

## Efficient Running Training Program – Progression to Maintenance

- **Designed for the runner who is already engaged in a regular fitness program. Some may have completed our 16 week Beginner Plan.**
- **Primary goal is full aerobic development to support optimal health and wellness. This plan is conservative and designed for anyone who has a fitness base. It is not designed for peak racing performance, although many find they run their best times of their lives on this plan.**
- **Schedule is designed with flexibility and different activities, so have fun and make movement a daily habit.**

Unlike many programs, we place the major emphasis on aerobic development, running skill, specific strength, health, progression over years, and not on high intensity workouts. Any intense program can give you short immediate gains, but this comes at a cost.

The philosophy behind our schedules and program is eloquently described by the world's leading Sports Scientist Dr. Tim Noakes of South Africa.

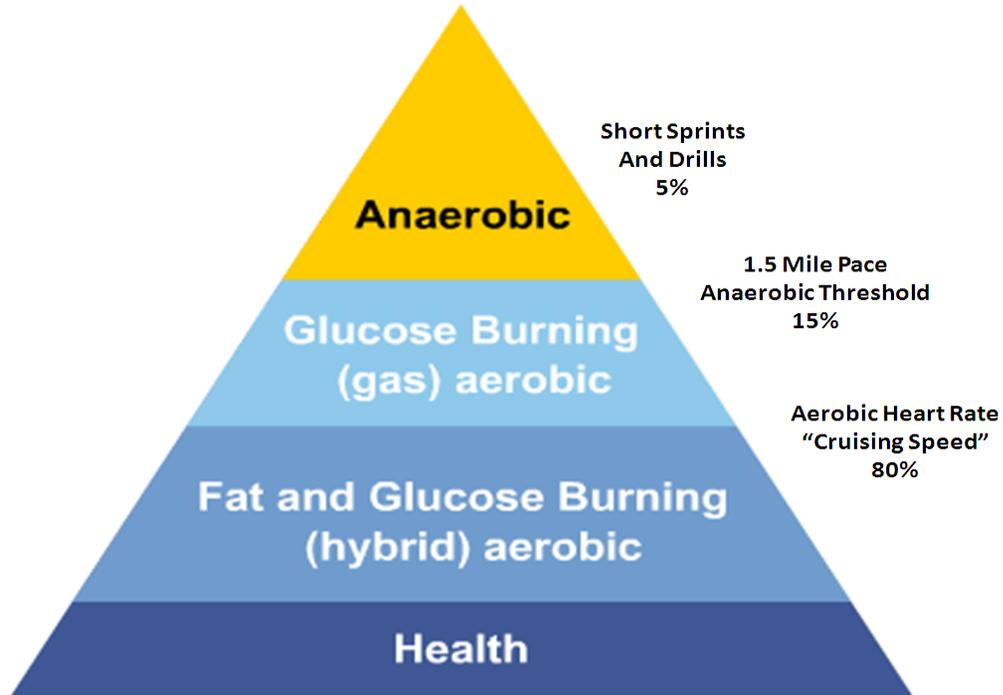
*“... you are not training to run 1.5 miles. What you are training for is to live a long and productive life and maintaining health optimally. For that there is no question that whatever is sustainable is the best type of training. My view is that it is much more sustainable to run longer distances at one's own comfortable pace on a daily basis than to have to force runners to do anaerobic work, which really is not sustainable in the long term for most .”*

We also apply the time tested wisdom of former USAF Flight Surgeon and Father of Aerobics Dr. Ken Cooper. [The Cooper Institute](#) has tested and trained 1000's of runners over the last 30 years.

*“Our general philosophy here at Cooper is that the most effective exercise training programs combine the principles of **overload, progression, and specificity**. By **overload**, we mean training longer/more frequently and/or harder this week than last week and longer/more frequently and/or harder next week than this week. By **progression** we mean increasing the overload very gradually, i.e. just a little longer/more frequently and/or little harder each week. Too much overload too soon leads to musculoskeletal injury. By **specificity**, we mean training according to the goal, i.e. running is a lot more effective for improving 1.5 mile run score than swimming. That doesn't mean that the member needs to run at the exclusion of all other aerobic activities, but certainly running needs to be a part of their exercise training program.”*

Believe the immortal words of Dr. George Sheehan who said “Everyone is an athlete”. Apply the advice of Arthur Lydiard, Coach of Champions and the Cardiac Patients, who said “Train don't strain.” Make activity a daily habit and you too will succeed in both fitness and in health.

