Walking

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"Walking is man's best medicine."
-Hippocrates

Hippocrates must have been a smart guy! There's a wealth of research to prove that walking is good for you and the results are impressive: major reductions in both diabetes and heart disease, decreases in high blood pressure, increases in bone density, and more all follow regular walking exercise.

In this article, I'll cover how walking can help you, how much you need to do to gain benefits, types of walking and techniques, how to get started, and other valuable information.

Do you remember your first step?

Remember your first step? What a fuss everyone made! And then you continued to walk right on through childhood, adolescence, and into adulthood, but somewhere along the way, like most adults, you probably stopped walking so much. In fact, the percentage of adults who spent most of their day sitting increased from 36.8% in 2000 to 39.9% in 2005! Part of the reason may be your hectic, stressful life, with not a moment to spare for recreation or formal exercise. The environment plays a part too; inactivity has been engineered into our lives, from escalators to remote controls to riding lawn mowers to robotic vacuum cleaners to electric toothbrushes to the disappearance of sidewalks and safe places to walk. But research shows that all this automation is bad for our health. Inactivity is the second leading preventable cause of death in the United States, second only to tobacco use.

You'd think a simple activity like walking would be just that, simple. But fewer than 50% of American adults do enough exercise to gain any health or fitness benefits from physical activity. Is walking our salvation? I don't know for sure, but evidence suggests that it's probably a good start.

What are the top 10 reasons to walk?

1. **Walking prevents type 2 diabetes.** The Diabetes Prevention Program showed that walking 150 minutes per week and losing just 7% of your body weight (12-15 pounds) can reduce your risk of diabetes by 58%.

2. **Walking strengthens your heart if you're male.** In one study, mortality rates among retired men who walked less than one mile per day were nearly twice that among those who walked more than two miles per day.

3. **Walking strengthens your heart if you're female.** Women in the Nurse's Health Study (72,488 female nurses) who walked three hours or more per week reduced their risk of a heart attack or other coronary event by 35% compared with women who did not walk.

4. **Walking is good for your brain.** In a study on walking and cognitive function, researchers found that women who walked the equivalent of an easy pace at least 1.5 hours per week had significantly better cognitive function and less cognitive decline than women who walked less than 40 minutes per week. Think about that!

5. **Walking is good for your bones.** Research shows that postmenopausal women who walk approximately one mile each day have higher whole-body bone density than women who walk shorter distances, and walking is also effective in slowing the rate of bone loss from the legs.

6. **Walking helps alleviate symptoms of depression.** Walking for 30 minutes, three to five times per week for 12 weeks reduced symptoms of depression as measured with a standard depression questionnaire by 47%.

7. **Walking reduces the risk of breast and colon cancer.** Women who performed the equivalent of one hour and 15 minutes to two and a half hours per week of brisk walking had an 18% decreased risk of breast cancer compared with inactive women. Many studies have shown that exercise can prevent colon cancer, and even if an individual person develops colon cancer, the benefits of exercise appear to continue both by increasing quality of life and reducing mortality.

8. **Walking improves fitness.** Walking just three times a week for 30 minutes can significantly increase cardiorespiratory fitness.

9. **Walking in short bouts improves fitness, too!** A study of sedentary women showed that short bouts of brisk walking (three 10-minute walks per day) resulted in similar improvements in fitness and were at least as effective in decreasing body fatness as long bouts (one 30-minute walk per day).

10. **Walking improves physical function.** Research shows that walking improves fitness and physical function and prevents physical disability in older persons.

The list goes on, but if I continued, there'd be no time for you to start walking! Suffice to say that walking is certainly good for you!

What are the types of walking?

There are two types of formal walking: power-walking (also known as speed-walking) and racewalking. Both types require technique; the difference between them is that racewalking is an Olympic sport with rules and power-walking is done more recreationally. For example, there's a racewalking rule that the athlete's back toe cannot leave the ground until the heel of the front foot has touched. Both are excellent forms of exercise that yield fitness and health benefits.

