

Tempo Trainers: Using them to enhance training sessions.

Tempo Trainers are a valuable tool which can be used to enhance training sessions. They can be used in 2 ways: stroke rate and pacing.

1: Stroke Rate

- Average Stroke Rate is around 60 -65.
- Stroke rates can drop off with age and fitness
- Swimmers set tempo trainer on **Mode 3** and experiment with different stroke rates:

48 – Should be way too slow for all

63 – about average

76 – Thorpe’s stroke rate

96 – Brownlee brothers (British Triathletes) stroke rate

110 – Janet Evans stroke rate

- Experimenting with own stroke rate: Swimmers set tempo trainer a few beeps above or below stroke rate- what feels good? All about finding the sweet spot – swimming fast and efficiently
- Coaches can find stroke rate using stopwatch. Stroke rate Mode “00” observe a swimmer – press start as hand enters the water count 1, on 4th stroke count 4 and press stop. The number is the stroke rate.
- Ramp test:

Used to find optimal stroke rate.

Swim a set of 50s increasing stroke rate each 50,
starting at a rate below usual rate.

What is the point where fastest speed is achieved without comprising stroke. This is optimal stroke rate.

2: Pacing using tempo trainer

- Pacing is essential for distance swimming – need to maintain same pace over a long period (CSS)
- TT can be used over shorter distances (200m) to practise maintaining pace.

Critical Swim Speed (CSS) is the pace you can sustain for a prolonged period of time. Your CSS is the average time of each lap. CSS is also considered to be your aerobic swimming threshold. From a physiological point of view, CSS is a speed you can swim where your lactate production is equal to your body’s ability to dispose of lactate.

To improve your distance swimming, one way is to base your training on your CSS time. By using a beeper, your swim set can be configured to best suit your individual CSS time.

CSS pace (critical swim speed) can be easily calculated here.

Your CSS can be calculated from a 400 and 200 metre swim.

<https://www.swimsmooth.com/improve/intermediate/swim-smooth-css-calculator>

When doing a CSS training set with a beeper, you swim each lap at the pace of the beeper.

e.g. if swimming 5 x 200 at a CSS pace of + 1 per 25, then as your toes leave each wall in a 25-metre pool, your beeper should beep.

- if it beeps before your toes leave the wall, then you are swimming too slow.
- if the beeper beeps after your toes have left a wall you are swimming too fast

Using Tempo Trainers in squad

It is possible to use TT in squad even if only some have one.

TT can be used for all strokes too.

Stroke Rate:

Put swimmers in pairs sharing TT. Swim together – swimmer with no TT matches stroke rate of swimmer with TT. Change every 50.

Pacing Sets:

Give TT to lead swimmer. Following swimmers use pace clock leaving 10 sec gap as usual.

The Tempo Trainer can be used over all distances – good for shorter distances to maintain pace or practise negative splits.

Sets:

Pacing CSS swimming: Set tempo trainer on **Mode 2** or **Mode 1** to beep at CSS pace each 25. (Set to **Mode 1** for finer tuning). There are two types of sets:

1. Beat the Beep (BTB)
2. Stay with the Beep (Stay)
- 3.

With **BTB**, your beeper is set to a few seconds slower than your CSS pace per 50 meters (as specified in the set). As you swim the time you achieve in front of the beep (per lap) is accumulated into your rest interval.

Your beeper is set to a slower time per lap than you can swim. For each lap swum, you will be accumulating time that adds to become your rest interval.

E.G. if your CSS is for example 30 secs /25 metres, your BTB swim set may have the beeper set to CCS + 2 / 25 being 32 seconds / 25 metres.

Then when swimming say, 4 x 200 metres you will be gaining (or Beating the Beep by) approx. 2 seconds per 25 metres, so across the 200 m you will be approximately 16 secs in-front of the beep.

The time you gain (in this case 16 seconds) is the rest interval you get before you swim the next 200m. (no need to look at the pool clock).

With **STAY** with the beep, you are supposed to swim at the exact pace as the beeper – which may be faster or slower than your CSS pace. The rest period is until the next beep.

CSS Set Stay with the beep

Goldilocks Set (from Swim Smooth)

- 4 x 100
- 1 x 200 (baby bear)
- 4 x 100
- 1 x 300 (mama bear)
- 4 x 100
- 1 x 400 (papa bear)

For example:

CSS pace/100m: 1.37

Set in Mode 1/25m: 24.37

Stay with the beep.

All with 1 beep recovery between each

Beat the Beep Sets

Set 1

- 6 x 50 CSS +3/50m
- 4 x 100 CSS +5/50m
- 2 x 150 CSS +7/50m

For example:

CSS pace/100m: 1.54

Set TT Mode 2 at 57+ 3 sec/50m =60

57 + 5+= 1.02

57 + 7 = 1.04

Set 2

2 x 200 CSS + 4/50 m

Set TT at mode 2 at 57 + 4 = 1.01

Tempo Trainers can be purchased from many online stores such as Aquashop.