Synergie Coaching

Swim Analysis Report

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Front Crawl Swim Stroke Analysis

Athlete Name		Date	
Venue	Synergie Coaching	Wetsuit/Jammers	Y/N

Shoulder Mobility (cm).

This assesses shoulder mobility. This can often be restricted through thoracic spine mobility & anterior muscular tightness.

Athlete lies face down with arms extended & holding a broom handle/bar in an overhand grip (back of hand to ceiling, palms towards floor).

Arms are shoulder width apart & chin stays on floor. Keeping chin on floor & fingers/knuckles facing forward NOT backwards or to roof slowly raise arms keeping them straight.

Distance between floor & underside of wrist is measured.

Distance from floor to underside of wrist	Score
<10cm	Poor
10-20cm	Average
>20cm	Good

Shoulder Score (cm)	

Shoulder Rotation, Abduction & Adduction (cm).

The shoulder screen assesses bilateral shoulder Range of motion (RoM); both internal rotation with adduction and external rotation with abduction. The test requires scapular mobility and thoracic spine extension.

The ability to perform the shoulder mobility test requires mobility in a combination of motions including abduction/external rotation, flexion extension, and adduction/internal rotation. This test also requires scapular and thoracic spine mobility.

In the arm coming over the top there is shoulder flexion, external rotation, and abduction. In the lower arm, coming up the back, there is extension, internal rotation, and adduction.

Poor performance during this test can be the result of several causes, one of which is the widely accepted explanation that increased external rotation is gained at the expense of internal rotation in overhead throwing athletes. In addition, excessive development and shortening of the pectoralis minor or latissimus dorsi muscles can cause postural alterations including rounded or forward shoulders. Finally, scapulothoracic dysfunction may be present, resulting in decreased glenohumeral mobility secondary to poor scapulothoracic mobility or stability.

Distance	Scoring
>1.5 x hand width	Poor
Within 1 - 1.5 hand widths	Average
< hand width	Good

Hand width (cm)	
Left Arm Over Top – distance between hands	Right Arm Over Top – distance between hands

Swim Bench Analysis	200m time	Cadence	Power	HR
Both Arms				
Left Arm Only				
Right Arm Only				

Performance Metrics

Cadence – For triathlon open water swimming we are looking for athletes to be swimming with a cadence of between 80-100 strokes per minute (spm). This is usually significantly higher than the stroke count seen in a pool environment.

Body Roll – typical values for body roll are between 40° - 70°. Typically, swimmers rotate more, on average to the side they breathe. Roll is measures from the maximum rotation of your shoulders left to right through the swim cycle. Too little body roll can influence elbow drop, too much body roll can impact on your ability to catch the water, which in turn will affect your stroke efficiency.

Pitch – is how good your aquatic posture (flatness) is in the water, looking at the angle from head to toe. Ideally looking at 0-10°, although under 20° is acceptable. A large number tends to indicate hip/leg drop and drag. A High pitch angle and a low roll angle means you are creating more drag in the water, so reducing your efficiency.

Endless Pool Swim Analysis	
	Comments
Initial impression • Move with minimum effort. • Move with minimum noise/disturbance. • Continuous arm and leg action • Flexible • Buoyancy • Streamlined	
Breathing • Bilateral/ Single sided • Exhalation – explosive / trickle • Frequency • Rotation of head • Relaxed or strained.	
Head position • Looking forward • Looking down to the bottom of the pool • Head position when sighting (OW)	
Body position in the water • Body high or low • Shoulders high or low • Hips high or low	
Body roll • Rhythmical • Balanced	
Hand entry & Arms • Hand position entering water. • Entry position – short/ overreach/ cross centre line	

• Elbow wrist and hand position on entry • Pull – press backwards. • Push -accelerating through water. • Push past hip to start recovery.	
Legs • Initiated from hip. • Rhythmical and continuous • Flexibility in the ankle • Heels breaking surface of the water.	
Recovery • Relaxed or strained. • High elbow or straight arm	
General Comments	

Suggested Drills

	Purpose: **Key Coaching Point to Remember:**
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Critical Swim Speed & Pacing

To ensure you are nailing down the purpose of each swim, it can be beneficial to work to a specific Critical Swim Speed (CSS), have a look at https://www.trainingpeaks.com/blog/how-to-use-critical-swim-speed-training/

Once you have your CSS use the table below to work out what paces & cadence you can use in your swims.

Zones	Name	CSS Pace (Swim)	Cadence (SPM)	RPE	Intensity	Session/Interval Duration	Adaptation
1	Recovery/Aerobic	CSS + 10s	CO – 3 SPM	1-3	Easy to hold a conversation		Recovery
2	Low Aerobic	CSS + 7-10s Hold for 10km	CO – 3 SPM	4	LT 1 Aerobic. Can hold a short conversation.	4-6 hours	Improve endurance. Improve fat oxidisation as fuel source.
3	High Aerobic (Red Mist)	CSS +4-6s Hold for 3-5km	CO - 3 SPM	5	Above LT1 Aerobic. Starting to breathe heavy.	1-3 hours	Improve economy. CHO as fuel source.
4	Threshold	CSS -2s to +2s 1.5-1.9km	Current Optimal (CO)	6 – 7	LT2 Short of breath. One – two word answers	30-60 mins	Threshold Lactate clearance **Race Pace**
5	VO_2 Max	CSS -5 to -6s 400m	CO +6 SPM	8	Above LT2 Not talking	5-8 mins	VO_2 adaptation Race Intensity
6	Anaerobic Capacity	CSS -9 to -10s 50-100m	CO + 12 SPM	9-10	Max Effort Can't talk.	2-4 mins	Improved Speed Improved lactate clearance.