



RUNNER'S WORLD[®]

Treadmill Training Tips

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REAL RUNNERS TRAIN ON TREADMILLS

The treadmill can be more than a stopgap on days when the weather doesn't cooperate or the baby is napping upstairs. Done right, treadmill training will help you maintain and improve your fitness—you can monitor the thermostat, tackle made-to-order hills, and enjoy cushioning that protects your joints. Most important, you force yourself to stick to a pace. “You've got to keep up, or you're flying off the back of the machine,” says Rick Morris, author of *Treadmill Training for Runners*.

It may take a little experimenting to build a routine you enjoy. That's fine—just don't get locked in. “Be playful with your workouts,” says Gregory Florez, a treadmill expert and CEO of V2Performance.com. “Never get locked into the same routine; otherwise, your body is going to adapt pretty quickly and you won't get as much out of it.” With that kind of improvisation in mind, here are eight workouts that make the best use of a treadmill's programmable features.

8 GREAT RUNS OF THE 'MILL

Whatever your goal, there's an effective and fun (really!) treadmill workout just for you.

If your goal is to:

Introduce Your Legs to the Treadmill

Try This: Start at an easy pace. After 5 minutes, crank up the speed by .5 MPH for 1 minute, then back down to your easy pace for 2 minutes. Crank up the incline by .5% for 1 minute, then back down for 2 minutes. Continue alternating, experimenting with pace and incline.

If your goal is to:

Make the Most of 20 Minutes

Try This: Warm up at a slow to moderate pace for 5 minutes, then increase the speed to race pace and hold it for 10 minutes for a hard tempo. Cool down for 5 minutes.

If your goal is to:

Return from Injury or Illness

Try This: Alternate jogging and walking—2 minutes jogging, 2 minutes walking—for a total of 20 to 30 minutes. If your injury or illness doesn't flare up, increase the run interval during subsequent workouts to 3 minutes, then 4, then 5 (and so on), and bring the walking segment down to 1 minute in between.

If your goal is to:

Preserve Speed through the Winter

Try This: Do a 10-minute warmup at a 1% incline. Then increase the speed by .5 MPH for 3 minutes, decrease the speed to warmup pace for 2 minutes, increase by 1 MPH for 3 minutes, and decrease to warmup pace for 2 minutes. Do this two or three times, and finish with a 5-minute cooldown. This 35- to 45-minute workout has enough fast segments to keep you speedy until spring, and it's more mentally engaging than a single-speed treadmill run of the same duration.

If your goal is to:

Improve Speed at Any Distance

Try This: Set the treadmill to a 2% incline. After warming up, match speedy segments with equal recovery (e.g., 1 minute hard, 1 minute recovery) for 1-2-3-2-1-2-3-2-1 minutes, then cool down. “The idea is to run your 10-K pace in a broken tempo format,” says coach Brad Hudson of Hudson Training Systems in Boulder, CO.



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If your goal is to:

Chew Up Hills

Try This: After warming up, do 1-minute runs up a 4% incline with 2 minutes of slow, flat jogging in between. Build up to 10 repeats at a 6% incline. This gives your cardiovascular system a challenge but is easier on your legs because your overall speed isn't fast. “I've found over the years that I can stay injury-free while running slower up a steep hill,” says Olympic marathoner Magdalena Lewy Boulet. “It's the same intensity as on a track, but on a track your legs have to move much faster.”

If your goal is to:

Finish Your Marathon Strong

Try This: Run 4 miles at 30 seconds slower than your marathon pace; then 4 miles at 15 seconds slower than race pace; then 4 miles at race pace; then 4 miles at 15 seconds faster than race pace. “This trains your body to go fast when you're tired but is best done in the last phase of training,” says coach Dan Guillory of West Coast Road Runners.

If your goal is to:

Train for a Specific Race

Try This: Use the treadmill to simulate your upcoming race. Some treadmills offer preset courses of famous races, but if your treadmill doesn't, you can still use that race's elevation map to time your ups and downs on the treadmill to mimic the course. For instance, let's say you know there's a killer hill two-thirds of the way into your next 10-K. Hit that “up” incline button at the same point in your treadmill run, and get used to the feeling. On race day, when you get to that hill, you can think about how you've done it before—and it felt much worse when you were in your basement.

ACHIEVE PERFECT FORM

Treadmills offer benefits you may not get from the road, but you need to adapt your workouts to simulate outdoor conditions as well as avoid injury. Use these tips to get started.

