



Kids of Steel® and Youth Development Principles and Rules

Revised Mar 10, 2008: All rule changes are recommended for implementation for 2008 but must be implemented by 2009.



Kids of Steel® (KOS) and the Triathlon Youth Development programs encompass clubs, clinics, and races across Canada. Events that qualify for KOS and Triathlon Youth Development status are recognized as safe, developmentally appropriate, and enjoyable activities that stress the importance of lifelong sport, finishing as winning, and healthy activity goals.

Kids of Steel® represents the developmental stream that promotes fun, participation, and skill development in children and youth who complete triathlons as part of an active lifestyle.



The Youth Development Program introduces a competitive option that some athletes may choose to follow in their adolescent years if they wish to pursue higher levels of performance in Triathlon.

Both streams stress the philosophy of triathlon including:

- respect for participants of all abilities and experience levels,
- challenging oneself to new levels of skill and fitness, and
- a healthy passion for sport and physical activity throughout life.

For more information on the developmental streams in Triathlon, see Triathlon Canada's Long Term Athlete Development (LTAD) Model and booklet, available from www.triathloncanada.com.

Following is a list of key principles related to development and a list of the competition rules for KOS and Youth Development events.

Guiding Principles

Safety comes first.



Safety refers to a number of variables:

- Equipment that minimizes risk to athletes during training and racing.
- Race distances - and subsequent training distances - that will minimize overload on the growing athlete.
- Holistic safety including a focus on finishing as winning and enjoyment of sport to ensure healthy emotional and social experiences.

Inclusion involves creating an equitable environment for all athletes.



Triathlon is a sport for all. The rules minimize barriers to participation so that athletes of all abilities, socioeconomic backgrounds, and experience levels can participate.

At the same time, opportunities are maximized for athletes with both recreational and competitive goals.



Developmentally appropriate practices translate to higher levels of future participation, success, and overall health.



Every child develops at a different rate through a process called maturation. Maturation includes the growth and development of:

- skeletal, sexual, neural, and morphological (height, weight) components
- psychological, emotional, and cognitive abilities
- physiological systems, e.g. the cardiovascular system

Biological age, or age of the “growing body”, may differ from chronological age by one to three years. Guidelines that are “developmentally appropriate” take maturational patterns into account. The KOS rules and LTAD guidelines emphasize a progression that optimizes athletes’ future participation in all sports – not just triathlon.

The Path to Lifelong Participation and Expertise in Sport

A strong foundation of research supports the principles and rules endorsed by Triathlon Canada. Below is a brief synopsis of several important findings, followed by implications to coaches, parents, volunteers, and event organizers who work with KOS and Youth athletes. Reference: Starkes & Ericsson, 2003

1. Children who participated in MORE sports in the sampling years (before the growth spurt) required *less* hours to reach National Team standards than children who specialized in one sport early.
2. Most children who specialized early (i.e. before growth spurt) in one sport either reached an early ceiling and stopped improving before they reached their potential, or more commonly burned out and quit the sport early.
3. Children exposed to an environment of exploration and intrinsic desire for the activity (i.e. not driven by a parent or coach) experienced much higher levels of performance in their sporting career than children who were extrinsically motivated (i.e. by a parent or coach).
4. Children who focused on exploring skills, self-motivation, and inherently enjoyable activities also reached much higher levels and stayed in sport longer than athletes who trained at a young age in a performance-based environment.
5. Athletes of parents who supported but did not push their athletes stayed in sport far longer and achieved much higher results than athletes who were pushed by a parent or coach at early ages.
6. Skill development has a window of optimal development in the years leading to the growth spurt (Peak Height Velocity). Athletes who focused on training instead of skill development during these years experienced a ceiling effect post-puberty which reduced the number of sport options and level of performance possible.

“A playful environment during the early years of a child’s involvement in sport may explain the early learning and exceptional motivation of expert athletes.... Early specialization and highly structured training in which control is passed to an outside agent (parent or coach) reduce intrinsically motivated behaviour and can ultimately lead to more drop out and burn out among youths in sport.” (p. 103, Starkes & Ericsson, 2003)

Implications for Triathlon Leaders

1. Focus on skill development in young athletes. Minimize the amount of highly structured training.
2. Expose athletes to a wide variety of drills, skills, exploration, and movements. Perfect practice does not make perfect; it creates a very narrow bandwidth in which an athlete can perform. When children grow, their bodies change and so does their ability to perform skills. If they can only do a skill “one way” then the chances of them adjusting during growth periods are very low. But if they have a wide variety of movement abilities available then adaptation will be easier.
3. Encourage play within a structure so athletes can explore their abilities without undue stress. Let athletes make mistakes. The brain and body learn through connections, contrasts and comparisons. Make use of them.
4. Have fun. Humans of all ages work harder “at play” than during any other pursuit or activity.



