

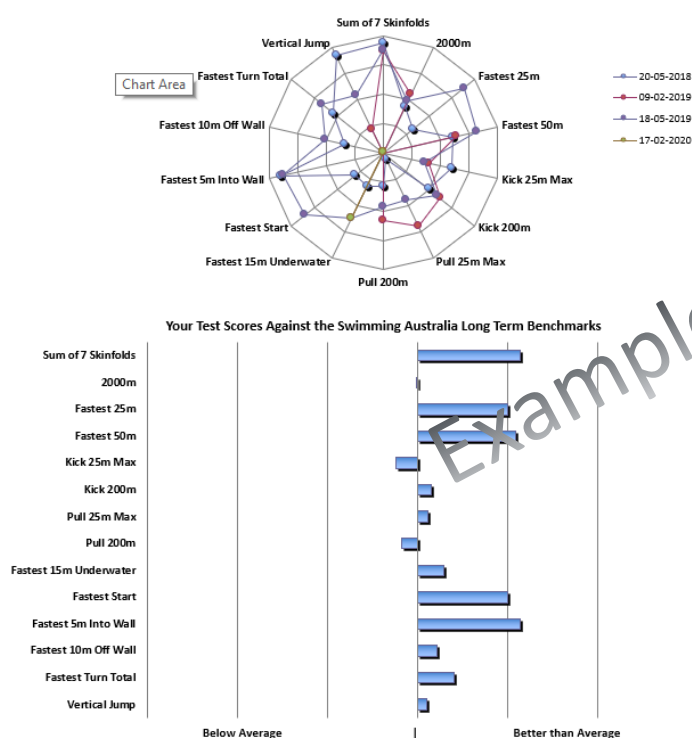
## Swimming Australia Pathway Testing Protocols

### Background Information

During past decades Swimming Australia and the State Swimming Associations have conducted a variety of talent identification and talent development programs. The beneficial value of these programs is evident through the sustained high standard of performances of Australia's youth which supported continued improvement as swimmers transitioned into the national team.

In 2012 and again in 2016 the decision was made by Swimming Australia to embark on the delivery of a long term national Pathway and testing program. This program operated through the engagement of widely experienced high performance coaches, sports science servicing by the State Institutes and Academies of Sport, State Swimming Associations, SA High Performance Staff and the Australian Institute of Sport. The program involves the identification of Australia's best teenage talent performing at the Australian Age Championships based on a variety of subjective and objective parameters. The identified swimmers are invited to their respective State Development programs each year. The majority of the assessments will be conducted in each swimmer's home environment, with the results sent to the State Technical Directors. All other assessments will be conducted on the various State and National camps.

**The purpose of the testing** is to gather information which will be compiled to provide athletes and coaches with performance standards created by this highly talented group which they then can compare their own individual performances to. This will give athletes and coaches insight to their strengths and weaknesses and will highlight where improvements can be made. Each individual involved will benefit from receiving a spider graph (see below) which gives them a comparison of their performance standards of each test compared to the average and best results of the group.



Swimming Australia National Youth Program Results of Physical Testing									
Name	Gender	Stroke	Freestyle	Stroke	Freestyle	Stroke	Freestyle	Stroke	Freestyle
Date of Birth	20-05-2018	09-02-2019	18-05-2019	17-02-2020	20-05-2018	09-02-2019	18-05-2019	17-02-2020	20-05-2018
<b>Anthropometry</b>									
Age (yr)									
Height (cm)									
Mass (kg)									
<b>Swim Time</b>									
Swim Competency									
Vertical Jump (cm)	47	37	41	41					
Forward Leap & Turn	3	1	2	2					
Chin Up	3	2	2	2					
Park Up	3	2	2	2					
Swim Jumps	3	2	2	2					
<b>Swim Time</b>									
Time	Stroke	Stroke	Stroke	Stroke	Time	Stroke	Stroke	Stroke	Stroke
100m	Freestyle	Freestyle	Freestyle	Freestyle	100m	Freestyle	Freestyle	Freestyle	Freestyle
#1	167.10	24.5	39.0	159.75	21.0	162.40	32.0	29.0	159.75
#2	162.40	30.0	40.0	153.40	35.0	153.50	32.0	39.0	153.50
#3	157.00	29.5	39.0	149.60	31.5	132.90	34.0	40.0	149.60
#4	149.70	32.0	50.0	142.20	35.0	140.20	34.0	41.0	140.20
#5	144.70	35.0	45.0	139.00	33.0	143.00	35.0	43.0	143.00
#6	143.50	34.0	43.0	136.10	42.0	140.00	38.0	44.0	140.00
#7	144.10	40.0	50.0	127.40	40.0	140.10	40.0	46.0	140.10
<b>4 x 25m</b>									
500m	Freestyle	Freestyle	Freestyle	Freestyle	500m	Freestyle	Freestyle	Freestyle	Freestyle
#1	393.80	32.0	39.0	345.00	35.0	347.00	34.0	36.0	347.00
1000m	792.60	32.0	39.0	747.00	34.0	740.70	37.0	41.0	740.70
1500m	1103.50	34.0	43.0	1064.60	38.0	1041.00	35.0	42.0	1041.00
2000m	1573.70	35.0	43.0	1509.10	40.0	1545.40	34.0	43.0	1545.40
<b>4 x 25m</b>									
#1	12.23					12.30			12.30
#2	12.21					12.70			12.70
#3	12.31					12.50			12.50
#4	12.34					12.00			12.00
<b>3 x 50m</b>									
#1	28.14	51.0	42.0	28.00	51.0	40.0	27.07	49.5	38.0
#2	28.41	51.0	42.0	28.20	51.0	42.0	27.92	50.0	39.0
#3	28.91	49.0	43.0	28.40	51.0	42.0	28.95	49.5	40.0
<b>Kick Time Trial</b>									
25m Max	19.20			19.06			19.20		
100m	96.67			94.34			94.30		
200m	200.10			196.00			197.60		
<b>Pull Time Trial</b>									
25m Max	16.70	49.0	23.0	14.80	48.0	22.0	15.40	41.0	24.0
100m	70.30	40.0		71.32	43.0		74.90	30.0	
200m	162.15	39.0	51.0	148.17			153.00		
<b>Underwater Kick</b>									
#1	9.19						9.20		
#2	9.22						9.60		
#3	9.05						8.50		
#4	9.32						9.70		
<b>Skills</b>									
Start1	7.26						6.60		
Start2	7.23						7.00		
Turn 15m Into Wall	2.60						2.07		
Turn 15m Off Wall	5.39						5.29		
Turn 1 Total	6.47						6.36		
Turn 25m Into Wall	2.05						2.09		
Turn 25m Off Wall	5.40						5.16		
Turn 2 Total	6.45						6.25		



