

# Malaysia Medal Pathway

**A data-driven system to identify, track, and invest in swimmers with the highest potential to deliver international medals for Malaysia**

# Current Malaysia Qualification Criteria

**Bakat:** Under Construction, to follow

**Pelapis:** 20 Roster Slots for athletes ages 21 and under determined as the best investments to produce SEA Games Medals in 2-4 Years as presented by the association and accepted by the Sports Council

**Podium:** Unlimited Roster Slots for athletes having posted a time faster than the previous SEA Games Bronze medal in an event.

# Current Malaysia Qualification Criteria - Critical Issues

- **Lacks Specificity to Swimming and its Events:** Selection criteria lack specificity to swimming and its events, ignoring event-specific peak ages and limiting athletes' full development by using a generalized all-sport age of 21.
- **Lacks Data Based Standards:** Criteria not relevant to international performance trends and proven progression benchmarks.
- **Lacks Development Alignment:** Pelapis eligibility ends several years before the statistical peak of development and short of the typical SEA Games medalist age range, leaving medal-track athletes without support during crucial performance-maturing years.

# Malaysia Qualification Criteria Objectives

- **Define clear, evidence-based standards** for Bakat, Pelapis, and Podium using valid data to map progression benchmarks.
- **Align athlete support with peak performance ages**, sustaining support through peak medal years.
- **Provide transparent, consistent criteria** so stakeholders know exactly how qualification and continued support are determined.
- **Maximize medal return on investment** by funding athletes with verified medal potential through to full development.

# Model: Canada On Track Methodology and Vision

Introduced in 2013, this data driven system:

- **Draws** on over two million world-class performances from international competitions to identify developing athletes with the highest potential to impact international results.
- **Directs** resources to those most likely to attain federation desired outcomes.
- **Determines** funding based on average progression rates of Canadian age-group swimmers On Track to attain World Aquatics A standards.

**Creates a seamless path from talent identification to Podium roster qualification.**

# Unprecedented Success

	Podium			Finalists			Roster	
	Gold	Silver	Bronze	Male	Female	Relays	Male	Female
Sydney 2000	0	0	0	5	6	2	12	12
Athens 2004	0	0	0	4	4	2	10	10
Beijing 2008	0	0	0	5	6	2	11	11
London 2012	0	1	2	4	4	2	10	10
Rio 2016	1	1	2	6	6	4	10	20
Tokyo 2021	1	2	2	6	6	4	12	14
Paris 2024	4	1	0	8	8	6	13	15

**Rio:** 1st Gold Medal in Canadian Swimming since 1992

**Tokyo:** Back to Back Gold Medals from different athletes, first time ever

**Tokyo and Paris:** Back to Back best swimming performances in the country's history

50 Free			100 Free			200 Free			400 Free			800 Free			1500 Free		
Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3
13			13			13			13			13			13		
14			14			14	2:06.51		14	4:25.42		14	9:04.09		14	17:12.17	
15			15	56.85		15	2:02.98	2:04.11	15	4:18.86	4:20.27	15	8:51.31	8:54.21	15	16:52.17	16:56.98
16	25.66		16	55.76	56.38	16	2:00.67	2:01.78	16	4:14.48	4:15.87	16	8:42.92	8:45.77	16	16:38.19	16:42.94
17	25.40	25.68	17	55.07	55.68	17	1:59.20	2:00.30	17	4:11.78	4:13.16	17	8:37.81	8:40.64	17	16:29.65	16:34.36
18	25.20	25.48	18	54.62	55.22	18	1:58.23	1:59.32	18	4:10.23	4:11.60	18	8:34.62	8:37.43	18	16:24.56	16:29.24
19	25.02	25.30	19	54.25	54.85	19		1:58.69	19		4:10.74	19		8:35.61	19		16:26.24
20	24.86	25.14	20		54.53	20		1:58.23	20		4:10.23	20		8:34.62	20		16:24.56
21		24.99	21		54.25	21		54.55	21		4:10.35	21		8:34.90	21		16:25.53
22		24.86	22			22			22		4:10.23	22		8:34.62	22		16:24.56
23			23		24.93	23		54.25	23			23			23		
24			24		24.86	24			24			24			24		
25			25			25			25			25			25		

50 Back			100 Back			200 Back			50 Breast			100 Breast			200 Breast		
Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3
13			13	1:05.85		13	2:23.84		13			13			13		
14			14	1:03.87	1:04.75	14	2:18.64	2:20.52	14			14			14		
15	29.29		15	1:02.34	1:03.20	15	2:14.97	2:16.80	15			15	1:09.68		15	2:31.21	
16	28.78	29.02	16	1:01.22	1:02.06	16	2:12.63	2:14.43	16	31.56		16	1:08.45	1:09.15	16	2:28.85	2:30.01
17	28.52	28.76	17	1:00.46	1:01.29	17	2:11.08	2:12.86	17	31.20	31.35	17	1:07.71	1:08.40	17	2:27.43	2:28.58
18	28.36	28.60	18		1:00.79	18		2:11.79	18	31.00	31.15	18	1:07.24	1:07.92	18	2:26.60	2:27.74
19	28.22	28.46	19		1:00.46	19		2:11.08	19	30.86	31.01	19	1:06.87	1:07.55	19	2:25.91	2:27.05
20		28.32	20			20		2:11.40	20	30.75	30.90	20		1:07.20	20		2:26.41
21		28.22	21		1:00.46	21		2:11.08	21		30.81	21		1:06.87	21		2:25.91
22			22			22			22		30.75	22		1:07.10	22		2:26.14
23			23			23			23		30.75	23		1:06.87	23		2:25.91
24			24			24			24		30.75	24			24		
25			25			25			25			25			25		

