## Training Guideline 800m and 1500m

### Phase 1
- **14 weeks**
- Sept, Oct, Nov, Dec,
- General development of strength, mobility, endurance and basic technique

1. The **800 metres** event is two-thirds anaerobic, one-third aerobic. The **1500m** event is half-aerobic and half-anaerobic. During the winter period the aerobic and anaerobic ratio for the **800m** is reversed (67% aerobic, 33% anaerobic). Therefore, based on a six day weekly training cycle, two days will be anaerobic and four aerobic.
   a) The 67% aerobic will be comprised of **3Km and 5Km** pace sessions on the track and longs and recovery runs at 10km to Marathon pace. Alternate between 3Km and 5Km pace session each week. About one-third of the total weekly mileage should be devoted to work between 80 and 100 per cent of VO2 max. The greatest fitness gains come from work between **90% (10K pace) and 100% (3K pace)** of the VO2 max.
   b) The 33% anaerobic will be made of hill repeats and 400-1500m pace sessions. To be prepared for early indoors racing must keep in touch with speed, that’s pure speed and race speed. Dedicate one daily average session to pure speed one week (**Full out sprint**) and race speed the next week (**800 or 1500m pace**). During the first part of this phase (Sept and Oct), the speed session, on an every other weekly basis, will be replaced with 200m hills session run a close to top speed. Hills training 10% alternate between 200m 2 set 5 increase to 4 set 5 and 400m 2 set 3 increase to 4 set of 3

2. Gradually increase mileage to 40-50 per week for this Phase 1 block. Starting with each week containing a long run, hill run and a **5k or 3k** pace session. The long runs should be 10-12 miles.

3. Start circuit and weight training two days a week

4. By October, the weekly mileage should be 40-50. Training should be six days a week with a two-day rest once a month during this phase. Weekly cycle should be **3 weeks hard 1 week easy**. Weekly training program:
   a) Saturday – Anaerobic, Hill repeats
   b) Sunday – Rest, weight training
   c) Monday – Aerobic, Long run 10-12 miles
   d) Tuesday – Aerobic – speed or hill session
   e) Wednesday – Aerobic, 6-8 mile run, circuit training
   f) Thursday – Aerobic, 5K pace session (20 x 200m 30 sec rest, 16 x 400m 45 sec rest, 8x 800m 90 sec rest, 5 x 1000m 3 min rest, 4 x 1600m 3 min rest)
   g) Friday – Aerobic, 6-8 mile run or Bike ride,

### Phase 2
- **10 weeks**
- Dec, Jan, Feb,
- Development of specific fitness and advanced technical skills

1. Transition to 50 % aerobic and 50% anaerobic maintaining weekly mileage of 40-45. Continue hill repeats once a week and increase 1500m and 3k pace sessions. In January, start-running time trails and races every other week. Use the time trails to evaluate training. Has base provide good endurance? Is speed progress as planned for goals? By February, the long run should be replaced by a shorter aerobic recovery run due to increase workout intensity and the hill repeats replace by anaerobic 800m and 1500m pace.

2. Continue circuit and weight training two days a week

3. Start Plyometrics workouts start with standing jumps and hops once a week.

5. By the end of February, the weekly training program. Continue weekly cycle should be **3 weeks hard 1 week easy**
   a) Saturday – Anaerobic, Hill repeats transitioning to 800m and 1500m pace sessions
   b) Sunday – Rest, weight training
   c) Monday – Aerobic, 6-8 mile run
   d) Tuesday – Anaerobic – 800m and 1500m pace (3x4x200m, 4x400m, 5x500m, etc)
   e) Wednesday – Aerobic, 6-8 mile run, Plyometrics, circuit training
   f) Thursday – Thursday – Aerobic, 5K pace session (20 x 200m 30 sec rest, 16 x 400m 45 sec rest, 8x 800m 90 sec rest, 5 x 1000m 3 min rest, 4 x 1600m 3 min rest)
   g) Friday – Aerobic, 6-8 mile run or Bike ride,
<table>
<thead>
<tr>
<th>Phase</th>
<th>3</th>
<th>8 weeks</th>
<th>Mar Apr</th>
<th>Competition experience - achievement of indoor objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. Focus on race related workouts, which will include pace-change sessions. For 800m/1500 balance, a 50% aerobic and 50% anaerobic mix will be maintained during this phase. Will start developing Speed and Speed endurance. The speed session are intended to develop first lap 400m strength with workouts like 4 x 400m at 2-3 seconds faster per 400m race pace. Also, 100m and 150m full out to improve leg turnover. These can be added to the end of aerobic 3k and 5k pace sessions. Speed endurance session are focused on developing second lap strength with workouts such as 5 x 500 at second lap 800m pace. 5km pace sessions will be maintained through the track season on every other week on the track. 2. Continue circuit and weight training two days a 3. Continue Plyometrics workouts start adding in Bounding exercise 4. Weekly mileage 40-45 6) Weekly training program: a) Saturday – Anaerobic, speed b) Sunday – Aerobic, 6-8 mile run c) Monday – Rest, weight training d) Tuesday – Anaerobic – speed endurance e) Wednesday - Aerobic, 6-8 mile run, Plyometrics f) Thursday – Aerobic, 5K pace session (1k to 1600m) g) Friday – Aerobic, 6-8 mile run or Bike ride, circuit training</td>
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<tr>
<td>Phase</td>
<td>4</td>
<td>8 weeks</td>
<td>May Jun</td>
<td>Adjustment of technical model, preparation for the main competition</td>
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<td></td>
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<td></td>
<td></td>
<td>1. Evaluate performance and goals. 800m or 1500m focus? If 800m, shift training to 66% anaerobic and 33% aerobic. If 1500m, maintain 50%/50%. Adjust workouts to focus on race weaknesses. Speed, Speed Endurance, etc. 2. Start to taper off circuit and weight training two days a 3. Start to taper off Plyometrics workouts</td>
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<tr>
<td>Phase</td>
<td>5</td>
<td>8 weeks</td>
<td>Jul, Aug</td>
<td>Competition experience and achievement of outdoor objectives</td>
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<tr>
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<td>1. Evaluate performance and goals. 800m or 1500m focus? If 800m, shift training to 66% anaerobic and 33% aerobic. If 1500m, maintain 50%/50%. Adjust workouts to focus on race weaknesses. Speed, Speed Endurance, etc. 2. Only easy circuit training one day a week. Stop weight and Plyometrics workouts.</td>
</tr>
<tr>
<td>Phase</td>
<td>6</td>
<td>4 weeks</td>
<td>Sep</td>
<td>Active recovery - planning preparation for next season</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td>Rest</td>
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<table>
<thead>
<tr>
<th>Pace</th>
<th>% Aerobic/Anaerobic</th>
<th>Pace - VO$_2$ - Heart Rate Table</th>
<th>Actual pulse (bpm)</th>
<th>400m Pace (sec)</th>
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<tbody>
<tr>
<td>joggy</td>
<td>Aerobic: 100%</td>
<td>35</td>
<td>55</td>
<td>105</td>
</tr>
<tr>
<td>long slow running</td>
<td>Aerobic</td>
<td>50</td>
<td>60</td>
<td>115</td>
</tr>
<tr>
<td>steady running</td>
<td>Aerobic</td>
<td>60</td>
<td>73</td>
<td>139</td>
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<tr>
<td>Marathon pace</td>
<td>Aerobic</td>
<td>70</td>
<td>80</td>
<td>153</td>
</tr>
<tr>
<td>1/2 marathon pace</td>
<td>Aerobic: 94%</td>
<td>80</td>
<td>Equivalent % of max pulse rate 88 (near lactate threshold running)</td>
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<tr>
<td>10K speed</td>
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<td>90</td>
<td>93</td>
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<td>Aerobic: 80%</td>
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<td>Aerobic: 60%</td>
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<td>100</td>
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<td>1500m</td>
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<tr>
<td>800m</td>
<td>Anaerobic: 67%</td>
<td></td>
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<tr>
<td>400m</td>
<td>Anaerobic: 83%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>200m</td>
<td>Anaerobic: 95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100m</td>
<td>Anaerobic: 100%</td>
<td></td>
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Training Sessions