**Involvement in the testing camps** over an extended period of time builds a profile of the athlete's individual progression over the years, along with their comparisons to the group. The testing results provide individual feedback to athletes and coaches at regular intervals which will reveal whether the strategy adopted to improve a particular aspect is effective or not.

**It is an advantage for swimmers to be involved** in this testing program as it identifies their strengths and weaknesses, gives them an idea as to how good they are compared to the group (particularly the best), plus it provides individualised information which can assist the coach in their workout design and training prescription.

**It is vital for the national data bank** that information can be collected and analysed to provide us with information that can assist in making decisions on athlete development and programing based on objective data.

**The tests are designed to measure and monitor changes over time (3-4 years) in the areas listed below:**

- **Anthropometry** – These are measurements related to an athlete's anatomy and growth factors. Some measures are – Body mass, Skinfolds (lean muscle mass to fat), height, arm span etc.
- **Physiotherapy measures** – Musculo-skeletal screening, flexibility, range of movement, muscle recruitment /balance etc.
- **Strength and coordination** – Athletes are scored on the standard of execution of a series of exercises which underpin the movements of swimming.
- **Water Tests -**
  - Aerobic – 2,000m for time – provided aerobic training speeds and is an indicator of aerobic fitness
  - Anaerobic Capacity 12 x 25m – speed endurance
  - Anaerobic Power 4x25m dive timed – absolute speed.
  - Start time x2 (15m) – starting skill
  - Turn time x2 (5m in 10m out) – turning skill
  - Under water kicking - u/w streamlining and fly kicking skills
  - Kicking tests – speed and endurance.
  - Pull tests – speed and endurance.
  - Efficiency Test – 6 x 50m to establish the relationship between swimming velocity, SR & DPS
- **Testing Schedule and Environment**

<b>State Camp Environment x 2 (Jan – Feb &amp; May-June)</b>	Anaerobic Capacity/Power, Efficiency Test, Start/Turn Skills, Under Water Kicking, Pull/Kick Tests plus Anthro/Physio/S&C Assessments
<b>Home Environment x 3 (Sept – Oct, Jan-Feb &amp; May – June)</b>	Aerobic Capacity – 2km TT

## Competition Framework Overview and Training Emphasis

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug
<b>Recommended Training/Competitions on emphasis</b>	Skill and Aerobic Development with SC comp emphasis.  Compete at various events and without full taper/shaving				Increase intensity and Anaerobic Capacity/Power training with focus on long course prep for April National Championships  Compete at Jan-Mar preparation meets as lead into National Championships. Emphasis on assessment of training periodisation and full taper/shave at Age Nationals/Club Champs to qualify for Youth Teams				Maintain intensity and Anaerobic Capacity/Power training with emphasis on 'Peak Performance at International Benchmark Event (BME)'  Potentially use competition in May or Trials as preparation meet for BME, where the focus is on: 1. Peak Performance at BME			
	Phase 1 - Building and Consolidation of Training (15 weeks)				Phase 2 - Consolidation and preparation period of training and racing (15 weeks)				Phase 3 - Peak Performance preparation phase (15 weeks)			
<b>Assessment Focus</b>	Home Environment 1				Home Environment 2 State Camp				Home Environment 3 State Camp			
<b>Competition calendar</b>	Break	National SC		QLD/W A	SA	VIC	NSW	SA National Age & Open Champs	Final Prep Comp	SA Selection Trials (5 weeks)	Senior BME Junior BME	
<b>SAL Camps</b>					Flippers Camp	Event Camp					BME Prep (Youth) Camp BME Staging Camp	