50 Fly			100 Fly			200 Fly			200 IM			400 IM		
Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3
13			13			13			13			13	5:09.36	
14			14			14	2:18.48		14			14	4:58.88	5:01.95
15			15	1:01.67		15	2:14.47	2:15.86	15	2:18.51		15	4:51.23	4:54.23
16			16	1:00.43	1:01.15	16	2:11.84	2:13.20	16	2:15.93	2:16.89	16	4:46.20	4:49.15
17	26.98		17	59.56	1:00.27	17	2:10.18	2:11.53	17	2:14.41	2:15.36	17	4:43.06	4:45.98
18	26.71	26.81	18	58.87	59.57	18	2:09.21	2:10.55	18	2:13.47	2:14.42	18		4:44.11
19	26.50	26.60	19	58.33	59.03	19		2:09.78	19	2:12.83	2:13.77	19		4:43.06
20	26.34	26.43	20		58.60	20		2:09.21	20		2:13.25	20		4:43.24
21	26.23	26.33	21		58.33	21			21		2:12.83	21		4:43.06
22		26.27	22			22		2:09.21	22			22		2:12.95
23		26.23	23			23			23			23		2:12.83
24			24			24			24			24		
25			25			25			25			25		

**FEMALE**



50 Free				100 Free			200 Free			400 Free			800 Free			1500 Free							
Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3	
15				15	53.28			15	1:56.62			15	4:08.91			15	8:31.10			15	16:17.69		
16				16	51.48		52.43	16	1:52.75		1:54.33	16	4:00.79		4:03.63	16	8:14.62		8:20.18	16	15:46.32		15:53.70
17	23.44			17	50.09	51.02	51.44	17	1:49.93	1:51.47	1:52.04	17	3:54.84	3:57.61	3:58.24	17	8:02.43	8:07.85	8:09.69	17	15:24.14	15:31.34	15:33.06
18	22.91	23.09		18	49.07	49.98	50.39	18	1:48.02	1:49.53	1:50.09	18	3:50.84	3:53.56	3:54.18	18	7:54.03	7:59.36	8:01.16	18	15:10.35	15:17.45	15:19.13
19	22.52	22.69	22.74	19	48.34	49.23	49.64	19	1:46.70	1:48.20	1:48.75	19	3:48.15	3:50.84	3:51.45	19	7:48.66	7:53.93	7:55.71	19	15:01.89	15:08.92	15:10.59
20	22.24	22.41	22.46	20		48.72	49.12	20		1:47.30	1:47.84	20		3:49.11	3:49.72	20		7:50.66	7:52.43	20		15:04.13	15:05.79
21	22.05	22.22	22.27	21		48.34	48.74	21		1:46.70	1:47.24	21		3:48.15	3:48.75	21		7:48.66	7:50.42	21		15:01.89	15:03.55
22		22.11	22.15	22			48.49	22			1:46.88	22			3:48.27	22			7:49.18	22			15:02.44
23		22.05	22.09	23			48.34	23			1:46.70	23			3:48.15	23			7:48.66	23			15:01.89
24			22.06	24				24				24				24				24			
25			22.05	25				25				25				25				25			
26				26				26				26				26				26			

50 Back			100 Back			200 Back			50 Breast			100 Breast			200 Breast								
Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3	Track 1	Track 2	Track 3						
15			15			15	2:07.63		15			15			15	2:23.31							
16	27.26		16	57.82		16	2:03.66	2:04.75	16			16	1:04.06		16	2:18.55	2:20.95						
17	26.47	26.73	17	56.23	56.79	17	2:00.86	2:01.93	2:02.23	17		17	1:02.45	1:03.26	17	2:14.89	2:17.24	2:18.23					
18	25.85	26.10	26.15	18	55.17	55.72	55.86	18	1:59.15	2:00.21	2:00.51	18	28.68		18	1:01.25	1:02.05	1:02.46	18	2:12.22	2:14.51	2:15.48	
19	25.40	25.64	25.69	19	54.43	54.98	55.12	19	1:58.07	1:59.12	1:59.41	19	28.17	28.40	19	1:00.37	1:01.16	1:01.57	19	2:10.32	2:12.58	2:13.54	
20	25.11	25.35	25.40	20	53.94	54.48	54.62	20		1:58.48	1:58.77	20	27.79	28.01	28.07	20	59.75	1:00.53	1:00.93	20		2:11.26	2:12.21
21		25.19	25.24	21		54.15	54.28	21		1:58.07	1:58.36	21	27.53	27.75	27.81	21		1:00.09	1:00.48	21		2:10.32	2:11.26
22		25.11	25.15	22		53.94	54.08	22			1:58.13	22	27.33	27.55	27.61	22		59.75	1:00.14	22			2:10.66
23			25.12	23			53.97	23			1:58.07	23		27.41	27.47	23			59.91	23			2:10.32
24			25.11	24			53.94	24				24		27.33	27.38	24			59.75	24			
25				25				25				25			27.34	25				25			
26				26				26				26			27.33	26				26			

