

A LEVEL PE PERFORMANCE DEVELOPMENT PLAN



Candidate number: 
Cornwallis Academy: 

Aim: To improve the efficiency of the start and turns in my 100m backstroke by improving my leg power.

Accumulative word count (excluding titles, training logs, graphs, tables and pictures etc): 3,637

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Physiological Analysis

Most Important components of fitness for swimming

The event I will be analysing is 200m backstroke with my PB being 2 minutes 20 seconds, therefore this includes both the aerobic and anaerobic glycolysis energy systems (14).

Swimming athletes require elements of power, speed, and endurance to reach their performance potential. Combination of these energy systems are used to do so (11).

Aerobic endurance allows a swimmer to sustain long periods of aerobic activity in training and in a competitive situation. Furthermore, I found that speed is important for swimmers as it is the ability to break through a natural barrier that is at the core of the sport (12).

Power is also an essential component in order to create an explosive start and turn. It is important as the greater the force the swimmer's muscles can exert on the water the faster, they can swim (13). Both speed and power are imperative as a successful start and turn will allow the swimmer to get an early advantage against their opponents and continue to generate speed through the water and create powerful turns until the finish.

The three most important components of fitness for a 200m backstroke swimmer is; are aerobic endurance, speed and power. In the absence of elite data, I will be using data from one of my squad members for comparison who swims at a national level for the same competitive swimming club as me.

Aerobic endurance

Aerobic endurance is vital for swimming because it creates the basis of the race (4). The 200m backstroke lasts for over 2 minutes and in order to complete a competitive race.

Aerobic endurance test:

Aerobic

- 5x200 Step Test

All swims even pace/splits. Descend by 4 secs on each 200 to goal time, start at PB +20 secs. Record times and heart rate. Aim to descend but promote efficiency to do so.

- Double Distance Test

Swim 3 sets of 2x200, then 1x400 aim to achieve double the time on the 400.

Eg Set 1 2x200 Target 2.30.0 /400 Target 5.00.0

Set 2 Target 2.25.0 /400 Target 4.50.0

Set 3 Target 2.20.0 /400 Target 4.40.0

(5)

All swims even pace promote efficiency. Allow sufficient rest to achieve required outcomes, as swimmers progress reduce rest times. Record splits and heart rate to monitor improvements.

Validity: The 7x200m step test measures your ability to swim a distance as fast as you can and maintain this speed testing your V02 max. For a 200m swimmer, this is a valid method as it allows you to be specific on what distance you are testing in this case 200m.

Although this test gives a V02 indication we cannot fully assess V02 max without specialist gas analysis equipment.

Reliability: In order to make these results reliable I did this in a 25m pool in order to compare results I need to make sure it is always completed in a 25m pool to make it reliable (46). Also, it is more efficient to use timing pads rather than a timekeeper to decrease the chance of human error when time keeping. Conditions for this test to make it affective must replicate racing condition such as competitors, lane lines used, swimsuits worn.

Date: 06/10/18

Venue: Mote Park

Scores:

	Personal best	1 st 200m (+24)	2 nd 200m (+20)	3 rd 200m (+16)	4 th 200m (+12)	5 th 200m (+8)	6 th 200m (+4)	7 th 200m (+0)
My score	2.20.90	2.48.98	2.41.10	2.35.76	2.29.11	2.28.10	2.26.70	2.22.10
Peer score	2.17.56	2.46.20	2.38.20	2.34.34	2.27.29	2.24.31	2.21.90	2.19.80

Speed

Speed is necessary in order to win the race against other competitors because without speed, times will not improve and will not be fast enough to compete in certain events.

Speed test:

2. CSS test 200/400 double:

- a. *Protocol:* Warm Up 300 easy freestyle, 4 x 50 freestyle (25 fast/25 easy) on 10 seconds rest, then 4 x 100 freestyle at what you think you can do for the 400, Main Set: 400 time trial, 200 easy swimming plus some time on the wall (5min total) THEN 200 time trial, Warm Down 100 easy choice of stroke

Validity: CSS defined by Monod and Scherrer (1965) was that maximal swimming speed could be maintained without exhaustion for a long period of time (45). Improving speed in swimming is essential as by increasing this element it allows for explosive reactive power to be effective. As for a development in power a base of strength, speed and balance is needed (44). Specific distance of this tests means you can incorporate turns and starts mimicking the competitive situation that the race would be in.

Reliability: This test allows for specific distances to be measured depending on the race you compete in; it replicates the environment you should swim in. Results from this test can only be compared to those swum in the same distance pool as you, the results from a 25m pool cannot be compared to those done in a 50m pool. The use of a device called a pacer, allows you to maintain stroke rate and pace to be able to mimic race speed (46).

Date: 07/10/18

Venue: Strood Leisure Centre

My result:

4x100m Backstroke

	Personal best	1x100m	2x100m	3x100m	4x100m
My scores	1.06.39	1.10.12	1.09.30	1.07.39	1.08.20
Peer scores	1.05.65	1.08.24	1.08.67	1.09.21	1.07.90

200m Backstroke time trial

	Personal best	200m
My scores	2.20.90	2.25.76
Peer scores	2.17.56	2.22.43

Accumulative word count: 499

Power

Possessing high levels of power allows swimmers to improve their reaction at the start, push off out of each turn and with the rotation during the turn. By improving power, it can improve starts and turns by 10.5% and 20.5% respectively (6). Lanthrop et al (2009) states that the required explosive reactive muscular response off the block from a swimmer accounts for up to 30% of the performance (44).

To measure this, I will complete the vertical jump test.



Validity: Swimming starts are explosive movements designed to propel athletes through the air as quickly and as far as possible in order to take advantage of the decreased resistance compared with water. The vertical jump test mimics this movement of explosive action forwards off the block as Cossor and Mason (2001) states that starts can compromise up to 26.1% of a performance impacting hugely on the time swum. (41)

Reliability: To measure my vertical jump more accurately a vertec will need to be used in order to ensure that the test completed was reliable. However, when such equipment isn't available, I made sure that the same person measured each jump so that judgement of eye and measurements were reliable as we do not have a vertec to use (16). Also, three jumps were performed to find a mean height each time my fitness test was completed incorporating a rest period after each jump (42).

Date: 25/09/18

Venue: Cornwallis academy

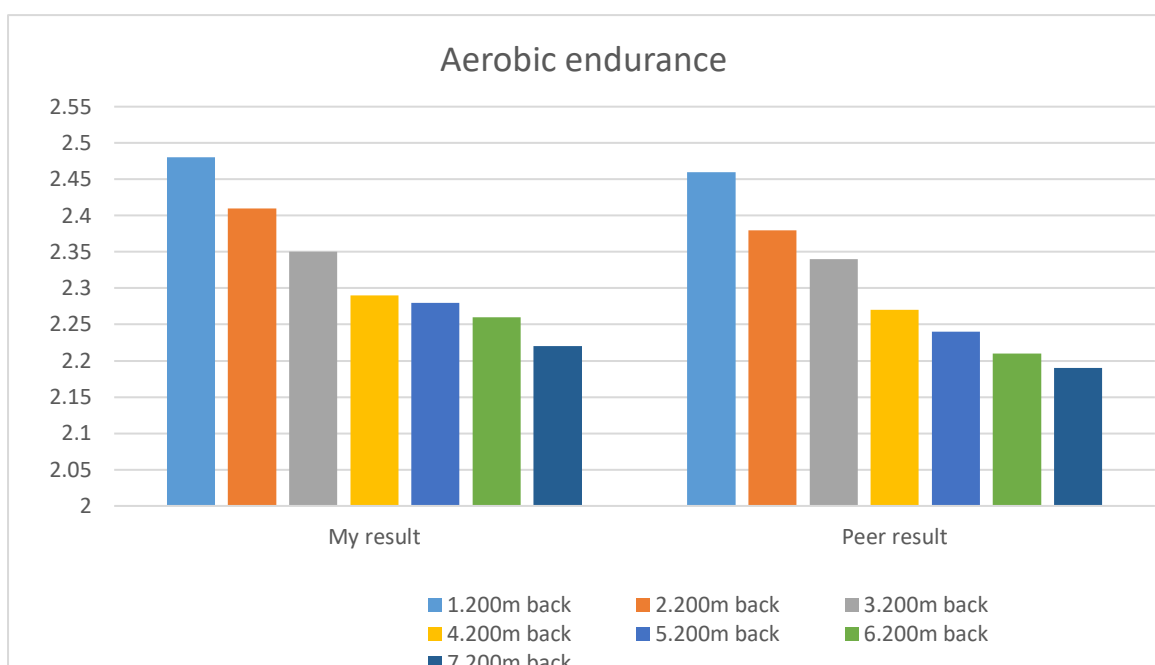
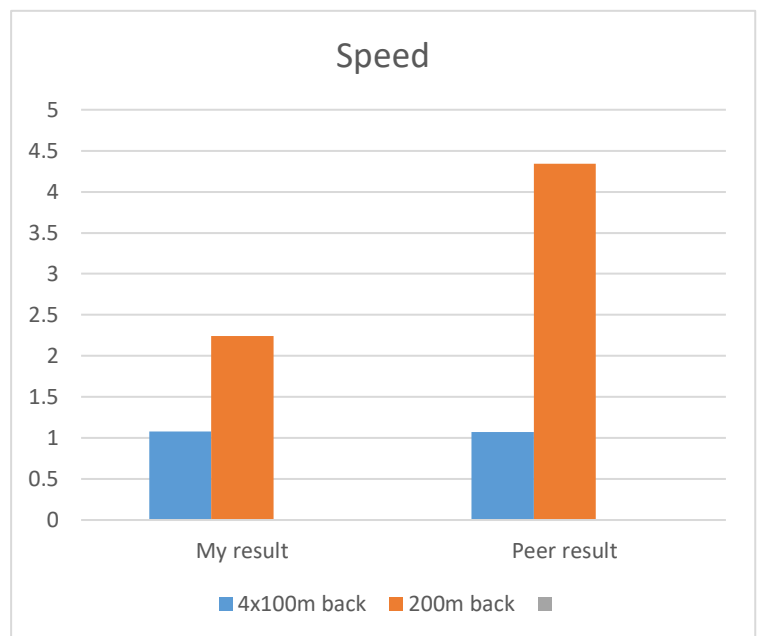
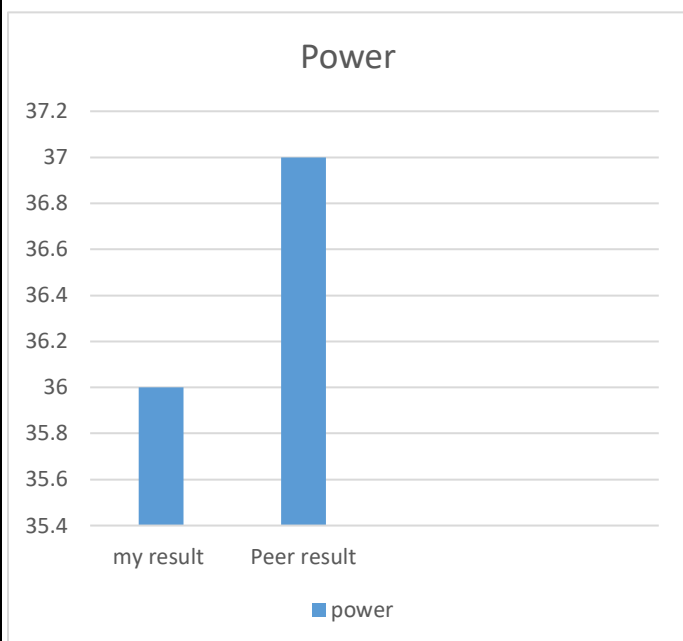
Score: 36cm

Peer swimmer results: 37cm

Future Priorities

After analysing my results, power and speed have been identified as areas that need improving in order to reach a more elite level. Both of these components were my weakest results in comparison to my peer results. In training to improve my power I can undertake plyometric training to improve the power in my legs. In order to improve speed, I would be considered specific swimming interval training sessions, with short bursts of sprint work with periods of work. Increasing explosive power from my starts and turns will lead to an increase in speed.

In my PDP, I will complete exercises including; squat jumps, bench or box jumps, advanced burpees, forward hops, frog hops (23), lateral lunge, mini band external rotation and squat jumps with weights (28).



Technical Analysis

- Preparation
- Execution
- Recovery

5 key elements of a backstroke start include: stance on the wall, hips at the wall, set, the launch and the entry (17).



Preparation (Anastasia Zueva)

The hamstring contracts to create flexion at the knee and the antagonist, the quadriceps, relaxing.

The feet sit in dorsiflexion, which the ball of the foot is planted against the touch pad just enough to be able to powerfully push away during execution. The tibialis anterior contracts and the gastrocnemius relaxes to provide this movement. The choice of foot position is specific to the swimmer however, a study in 2013 discovered that when the feet are immersed the body's centre of mass was more horizontal and the method increased horizontal velocity (50).

Both the elbows and knees are in flexion to pull you up towards the block with the hamstring and bicep contracts to create this isometric contraction in both the legs and arms.

Like the elite performer my feet are sat in dorsiflexion which allows me to push off the wall more effectively.

In the preparation phase both the elbow and the knee are in flexion as the swimmer pulls up towards the block, with a neutral position in the wrists.

