Triathlon CANADA

Gold Medal Profile

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The Gold Medal Profile defines the skills and abilities required to stand on the top of the Olympic Podium.

THE CULTURE OF EXCELLENCE

A Culture Of Excellence is needed to support an athlete in pursuit of the Gold Medal Profile. A World Leading Daily Performance Environment is evidence of a Culture of Excellence.

At the core of the Culture Of Excellence is an ***Ethos Of Winning***

THE ETHOS OF WINNING

We strive to improve on past results by never going backwards on performance expectations. Every time our athletes race, they are fully prepared to perform.

This ethos guides the mindset needed to pursue the Gold Medal Profile, which in turn is used to define every aspect of the performance pathway.

THE GOLD MEDAL PROFILE

The Gold Medal Profile (GMP) is based on a hierarchy of Key Performance Indicators (KPI). At each successive level of the hierarchy, the strength of the relationship to the Olympic Podium is reduced in exchange for a stronger relationship to athlete development.

At the top of the hierarchy are Primary KPI, triathlon events demonstrating the strongest relationships to Olympic podium performance. The next level features objective measures directly related to the Primary KPI, performance standards in swim, bike and run. The final level of KPIs is the collection of elements defining the Daily Performance Environment (DPE)

Table 1. Gold Medal Profile Key Performance Indicator hierarchy.

KPI	Reference
Primary	Triathlon Performance
Secondary	Single Sport Performance
Tertiary	Daily Performance Environment

Strategically, World Leading performance in triathlon level requires competitors to optimize the use of their physiological, technical, strategic and mental skills to;

- Complete the swim with the lead pack while conserving the most energy possible, especially when the lead pack also contains top runners and cyclists capable of remaining in the lead into the run
- The characteristics of the swim (salt water vs fresh, rough vs calm, warm vs cold, current vs calm, number and spacing of turns, beach vs pontoon, etc.) will define a sub-set of interacting skills needed to succeed.
- Leave T1 with the lead pack or with ability to close the gap as soon as possible.
- Complete the bike with the lead pack while conserving the most energy possible, especially when the lead pack contains the fastest runners

- The characteristics of the bike (corners, descending, climbing, rough roads vs smooth, warm vs cold, windy vs calm etc.) will define a sub-set of interacting skills needed to succeed.
- If there are no faster runners and cyclists capable of staying in the lead throughout the end of the run, the gap between the lead cycling pack and fastest runners must remain within the anticipated run split difference to ensure a win
- If there are faster runners in a cycling pack further up the road, the gap must be closed as soon a possible while leaving time to conserve energy before the run.
- If there are no faster runners in the lead pack, the gap between the lead pack and fastest runners must remain within the anticipated run split difference to ensure a win
- If there are no fast runners up the time gap is within the anticipated run split difference, the lead pack is of minimal concern.
- Leave T2 capable of arriving at the finish first, by out running, catching or staying ahead of all competitors based on time gaps leaving T2
- The characteristics of the run (corners, uphill, downhill, turns, heat, etc.) will define a sub-set of interacting skills needed to succeed.

PRIMARY KPI | TRIATHLON PERFORMANCE

The ***Primary KPI*** for the GMP is triathlon performance.

To properly interpret triathlon performance KPI, the quality and depth of field relative to the Olympics is a critical consideration. To stand on the Olympic podium, an athlete must know how to compete with current World Leading triathletes (see Table 2).

Long term tracking of ***primary KPI*** data tells us that U23 World Championship podium performances have a high probability of conversion to Senior World Championships podium performances.

The relationship between Junior World Championships podium and subsequent U23 World Championships podium is much weaker. As such, until an athlete is competing at the U23 level internationally, there are no ***primary KPI*** applicable to the GMP. At non-WTS events, all results must be interpreted relative to quality of field and evaluating ***secondary KPI*** both directly and indirectly (such as run speed relative to the GMP, percentage of the race winner and race leader after swim, T2 and run). However, triathlon performance benchmarks are still useful in tracking junior athlete GMP progression.

Table 2. Primary KPI benchmarks in the GMP for triathlon performance ranked relative to Olympic Podium potential and associated LTAD stage estimates.

