

Coach's Notes to Sprint Workout Video

Ensure swimmers have achieved a good level of fitness and are capable of completing aerobic workouts without suffering from cramps etc. before executing sprint specific training.

The object of these workouts is to overload the muscles with lactic acid and to train the body to recover the effects of lactic acid build up while still performing at a high intensity level. Technical advice is given to help maintain body position and reduce drag to optimize speed.

Warm up

Simple easy short warm up covering 300m

Activation Set

6 x 100's breathing either 2/4 or 3/5, concentrating on keeping the head still and looking at the bottom of the pool between breaths, good rotation allowing for easy high elbow-relaxed forearm recovery. While keeping the head down, push the chest down (extending stomach muscles) in the water and imagine yourself swimming downhill. This should be on a relatively easy turnaround time allowing between 20 and 30 sec rest.

1 x 200 as:

25m streamline kick on the back - hold tight locked arm position and push shoulders down in the water

25m catch up – ensure hands touch before starting next stroke to enable full rotation of shoulders and hips

50m easy DPS (distance per stroke) – stretch out in this extended full stroke maintaining still head position, chest pressing down and good rotation of hips and shoulders every stroke.

Repeat.

Main Set

10 explosive jumps. Move to a depth where your mouth is at the surface when standing on the bottom. Sink down until in a squat position then explosively push off the bottom with arms streamlined and extended jumping to get your hips out of the water. Allow yourself to fall and sink immediately and repeat the jump. You will only get one breath per jump, so the jumps will start to fill your calf and quad muscles with lactic acid by numbers nine and ten. Try to loosen muscles on the descent by shaking out arms and legs. Activating core muscles will help keep you in one position and prevent movement towards other people/lane rope etc.

4 x 50 where the:

1st rep = 200m race pace,

2nd rep = 35m @ 200m race pace / 15m easy

3rd rep = 25m @ 200m race pace / 25m easy

4th rep = 15m @ 200m race pace / 35m easy

Aim to get between 25 – 35 sec rest after each 50.

2 x 50 Easy backstroke pull on lane rope (on the side where rope is). Stretch and rotate as much as possible to take as few strokes as possible.

1 x 150 Easy swim DPS – stretch out, focus on head still, rotation of shoulders and hips, swim downhill. Aim to get 1 minute rest.

4 x 50 with first 15m ALL OUT. After an explosive push from the wall (mimicking the explosive jumps earlier), hold the streamline tight. Use either dolphin or flutter kicks towards the surface. Do not be in a hurry to start the first stroke, but do so upon the onset of deceleration and ensure the first four strokes are accelerated emphasizing the push-down at the front of the stroke before pushing back towards the hips. Do not breathe for the 15m fast. Maintain the high body position (head down, chest pressing) for the remaining 35m, but reduce intensity and swim slower.

Aim to get 25-35 sec rest after each 50.

1 x 150 Easy swim DPS – repeat as before - focus on head still, rotation of shoulders and hips, swim downhill. Aim to get 1 minute rest.

Repeat all six components of the main set.

Warm down set:

4 x 100 IM. Mix up the strokes to ensure all lactic acid is removed from the muscles. If swimming long course alternate the breakdown into 30m Fly/Fr and 20m Bk/Br on odd numbers and 30m Bk/Br with 20m Fly/Fr on the even ones.

1 x 200 choice easy swim/kick.

Total metres = 3350m, Time 75minutes (swimming) ideal for 90 minute practice depending on talk-time.

By using the percentage of actual best times rather than a percentage of effort level you can quantify the times achieved in the practice and get the swimmer to focus on the achievement of target times. It is through consistency of attainment that both fitness and confidence will improve allowing for better race performances. To perform within 10% (110% of BT) in practice equates to race pace speed simulation, especially if undertaken without a dive.

When executing the sprint aspects try to accelerate the first four strokes off the wall on every push off. Emphasizing the push down at the front of the stroke (while keeping your head down) will create lift allowing maximum momentum to be carried forward from the push off. Remember the art of sprinting is not how fast you can go, but how far you can go before decelerating. The push off from the wall is the fastest part of your race (except from the dive from the block) so by extending that 'top speed' momentum further down each length you will swim faster throughout each length.