- 1. Adjust as you go.** Counter the lack of wind resistance you would normally face outside. Because there's no hard science equating wind resistance to incline percentages, you should experiment with your own adjustments to get your indoor experience to match your outdoor one (see "The 1% Debate," right).
- 2. Shorten your stride.** Have your feet land as close to your body as possible. Overstriding (having your foot extend too far ahead of your body) can create an inefficient running form that can cause injury. Listen to your body to find a comfortable pace. If what's normally an easy pace outdoors feels hard on a treadmill, slow it down.
- 3. Don't hold on.** Holding onto the handrails can cause excess rotation in the lower body or increased stride width. These issues can lead to pain in the knees, shins, Achilles tendons, and iliotibial bands.
- 4. Look straight ahead.** Staring down at the treadmill's display or turning your head to see a TV screen that's off to your side can strain your neck and wreck good running posture.
- 5. Watch your stance.** A too-narrow stance is a common problem. Imagine a line dropping straight down from your belly button. The inside edge of each shoe should approach but not cross over the centerline of the body.
- 6. Swing your arms front to back.** Your hands should approach but not cross the centerline of your body. Imagine keeping them in line with the bottom of your ribs. Extra side-to-side motion wastes energy.
- 7. Push off the belt.** On a treadmill, runners tend to simply pick their feet up and place them back down on the moving surface, rather than pushing off the surface as they would outside. Lean more forward at the ankles, land more on your forefoot, and concentrate on pushing off the belt rather than letting it carry you along—in other words, run with some spring in your step.
- 8. Remember to drink up.** You're likely to sweat more on a treadmill. To avoid dehydration, drink two to four sips of water every 15 minutes while running.

The 1% Debate

YOU'VE LIKELY HEARD THAT YOU NEED TO RAISE THE INCLINE TO 1% IN ORDER TO OFFSET THE LACK OF WIND RESISTANCE.

It may sound like good advice, but is it backed by scientific fact? It appears that it depends on how fast you run. The faster you run, the greater the energy cost because of the increased wind resistance. At paces slower than 8 MPH (7:30/mile pace), no adjustment to the incline is necessary. If you run between 8 MPH and 11.2 MPH (5:21/mile pace), a 1% treadmill grade provides the right adjustment. At higher speeds you'll need at least a 2% grade to offset the lack of wind resistance.

TREADMILL FAQs

Much like the belt of the machine itself, certain treadmill questions seem to roll around again and again. Here are some answers.

Q: Just how accurate are those "calories burned" numbers?

SHORT ANSWER: Not terribly

LONGER ANSWER: Treadmills fool us by estimating total calories burned during our time on the machine rather than the net number—i.e., calories burned solely through exercise, above and beyond what we would have used anyway. (We all burn a certain number of calories even at rest.)

Here are some simple equations to calculate and compare total calories burned per mile versus net: **For running** (5 MPH and higher): Total calories burned per mile = $.75 \times$ body weight (in pounds); net calories burned per mile = $.63 \times$ weight. **For walking** (3 to 4 MPH): Total calories burned per mile = $.53 \times$ body weight; net calories burned per mile = $.30 \times$ weight.

Q: Is treadmill running easier than running at the same speed outdoors?

SHORT ANSWER: Yes

LONGER ANSWER: Treadmill running may feel more taxing, but physiologically it's actually a bit easier than running outdoors. In his book *Treadmill Training for Runners*, Rick Morris explains, "Running on the treadmill, you don't have to overcome the effects of wind resistance and you also have that assistance of a moving belt doing part of the work for you." To more closely simulate road running, set your treadmill's incline at 1% or 2% (see "The 1% Debate," above) and don't let the treadmill carry you along (see "Push off the belt," above).



Q: Can I train on a treadmill for a road race?

SHORT ANSWER: If you must

LONGER ANSWER: You can train for a road race mostly on a treadmill, says Jenny Hadfield, coauthor of *Running for Mortals* and *Marathoning for Mortals* and a RunnersWorld.com columnist. But you'll have to make a few tweaks. For starters, be sure to increase the incline and run "hills" on the treadmill once or twice a week. And because treadmill belts offer a relatively soft landing, take steps to prepare your body for racing on asphalt:

- **Strength-train twice a week** (lunges, squats, hip extensions, planks, pushups).
- **Do at least one short outdoor run** each week during the last 4 weeks of training.
- **During your race**, walk a minute at every mile marker or aid station. This will ease the overall impact on your body and allow you to hydrate.
- **Finally, on race day, run by effort**—not by pace or time goals. You'll be on unfamiliar ground, literally.