RANK	APROX LTAD STAGE	BENCHMARK
1	Competing to Win	WTS Podium
		WTS GF top 5
		WTS Series top 8
		Olympic Top 5
		Major Games Podium
2	Training to Compete	WTS top 8
		WTS GF top 12

		WC Podium
		U23 World WIN
3	Learning to Compete	WTS top 20
		WC top 8
		U23 World top 5
		Continental Cup WIN
4		U23 World top 10
		Junior World top 10
		Continental Cup PODIUM
5	Training to Train	U23 World top 15
		Junior World top 15
		Continental Cup top 5
6		JR National Championships WIN
		JR National Series PODIUM
7		JR National Championships PODIUM
		JR National Series top 10
8	Learning to Train	International draft legal experience
		National draft legal experience
		Provincial draft legal experience
		Regional draft legal experience
		Non-drafting experience

SECONDARY KPI | SINGLE SPORT PERFORMANCE

World Leading ***Secondary KPI*** are obtained from verified performance in ITU WTS standard distance competition, verified swim and run performance under FINA and IAAF rules and estimates of expected performance within the current quadrennial.

The 2º KPI are evaluated relative to an absolute GMP (see Tables 3 and 4) as well as an age grade GMP.

- The **absolute GMP** is the World Leading swim or run performance
- The **age graded GMP** is a trajectory based on a yearly improvement of 1% until age 24

Table 3. World Leading swim performance standards in 50m pool swim under FINA rules (standards updated on February 10, 2014).

MEN		
	800 m	**1500 m**
100.0%	**08:57**	**16:45**
99.0%	09:02	16:54
98.0%	09:08	17:04
97.0%	09:14	17:15
96.0%	09:19	17:24
95.0%	09:25	17:34

WOMEN		
	800 m	**1500 m**
100.0%	**09:20**	**17:45**
99.0%	09:26	17:57
98.0%	09:31	18:07
97.0%	09:37	18:18
96.0%	09:43	18:29
95.0%	09:49	18:40

94.0%	09:31	17:45
93.0%	09:37	17:55
92.0%	09:44	18:07
91.0%	09:50	18:18
90.0%	09:57	18:30
89.0%	10:03	18:40
88.0%	10:10	18:53
87.0%	10:17	19:04
86.0%	10:24	19:17
85.0%	10:32	19:32
84.0%	10:39	19:43
83.0%	10:47	19:57
82.0%	10:55	20:11
81.0%	11:03	20:25
80.0%	11:11	20:39

94.0%	09:56	18:53
93.0%	10:02	19:04
92.0%	10:09	19:17
91.0%	10:15	19:28
90.0%	10:22	19:41
89.0%	10:29	19:54
88.0%	10:36	20:07
87.0%	10:44	20:22
86.0%	10:51	20:35
85.0%	10:59	20:50
84.0%	11:07	21:05
83.0%	11:15	21:20
82.0%	11:23	21:35
81.0%	11:31	21:49
80.0%	11:40	21:12

Table 4. World Leading run performance standards achieved on track or road under IAAF rules (standards updated on February 10, 2014).

MEN		
	5 k	**10 k**
100.0%	**13:41**	**28:32**
99.0%	13:49	28:44
98.0%	13:57	29:01
97.0%	14:06	29:17
96.0%	14:15	29:35
95.0%	14:24	29:54
94.0%	14:33	30:13
93.0%	14:43	30:34
92.0%	14:52	30:52
91.0%	15:02	31:13
90.0%	15:12	31:34
89.0%	15:22	31:53
88.0%	15:33	32:15
87.0%	15:44	32:37
86.0%	15:55	33:00
85.0%	16:06	33:24
84.0%	16:17	33:46
83.0%	16:29	34:11
82.0%	16:41	34:36
81.0%	16:54	35:03
80.0%	17:06	35:27

WOMEN		
	5 k	**10 k**
100.0%	**15:14**	**31:40**
99.0%	15:23	31:55
98.0%	15:33	32:15
97.0%	15:42	32:35
96.0%	15:52	32:55
95.0%	16:02	33:16
94.0%	16:12	33:35
93.0%	16:23	34:00
92.0%	16:33	34:19
91.0%	16:44	34:42
90.0%	16:56	35:06
89.0%	17:07	35:30
88.0%	17:19	35:55
87.0%	17:31	36:20
86.0%	17:43	36:43
85.0%	17:55	37:10
84.0%	18:08	37:37
83.0%	18:21	38:02
82.0%	18:35	38:31
81.0%	18:48	39:00
80.0%	19:02	39:27

Tracking individual single sport performance progress relative to World Leading swim and run performance in controlled situations. The objective for ***secondary KPI*** is monitoring a trajectory for World Leading target speeds within the current Quadrennial and the next.