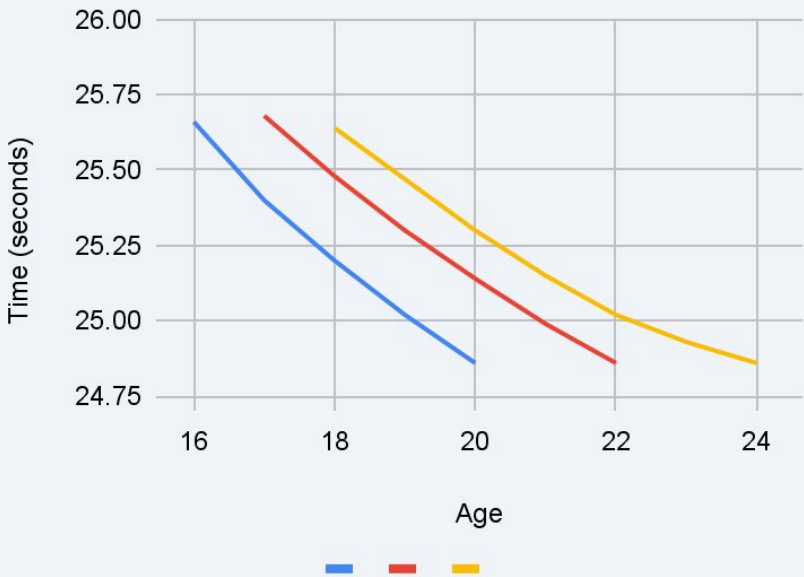
50 Fly				100 Fly				200 Fly				200 IM				400 IM			
Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3		Track 1	Track 2	Track 3	
15				15				15	2:07.69			15				15	4:38.79		
16				16	55.15			16	2:03.12	2:04.65		16	2:06.50			16	4:30.33	4:34.00	
17	24.61			17	53.75	54.31		17	1:59.88	2:01.37	2:01.77	17	2:03.32	2:04.42		17	4:24.32	4:27.91	4:28.61
18	24.10	24.31		18	52.83	53.38	53.52	18	1:57.84	1:59.30	1:59.70	18	2:01.30	2:02.39	2:02.59	18	4:20.41	4:23.94	4:24.63
19	23.75	23.96	24.04	19	52.22	52.76	52.90	19	1:56.51	1:57.95	1:58.35	19	1:59.95	2:01.03	2:01.22	19	4:17.48	4:20.98	4:21.66
20	23.52	23.73	23.81	20	51.77	52.31	52.45	20		1:57.06	1:57.45	20	1:59.05	2:00.12	2:00.31	20		4:18.85	4:19.53
21	23.36	23.57	23.64	21		51.99	52.13	21		1:56.51	1:56.90	21		1:59.49	1:59.69	21		4:17.48	4:18.15
22		23.45	23.52	22		51.77	51.90	22			1:56.60	22		1:59.05	1:59.24	22			4:17.46
23		23.36	23.43	23			51.79	23			1:56.51	23			1:59.05	23			4:17.48
24			23.38	24			51.77	24				24			1:59.05	24			
25			23.36	25				25				25				25			
26				26				26				26				26			

**MALE**



# Visual: Female 50 Free Progression

50 Free Female Progression by Age and Track



Age	Track 1	Track 2	Track 3
16	25.66		
17	25.40	25.68	
18	25.20	25.48	25.64
19	25.02	25.30	25.47
20	24.86	25.14	25.30
21		24.99	25.15
22		24.86	25.02
23			24.93
24			24.86

# Data Driven Boundaries and Bend

**Entry Age:** When performance tracking becomes meaningful and predictive

- Varying entry ages, growth rates, and puberty onset make earlier results unreliable indicators of senior performance.
- Puberty changes, especially in females with shifting body composition, make it hard to predict future performance profiles
- By the Track 1 entry age, benchmarks are predictive, making it valid to identify, monitor, and invest in swimmers who meet them.

**Arrival Age:** When data shows that the development window has closed

- Swimmers who have not met the benchmark by this point are not considered statistically on track, as later arrivals are rare exceptions.

**Progression Rates:** How improvement unfolds

- Improvement is faster at younger ages and slows near peak levels.
- Early entrants progress to the benchmark more quickly, while later entrants often take longer to reach the target time.