**Aerobic Sessions**

Run steady for 1 hour. Aerobic 99%

- **20 x 200m** rest 30 sec 31-33 sec
- **16 x 400m** at 3K pace with 45 secs rest (70 secs). Aerobic 60%
- **6 x 500m** at 1,500m pace in 81 secs with 2 mins rest. Aerobic 50%
- **4-5 x 800m** at 1500/3000m pace 2-3 min recovery. 2:10 to 2:20, Aerobic 50%
- **6 x 600m** at 1500m pace 2 rest. 1:37 to 1:42 Aerobic 50%
- **4-5 x 1000m** at 3000/5000m pace 60 sec min recovery. 2:55 to 3:05. Aerobic 80%, 95% VO$_2$ max
- **5 X 1000m** with each 1000 in 2:45 to 2:55. There are two minutes of recovery between reps. I'll run the first 800 of each 1000 at slower than race pace and then finish the last 200 metres at actual race velocity, which helps me develop the ability to run at race pace when I'm tired
- **4 x 1,600m** at 5k speed with 200m jog recovery. Aerobic 80%
- **10 mile run**, 75 secs per mile slower than for one's best mile time. Aerobic - 98 per cent 80% VO$_2$ max

Run 45mins fartlek as follows: 10mins jog, then **6 x 3mins** fast runs at 3k speed with 1.5mins jog recovery. Aerobic 60%
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Anaerobic

8 x 100m or 150m full out with walk back recovery. Anaerobic 100%
4 x 200m full out with full active recovery 5-10 minutes (active recovery jog walk 800m). This is speed development. 100% Anaerobic
3 x 4 x 200m rest 45 sec/3min 800m pace 29 sec
3 x 4 x 200m full out with 30 secs rest and 400m walk after each set. Anaerobic – 95%
2 x 6 x 200m rest 30s between runs/4min between sets at 1-2 sec faster than 800m pace 26-27 sec
8 x 200m full out with 200m walk back recovery. Anaerobic 95%
6-8 x 300m -2 sec faster than 800m pace 42-43 sec 3 minute recovery.
1 x 350m, 2 x 300m, 3 x 250m. All full out with 400m walk recovery after each. Anaerobic 83%
1 x 350m, 1 x 300m, 1 x 250m, 1 x 200m, 1 x 150 all full out with good recovery. Anaerobic - 83 per cent
2 x 1 x 400 + 1 x 800 + 1 x 300, at 15 secs per 100m throughout. Take 30 secs rest after 400m, 60secs rest after 800m and a lap walk after 300m before repeating. Anaerobic 67%, 110% VO2max

1500m Predictor Test 2 x 1 x 400 + 1 x 800 + 1 x 300. 400m 45 secs Recovery 800m 90 secs Recovery 300m 3 minutes Recovery. The time for each run is recorded and the accumulated time for each set is recorded. The average of these two accumulated times is the predicted 1500m time for the athlete.

1 x 600m, 1 x 500m, 1 x 400m, all at target 800m pace with good recovery. Anaerobic 67%, 130% VO2 max
4 x 400m at 2-3 sec faster than race pace 56-57 with full active recovery 5-10 minutes (active recovery jog walk 800m). This is speed development. 95% anaerobic
4 x 400m at target 800m speed with 3mins rest. Anaerobic 67% Then 5 mins rest – 4 x 200 full out, 400m jog recovery. 95% anaerobic
8 x 400m at best 1,500m speed starting with 90secs rest and decreasing by 15secs rest after each rep. After rep done after only 15secs rest, return to 90secs etc. Anaerobic 50%
2 x 200-400-600-400-200

Anaerobic/Aerobics Sections

1000m, 800m, 600m, 400m, 300m, 200, 100m, 3-4 min recovery
2 x 200mm, 400m, 600m, 400m, 200m
4 X 600m at 1500m pace, with two-minute recoveries, and then 5 X 300m in just 40-41 seconds, with two-minute recoveries. However, again I'm looking to develop my finishing power during this workout, so for the 300s, I'll do the first 100 in 14 seconds and the final 200 in just 26 seconds -right at race pace.

Tempo Sessions

4 x flying 150m rest 5min - go faster on each one, recovery for 15min staying active and then do 4 x 200 in about 28 staying relaxed with rests of about 5min
1 x 300m at race pace recovery 8min, then 4 x 200m rests 3min in 28.0s
3 x fly150 rest 3min, 400pace eg 19s recovery 5 min, 1500m in 4:30 (very solid) 5 min, 3 x fly150 rest 3min (400pace eg 19s)
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Speed Endurance Sessions

- **6 x 400m** paces 800/1500/800/1500, 59/68/59/68/etc. 3min recovery
- **4 x 500m** at the pace for the second lap (60 sec last lap) 75 sec, recovery 2-3 minutes.
- **1 x 600** run 300-300 first 300 in 48 then very fast the next 300 rest 15min active and **1 x 400** run 200-200 the first 200 in 32 then go very fast rest 2min and do **2 x flying 150m** all out with rest between just a 50m jog.
- **1 x 150, 3 x 600, 3 x 150**: Track Session 150 very fast holding form 100% rest 8min 3 x 600 run like this 200-200-200 first rep is 33-28-33 hold form nicely in the last 200 and just ease off a tiny bit. recovery including some jogging and faster strides for 15min second rep is 33-31-28 recovery active 15min third rep is 33-28-33 recovery active 15min then do 3 x flying start 150m relaxed in about 21s rests 3min
- **4 x 400** rest 15min first 200m in about 32 last very fast

Race Rehearsal Session

- **1 x 400m** rehearsal of 800m, 59s, recovery 8min then **2 x 800m** run at or above goal pace for first and last 200. The middle 200m should be about 1500/300 pace.
  Recovery between 15min active.

