



## Treadmill Buying Guide

By Joe Alter

A handwritten signature in blue ink that reads "Joe".

This guide has been written to help those of you who are using the Internet to research the treadmill market prior to purchasing a quality treadmill. Unlike other resources available to you, this document comes from an industry expert. In the interest of full disclosure, I am the CEO of Smooth Fitness, the industry's largest direct-to-consumer treadmill manufacturer. My goal is not to get everyone to buy one of my treadmills, but rather to help educate you as a buyer so that you are better equipped to avoid the industry tricks and traps that an unsuspecting buyer can easily encounter.

First of all, you'll be happy to know that treadmills have been the largest selling category of cardiovascular fitness products for the better part of 20 years now. Only treadmills mimic the natural running/walking movements that the human body naturally performs. Thanks to a motorized machine, the user is automatically paced. For this reason, treadmills enjoy a significantly lower drop-off rate than any other workout modality. But you already know you want one, so let me dig right into the meat of this now!

Before I tell you how to research the various manufacturers, makes and models out there, let me go over a few DOs and DON'Ts:

- DON'T make your decision based on just one person's opinion and that includes mine.
- DO look at several sources available to you online such as [About.com](http://About.com) (owned by the New York Times and the Internet's tenth most trafficked web site), [Epinions](http://Epinions.com), [Bizrate](http://Bizrate.com) and [Consumer Guide](http://Consumer Guide) online (which is now part of [www.howstuffworks.com](http://www.howstuffworks.com)).
- DO steer away from web sites that sell parts for treadmills. If you think about it, a web site that makes its living supplying parts for poorly-made treadmills with weak warranties is bound to recommend low-end units that will need some TLC in short order!
- DON'T get too hung up on the spec game, and avoid playing the horsepower game altogether.

### Where to Start?

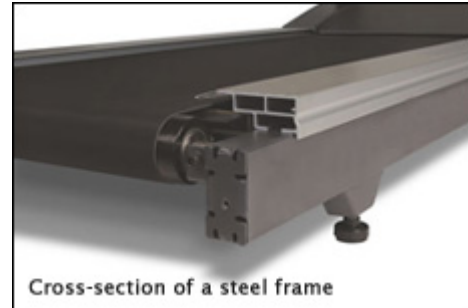
**Price:** The first thing you need to know is how much you should expect to spend in order to get a good quality machine. That answer really depends on what kind of use you and your family expects to get out of the treadmill. Generally, you can get a good machine for walking only for around \$1,000. Look for a 2.5 HP continuous duty motor (beware of anything labeled much more than that (I'll tell you why later), a 20-wide walking belt that's 52"-55" in length. If you are taller (over 6'2"), you should consider stepping up to something in the \$1,500-\$2,000 price range. The upgrade gives you 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 lbs., you should consider spending a bit more for a stronger motor and higher grade belt and deck combination, even if you are only planning on walking on the treadmill. 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 the highest speed, 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 very heavy person walking at a slow speed will cause the motor to run hot and eventually result in motor or lower electronic board failure.

### Components:

**Frame:** One of the most important and overlooked components is the treadmill frame. There are two types of frames: steel and aluminum. I much prefer steel because with a steel frame you will feel a more spring-like feel when your foot strikes the deck, and generally the steel frame lends itself to a tighter, quieter unit. Aluminum frames are strong and last just as long as steel, but those aluminum units have a deadpan feel which is really bad for runners (why?). Understand that companies that use aluminum rivet the frames, and that is just not as good as a unibody 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 over 200 lbs. For a unit over \$1,500, look for at least 250 lbs.



Cross-section of a steel frame

**Motor:** Unfortunately there is no such thing as motor horsepower police, so you will not be able to 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: 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 bigger HP number strictly for marketing purposes. As you can imagine, with more than a million treadmills sold in sporting goods and big box stores annually around the country, many consumers just look for the highest HP rating at the lowest price.



Treadmill drive motor

My experience is that all of the top brands of treadmills are using good quality motors now. Generally, they will last a very long time, and 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 probably a dozen or so brands that fall into the high-quality bucket. Now that you know your motor will likely last a good long time, you should know to look for one with a precision-balanced flywheel. At Smooth, we put each and every motor we make onto a balancing machine. During the process, the motor runs at a very high speed while a technician drills small holes into the cast aluminum flywheel until the motor is running perfectly smooth. It is that added inertia which is provided by the flywheel that provides that smooth-as-glass feel.