Triathlon Canada KOS and Youth Development Rules

General Race Rules

1. All participants must wear approved helmets on the bicycle course.
2. Chinstraps must be fastened before removing the bike from the bike rack. Chinstraps must remain fastened until the bike has been returned to the bike rack.
3. Participants must rack their bikes in the transition area at the location designated by the event. E.g. Most races provide bike racks with spaces for different age or race groups.
4. Torsos must be covered during the bike and run.
5. Drafting on the bike course is not permitted, except in races that are specifically authorized and sanctioned as “draft legal” by the Provincial Governing Body. Only Kids of Steel® 14-15 or Junior Age 16-19 Sprint Distance races may be sanctioned as draft-legal. **Participants in a draft legal event must have completed a drafting training and safety course conducted or accredited by the Provincial/Territorial Governing Body.*
6. Participants and parents must follow the principles of fair play and good sportsmanship.
7. Parental assistance is not permitted on the racecourse or in the transition area once the race has begun, except with special permission from the race director for young and/or AWAD (athletes with a disability) participants.
8. The Officials may disqualify a participant who is in direct violation of the rules.
9. Athletes are not permitted to race up an age category, with the exception of 15 year-olds whose coaches successfully petition for inclusion in 16-19 Junior draft-legal events in Canada only. Refer to Triathlon Canada’s application and petition process for approval of such exceptions.
10. All participants must belong to a Provincial/Territorial Governing Body, or must purchase a One Day Membership at a cost as levied by the Provincial/Territorial Governing Body.
11. All participants will adhere to the equipment regulations specific to their age category.
12. Provincial Governing Body sanctioned races will be governed by the maximum distances established in this document with exceptions as indicated in the following table.

Age Divisions

Athlete age is determined as of December 31st of the current year of competition in accordance with International Triathlon Union (ITU) guidelines. For example, an athlete who is 11 years old on the day of competition, but turns 12 on or before December 31st of the current year, will race in the 12-13 division. Refer to Table 1 for age categories.

Racing Up

Athletes must race in their defined age divisions, and may not race in an older age group, with the following exception:

- 15 year-old athletes who meet strict performance criteria may be permitted to compete in Junior (age 16-19) draft-legal events, for the purposes of continued athlete development. Triathlon Canada has developed a protocol for these situations. Athletes and coaches are referred to their Provincial Governing Body (PGB) and the Triathlon Canada website at triathloncanada.com for further information.



Racing Down

Athletes may be permitted to race in a younger age division with permission from the Race Director in the event they are not comfortable completing the distance for their age group. Athletes racing in younger age divisions may not qualify for awards or prizes in the younger age group.

Maximum Distances

In the interests of appropriate athlete development, Triathlon Canada has developed maximum race distances (swim/bike/run) for each age group. The proportional distances in each sport reflect a focus on skill development at younger ages. Swimming, as an early maturation sport, requires the most focus prior to puberty followed by running technique and bike handling abilities in cycling. Physiological training for longer distances in each sport is not a priority until after puberty. Race distances may be shorter, but not longer than the prescribed distances. **Note that the Technical Director of the PGB sanctioning the race has the discretion to approve distances that are nominally longer (maximum 10%) than those stated below when the need is due to safety issues in course design. Variances of more than 10% will be referred to the National Coaching & LTAD or Youth Development Committee for input and agreement. Refer to Table 1 for maximum distances by age group.*

Race Equipment

A. Aero Bars

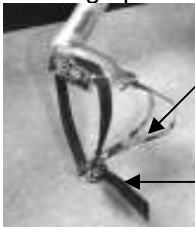
- Aero bars are permitted for the 14-15, 16-19 and 18-19 age groups only.



- Aero bars used in the 14-15 and 16-19 (Junior) age groups must be draft-legal and comply with Triathlon Canada and ITU rules (Section E.3.2). Specifically:
 - Clip-on aero bars will be permitted provided they do not extend more than 15cm beyond the front wheel axle, and they are not longer than the brake levers foremost line.
 - Aero bars must be bridged with solid material.
 - Elbow pads are permitted.
- Aero bars used in the 18-19 age group may extend beyond the brake levers foremost line in **non-drafting races only**.

B. Pedals

- Platform pedals (i.e. no cleats, no cages) are permitted at any age.
- Cage pedals (aka 'toe clips') are not permitted at any age.



- Clipless pedals are permitted at any age, with the following conditions:
 - For ages 13 and under, the cleat must be recessed into the cycling shoe, such that the sole of the shoe, but not the cleat, makes full contact with the ground (See Appendix 2).
 - For ages 13 and under, the athlete must be able to clip into both sides of the pedal (See Appendix 2).
- For ages 14 and up, all clipless pedal systems are permitted.