While an individual performance curve plateaus over time, it is safe to assume a sustainable rate of performance improvement of up to 1.0% (see Tables 5). Appendix 1 provides additional guidelines for youth and junior performance standards.

Table 5. ***Secondary KPI*** tracking relative to World Leading Gold Medal Profile triathletes shown over a three quadrennial period, based on a 1% improvement per year.

YEAR	SENIOR	U23	JUNIOR
QUADRENNIAL 1			
YEAR 1	97%	93%	89%
YEAR 2	98%	94%	90%
YEAR 3	99%	95%	91%
YEAR 4	**100%**	96%	92%
QUADRENNIAL 2			
YEAR 1	**100%**	97%	93%
YEAR 2	**100%**	98%	94%
YEAR 3	**100%**	99%	95%
YEAR 4	**100%**	**100%**	96%
QUADRENNIAL 3			
YEAR 1	**100%**	**100%**	97%
YEAR 2	**100%**	**100%**	98%
YEAR 3	**100%**	**100%**	99%
YEAR 4	**100%**	**100%**	**100%**

Secondary KPI improvement should prepare an athlete for progression in Primary KPI benchmarks. However, without a World Leading Daily Performance Environment, as assessed through the associated ***tertiary KPI***, an athlete's ability to "***Consistently perform on demand in competition the mastery of skills at target speed under fatigue***" will always be in question. As the rate of improvement increases, DPE management becomes more important so as to minimize risks of injury, overtraining and other complications.

TERTIARY KPI | DAILY PERFORMANCE ENVIRONMENT

Athletes who have not invested in an ideal Daily Performance Environment have a much lower probability of achieving podium performances at top level Primary KPI events.

Using the ***Primary and Secondary KPI*** to define an associated skills matrix, this becomes the foundation for an individual gap analysis relative to the Gold Medal Profile. In LTAD terminology, this is the "Competing to Win" stage and drive the LTAD from a top down approach.

The main areas defining the Tertiary KPI are;

- Physiology
- Biomechanics
- Strategy
- Psychology

DPE Skills Progression

The DPE is described through a number of skills matrices. Each skill has a progression, from learning the basics to culminating in a podium ready Olympian.

The trajectory sought in each Olympian for each skill is best described using the Goldsmith model;

1. **Acquire skill**
2. **Mastery** of skill
3. Mastery of skills **at target speed**
4. Mastery of skills at target speed **under fatigue**
5. **Perform in competition** the mastery of skills at target speed under fatigue
6. **Consistently perform** in competition the mastery of skills at target speed under fatigue
7. Consistently perform **on demand** in competition the mastery of skills at target speed under fatigue

For each potential Olympian, coaches and IST must manage the DPE to ensure progress towards the GMP in 2º and 1º KPI.

BENCHMARKING

Primary KPI

Improvement in triathlon performance should come as a function of successfully addressing the gaps identified at in the tertiary KPI, which will improve single sport performance and the ability to;

> ***Consistently perform on demand in competition the mastery of skills at target speed under fatigue***

Primary KPI are outcome goals only when an athlete is at the peak of their career. To overly identify these as outcome goals too early in an athlete's career can compromise their long term development.

Secondary KPI

Improvement in the 2º KPI are expected until age 24. Annual improvements should fall between a 1% minimum, and a maximum that will put the athlete on the GMP by age 24.