**Important Note:**

**Training Blocks**

4 week cycle *Early Session*

**Week 1** Strength – Endurance Focus. The aim is to develop aerobic strength. There is some overlap with a speed focus early in the week.

Aerobic sessions: **2 x 6 x 200m; 3 x 1000m; 5 x 600m**

**Week 2** Speed-Endurance Focus. The aim is to develop all aspect of endurance including aerobic power, anaerobic power and lactate tolerance. Some

**Week 3** Speed Focus. The aim is to develop speed at the race pace. Typical workouts 100m an 150m at 400m pace.

**Week 4** Race Focus. Easy week to focus on race tempo. Race or time trail week.

Here, are some *average* statistics. Your best 800m, 1,500m, 3km and 5km, is most likely to occur from the *fifth* to *seventh* race at those distances. This assertion is the same for *under-distance* races, this ideally could mean for an 800m specialist – 5–7 x 400m races + 5–7 x 800m races. Also, the average figure for *over-distance* races which accompany peak performances is *three*. This indicates that an 800m specialist should also race three times at 1,500m and that a 1,500m runner should consider racing 3km or 5km, and a 5km runner three outings at 10km or further.

There is also the question of how you treat all build-up races. In his early days, Coe spent a whole season running all his races from the front in order to see if he ran better that way and also to experience it should he be forced to do so. Every race should have a point to it. The obvious one is to win it! A secondary one is to win in a good time. A third is to experiment, for example, increasing speed for the third lap of a 1,500m race or the third 200m of an 800m is not a popular tactic with the opposition! If you lack finishing power this may be something you have to work on. A powerful finisher must rely on keeping in touch and keeping in contact requires good endurance and training should reflect this. Using different tactics also confuses the opposition, it is difficult for them to fathom out your next move. Avoid being an open-book.

Anaerobic training involves all the sprints (100-400m) at 800m pace. It may be that this type of running will get better results for some. On the other hand, those who have classed themselves as 400/800 runners and who have fought shy of aerobic work and 1,500m training and racing, may surprise
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themselves by taking a more diligent approach to this routine. Therefore, for runners that possess a powerful finisher might alternate between 800m and 1500m training. On e week of two-thirds anaerobic, one-third aerobic, 800 metres, and the next week 50% aerobic and 50% anaerobic, 1500m.

What is the significance of a 5km pace session? It is 95% VO2 max and, according to the world's leading work physiologists, Costill, Cooper, Daniels and Astrand, it is the greatest improver of oxygen uptake. Coe's VO2 max has been measured at 82mls.kg.min., one of the highest ever recorded, yet he never exceeded 50 miles a week. But Bannister, like Coe, did 3 x 1.5 miles at 5km pace each week on the track. Coe's coach, his father, has stated that 'Five kilometre pace running is golden. It eradicates the need for big mileage'. The aforementioned physiologists advocate 5 x 1km at 5km pace with 60 secs rest as being the ideal workout.

This raises the important issue of what speed to run these 5km sessions if the athlete has never raced the distance? A simple rule-of-thumb method is to multiply the 1,500m speed by three and add three minutes - eg, best 1,500m time = 4mins x 3 + 3mins = 15mins (72/400). Thus a good session in this case would be 5 x 1km in 3 mins with 60 secs rest. It can always be adjusted and improved when executed comfortably.

Winter Training

Hold the mileage at the level of Week 9-12. It will be necessary to work out each week what the long run will be, e.g. In Week 6 it will be 5 miles and 5 x 2 miles. The higher the starting point the higher the maximum will be in 3 months time. If you start at 10 miles a day (60mpw) in Week 1, you will be well over the 100 miles mark by Week 9. This scheme has built-in safety valves to prevent over-training/stress. Research tells us that the greatest boost to the VO2 max is work at 5k pace, your 5k pace. If you have a 5k time of 17mins.30secx (84secx/400), the ideal session is 5 x 1k in under 3 mins.30secs with 60secs recovery. Make one of average daily runs each week a 5k pace one. Also, make one your daily average runs up and down a hill. You can also alternate your 5k pace session with a 3k pace one. If your 3k time is 11mins (88/400m) you can try 16 x 400 in under 88secs with 45secs rest.

So, each week you have a long run, hill run and a 5k or 3k pace session. Your mileage is increasing gradually. You are building up your VO2 max very efficiently. If you plan to run indoors you must keep in touch with speed, that’s pure speed and race speed. Devote one of your daily average sessions to pure speed one week (Full out sprint) and race speed the next week (800 or 1500m pace). If you are a sprinter devote three sessions a week to it, but do not neglect general conditioning (mileage). Running heats, semi-finals and final, requires stamina.

Hart Rate vs V02 max

For women max heart is estimation by: 209 beats per minute maximum minus point seven for every year of age – 209 minus 25 x 0.7 (17.5) = 191.5 bpm. The figure for men is 214 bpm minus point eight for every year of age. Given a male aged twenty five, the formula would be: 214 minus 25 x 0.8 (20) = 194 bpm.

If we take the example of a 25 year old female with an estimated maximum of 191bpm, we can plan out what pulse rates should be used to record specific percentages of VO2 max. In doing this, we must remember one vital criteria – the greatest fitness gains come from work between 90 and 100 per cent of the VO2 max. Most of the world’s physiologists favour the figure of 95 per cent of the VO2 max (about 5K speed); however Russian coaches working with female athletes favour 100 per cent of the VO2 max (about 3K speed). We also come to another important point – the lower the VO2 max percentage of work – the greater the duration of the repetition. Thus, an athlete training at 90 per cent of his or her VO2 max (about 10K speed), should do 4 x 10 minutes at 10K speed with very short recovery (about 90 seconds). The minimum duration of any repetitions between 80 – 100 per cent of the VO2 max is 3 minutes. But work at the lower end of that scale (80%) would be much longer, e.g. 3 x 20 minutes (about half-marathon speed), with extremely short recovery (about 60 seconds).