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	Hills or Fartlek	Recovery	Aerobic	Recovery	Tempo Or Intervals	Long Run	
Every other Week after Week 16	Progress from 30 - up to 45 Fartlek or Hill run.  Phase 1 or 2 drills	Jog or Aerobic Run 30  Or  X-T 30	Progress from 30 - up to 45/60 Aerobic Run  strides/pickups	Jog or Aerobic Run 30  Or  X-T 30	Progress from 15 to up to 30 Tempo Run  Phase 1 or 2 drills	60-90 Long Run	REST Or Fun Active Play
Every other Week after Week 16	Maximum Aerobic Function Test 3 mile distance or 1.5 mile time trial or Race a 5K  Phase 1 or 2 drills	Jog or Aerobic Run 30  Or  X-T 30	Progress from 30 - up to 45/60 Aerobic Run  strides/pickups	Jog or Aerobic Run 30  Or  X-T 30	Intervals in 1- 3 duration with equal rest. Build up to 20 minutes of fast running  Phase 1 or 2 drills	Build up gradually so every other week you go a little longer. Make goal of 2 hour comfortable Long Run	REST Or Fun Active Play

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### Year-round Maintenance Program

\*\*\*See key below schedule for descriptions of types of runs

- The goal is to keep the lifelong habit simple, fun, and different. So mix it up. This is a general guideline
- Do the Maximum Aerobic Function Test every 4 weeks if possible. Consider a 1.5 Mile time trial or 5k race every month also for motivation and tracking progress.
- This amount of activity will feel fun, easy, and sustainable as it is almost all aerobic
- Increase mileage no more than 10% a week and keep the third week as a recovery week with no increase. 45-60 minutes of activity most days of the week is a goal to aim for.
- Do strides/pickups several times a week if you are healthy and enjoy it.

Training Zones Key (Cross Train is not on the above pyramid):

Aerobic Development   Speed/Endurance   Strength/Quickness   Cross Train X-T

Types of Runs:

1. Building Endurance and Aerobic Recovery
  - a. Aerobic Runs
  - b. Long Runs
  - c. Jogs

2. Relaxed Speed/Endurance
  - a. Tempo Runs
  - b. Fartlek
  - c. Intervals
  - d. Hills

3. Strength/Quickness
  - a. Strides
  - b. Drills

4. Assessing Progress
  - a. Maximum Aerobic Function Test
  - b. 1.5 mile PT Test simulator

5. Cross Training

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## Aerobic Runs

Purpose: These runs are the foundation of fitness and health. Run at or slightly below your Aerobic Heart Rate (AHR) for the duration of the run. You should be able to happily converse. At least 80 % of your running should be at or below the AHR except for 4-6 weeks prior to an event or PT test.

[See Maffetone Method](#) and [180 formula](#)

Instruction /Tips: First 10 minutes are really relaxed to warm up and gradually raise HR toward AHR. When you are finished these runs you should feel as if you could run more.

Adaptation: Aerobic development. Builds capillaries, mitochondria, fat burning capacity, and relaxed running form.

Common Mistakes:

- Ignoring AHR and effort since you may be going slow. When you run above AHR you are all glucose/glycogen and often tapping into anaerobic metabolism, which inhibits aerobic development.
- Trying to run a specific pace
- Going too fast up hills

## Long Run

Purpose: This is a large aerobic stimulus. Time on your feet is the goal and stimulating aerobic development, fat burning, and recruitment of muscle fibers in a sugar depleted state. Duration is the goal not speed.