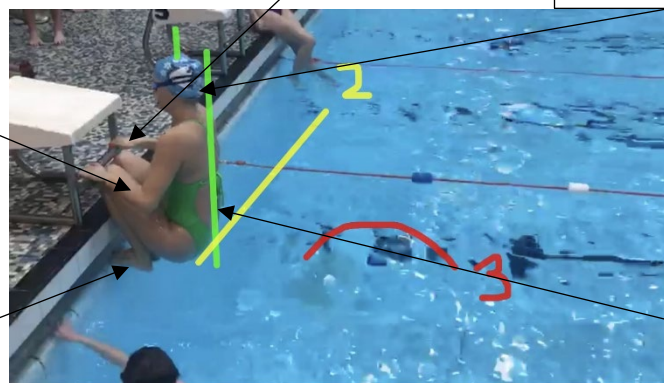
Head is in an upright and facing forward with chin in line with block to create a stable base. By having your head in this position, it allows you to throw your head back quicker and effectively between your arms during preparation and decreases the time it takes to throw yourself away from the block.

The back is slightly curved yet upright in order for the body to be in the right position for execution.

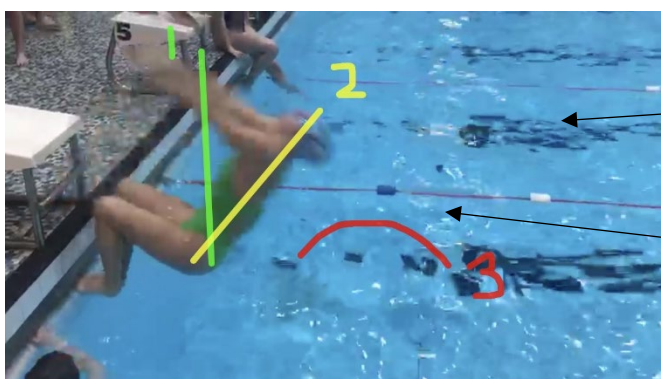


My hands are situated in pronation whereas the elite performer has a neutral position. Depending on the position of the hands affects which muscles are used to propel off the start.

The elite performer and I demonstrate a good upright and forward-facing position, with chin in line with the block. This allows me and the elite swimmer to extend our arms efficiently and quickly, so that we can leave the block quickly to create an advantage.



The position of my back is slightly straighter than the elite performer whose back is slightly curved. This would mean I would need greater push off the wall to get into this position.



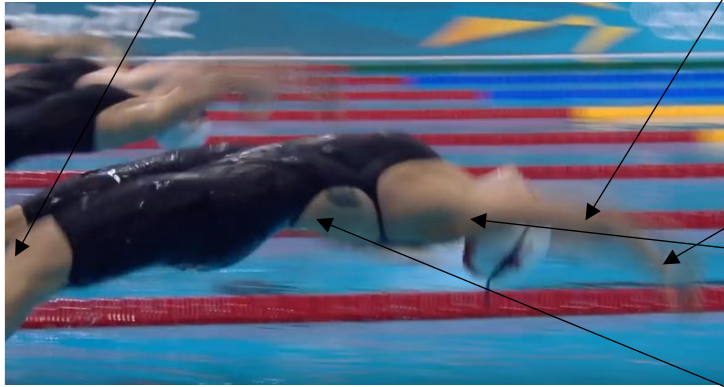
The yellow line defines the change in the angle of my body as I push off the wall, by going out in this position of line number 2 it means I can reach out over the water high enough to arch my back before execution.

Accumulative word count: 1,191

Execution (Anastasia Zueva)

During execution the feet move into plantar flexion where the gastrocnemius contracts and the tibialis anterior relaxes. In the video (on the title page) you can see that the toes are pointed as they enter the water to help create the streamlined position through the water.

The arm extends at the elbow (triceps contract) and flexes at the shoulder (deltoid contracts) in order to throw the arms back into the water in a streamlined position. The arms must be against the head, tightly tucking in the head to create a good streamlined position that reduces drag.



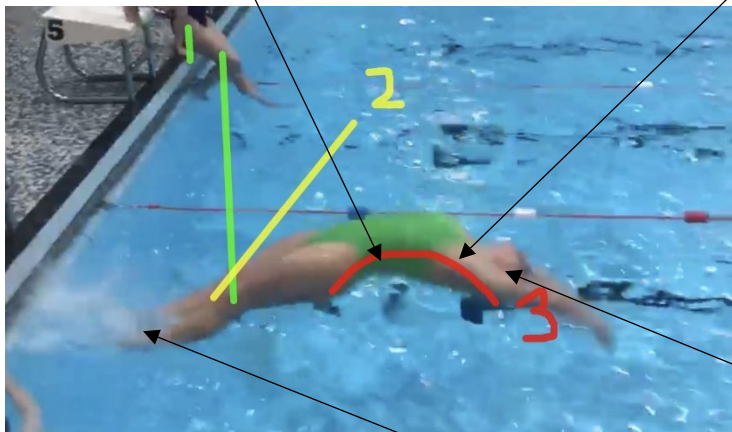
The wrist moves from neutral position into supination that creates a smooth entry with the hands and prepares the swimmer for a streamlined position to reduce resistance.

The neck is arched with the head aggressively thrown in the direction she wishes to travel in as doing this controls the direction her body moves. (49)

The back is curved in order to lift over the water, avoiding collision causing resistance that decreases the speed and power of the start. In the photo the swimmer shows a good arched back that easily clears the water with this crucial explosive leg drive will help to extend your hips and knees getting the strongest push (49).

In comparison to the elite performer, my back is not as curved so I am not entering the water as high, which in turn will affect my entry into the water, as I am most likely to enter the water quickly but at a shorter distance.

Due to the more curved position in the elite performers back, she is able to reach further with her arms whereas for me my arms enter closer to the start, which technically will mean that I will have to do more work underwater to reach the same distance.



Like the elite performer my head is leaning right back so I can execute my start without my head causing drag, that will allow me to enter the water smoothly without causing resistance and slowing down.

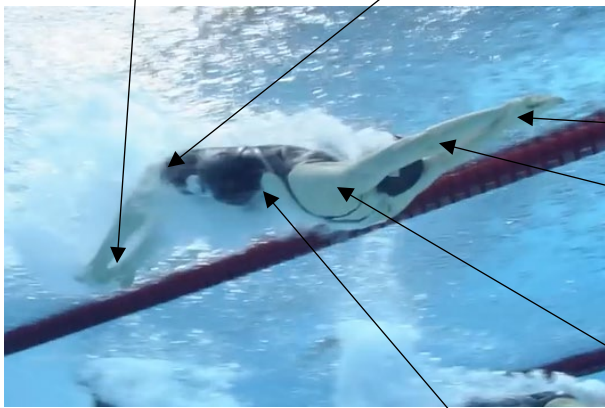
My feet like the elite performers move into plantar flexion, which helps create this streamlined position with the body during execution minimising the chance of drag.

Accumulative word count: 1,515

Recovery (Anastasia Zueva)

The feet stay in plantar flexion to allow for greater propulsion through the water.

The knees flex to prepare for the fly kick initially caused by the hamstring contracting and the quadriceps relaxing.



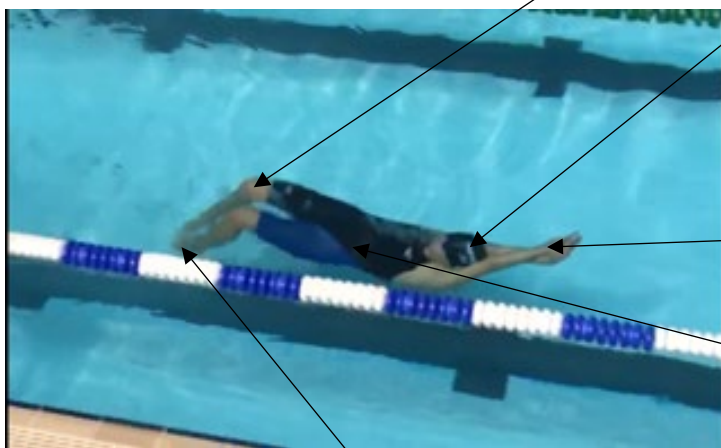
The hands are pronated as it is necessary for the swimmer to be in a tight streamline position so power and speed off the start is not lost due to lack of technique, as a clean entry reduces surface drag (49).

Arms continue to extend at the elbow and flex at the shoulder as once entered you should be in a streamline to be able to complete the underwater phases.

Just as the execution, the swimmers back is arching to create the fly kick movement. By doing so it creates a stronger undulation ready for the next movement.

As well as the back arching to generate a fly kick the knees flex to create this movement. By doing this with my legs as close together as possible, it is to maintain a streamlined position in order to reduce any drag or resistance.

In comparison to the elite performer the position of my head is a little higher than it should be. My head needs to be tucked between my arms to prevent drag, otherwise greater frontal and pressure drag will be created which is detrimental to my swim (51).



Just the elite performer, both our hands are one on top of each other in pronation, pointing in the direction of travel making it easy to break the water fast without causing drag.

The arch in my back allows for me to create an effective undulation just as the elite performer does, allowing me to move into fly kicks fast without slowing me down.

With both feet in plantar flexion like the elite performer, this positioning allows the best streamlining position.

Accumulative word count: 1,794

Strengths and weaknesses



The link shows the video to my backstroke which is used to compare myself to the elite athlete.

<https://youtu.be/qoEMjWAZd64>

Application of skill:

Meet: Kent County Championship 2019

Venue: Crystal Palace National Sports centre

Stroke count	50m	100m	150m	200m
My score	38	41	42	45
Elite athlete (Anastasia Zueva)	31	34	37	39

To improve my start technique, I will need to improve the position when entering the water. My main weakness is the height I extend out of the water, as it is lower than the elite performers. By improving my strength and power in my legs (quadriceps, hamstring, gastrocnemius and abdominal muscles) which can be done by doing more land resistance training eg, squats and plyometric exercises (18). This will allow me to generate greater height off the block into my start. This will mean my start will be more efficient in clearing the surface of the water. My notational analysis explains how the rate of my arm count depends on the power technically through the water in comparison to the elite performer.

Accumulative word count: 1,899

Planning

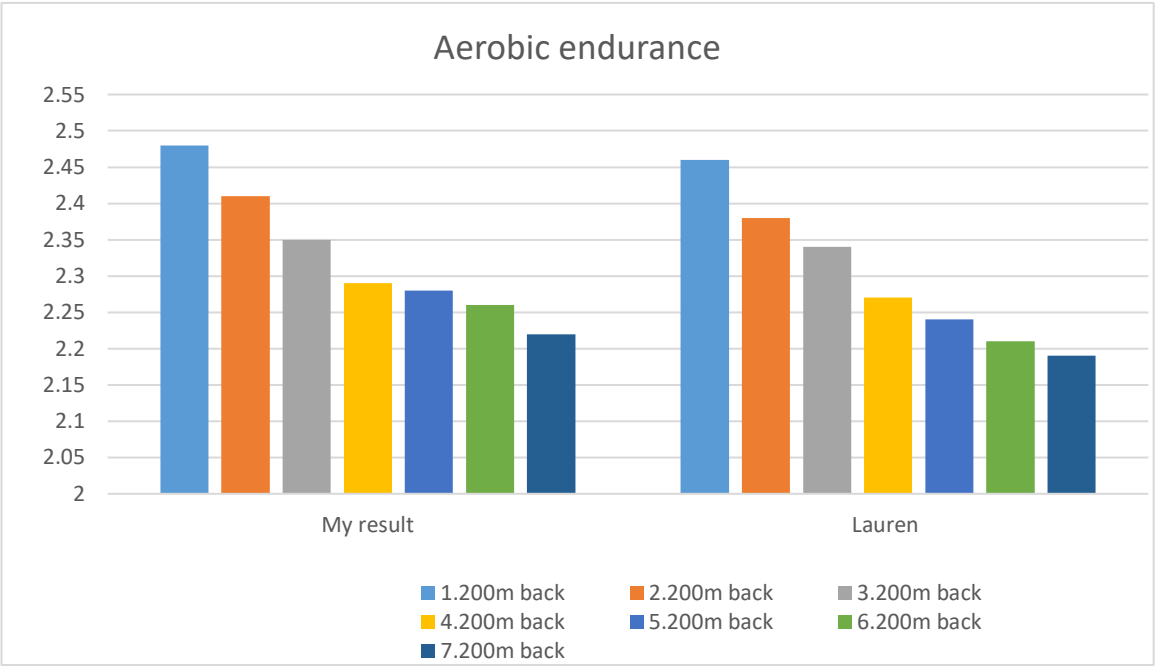
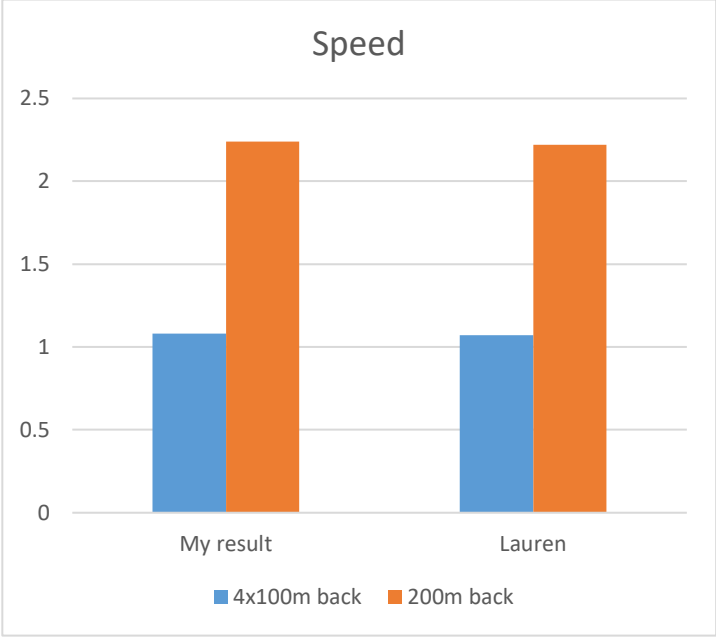
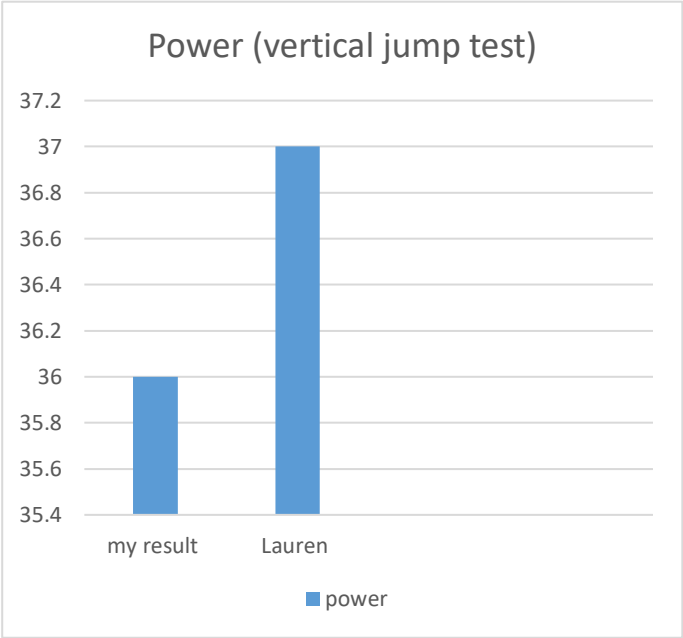
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Accumulative word count: 1,899