Here is a table of pulse rates related to percentage of VO2 max.
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<table>
<thead>
<tr>
<th>Pace</th>
<th>of VO₂ max</th>
<th>Equivalent % of max pulse rate</th>
<th>Actual pulse (bpm) Male 47</th>
</tr>
</thead>
<tbody>
<tr>
<td>jogging</td>
<td>35</td>
<td>55</td>
<td>97</td>
</tr>
<tr>
<td>long slow running</td>
<td>50</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td>steady running</td>
<td>60</td>
<td>73</td>
<td>128</td>
</tr>
<tr>
<td>slow marathon pace</td>
<td>70</td>
<td>80</td>
<td>141</td>
</tr>
<tr>
<td>fast marathon pace</td>
<td>80</td>
<td>88 (near lactate threshold running)</td>
<td>155</td>
</tr>
<tr>
<td>10K speed</td>
<td>90</td>
<td>93</td>
<td>164</td>
</tr>
<tr>
<td>5K speed</td>
<td>95</td>
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<tr>
<td>3K speed</td>
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<tr>
<td>1500m</td>
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</tr>
<tr>
<td>400m</td>
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</tbody>
</table>

To determine 3K, 5K, etc. pace, a starting point is to take your 1500m time per lap and to add 4 seconds to it. Thus if you are a 4min/1500m runner this is a 64sec/400, your potential at 3K is 68secs/400(100%), your potential at 5K is 4secs per 400m slower - 72secs/400 (95%), your potential at 10k is a further 4secs slower - 76secs/400(90%), and finally, your potential at the ½ marathon is 80secs per 400m(5mins.20secs/mile)(80%).

<table>
<thead>
<tr>
<th>Distance</th>
<th>Pace</th>
<th>Time</th>
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<tbody>
<tr>
<td>1500m</td>
<td>4:03 65 sec 400m pace</td>
<td>65 sec</td>
</tr>
<tr>
<td>3K (1500+ 4 sec)</td>
<td>69 sec</td>
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</tr>
<tr>
<td>5K (3K+ 4 sec)</td>
<td>73 sec</td>
<td></td>
</tr>
<tr>
<td>10K (5K+ 4 sec)</td>
<td>77 sec</td>
<td></td>
</tr>
<tr>
<td>½ Marathon (10K+ 4 sec)</td>
<td>81 sec</td>
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</tr>
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</table>

**What you do between work intervals can be as important as the work itself.**

The message is that there's no point in making your recovery interval ridiculously long in hopes of zeroing-out lactate. That troublesome fellow is actually going to go up during your recoveries. Instead of focusing on long, 'perfect' recoveries, you should remember that a key principle of training is to make your high-quality workouts as specific to the demands of your competitions as possible. During competitions, you don't get extraordinarily long recoveries between bursts of energy; you must work at a high level continuously. Therefore, it makes sense to PROGRESS in your interval sessions from longer to shorter active recoveries over a period of several weeks. As long as the shortened recoveries don't compromise how fast you can swim, cycle or run during your work intervals, your workout will be of higher specificity and quality and you'll be better prepared for competitive situations.

And lactate? It was significantly lower at the ends of the recovery periods when the recovery was active, rather than passive. How's that? Greater activity led to lower lactate? Absolutely! You see, muscle cells - especially 'slow-twitch' muscle cells - actually use lactate as an important fuel. If the muscle cells are basically dormant, as they are during passive recovery, they 'burn' lactate at very low rates. If they're moderately busy, as they were during the French active-recovery periods, they metabolise lactate at appreciably greater rates. This should lead to lower muscle-lactate levels and - most importantly - less interference with anaerobic energy production during subsequent work intervals.

**The true effects of various workouts – and how to answer that key question: what do I do on Monday?**

**Workout 1 – the vVO₂ max session**

Whether you are an endurance rower, runner, cyclist, swimmer, skier or race-walker, you can compute your vVO₂ max by going as far as you can in six minutes. The pace you establish over this six-minute period is then your velocity at VO₂ max (vVO₂ max), one of the most powerful predictors of endurance performance. Once you have estimated vVO₂ max, the workout you should use for vVO₂ max enhancement is straightforward: just warm up and complete five three-minute work intervals at your calculated vVO₂ max, with three-minute recoveries. The workout is great for improving vVO₂ max, lactate threshold, efficiency at close-to-VO₂ max paces, strength, power, and psychological courage and confidence during intense effort. With regard to specificity (goal 7), it is also great specific preparation for races which last for about 5-7 minutes. Thus, the vVO₂ max session is an incredible workout, which allows you to work on six (and maybe even all) of your seven goals. It definitely deserves premier ranking.
Workout 2 – the lactate stacker
Again, it doesn’t matter what kind of endurance athlete you are. Simply warm up and then go almost all out for 60 seconds. Work easily for 120 seconds, and then return to all-out effort for 60 seconds. Continue in this 60-120 pattern until significant fatigue rears its head. This workout builds up phenomenal levels of blood lactate and thus is great for lactate-threshold speed. In addition – surprise, surprise, given the ‘anaerobic’ nature of the effort – it causes you to reach VO2 max as things unfold, and thus is great for vVO2 max. Yes, it’s also good for economy (especially efficiency at high intensity), strength, power, psychological courage, and – from the specificity standpoint – your ‘kicks’ at the ends of your races. This session is another high-ranker!

Workout 3 – fartlek
As you are probably well aware, you complete fartlek sessions by warming up and then alternating – in a relatively spontaneous manner – 2-6-minute efforts at an intensity which you might sustain in a 12-20-minute race with 2-4 minutes of easy effort. Most endurance athletes attain VO2 max at some point during this session, so it is good for vVO2 max. Lactate levels also build, so there is a positive effect on lactate-threshold speed. Efficiency during competitions lasting 12-20 minutes is also improved, and there are modest effects on strength and power, as well as psychological comfort at fairly intense paces. Specific preparation for races lasting 12-20 minutes is decent, too, giving this workout a high ranking overall.

Workout 4 – hill session
After warming up, attack either an incredibly steep 50-100m hill at close-to-max intensity or a longer, more gradual incline at an intensity you might use in a race lasting 12-15 minutes. Recover by moving back to the bottom easily, and continue until significant fatigue ensues. (Of course, swimmers and rowers may omit this workout, although both could simulate a hill session by working against a strong river or stream current.) Although hill work has classically been said to improve strength and economy, the truth is that it also causes athletes to reach VO2 max and exceed – by a long way – lactate threshold. Hill work is also fundamental to improving power (first you get strength, then you apply that strength more quickly to achieve power), toughens the mind and is fine preparation for hilly race courses. Another great workout!

Workout 5 – long session
This can be defined as a training session which exceeds the length of your normal workout by about 33%. For example, if you usually train for 60 minutes per day, a long workout would be anything exceeding 80 minutes or so. Endurance athletes usually say that they perform long workouts for three key reasons: to build strength, boost endurance and add bulk (volume) to the overall training load, presumably leading to significant gains in physiological fitness. VO2 max, for example, is generally considered to increase directly and predictably in response to increased training mileage. Unfortunately, these popular assumptions are slightly misleading. Taking the notion that long sessions build strength, for example, it is important to remember that strength is always speed-specific; that is, if you utilise slow movements in your effort to improve your strength, your strength will be improved during slow movements but not fast ones – and vice versa.