Instruction/Tips: Start very comfortable and easy below your AHR. On the return you may run at your AHR. Build up your pace slowly. Slowly extend the time on your feet to an hour and a half (2 hours for experienced runners) once every 2 weeks. Maintain adequate hydration by following your thirst cues. Do not over drink water as this can lead to hyponatremia. Replace fluids with a good recovery meal shortly after a long run (preferably within 30 minutes).

Adaptation: Aerobic development. Builds capillaries, mitochondria, fat burning capacity, and relaxed running form. Longer runs (>1 hour) stimulate maximum muscle recruitment without the run being “hard”.

Common Mistakes:

- Running too fast so that you finish the run fatigued and slow. Like all training runs, you should feel as if you could do this run again if you had to.

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- Starting out above AHR and tapping all the glucose reserves instead of stimulating fat burning
- Relying on replacement carbohydrates for energy versus training your body to mobilize fat as fuel.
- Making this one run more than 50% of your weekly miles

### **Jog**

Purpose: Recovery and focus on relaxed and efficient movement pattern. Mental relaxation and stress reduction. General health.

Instruction/Tips: Run much slower than you are capable of, well below AHR. Use light springy running motion (not overstride jog). Keep cadence close to 180. Goal is easy 30 minutes of activity.

Adaptation: Aerobic development same as “Aerobic Runs” as this is below AHR. You train the movement pattern as you focus on form, breathing, and relaxation.

Common Mistakes:

- Timing your jog
- Frustration at how slow it is
- Deciding to run this above AHR

### **Threshold or Tempo Run**

Purpose: Threshold is the fastest pace you can run without generating more lactic acid than you can recycle back into energy. This is a pace you could sustain for at least 30 minutes once you are fit. This is the top end aerobic pace (above the AHR for mixed fuel use) and right at the line between anaerobic and aerobic. It is called the Anaerobic Threshold (AnT) and is still aerobic. This pace is about 90% of your 1.5 mile test pace, a pace which does make you anaerobic toward the end.

Instruction/Tips: Warm up nice and easy for at least 10 minutes. Choose an out and back or loop course you enjoy running that is uninterrupted with traffic. A track works well for shorter distances. Run at comfortable hard effort building from 15 to up to 30 minutes. Your effort and heart rate (if you wear HRM) should be constant from week to week but as you become more efficient your pace will increase naturally.

Adaptation: Develops relaxed speed, running economy, improves aerobic development (remember this is below Anaerobic Threshold) and also raises Anaerobic Threshold by running at a pace at or slightly below this. Helps teach pacing.

Common Mistakes:

- Many novice and experienced runners do this “all out” or think of these as “races”

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- Checking watch and wanting to run specific times
- Thinking you need to improve time with each successive run and trying to force this. Think instead “fast and relaxed”.

### Fartlek

Purpose: Running should be fun. A type of fun running first done in Sweden in the 1930's and practiced by runners and coaches until this day. “Fartlek” literally means as “speed play”. Speed up and slow down according to how you feel, not by any set pace or time interval. This is how a child runs. Make the recovery runs very relaxed. Great way to work on form, relaxation, dynamic stretching, and strength.

Instruction/Tips: Make it up as you go. Run quick and relaxed to telephone poles, up hills, to a certain target. Like play, there is not time or distance outcome. The fast run segments can be 30 seconds to a few minutes. The total run time anywhere between 20-40 minutes, or longer once fit and ready. Pick a fun and scenic route with little traffic. Warm-up 10 minutes. Run the whole mix of paces over an undulating terrain. Mix in some sprints, ups and downs, pick-ups for a minute or two, and recover between the speed segments. Cool-down for 10 minutes.

Adaptation: Aerobic development and coordination with efforts right below the AnT. Develops relaxed leg speed as this is your focus and not a specific pace. Also develops strength if you incorporate sprinting up some hills.

Common Mistakes:

- Making this a structured workout with a time or pace goal
- Making this hard and anaerobic for long segments
- Not recovering between speed segments

A short article on the [Rebirth of Fartlek](#)

### Intervals

Purpose: Develops relaxed speed at pace at or close to 1.5 mile PT test pace. Improves your ability to run at Anaerobic Threshold where you are still aerobic and recycling lactate. Teaches pace judgment, relaxation with effort, and rehearses speeds of the test without the run being overly taxing. Goal is to feel a strong effort but far from “all out”.