Female Event Age Ranges				
Event	Canada T1 End	Canada T3 End	SEA Games Medal Age	World Top 10 Average Age
800 Free	18	22	18.0	22.8
400 IM	17	21	18.4	23.3
50 Back	19	23	20.3	23.9
200 IM	19	23	20.6	22.8
400 Free	18	22	21.1	22.4
100 Breast	19	23	21.3	24.4
100 Back	17	21	21.7	22.7
200 Free	18	22	21.8	23.2
200 Breast	19	23	22.3	25.3
200 Back	17	21	22.4	22.4
200 Fly	18	22	23.0	22.1
50 Breast	20	24	23.0	22.2
100 Free	19	23	24.9	23.9
50 Free	20	24	27.9	24.1
50 Fly	21	25	27.9	24.7
100 Fly	19	23	28.3	24.5

Male Event Age Ranges				
Event	Canada T1 End	Canada T3 End	SEA Games Medal Age	World Top 10 Average Age
400 IM	19	23	19.0	23.9
200 Back	19	23	19.7	23.1
1500 Free	19	23	20.2	24.8
200 IM	20	24	20.4	23.4
200 Breast	19	23	21.0	25.6
400 Free	19	23	21.1	23.1
200 Fly	19	23	21.9	22.6
100 Breast	20	24	22.1	26.4
50 Free	21	25	22.1	26.2
50 Breast	22	26	22.4	28.4
200 Free	19	23	23.0	22.5
100 Free	19	23	23.1	22.7
100 Back	20	24	24.8	24.2
50 Fly	21	25	25.1	27.7
100 Fly	20	24	25.6	23.6
50 Back	20	24	26.3	22.4

# SEA Terrain: Underdeveloped Athletes and Events

Female Athlete and Event Development				
Event	Canada T3 End	SEA Games Medal Age	World Top 10 Average Age	SEA Medal vs World Top 10
400 IM	22	18.4	23.3	-4.8
800 Free	21	18.0	22.8	-4.8
50 Back	23	20.3	23.9	-3.5
100 Breast	23	21.3	24.4	-3.0
200 Breast	22	22.3	25.3	-2.9
200 IM	23	20.6	22.8	-2.2
200 Free	21	21.8	23.2	-1.4
400 Free	22	21.1	22.4	-1.2
100 Back	23	21.7	22.7	-1.0
200 Back	21	22.4	22.4	0.1
50 Breast	22	23.0	22.2	0.9
200 Fly	24	23.0	22.1	0.9
100 Free	23	24.9	23.9	1.0
50 Fly	24	27.9	24.7	3.2
50 Free	25	27.9	24.1	3.8
100 Fly	23	28.3	24.5	3.9

Male Athlete and Event Development				
Event	Canada T3 End	SEA Games Medal Age	World Top 10 Average Age	SEA Medal vs World Top 10
50 Breast	23	22.4	28.4	-5.9
400 IM	23	19.0	23.9	-4.9
200 Breast	23	21.0	25.6	-4.6
1500 Free	24	20.2	24.8	-4.5
100 Breast	23	22.1	26.4	-4.2
50 Free	23	22.1	26.2	-4.0
200 Back	23	19.7	23.1	-3.4
200 IM	24	20.4	23.4	-2.9
50 Fly	25	25.1	27.7	-2.5
400 Free	26	21.1	23.1	-1.9
200 Fly	23	21.9	22.6	-0.7
100 Free	23	23.1	22.7	0.5
200 Free	24	23.0	22.5	0.6
100 Back	25	24.8	24.2	0.6
100 Fly	24	25.6	23.6	2.0
50 Back	24	26.3	22.4	4.0

# System Logic Breakdown

## Case Study: Female 50 Free

Malaysia ends development support at age 21:

- 3 years before Canada does
- 3 years before the typical age of the World Top 10
- 7 years before the typical age of the SEA Games medalists

Female Pipeline Gap		
Event	SEA Games Medal Age	Pipeline Gap
100 Fly	28.3	-7.3
50 Fly	27.9	-6.9
50 Free	27.9	-6.9
100 Free	24.9	-3.9
50 Breast	23.0	-2.0
200 Fly	23.0	-2.0
200 Back	22.4	-1.4
200 Breast	22.3	-1.3
200 Free	21.8	-0.8
100 Back	21.7	-0.7
100 Breast	21.3	-0.3
400 Free	21.1	-0.1
200 IM	20.6	0.4
50 Back	20.3	0.7
400 IM	18.4	2.6
800 Free	18.0	3.0

Male Pipeline Gap		
Event	SEA Games Medal Age	Pipeline Gap
50 Back	26.3	-5.3
100 Fly	25.6	-4.6
50 Fly	25.1	-4.1
100 Back	24.8	-3.8
100 Free	23.1	-2.1
200 Free	23.0	-2.0
50 Breast	22.4	-1.4
100 Breast	22.1	-1.1
50 Free	22.1	-1.1
200 Fly	21.9	-0.9
400 Free	21.1	-0.1
200 Breast	21.0	0.0
200 IM	20.4	0.6
1500 Free	20.2	0.8
200 Back	19.7	1.3
400 IM	19.0	2.0

# Undermining Medal Potential

- **Funding stops during critical athlete development years and years before the typical medal-winning age in most events.**
- **Support ends just as Pelapis and Bakat investments should be returning results.**
- **The medal pipeline breaks before athletes reach their peak performance window.**

# Pelapis Solution Pathway: Targets and Tracking

1. **Anchor** each event's
  - a. **Entry Age**: Youngest Canada Track 1 age
  - b. **Arrival Age**: 25 (Closes the Pipeline Gap on Most Events)
  - c. **Arrival Time**: Previous SEA Games Bronze time
2. **Build** an age-based improvement curve with Canada data, regional data added as available.
3. **Determine** each swimmer's position as ahead, on, or behind the curve throughout the key development years.
4. **Apply** these benchmarks to guide support and funding so resources follow athletes with verified medal potential.