C. Wheels

Age 13 and under:

Standard wheels must be used by all athletes who are 13 or younger. Standard wheels will meet the following criteria:

- A minimum of 16 spokes.
- Spokes may not exceed a depth of 2.4mm.
- Spokes can be round, oval, or flat.
- Rims must be metal.
- Rim depth may not exceed 25mm.

- Tires may be no thinner than 23C.

**Note: Standard wheel guidelines may be waived for children's bikes (i.e. spoke count, spoke material) at the discretion of the referee.*

Age 14-15 and 16-19:

Race wheels are permitted for the 14-15 and 16-19 age groups, according to the following criteria:

- Wheels must be included in the International Cycling Union (UCI) "Non-Standard Wheels" List. These wheels have undergone 'break testing' and have been deemed safe for pack riding. Refer to Appendix 1 for reference link to complete UCI list.
- Maximum rim depth is 60mm. Please Note: Zipp 808 wheels (rim depth = 81mm) are included on the UCI's Non-Standard Wheel list, but due to concerns over bike handling under windy conditions, all wheels with a rim depth in excess of 60mm are not permitted for 14-15 and 16-19 (Junior Draft Legal) events.

Age 18-19 (non-drafting):

All race wheels which comply with ITU rules for non-drafting events are permitted for the 18-19 age group:

- All race wheel types are permitted for the rear wheel.
- The front wheel may not be a disk wheel, or have a cover.

D. Gear Ratios

Gear ratios for the age groups indicated (Table 1) are recommended as being the best for training young children to:

- spin in low gear ratios and
- reduce the potential for injury.

These are recommendations only, and athletes will not be barred from competition for using non-recommended gear ratios, although it is strongly encouraged that they do use these gear ratios.

Table 1. Summary of Race Distances and Equipment by Age Category

Age Divisions	Maximum Race Distance (Swim / Bike / Run)	Race Equipment	Gearing (recommended)
7&Under*	Up to 50m - 1.5km - 500m	<ul style="list-style-type: none"> • No aero bars permitted • Clipless pedals permitted (recessed cleat, entry on both sides of pedal) • Wheels: minimum 16 spokes, 2.4mm maximum spoke depth, metal rim, 25mm maximum rim depth, 23C minimum tire width 	45 x 16
8-9yrs	Up to 100m - 5km - 1km		
10-11yrs	Up to 200m - 5km - 2km		
12-13yrs	Up to 300m - 10km - 3km		
14-15yrs	Up to 500m - 10km - 4km	<ul style="list-style-type: none"> • Draft-legal aero bars permitted • All clipless pedal systems permitted • Wheels: most race wheels permitted as per UCI rules, 60mm maximum rim depth 	52 x 16
16-19yrs	Up to 750m - 20km - 5km		
18-19yrs	Up to 1.5km - 40km - 10km	<ul style="list-style-type: none"> • Non-drafting aero bars permitted • All clipless pedal systems permitted • Wheels: all race wheels permitted in accordance with ITU non-drafting wheel rules 	N/A

***NOTE:** Race distances for 5 years and younger should be substantially shorter than the 7&Under maximums.

APPENDIX 1: References

Competition Rules

International Cycling Union (UCI) Non-Standard Wheel list for Mass Start Races:

<http://www.uci.ch/modello.asp?1stlevelid=C&level1=1&level2=15&idnews=1628>

International Triathlon Union Competition Rules:

http://www.triathlon.org/docs/downloads_Competition_Rules_2006_10a.pdf?ts=1201364122

Long Term Athlete Development

Balyi, I., Cardinal, C., Higgs, C., Norris, S., & Way, R. (2005). **Long-term athlete development: Canadian sport for life.** Canadian Sport Centres.

Cote, J. (1999). The influence of the family in the development of talent in sport. **The Sport Psychologist, 13**, 395-417.

Malina, R., Bouchard, C., Bar-Or, O. (2004). **Growth, Maturation, and Physical Activity.** Champaign, IL: Human Kinetics Publishers.

Patrick, T., et al. (2007). **Triathlon Canada: Long Term Athlete Development.** Toronto, ON: Triathlon Canada.

Starkes, J. & Ericsson, E. (Eds.) (2003). **Expert Performance in Sports: Advances in Research on Sport Expertise.** Champaign, IL: Human Kinetics Publishers.

APPENDIX 2: Clipless Pedals systems for 13 and Under

Most manufacturers produce a clipless pedal system commonly associated with mountain biking or cyclocross. The main features of this system are: 1) a recessed cleat to facilitate walking/running; 2) a pedal that can be clipped in to from both sides. These systems are also widely used in road cycling, and they are the only clipless system permissible for 13 & under KOS competitors. Triathlon Canada does not endorse a particular manufacturer, and these pictures are included for demonstration purposes only.



Note that the cleat is recessed into the shoe such that the sole of the shoe is in contact with the ground, while the cleat is not.



An example of a cleat and pedal system. The cleat will clip into either side of the pedal.