Instruction/Tips: you cover a set distance with repetitions and a recovery interval between each. Warm up for 10 minutes. Consider some light quick and short strides to loosen up. Choose a distance or duration that you feel comfortable repeating. This can be in minutes or laps. The total distance of the faster running can be 5 minutes for the beginner and up to 20 minutes for the more advanced. Usually the interval recovery will be of equal time to the faster interval. Allow the Heart Rate to recover to 120~130 range and you feel ready to go again. Stop the workout if you struggle to hold your

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pace or feel your form is compromised. Cool down with an easy 10 minute jog. Pace of the interval is not all out, but pick a pace near your 1.5 mile or 5k goal pace. You should always end this workout feeling as if you could do another interval if you had too.

Adaptation: Develops relaxed speed. Raises Anaerobic Threshold by running at a pace at or slightly above this. Helps teach pacing and tolerance to oxygen debt.

### Common Mistakes

- Trying to run a specific time and running “all out” and too fast. The times are not important, it is the physiological and strength adaptations that matter.
- Too short a recovery jog and not running the repetition well.
- Racing these with training partners or joining a group above your level

## **Hills**

Purpose: Many runners fear hills and avoid them. Running up and down hills at a comfortable pace with good technique develops strength as you run up. This is like going to the gym for free and you are outside! Running downhill is really fun as you develop relaxed speed and work on form.

Instruction/Tips: The course can be a loop with a couple hills ranging from a hundred meters to a half a mile. If you are lucky to live in the mountains you can climb for a couple miles and then run swiftly down. As a beginner do not try to run fast on the uphills. Keep tall with your chest up and open. Look forward and resist the tendency to look down and bend at the waist. Keep stride short and use your glutes to push and spring off the ground. Practice running efficiently and quickly on the downhills with faster turnover. Do not hit hard into the ground with an outstretched leg. Think “run *over* the ground and not *into* the ground”. On the uphills your Heart Rate will exceed your AHR but should still be below your AnT.

Adaptation: Leg Strength (uphill). Leg speed, coordination, and mobility (downhill). Aerobic development as the courses will involve running below your AnT with most of the running relaxed and below your AHR.

### Common Mistakes

- Running too fast and straining up the hill at the expense of good form and going into oxygen debt (anaerobic)
- Running too hard with high impact on the downhills. Remember good downhill running is a skill.

[A fun video tutorial from Boulder CO](#)

## **Strides/pickups**

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**Purpose:** Develop Speed and coordination without running “hard”. This is a form of dynamic stretching and strength work as distances are very short. No lactic acid accumulates. This should be fun! All animals (humans included) love to do short sprints. Strides you a better runner for short and long events as you improve your skill of running.

**Instruction/Tips:** During a run, at the end of a run, or after a thorough warm-up do 4-8 pickups of 50-80 meters. A grass field is ideal. Accelerate naturally and progressively and decelerate slowly. Give yourself a full recovery between each. The goal is to not develop lactic acid or fatigue. Each should feel progressively easier and quicker as you loosen up. Focus on form and relaxed speed.

**Adaptation:** Strengthens and adds mobility to the key muscles and tendons used in running. Develops coordination and skill of running.

**Common Mistakes:**

- Running too hard and long for the strides so that your form breaks down
- Not recovering between and building up acidity in muscles
- Thinking of these as “workouts” which need to be done harder and faster each time
- Not focusing on form and muscling through them.

### **Drills**

**Purpose:** Drills first develop coordination through repetition of correct movement. As you progress they add more strength and mobility. Like sprints, this should be fun and a bit challenging!

**Instruction/Tips:** Work on mastering the movement before trying to add speed or power to the drills. A grass field is ideal surface. Give yourself a full recovery between sets. Progress from Phase 1 to Phase 2 drills as per Modules 2 and 3. Try for twice a week at the end of a run.