Another type of walking requires no technique; you just get out there and walk. I call this the plain old walking technique, one step in front of the other! You've been doing it your entire life, and whether it's for exercise, a stroll, or walking the dog, there are lots of benefits to be gained from it. I encourage you to continue if that's what you do for exercise, but if you want to up the ante and start walking faster, then attention to your technique might be just the ticket.

Where can I find tips on walking techniques?

The technique for brisk walking, whether it's power- or racewalking, is the same. Below are some tips on technique.

Legwork

1. A common mistake for beginners when trying to walk fast is lengthening the stride (overstriding). Overstriding is biomechanically inefficient and can slow you down. It will burn more calories because it's inefficient (which might be a good thing), but you may burn fewer calories overall because you don't walk as far due to fatigue.

2. Instead of overstriding to walk faster, concentrate on a powerful push off while the front foot lands closer to the body. This is what elite walkers do.

Footwork

1. Walk heel to toe and not flatfooted to increase speed.

2. Contact the ground with your heel.

3. Roll the foot forward over the center of your foot.

4. Push off with your toes.

Hips

1. Rotate your hips forward and backward as you walk.

2. Your waist should twist. Racewalkers can look funny because of the hip rotation but restricted hip movement decreases your speed.

Torso

1. Keep your torso upright. Leaning forward or back will slow you down.

Arm work

1. Keep your elbows at 90 degrees.

2. Keep your hands relaxed.

3. Swing your arms forward and back and keep them close to your body. Your hands should not cross the midline of your body to maintain efficiency.

4. Speed up your arm swing to increase your speed and your legs will follow! This really works!

Head, neck, and shoulders

1. Keep your shoulders and neck relaxed. Head should be upright, eyes looking forward.

Is walking really a workout?

You may be surprised to learn that brisk walking can be almost as challenging as jogging. Here's why. When you walk at speeds faster than 3.1 mph, your stride length naturally increases (you don't necessarily want it to for efficiency but inevitably it happens). Lengthening your stride is inefficient because it requires additional energy to move your legs forward, which in turn requires more arm and torso movement, which leads to increased torso and hip rotation, which amounts to higher aerobic demands and more calorie-burning. This has been confirmed in the laboratory. The research shows that at maximal levels of exertion, oxygen consumption (the bottom line to cardiorespiratory fitness) is only slightly lower for racewalkers than it is for runners, and at submaximal or moderate-intense levels of exercise, oxygen consumption levels between race walkers and runners are almost equal. Racewalkers can reach speeds as high as 9 mph!

What are the biomechanics and types of foot strike?

Foot strike is the term used to describe the moment that your foot hits the ground when you're walking. The normal biomechanics of foot strike are that your heel lands first (heel strike), followed by midfoot strike and flattening of the arch to absorb impact (very important), then the forefoot strike (front of your foot), and finally the push-off to the next stride. Soft heel strikes with a smooth gait pattern and some flattening of the arch will reduce the impact on the foot and cause less stress in joints as high up as the hip (the ankle bone is indeed connected to the hip bone!). There are three types of foot strike:

1. **Pronated foot strike.** Pronation is the term to describe when your arch flattens on foot strike (for example, when you have flat feet) and causes your foot to invert, or roll in. Excessive pronation will cause your ankle and leg to twist and can lead to stress fractures, shin splints, and other lower-extremity injuries. You're probably a pronator if the inner edges of your shoes wear out.

2. **Supinated foot strike.** Supination is the term to describe high arches that don't flatten. This is a problem because if your arch doesn't flatten and your foot doesn't roll in at all, then you lose shock absorption on foot strike. Excessive supination can lead to ankle sprains, Achilles tendinitis, plantar fasciitis, and iliotibial band syndrome. You're probably a supinator if the outer edges of your shoes wear out.

3. **Neutral foot strike.** An efficient amount of flattening of the arch is called "neutral" foot strike. This provides plenty of shock absorption and enough energy for you to have a powerful push-off.

What type of foot do I have?