> i.e. A 16 year old junior boy running 8:57 for 3000 m. This is 87.9% of the absolute GMP for males and 95.9% of the age graded GMP (8:33).
>
> A 1% improvement is 0:05 (a 8:52 3000 m) within the next year. However, this is slower than the GMP trajectory. To get onto the GMP by age 24 he needs improve by 1.5% for the next eight years to get on track, thereby setting an upper target of 8:49

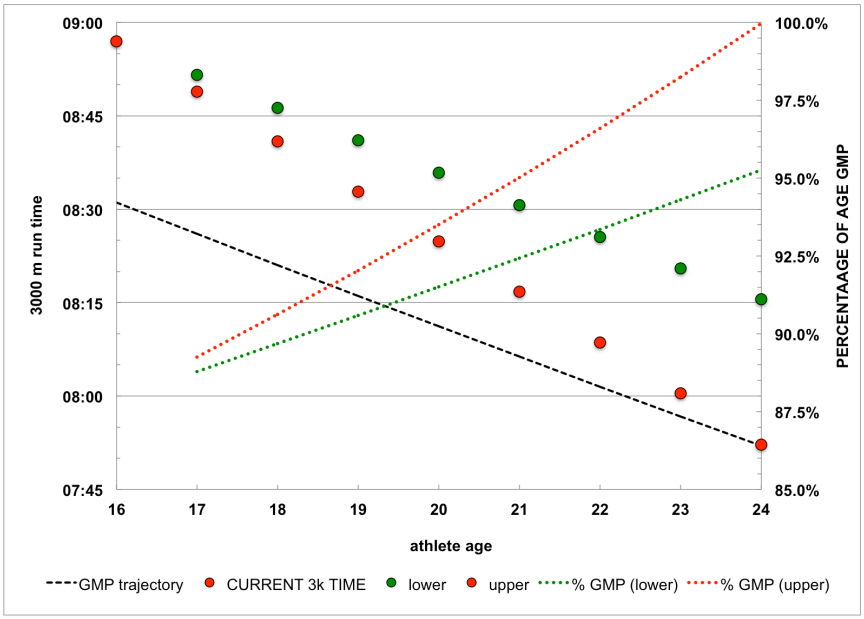

Figure 1. Gold Medal Profile trajectory example for a 16 year old male using 3000 m run performance

It is important to note that secondary KPI benchmarks are not outcome goals; they are process goals needed to achieve primary KPI- triathlon results. Furthermore, secondary KPI are achieved as a function of successful completion of underlying DPE tasks (tertiary KPI).

Tertiary KPI

The Gold Medal Profile is a tool to guide long term athlete development towards achieving the Daily Performance Environment (DPE) required for High Performance. Addressing the DPE will provide the infrastructure needed to close gaps at 2º KPI and then 1º KPI levels.

The HP LTAD skills matrices define DPE needs as a function of the athlete's triathlon experience. In turn, these are reflected in the **Individual Performance Plan** template used to design the YTP as well as the coaching competencies needed to develop an athlete at this level.

DPE PRIORITIZATION

There are seven steps to guide the prioritization of the DPE gaps relative to the 2º KPI.

2. IF the athlete has not invested in an ideal DPE (head triathlon coach, networked coaches as needed to achieve steps 2-7 below, ideal climate, AND emphasis on learning the physiological, technical, strategy and mental skills needed to advance), THEN the athlete must make this investment.
3. IF the athlete is not running at the AGE GRADED Gold Medal Profile speeds, THEN they have to get that speed by the time they are 16-19.
4. IF the athlete is not swimming at the AGE GRADED Gold Medal Profile speeds, THEN they have to get that speed by the time they are 13-19.
5. IF the athlete is not learning bike technique, skills and tactics, THEN they need to be learning those by the time they are 14-16.

6. IF the athlete is not running at the Gold Medal Profile speeds, THEN they have to get that speed by the time they are 24-28.
7. IF the athlete is not swimming at the Gold Medal Profile speeds, THEN they have to get that speed by the time they are 18-19.
    - While improvements may continue to age 24, Primary KPI performance will suffer more as function of the impact of slower swim KPI on race strategy.
8. IF the athlete is not cycling at target power outputs, THEN they need to get that power range by the time they are 24-28.

From these guidelines, tertiary KPI gaps can be identified in the DPE using the Triathlon Canada HP LTAD and GMP skills matrices contained in the athlete Performance Passport template.

APPENDIX 1 | SECONDARY KPI FOR YOUTH AND JUNIOR

Tracking individual sport performance at shorter distances than used in the adult Gold Medal Profile Secondary KPI is of value for youth and junior athletes, especially in Talent ID and Talent Transfer scenarios.

Table 6. World Leading 400 m swim performance standards for youth and junior athletes (in 50m pool swim under FINA competition rules).