Of course, long workouts are almost always carried out at moderate-to-low intensities and so, while they do build strength, it is not the kind of strength needed at competitive intensities, which tend to be high. For endurance runners, for example, even a prolonged event like the marathon is usually completed at an intensity of 85% VO2 max-or-so – well above a typical long-run intensity of 70-75% VO2 max. Long sessions primarily build the strength needed to complete more long sessions (provided injury does not intervene), not the strength needed during competition.
A similar argument can be constructed against the belief that long efforts favour endurance. The problem is that endurance is also intensity-specific, and thus the building of endurance at prolonged-effort intensities does not ensure endurance at competitive intensities. Do long workouts work any better in relation to their third presumed benefit – of enhancing fitness via the volume effect? It would be nice to give prolonged efforts a glowing review in this area, but our most truthful and accurate answer would have to be: it depends. Basically, if you are already training for about 5 hours per week or less, the gains in fitness become smaller and smaller. Eventually, in fact, fitness does not respond at all to advances in volume, and for many athletes this ‘unhooking’ of the relationship occurs above about 7-8 hours of training per week. Thus, adding a two-hour workout to an existing eight-hour week wouldn’t do much for VO2 max. Worse still, long workouts do little for lactate threshold, since they are conducted at below-lactate-threshold intensity, and they probably improve economy primarily at the relatively low intensities chosen for the long workouts. In addition, they are poor producers of power, and they offer true specific preparation only for ultra-type events.

However, long workouts can work well if you are currently training for about 5-6 hours per week or less. If you can add a 90-120-minute exertion to such a programme without getting hurt, you can probably upgrade your VO2 max, and thus potentially your vVO2 max. Note, though, that there is no scientific evidence to support the idea that a two-hour workout is better than two separate one-hour sessions; in fact, one might argue that breaking a two-hour workout into one-hour chunks would actually be better, since it would permit higher average training intensities.

To summarise, we can say that prolonged workouts are not actually necessary for optimising VO2 max; the process can occur without the need to have a ‘biggie’ in your workout bag. Perhaps the greatest benefit of long efforts is that they do steel the mind for exhausting exercise, and such preparation can be very useful in competitive situations. If during a long run you can keep on going at a reasonable pace when your mind and muscles are screaming ‘no’, your confidence in your toughness and ability will be enhanced, and you will be more likely to keep on going at the ends of tough races.

Workout 6 – tempo session
By definition, tempo sessions are completed at very close to your actual lactate-threshold intensity; the basic idea is to warm up and then work continuously at lactate threshold for about 25 minutes. The trouble with this workout is that, since you are at threshold, blood-lactate levels are fairly low, and there is little stimulus for the muscles to improve their ability to clear lactate from the blood. Thus, the lactate-stacker session works better in terms of lactate-threshold improvement. Tempo efforts improve efficiency at lactate-threshold velocity (and thus in races lasting about an hour), and they are good for building confidence at such intensities. Unfortunately, though, they are weak boosters of vVO2 max and power.
Training Guideline 800m and 1500m

Now that you know what popular workouts actually do for you, you are in a much better position than before. If you know, for example, that your vVO₂ max or lactate threshold is deficient, you also know which workouts you should be emphasising in your training, and the answers to your questions about what you should do tomorrow – and in the coming weeks – should be much clearer.

The remaining problem, though, is to be clear about your areas of deficiency. How do you really know it is your vVO₂ max which is below par? Isn’t it equally possible that your lactate-threshold is on the blink or your sport-specific strength in need of a boost?

Well-supported athletes have an advantage here, because they can visit an exercise physiology laboratory and undergo regular check-ups for vVO₂ max, lactate threshold, economy, and so on. Progress in these areas can be charted and negative dips addressed with corrective training. What should the rest of us do? We will just have to emulate the great Kenyan distance runners and figure out things on our own.

Fortunately, there are some simple practical steps you can take to determine whether your key performance variables are heading in the right direction. For example, since vVO₂ max is such an important predictor of performance, you should be checking it every six weeks or so during training (by conducting the six-minute test described above). You would be wise to keep a log of your vVO₂ max readings (either as distances covered during your tests or actual computed speeds), and your vVO₂ max should show a steady upwards trend during the portion of the year when you are training seriously. If you notice a downturn, it’s time to place more emphasis on vVO₂ max development in your training. Don’t forget, however, that occasional low readings for vVO₂ max may simply reflect a ‘bad day’, when you feel tired and lacking in energy and enthusiasm, and shouldn’t be taken too seriously.

Lactate threshold is slightly more difficult to keep tabs on, but only because you will need to purchase one of the lactate-measuring kits which are now available for athletes, and stab yourself in the finger at the end of your test exertion. Fortunately, these devices are quite accurate and are becoming less expensive. The lactate-threshold test is quite simple: after a great warm-up, exercise for exactly 10 minutes at an intensity which represents 92% of your vVO₂ max. At 10 minutes, stop and immediately check your blood-lactate level (trying to move around a bit as you do so to ease the stress of the sudden stop on your heart). Naturally, you should keep a record of these lactate readings over time, just as you do for vVO₂ max. Interestingly enough, the 92% vVO₂ max level of intensity is not your lactate threshold; it is above it. The key point is that this intensity is high enough to be associated with fairly high blood-lactate levels, but these will fall over time as your actual lactate threshold improves. Note, too, that 92% of vVO₂ max is very easy for you to calculate. If you are a cyclist, for example, it is simply 92% of your cycling speed during the six-minute vVO₂ max test (or 92% of the average intensity in Watts which you achieve during the test).

Economy is a little tougher to keep tabs on, partly because you will have to rely on that notoriously inaccurate measure of fitness – your heart. Without accurate oxygen-measuring equipment, the heart is simply the best efficiency yardstick you have at your beck and call. For this test to work you must first select a movement speed, and you should choose one which you think you would sustain in a race lasting 20 minutes. Obviously, you may not ever enter 20-minute races, but you should have a good idea of how fast you could move in such a contest. Once you have made your choice, you should continue to use the speed throughout your training season.

Here is the economy test: warm up well, then move along for 10 minutes at your chosen 20-minute race speed. (Note that all of these tests are also fairly decent workouts in their own right.) If you have a good heart monitor, measure your average heart rate for the 10 minutes and keep a record of it; it should drop over time as your economy improves. If you have never purchased a heart monitor, we don’t blame you at all; you can manually record your heart rate (do it quickly so as not to disrupt the sustained movement too much) after five minutes and then again at the end of 10 minutes, entering the average of the two readings into your log book.