I mentioned that you can tell by the wear pattern of your shoes if you pronate or supinate. You can also ask a salesperson at a reputable shoe store to evaluate your gait and foot strike, or you can have your doctor or podiatrist do this. You can also try the wet test at home. To do it, wet your bare foot and then step on a piece of paper or other surface that will show your footprint. Stand normally when you do this with slight pressure toward the front of your foot. You're a pronator if most of your foot hits the floor, a supinator if very little of your foot hits the floor, and neutral if the foot print is somewhere between pronation and supination.

What type of shoe should I buy?

Footwear for your foot type

One of the plusses of walking is that you don't need lots of fancy equipment, but shoes can make a difference. There are many athletic shoe types to choose from: running, walking, cross-training, etc. I suggest the obvious for walking, a walking shoe. Walking shoes typically have heels and toes that are rounded up to reduce impact on heel strike and increase energy during push-off. Here's how to decide what type of walking shoe to buy depending on your foot type and your foot strike.

- If you over pronate and have flat feet, avoid shoes with excessive cushioning because they lack stability and motion control. Shoes that feel as soft as bedroom slippers, lack support, or are excessively bouncy are not a good choice for over-pronators. Instead, purchase shoes with firm midsoles and pronation-control features. I also recommend over-the-counter full-length arch supports for over-pronators. They can decrease pressure by as much as 33%. Powerfeet and Superfeet full-length insoles are two good choices and can be located online.

- If you supinate and have high arches, purchase cushioned shoes that do not limit motion. Your foot doesn't shock absorb very well if you have high arches and you supinate, and too much stability and control in the shoe will decrease shock absorption even more.

- If you have a neutral foot, you can wear any type of shoe that feels comfortable. Your foot strike is efficient with a healthy amount of arch support and shock absorption when your foot is neutral.

Important note: Speak with your doctor or consult with a podiatrist if your feet hurt. It will be difficult to stay motivated to walk if your feet hurt. Your doctor can help.

Shoe shopping basics for everyone

Here are some tips that everyone should follow when buying walking shoes:

1. The sole of a walking shoe should be flexible with more bend in the toe than a running shoe. You will be more likely to get blisters if the shoe is too stiff. Make sure you can bend and twist the toe area of your walking shoe.

2. Breathable shoes are more comfortable. Mesh fabrics are better than leather, and they're lighter, too.

3. Shoes should always feel comfortable right away—there's no "breaking in" period. Don't buy shoes if seams or stitching can be felt. This can cause blisters, calluses or other injuries.

4. Feet swell during the day so get fitted for walking shoes at the end of the day when your foot is its largest.

5. Wear the socks you normally wear when walking. Synthetic socks made of polypropylene or other synthetics are better than cotton because they don't compress, they dry quickly, they wick moisture away from the foot, they prevent blisters, and the heel is padded. Ask at your shoe store for walking socks.

6. Allow one-half inch between the end of your longest toe and the shoe's end, with wiggle room for all toes.

7. The shoe should be as wide as possible across the forefoot without allowing heel slippage. Experiment with the lacing to get a proper fit if necessary.

8. Always try on both shoes before making purchase. Buy the larger size if one foot is larger than the other.

9. Replace your walking shoes when they no longer support your feet. You'll know your current shoe is worn down if you take them to the shoe store and feel the difference when you compare them to a new pair.

10. Find a reputable shoe store in your area to buy your shoes.

How many calories will I burn walking?

A 150-pound man burns 100 calories per mile; a 200-pund man burns 133 calories per mile; and a 250-pound man burns 166 calories per mile. You burn virtually the same number of calories whether you run or walk a mile; you just get there faster if you run. See below for a chart of calories burned during walking at different speeds and body weight.

What's a good average walking speed?

- A good average walking speed is 3 to 4 miles per hour (mph) and depends on your leg length and how quickly you can move your legs.
- You may need to start at a slower pace if you're out of shape, but you will build up quickly if you walk regularly.
- Once you exceed 4 mph, it gets tricky because you don't know if you should walk or run. Proper speed-walking technique will help at fast speeds.
- Treadmill and outdoor walking yield the same benefits. Set the elevation to 1% to mimic outdoor walking.

How much walking should I do?

There are two exercise recommendations in the United States.