Alternate sprint workout sets may include (ensure adequate warm up/warm down):

3 x 4 x 50 ALL OUT on 2:00
200 Easy DPS on 4:00

Targets:

1st set = 110% of 50m BT (best time) i.e. if best time is 27.0 target to achieve is 29.7 each rep

2nd set = 115% of 50m BT (in this scenario hold 31.1 seconds each rep)

3rd set = 120% of 50m BT (32.4)

Total metres = 1200m (600m high intensity), Time = 36 minutes

3 x 2 x 50 kick easy keep feet in the water on 1:10 (or short rest – max. 15sec)
2 x 100 swim DPS on 1:45 (or approx. 20 sec rest)
1 x 150 swim broken as follows (75m, 50m 25m):
 @ 75m take 20 sec. rest
 @ 125m take 10 sec. rest
The target for the 150m + 30 sec rest is your 200m BT (best time).

Total metres = 1350m (450m high intensity), Time = 30 minutes

1 x 100 Target 110% of 100m BT on 1:45
4 x 50 swim DPS (active recovery) on 1:15
1 x 100 Target 115% of 100m BT on 1:45
4 x 50 swim DPS (active recovery) on 1:15
1 x 100 Target 120% of 100m BT on 1:45
4 x 50 swim DPS (active recovery) on 1:15

As the lactic acid builds up it is important to give enough recovery (5 minutes active recovery) between intense components. Also allow the set to appear to get ‘easier’ (110% followed by 115% then 120%) so that the swimmer has maximum effort in achieving the first rep at 110% of their best time.

Total metres = 900m (300m high intensity), Time = 20:15 minutes

Note when sprint training the requirement is to go faster earlier in the set. It is a common mis-practice to expect a sprinter to increase speed on ALL OUT repetitions. If you find your swimmers are achieving their times (percentage of best times) easily and can push harder on the last set than the first, either your swimmers have not yet performed near

their potential in short sprint events or they are distance swimmers who can repetitively hold high intensities (albeit at slower speeds).

Sprinting involves exerting your muscles to maximum stresses while undergoing the same movements that are required during racing. Rest and recovery is always the key to successful sprint training and improved speed. Sprint focused practices should only be adopted up to three times per week. For Master's swimmers who do train more often the interim practices should be more of recovery and technique based in nature to ensure adequate recovery and injury prevention. Thus it is important to adopt a periodization of training to ensure an aerobic foundation has been developed (this takes several weeks) for the anaerobic training to be maximized. Without an adequate aerobic base the sprint training will improve speed, but likely not enable the swimmer to perform at the desired speed throughout the entire race due to the breakdown of stroke mechanics.

Sprint Training with respect to Age:

The benefits of sprint training are that you achieve a higher intensity from a shorter duration of time and fewer shoulder joint rotations! This is an obvious advantage to the older swimmer. Caution must be observed however, since the elevated intensity can lead to or exacerbate any underlying medical conditions the aged swimmer may be experiencing. The coach must ask the questions of the Masters swimmer as to their health and possible 'down-sizing' the intensity of a set specifically for any swimmer not 'feeling too good' that day or to accommodate any such conditions. It is important to realize that swimmer knows their body much better than the coach and unlike the young age group swimmer that can 'bounce back' from hard training quickly, the Masters swimmer is much more fragile and requires more care and attention.

Reducing set length and intensity for older swimmers will allow the focus to be maintained on higher intensities while maintaining good mechanics. This is often prevalent on sets including butterfly. Since the aim is to improve speed of a good mechanical stroke, swimmers should 'back down' or swim single arm upon such onset. Start out with just half a lap of good fly or good stroke mechanics of another stroke if the swimmer is unable to complete the whole set of 25's or 50's without stroke deterioration. This will provide a benchmark of good mechanics high intensity distance which can be improved on over subsequent sessions. 'Struggling through' sets does not yield improvements while maintaining good stroke, but only makes the swimmer better at swimming poorly! As Dan Thompson states, "If your stroke falls apart, just stop, warm down, and go home. You're into power swimming, not punishment." -

<http://www.usms.org/articles/articledisplay.php?a=117>

There are many resources for sprint training and what I have advocated here is only one of such. Another good source is Swimming fastest by Ernest Maglischo which has an in depth chapter on sprinting.