

About A 10Miler & 1/2Marathon Training Program

This training program is designed for runners with extensive racing experience who want to improve their performance. Owen Anderson, Ph.D., this author's mentor, often said "Most runners invariably train the same way year after year and then wonder why they don't improve." So, this program will utilize a somewhat different training paradigm than the participants are accustomed to. This program description explains the running science basis for all the recommended drills.

Racing is essentially running between two points in the minimum amount of time. The runner's average race pace is primarily determined by two factors, the racer's vVO₂max pace and his/hers subliminal [Dr. Noakes "Central-Governor"] sense of the best pace for the distance. We'll use the term "pace-control" for this factor. Our program will insure the participants improve both of these factors.

vVO₂max Training

As to vVO₂max [See the appendix]: This measurement is the runner's speed at his/hers maximum ability to convert oxygen and glucose to energy. It is essentially the runner's lactate threshold. Most experienced runners race 10 miles at about 85% of their vVO₂max value and 1/2marathons at about 80%. The small "v", is the velocity [meters/sec] at VO₂max. The VO₂max part is inherent and generally can't be improved by seasoned runners. It declines with age and is the principal factor that causes runners to race slower, especially after 60.

Thus, if he/she improves their vVO₂max by 5%, e.g., they can improve their race time by 5%. E.g., Given a 10mile time of 1:40:00 [100 mins] before improvement, after improvement, it will be 96mins [1:35:00]. There are two ways to improve one's vVO₂max. Run enormous weekly distances, e.g., 70+ mi/week, or better yet, run vVO₂max-based intervals weekly.

However, runners can improve their velocity "v". This factor is determined by the runner's biomechanics. Generally, for very experienced runners and especially seniors, improvement can be found by improving the runner's running form.

Note#1: Getting Started:

- Familiarize yourself with how to measure your vVO₂max and its importance for you, here: [Running Economy](#)
- Measure your vVO₂max, run 2 it twice. You must have a watch that can be used to accurately measure 6:00mins. And, have a way to record their measured distances. e.g., a pencil and paper.
- You'll need barbells [Women 3lbs, men 5lbs]
- Check your old running shoes. The heel or toe should not be heavily worn. If either is worn, your foot plant needs correction. Both cause long-term injuries. Both slow you down. Get Owen Anderson's book "Running Form". It's on Amazon.

Drill Type#1: Twice a week run 800m with 45sec recovery intervals at their vV₂max pace. Run 5 the first week or so; then slowly work up to about 10 intervals per session. Be very careful about monitoring your DOMS to prevent injury. Ideally, a DOMS value [0 no pain, 5 so bad can hardly walk] of 1 or 2 is good. *And, never do intervals one day before or after your long weekly run.* Every other week run **two** of your vVO₂max tests instead of a regular interval session. If your vVO₂max pace increases GREAT. If it doesn't improve, or heaven forbid it decreases, contact me immediately. This same drill is applicable for 1/2Marathons; and in fact, full marathons also. Important: Email me your vVO₂max results.

Drill Type#2: After your last 800m interval; rest 2mins and then run two 100m sprints. Carefully note and record your times. We want to see this time improve. It'll pay off in a race when you want to beat a competitor just a few strides ahead of you.

If you don't relish going to the track, use this alternative for your routine interval drills. A [Simple Benchmark Test](#) [This is a hyperlink] see appendix. But, participants must use a track for their biweekly vVO₂max tests.

Drill Type#3: If we find your running form needs improvement, then do this every day, or so. Stand up straight with your feet directly below your shoulders, your lower arms horizontal, and your barbells firmly in your hands. Swing your arms back and forth as if you are running. Count one arm swings. See how many you can do in 60secs. Try to increase the number of swings each time. A good number is 90+ per 60sec.

Pace-Control Training

Pace-Control is a major factor in improving all runners' racing performance. From above: "His/hers subliminal [Dr. Noakes "Central-Governor"] sense of the best pace for the distance. Noakes was the first exercise scientist to recognize the importance of Pace-Control and published his research findings in his first edition of "The Lore of Running" circa 1990. Unfortunately, his research has not been adopted by most of the coaches in the US. Note, even though the US has the largest base of runners of any country, we do not have any world-class road runners. See <https://marathonhandbook.com/running-world-records/>

For perspective, here are a couple of examples: If all a runner has ever raced are 10Ks, and then he/she attempts to race a marathon; you can be certain the runner will start out too fast and hit the wall before finishing.