To assess your strength, you will have to choose a movement which is very specific to your sport and chart your strength while performing that movement. Runners, for example, might choose a running-specific movement like the partial one-legged squat with barbell resistance (basically, a one-legged squat to just 45°, with a barbell of specific weight on the shoulders) and should then see how many reps they can complete on each leg before exhaustion. Another alternative for runners would be to measure stride length (easily accomplished on a dusty road) while running at a fixed pace; as running-specific strength improves, there is a natural tendency for stride length to expand. Even better is the ‘hop test’, in which a runner attempts to cover 30m on one leg with as few hops as possible; the number of hops required should drop (for each leg) as strength improves.

The power test is a no-brainer: from a ‘flying’ start (ie good-but-not-maximal speed), you should cover 100m as quickly as you can. The time required for this effort will decrease steadily as your maximal movement speed improves, and this is a great thing: it means that you have extended the range of speeds into which you can progress as you upgrade your neuromuscular capabilities. Thus, your performances in races can improve not just because of positive changes in your underlying physiology (vVO₂ max, lactate threshold, and economy) but also because you have the capability of generating greater power than you did before.

So what is the absolute-best workout for you to do tomorrow? You don’t know just yet, but you do know exactly what you need to work on, and you have a much clearer idea of the effects which various types of workouts have on your competitive fitness. Over the rest of your training year, you can chart your progress in improving vVO₂ max, lactate threshold, economy, strength, and power, and you will be able to do exactly the right things to achieve the greatest gains in those variables. As you do so, you will also achieve substantial improvements in your performances.

Various Workout from articles

The 800m event is two-thirds anaerobic, one-third aerobic. So the training must reflect this. Here is an example of such an allocation:

**Day 1:** Aerobic - 80 per cent - 5 x 1km at 5km pace – 60 secs rest. 95% VO₂ max

**Day 2:** Anaerobic - 83 per cent - 1 x 350m, 1 x 300m, 1 x 250m, 1 x 200m, all full out with good recovery

**Day 3:** Anaerobic - 67 per cent - 1 x 600m, 1 x 500m, 1 x 400m, all at target 800m pace with good recovery. 130% VO₂ max

**Day 4:** Aerobic - 98 per cent - 10 mile run, 75 secs per mile slower than for one's best mile time. 80% VO₂ max

**Day 5:** Anaerobic - 95 per cent - 3 x 4 x 200m full out with 30 secs rest and 400m walk after each set

**Day 6:** Rest
Training Guideline 800m and 1500m

Day 7: Race or time trial - 600m or 1,200m or 400m, or in strict rotation, ie, one week, 400m, next week, 600m, third week 1,200m.

Given ten training sessions over a course of 14 days using Hill’s table for the 1,500m, we could allocate five sessions to aerobic work and five to anaerobic efforts to look like this:

**Day 1** – Aerobic (99 per cent) – Run steady for 1 hour.

**Day 2** – Anaerobic (67 per cent) – Run 4 x 400m at target 800m speed with 3mins rest.

**Day 3** – Aerobic (90 per cent) – Run 10k fast.

**Day 4** – Anaerobic (95 per cent) – Run 8 x 200m full out with 200m walk back recovery.

**Day 5** – Aerobic (60 per cent) – Run 45mins fartlek as follows: 10mins jog, then 3mins fast runs at 3k speed with 1.5mins jog recovery x 6.

**Day 6** – rest

**Day 7** – Anaerobic (83 per cent) – 1 x 350, 2 x 300, 3 x 250. All full out with 400m walk recovery after each.

**Day 8** – Aerobic (80 per cent) – 4 x 1,600m at estimated 5k speed with 200m jog recovery. To estimate 5k speed add 8secs per 400m to best 1,500m time per 400m. Example – best 1,500m = 4mins = 64secs = 72secs/400m on this session.

**Day 9** – Anaerobic (50 per cent) – 8 x 400m at best 1,500m speed starting with 90secs rest and decreasing by 15secs rest after each rep. After rep done after only 15secs rest, return to 90secs etc.

**Day 10** – Aerobic (99 per cent) – Run steady for 1 hour.

**Day 11** – Anaerobic (100 per cent) – Run 8 x 100m full out with walk back recovery.

**Day 12** – Start cycle again

**Anaerobic work includes:**

All sprint distances up to 400m (100 to 83%), 800m pace (67%), 1,500m pace (50%). The ratio for the 800m trainer is two anaerobic sessions to one aerobic. A specimen schedule in the summer based on this allocation would look like this:

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Aerobic</th>
<th>1 hour run at marathon pace (3 mins 45 secs/km) (98%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 2</td>
<td>Anaerobic</td>
<td>8 x 100m full out, walk back recovery (100% anaerobic)</td>
</tr>
<tr>
<td>Day 3</td>
<td>Anaerobic</td>
<td>4 x 400m at 800m pace target speed, 400m walk recovery (67% anaerobic), 5 mins rest – 4 x 200 full out, 400m jog recovery. (95% anaerobic)</td>
</tr>
<tr>
<td>Day 4</td>
<td>Anaerobic</td>
<td>45 minutes run at half-marathon speed (3 mins 35 secs/km) (94%)</td>
</tr>
<tr>
<td>Day 5</td>
<td>Anaerobic</td>
<td>1 x 350, 1 x 300, 1 x 250, 1 x 200 full ou, walk 400m recovery after each (83% anaerobic)</td>
</tr>
<tr>
<td>Day 6</td>
<td>Rest</td>
<td></td>
</tr>
<tr>
<td>Day 7</td>
<td>Anaerobic</td>
<td>6m x 267m (One third 800m) at target 800m pace with 2 mins rest (67% anaerobic), 5 mins rest 6 x 60 sprint.</td>
</tr>
<tr>
<td>Day 8</td>
<td>Aerobic</td>
<td>30 mins run at 10k pace (3.25/km) (90% aerobic)</td>
</tr>
<tr>
<td>Day 9</td>
<td>Anaerobic</td>
<td>4 x 200m full out with 30 secs rest. 10 mins rest and repeat (95% anaerobic)</td>
</tr>
<tr>
<td>Day 10</td>
<td>Start day 1 again</td>
<td></td>
</tr>
</tbody>
</table>

Coe’s approach to the 800m training cycle was that training had to include work at 1,500 pace, and since he always trained at paces above and below pace, his cycle involved in the summer:

<table>
<thead>
<tr>
<th>Day 1</th>
<th>3k pace – 60% aerobic – 3 x 1,500 3 mins rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 2</td>
<td>1 hour fast run at half-marathon speed (94% aerobic)</td>
</tr>
<tr>
<td>Day 3</td>
<td>800m pace – 4 x 400 in 52 secs with 3 mins rest (67% Anaerobic)</td>
</tr>
<tr>
<td>Day 4</td>
<td>45 mins run steady run (98% aerobic)</td>
</tr>
<tr>
<td>Day 5</td>
<td>1500 pace – 4 x 800 in 1:54 with 3 mins rest (50% aerobic)</td>
</tr>
<tr>
<td>Day 6</td>
<td>Rest</td>
</tr>
<tr>
<td>Day 7</td>
<td>30 mins acceleration run (10 min slow, 10 mins steady, 10 mins fast) (90% aerobic)</td>
</tr>
<tr>
<td>Day 8</td>
<td>400m pace – 1 x 350, 1 x 300, 1 x 250, 1 x 200, full-out, walk 400m recovery (83% Anaerobic)</td>
</tr>
</tbody>
</table>
Training Guideline 800m and 1500m

