



## Treadmill Buying Guide

By Smooth Fitness © 2008

This guide was written to help educate people who are looking to purchase a treadmill for home use. Unlike other resources, this document comes from an industry leader. In the interest of full disclosure Smooth Fitness is the industry's largest direct-to-consumer treadmill manufacturer and we're in the business of making and selling treadmills. We believe that the best customer is a knowledgeable one and it's our goal to help educate you as a buyer so that you are better equipped to avoid the industry tricks and traps so that you end up purchasing a treadmill that fits your workout needs for the right price.

First, you'll be happy to know that treadmills have been the largest selling category of cardio products for the past 20 years now. Treadmills provide a natural running/walking motion that the human body is well suited for. Motorized treadmills automatically pace the user. For this reason, treadmills enjoy a significantly lower drop-off rate than any other workout machine. Once you get into a routine you're more likely to stay with it. But you already know you want one, so let's dig into what to look for.

Before exploring how to research various manufacturers, makes and models, let's go over a few DOs and DON'Ts:

- **DON'T** make your decision based on just one person's opinion- including ours.
- **DO** look at many sources available online such as [About.com](http://About.com) (owned by the New York Times), [Epinions](http://Epinions.com), [Bizrate](http://Bizrate.com) and [Consumer Guide](http://Consumer Guide online) online (which is now part of [www.howstuffworks.com](http://www.howstuffworks.com)).
- **DON'T** get too hung up on the specs and horsepower ratings (we'll explain in more detail below).

## Where to Start?

**Price:** The first thing you need to consider is how much you should spend in order to get a good quality machine. This really depends on what kind of use you and your family expects to get out of the treadmill. Generally, you can get a good machine for walking for around \$1,000. Look for a 2.5 HP continuous duty motor (beware of anything labeled much more than that - keep reading for why), a 20 inch wide walking belt that is 52-55 inches in length. Please note that if you are taller than 6'2" then you really should consider stepping up to something in the \$1,500-\$2,000 price range because of your longer running stride and you'll also benefit from a longer warranty, a longer treadbelt and generally a smoother, quieter and longer-lasting machine.

**User Weight:** If any of the users in your family weigh over 225 pounds then you should increase your budget a bit for a stronger motor and higher grade belt and deck, even if you are only planning on using the treadmill for walking. The reason for this is that all home treadmills are made using DC motors. DC motors only operate at their full capacity when running at their top speeds, which means that a person walking at 4 mph on a machine with a 2.5 HP motor will likely only be using a small fraction of the motor's capacity. This is not a huge problem for most users, but a heavy person walking at a slow speed will put an extra load on the motor and cause it to run hot which will eventually result in motor or lower electronic board failure. A larger motor will be able to handle the extra load without over-heating.

**Folding vs. Non-Folding:** Many folding treadmills are only suitable for walking. This is because to make the folding mechanism work reduces the footprint of the machine resulting in less stability especially when the deck is inclined. This lack of stability not only reduces the quality of your workout but also reduces the ability of the treadmill to withstand the constant pounding that running puts on the frame, console and lower electronics. If you're looking for a folding treadmill, make sure it has a separate pedestal and a one-piece deck that folds up independently of the pedestal. To test this inclining the treadmill while you're on it, if the console elevates while the deck is inclining, then that machine does not have the separate pedestal design.



If you're going to be doing a lot of running then a non-folding treadmill is still your best bet, especially in a basement or somewhere you can dedicate the floor space. You may also want to get the full 60" long deck to give yourself a little more room to roam. One additional benefit of non-folding treadmills is that they often have better shock absorption systems designed for the serious runner.

## Components:

**Frame:** The frame is the foundation of the treadmill and it is an important and often overlooked component. There are two types of frames: steel and aluminum. We prefer steel because steel frames feel more spring-like when your foot strikes the deck, and generally speaking steel frames lend themselves to a tighter, quieter unit. Aluminum frames are strong and last just as long as steel, but aluminum units have a deadpan feel which is really bad for runners. This is because aluminum treadmill manufactures use rivets to hold the frames together, and that is just not as good as a uni-body steel-welded frame. As a rule



of thumb, look at the specs of the treadmills you are considering. For the price point of \$1,000 or less, look for a unit that's over 200 lbs. and for a unit that's \$1,500 or more, look for at least 250 lbs.