In order for me to consider my aims I need to take into consideration a range quantifiable data with regards to my; the strengths and weaknesses derived from my fitness tests, and the impact my fitness has on my performance, analysed through the use of a notational analysis. I will also take into consideration comments through a witness statement from my coach Claire Muller who is head coach at Maidstone swimming club.

Fitness test results:



The above table and graph illustrate the differences in the major fitness components between Lauren (peer swimmer) and I. There is a clear weakness with regards to my lower body power and focussing on developing this component of fitness will allow me to improve my overall performance.

Accumulative word count: 1,942

Impact on performance:

To assess the impact of my fitness on my performance I will conduct a notational analysis in order to make a comparison to an elite performer.

My notational results:

Date: 03/02/19

Venue: Crystal Palace National sports centre

Time: 2.27.70 (short course) 2.29.97 (long course)

Turns	start	1 st turn	2 nd turn	3 rd turn
Distance travelled of turn	8m	6m	8m	7m

Time taken for each lap (200m)	50m	100m	150m	200m
My results	34.76	1.12.58 (37.82)	1.51.49 (38.91)	2.29.97 (38.48)

Elite athlete notational results: Jessica Fullalove (20)

Date: 19/04/19

Venue: Glasgow

Time: 2.09.74 (long course) 2.07.00 (short course)

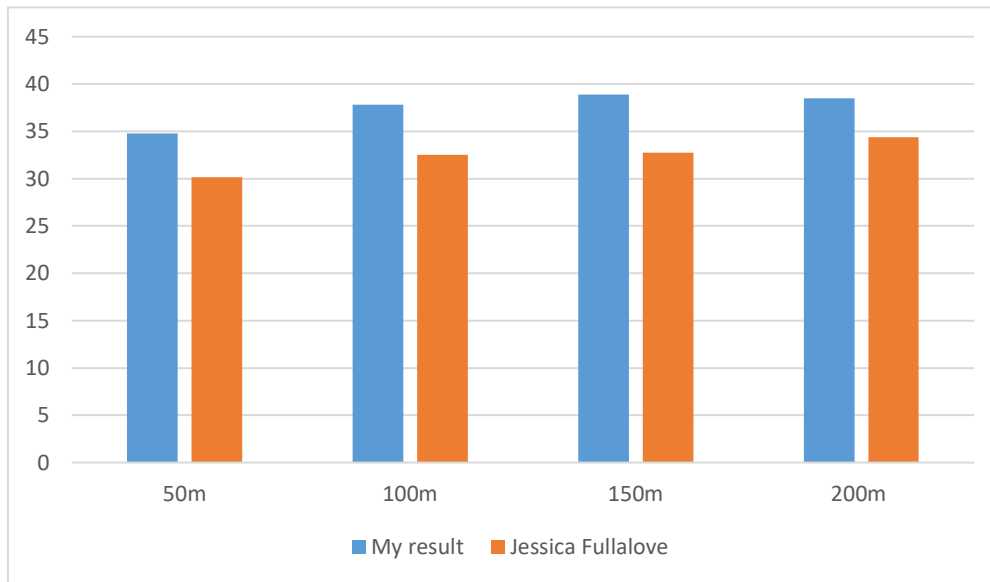
An athlete who competes for Bath University, ranked 2nd nationally for 200m backstroke. Best strokes including backstroke and butterfly. Aged 23.

Turns	start	1 st turn	2 nd turn	3 rd turn
Distance travelled of turn	12m	11m	10m	10m

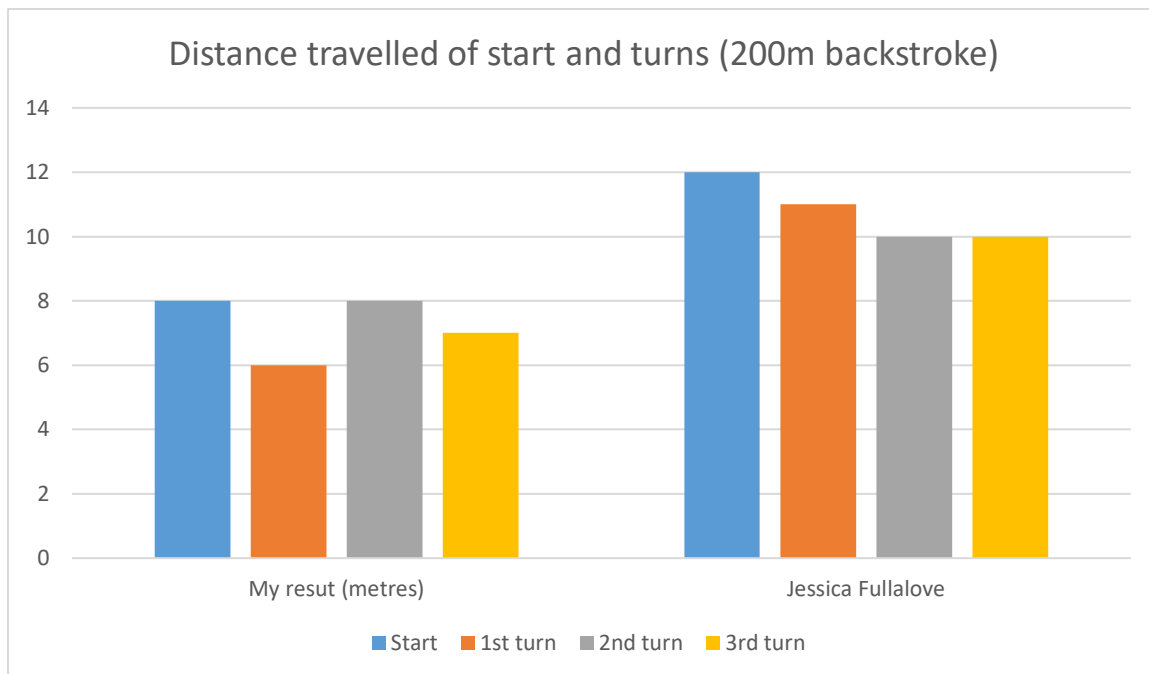
Time taken for each lap (200m)	50m	100m	150m	200m
results	30.14	1.02.66 (32.52)	1.35.38 (32.72)	2.09.74 (34.36)

Accumulative word count: 1,967

Time taken for each lap



There is a greater discrepancy between the first lengths and my last lengths than compared to the elite swimmer (Jessica). Her times shown are all below 35 whereas for mine all but one is above 35.



Throughout the race there is a significant difference between the distance travelled with concerning starts and turns in comparison to the Jessica. Her speed of rotation and explosive power on the push-off from the wall allows her to make better progress during this aspect of the race.

Accumulative word count: 2,043

Aim:

After considering the results from the fitness tests and the impact this has on my performance within the notational analysis, my aim for this PDP will be:

To improve the efficiency of the start and turns in my 100m backstroke by improving my leg power.

Smarter targets:

Specific: By improving the power expelled by my legs it will improve the distance of the starts, turns and the underwater propulsion, overall having a positive effect on improving my performance.

The specific targets in order to meet my overall aim include:

1. Improve vertical jump score by **20%**
2. Distance travelled off the turns increasing by **30%** off my initial distance of 8m, aim of travelling 10.4m off turns.
3. Initial distance travelled underwater off my start aim of increasing by **40%** off my initial distance of 8m, aim of travelling 11.2m off my start.

Measurable:

In order to monitor and measure progress throughout the PDP I will use the vertical jump test during the transition phase and at the end of the PDP. The results mid PEP will be used to re-calculate the appropriate intensities to make further progress.

I will also measure my progress by analysing the impact of the programme on performance through a notational analysis.

Agreed: My coach and I have agreed together that through my notational results and video evidence that power I expel from my legs is the weakest part of my performance. Agreeing and setting targets to meet that will improve the effectiveness of my undulation and power off the wall at the starts turns and finishes.

Realistic: By applying the correct principles of training such as intensity levels (working at 60% up to 85%), progressive overload and specificity I can apply these to my periodised plan to reach my aim within the ten weeks. I will be using:

1. Plyometric training (specific)
2. Swim training (non-specific) maintaining fitness alongside improving my leg power.

Time bound: I have set myself a target of a 10-week training period to complete my aim. My training will be periodised into two mesocycles with a transition phase where fitness tests will be done as well as a final testing week (Page 19-20).

Accumulative word count: 2,327

Exciting: I will be using circuit training, weight and plyometric training to help vary my training, so it doesn't become tedious and I do not become unmotivated. Such methods will include plyometric training by varying the types of activities I do it will allow me to enjoy training over the 10-week period.

Recorded: To make sure I am maintaining good progress through my training programmes I will record each session with record sheets including mid-week testing and final testing at the end of the programme. These record sheets include activities completed to be able to measure for such principles as progressive overload.

Methods of training

Bishop (2009), states that by completing habitual (innate response to a stimulus) training alongside extra plyometric training is effective for improving power generated off starts and turns which in turn produced an effective overall performance (38). Using plyometric exercises, it encourages the muscle to achieve maximal force rapidly and therefore helping to increase explosive reactive power through a range of motion (38). Plyometric training is effective for developing power when planned effectively (34); but can also help reduce over-use injuries which is important due to the repetitive nature of swimming. Being able to generate as much force as possible and as fast as possible, can pay vast dividends in my performance as 80% of a swimmer's performance includes strength and power production. Plyometric training combines speed and strength to produce power and acceleration which can be seen when launching off the block, exploding off the wall, during a turn and even executing the power phase of the stroke. (35)

Plyometric training is made up of three stages; eccentric loading phase, the amortization phase and the concentric phase (27). In my PDP, I will complete exercises including; squat jumps, bench or box jumps, advanced burpees, forward hops, frog hops, lateral lunge, mini band external rotation and squat jumps with weights (23), (28).

Accumulative word count: 2,567

Principles of training

The correct application of the principles of training will allow me to structure the programme effectively and sequentially in order to make sufficient progress over the 10-week period.

Frequency: During my PDP I will be completing plyometric training twice a week alongside my non-power specific training at my swim club 6 times a week. Alongside my training I will have rest days as required to allow for adaptations; such as microtears to repair, to be made through my training reducing the risk of injury by overtraining (27).

Intensity: To improve my power my training needs to be gradually improved to allow for an increase in demand from my body allowing for adaptations to be made. Initial intensity will be **60% 1RM** with hoping to progress to **75% 1RM** by the end of the 1st mesocycle by applying progressive overload. By the start of start of the second mesocycle it will begin back at **65% 1RM** as a previous week of recovery was taken so intensities will need to slowly overload again, reaching **85% 1RM** by the end of the 2nd mesocycle. Also applying progressive overload by increasing the height of the boxes I jump to allowing for a greater demand as I progress through my training. **The height in the boxes will begin at 15 inches and look towards achieving 18 inches**, if achieved by the end of the first mesocycle than further height can be jumped in the second mesocycle (26).

Time: By completing plyometric training at least 1-3 times a week over 6-12 week programmes my motor programmes can be significantly improved. The effectiveness of my training depends on the rest intervals which allow for recovery (39). My plyometric training sessions will last for about 30-45 minutes, at most 3 sessions a week to allow for recovery after each session (40). My swimming sessions lasting an hour to two-hour sessions.