Careful examination of marathon record holders shows a distinct pattern. They start out relatively slow compared to their overall average pace of the total race. About halfway, they begin picking up their pace every mile. Then they essentially sprint the last mile or two. Note, most novice ultra-marathon runners don't train 50 miles for a 50mi ultra. They simply start out super slow and plan on just running all day long.

Our objective for this part of our training program is to train your subconscious to learn that it's safe and OK to let you run a couple of hours at 85% of your $vVO_2\text{max}$ pace. And, 80% for 1/2 Marathons.

You will be training your subconscious. It knows nothing about miles and distances; it can only learn about duration time. Oh hell, the boss is going to want me to let him/her run for a whole hour. Our brains are great when dealing with time. In prehistoric times, we had to know what time we had to be at the watering hole before the prey got there.

Drill Type#4: First, estimate your likely race finish time. Then, once a week run $\frac{1}{2}$ of that time, PLUS 10%, on a relatively straight, flat course. [E.g., Previously you ran a recent CB10 Miler in 2:00. So, you'll run 1:06 out and 1:06 back.] Then run back to your starting point. Make certain you have the means to measure your pace status, either with a GPS watch or if it's on the W&OD train, time your $\frac{1}{2}$ mile markers. Sprint the last 4 or 5 mins. Try to perfect your ability to do this.

Important, run your first 2 or 3 long runs at about 75% of your $vVO_2\text{max}$ pace. If you find it becomes very hard near the end, then run the next one even slower. Based on how you felt near the end of the previous long run, slowly increase your pace each week, Level off at about 80% to 85%. Remember, you'll run faster in an actual race due to the pack effect and adrenaline rush. Try to maintain your pace up long hills; concentrate on how good you'll feel when you get to the top. Concentrate on everything associated with your running gear, foot strike, springing off the rear foot, etc.

Get in the habit of finishing all your long runs by sprinting the last 4 or 5mins. It'll pay off in a race when you want to beat a competitor just a few strides ahead of you. Typically, you can improve your total time by several minutes.

Incidentally, research has shown elite runners concentrate on their body [association] and regular folks on the time and everything else [disassociation]. I find time and distance pass considerably faster when I race using association; but, it takes practice to maintain your concentration longer than a few minutes.

It's best to run your long runs in a pack. Learn to take advantage of the pack effect, adrenaline rush, and wind drag. You've likely noticed, all elite Kenyans, etc., run races in a pack. We'll publish everyone's $vV_2\text{max}$ to help form teams with similar $vVO_2\text{max}$ speeds.

Final Requests:

- Drill#1 $vVO_2\text{max}$ intervals twice per week
- Drill#2 twice per week following Drill #1
- Drill#3 Daily or at least several times per week, as needed.
- Drill#4 Once per week
- Sprint the last 4 or 5 minutes of all long runs. Work on perfecting this.
- Rest from any strenuous exercise at least one day per week.
- **No regimented walk-running. This seriously befuddles your Central-Governor.**
- Try to do ALL of your running on relatively straight and flat courses, unless you are training for a cross-country race.
- If you plan to race on a hilly course, one day per week, run one of the long hills in your area. Run hard up and fast down. Do not walk or jog down.

Note there are only 4 days scheduled, 3 running and one recovery. Do your own thing in keeping with the general principles of this program.

Appendix, $vVO_2\text{max}$:

The $VO_2\text{max}$ part of this factor is a measure of the maximum amount of oxygen your body can utilize during exercise. It's measured as Milliliters-of-oxygen / kg-of-body-weight / minute. [ml/kg/min]. Typical values for runners range from 65 ml/kg/min to about 85 ml/kg/min. It was initially thought [about 50 yrs ago] that this value could predict a runner's ability. However, it turned out to be rather inconsequential. So, based on good research a new, more accurate measurement was devised, $vVO_2\text{max}$. Note the small "v", it is the velocity [meters/sec] at $VO_2\text{max}$

A Simple Benchmark Test >> https://ridersite.org/About_A_Benchmark_Test_To_Monitor_Performance-Status.pdf

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