

Speed Endurance 1 – middle distance

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There are many ways of improving your speed endurance. Several of these involve sessions of 200m repetitions. The training pace and recovery periods between repetitions depends on what you are trying to achieve. If you want to improve your 800m race time, run the repetitions at your target 800m pace. The following sessions are aimed at improving what is commonly called lactic tolerance, your ability to maintain pace as the by-products of repeated anaerobic lactic energy production accumulate. The term “by-products “ is used to include a complex set of consequences of repeated anaerobic demand with relatively short recovery periods. The consequences include physiological changes and perceptions of fatigue.

Following a comprehensive warm up, a typical session might be:

2 x (6 x 200m @ 800m pace), recovery decreasing from 60 to 40s in 5s steps for 200m time >40s; 45 to 25s in 5s steps for 200m time < 40s, 6-8 min between sets. [2.4km] {lactic capacity/tolerance}

This session consists of 2 sets of 6 reps of 200m at your target 800m pace. This pace should be a little faster than you are currently running for an 800m race (you can gradually increase it as your race times improve). If that gives a time for the 200m reps that is greater than 40 seconds, your recoveries will start at 60s and decrease by 5 seconds for each rep, down to 40 seconds. If your 200m rep time is 40 seconds or less, start your recoveries at 45 seconds and decrease each by 5 seconds down to 25 seconds. After the first set, a walk of 400m in 6-8 minutes should enable you to recover for the second set. The 200m distance is chosen because it is far enough to place the major demand on the anaerobic lactic system, multiple repetitions can be run in a set to gradually accumulate a training load and it is a useful subset of an 800m race.

There is nothing magical about the 6 reps in each set. You may want to start with 3 reps and build up to 6 or more reps per set or you may want to select a different starting recovery and gradually increase the demand as you improve. Alternatively, you may find it better to start with just one set of 4-6 reps and gradually increase the demand over several weeks. People react differently to various training sessions depending on their initial level of fitness, the desire they have to improve and what they are prepared to commit to achieving improvement. Allow several days for recovery between interval sessions.

This type of session requires that you maintain the same pace for each 200m rep and that pace will place demand on the lactic anaerobic system if it is 800m pace. The recovery time between the 200m reps is not long enough for the by-products of anaerobic demand to be completely cleared from the muscles. As the recovery times decrease, there is an accumulation of these by-products. The training outcomes of the session are:

- improvement in the ability of your body to transport lactate through muscle cell membranes;
- improved capacity to buffer increased muscle cell acidity;
- better pace judgement;
- improved ability to cope with the mental demands of sustained anaerobic effort.

During each rep, your heart rate and breathing rate will increase, but there is insufficient time for the aerobic system to contribute maximally to speed (although it will help to recharge the anaerobic CP system during recoveries) . During the recovery period, these rates will fall, but will be forced to rise again with the next rep. This has a training effect on the aerobic system, improving its capacity to quickly respond to contribute to the total energy demand.

A similar session is:

16 x 200m @ 800m pace, recoveries decreasing from 90s to 15s in 5s steps. [3.2km] {lactic capacity/tolerance}

In this session, the first half seems relatively easy as the recovery times allow almost complete recovery, but the demand grows considerably as the recoveries shorten. The increased number of reps also requires concentration to maintain the required pace. If you try this session and find that you cannot maintain the required 800m pace, cut the session short rather than run at a slower pace.