# Example Process: Female 50 Free

1. **Anchor** each event's
  - a. **Entry Age**: Youngest Canada Track 1 age
  - b. **Arrival Age**: 25 (Closes the Pipeline Gap on Most Events)
  - c. **Arrival Time**: Previous SEA Games Bronze time

Female 50 Free	
Age	Time
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	25.32

2. **Build** an age-based improvement curve with Canada data, regional data added as available.
- a. **Combined** the yearly changes from all tracks into a single average progression.

Female 50 Free	
Age	Time
16	26.63
17	26.37
18	26.17
19	25.99
20	25.83
21	25.68
22	25.55
23	25.46
24	25.39
25	25.32

3. **Determine** each swimmer's position as ahead, on, or behind the curve throughout the key development years.
- a. **Convert** times into AQUA points to standardize across all events.
  - b. **Match** the points to the on-track AQUA points for that age
  - c. **Calculate** the difference (positive = ahead, zero = on, negative = behind)

Age	Time	AQUA
16	26.63	696
17	26.37	717
18	26.17	734
19	25.99	749
20	25.83	763
21	25.68	777
22	25.55	789
23	25.46	797
24	25.39	804
25	25.32	810

Result					
Age	Time	AQUA	Target Time	Target AQUA	Difference
18	26.11	739	26.17	734	5

Result					
Age	Time	AQUA	Target Time	Target AQUA	Difference
20	26.11	739	25.83	763	-24

4. **Apply** these benchmarks to guide support and funding so resources follow athletes with verified medal potential.
  - a. **Sample Dataset:** MIAG Group 1 Event Winners
  - b. **Rank:** Arrange athletes by their score difference from the benchmark

# Sample Data Set: Male MIAG Group 1 Champions

Top Male Performances								
Gender	Event	Name	Age	Time	AQUA	Target Time	Target AQUA	Difference
M	200 Free	Bin Zulβikry Muhammad Dhuha	17	1:51.82	759	1:54.98	698	61
M	400 Free	Bin Zulβikry Muhammad Dhuha	17	3:58.39	786	4:04.07	733	53
M	100 Free	LI Jie Goh	17	52.19	702	53.07	668	34
M	1500 Free	Bin Zulβikry Muhammad Dhuha	17	16:00.77	744	16:12.67	717	27
M	200 Fly	LI Jie Goh	17	2:05.25	683	2:06.02	671	12
M	200 IM	Jing Ngui	16	2:11.55	650	2:11.15	656	-6
M	100 Breast	Khai Hern Wan	17	1:06.66	621	1:06.28	632	-11
M	400 IM	Jing Ngui	16	4:43.54	625	4:40.39	646	-21
M	50 Breast	Yuen Zer Ooi	18	30.04	644	29.63	671	-27
M	50 Free	Ryan EE Tian Aymes	18	24.34	634	23.92	668	-34
M	50 Back	Yi Quan Dylan Leong	17	27.82	606	27.28	643	-37
M	100 Back	Yi Quan Dylan Leong	17	1:00.13	631	59.00	668	-37
M	50 Fly	Abdul Karim Jaafar Bin Azhar	17	25.94	632	25.42	672	-40
M	200 Breast	Khai Hern Wan	17	2:25.97	635	2:22.83	678	-43
M	100 Fly	Bin Zulβikry Muhammad Dhuha	17	57.05	651	55.60	703	-52
M	200 Back	Yi Quan Dylan Leong	16	2:13.54	588	2:08.82	655	-67
M	800 Free	Chong Samuel Lai	18	8:47.59	629	8:20.21	738	-109

# Sample Data Set: Female MIAG Group 1 Champions

Top Female Performances								
Gender	Event	Name	Age	Time	AQUA	Target Time	Target AQUA	Difference
F	100 Breast	Isabelle Chiyi Buckley	16	1:13.31	669	1:14.20	645	24
F	100 Free	Lynna Yeow YI Jing	16	58.79	680	59.07	670	10
F	50 Breast	Isabelle Chiyi Buckley	16	32.84	700	32.94	693	7
F	100 Back	Xin Lin Chong	18	1:05.67	658	1:05.28	670	-12
F	50 Back	Xin Lin Chong	18	30.02	716	29.62	745	-29
F	200 Breast	Sue Enn Khoo	16	2:41.57	617	2:37.76	662	-45
F	200 Back	Jie Xin Rainne Foo	16	2:27.07	586	2:23.41	633	-47
F	100 Fly	Morgan Eleven Teo	18	1:03.98	641	1:02.28	695	-54
F	50 Free	Wei YI Kaelyn Chee	16	27.36	642	26.63	696	-54
F	200 Free	Lynna Yeow YI Jing	16	2:11.07	627	2:07.42	683	-56
F	50 Fly	Natalie Suyin Buckley	18	28.64	620	27.61	692	-72
F	200 Fly	Yue Lynn Mishya Khor	16	2:25.85	582	2:19.45	666	-84
F	200 IM	Sue Enn Khoo	16	2:28.67	610	2:20.83	718	-108
F	800 Free	Yun Xuan Yeoh	16	9:43.97	572	9:08.87	689	-117
F	400 Free	Lynna Yeow YI Jing	16	4:42.08	581	4:24.02	708	-127
F	400 IM	Sue Enn Khoo	16	5:25.06	538	4:59.51	687	-149
F	1500 Free	Yuan YI Chong	16	19:07.07	516	17:30.95	671	-155