1. The Surgeon General recommends 30 minutes or more of accumulated moderate intensity physical activity on five or more days per week to improve health and fitness. "Accumulated" means you can do it in shorter bouts throughout the day (for example, 10- or 15-minute intervals throughout the day), and "moderate intensity" means you feel warm and slightly out of breath when you do it. Walking counts!

   Here are some suggestions to incorporate walking into your day and accumulate 30 minutes. Think about your day and how you can increase walking.

   - Get off the bus before your destination (you may even save time this way).
   - Park your car farther from the store.
   - Take a walk at lunch instead of having your food delivered.
   - Walk for errands instead of driving short distances.
   - Get rid of your riding lawnmower!

- Keep your walking shoes handy. Leave a pair at your office for quick 10-minute stress-reducing walks.

2. The American College of Sports Medicine recommends 20-60 minutes of continuous activity, three to five times a week, at 60%-90% of maximum heart rate, and two to three days of resistance training. Walking counts!

How do I get started?

For beginners who are concerned about their motivation or ability to walk far, I recommend the "five minutes out, five minutes back" plan. Just like it sounds, you walk out for five minutes, turn around, and walk back. If you feel ambitious, you can start with 10 minutes out, 10 minutes back, and off you go about your day! Increase by two to three minutes per week and before you know it you'll be up to 30 minutes. It sounds too simple to be true, but this is a realistic and achievable way to get started, and if you follow it, you'll be walking plenty before you know it.

Consider power-walking if you want to increase your speed. Start with your normal walking pace for five to 10 minutes as a warm-up and then try your skill at power-walking. You'll be surprised how exhausting power-walking can be, so start with 10-15 minutes the first few times out and finish up your 30 minutes with your normal walking pace so you don't over do it.

Interval training

Once you reach a baseline of 30 minutes of power-walking, you can speed up even more by training with intervals. Intervals are where you set up work to active rest ratios (work:active rest) to push your body and improve your cardiorespiratory fitness. Here's an example of how to do intervals.

1. Walk at your normal pace for three minutes, then
2. increase the speed for one minute, then
3. back to your normal speed for another three minutes, then
4. repeat this 1:3 interval cycling for your entire workout.
5. Over time, increase the work and decrease the active rest.

Here's an example of an interval training workout for someone who walks for 30 minutes at 3.5 mph.

1. Walk for 10 minutes at 3.5 mph, then
2. increase the speed to 3.8 mph for one minute, then
3. walk again for three minutes at 3.5 mph, then
4. walk again at 3.8 mph, and so on until you reach your time limit.
5. Increase the work part to one and a half minutes and decrease the active

rest to two and a half minutes as you get more fit (you walk faster, your heart doesn't pump as hard, and your breathing is easier).

Your fitness will substantially improve after six to eight weeks if you continue with this type of training. You may even notice more endurance after just one or two sessions.

Stretching

I suggest the following five simple stretches before and after you walk. Ease into each stretch until you feel the tension in the muscle you want to stretch and hold until it feels looser.

Calf stretch

1. Stand at arms length and lean against a wall or fence.

2. Put one leg straight back and the other bent underneath you.

3. Keep back straight and lean hips forward.

4. Keep rear leg straight with heel on ground.

5. Repeat for other leg.

Side stretch

1. Stand with both arms over head.

2. Lean to one side, then the other.

3. An alternative is to leave your right arm at your side and bend to the right while reaching your left arm reaches overhead, then reverse.

Torso twist

1. Stand with both arms out to side with elbows slightly bent.

2. Feet should be at shoulder width or slightly wider.

3. Twist your torso to the right and then the left, alternating back and forth slowly.

Quadriceps (thigh)

1. While leaning against a wall, reach back with your left hand and grab your right ankle.

2. Pull your foot back and away from your buttocks.

3. Repeat for other side.

Hamstrings (back of legs)

1. Put your right leg out about 18 inches from your body with toe pointed up.

2. Bend your left leg slightly.

3. Reach down with both hands toward your right foot.

4. Repeat for other side.

5. Alternatively, you can sit down on the edge of your bed or a park bench with one leg up and the other on the floor and reach with both hands until you feel the stretch in the back of the leg.