**Treadbelts:** Most high-quality treadmills have two-ply belts which consist of a black polyurethane (not rubber) top layer and an under-layer which should be made of a nylon-polyester weave. It is the underside of the treadbelt which will wear out first. In over 22 years in this business, I have never seen a customer 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 you should be looking at:

1. Determine whether the seam is a horizontal or a diagonal cut. Diagonal is the preferred method of making a long-lasting treadbelt because the extra bonding area creates a stronger bond where the belt is glued together. Furthermore, with the diagonal method of cutting and gluing, you will not get that THUMP-THUMP sound with each rotation of the belt traveling 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 of many manufacturers to use only nylon in their 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 is akin to bees buzzing, don't buy the treadmill!) You can imagine that if the underside of the belt is rough, it will wear away the top (phenolic resin) coating of the deck which again will make the unit run hot and cause the treadmill to break down. On very high-end machines, you may see what some call 4-ply or multi-ply belts. Those belts generally are geared for very heavy use such as high-speed running or large-family use.

**Decks:** Most of the top treadmill manufacturers are using  $\frac{3}{4}$ "-1" thick solid wood decks which are usually mounted on top of elastomer rubber grommets laid upon the steel frame. The rubber grommets are designed to absorb impact and are commonly referred to as a floating deck in the industry. Cheaper machines will use pressboard and not solid wood and those will surely break if you run on the machine at all. You should know that although decks are not the most expensive component, they can be very expensive to change 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 change your deck you should also change the treadbelt at the same time. The deck and treadbelt on a high-end unit usually last through a few thousand hours of use. It is not unusual for sporting-goods sold treadmills to have belt and deck combinations that will only last about 500 hours. Some of the 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 since they can be turned over once before they need to be replaced.



**Rollers:** Look for a roller that is anywhere from 2"-3" in diameter. Bigger is not necessarily better, though. The most important thing about a roller is not the size of the roller but the size and type of the bearings. Every treadmill has 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 any slippage, you may need to tighten up the rear roller. Cheap machines are a constant headache because it tends to be very difficult to keep the belt centered—you'll find yourself continually having to adjust the rollers.



**Electronics:** Each treadmill has both an upper electronics package (usually called the console) and a lower motor control board which is the brain of the treadmill and typically the most serviced part—especially on cheap models. 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, you can even find lifetime warranties now on all components including electronics. Now that is a great deal!



**Optional features you may want to consider:**

**Wireless Heart Rate Control Programs (HRC):** There are two ways that you can monitor your heart rate on a treadmill via handgrips or with a wireless monitor. Inexpensive machines usually only have handgrip pulse monitoring which is fairly convenient, but is not as accurate as a wireless heart rate monitor. If a treadmill is equipped with HRC, it will come with a rubber chest belt which you wear against the skin just below the rib bones above your upper abdominals. That belt will transmit a wireless signal to a hidden receiver built into the console. The treadmill is able to adjust its speed and/or incline automatically to keep you in your target heart rate zone. Most high-end units have this feature and many allow you to save your preferred target zone or just let the machine determine the correct zone based on your age.



Chest belt for wireless heart rate monitor

**Folding vs. Non-Folding:**

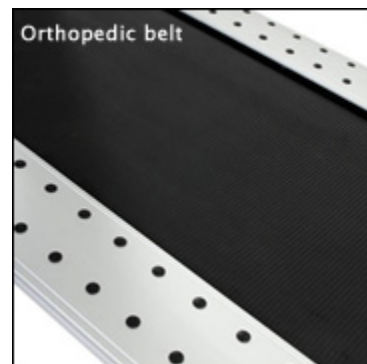


Folding treadmill with separate pedestal design

The great majority of folding treadmills are only suitable for walking. The reason for this is that when you put a joint in the middle front of the machine and then you add incline to the front end you no longer have a very stable surface to withstand the constant pounding that regular running will put on the frame, console and lower electronics. If you require a folding treadmill, look for one that has a separate pedestal and a one-piece deck that folds up independently of the pedestal. You can test this by inclining the treadmill while running on the unit. If the console elevates while the deck is inclining, then that machine does not have the separate pedestal design.