4. **Apply** these benchmarks to guide support and funding so resources follow athletes with verified medal potential.
  - a. **Sample Dataset:** SUKMA Results, Medals
  - b. **Rank:** Arrange athletes by their score difference from the benchmark

# SUKMA Data Set, Male: Medals as False Positives

Gender	Event	Name	Age	Time	AQUA	Place	On Track Target Time	On Track AQUA	Difference
M	200 Free	BIN ZULFIKRY, Muhd Dhuha	16	1:50.03	796	1	1:57.82	648	148
M	400 Free	BIN ZULFIKRY, Muhd Dhuha	16	3:55.59	815	2	4:10.05	681	134
M	50 Breast	GOH, Andrew	20	27.4	849	1	28.74	736	113
M	100 Free	BIN ZULFIKRY, Muhd Dhuha	16	51.52	730	1	54.47	618	112
M	800 Free	BIN ZULFIKRY, Muhd Dhuha	16	8:14.58	763	1	8:40.94	653	110
M	100 Free	JAYDEN GOH, Li Jie	16	51.88	715	3	54.47	618	97
M	200 Free	JAYDEN GOH, Li Jie	16	1:52.55	744	2	1:57.82	648	96
M	1500 Free	BIN ZULFIKRY, Muhd Dhuha	16	15:51.53	766	1	16:34.94	670	96
M	200 Fly	JAYDEN GOH, Li Jie	16	2:03.98	704	1	2:09.28	621	83
M	100 Breast	GOH, Andrew	20	1:01.39	795	1	1:03.56	716	79
M	200 Free	KUEH, Ryan Colby Poh Huan	15	1:57.81	649	4	2:01.69	588	61
M	100 Fly	JAYDEN GOH, Li Jie	16	55.68	700	2	57	652	48
M	50 Free	TONG, Yu Jing	19	23.06	745	1	23.53	701	44
M	400 IM	NGUI, Jing	15	4:42.53	632	3	4:48.85	591	41
M	100 Free	LOH, Emmanuel Yung Ming	15	55.07	598	14	56.27	560	38
M	100 Breast	WAN, Khai Hern	16	1:06.64	621	8	1:07.89	588	33
M	400 Free	LAI, Samuel Chong Weng	16	4:06.88	708	4	4:10.05	681	27
M	100 Breast	CHAM, Yu Xiang	18	1:04.55	684	2	1:05.07	667	17

