

KARATE CANADA LTAD MODEL[®]

The Canadian Sport for Life, Long-term Athlete Development (LTAD) Model outlines the seven stages of a generic pathway to develop Physical Literacy for life-long participation in physical activity and podium performances. Now all National Sport Organizations in Canada are designing their own sport-specific LTAD models. This poster is an overview of the sport-specific Karate LTAD model.

These stages relating to competitive performance are outlined below:

	Active Start	FUNDamentals	Learn To Train	Train To Train	Train To Compete	Train To Perform	Train To Win	Active For Life
Chronological or Developmental Age	Chronological	Chronological	Chronological and Developmental	Developmental	Developmental and Chronological	Chronological	Chronological	Chronological
Male age	0-6	6-9	9-12	12-16	16-18+/-	18-24+/-	Kumite 24+/- Kata 27+/-	Enter at any age
Female age	0-6	6-8	8-11	11-15	15-17+/-	17-22 +/-	Kumite 22+/- Kata 26+/-	Enter at any age

*Shaded areas indicate stages that incorporate both chronological and developmental age. **Chronological Age** refers to: "the number of years and days elapsed since birth."

Developmental Age refers to: the degree of physical, mental, cognitive, and emotional maturity. Physical developmental age can be determined by skeletal maturity or bone age after which mental, cognitive, and emotional maturity is incorporated.

The LTAD model for Karate consists of 8 stages.

The first three stages of the Long Term Athlete Development Model encourage physical literacy including karate specific skills:

1. Active Start
2. FUNDamentals
3. Learn to Train

The next four stages focus on karate excellence, preparing for the podium:

4. Train to Train
5. Train to Compete
6. Train to Perform
7. Train to Win

The eighth stage encourages life-long karate involvement and can be entered at any age:

8. Active for Life

1 ACTIVE START - Hajime

Males and Females 0-6 years old

Chronological Age



The purpose of the Active Start stage of the karate LTAD is to learn fundamental movements and link them together into play. Physical activity is essential for healthy child development. Among its other benefits, physical activity:

- encourages development of brain function, coordination gross motor skills, social skills, leadership skills, emotional intelligence, and imagination
- builds confidence and positive self-esteem
- builds strong bones and muscles, improves flexibility, develops good posture and balance, improves fitness, reduces stress, and improves sleep patterns
- promotes healthy weight.
- helps children learn to move skillfully and enjoy being active.

Physical activity should be fun and an integral part of every child's daily life. When children engage in play, they learn to associate fun and enjoyment with being physically active. This allows them to easily and willingly develop a repertoire of physical skills and a healthy level of fitness.

It also instills a positive attitude towards sports participation and physical activity that will benefit them throughout their lives.

2 FUNDAMENTALS - Building Blocks

Males 6-9 years old Females 6-8 years old

Chronological Age



The aim of the FUNDamental stage is to develop general movement skills using a fun, yet structured approach. Physical skills are introduced through multi-sport participation using methods that keep children interested in sport and physical activity.

The general movement skills that should be emphasized during this stage are referred to as the fundamentals of physical literacy. These include: the ABCs of athleticism (Agility, Balance, Coordination and Speed, RIT (Running, Jumping, Throwing), and CPKs (Catching, Passing, Kicking, Striking with an implement). Correct demonstration (modeling) of these skills by coaches, and accurate detection and correction of errors are essential, since children learn through imitation.

Children should be encouraged to participate in a variety of games and activities that provide an opportunity to practice these skills. The environment should be fun and playful to maintain their interest.

This stage focuses on developing the fundamentals of physical literacy because mastering the general movement skills will improve the ease with which children successfully learn the more complex, sport specific skills taught in the later stages of the model. Ideally, the general movement skills should be mastered by the end of the FUNDamental stage.

The first window of optimal trainability for speed occurs in this stage. When we refer to a window of optimal trainability, we are talking about a specific time during an athlete's physiological development which favours the acquisition and retention of a particular skill in motor memory.