For those focused on running, a non-folding treadmill is still the best type to buy, especially in a basement or on the first floor of a home where you can dedicate the floor space. If you are going to spring for a non-folding unit, you may want to just get the full 60"-long deck to give yourself more room to roam. One added benefit of the non-folding class of treadmills is that they often have a better shock absorption system geared for running.

**Orthopedic Belts:** There are two types of orthopedic running belts in the marketplace today. The original style has a two-ply belt which has the same nylon/polyester weave layer on the bottom side as a regular treadbelt. The top layer is replaced with a very thick rubber layer which is heavy in weight and soft on the feet. The added weight causes the treadmill to run at a higher amperage level than a conventional thinner belt and therefore should always be used on a 20-amp circuit breaker with a dedicated line. These high quality ortho belts will hold up just fine if paired with a larger motor and top-grade deck. You may need to lubricate ortho belts a bit more often (monthly instead of quarterly) since they run a bit hotter.



Orthopedic belt



The other styles of orthopedic belt that you may see are really not true orthopedic belts at all. I am seeing that some unscrupulous manufacturers are putting a waffle stamp design into a thicker nylon belt and calling it an orthopedic belt. 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:** As a general standard, 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 a warranty war going on right now among the manufacturers, I would only purchase a treadmill that comes with a great standard warranty and I would recommend avoiding the purchase of an extended warranty. Those 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!



## Maintaining Your Treadmill:

A treadmill can only last and perform according to how well it is maintained. Fortunately for us, this is a relatively simple and inexpensive task! Any reputable manufacturer should be happy to answer your maintenance questions long after your purchase.

I recommend a four-pronged approach to caring for your fitness investment:

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

**Placement:** The location of the machine within your home can impact the frequency and difficulty of maintenance. Pet hair, feathers, carpet lint and debris from the outside are all factors that can require you to dust and vacuum in and around the machine more often. If possible, keep the door to your exercise room shut to keep pet hair at bay. 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 would be a great idea to keep a separate pair of sneakers for use on the treadmill that you never wear outside.

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.

Unevenness of flooring 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 begin shifting off-center and become more worn 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 not to be at the same height, simply rotate the machine until any lean runs front to back. Rotating is an easier, more reliable leveling method than attempting to shim the feet. If your exercise room is not of a size or shape which 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, I can't begin to overemphasize the value of a treadmill mat. Any seller should be able to offer this. The mat creates ease of vacuuming or mopping, makes hair and lint easy to spot and eradicate, as well as picks up remnants of shoe dirt before you step on the machine. The mat can also help to eliminate any shallow dips in the floor that could tilt the surface.

**Cleaning:** If you remember nothing else from this reading, remember this: NO SOAPS, NO SOLVENTS! This includes even the mildest products available. As careful as you may be, soap will reach the belt and cause the surface to lose traction, eroding the safety of the unit. Rubbing alcohols should be avoided as well. Such solvents will, over time, dry out the rubber and plastic parts of the console, aging them unnecessarily. My best advice is to keep liquids away, other than unavoidable sweat or water bottle condensation. 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 undermining 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 an overheated system.

**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). The silicone lubes I recommend are 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 to semi-annually, depending on usage. The way to know whether it needs lubrication during the first year and beyond is to give it a quick exam every three months. Simply lift the sides of the belt and reach in to feel the surface of the deck. If you can feel silicone, the deck is still sufficiently lubricated. If the area feels dry, you need to re-lube.

To lubricate, follow these 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. Begin spraying 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:** Despite your best efforts to set your treadmill on a level surface, the belt may run out of line. For example, 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 operate your machine at a slow speed (2.5 mph) with no one on it to observe your belt and verify that it is not moving at an angle.

If you see that the belt has shifted to one side (left or right), unplug the unit and rotate the roller adjustment bolt one quarter turn clockwise on the side toward which the belt has shifted.

**Belt Tension:** This time, to test belt tension, walk ON the treadmill at 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 check that it remains centered after adjustment.

### Final Remarks:

I hope I have given you the guidance you need in order to make your search infinitely easier. The keys to a great investment are quality components combined with a strong customer service commitment on the part of the manufacturer. The best manufacturers will assure you that someone knowledgeable will always be there to give advice and answer questions long after the time of your purchase.

Now for the real task: achieving your fitness goals. Best of luck!