# SUKMA Data Set, Female: Medals as False Positives

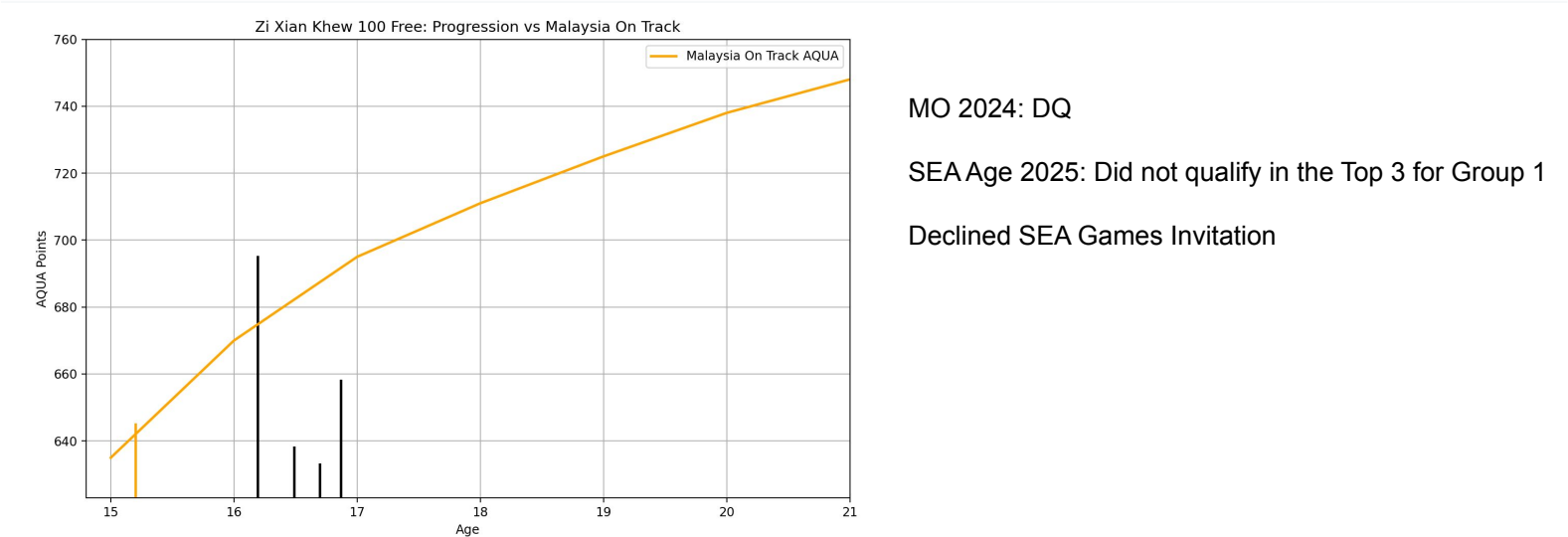
Gender	Event	Name	Age	Time	AQUA	Place	On Track Target Time	On Track AQUA	Difference
F	100 Back	TEE, Vivian Xin Ling	13	1:06.85	624	2	1:11.21	516	108
F	200 Back	TEE, Vivian Xin Ling	13	2:25.72	603	2	2:34.67	504	99
F	100 Breast	BUCKLEY, Isabelle Chiyi	15	1:13.09	675	3	1:15.43	614	61
F	100 Breast	KHOO, Sue Enn	15	1:13.28	670	4	1:15.43	614	56
F	100 Back	CHONG, Xin Lin	17	1:04.06	709	1	1:05.79	654	55
F	100 Free	YEOW, Lynna Yi Jing	15	58.61	686	3	1:00.16	635	51
F	200 Free	NGO, YI Rui Chereen	14	2:10.97	629	3	2:13.27	597	32
F	200 Fly	ANG, Kayleigh Zhi Xuan	14	2:23.71	608	3	2:26.11	579	29
F	200 Breast	KHOO, Sue Enn	15	2:37.93	660	1	2:40.12	633	27
F	100 Free	KHEW, ZI Xian	16	58.36	695	1	59.07	670	25
F	200 Free	SHANNON TAN, Yan Qing	14	2:12.02	614	6	2:13.27	597	17
F	100 Back	CHAN, Joelle Zu-Ee	15	1:07.48	606	4	1:07.69	601	5
F	200 Back	JOSELINE ADONG, Shanise Jauw	14	2:28.97	564	4	2:29.47	559	5
F	200 Free	KHEW, ZI Xian	16	2:07.13	687	2	2:07.42	683	4
F	50 Back	CHONG, Xin Lin	17	29.74	736	1	29.78	733	3

**The process will be applied to 2025 performance results for athletes in the relevant age range to be considered for Pelapis. The top ranked athletes will be considered based on their:**

- Ranking (To determine order of consideration)
- Home coach recommendation (**Evaluation Rubric** and Interview)
- NTC Coach evaluation (Interview)

# Individual Pelapis Swimmer Evaluation

Timeline	Competition	Date	Age	Time	AQUA	Competition Age	Target Time	Target Aqua	Difference
1	SEA Age 2023	8/24/2023	15.2	59.84	645	15	1:00.16	635	10
2	SUKMA	8/20/2024	16.2	58.36	695	16	59.07	670	25
3	SEA Age 2024	12/6/2024	16.5	1:00.05	638	16	59.07	670	-32
4	MIAG 2025	2/20/2025	16.7	1:00.21	633	17	58.37	695	-62
5	MO 2025	4/24/2025	16.9	59.44	658	17	58.37	695	-37



MO 2024: DQ

SEA Age 2025: Did not qualify in the Top 3 for Group 1

Declined SEA Games Invitation

# Bakat Evaluation

**A data-driven system to identify, track, and invest in swimmers with the highest potential to become Pelapis level athletes in 2-4 Years**

# Bakat Evaluation

1. **Anchor** each event
  - a. **Ages 12-18**: Looking at Pre-Pelapis youth talent
  - b. **USA Swimming Database**: Draw from the largest available dataset spanning 30 years.
2. **Build** an age based point system
3. **Determine** which swimmer's exhibit broad promise in various event clusters for development investment and motivational rankings.
4. **Apply** these measures to identify and compare emerging talent so opportunities are given to the most promising athletes.

# 1. **Anchor** each event

- a. **Ages 12-18:** Looking at Pre-Pelapis youth talent
- b. **USA Swimming Database:** Draw from the largest available dataset spanning 30 years.

Base Time: USA 100th all-time for each gender/age group

Female 200 IM	
12	2:26.19
13	2:21.89
14	2:19.58
15	2:17.70
16	2:16.45
17	2:15.91
18	2:15.46

Male 200 IM	
12	2:21.51
13	2:14.32
14	2:10.44
15	2:07.45
16	2:05.45
17	2:04.07
18	2:02.94

- \*Age 13: Using the younger time minus the difference times .65
- \*Age 15: Using the younger time minus the difference times .60
- \*Age 17: Using the younger time minus the difference times .55

## 2. **Build** an **age based point system** and map relevant event clusters

Points Formula: World Aquatics AQUA Point Formula

$$Points = 1000 \times \left( \frac{B}{T} \right)^3$$

Where B = Base Points by Age, T = Evaluated Performance

## 2. Build an age based point system

Evaluated Performance				
Name	Gender	Event	Age	Time
Aw Yuet Ting	F	200 IM	14	2:24.90