Planning your walks

I recommend setting a weekly plan for walking if you struggle with motivation or sticking with it. Planning increases compliance. Write down the day(s) of the week you'll walk, the time of day, how many minutes, and where you'll do it (location). Set and review your weekly plan every week for three months and then reevaluate at that time.

Where can I walk?

The beauty of walking is that it can be done anywhere. Here are some suggestions:

- When you travel (a great way to explore a new city)
- Around your block
- Your local track
- Architectural walking tours
- Mall walking is great for cold or rainy conditions, and it's great for social support and meeting new people. Call your local mall to find out when their walking club meets (most of the time it's before the mall opens).
- Trails in your local park
- Enter road races sponsored by your local running or walking club. Many running clubs sponsor walking events too, and plenty of people walk road races even when people are running. Check out your local clubs.
- American Volkssport Association: A network of 350 noncompetitive walking clubs that organize more than 3,000 walking events per year in all 50 states
- Rails-to-Trails: A nonprofit organization that converts abandoned railroad tracks into biking, hiking, and walking trails

- Go hiking. It's walking in the woods! Check out the American Hiking Society for clubs in your area.

- Check out local walks for causes in your area. The American Heart Association, American Diabetes Association, and many others sponsor local walking events.

- Walk your dog!

Pedometers

Pedometers are beeper-sized devices that measure how many steps you take. They're a great way to keep track of your walking progress!

Should I walk or run?

The benefits of running vs. walking

I'm frequently asked if walking is as good as jogging. It is for both health and fitness. Many of the studies on exercise and chronic disease prevention use walking as the measurement. The risk of injury is low for walking, most everyone can do it, it burns calories, and it makes you fit and healthy. Jogging yields the same benefits as walking, but there is more impact on your knees, hips, and other joints.

Walking for weight loss

Walking, like any other aerobic activity, burns calories and will contribute to weight loss. Of course, to lose weight, you must burn more calories than you consume no matter how much you exercise, so make sure to reduce your calories if you want to lose weight, even if you're walking a lot.

Exercise is much more important for maintaining weight than it is for losing it. In fact, scientists believe it's the single best predictor of maintaining weight. Research over the past two decades clearly shows that individuals who exercise after weight loss are far more likely to maintain their weight than individuals who don't exercise.

As for walking specifically to control weight, walking is the most popular activity among participants in the National Weight Control Registry. The NWCR is a longitudinal study of more than 5,000 men and women who, in order to participate in the registry, must successfully maintain a 30-pound weight loss for a minimum of one year. The current average weight loss among the 5,000 participants is 60 pounds and the group has maintained that loss for roughly five years. It's tough to argue with success!

There you have it

It's as simple as walking out the door. And you'll be in good company. Walking is the most popular physical activity among adults in the United States. It doesn't take all that much time (you can incorporate it into your life), you've been doing it your entire life, you can do it just about anywhere, there are plenty of health and fitness benefits, and you'll feel good once you get going. What are you waiting for? Get out there and take a walk!

Where can I get more information about walking?

Resources

http://www.smallstep.gov/

http://www.cdc.gov/nccdphp/dnpa/physical/

http://aom.americaonthemove.org/

http://www.railtrails.org/index.html

http://www.americanhiking.org/

http://www.ava.org/

http://www.diabetes.org/ClubPed/index.jsp

http://walking.about.com/

The Complete Guide to Walking, New and Revised: For Health, Weight Loss, and Fitness, by Mark Fenton

http://www.presidentschallenge.org/activity_log/index.aspx

Calories burned in one hour at different body weights

Calories burned per hour at different body weights					
Walking	110 lbs.	125 lbs.	150 lbs.	175 lbs.	200 lbs.
Strolling less than 2 mph, level	100	114	136	159	182
Moderate pace about 3 mph	175	199	239	278	318
Brisk pace about 3.5 mph	200	227	273	318	364
Very brisk pace about 4.5 mph	225	256	307	358	409
Moderate pace about 3 mph, uphill	300	341	409	477	545

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