Q: Should I wear different shoes on the treadmill?

SHORT ANSWER: Nah

LONGER ANSWER: "Most runners wear the same shoes whether running inside or out," says *Runner's World* shoes and gear editor Jeff Dengage. If anything, Dengage says, treadmill runners might opt for a lighter pair of shoes that offers less cushioning, because the treadmill's running surface is softer than most outdoor surfaces. That said, if you wear a shoe with any motion-control features, choose something similar for the treadmill to be sure you have the proper support.

Q: Am I better off running faster with no incline or slower with a steeper incline?

SHORT ANSWER: Yes!

LONGER ANSWER: You must do both for balanced fitness, says Morris. The slower uphill workouts build strength and power, while the faster flat workouts build stamina, endurance, and foot speed. Adjust both

speed and incline during your workout, and you can better simulate the changing terrain of a road run.

Q: Are treadmills "easier" on your body than running outdoors?

SHORT ANSWER: Yes and no

LONGER ANSWER: In general, running on a treadmill is less stressful on the body than running outdoors. John Post, the medical director for TrainingBible Coaching, explains that the treadmill absorbs a significant amount of impact, sparing your body. On the other hand, he says, "The downside is that it doesn't condition the shock-absorbing musculature of the lower extremities like road running does." Result: Over the long term, heavy treadmill use may actually leave you more prone to injuries like stress fractures.

HOW TO AVOID AN INJURY

The treadmill can be a lifesaver when it's dark outside or the weather is bad. But running on a moving belt—especially if it's too fast for your fitness level—can affect your stride. If a treadmill is a valuable part of your running life, consider these strategies for keeping your body healthy and your brain happy.

Problem: You run on autopilot.

Solution: Plugging in the very same comfortable pace and incline mile after mile, day after day can cause problems because the belt's flat, uniform surface works your muscles and joints in a repetitive way. "Any variability you can add to your training program is protective to your body, helping it work more evenly," says Reed Ferber, director of the Running Injury Clinic at the University of Calgary. "If you're bound to a treadmill, using the preset programs, doing hill work, and changing up the pace are not a bad way to perturb your system."

Problem: You do your speedwork on the treadmill.

Solution: You might like plugging in an aggressive pace and sticking it out, but because the treadmill keeps moving even as you tire, you may overstride—land with your foot too far ahead of your body—as you attempt to keep up with a too-fast belt. And that can lead to knee, hip, and hamstring pain. Try to match your treadmill stride rate—the number of steps you take per minute—to the stride rate you have on the road. If your stride rate is



much slower on the treadmill than it is outside, it's a sign that you're struggling on the belt and likely overstriding. (To find your stride rate, count the number of steps one foot takes in 20 seconds. Multiply that by three. Then double it.) "If you're off by 10% or more, you're putting a new stress on the body," says Jay Dicharry, director of REP Biomechanics Lab at Rebound Physical Therapy in Bend, OR.

Problem: You train inside but race outside.

Solution: To get used to variables you may face on race day—such as headwinds, elevation changes, and weather conditions—do your long runs outside. But if it's a choice between a treadmill long run and no long run at all, then hit the belt and "try to vary your pace and incline as much as possible to resemble the terrain you'll encounter outside," Ferber says.

Miles Per Hour to Minutes Per Mile Cheat Sheet

Most treadmills offer both readings of miles per hour and minutes per mile. Manufacturers include MPH because beginners or casual treadmill users may not be familiar with the concept of minutes per mile, which is the measure preferred by experienced runners.

If you're stuck on an old treadmill that offers only MPH, converting to minutes per mile just requires some math—we've done the work for you.

MILES PER HOUR	MINUTES PER MILE
5.0	12:00
5.5	10:55
6.0	10:00
6.5	9:14
7.0	8:34
7.5	8:00
8.0	7:30
8.5	7:04
9.0	6:40
9.5	6:19
10.0	6:00
10.5	5:43
11.0	5:27
11.5	5:13
12.0	5:00



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Before you undertake a new health program or fitness regimen, we encourage you to discuss your plans with your health care professional, especially if you have not exercised for several years, are over 35, or are overweight.

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