

Treadmill Test to Set Run Training Zones

This field test will help you determine your heart rate and pace at lactate threshold, which you can then use to set your run training zones for use with an [ENDURANCEWORKS](#) training plan

Please note that if you are new to triathlon training, have been inactive for a prolonged period of time or are not yet able to maintain a hard, sustained effort, we recommend that you use Rate of Perceived Effort during the first 4–6 weeks of your training program before performing this field test.



Preparation

1. Use a treadmill that accurately displays speed and has a top speed exceeding your best one-mile time and/or has variable incline. If the treadmill's top speed does not exceed your ability, set it at a sufficient grade to make the fastest speed quite difficult. Note this grade in your log.
2. You will need an assistant to record your data and operate the treadmill controls. They will stand so as to easily reach the speed and stop controls on the treadmill panel.
3. Do not eat for 2 hours before the test. You'll have the best results if the previous day was light exercise or a rest day. Warm-up for 10-20 minutes before the test. Note in your log what the warm-up procedure was.
4. If at any time you feel lightheaded or nauseous, stop the test immediately. You are not looking for a maximum heart rate on the test, but it will be necessary to attain a high effort level.

Test Protocol

1. Start at a slow speed (such as 6 mph) and increase by 0.2 mph every minute until you can no longer continue.
2. At the end of each minute tell your assistant how great your exertion is using Borg's Rate of Perceived Exertion (RPE scale of 12 easy effort to 20 max effort).
3. At the end of each minute, your assistant will record your speed, exertion rating and heart rate and increase treadmill speed to the next level (+0.2 mph).
4. The assistant listens closely to your breathing to detect when it first becomes labored, marking this point as "VT" for ventilatory threshold.
5. Continue until you can no longer hold the speed for a minute then slow the treadmill gradually down to a walking pace.
6. The data collection sheet should be completed like this:

MINUTE	SPEED (MPH)	HEART RATE (BPM)	EXERTION (RPE)
1	8.2	147	12
2	8.4	154	13
3	8.6	161	13
4	8.8	166	14
5	9.0	172	15
6	9.2	179	17 VT
7	9.4	182	19
8	9.6	185	20

Data Collection Sheet

MINUTE	SPEED (MPH or KPH)	HEART RATE (BPM)	EXERTION (RPE)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Calculate Your Training Zones Using Heart Rate

TrainingPeaks will calculate your training zones for you:

- Login to your TrainingPeaks account.
- Click on your name in upper right-hand corner for drop down then select “Settings.”
- Click on “Zones.”

Heart Rate Training Zones

The heart rate at ventilation threshold (VT) that you observed during your test is a good estimate of your lactate threshold heart rate (LTHR). Lactate threshold is the heart rate above which acidosis occurs — your muscles will feel heavy with a burning sensation and your breathing becomes labored.

To calculate your heart rate training zones:

- Click on “Add Activity” under “Heart Rate.”
- Choose “Running.”
- Enter your LTHR from your test.
- Under “Choose Type,” select “Lactate Threshold.”
- Under “Method,” choose “Joe Friel for Running (7)” then click on “Calculate.”
- Click on “Apply” to save your run heart rate training zones.

Please note: We only use Zones 1-5 in workouts the training plans (Z5 in a workout refers to Z5a in the zones calculation).

Pace Training Zones

The average pace that you achieved at ventilation threshold (VT) is a good estimate of your pace at lactate threshold (LT-Pace). LT-Pace is the pace you can maintain for about 45-60 minutes in a race assuming you are well-trained.

To calculate your pace training zones:

- Click on “Add Activity” under “Speed/Pace.”
- Choose “Running.”
- Enter your average pace in kilometers per hour (kph) from your test. Note: You can convert miles per hour to kilometers by typing in “convert X.X mph to kph.”
- Under “Choose Type,” select “Threshold Speed.”
- Under “Method,” choose “Joe Friel for Running (7)” then click on “Calculate.”
- Click on “Apply” to save your run pace training zones.
- Please note: We only use Zones 1-5 in workouts the training plans (Z5 in a workout refers to Z5a in the zones calculation).

Additional Notes

Finally, be sure to cross-reference your training zones with Rate of Perceived Effort (RPE) to ensure that your training zones make sense:

ZONE	RPE (6-20 SCALE)	DESCRIPTION
Z1	10-12	Fairly light effort
Z2	12-14	Moderate effort
Z3	14-16	Moderately Hard
Z4	16-18	Hard
Z5	18-20	Very Hard

Do your training zones match the description of perceived effort for each zone?

If not, you may need to adjust your training zones up (or down) slightly to better match RPE. Keep in mind that setting training zones is not an exact science – as long as you are in the ballpark for your training zones then you will get the desired training effect.

WAIVER OF LIABILITY

What you are about to undertake is a fitness program. Injuries may occur in any exercise program, as with this specific program written by David Glover, Krista Schultz and ENDURANCEWORKS, LLC. By downloading and using this program, you are waiving any liability to David Glover, Krista Schultz or ENDURANCEWORKS, LLC. This is a training program that has worked for many others, but it may not be right for you. It is recommended that you consult a physician before undertaking any new fitness regiment.