Type: Each plyometric activity I have chosen to do are specific that it will improve power and therefore benefit my performance in the water even if these are land based making is specifically adapted to my sport (23). By using these activities, it will improve my identified weakness of power making sure that in my training it is specific to power. By doing these exercises it activates the body's central nervous system allowing elasticity to be improved by stimulating the fast twitch muscles fibres which produce force quickly and efficiently. (25).

Accumulative word count: 2,875

Periodisation

Periodisation involves dividing training into specific cycles such as mesocycles, macrocycles and micro cycles.

Mesocycle 1: Anatomical adaptations

Haff (2013), stated that the preparatory phase is used to develop specific competitive skills such as the explosive starts turns and finishes as well as technique, whilst maintaining general fitness (32). Within this cycle I will be completing intensities during training at **60-70% 1RM** gradually increasing to **75%** at the end of the mesocycle (26). Finally, by completing this preparatory phase it will reduce the chances of injury as it prepares specific muscle groups and components of the body in preparation of enduring power training and the high intensities it requires (33).

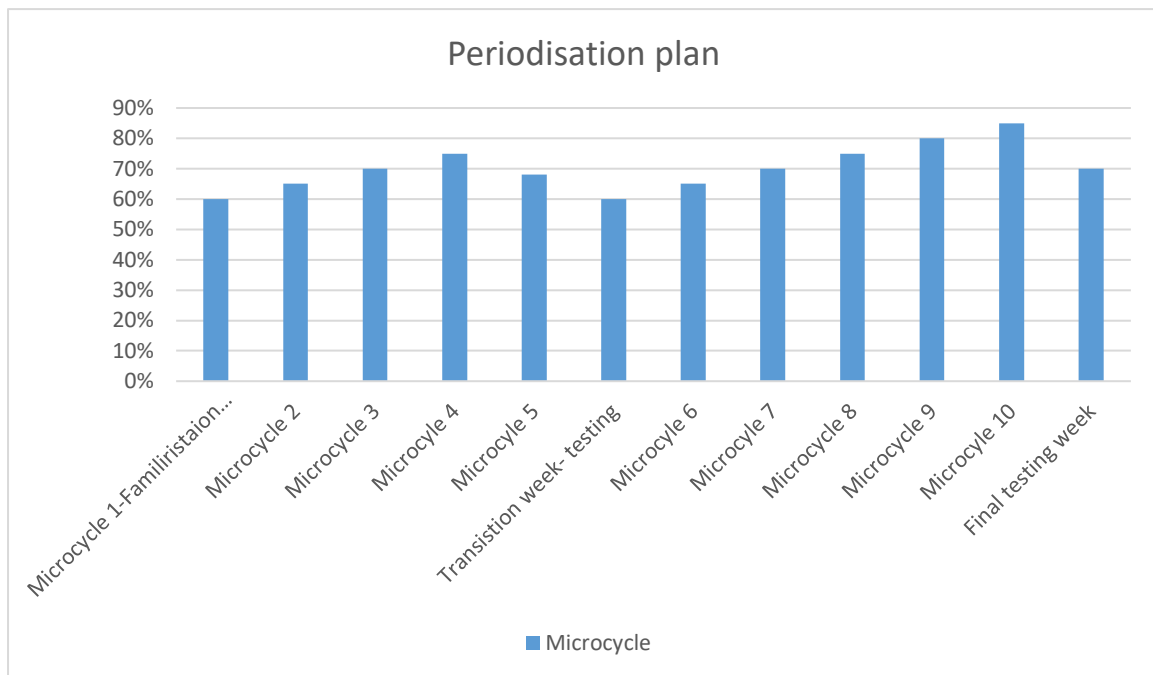
1. Transition Phase

The transition period is designed bridge training plans or mesocycles together to allow athletes to have the opportunity to recover from the previous training cycle. Training here should not completely stop but load should be reduced (32). Bompa (1996), also states that **50-60%** of the volume from the first mesocycle should be implemented to allow for strength gains (33). By applying the principle of **rest and recovery** it determines the effectiveness of my training as during the session's maximal effort and high speed of the movement are completed requiring time to repair microtears (39). In this week it will help prepare my body for the next mesocycle where intensities will further increase. During this week mid-week testing will be done so measure my training.

2. Mesocycle 2: Maximum strength

The main focus of this mesocycle is to develop the highest level of force exerted by my legs, reaching intensities of **75-85%**. Although increasing intensity is important Bompa also states that this phase should look to convert gains into sport specific exercises that correlate to what I am trying to improve in my sport specifically (33). Due to focusing on power these exercises include squat jumps, bench jumps, frog jumps, squat jumps with weights, advanced burpees and lateral lunges (23) (28).

Accumulative word count: 3,088



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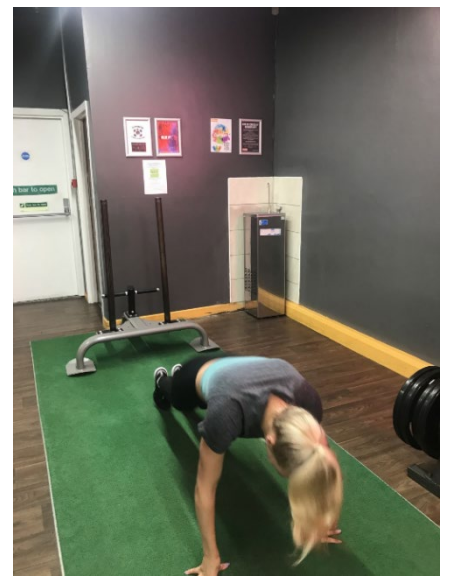
Physical Activity Readiness Questionnaire

Name	Hope Paice
Gender	Female
Age	18
Weight (kg/st.)	
Height (cm/ft)	5"7
Medical Info	Asthmatic
Past Injuries	Rotator cuff injury also issues with reliability of my back. Neck injury caused by whip lash (November).
Smoke (Y/N)	N
Activities Currently Undertaken	Swimmer in which I swim 6 times a week with 1 day of land training as well as undertaking netball, rounder's, athletics, cricket afterschool.
Frequency of exercise/training	I train 8 times a week at Maidstone leisure centre with Maidstone swimming club with one land training session and 3 gym sets.
Additional Comments about health and fitness	

Accumulative word count: 3,088

Performing and recording

1. Training logs (Page 23-59)
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Accumulative word count: 3,088

PDP Recording Sheet

Week: 1

Microcycle: 1

Duration of Session: 1hr/2hr

Session 1 1hr				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral bounds	3 sets of 10	N/A	N/A	1mins 3 before next activity
Squat jumps	3 sets of 10	N/A	N/A	1mins 3 before next activity
Box jumps 30cm	3 sets of 10	N/A	N/A	1mins 3 before next activity
Advanced burpees	3 sets of 10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15 mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 2hr	
Exercise	Volume (sets x reps)
Warm up: 200m FC 3x100m MS kick (+20) 200m BC 3x100m MS kick (+20)	Total metres: 1000m
Main set: 16x25m MS build speed (60) 200m FC easy 6x100m BC as 25 kick 25 swim 50 pull (1.450) 4x150m FC as 50 kick 50 pull 50 swim (2.40) 6x100m BC A 25 kick 25 swim 50 pull (1.45) 100m easy FC 16x25m MS decreased speed (60)	Total metres:2900m
Cool down: 300M FC easy	
	Total metres of whole session: 4400m

Session 3 2hr	
Exercise	Volume (sets x reps)
Warm up: 200m FC 12x75m BC as 25 kick 25 catch up 25 swim (+15)	Total metres: 1100m
Main Set: 2x 7x100m FC (1.20) 3x100m FC (1.15) 60 secs then repeat Sprint set x3 : x1. FC kick (1.30) x2. FC pull (1.15) x3.FC (70) with fins As: 50m as 15m fast 35m easy 50m as 20m fast 30m easy 50m as 25m fast 30m easy 50m as 25m fast 25 easy 50m as 30m easy 20 fast 50m as 35 easy 15m fast 50m sprint 100m easy BC	Total metres: 3200m
Main set 2: x4 2x75m BC (1.10) 2x50m BC (45)	Total metres: 1000m
Cool down: 300m easy FC	
	Total metres of whole session: 5600m

Session 4 1hr				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretches	N/A	N/A	N/A	1 min then begin set
Lateral lunge	3x10	N/A	N/A	1mins 3 before next activity
Plyo reverse step	3x10	N/A	N/A	1mins 3 before next activity
Frog jumps	3x10	N/A	N/A	1mins 3 before next activity
Squat thruster	3x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5 2hr	
Exercise	Volume (sets x reps)
Warm up: 16x50m as 4 FC (50) 4 FC kick (65) 4 BC (50) 4 IM Drill (50) 6x100m FC pull (1.35) 200m BC	Total metres: 1600m
Main set: 4x 2x125m IM (2.00) 100m IM kick (2.00) 100m IM (1.30) 2x50m IM kick (60)	Total metres: 2200m
Sub set: 12x50m BS (60) as <ol style="list-style-type: none"> 15m race pace 15m under water start Fc DPS Repeat 12x50m MS (60) descend 1-3 x4 4x150m 50m kick 50 pull 50 swim all BC (+20)	Total Metres: 1800m
Cool down: 200m fc easy	Total metres: 200m
	Total metres: 5800m

Session 6 1hr				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	3x10	N/A	N/A	1 min then begin set
Burpee with knee tuck	3x10	N/A	N/A	1mins 3 before next activity
Reverse lunge with knee	3x10	N/A	N/A	1mins 3 before next activity
Alternating lunge jump	3x10	N/A	N/A	1mins 3 before next activity
Box drills	3x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7 2hr	
Exercise	Volume (sets x reps)
Warm up: 300m FC 300m FC pull 75m swim 25m kick (+10) 2x50m Bs-FC (+10) 75m swim 25m kick (+10) 4X75m as kick drill swim MS (+15)	Total metres: 2200m
Main set: x4 200m FC (2.30) 150M BC (2.20) 100M BS (1.40) 50m fly (60) 2x25m fly (35)	Total metres : 2000m
Sub set: x5 as 1. Fly 2.BC 3.BS 1.FC 1.IM 4x50m kick (60) 2x25m sprint kick (45) HVO 20x25m (60) 5 fly as 15m race pace start 5 BC last 15m race pace finish 5 BS increase stroke rate into finish 5 FC minimal breathing	Total metres: 2000m
Cool down: 3x100m FC as 50pull 25 swim 25 streamlined kick	Total metres: 300m
	Total metres: 5700m

Session 8 1hr	
Exercise	Volume (sets x reps)
Warm up: 500m as 100m FC 100m IM drill 500m as 100m BC 100m old English	Total metres: 1000m
Main set: 12x125m IM (1.50)	Total metres: 1500m
Sub set: 10x50m IM kick (65) As Fly BC BS Fc mini IM	Total metres: 500m
Cool down: 200m easy 100m old english 100m FC	Total metres: 200m
	Total metres: 3200m

Evaluation

Start to training completed easily, no struggle to complete all sessions due to progressive overload not yet introduced finding a base line fitness before doing so with the activities.

Week: 2

Microcycle: 2

Duration of Session: 1hr/2hr

Session 1 1hr				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral bounds	3x15	N/A	N/A	1mins 3 before next activity
Squat jumps	3x15	N/A	N/A	1mins 3 before next activity
Box jumps 34cm	3x10	N/A	N/A	1mins 3 before next activity
Advanced Burpees	3x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 1hr 30	
Exercise	Volume (sets x reps)
Warm up: 500m as 50m FC 50m BC 5x50m choice drill (+15) 5x50m main stroke build speed (+20)	Total metres: 1000m
Main set: aerobic endurance 6x 100m FC (1.20) 100m IM (1.30) 50m BC (50) 50m BS (60)	Total metres: 1800m
Sub set: snorkels 4x 50m FC arch drill (+10) 50m BS streamlined kick (+10) 50m FC catch-up (+10) 50m BS kick kick hand up to full reach	Total metres: 800m
Sub set 2: 8x25m BS sprints 200m easy (off 75)	Total metres: 400m
Cool down: 5x100m odds FC even BC (+20)	Total metres: 500m
	Total metres: 4500m

Session 3 2hr	
Exercise	Volume (sets x reps)
Warm up: 500m as 100m BC 100m FC 100m FC 100m BC 12x50m FC with snorkels arch drill (55)	Total metres: 1100m
Sub set: Anaerobic threshold 20x50m FC kick with fins (60)	Total metres: 1000m
Main set: Lactate tolerance 6x100m FC max effort (race pace) 100% every 100m swims timed and recorded (4.00) 300m easy swim	Total metres: 900m
Sub set 2: Anaerobic threshold 4x 100m IM (1.30) 50m BC (50) 100m BC (1.30) 50m BC (50) 10x50m BC pull (55)	Total metres: 1700m
Cool down: 4x100m odds kick evens full stroke BC	Total metres: 400m
	Total metres: 5100m