With regard to the window of optimal trainability for speed, coaches should take advantage of this window by introducing games and activities which encourage improvements in quickness and agility.

Strength can be developed using body weight, stability balls, medicine balls and elastic tubing.

The basic ethics of Karate, style specific kihon, the basic competitive karate rules, and simple tactical decision-making can also be introduced during this stage.

An appropriate weekly training schedule for children in the FUNDamental stage would include 9 to 11 hours of physical activity. This should include 3 to 4 hours of Karate and 6 to 7 hours of general physical activity. Each training session should last 30 to 60 minutes, and focus on developing fundamental movement skills.

No formal periodization is recommended at this stage, and activities should revolve around the school year with multi-sport camps occurring during school holidays. Regular participation in formal competitions is discouraged.

Talent identification for this stage should be based on a wide range of athletic skills rather than solely on Karate ability or competition success.

Recommended Weekly Hours of Training 9-11 Hours Total *

- General Karate Training 3-4 Hours
- Other Physical Activity 6-7 Hours

*refer to Karate LTAD model

3 LEARN TO TRAIN - Karate Literacy

Males 9-12 Females 8-11

Chronological and Developmental Age



The Learning to Train stage continues to focus on developing fundamental movement and basic Karate skills. During this stage children should be involved in two other sports besides Karate so that the general movement skills acquired in the FUNDamental stage are reinforced.

The development of motor coordination is a priority now, because of the window of optimal trainability for motor coordination that occurs during this stage. This window presents itself between ages eight and eleven for girls and between the ages of nine and twelve for boys. Taking advantage of this opportunity to develop motor coordination is of critical importance vis-à-vis long term athletic development.

If this opportunity is neglected or minimized, it will have negative consequences on athletic performance later on, as it is difficult to develop motor coordination in the later stages of an athlete's training.

It is also important to recognize that this stage emphasizes training and mastery of the fundamental general and karate skills, rather than competition. One of the main reasons that athletes plateau during the later stages of their career is because too much emphasis was placed on competing and winning before the fundamental skills were developed and mastered.

Differences in gender become more apparent towards the end of the stage, as females gradually outpace males of the same age in abilities including strength, flexibility and fine motor control.

Strength development is continued through the use of stability balls, body weight movements, medicine balls and the addition of light plyometrics (hopping/bounding) and jumping. Endurance and flexibility training can be introduced to complement the speed and agility training from the FUNDamental stage. Fun Karate style games continue to be recommended as a method of strength training and conditioning.

Protocols relating to the ancillary capacities of warm-up, cool-down, stretching, nutrition and mental training should be introduced, along with simple competitive tactics.

Multi-sport activities are still encouraged. These should be a part of the total training load of 10-13 hours of activity per week. This load should also include 5 to 7 hours of Karate specific activities, broken into 30 to 90 minute sessions, and be supported by 2 hours of physical education at school each week.

Athletes should follow single or double periodization within a well-structured program but taper to peak for only one competition per year.

Talent identification becomes more and more Karate skill-specific as this stage progresses.

Recommended Weekly Hours of Training 10-14 Hours Total *

- Karate Training 7-10 Hours
- Other Physical Activity 2-4 Hours
- School PE 2 Hours

*refer to Karate LTAD model

Percent Distribution of Karate Training Load and Competition Training Load

- Karate Training 95%
- Competition-Training 4%
- Competition 1%

4 TRAIN TO TRAIN - Developing Karate Skills and Fitness

Males 12-16 Females 11-15

Developmental Age Based on PHV



The primary purpose of the Training to Train stage is to "build the engine." The focus is on refining and individualizing training and techniques, rather than on competition per se. The development and refinement of physical fitness and karate specific skills and tactics are also of primary importance.