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 9</td>
<td>1 hour fast run (94% aerobic)</td>
</tr>
<tr>
<td>Day 10</td>
<td>5k pace – 5 x 1k in 2 mins 40 secs with 45 secs rest (80% aerobic).</td>
</tr>
<tr>
<td>Day 11</td>
<td>45 mins steady run (98% aerobic)</td>
</tr>
<tr>
<td>Day 12</td>
<td>Start day 1 again</td>
</tr>
</tbody>
</table>

800m Anaerobic – two thirds. Aerobic – one third

Day 1 – Anaerobic – 8 x 100m full out, walk back recovery (WBR).
Day 2 – Anaerobic – 4 x 200m full out, WBR.
Day 3 – Aerobic – Run 10 miles in 1 hour.
Day 4 – Anaerobic – 6 x 267m (one-third of 800m) with 2 minutes rest. Target times – 35-40 seconds.
Day 5 – Anaerobic – 1 x 350, 1 x 300, 1 x 250, 1 x 200, 1 x 150. All full-out with 400m walk recovery after each.
Day 6 – Rest
Day 7 – Aerobic – 16 x 400 with 45 secs rest (from 64-72 secs per 400m). 3K pace.

1500m Aerobic – 50 per cent. Anaerobic – 50 per cent

Day 1 Aerobic – Run 10 miles in 1 hour.
Day 2 – Anaerobic – 6 x 500m in 75-80 secs with 2 mins rest (1,500m speed).
Day 3 – Aerobic – Run 8 miles in 47 mins.
Day 4 – Anaerobic – 3 x 534m (two-thirds of 800m) in 70-80 secs with 4 mins rest.
Day 5 – Aerobic – Run 6 miles in 35 mins.
Day 6 – Rest
Day 7 - Anaerobic – 1 x 350, 1 x 300, 1 x 250, 1 x 200, 1 x 150. All full-out with 400m walk recovery after each.

Monday
am: rest (raced yesterday at Mike Sully Cross Country and won), pm: 12.5 miles steady

Tuesday
am: 5 miles steady, pm: track - 2x(1000, 600, 300, 300, 600, 1000) with recovery jogs of 300 after the 1000s, 200 after the 600s and 100 after the 300s

Wednesday
am: 9.5 miles steady, pm: 5.5 miles steady

Thursday
am: 7 miles steady, pm: rest

Friday
am: track - 14x400 (200 jog rec) averaging 61 seconds; then 4x200 (200 jog rec) averaging 27.9 seconds
pm: rest

Saturday
am: 8.5 miles steady, pm: rest

Sunday
am: 13 miles steady, pm: rest

Total week's mileage: 81.5

Monday
am: 8 miles steady, pm: six miles steady

Tuesday
am: 5 miles steady, pm: track - 5x1000 (400 jog rec) averaging 2:37

Wednesday
am: 11 miles steady, pm: rest

Thursday
am: 5 miles fast, pm: track - 2x(600, 300, 100, 100, 300, 600) 200 jog after 600s, 100 jog after 200s and 100s, averaging 93 and 43 seconds

Friday
am: 7 miles steady, pm: 6.5 miles steady
Training Guideline 800m and 1500m

A program to break the barrier

We are now in a position to compile a programme based on physiological data to break the four-minute barrier for the mile:

**Day 1** - (Aerobic, 80% VO\(_2\) max). Run half-marathon distance 64secs per mile slower than for one's best mile time. Example: best mile time 4:10, run 5:14 / mile or as near as possible to this.

**Day 2** - (Anaerobic, 110% VO\(_2\) max). 2 x 1 x 400 + 1 x 800 + 1 x 300, at 15 secs per 100m throughout. Take 30 secs rest after 400m, 60secs rest after 800m and a lap walk after 300m before repeating.

**Day 3** - (Aerobic, 90% VO\(_2\) max). Run 10km 48 secs / mile slower than for one's best mile time. Example: best mile 4:10, run 4:58 / mile.

**Day 4** - (Anaerobic, 130% VO\(_2\) max). 4 x 400, 4 secs per 400m faster than per 400m for best mile time. Example: best mile 4:08 (62/400), run 400ms in 58 secs, 3 mins rest.

**Day 5** - (Aerobic, 95% VO\(_2\) max). Run 5 x 1K at 8 secs per 400m slower than for best mile time. Example: Best mile 4:04 (61 / 400), run at 69 / 400 = 2:52, with 60 secs rest.

**Day 6** - REST.

**Day 7** - (Anaerobic). 1 x 350, 1 x 300, 1 x 250, 1 x 200, 1 x 150. All full out, with 400m walk after each. N.B. Race every other seventh day instead of this session.

On Day 5, alternate this session each week with an aerobic 100% VO\(_2\) max session of 4 by1,500m, 4 secs per 400m slower than for one's best mile time. Example: best mile 4:02 (60.5 / 400m), run 64.5 / 400, with 3mins rest after each.

There is a competitive pattern called 'psycho-logical race preparation'. This is where each month starts with an over-distance race, either 5km or 3km, then an under-distance race, either 400m or 800m, then the specialist distance, in this case 1,500m or a mile. The first confirms endurance, the second speed and the last brings both together

**Competition Late Season (week blocks)**

**Mon** - 1 x 150, 3 x 600, 3 x 150; 150 very fast holding form 100% rest 8min 3 x 600 run like this 200-200-200 first rep is 33-28-33 hold form nicely in the last 200 and just ease off a tiny bit. recovery including some jogging and faster strides for 15min second rep is 33-31-28 recovery active 15min third rep is 33-28-33 recovery active 15min then do 4 x flying start 150m relaxed in about 21s rests 3min Warmdown

**Tue** - Warmup and run solid but not for 30min and warmdown on a softer surface.

**Wed** - Track session – (Tempo Session)Warmup well and do 4 x flying start 150m rest 5min - go faster on each one, recovery for 15min staying active and then do 4 x 200 in about 28 staying relaxed with rests of about 5min. This is pure tempo work so the second set should not be hard.

