

Training Sets for Racing



The training sets and content are based on materials developed by **Kareena Preston** (MSA Coach and SA High Performance Coach) and presented at the MSNSW Performance Weekend in May, 2023.

Thanks to **Greg Gourley** for the FES/BES Calculator.

What is Front-End Speed, Back-End Speed and CSS Pacing?

- **Front End Speed (FES)** is the pace of the first 50m of a race over 100/200/400/800. Sometimes the first 100m can be FES, particularly longer events. FES is always going to be quicker due to being fresh and often having a dive start. It can also be “easy speed” – the sensation of feeling controlled and relaxed but are actually swimming quick.
- **Back-End Speed (BES)** is the pace of the rest of the 50s (or 100) in the set distance. It is trying to maintain pace.
- **BES and Critical Swim Speed (CSS)** are very similar. It is all about maintaining pace over a distance. CSS is usually over longer distances and open water swims.

What is a Flush?

A Flush means to rid the body of lactate build up and toxins to aid in recovery. After a high lactate set in training and after swimming an event at a Meet, it is recommended that a Flush is incorporated into the recovery, i.e., this involves swimming 10 hard metres in every 100 m. That is, in a 200m cool down, you need 2 flushes.

Implications for training

- Incorporating FES, BES, CSS pacing into your training will enhance your program.
- It allows coaches to provide specific targets and goal times for our competitive swimmers. Those who are really wishing to improve. It provides a solid scaffold for measurable progress.
- For target race events 200m use FES and BES. Events targeted over 200m use either BES or CSS pace.

How to work out FES, BES, CSS pace.

- **FES and BES:** A table is attached to work out FES and BES for an event. Drop off for Freestyle is no more than 1.5 sec between FES and BES. In Form, there is a larger drop-off between FES and BES (2.5).
- **CSS** is calculated by $400\text{m time} - 200\text{m time} \div 4 = \text{your } 50\text{m CSS pace}$.
- <https://www.myprocoach.net/calculators/critical-swim-speed/>

Using FES, BES, CSS pacing

Swimmers are to keep their own record of target times to be able to use in sets. A Tempo Trainer is a handy tool for BES/CSS sets. Mode 2, either set on 50m or 25 m. For example, BES or CSS pace is 48, set it at 48 (50m) or 24 (25m).

For swimmers who are not interested in this precise timing using BES etc, sets can be swum as normal using easy/moderate/ hard and the Pace clock. The sets will still work. We do not want to overcomplicate programs – keep it simple.

Our main aim is to improve all swimmers’ fitness and pacing.

SAMPLE TRAINING SETS

PRE-SET - to swim in preparation for the BES sets.

8x50m on 1.30 or on a 1:2 work/rest ratio

- 2 @ 40% effort
- 2 @ 60% effort
- 2 @ 80% effort
- 2 @ best effort

SETS: Target 200m+ Event developing pacing and fitness * similar to Tempo Trainer sets

Set 1: TESTING SET for pacing

3 or 5 x 200m Step Test on 5.00. (Lower lanes 2 min RI). Aim to increase 200s swum as fitness increases.

1. 200 time + 35 sec
2. 200 time + 30 sec
3. 200 time + 25 sec
4. 200 time + 20 sec
5. 200 time + 15 sec

Record:

- Time for each 200m. Swim to target time.
- Stroke Count last 50m of each 200m – keep consistent.
- Heart Rate at end of each 200m – should increase through the set as effort increases.

Set 2: Broken 200 set

6 x (4 x 50- 1.30) followed by 100 recovery swim on 3.00

- Swimmers to aim for BES 200m.
- 1-3 FR, 4-6 Form
- Adjust intervals and repeats to cater to swimmers. Work to rest ratio could be 1:1 or 1:2.
- This set descends in time over 3 weeks. i.e. 1.30 / 1.25/ 1.20
- Recovery week is back to 1.30
- When you begin this cycle again, Week 1 is 1.25

Set 3: Pacing Set - aim is to maintain same pace (200 BES or CSS + 2/50m)

- 3 x 100 FR
- 200 FR
- 2 x 100 FR
- 200 FR
- 1 x 100 FR

Set 4: 200 event set - max Effort. Increasing rest interval while maintaining speed

- Dive Start 50m max effort
- 150 recovery + passive rest 2-3 mins
- 4 x 50 at 200 BES on 1.30
- 4 x 50 at 200 BES on 1.45
- 4 x 50 at 200 BES on 2.00

SETS: Target -100m Event

SET 1 –Descending Set. Repeat 1x, 2x or 3x.

- 3x50m on a time cycle of 1:2 or 1:3 work: rest ratio (depending on the swimmer's capacity)
1: swim at BES +4s
2: swim at BES + 2s
3: swim at BES
- 200m Recovery with 2 x 10m/100 Flushes.

Set 2 – Maintaining speed. Repeat this set 1-4 times

- 4, 6 or 8 x 50m BES on 1.30 (or 1:1 time cycle)
- 200m Fins Flush

Set 3 – Maintain speed/increasing rest interval. Repeat up to 3 x

- 3x50m BES on .60/1.15/1.30 or any times equalling 15s/25s/40s rest
- 50m easy and passive rest on 3.00

Set 4 – 100 Set. Repeat up to 3 x

- 50m at BES 15s rest (start to close the gap (reduce the rest) between the 50s)
- 3x100 at A1 (easy) Pace with adequate rest
- 50m BES 2.00
- 200m Recovery including 2 flushes

Set 5 – Max Effort BES with Increased Recovery

- 4x50 BES 2.00
- 100m Recovery
- 3x50m BES 3.00
- 150m Recovery
- 2x50m BES 4.00
- 200m Recovery
- 1x50m BES
- 250m Recovery and flush

Set 6- FES Set -repeat up to 3-4 times

- Dive 25m FES then swim through easy to 50m – rest varies according to capacity to hit target times. You can decrease rest periods as you improve on the set.
- Push start 50m BES
- 200m Recovery Flush

Set 6 -A FUN FINS set at 100m Pace

- 16 x 25m at 100m Pace on .45
- 200-300m Recovery and Flush

SPRINT SETS – 50 m Focus

Kick Set

- 4x10m Kick at 60/70/80%/best effort.
- expand this set to 8-10x10m with 2 at each effort.
- 100m pull recovery

Breathing set.

4x50m on a time cycle that allows 15s rest

1. At your normal breathing pattern
2. +1 stroke on your normal breathing pattern
3. +2 strokes on your normal breathing pattern
4. +3 strokes on your normal breathing pattern

NOTE: pay attention to how this set feels. If at any point you cannot maintain the breathing pattern, don't progress to the next one. Just work on that point of failure.

You may find your normal breathing pattern is not necessarily your most efficient.

Training TOP SPEED over short distances

- 4x15m freestyle at 80-85% effort (on a 1:2 work: rest ratio)
- 100m recovery
- 4x15m freestyle pull at 80-85% effort (same work: rest ratio)
- 100m recovery
- 4x15m freestyle Fins at 80-85% effort (same work: rest ratio)
- 100m recovery

NOTE: keeping efforts at 15m and sub-maximal speed will allow the swimmer to maintain the effort throughout the set.

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