It is very important that coaches recognize and take full advantage of several windows of optimal trainability that occur in this stage. The first of these is the window for endurance (stamina), which occurs shortly after the onset of Peak Height Velocity (PHV), commonly known as the adolescent growth spurt. Windows of optimal trainability for speed and strength occur during the latter part of the Training to Train stage.

Flexibility should be emphasized through PHV, as increased suppleness helps to limit the potential for injury associated with sudden growth in bones, ligaments and tendons that occur during this time.

Sport Karate-specific skills such as an increased range of techniques, deception and the reduction of extraneous movement while attacking should be emphasized in this stage. This stage also introduces the concept of personalized technical and fitness programs.

Tactical preparation continues to be developed now, and the concepts of reading opponents, playing to personal strengths and exposing opponent's weakness are introduced. Sport Karate preparation should start to outweigh traditional Karate training.

The concepts of tapering and peaking, time management, training evaluation and training journals, and regeneration are introduced in this stage. Pre-competition, competition, and post competition routines should also be established.

Karate athletes desiring elite success should be training 12 to 16 hours weekly by the end of this stage. The total weekly training load should consist of 5 to 7 hours training general Karate skills and 2 to 3 hours training specific competitive skills. Each training session should be 2 hours long. Participation in one other sport and school PE for a total of 5 to 7 hours/week make up the remainder of the weekly training load.

Double periodization can be implemented now, allowing for a taper and peak at 2 major competitions. Karate athletes can participate in four to eight competitions per year during the Training to Train stage, but the emphasis is still on the mastery and refinement of skills, not on winning competitions.

Talent would now be identified through provincial and national results.

Recommended Weekly Hours of Training 11-16 Hours Total *

- Karate Training 7-10 Hours
- Other Physical Activity 2-4 Hours
- School PE 2 Hours

*refer to Karate LTAD model

Percent Distribution of Karate Training Load and Competition Training Load

- Karate Training 70%
- Competition Training 28%
- Competition 2%

5 TRAIN TO COMPETE - Developing Performance

Males 16-18+/- Females 15-17+/-

Developmental and Chronological Age



The purpose of the Training to Compete stage is to optimize fitness preparation, to further develop Karate skills, and to learn to compete under a wide variety of circumstances. Training for fitness, technique, tactics, mental fitness and decision training should all be individualized. This individualization includes specialization in either Kata or Kumite. A total focus on the chosen Karate event is recommended by the end of this stage.

Further improvements in the areas of technique development, speed and economy of movement should be encouraged. Strength, speed and power development is continued through the use of resistance training, plyometrics and technical sessions that incorporate linear, lateral and chaotic movements.

All techniques and tactics should be highly individualized. Self analysis, planning and opponent analysis should be introduced. The Training to Compete stage is also characterized by a gradual increase in the volume and intensity of training. Training content should be identified through diagnostics (testing) to identify individual specific training loads, volumes and intensities for optimizing (enhancing) preparation and performance.

A weekly training load of 15 to 23 hours is appropriate at this stage, comprised of 6 to 10 hours of event-specific Karate practice, 5 to 6 hours of specific competition training and simulation, and 4 to 7 hours of event specific fitness.

Non-elite karate practitioners can spend 45% of this total weekly training time on general training, 20% on competition-specific issues and 35% on physical preparation.

Double periodization can be applied at this stage with refinement in the concepts and practice of tapering to peak. Eight to twelve competitions annually is appropriate.

Talent can be identified by tournament observation, fitness test standards and national ranking. Anthropometric screening and fitness test results should be used to develop training guidelines.