**Adaptation:** Strengthens and adds mobility to the key muscles and tendons used in running. Develops coordination and skill of running.

**Common Mistakes:**

- Doing drills with incorrect form
- Not recovering between sets
- Applying power before mastering the movement skill
- Not focusing on form and muscling through them

### **Cross Train**

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Instruction: Pick an enjoyable activity you can fit into your day to get 30 minutes of relaxed activity. Swimming, biking, cross fit, gym work, yoga, aerobics....it is all good as long as it is not a large stress and fits into the relaxation and recovery.

Purpose: Different activities allow you to recover from the tissue stresses of running, especially for the beginner. The ACSM recommends that all try to get 30 minutes of physical activity daily with the safe guidelines of increasing your running volume no more than 10% a week. Cross training can be fun and will work your entire system in a different way to produce greater overall fitness. It is not specific to running though so do not assume that cross training will greatly assist you in passing the PT test.

Adaptation: Continued aerobic development as well as specific strength.

Common Mistakes:

- Doing recovery cross training days too hard.
- Using poor technique in new activities, adding to mechanical stress to tissues.
- Assuming the cross training will make you run faster
- If you are using cross training during an injury, assuming when the injury is healed you can jump back into the same volume and intensity of running as you were doing with cross training sessions. Remember that the tissue load of running is different, even if you are “fit”.

### **Maximum Aerobic Function Test (used with permission from Phil Maffetone)**

[Link to article by Phil Maffetone](#)

Purpose: measures the improvements in aerobic speed during base building. Aerobic speed means you can run faster at the same aerobic heart rate. Without objective measurements, you can fool yourself into thinking all is well with your exercise and you are progressing

Instruction /Tips: perform the MAF test on a track or measured flat with your Heart Rate Monitor, running at your maximum aerobic heart rate found with the 180 Formula. Three to five miles provides good data, although a one-mile test still has value. The test is done following an easy warmup.

Below is an actual example of an MAF Test performed by running on a track, at a heart rate of 145, calculating time in minutes per mile:

Mile 1 11:32

Mile 2 11:46

Mile 3 11:49

Adaptation: The MAF Test should indicate faster times as the weeks pass. You are building capillaries, mitochondria, fat burning capacity, and relaxed running form. This

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means the aerobic system is improving, enabling you to do run faster *with the same effort*. Below is an example showing the improvement of the same person from above. This faster MAF test corresponds to a faster 1.5 mile hard effort run which is done at a pace and Heart Rate higher than the (AHR). Perform the test regularly through the year, ideally every month.

	September	October	November	December
Mile 1	11:32	10:29	9:35	9:10
Mile 2	11:46	10:46	9:43	9:22
Mile 3	11:49	10:44	9:47	9:31

### **Chart your progress!**

#### Common Mistakes:

- Running different courses in different conditions for the test. Examples would be an extremely hot day or a course with significant wind, both of which affect your speed at the same effort.
- Doing the test on a day you are extremely fatigued
- Not warming up
- Doing too long a test when you are starting. If you are a new runner do this for only one or two miles.
- “Cheating” and running faster than the pre-determined AHR.

### **Time Trial**

Purpose: This run is a PT test or race simulation done at a pace close to what you want to achieve but not “all out”. You practice and develop rhythm, relaxation at higher speeds, and pacing. You are maximally tapping your aerobic system and becoming slightly anaerobic to help develop tolerance to lactate and fatigue. Ideally Should only be done 4-6 weeks out from your PT test or event. Anaerobic work inhibits your aerobic development. Build confidence in what you can do event day.

Instruction/Tips: Simulate what you will do on test/race day. Wear similar clothes and footwear, find a similar course, eat similarly, and warm up for 10 minutes. Do a few light strides. Do not stretch. Try using positive affirmations before and during the run.

Adaptation: Develops your Anaerobic Threshold and rehearses relaxed speed.

### **Chart your progress!**

#### Common Mistakes:

- Going 100%. Try 95%. finish strong and save your best for event day.
- Starting out too fast and slowing at the end
- Trying to run faster each time