**Thu** - recovery day no running

**Fri** - Warmup and run solid but not for 30min and warmdown on a softer surface. Not as hard as Tuesday.

**Sat** - Track session - Warmup 1 x 600m run 300-300 first 300 in 48 then very fast the next 300 rest 15min active and do a 1 x 400m run 200-200 the first 200 in 32 then go very fast rest 2min and do 2 x flying 150m all out with rest between just a 50m jog. Warmdown

**Sun** - 30min easy jog

**Mon**: 30min run easy

**Tues**: Track session – 3 x fly150m rest 3min, 400pace eg 19s recovery 5 min, 1 x 1500m in 4:30 (very solid) 5 min, 3 x fly150m rest 3min (400pace eg 19s)

Wed: warmup 10min, solid 20 min cooldown 10m, total ~45min

**Thur**: 3 x 400m rest 15min first 200m in about 32 last very fast

Fri: Easy 30min

**Sat**: Track Session – 2 x 1000m rest 10min then 4 x 200 tempo runs relaxed in 28.0s
Training Guideline 800m and 1500m

Sun: Rest
Mon: warmup 10min, solid 20 min cooldown 10m, total ~45min
Tue: 1 x 400m rehearsal of 800m, 59s, recovery 8min then 2 x 800m run at or above goal pace for first and last 200. The middle 200m should be about 1500/300 pace. Recovery between 15min active.
Wed: warmup solid 10min cooldown, ~30min
Thur: Tempo Session – 1 x 300m at race pace recovery 8min, then 4 x 200m rests 3min in 28.0s
Fri: Easy 15min with some striders
Sat: Race
Sun: Wed: warmup 10min, solid 20 min cooldown

Lose weight - run minutes faster

by Frank Horwill

A female said to the writer recently, "I read one of your articles about the height/weight ratio for runners and it depressed me greatly.” She could not come to terms with what the medical profession call a healthy weight for height. To calculate this, allocate 110 pounds (49kg) for the first 5 feet (1.524m) in height and 5\(\frac{1}{2}\) pounds (2.46kg) for every inch (0.025m) thereafter if you are a male. So, if you are 6 feet (1.82m) tall your allocation is 176 pounds (79.8kg). If you are a female, allocate 100 pounds for the first 5 feet in height, that’s 45kg for 1.524m in height, then 5 pounds (2.26kg) for every inch thereafter. If you are 5 feet 5 inches (1.651m) tall your allocation is 125 pounds (56.6kg). This is target number one.

How do you achieve this without starving to death? The more running you can do in the morning, the better. This will elevate your metabolic rate for several hours afterwards instead of burning one calorie a minute while sitting, you may burn up to 2 calories a minute.

Next comes the complete avoidance of some high-fat foods which can be classed as killers. Here are a few that can put you in a coffin prematurely! Beefburgers, roast pork, bolognase, frankfurters, roast beef, bacon, t-bone steak, pork sausage, cheddar cheese, cream cheese. These are made up of 30 to 60 per cent fat. Grilling does reduce this figure.

We now come to ugly oils. These are: palm, palm kernel, coconut, peanut and cottonseed. They contain from 15 to 88 per cent saturated fat. Cut the chips and dips.

We require a lot of low glycaemic carbohydrates, but we can overdo them if our calorific expenditure does not exceed or equal the intake. Mid-meal snacks have to be watched. Ice cream, dates, lemonade, cakes, sponges, pastry, sugar, pudding, biscuits. If you require a mid-meal snack, eat fruit, especially apples and oranges.

The amino acid 1-carnitine helps fat to be burned preferentially. Take a supplement of 2g a day.

Maintain chromium status. This controls sugared foods turning into fat. Insulin bursts cause fat deposits. Good sources are: brewers’ yeast, black pepper, wholewheat bread.

Eat a high fibre diet, the target is 20g daily. The following contain 10g: half a cup of All Bran, half a cup of mixed beans, two cups of raisins, one cup of rolled oats, half a cup of peas, three pears, half a cup of Fibre One, half a cup of lentils, three bananas, four Shredded Wheat, five apples, four peaches, six oranges, twenty prunes.

Maintain omega-3 fatty acid status which is found in: cold water fish (cod, tuna, salmon, halibut, shark and mackerel). Fatty acids also control insulin bursts.
Do some strength training to maintain lean mass every other day. Press ups, abdominals, squat thrusts and step ups. Start with 30sec of each and add 10sec each week.

Increase the duration of running by 5 minutes per week. Increase your longest run by 10 minutes per week.

Try this supplement combination: 400mg chromium picolinate, 200mg L-carnitine, 20g fibre.

What can you eat? Fruit and vegetables, skimmed milk products, cod, sole, halibut, flour, lobster, crab, turkey breast, shrimp, tuna, chicken breast, sardines, herrings, lamb chops, veal, eggs (not more than four a week), ricotta cheese. Cook with these oils: linseed, pumpkin seed, soyabean, walnut, canola.

**Target number two**: is to get 5 per cent below the medical profession’s stipulations in the first paragraph. You can do it! Watch your race performances take off. See the look of astonishment as you beat old rivals.
Most endurance athletes accept that tapering before a competition is beneficial, but few understand why.

**Research**

A trial was conducted back in the 1980s by a group of Canadian researchers at the McMaster University in Ontario. The trial was conducted for a one-week period, with a group of experienced endurance athletes who all run approximately 50 miles a week in training. The athletes were split into three groups, with each group working a different training programme for the week. At the end of the week the performance improvement for each group was checked. The results were as follows –

As it can be seen from the table, group 3 achieved the best improvement in their performance (22%). In addition group 3 enjoyed four advantages over the other groups:

- More glycogen in the leg muscles.
- Increased density of red blood cells.
- Increased blood plasma.
- Increased enzyme activity in their leg muscles.

Similar tests have also concluded that as well as achieving the above advantages there is also an improvement in the neural system. The end result is that the athlete has an improved ability of a better rested nervous system to control and coordinate better rested muscles at faster running speeds. These are all very desirable in an athlete’s preparation for a major competition.

**What to do**

If your total mileage is less than 50 miles a week and your event is less than one hour then:

- taper for seven to 10 days
- reduce the total mileage by 80%
- training intensities high interval sessions (90% VO2max)
- reduce frequency of training by 20%.

If your total mileage is greater than 50 miles a week and your event is greater than one hour, then taper for 14 to 20 days, otherwise use the same strategy.

**Tapering in training**

If tapering in this way can have this effect on your performance then perhaps you should consider including tapering weeks in your season’s training programmes. With all my athletes I use a four-week cycle, where the fourth week is an active rest and test week. In this fourth week the training load is reduced by 70%, two or three tests at max effort are performed and light sessions are included between tests. The tests are used to monitor progress made in the proceeding three weeks of training and the results are considered in the planning of the next four-week cycle.

**Brian Mackenzie**

Group Training programme % reduction in training load

<table>
<thead>
<tr>
<th>% improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No training 100% 0%</td>
</tr>
<tr>
<td>2 18 miles (easy running) 64% 6%</td>
</tr>
<tr>
<td>3 6 miles (500m sessions at max effort) 88% 22%</td>
</tr>
</tbody>
</table>