




RACE PACE PRINCIPLES
&
SET DESIGN

Powered by
British Gas



Stuart Mc Narry
High Performance Coach, Swim Wales

What is Race Pace Training?

- Race Specific Training
- Repeats Performed at Race Speed according to desired splits
- Race Stroke Rates
- Race Stroke Counts
- Race Breathing Patterns

Powered by
British Gas



How Often Should you swim Race Pace?

- Improvements resulting from training appear to be more a function of intensity (AS CLOSE TO MAXIMUM AS POSSIBLE) than of the total distance covered (Maughan 1990)
- Focus on total weekly volume of race pace training
- 5,000 – 10,000 vs. 55-70,000/week total volume
- To have a positive effect “Race specific training” needs to be done twice per week. It can be presented as sets done entirely at race pace or integrated with other repeats at lower intensities. The introduction of this work is often left too late in the preparation, resulting in incomplete adaptation to this training influence. Swimming at racing speeds can be introduced early into the preparation with the volume being adjusted according to the swimmers ability to cope.

Train Fast Enough for Long Enough

Event	50m	100m	200m	400m	800-1500m
Minutes of Race Pace	8	12	14	15	30-40
Total Distance of Race Pace	600	1000	1200	1500	3000

Powered by
British Gas



Principles in the design of Race Pace (Specific) Sets

- It is critical for the swimmer to be able to swim at race speed.
- The rest period must be long enough for speed maintenance but short enough in some sets to create an endurance stress.
- The swimmer must practice swimming at the required speed with the desired stroke rate and stroke count.
- The 100m events require sets designed for the first 50 making distinction from sets created for the second 50.
- Racing at constant velocity is a common strategy used in the events 200,400,800 & 1500.
- Specific sets may need to be developed for the first 50 split of the 200, first 100 of the 400.or first 200 of the 1500.
- Speeds need to be determined from the projected race time and not current PB.
- *Individual medley sets should be completed as broken IM's as well as sets dedicated to each particular stroke.*
- **Swimmers need to learn what the selected stroke rate and speed feels like.**
- Get regular feed back from the swimmer of what they think their stroke rate and time was at the end of each repeat or race. By doing this the swimmer will become more in tune with their body.

Specific Training for 100m Events

Training for the first 50m

- Race specific training is an essential part of all preparations and must be included in the training cycles from the early stages of the preparation to achieve a complete adaptation response.
- The 1st 50 is swum at speeds that are not easily achieved as 50s in day to day workouts. Swimmers can reproduce 1 or 2 swims of 50s in this time but not enough repeatedly to gain a significant training effect.
- The 1st 50 therefore needs to be broken down into shorter distances to ensure that speed can be maintained at the required stroke rate. This will allow the swimmer to complete enough repeats to create a significant training effect.
- The preferred repeat distances are longer than 25 m. The ideal repeats are 30m, 35m and 40m; although 45s and 50 can be included sparingly.
- Maximum distance of 400-500m per set.
- Swimming at the speed and target stroke rate are critical factors. The rest periods must be long enough in order to maintain speed.

Powered by
British Gas

Specific Training for 100m Events

Training for the first 50m

- The desired race or competition model is essential. We need to know the 25m split the 50m split 75m split, the 100m time, the stroke rate and stroke counts.
- From the above we can determine the 30m, 35m, 40m and 45m splits. This is worked out by subtracting the 1st 25m split from the 1st 50 split. From this the split for each additional 5m beyond the 25m. can be determined.
 - Example Swimmer is aiming of swimming 25 sec first 50m and 26.5 sec his second (times are use as an example only):
 - 1st 50 split 25sec,
 - 25m split 11sec,
 - Difference gives time for 2nd 25 = 14.00 sec.
 - Divide 14 by 5 to determine the time for each 5m interval = 2.80 sec. Then,
- 30m = 11.00 + 2.8 = 13.8sec
- 35m = 13.80 + 2.8 = 16.6sec
- 40m = 16.60 + 2.8 = 19.4sec
- 45m = 19.40 + 2.8 = 22.2sec
- 50m = 22.20 + 2.8 = 25.0

Specific Training for 100m Events

Training for the Second 50m

- Use 50m repeats as I believe these sets and required speeds are more easily achieved throughout the preparation period.
- Race speeds for the distance swimmer are regularly achieved in their **VO2** or **Heart Rate workouts**. I would suggest that “Sets” up to 3000m should be swum.
 - Straight sets can be done but broken sets usually draw a better performance.

Powered by
British Gas

Set Design

- It is the coach's imagination for the design of new sets but the key points are:
- Perform these sets once a week
- They only achieve their purpose if they are swum at the correct speed and stroke rate.
- Feedback between swimmer and coach is vital.
- If the swimmer is too fatigued to swim at the required speeds do the set at another time.
- **RACE PACE WORK IS ONLY RACE PACE WORK WHEN IT IS SWUM AT RACE PACE**

Example Race Pace Sets

- 3x35 (100m)
 - Target is Sub 100m PB
 - Dive Rd. 1
 - Push Rds 2+3
-
- Super 500
 - 25,50,75,100,75,50,25 or any other combination

Example Race Pace Sets Continued

- 8x25 (Swum as 50's) Odd as Dive 25, Even Push 25
- Combined Total is Target 50m Split
- 8x50 at 2nd 50 of Target 100 PB
- 8x50 at 200 Pace or better
- 200 easy between rounds

Powered by
British Gas



Sample Stroke Rate Control

- Same or higher SR at finish as 1st 25
- Best swimmers shift gears at finish and win the close races (accelerate into finish instead of slowing – Phelps vs. Cavic)
- Emphasize SR/splits in all meets
- Control SR in quality sets

Powered by
British Gas

Sample SR Sets

300 – easy free

200 SR ladder

250 – 100 – 50 – 100

75- SR - 45

200 – easy free

25 – easy free

150 – 50-50-50

50 – SR - 50

100 – easy free

25 – easy free

50 – pace

25 – SR 55

*Aqua-pacer -

Powered by
British Gas

Any Questions?



NODDIO CYMRU
SWIM WALES

Powered by
British Gas