Session 4 1hr				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral lunge	2x15	N/A	N/A	1mins 3 before next activity
Plyo reverse step	2x15	N/A	N/A	1mins 3 before next activity
Frog jumps	3x15	N/A	N/A	1mins 3 before next activity
Squat thrusters	2x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5 2hr	
Exercise	Volume (sets x reps)
Warm up: 400m FC BC 6x100m BC (2.00) as 25m kick 50m 3 LARA 25m full stroke, concentrating on shoulder and hip rotation 12x100m (1.50) As fly BC BS kick FC pull Sectional: 4x <ol style="list-style-type: none"> 100m steady IM kick (2.15) 4x25m kick hard (45) Repeat until 4 done 1 st set fly 2nd set BC 3 rd set BS 4 th set FC	Total metres: 3000m
Main set: 6x100m IM (1.30) 20x50m As: 5 fly drill (50) 5 BC (45) 5 BS (60) 5 FC (40) 20x 25m IM order sprint (50) Odds sprint 1 st 15m evens last 15m	Total metres: 2100m
Sub set: Sectional 6x100m BC (2.00) As 25m hammer head kick 50m old English 25m sprint	Total metres: 600m
Cool down: 200m FC easy	Total metres: 200m
	Total metres: 5900m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin set
Burpee with knee tuck	2x15	N/A	N/A	1mins 3 before next activity
Reverse lunge with knee	3x15	N/A	N/A	1mins 3 before next activity
Alternating lunge jump	3x15	N/A	N/A	1mins 3 before next activity
Box drill	7x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7	
Exercise	Volume (sets x reps)
Warm up: 400m swim 300m pull 200m kick 100m choice 8x100m (2.15) as 2 as 50 kick 50 drill 2 as drill swim repeat	Total metres: 1800m
Main set: Main stroke Elite max speed 3x 50m FAD (2.00) 100m FAP (4.00) 50m FAD (2.00) 400m easy BC between each set	Total metres: 1800m
Kick set: 4x 100m MS kick (2.30) max effort 2x50m MS kick faster than half of 100m kick (1.15) 100m easy swim	Total metres: 1200m
Cool down: 6x100m FC arch drill with snorkels (2.00)	Total metres: 600m
	Total metres: 5400m

Session 8 1hr	
Exercise	Volume (sets x reps)
Warm up: 10x75m odds FC last 25m streamlined kick (+15) 250m BS	Total metres: 1000m
Main set: aerobic maintenance 2x 200m IM (3.10) 5x100m IM (1.30) 50m Easy FC	Total metres: 1500m
Sub set: HVO-sprint 12x25m IM order (45)	Total metres: 300m
Cool down: 400m as 100m old English 100m BS 100m BC 100m FC	Total metres: 400m
	Total metres: 3200m

Evaluation: Here intensities began increasing but no real effect of DOMS stopping me from completing training.

Week: 3

Microcycle: 3

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then next set
Lateral bound	3x15	N/A	N/A	1mins 3 before next activity
Squat jumps with streamlined arms	3x15	N/A	N/A	1mins 3 before next activity
Box jumps 36cm	3x10	N/A	N/A	1mins 3 before next activity
Advanced burpees	3x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 2hr	
Exercise	Volume (sets x reps)
Warm up: 200m FC 12x75m as FC BC BS all drill (+15)	Total metres: 1100m
Main set: 6x100m FC (1.20) 400m BC pull (+30) 4x100m FC (1.20) 200m BC pull (+15) 2x100m FC (1.20)	Total metres: 1800m
Sub set: 10x25m static starts odds BC evens FC (75) 200m easy choice 16x50m odds FC kick evens BC (65)	Total metres: 1250m
Cool down: 300m choice	Total metres: 300m
	Total metres: 4450m

Session 3 2hr	
Exercise	Volume (sets x reps)
Warm up: 400m FC 3x200m IM (+30) as 1. Drill 2. Kick 3. Swim	Total metres:1000m
Sub set: snorkels 10x50m FC pull (50) 6x50m kick (65)	Total metres: 800m
Main set: Anaerobic threshold 8x Odds 200m IM (3.15) Evens 100m BC (1.30)	Total metres: 2400m
Sub set 2: IM order 2x50m kick (65) 2x25m sprint kick (45) 200m easy BS	Total metres: 800m
Sub set 3: (off 60) 10x FC 40m sprint, mid turn pool at 20m swim easy back 200m easy swim	Total metres: 600m
Cool down: 400m easy 100m IM drill 100m BC repeat	Total metres:400m
	Total metres: 6000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral lunge	3x15	N/A	N/A	1mins 3 before next activity
Plyo reverse step	3x15	N/A	N/A	1mins 3 before next activity
Frog jumps	3x15	N/A	N/A	1mins 3 before next activity
Squat thrusters	3x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5 2hr	
Exercise	Volume (sets x reps)
Warm up: 5x100m FC odds catchup (+20) 5x100m IM drill (+20)	Total metres: 1000m
Main set: Anaerobic threshold 10x 50m FC (40) 100m BC (1.30) 50m FC (40)	Total metres: 2000m
Sub set 1: 8x 50m FC pull (50) 100m FC kick (2.10) 50m FC pull (50)	Total metres: 1600m
Sub set 2: 20x25m BC HVO (50) 5 as sprint 1 st 10m 5 as sprint middle 15m 5 as sprint last 10m 5 as sprint 25m	Total metres: 500m
Cool down: 400m drills	Total metres: 400m
	Total metres: 5500m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin set
Burpee with knee tuck	3x15	N/A	N/A	1mins 3 before next activity
Reverse lunge with knee	3x15	N/A	N/A	1mins 3 before next activity
Alternating lunge jump	3x15	N/A	N/A	1mins 3 before next activity
Box drills	10x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7 2hr	
Exercise	Volume (sets x reps)
Warm up: 1000m SKIPS	Total metres: 1000m
Sub set: 20x50m fly kick with fins (60) Odds front evens on back	Total metres: 1000m
Main set: 3x 6x50m BS or fly (60) 2x200m FC (2.30) 2x100m FC (1.20) 100m BC pull easy pace (3.00) 60 secs rest repeat	Total metres: 3000m
Sub set 2: HVO 20x25m fly with fins (60)	Total metres: 500m
Cool down: 2x200m as 50m BC 50m dragging fingertips 50m FC 50m FC catchup x2	Total metres: 400m
	Total metres: 5900m

Session 8 2hr	
Exercise	Volume
Warm up: 400m FC every 4 length sprint 200m reverse IM 200m BC twist twist enter	Total metres: 800m
Sub set 1: 8x25m IM sprint FAD (1.50) 200m easy BC	Total metres: 400m
Main set: Aerobic endurance 2x100m 25m fly 25m drill (1.50), 3x100m BC (1.35), 4x100m BS (1.50), 5x100m FC (1.20) 1x100m 25m fly fly 25m drill (1.50), 2x200m BC (1.35), 3x100m BS (1.50), 4x100m FC (1.20) 1x100m BC (1.35), 2x100m BS (1.50), 3x100m FC (1.20)	Total metres: 3050m
Sub set 2: all with snorkels 3x50m pull 15m fast 35m easy (60) 3x50m kick 20m fast 30m easy (65) 3x50m FC 25m fast 25m easy (60) 3x50m pull 30m easy 20m fast (60) 3x50m kick 35m easy 15m fast (65) 3x50m FC 25m fast 25m easy (60)	Total metres: 900m
Cool down: 400m easy	Total metres: 400m
	Total metres: 5550m

Evaluation: Progressive overload introduced further as intensity increased this week muscle fatigue caused this week.

Week: 4

Microcycle: 4

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral bounds	5x10	N/A	N/A	1mins 3 before next activity
Squat jumps	5x10	N/A	N/A	1mins 3 before next activity
Box jumps	4x10	N/A	N/A	1mins 3 before next activity
Advanced burpees	5x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 1hr	
Exercise	Volume
Warm up: 10x75m Odds FC last 25m streamlined kick (+15) 250m BS	Total metres: 1000m
Main set: Aerobic maintenance 30x50m as 5xFC 5xBC 50m FC (40) 50m BC (45)	Total metres: 1500m
Sub set: HVO sprint 12x25m odds FC evens BC	Total metres: 300m
Cool down : 400m as 100m old English 100m BS 100m BC 100m FC	Total metres: 400m
	Total metres: 3200m

Session 3 2hr	
Exercise	Volume
Warm up: 200m swim FC 200m IM drill 200m swim FC 5x100m kick odds Fc evens BC (2.10)	Total metres: 1100m
Main set: 10x50m choice (+15) <ol style="list-style-type: none"> 1. Build 2. 15m fast 3. Underwater streamline 4. Last 15m fast 5. Easy repeat	Total metres: 500m
Sub set: 5x 100m FC (1.20) 100m BC (1.35) 50m FC (45) 50m BC (50)	Total metres: 1500m
Sub set 2: 8x75m fly or BS 75 as kick drill swim (+20)	Total metres: 600m
Cool down: 300m easy	Total metres: 300m
	Total metres: 4000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral lunge	5x10	N/A	N/A	1mins 3 before next activity
Plyo reverse step	5x10	N/A	N/A	1mins 3 before next activity
Frog jumps	5x10	N/A	N/A	1mins 3 before next activity
Squat thruster	5x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5 2hr	
Exercise	Volume (sets x reps)
Warm up: 400m FC BC 400m SKIP 8x50m Fc build speed (60)	Total metres: 1200m
Main set: 8x25m (60) Fly sprint legal finishes 200m back recovery swim 5x200m BC (3.10) Plus 60 10x100m FC (1.20) Plus 60 10x50m BC (50) Plus 30 10x25m FC (25)	Total metres: 400m
Sub set: 5x 50 fly kick on front 50 fly kick on back 50 fly drill 50 fly sprint	Total metres: 2750m
Cool down: 400m easy swim	Total metres: 400m
	Total metres: 5750m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Burpee with knee tuck	5x10	N/A	N/A	1mins 3 before next activity
Reverse lunge jump	5x10	N/A	N/A	1mins 3 before next activity
Alternating lunge jump	5x10	N/A	N/A	1mins 3 before next activity
Box drills	12x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7 2hr	
Exercise	Volume
Warm up: 5x100m odds catchup evens full stroke (+15) 8x75m IM drill Fly-BC-BS (+10)	Total metres: 1100m
Main set: lactate production 4x50m at second 50m of 100m pace (1.30) 10 sec gap recording times 1x25m max speed (60) minimal breathing 3x50m at second 50m of 100m pace (1.30) 2x25m max speed (60) minimal breathing 2x50m at second 50m at 100m pace (1.30) 3x25m max speed (60) minimal breathing 1x50m at second 50m at 100m pace (1.30) 4x25m max speed (60) minimal breathing 300m easy BC	Total metres: 1050m
Sub set 1: 10x 25m FAD 15m underwater dolphin kick on front max effort 10m on surface (75) 5x50m FC kick with board (60) 25m FAP 15m underwater dolphin kick on back max effort (75)	Total metres: 750m
Sub set 2: 24x50m pull (50) Odds BC evens FC 8x75m BC as 25 left 25 right arm 25 full (+15) Work on rotation strong leg kick	Total metres: 1950m
Cool down: 6x50m odds FC evens BC (60)	Total metres: 300m
	Total metres: 5000m

Session 8 2hr	
Exercise	Volume
Warm up: 1000m SKIPS	Total metres: 1000m
Main set : endurance 4x100m FC descending one to four (2.00) 3x 1x200m FC (2.30) 2x100m FC (1.15) 4x50m FC (40) 60 secs rest repeat 200m easy BC	Total metres: 2400m
Sub set: endurance kick set all FC 600m target 12.00 200m easy BC 400m target 8.00 200m easy BC 200m target 4.00 200m easy BC 100m PB+20 200m easy BC	Total metres: 1500m
Sub set 2: sprint main stroke 4x25m exploded 1 st and last 15m on alternate 25 repeats (45) 4x25m competition start max speed to 20m (60) 4x25m explode 1 st and last 15m on alternate 25 repeats (45) 2x50m competition start max speed 20m (2.00) 4x25m explode 1 st and last 15m on alternate 25 repeats (45) 1x50m competition start aiming to hit 50m split time for 100m PB	Total metres: 550m
Cool down: 12x25m BC dril (45) 1.25 left 25 right arm 2. 3 left 3 right 3 full 3.full stroke good start and technique x4	Total metres: 300m
	Total metres: 5750m

Evaluation

Greatest intensity reached in this mesocycle in order to aid adaptations before mid testing week in two weeks time.