Evaluated Performance				
Name	Gender	Event	Age	Time
Ngui Jing	M	200 IM	16	2:11.55

Female 200 IM	
12	2:26.19
13	2:21.89
14	2:19.58
15	2:17.70
16	2:16.45
17	2:15.91
18	2:15.46

$$\text{Points} = 1000 \times \left( \frac{2:19.58}{2:24.90} \right)^3$$

894 Age Pts

Male 200 IM	
12	2:21.51
13	2:14.32
14	2:10.44
15	2:07.45
16	2:05.45
17	2:04.07
18	2:02.94

$$\text{Points} = 1000 \times \left( \frac{2:05.45}{2:11.55} \right)^3$$

867 Age Pts

# SEA AGE Data Set: Medals as False Positives

Rank	Gender	Event	Age	ATHLETE	Final Time	2025 Place	Age Points
1	M	400 Free	17	MUHAMMAD DHUHA BIN ZULFIKRY	3:57.99	2	972
2	M	200 Fly	14	CH'NG SAW HUAI	2:09.21	1	969
3	M	1500 Free	17	MUHAMMAD DHUHA BIN ZULFIKRY	15:45.17	2	966
4	M	50 Free	15	LOO CHENG FENG	24.10	1	965
5	M	100 Free	15	LOO CHENG FENG	52.68	2	965
6	M	200 Free	17	MUHAMMAD DHUHA BIN ZULFIKRY	1:52.47	2	961
7	M	50 Free	14	DAMIAN SETH LIM	24.84	6	950
8	F	100 Back	14	VIVIAN TEE XIN LING	1:04.90	2	949
9	M	200 Fly	17	GOH LI JIE	2:03.34	2	940
10	M	200 Breast	13	ETHAN TAN KHENG HONG	2:32.83	4	942
11	F	50 Free	15	KHONG ZI LIN	26.67	2	936
12	M	200 Free	17	GOH LI JIE	1:53.50	4	935
13	M	100 Free	13	SHEAMUS CHEW HENG YI	56.06	1	935
14	M	100 Fly	17	GOH LI JIE	55.64	1	925
15	M	50 Free	15	LEE E-AN	24.49	5	919

### 3. **Determine** which swimmer's exhibit broad promise in various event clusters for development investment and motivational rankings.

Evaluated Event Cluster: Short IM		
Aw Yuet Ting (F - 14)		
Event	Time	Age Pts
100 Fly	1:06.67	802
100 Back	1:11.74	702
100 Breast	1:13.34	951
200 Free	2:18.66	714
200 IM	2:24.90	894
	<b>Average</b>	<b>813</b>

Evaluated Event Cluster: Short Free		
Loo Cheng Feng (M- 15)		
Event	Time	Age Pts
50 Free	24.10	965
100 Free	52.68	965
200 Free	1:58.72	882
	<b>Average</b>	<b>937</b>

Evaluated Event Cluster: Long Free		
Eu Jun Lin (M- 13)		
Event	Time	Age Pts
400 Free	4:36.11	772
800 Free	9:28.15	801
1500 Free	17:37.62	872
	<b>Average</b>	<b>815</b>

Evaluated Event Cluster: Back		
Ayaz Zahin Bin Azhar (M- 12)		
Event	Time	Age Pts
100 Back	1:09.71	807
200 Back	2:34.37	766
	<b>Average</b>	<b>787</b>

Evaluated Event Cluster: Breast		
Kayler Ngan (F- 13)		
Event	Time	Age Pts
100 Breast	1:18.82	807
200 Breast	2:50.58	802
	<b>Average</b>	<b>805</b>

Evaluated Event Cluster: Fly		
Ch'Ng Saw Huai (M- 14)		
Event	Time	Age Pts
100 Fly	1:01.32	824
200 Fly	2:09.21	969
	<b>Average</b>	<b>897</b>

4. **Apply** these measures to identify and compare emerging talent so opportunities are given to the most promising athletes.

Define Event Clusters (Example):

Short IM	Long IM	Short Free	Long Free	Back	Fly	Short
100 Fly	200 Fly	50 Free	400 Free	100 Back	100 Fly	2 100s of Any Stroke
100 Back	200 Back	100 Free	800 Free	200 Back	200 Fly	50 of Any Stroke
100 Breast	200 Breast	200 Free	1500 Free	Breast	Long	Top 3
200 Free	400 Free			100 Breast	2 200s Any Stroke	Athlete's Any Best 3 Events
200 IM	400 IM			200 Breast	800 or 1500	

Allows us to proactively identify gaps and target event clusters. For example, 4 years ago we needed to target male Backstrokers and develop them for our Medley Relay. We have everything but a Backstroker.

Run on the data set we used to select 2024 SEA Age (available and applicable) as sample data.

# SEA AGE Data Set: Short IM Male

# SEA AGE Data Set: Short IM Female

# SEA AGE Data Set: Long IM Male

# SEA AGE Data Set: Long IM Female

# SEA AGE Data Set: Short Free Male

# SEA AGE Data Set: Short Free Female

# SEA AGE Data Set: Long Free Male

# SEA AGE Data Set: Short IM Male