**Motor:** Unfortunately, there are no motor horsepower police, so you can't compare the motors of each treadmill manufacturer on an apples-to-apples basis. The actual HP rating—believe it or not—is solely determined by the treadmill manufacturer itself. There is no industry standard as to how to rate your DC motors. Manufacturer "A" may call their motor a 2 HP continuous duty motor rated at 2,000 rpm and 15 amps. Meanwhile, Manufacturer "B" may buy that very same motor and label it as a 3 HP commercial grade continuous duty motor. You might ask how this is possible, well, it's quite simple Manufacturer "B" just rates their motor at a very high rpm speed (around 5,000 rpm) in order to achieve a higher horsepower number for marketing purposes. As you can imagine, with more than a million treadmills sold in sporting goods and big box stores annually across the US, many consumers just look for the highest HP rating at the lowest price.



Our experience is that the top brands of treadmills are all using good quality motors. Generally, they last a long time, you should look at the motor warranty to separate the high



quality ones from the junk. Don't consider any motor that comes with less than a ten-year warranty. The good news is that there are a dozen or so brands that fall into the high-quality bucket. Now that you know what to look for in a motor you also need to know what to look for in a flywheel. The flywheel helps to regulate the speed and consistency of the belt, with out it the belt would not move at a constant speed and would jerk with every foot impact. At Smooth, we "tune" each flywheel until the motor is running perfectly smooth to do this we put each motor on a balancing machine and run it at a high speed while a technician drills small holes into the cast aluminum flywheel. It is this balancing that allows the motor to run at peak efficiently and improves the inertia of the flywheel resulting in a smooth-as-glass feel.

**Treadbelts:** Most high-quality treadmills have a two-ply belt consisting of a black polyurethane top layer and an under-layer made of a nylon-polyester weave. Since the underside of the treadbelt is in constant contact with the deck and rollers it will wear out first. We've been selling treadmills for over 23 years and we know that customer just don't peel back a treadbelt to look at its underside. Go ahead and do it, pinch the edge of the treadbelt at the seam, peel the treadbelt back and take a look. Here are the three simple things to look for:

1. Determine whether the seam is a horizontal or a diagonal cut. Diagonal is preferred because the extra bonding area creates a stronger belt. Also, a diagonal seam gradually passes over the rollers so the belt runs smoother and will not give that "THUMP-THUMP" sound with each rotation over the front and rear rollers.
2. Look at the weave of the belt itself. Like an oriental rug, the tighter the weave, the more expensive the belt is to make. The belts with the tight, soft weave on the bottom will last for thousands of hours of use.
3. Rub your fingers across the underside of the belt. You should feel a soft, almost cottony, feel from the polyester. It is a common cost cutting measure to use only nylon in belts. You will only be able to know this by feeling the underside of the belt or by listening to the sounds of the machine while in use. If you hear a sound that's like bees buzzing, don't buy the treadmill the sound is caused by the increased friction of a cheap belt. If the underside of the belt is rough, it will eventually wear away the deck's top (phenolic resin) coating which will cause the treadmill to run hot and shorten it's life. On high-end machines, you may see what's called a 4-ply or multi-ply belt. Those belts are generally geared to very heavy use such as high-speed running, large-families or for use in gyms.

**Decks:** Most of the top treadmill manufacturers are using  $\frac{3}{4}$ "-1" thick solid wood decks that are typically mounted on elastomer rubber grommets on top of the steel frame. The use of rubber grommets is designed to isolate the deck from the frame and absorb impact of running on the deck this type of deck is often referred to as a "floating deck" and is a good thing. Cheaper machines will use a pressboard deck that's more likely to break if you run on the machine at all. Although decks are not the most expensive component, they can be very expensive to replace since it requires a few hours of labor to completely disassemble and break the machine down to the base frame. Since belts and decks are designed to wear out at about the same time if you do ever have to change your deck you should also change the treadbelt at the same time. The deck and treadbelt on a quality unit usually last a few thousand hours of use. It is not unusual for "big box retailer" treadmills to have belt and deck combinations that only last around 500 hours. Some high-end manufacturers like Life Fitness, Landice, True and Smooth use triple-laminated phenolic resin coatings on their decks. These reversible



decks offer twice the life-span of ordinary decks since they can be turned over before they need to be replaced.



Rollers

**Rollers:** Look for a roller that is at least 2"-3" in diameter. Although, bigger rollers are not necessarily better. A more important thing than roller size is bearing size and type. All treadmills have two screws in the rear of the machine which are used to adjust the treadbelt tension. High-end machines have several features like crowned rollers, rubber-coated front rollers or even auto-tracking computerized rollers. During your machine's break-in period, the treadbelt may stretch. If you notice belt slipping, you may need to tighten the rear roller. Cheap machines are a constant headache because it tends to be very difficult to keep the belt centered on the rollers—you'll find yourself continually having to adjust the rollers. So, you want to look for the right sized rollers with good bearings that are designed to keep the belt in-line and properly tensioned.