Week: 5

Microcycle: 5

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Lateral bounds	4x15	N/A	N/A	1mins 3 before next activity
Squat jumps	4x15	N/A	N/A	1mins 3 before next activity
Box jumps 40cm	4x10	N/A	N/A	1mins 3 before next activity
Advanced burpees	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 2hr	
Exercise	Volume
Warm up: 5x200m as 200m FC 200m BC 200m IM dill 200m BS 200m IM kick	Total metres: 1000m
Main set: 2x 8x25m fly fast (60) 4x100m BC pull last 25m max effort (1.40) 2x200m BS 50 full 50 2 k 1 p (3.20) 400m FC inside 5.30 repeat	Total metres: 2800m
Sub set: x4 IM order 5x50m kick (60) 2x25m max effort kick (60) 16x25m IM order sprints (60)	Total metres: 1600m
Cool down: 300m easy	Total metres: 300m
	Total metres: 5700m

Session 3 2hr	
Exercise	Volume
Warm up: 1000m SKIPS 30secs rest each 200m	Total metres: 1000m
Main set: 20x100m as 5 Fc (1.15) 5 FC (1.20) 100 easy BC then repeat	Total metres: 2100m
Sub set: 20x50m FC kick as (1.05) 5 board half submerged 5 with board 5 hammer head 5 streamlined	Total metres: 1000m
Sub set 2: 3x 8x25m Fc sprint (45) 6x50m FC-BC pull (50)	Total metres: 1500m
Cool down: 400m as 100m BC 100m TTE 100 BC 100m TTE	Total metres: 400m
	Total metres: 6000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Lateral lunge	4x15	N/A	N/A	1mins 3 before next activity
Reverse lunge with knee	4x15	N/A	N/A	1mins 3 before next activity
Frog jumps	4x15	N/A	N/A	1mins 3 before next activity
Squat thruster	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5 1hr	
Exercise	Volume
Warm up: 300m FC – BC changing every 50m 12x50m BC as Odds 3 left 3 right 3 full evens full stroke (60)	Total metres: 900m
Main set: 2x 50m FC (40) 100m (1.20) 150m (2.00) 200m (2.30) 50m FC (40) 100m (1.20) 150m (2.00) 50m FC (40) 100m (1.20) 50m FC (40)	Total metres: 2000m
Sub set: 16x25m FC kick (30)	Total metres: 400m
Cool down: 200m easy	Total metres: 200m
	Total metres: 3500m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin the set
Burpee with knee tuck	4x15	N/A	N/A	1mins 3 before next activity
Reverse lunge with knee	4x15	N/A	N/A	1mins 3 before next activity
Alternating lunge jump	4x15	N/A	N/A	1mins 3 before next activity
Box drills	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7	
Exercise	Volume
Warm up: 200m FC 8x75m as FC BC BS all drill +15	Total metres: 600m
Main set: 600m BC pull (+60) 6x100m FC (1.20) 400m BC pull (+30) 4x100m FC (1.20) 200m BC pull (+15) 2x100m FC (1.20)	Total metres: 2400m
Sub set: 8x25m static sprints odds BC evens FC (75) 200m easy FC 10x50m odds FC evens BC (65)	Total metres: 900m
Cool down: 300m choice	Total metres: 300
	Total metres: 4200m

Session 8	
Exercise	Volume
Warm up: 1000m as 400m FC 12x50m BC drill odds 25 left 25 right evens 6 kick switch	Total metres: 1000m
Main set: 20x100m as 75m FC (60) 1X25M (30) focus on streamlining 5kicks off the wall 100m easy BC	Total metres: 2100m
Sub set 1: 3x 8x25m BC sprint (45) 6X50m BC pull (50)	Total metres: 1500m
Sub set 2: 20x50m kick as 1.30 10 sec gap times recorded	Total metres: 1000m
Cool down: 400m easy	Total metres: 400m
	Total metres: 6000m

Evaluation

Training sessions towards the end of the week effected by muscle fatigue due to increase intensity at its highest the week prior so intensity reduced this week before a transition week where training will be slightly reduced.

Transition week (6)

Aerobic endurance test

	Personal best	1 st 200m (+24)	2 nd 200m (+20)	3 rd 200m (+16)	4 th 200m (+12)	5 th 200m (+8)	6 th 200m (+4)	7 th 200m (+0)
My score	2.20.90	2.45.10	2.38.76	2.37.36	2.30.11	2.29.98	2.27.70	2.24.10
Peer score	2.17.56	2.46.20	2.38.20	2.34.34	2.27.29	2.24.31	2.21.90	2.19.80

Date: 28/08/19

Venue: Mote Park Leisure Centre

Speed Test

4x100m Backstroke

	Personal best	1x100m	2x100m	3x100m	4x100m
My scores	1.06.39	1.09.87	1.07.30	1.07.99	1.07.10
Peer scores	1.05.65	1.08.24	1.08.64	1.09.21	1.07.90

Date: 26/08/19

Venue: Mote Park Leisure Centre

200m Backstroke time trial

	Personal best	200m
My scores	2.20.90	2.24.56
Peer scores	2.17.56	2.22.43

Vertical jump test

Date: 19/09/19

Venue: Cornwallis academy

Score: 39.5cm

Peer swimmer results: 37cm

2nd mesocycle begins

Week: 7

Microcycle: 7

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin set
Squat jumps with medicine ball 8kg	4x10	N/A	N/A	1mins 3 before next activity
Box jumps 41cm	4x10	N/A	N/A	1mins 3 before next activity
Advanced burpees	4x15	N/A	N/A	1mins 3 before next activity
Squat thruster	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2	
Exercise	Volume
Warm up: 400m FC 4x50m FC kick (+15) 200m BC 2x50m BC kick (+10) Single arm 100m FC 4x50m FC pull (+10)	Total metres:1200m
Main set: 3x 4x100m BC (1.30) 4x50m BC kick (600) 4X50m BC (45) 4X25m BC sprint (50) 60 secs then repeat	Total metres: 2700m
Sub set: 16x50m as odds 50 FC (40) evens 50 BC (40)	Total metres: 800m
Sub set 2: HVO'S 16x25m BC (60) as 4x25 explosive start to 10m underwater 4x25m last 10m sprint 4x25m 20m sprint 4x25m sprints	Total metres: 400m
Cool down: 300m easy drills	Total metres: 300m
	Total metres: 5400m

Session 3	
Exercise	Volume
Warm up: 200m FC 12x75m kick drill swim reverse IM order (+20) 3FC 3BS 3BC 3fly	Total metres: 1100m
Main set: anaerobic threshold 20x100m BC (1.30)	Total metres: 2000m
Sub set: 10x 10x100m as 50m BC pull (+15) 50m BC kick (+15) 10x50m BC sprint 0m in from turn 10m out underwater past flags (1.15)	Total metres: 1500m
Sub set 2: 16x50m with snorkles (60) 1. 6 kick catchup 2. 2 1 arm 2 arm other arm non moving arm by side 3. Streamlined kick 4. Full stroke FC work on hips shoulder rotation still head	Total metres: 1000m
Cool down: 200m easy BC 100m easy FC	Total metres: 300m
	Total metres: 5900m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Burpee with knee tuck	5x10	N/A	N/A	1mins 3 before next activity
Single leg dead lift with jump	4x10	N/A	N/A	1mins 3 before next activity
Full body plyometric push up	3x10	N/A	N/A	1mins 3 before next activity
Long jump	4x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching		N/A	N/A	N/A

Session 5	
Exercise	Volume
Warm up: 400m FC 4x50m FKick (+15) 200m BC 2x50m BC drill (+10) single arm pull 100m FC 4x50m FC pull (+10)	Total metres: 1200m
Main set: x3 4x100m BC (1.30) 4x50m BC kick (60) 4x50m BC (45) 4x25m BC sprint (50) 60secs then repeat	Total metres: 2700m
Sub set: 16x50 as 50m FC (40) 50m BC (45)	Total metres: 800m
Sub set 2: HVO 16x25 BC (60) as 4x25 explosive start to 10m underwater 4x25 last 10m sprint 4x25 20m sprint 4x25 sprints	Total metres: 400m
Cool down: 300 easy drill	Total metres: 300m
	Total metres: 5400m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Plyo reverse step with knee	4x15	N/A	N/A	1mins 3 before next activity
Box drills	15x10	N/A	N/A	1mins 3 before next activity
Mini band external rotation	4x10	N/A	N/A	1mins 3 before next activity
Lateral lunge	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7	
Exercise	Volume
Warm up: 200m FC 12x75 kick drill swim reverse IM order (+20) 3FC 3BS 3BC 3fly	Total metres: 1100m
Main set: anaerobic threshold 20x100m BC (1.30)	Total metres: 2000m
Sub set 10x100 as 50 BC pull 50 BC kick (+15) 10x50 BC sprint 10m in from turn 10m out underwater past flags (1.15)	Total metres:1500m
Sub set 2: 16x50 with snorkles (60) 1.streamlined kick 2.6 kick catch up 3.2 1 arm 2 other arm 4.Full stroke	Total metres:1000m
Cooldown: 200m easy BC 100m FC	Total metres: 300m
	Total metres:5700m

Session 8	
Exercise	Volume
Warm up: 5x100m BC (2.00) every 4 length drill 16x540m snorkel drills (60) as odds catch drill evens dragging fingertips	Total metres:1300m
Sub set: 12x25m FC-BS sprint (60) then 200m easy BC	Total metres: 500m
Main set: all continuous x2 2x400m FC (5.30) 6x200m FC (2.40)	Total metres: 4000m
Sub set 2: 20x25m kick (50) Odds BS kick Evens FC kick All max effort then 200m easy BC 4x100m as all BS 50 2 leg 1 arm pull 50 3 leg 1 arm pull 50 full sprint 25 sprint 25 easy x2	Total metres: 1100m
Cool down: 10x50 odds BC single arm (+15)	Total metres:400m
	Total metres:7300m

Evaluation: training completed easily this week as well as gym sessions, suggesting due to improvement in both aerobic system that training sessions easily completed within time slot. Intensity beginning to increase again after testing week.

Week: 8

Microcycle: 8

Aim:

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Squat jumps with medicine ball 8kg	5x10	N/A	N/A	1mins 3 before next activity
Box jumps 42cm	5x10	N/A	N/A	1mins 3 before next activity
Advanced burpees	4x15	N/A	N/A	1mins 3 before next activity
Squat thruster	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2	
Exercise	Volume
Warm up: 10x100m as drill (+15) 1. FC 2.BC 3.IM 4.50 5.FC 50BC 6. 50 BC 50 fly	Total metres:1000m
Main set: 8x200m FC (2.40)	Total metres: 1000m
Sub set 1: off 60 16x50 fly kick with fins Odds on back 1 st 15m sprint Evens on front 20m underwater at start	Total metres: 800m
Sub set 2: 16x75 (+15) 4x fly body on surface head bottom 4x repeat hand shoulder width apart 4x fly catchup 4x fly 25 left arm 25 right arm 25 3l 3r 3f 10x25 fly sprint with fins increasing stroke rate into finish 200m easy BC	Total metres: 1650m

Cooldown: 250m as 50 BC 50 FC	Total metres: 250m
	Total metres: 5300m

Session 3	
Exercise	Volume (sets x reps)
Warm up: 300m 50FC 50 BC 2x50 FC kick with snorkles (75) 2x50 FC 1 arm in front 45 degree angle of body 4x50 catch and press drill 4x50 3 catch and press drill right pull through 3 left 4x50 Fc holding high elbow	Total metres:1000m
Main set: 8x anaerobic threshold Odds 100m IM (1.30) Evens 100m BC (1.35)	Total metres: 1600m
Sub set: IM order 8x 2x50 kick (65) 2X25 sprint kick (45)	Total metres: 1200m
Sub set 2: (1.10) 10 sec gaps work off fast turns 12x50m fly-BC BC-BS BS-FC FC-fly 100m easy swim	Total metres: 700m
Cooldown: 400m easy as 100m IM dr5ill 100m BC repeat	Total metres: 400m
	Total metres: 5000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Burpee with knee tuck	4x15	N/A	N/A	1mins 3 before next activity
Single leg dead lift with jump	4x10	N/A	N/A	1mins 3 before next activity
Full body plyo push up	4x10	N/A	N/A	1mins 3 before next activity
Long jump	4x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5	
Exercise	Volume
Warm up: 200m FC 12x75 kick drill swim BC (+20)	Total metres:1100m
Main set: 5x 200m FC (2.35) 2x100m FC (1.20) 3X100M BC (2.00) as recovery	Total metres: 2300m
Sub set: 8x 25m FC pull 50m FC kick (+15)	Total metres: 1000m
FAD: 10x50m FC sprint 10m out of turn 10m out of wall underwater past flags (1.30)	Total metres: 500m
Cool down: 200m easy BC then 50 FC	Total metres: 250m
	Total metres: 5950m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Plyo reverse step with knee	4x15	N/A	N/A	1mins 3 before next activity
Box drills	15x10	N/A	N/A	1mins 3 before next activity
Mini band external rotation	4x15	N/A	N/A	1mins 3 before next activity
Lateral lunge	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 7 1hr	
Exercise	Volume
Warm up: 200m FC 200m BC 200m BS 200m BS drill 200m IM drill	Total metres:1000m
Main set: 2x 4x100m FC 4x50 BS	Total metres:1200m
Sub set: 12x25 as Odds BS Evens FC	Total metres: 300m
Cool down: 400m FC BC drill	Total metres: 400m
	Total metres: 2900m

Session 8 2hr	
Exercise	Volume
Warm up: 400m FC 6x50m FC as first 20m sprint 300m IM drill	Total metres:1000m
Main set: x3 4x100m FC (1.15) 3x75m BC (1.10) 2x50 BS (60) 2x25 fly (45) 75m easy BC Repeat	Total metres:2550m
Sub set: snorkels 12x50m FC first 20m sprint (60) 12x75m (90) with fins Odds 25 fly kick on back 25 on side 25 sprint Evens 25 back kick 25 hammerhead 25 sprint	Total metres:1500m
Cool down: 6x100m as Odds BC pull Evens BC	Total metres: 600m
	Total metres:5350m

Evaluation: Emphasise from my coach this week during swim training of metres completed in lead up to our club championships.