Recommended Weekly Hours of Training 15-23 Hours Total *

- Competition Specific Karate Training 6-10 Hours
- Karate Specific Fitness 5-6 Hours
- Style Specific Training 4-7 Hours

*refer to Karate LTAD model

Percent Distribution of Karate Training Load and Competition Training Load

- Training 40%
- Competition or Training 55%
- Competition 5%

6 TRAIN TO PERFORM - Optimizing performance

Males 18-24+/- Females 17-22+/-

Chronological Age



The Training to Perform stage aims to optimize Karate-specific preparations and to enable Karate practitioners to make the transition from junior to adult divisions while gaining experience in international senior events. All components of preparation including physical, technical, tactical, mental and ancillary capacities should be mastered prior to entering this stage. The 10's (Stamina, Strength, Speed, Skill, Suppleness, (p)sychology, Structure/Status, Sustainability, Schooling, and Socio-cultural) continue to be emphasized, along with individualization and specialization to enhance performance.

Karate athletes should continue to develop technical and tactical proficiency. Consistency at high speed is refined and physical capacities should also continue to be developed and improved. Content of training should be identified through diagnostics (testing) to identify individual specific training loads, volumes and intensities for optimizing (enhancing) preparation and performance.

Weekly training for elite athletes should total 17 to 23 hours per week, and consist of 12 to 16 hours of sport Karate training, and 5 to 7 hours of Karate-specific fitness. Athletes should also be gaining experience in all areas of international competition in preparation for the Train to Win-Peak Performance stage.

Non-elite Karate athletes can divide their total weekly training time so that 70% of training is technical/tactical and 30% fitness related.

Double periodization will be applied with tapers and peaks for major competitions and frequent prophylactic breaks.

Recommended Weekly Hours of Training 17-23 Hours Total *

- Competition Specific Karate Training 12-16 Hours
- Karate Specific Fitness 5-7 Hours

*refer to Karate LTAD model

Percent Distribution of Karate Training Load and Competition Training Load

- Training 30%
- Competition Training 65%
- Competition 5%

7 TRAIN TO WIN - Maximizing Performance

Males 24+/- Kumite 27+/- Kata Females 22+/- Kumite 26+/- Kata

Chronological Age



The goal of the Training to Win stage is for the athlete to maximize performance by fine-tuning fitness, technique, tactics, decision-making, mental abilities and all ancillary capacities. This will help to ensure the highest level of competitive proficiency. Additionally, anticipation skills should be refined and the athlete's lifestyle should be directly linked to effective performance.

This stage is identical to the preceding stage except that the athlete now has the benefit of competing in pressure situations at the highest level and is better prepared to win. The content of training should continue to be identified through diagnostics (testing) to identify individual specific training loads, volumes and intensities for optimizing (enhancing) individual preparation and performance.

Elite athletes' weekly training schedule should include 14 to 16 hours, focusing on competition-specific components, along with 5 to 7 hours spent on competitive fitness for a total of 19 to 23 hours per week. Non-elite athletes should be training 70% of the time on karate specific items and 30% on fitness.

Major and minor peaks will be based on the timing of major international competitions to ensure adequate prophylactics breaks are scheduled.

Ancillary Capacities

Ancillary Capacities refer to the knowledge and experience base of an athlete and includes warm-up and cool down procedures, stretching, nutrition, hydration, rest, recovery, restoration, regeneration, mental preparation and taper and peak.

The more knowledgeable athletes are about these training and performance factors, the more they can enhance their training and performance levels. When athletes reach their genetic potential and physiologically cannot improve anymore, performance can be improved by using ancillary capacities to full advantage.

Recommended Weekly Hours of Training 19-23 Hours Total *

- Competition Specific Karate Training 14-16 Hours
- Karate Specific Fitness 5-7 Hours

*refer to Karate LTAD model

Percent Distribution of Karate Training Load and Competition Training Load

- Training 25%
- Competition Training 70%
- Competition 5%

8 ACTIVE FOR LIFE - Retire, Retain and Retrain

Enter at Any Age

Chronological Age



This stage can be entered at any age or level. Karate practitioners of all levels should be encouraged to participate in areas of officiating, administration, coaching, instructing, volunteering etc. The success of any sporting association depends on having these positions filled by qualified and enthusiastic individuals.