**Electronics:** Each treadmill has both an upper electronics package (called the console) and a lower motor control board which is the brain of the treadmill and typically the most serviced part. Today, most treadmills have hill profiles, custom program storage and user profiles which can be set up for each user in the family. Look for at least a three-year warranty on your electronics. If you spend over \$2,000 look for more than three-years and you may even find lifetime warranties now on all components including electronics. Now that is a great deal!



Console

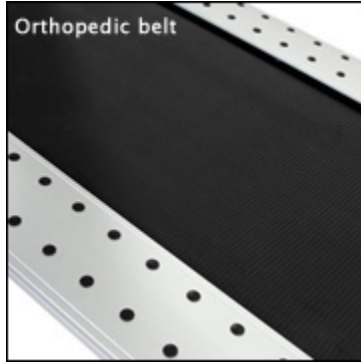
Optional features or upgrades you may want to consider:



Chest belt for wireless heart rate monitor

**Wireless Heart Rate Control (HRC):** Typically there are two ways that treadmills can monitor your heart rate, handgrips or with a wireless heart rate strap. Inexpensive machines usually only have handgrip for pulse monitoring which is both convenient and less expensive to manufacture, unfortunately it is not as accurate as a wireless strap. A treadmill equipped with HRC will come with a rubber chest strap that you wear against the skin just below your rib cage and above your upper abdominals. The belt transmits a wireless signal to a receiver built into the treadmill console. The treadmill is able to adjust its speed and/or incline automatically to keep you in your

target heart rate zone (based on your fitness goals this is typically 55-85% of HRmax). Most high-end units have this feature and many allow you to save your preferred target zone or calculate the correct zone based on your age (checkout the [American Heart Association's web site](http://www.heart.org) for more information on target heart rates).



**Orthopedic Belts:** There are two types of orthopedic running belts being used on treadmills. The original style has a two-ply belt with the same nylon/polyester weave layer on the bottom as a regular treadbelt. This is different than the typical belt because the top layer is a thick rubber which is heavy in weight and soft on the feet. Please note that the added weight of this type of belt will cause the treadmill to draw a higher electrical load than a conventional thinner belt and should always be used on a dedicated 20-amp circuit breaker. These high quality "ortho" belts will hold up just fine when paired with a larger motor and top-grade deck. You may need to lubricate the "ortho" belt a bit more often (monthly instead of quarterly) since they do run a bit hotter.

The other style of orthopedic belt is really not a true orthopedic belt at all. We're seeing some unscrupulous manufacturers putting a waffle stamp design into a thicker nylon belt and passing them off as orthopedic belts. Two of the lower priced manufacturers have had recalls on their machines recently because of these cheap belts. One has even had an issue with motor fires that were caused by excessive heat generated by the belts.

**Extended Warranties:** In general, you should always look for a three-year warranty on all key components like the motor, electronics, belt, deck and rollers. Typically, you will find longer warranties available on some components. A ten-year warranty on the motor is evidence of the manufacturer's confidence that the choice of components will stand the test of time. Since there is always a warranty war going among manufacturers, we would recommend the purchase a treadmill that comes with a great standard warranty and recommend avoiding the purchase of extended warranties. Extended warranties do not usually cover the wear items like the belt and deck and in many cases exclude the electronics as well. You can see why the big box chains push them so hard, since there is usually more profit in the extended warranty than there is in the treadmill itself!

## Tips on Maintaining Your Treadmill:

A well maintained treadmill will perform better and last longer. Fortunately the maintenance of a treadmill is a relatively simple and inexpensive task. Any reputable manufacturer should be happy to answer your maintenance questions long after your purchase.

To provide you with years of great workouts we recommend a four-pronged approach to caring for your treadmill:

1. Placement
2. Cleaning
3. Deck Lubrication
4. Belt Alignment and Tension

**Placement:** The location of the treadmill in your house can have an impact on the overall life of the machine and how frequently you have to maintain it. Pet hair, carpet lint and debris from the outside are factors that you should consider. Take these factors into consideration when choosing where you want to put your machine. If possible, keep the door to your exercise room shut to keep pet hair and other dust away from the unit. If your machine is in a high traffic or dusty location you may want to



vacuum in and around the treadmill more frequently. Dust that works its way under the belt or into the motor housing can make the machine run hotter and significantly reduce its lifespan.

Keep the computer in good working order by keeping it out of direct sunlight. As with any computer, overheating can damage the processor and memory.