MEN			
	400	800	1500
100.0%	04:26	08:57	16:45
99.0%	04:28	09:02	16:54
98.0%	04:31	09:08	17:04
97.0%	04:34	09:14	17:15
96.0%	04:37	09:19	17:24
95.0%	04:40	09:25	17:34
94.0%	04:43	09:31	17:45
93.0%	04:46	09:37	17:55
92.0%	04:49	09:44	18:07
91.0%	04:52	09:50	18:18
90.0%	04:55	09:57	18:30
89.0%	04:59	10:03	18:40
88.0%	05:02	10:10	18:53
87.0%	05:06	10:17	19:04
86.0%	05:09	10:24	19:17
85.0%	05:13	10:32	19:32
84.0%	05:17	10:39	19:43
83.0%	05:20	10:47	19:57
82.0%	05:24	10:55	20:11
81.0%	05:28	11:03	20:25
80.0%	05:33	11:11	20:39

WOMEN			
	400	800	1500
100.0%	04:37	09:20	17:45
99.0%	04:40	09:26	17:57
98.0%	04:43	09:31	18:07
97.0%	04:46	09:37	18:18
96.0%	04:49	09:43	18:29
95.0%	04:52	09:49	18:40
94.0%	04:55	09:56	18:53
93.0%	04:58	10:02	19:04
92.0%	05:01	10:09	19:17
91.0%	05:05	10:15	19:28
90.0%	05:08	10:22	19:41
89.0%	05:12	10:29	19:54
88.0%	05:15	10:36	20:07
87.0%	05:19	10:44	20:22
86.0%	05:23	10:51	20:35
85.0%	05:26	10:59	20:50
84.0%	05:30	11:07	21:05
83.0%	05:34	11:15	21:20
82.0%	05:38	11:23	21:35
81.0%	05:43	11:31	21:49
80.0%	05:47	11:40	21:12

Table 7. World Leading 1500 and 3000 m track running performance standards for youth and junior athletes (track results under IAAF rules).

MEN				
	1.5 km	3 km	5 km	10 km
100.0%	03:41	07:52	13:41	28:32
99.0%	03:43	07:56	13:49	28:44
98.0%	03:45	08:01	13:57	29:01
97.0%	03:47	08:05	14:06	29:17
96.0%	03:49	08:11	14:15	29:35
95.0%	03:52	08:16	14:24	29:54
94.0%	03:54	08:21	14:33	30:13
93.0%	03:57	08:27	14:43	30:34
92.0%	03:59	08:33	14:52	30:52
91.0%	04:02	08:38	15:02	31:13
90.0%	04:05	08:44	15:12	31:34
89.0%	04:08	08:50	15:22	31:53
88.0%	04:10	08:56	15:33	32:15
87.0%	04:13	09:03	15:44	32:37
86.0%	04:17	09:09	15:55	33:00
85.0%	04:20	09:16	16:06	33:24
84.0%	04:23	09:22	16:17	33:46
83.0%	04:26	09:30	16:29	34:11
82.0%	04:29	09:37	16:41	34:36
81.0%	04:33	09:45	16:54	35:03
80.0%	04:36	09:52	17:06	35:27

WOMEN				
	1.5 km	3 km	5 km	10 km
100.0%	04:06	08:46	15:14	31:40
99.0%	04:08	08:51	15:23	31:55
98.0%	04:10	08:56	15:33	32:15
97.0%	04:13	09:02	15:42	32:35
96.0%	04:16	09:08	15:52	32:55
95.0%	04:19	09:14	16:02	33:16
94.0%	04:21	09:19	16:12	33:35
93.0%	04:24	09:26	16:23	34:00
92.0%	04:27	09:32	16:33	34:19
91.0%	04:30	09:39	16:44	34:42
90.0%	04:33	09:45	16:56	35:06
89.0%	04:37	09:52	17:07	35:30
88.0%	04:40	10:00	17:19	35:55
87.0%	04:43	10:07	17:31	36:20
86.0%	04:46	10:13	17:43	36:43
85.0%	04:50	10:21	17:55	37:10
84.0%	04:54	10:29	18:08	37:37
83.0%	04:57	10:36	18:21	38:02
82.0%	05:01	10:44	18:35	38:31
81.0%	05:05	10:53	18:48	39:00
80.0%	05:09	11:01	19:02	39:27