commitment to regular physical activity is more important than the intensity of the workouts. Choose exercises you are likely to enjoy. ACSM's Position Stand "The Recommended Quantity and Quality of Exercise for... Healthy Adults" ©1998 states that aerobic training should be performed three to five days per week for a minimum of 20 minutes per day. Remember, it's better to exercise for a shorter period of time than not at all. Typical aerobic exercises include walking and running (or treadmills), stair climbing, cycling on a stationary or moving bike, rowing, cross-country skiing, and swimming. Many devices offer a combination of these motions. Generally, strength training should be done two to three times per week, using flexible rubber resistance, free weights or weight machines. For general training, do two to three upper-body and lower-body exercises. Abdominal exercises are an important part of strength training. Flexibility training is important and frequently neglected, resulting in increased tightness as we age and become less active. Stretch with sustained gradual movements lasting at least 15 seconds per stretch. At a minimum, try to stretch every day.

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## Selecting and Effectively Using

# A Pedometer



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## Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that even moderate physical activity—such as 30 minutes a day of brisk walking—significantly contributes to longevity. A physically active person with such risk factors as high blood pressure, diabetes or even a smoking habit can get real benefits from regular physical activity as part of 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 your suitability for beginning 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 because of 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 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 fitness testing and training.

## About Pedometers

The pedometer is a device about the size of a pager that typically attaches to the belt or waistband and is designed primarily to count steps. More recently, some pedometers are also capable of counting steps while placed in a shirt pocket or in a bag if it's held snug to the body.

Interestingly, 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 activity such as walking, jogging, or running. They will not count steps during activities such as cycling, rowing, upper body exercise, etc.

## How Do Pedometers Differ?

Pedometers can differ in the cost, internal mechanism and features.

### Cost

Pedometers typically range in cost from \$10-\$50 depending on the features.

### Internal mechanism

There are different mechanisms by which pedometers function.

- One common type consists of a spring-suspended lever arm that moves up and down in response to vertical acceleration of the hip. This movement opens and closes an electrical circuit and a step is counted.
- Others use an accelerometer-type mechanism. Pedometers with this mechanism can distinguish between ambulatory activities of differing intensities (If you shake the pedometer up and down and it does not produce a clicking sound, it probably has an accelerometer-type mechanism).

### Features

While steps are the fundamental unit of the pedometer, some devices also calculate distance walked and estimate 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. Steps are the fundamental unit of the pedometer and 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?

Step counting is what most pedometers do best. Therefore, purchasing an accurate step counting pedometer should be a primary objective.

### 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, try repositioning 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 factors can affect pedometer 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 more accurate pedometers miscount steps at slower speeds. With regard to waistband type, 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 step-counting accuracy. Those with the horizontal lever arm mechanism appear to be more vulnerable to miscounting steps based on the tilt or angle at which the pedometer sits when fastened to the belt or waistband.