Week: 9

Microcycle: 9

Aim:

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	2 min then begin set
Squat jump with medicine ball 10kg	4x15	N/A	N/A	2mins 3 before next activity
Box jumps 42cm	4x15	N/A	N/A	2mins 3 before next activity
Advanced burpees	4x15	N/A	N/A	2mins 3 before next activity
Squat thrusters	4x5	N/A	N/A	2mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2 1hr	
Exercise	Volume
Warm up: 10x100m as 1. FC 2. BC 3. IM 4. Fly to FC	Total metres: 1000m
Main set: 16x50 IM order (50)	Total metres: 800m
Sub set: 12x50m fly kick on back	Total metres: 600m
Cool down: 250m FC BC	Total metres: 250m
	Total metres: 2650m

Session 3 2hr	
Exercise	Volume
Warm up: 250m FC BC 8x75m IM order As 2 fly 2 BC 2 BS 2 FC (+15) 12x25 (60) As Fly FC	Total metres:1150m
Main set: 4x50m BC (50) 5x200m FC (2.35) 5x as (60) 3x50 fly 3x50 FC 30 secs between each then repeat 4x50m BC (50)	Total metres:2150m
Sub set: 10x100m fly kick (2.00) Odds on back Evens on front	Total metres: 1000m
Sub set 2: snorkels 4x25 fly kick arms by side 4x25 single arm fly 4x25 fly catchup 4x25 full stroke fly	Total metres: 400m
Cool down: 6x50 as Odds Fc Evens BC	Total metres: 300m
	Total metres:5000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	2 min then begin next set
Burpee with knee tuck	4x15	N/A	N/A	2mins 3 before next activity
Single dead lift with jump	4x15	N/A	N/A	2mins 3 before next activity
Full body plyo push up	4x15	N/A	N/A	2mins 3 before next activity
Long jump	4x15	N/A	N/A	2mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5	
Exercise	Volume
Warm up: 200m FC 4x50 BC (55) 2x100m FC (1.30) 6x50 BC (55) 10x50 FC (45)	Total metres:1400m
Sub set: 10x50 flat out, timed 50m back easy	Total metres:1000m
Main set: 10x 100m FC (1.15) 2x25m fly kick (40)	Total metres:1500m
Sub set 2: main stroke 4x 4x50m kick 4x25m sprint kick	Total metres:1200m
Cool down: 200m FC drop off	Total metres: 200m
	Total metres:5,300m

Session 6				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	2 min then begin next set
Plyo reverse step with knee	4x15	N/A	N/A	2mins 3 before next activity
Box drills	15x10	N/A	N/A	2mins 3 before next activity
Mini band external rotation	4x10	N/A	N/A	2mins 3 before next activity
Lateral lunge	4x10	N/A	N/A	2mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static Stretching	N/A	N/A	N/A	N/A

Session 7	
Exercise	Volume
Warm up: 400m FC every 4 dragging fingertips 12x50 BC odds drill evens full (55)	Total metres: 1000m
Main set: 20x50m FC pull (50) 10x75m FC (60) 10x75m kick (1.35) No breathing out of turns	Total metres: 2500m
Sub set: 2x 200m FC (2.30) 2x100m BC (1.35) 2x75m BS (1.20)	Total metres: 1100m
Sub set 2: BC 6x as 75 as 26 6k swt (2.00) 3x25m full stroke (40)	Total metres: 750m
Cool down: 400m easy	Total metres: 400m
	Total metres: 5750m

Session 8	
Exercise	Volume (sets x reps)
Warm up: 200m FC 4x50m BC (50) 2x100m FC (1.25) 6x50m BC (50) 10x50m FC (40)	Total metres: 1250m
Sub Set: 12x 50m swim main stroke (75) max effort 50m easy FC (60)	Total metres: 1200m
Main set: 10x 100m steady FC (1.15) 2x25 fly (35) Odds on front evens on back 12.5m max underwater	Total metres: 1500m
Sub set 2: 16x75m FC (60) Work out of turns and streamline No breathing two strokes out off turn	Total metres: 1200m
Cool down: 400m FC	Total metres: 5150m

Evaluation

Sessions harder to complete this week due to muscle fatigue from previous competition prior in the week made it hard, so recovery in gym sessions where made longer this week and intensity was still increased to follow micro cycle plan.

Week: 10

Microcycle: 10

Aim:

Duration of Session: 1hr/2hr

Session 1				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15 mins warm up	N/A	Speed: 8.0	1min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Squat jumps with medicine ball 10kg	4x15	N/A	N/A	1mins 3 before next activity
Box jumps 43cm	4x15	N/A	N/A	1mins 3 before next activity
Advanced burpees	4x15	N/A	N/A	1mins 3 before next activity
Squat thruster	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed: 5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 2	
Exercise	Volume (sets x reps)
Warm up: 5x200m odds BC evens IM kick (+30)	Total metres: 1000m
Main set: 15x100m FC (1.30) 400m easy individual pace swims for 1500m	Total metres: 1900m
Sub set: 4xIM order 4x75m kick (65) 2x50m full (+15)	Total metres: 1600m
Sub set 2: 16x25m IM order sprints (60)	Total metres: 400m
Cool down: 400m easy FC/BC	Total metres: 400m

Session 3	
Exercise	Volume
Warm up: 500m SKIPS 8x75 fly BC BS drill (+20)	Total metres: 1100m
Kick set: 4x 100m main stroke kick max effort (3.00) 50 MS kick faster than half of the 100m (1.30) 2x25 MS kick faster than half of the 50m 100m easy back	Total metres: 1800m
Main set: Anaerobic threshold 4x200m Odds FC (2.30) Evens BC (3.10) 4x100m IM (1.30) 12x50m IM order (55) no fly drill	Total metres: 1800m
Sub set: HVO 50m 25 DPS 25 MS drill (60) 50m 15m MS explosive start 25m choice drill 100m as 50 FC 50m MS drill (2.00) 2x50m 25m explosive 25m MS drill (60) 150m 75m FC DPS 75 MS drill (3.00) 3x50m 35m explosive 15m DPS MS 200m 100m FC DPS 100m MS (4.00) 4x50m descending 1 to 4 (60)	Total metres: 1000m
Cool down: 300m easy drills	Total metres: 300m
	Total metres: 6000m

Session 4				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed:8.0	1 min
Static stretching	N/A	N/A	N/A	1min then begin next set
Burpee with knee tuck	4x15	N/A	N/A	1mins 3 before next activity
Single leg dead lift with jump	4x15	N/A	N/A	1mins 3 before next activity
Full body plyo push up	4x15	N/A	N/A	1mins 3 before next activity
Long jump	4x15	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Session 5				
Exercise	Volume (sets x reps)	Load (kg)	Intensity	Rest (between sets)
Running on treadmill	15mins warm up	N/A	Speed: 8.0	1 min
Static stretching	N/A	N/A	N/A	1 min then begin next set
Plyo reverse steeo with knee	4x15	N/A	N/A	1mins 3 before next activity
Box drills	15x10	N/A	N/A	1mins 3 before next activity
Mini band external rotation	5x10	N/A	N/A	1mins 3 before next activity
Lateral lunge	5x10	N/A	N/A	1mins 3 before next activity
Running on treadmill	15mins cool down	N/A	Speed:5.0	N/A
Static stretching	N/A	N/A	N/A	N/A

Evaluation

In this week I had only completed 5 sessions as I could not access the pool in order to complete my last three swim sessions of the week, however I could still complete my gym sessions detailed above.

Week 11 end of training fitness testing

Aerobic endurance test

	Personal best	1 st 200m (+24)	2 nd 200m (+20)	3 rd 200m (+16)	4 th 200m (+12)	5 th 200m (+8)	6 th 200m (+4)	7 th 200m (+0)
My score	2.20.90	2.46.93	2.39.67	2.35.43	2.27.81	2.27.67	2.24.10	2.21.10
Peer score	2.17.56	2.46.20	2.38.20	2.34.34	2.27.29	2.24.31	2.21.90	2.19.80

Speed Test

4x100m Backstroke

	Personal best	1x100m	2x100m	3x100m	4x100m
My scores	1.06.39	1.09.34	1.07.76	1.07.60`	1.06.97
Peer scores	1.05.65	1.08.24	1.08.67	1.09.21	1.07.90

200m Backstroke time trial

	Personal best	200m
My scores	2.20.90	2.23.12
Peer scores	2.17.56	2.22.43

Vertical jump test

Date: 23/09/19

Venue: Cornwallis academy

Score: 40.80cm

Peer swimmer results: 37cm

EVALUATION

1. Evaluation of fitness tests (Page 60-64)
2. Impact on performance (Page 65-66)
3. Possible physiological adaptations
4. Future recommendations

Accumulative word count: 3,088

Fitness test results

Aerobic endurance test (1)

	Personal best	1 st 200m (+24)	2 nd 200m (+20)	3 rd 200m (+16)	4 th 200m (+12)	5 th 200m (+8)	6 th 200m (+4)	7 th 200m (+0)
Pre training	2.20.90	2.48.98	2.41.10	2.35.76	2.29.11	2.28.10	2.26.70	2.22.10
Mid training	2.20.90	2.45.10	2.38.20	2.34.34	2.27.29	2.24.31	2.21.90	2.24.10
Post training	2.20.90	2.46.93	2.39.67	2.35.43	2.27.81	2.27.67	2.24.10	2.21.10
Peer score	2.17.56	2.46.20	2.38.20	2.34.34	2.27.29	2.24.31	2.21.90	2.19.80

Speed Test

4x100m Backstroke (2)

	Personal best	1x100m	2x100m	3x100m	4x100m
Pre training	1.06.39	1.10.34	1.09.30	1.07.39	1.08.20
Midweek training	1.06.39	1.09.87	1.07.30	1.07.99	1.07.10
Post training	1.06.39	1.09.34	1.07.76	1.07.60	1.06.97
Peer scores	1.05.65	1.08.24	1.08.67	1.09.21	1.07.90

200m Backstroke time trial (3)

	Personal best	200m
Pre training	2.20.90	2.25.76
Mid-week training	2.20.90	2.24.56
Post training	2.20.90	2.23.12
Peer scores	2.17.56	2.22.43

Vertical jump test

Date: 23/09/19

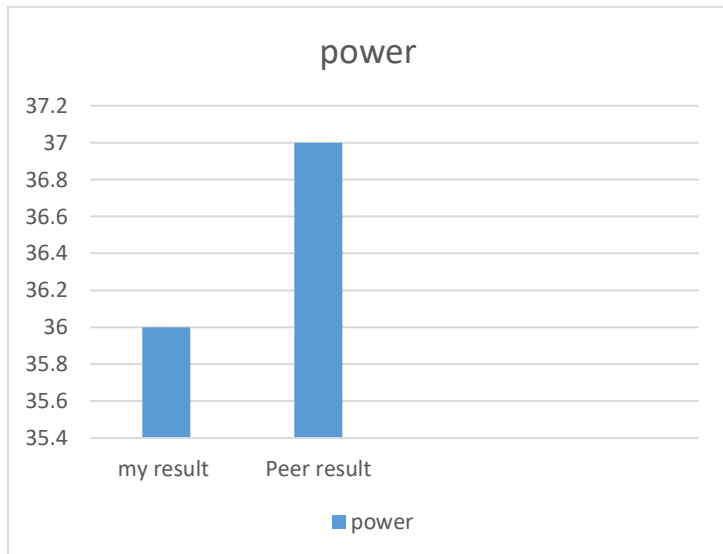
Venue: Cornwallis academy

Vertical jump	Score
Pre training	36cm
Mid week training	39.5cm
Post training	40.80cm
Peer swimmer	37cm

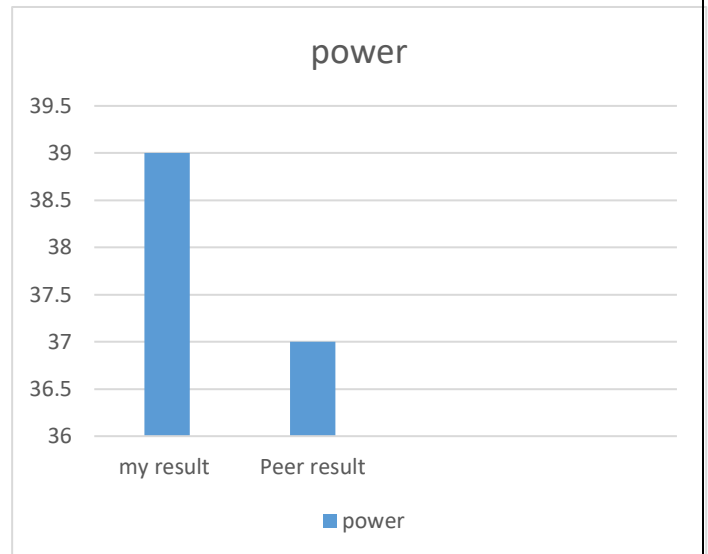
Power

The vertical jump test.