Keep the treadmill level, floor unevenness can result in lopsided wear on the treadmill's belt and deck. If the left and right sides are not at the same height, more pressure will be placed on the low side, and the belt will eventually shift off-center and wear more on one side than the other. When you first set up your new machine, use a level to make sure the deck does not slope from side-to-side. A small amount of slope from front to back is ok, so, if you find the left and right sides are not at the same height, simply rotate the machine until the slope runs front to back. Rotating may be an easier, more reliable leveling method than attempting to shim the feet. If your exercise room is not of a size or shape that provides the flexibility to rotate, consider purchasing a unit that features floor levelers. Floor levelers are simply feet that extend or retract to create a level surface every time.

For both cleanliness AND evenness of surface, a treadmill mat is invaluable. Any seller should be able to offer you a treadmill mat for a reasonable price. The mat makes it easier to vacuum or mop around the machine, makes hair and lint easy to spot, and picks up remnants of shoe dirt before you step on the machine. The mat can also help to smooth out any shallow dips in the floor that could tilt the surface.

**Cleaning:** If you remember nothing else from this reading, remember this: Do not use soaps or solvents to clean your treadmill. This includes the mildest household cleaning products. As careful as you may be, soap will get on or under the belt and cause the surface to lose traction, eroding the safety of the unit. Rubbing alcohols should be avoided as well. These solvents will, over time, dry out the rubber and plastic parts of the console, aging them unnecessarily. Our best advice is to keep liquids away, other than unavoidable sweat or water bottle condensation. When needed use a water-dampened soft cloth to wipe away perspiration or other grime. Once a week, vacuum around and under the unit. This will help keep any dust or dirt from the floor from getting into the lubrication of the belt and deck. Periodically, about four times per year, lift the motor hood and vacuum this area as well. Dust and lint frequently collect around the motor, increasing the likelihood of overheating.

Dirt from the shoes you wear on the machine invariably makes its way to the edges of the belt and onto the deck, so it's a great idea to keep a separate pair of sneakers for use on the treadmill that you don't wear outside.

**Deck Lubrication:** Although your treadmill came pre-lubricated, you will eventually need to refresh the grease. This is true for any unit in any price range. You will have an easier time if you select a unit that is lubricated strictly with silicone. Avoid the hassle caused by purchasing a unit lubricated with petroleum or paraffin (wax). We recommend silicone lubes like "Lube-N-Walk", which can be purchased from your treadmill dealer, or Napa 8300 spray, which can be purchased from almost any hardware or automotive store.

Fortunately, your unit is unlikely to need lubrication within the first year. After that, however, you may find it needs extra lubrication quarterly or semi-annually, depending how much you use the treadmill. The way to know whether it needs lubrication is to give it a quick exam every few months. Simply lift the sides of the belt and reach in to feel the surface of the deck. If it feels slippery, the deck is still sufficiently lubricated if the area feels dry, you need to reapply lubrication.

To lubricate, follow these three simple steps:



1. Position the belt so the seam is on top and in the center.
2. Lift the side of the belt and position the spray nozzle between the belt and deck, about 6" from the front of the unit. Spray from front to back for about 4 seconds. Move to the other side and repeat.
3. Let the silicone set for 1 minute.

**Belt Alignment and tensioning:** Despite your best efforts to set your treadmill on a level surface, the belt may get out of alignment. Many people have a gait that favors one leg over the other, gradually nudging the belt to one side and causing it to rub against the side rail or end caps. Periodically run your machine at a slow speed (2.5 mph) with no one on it and look at your belt to verify that it is not moving at an angle. If you see that the belt has shifted to one side, unplug the unit and rotate the roller adjustment screw one quarter turn clockwise on the side toward which the belt has shifted.

To test belt tension, walk on the treadmill at the same slow 2.5 mph. If you feel the belt slipping under your feet, then it needs tightening. Rotate both left and right roller adjustment bolts the same amount. Walk again at 2.5 mph to check to see that the slippage has stopped. If so, step off the machine with the belt still going and verify that it remains centered after adjustment.

Note: you may need to repeat the process a few times with smaller adjustments to the set screws until you're comfortable that the belt is properly tensioned and centered and be careful not to over tighten the belt.

### Final Remarks:

We hope that this guide helps to dispel some of the mysteries of purchasing a treadmill and provided some insight to make your search for the right treadmill significantly easier. It's important to know what you're looking for and then invest in a product from a manufacturer who's committed to using top-quality components, providing strong customer service and backs up their treadmills with great warranties. Now, informed by this guide, you are well-equipped to judge which models offer the features you need for the price you plan to spend.

But this is only the first step; the real task is achieving your fitness goals. Best of luck and if you have any questions please give one of our fitness consultants a call - they're available most days, check our website for details.

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