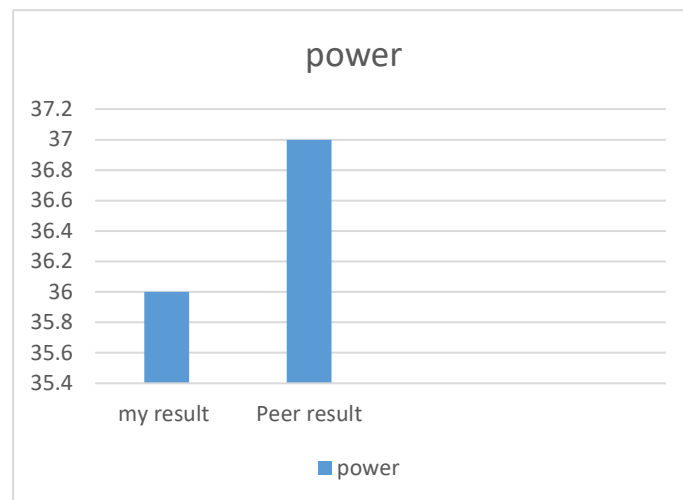
Pre training



Midweek training



Post training



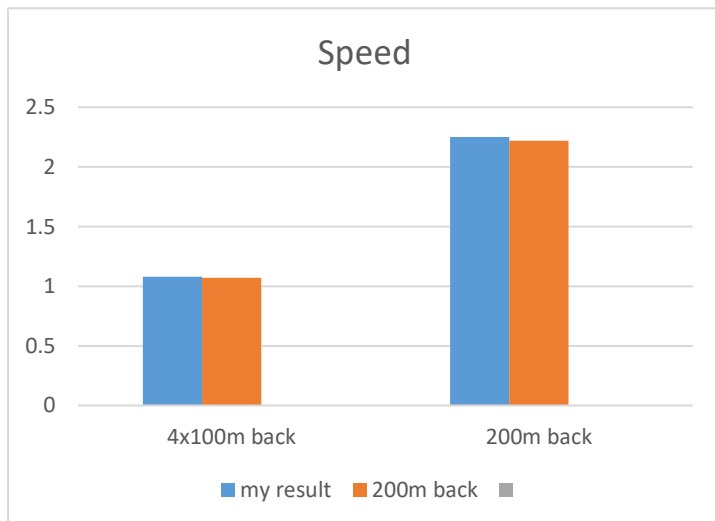
As illustrated in the graphs above my power increased over the weeks as a result of my PDP. Bishop (2009), suggests adaptations occurred by training due to the effects of plyometric training, including developing the efficiency of my neuromuscular system which helps to achieve this explosive reactive power of the block, starts and turns. Another possible adaptation could be activating motor units successfully and muscular activation from coordinated movements which in turn improved contraction force (38).

Accumulative word count: 3,148

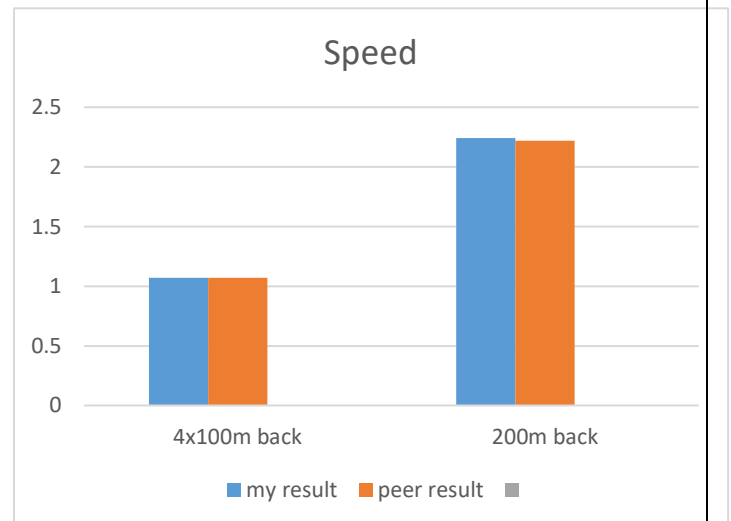
Speed

The critical swim speed test is where 4x100m backstroke are completed at max effort followed by a 200m backstroke max effort with aim to complete it with the split times achieved previously in the 4x100m.

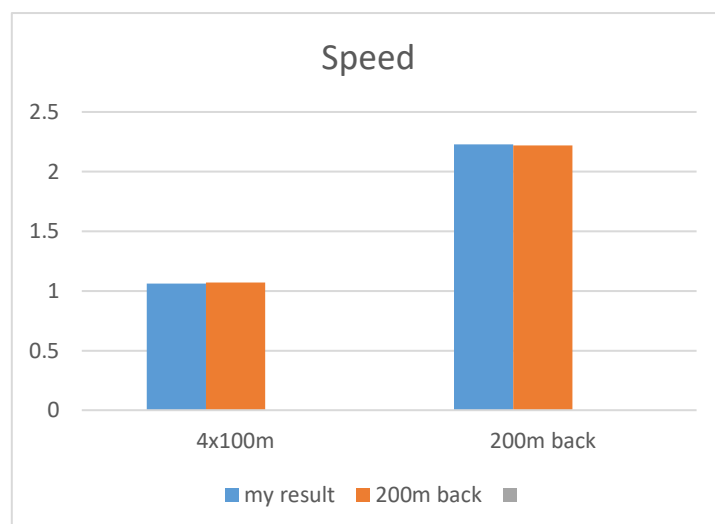
Pre training



Mid week training



Post training



By improving my speed, elements such as my power would also improve. This is because it is needed for several elements of my performance. Speed was not my main focus in my PDP however the graphs show I made a slight improvement since the beginning training. Although this suggests if I improve my speed it may benefit my performance further. In the study from Bishop (2009) it is suggested that by improving the reactive power the velocity from release to water had an impact in relation to each other (44).

Accumulative word count: 3,241

Impact on performance

My notational results:

Date: 24/10/19

Venue: Mote park leisure centre

Time: 2.22.67 (short course) 2.25.10 (long course)

Turns	start	1 st turn	2 nd turn	3 rd turn
Distance travelled of turn	11m	9m	8m	8m

Time taken for each lap (200m)	50m	100m	150m	200m
My results	32.70	1.08.32 (35.62)	1.45.25 (36.93)	2.22.67 (37.42)

Elite athlete notational results: Jessica Fullalove (20)

Date: 19/04/19

Venue: Glasgow

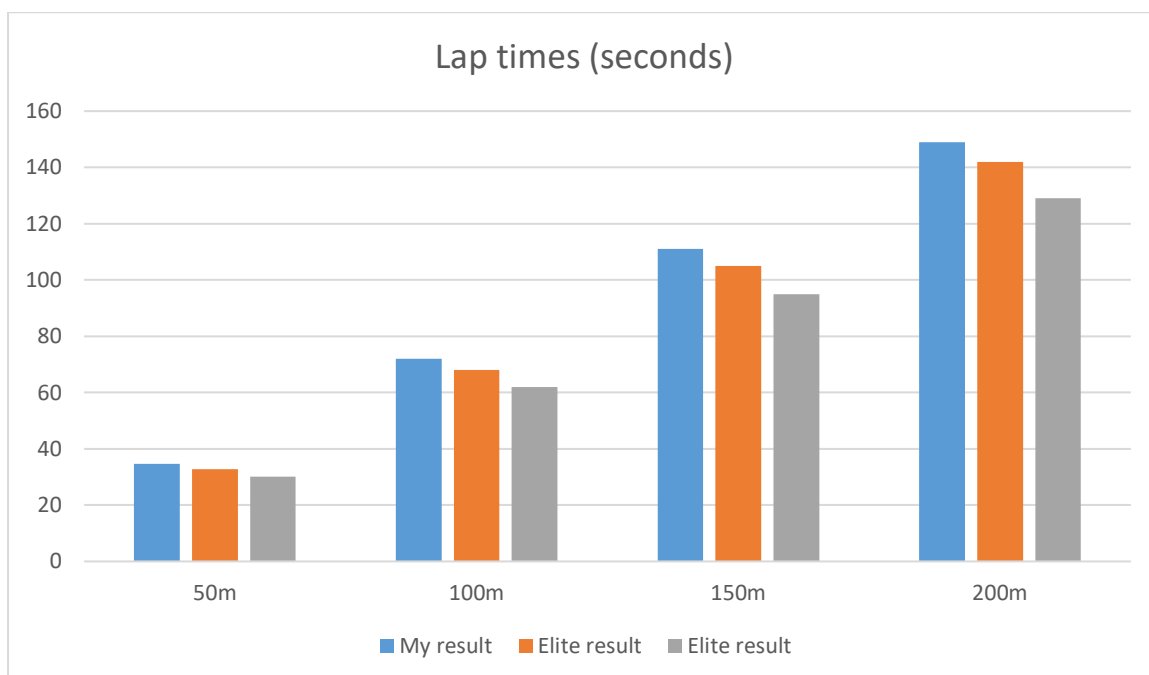
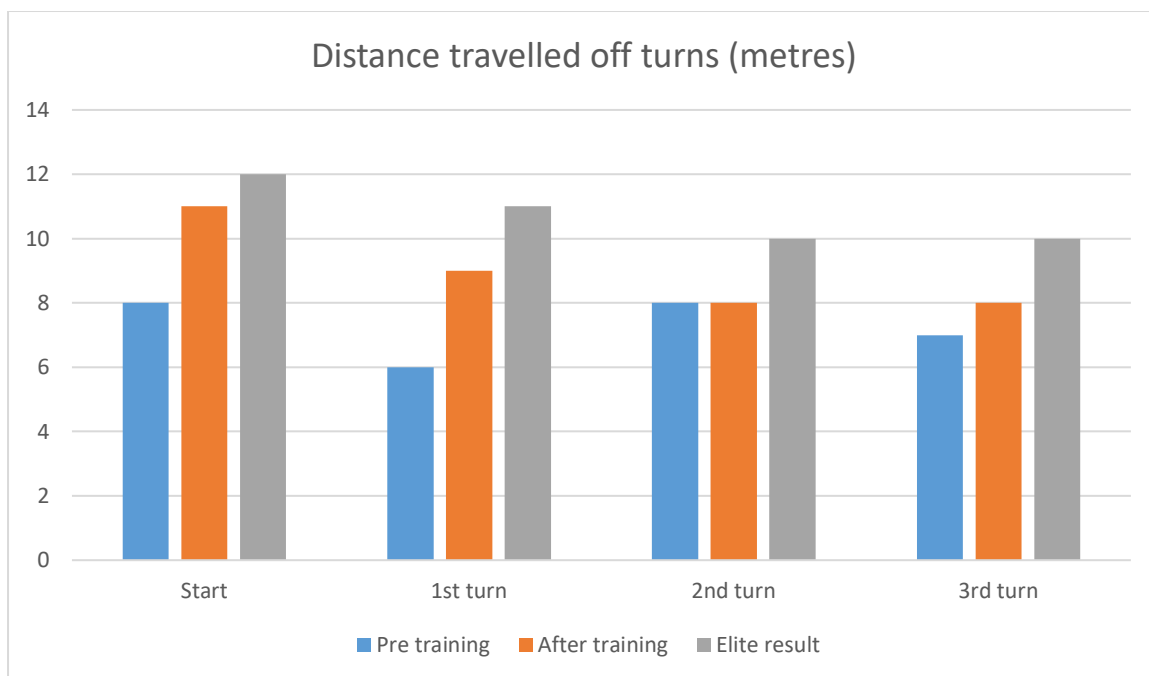
Time: 2.09.74

Turns	start	1 st turn	2 nd turn	3 rd turn
Distance travelled of turn	12m	11m	10m	10m

Time taken for each lap (200m)	50m	100m	150m	200m
results	30.14	1.02.66 (32.52)	1.35.38 (32.72)	2.09.74 (34.36)

It is evident that there is an improvement in my power from my competitive races as illustrated in the notational analysis above. However, in comparison to the elite swimmer my power is still much weaker. Although the training has allowed me to improve my power as there is now only a 2-3m gap compared to the 4-5m gap pre-PDP results.

Accumulative word count: 3,284



Accumulative word count: 3,284

In relation to speed, by improving the maximal force I produce at the start, leads to an increase in velocity off the block. This relationship suggests that I can maximise power off the blocks by accelerating quickly in turn increasing the distance and time before contacting the water.

Overall evaluation:

To **specifically** improve my power I used plyometric training, which in turn improved my speed as well as power. This led to an improvement in my performance by decreasing my time swum not just the distance travelled off the wall. The one aspect I would change with the methods of training would be swim training, by adding more technical work.

My aim for vertical jump score was to improve it by 20% I did not meet this however I did improve my score by 13%. Suggesting that my aim of improving my score by 20% was unrealistic however I did improve my score therefore showing my training was effective.

I also feel that the rest days could have been altered to recovery days this is because the sessions completed in my programme cause the muscle tissue to develop microtears in response to stress. This means that the microtears caused didn't have a realistic time period to recover which I found resulted in many days left with DOMS (leaving me at greater risk of injury).

Also, by completing active recovery instead of rest, it means that the blood lactate levels produced by training are significantly reduced. It focuses on movements that allow blood to move and decrease residual fatigue in the muscles (48).

I included **progressive overload** into my training by slowly integrating it over each micro cycle. I did this by increasing sets, increasing box heights. I increased intensities over each micro cycle because it meant I could integrate progressive overload throughout each week not every session. I feel the way I introduced progressive overload was successful however next time I would add more reps to a number of sessions a week instead of each individual session.

FITT:

Throughout my PDP I trained 8 times a week, with 5 sessions of non-specific swim training and 3 sessions of gym sessions including plyometric activities a week. I feel this method was successful as shown in my final results however, this method did not include enough rest and recovery days. The ideal rest and recovery between plyometric sessions being 2-4 days depending on the intensity as this means the nervous system has time to recover (43).

Accumulative word count: 3,637

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