



Canadian Fencing Federation

Long Term Athlete Development





Canadian Fencing Federation

Enriching fencing through excellence at all levels

Standing among fencing's respected nations

Preparing tomorrow's champions

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Introduction

Long Term Athlete Development, or LTAD, was first described in the document “Canadian Sport for Life”. LTAD describes a framework for the optimal development of sport participants of all ages, interests and abilities, and in all sports. In the Canadian sport system, LTAD is important for the ongoing development of:

- Enhanced Participation
- Enhanced Excellence
- Enhanced Capacity
- Enhanced Interaction

The basic principles of LTAD are embedded in the physical, mental, cognitive and emotional development of participants. The fencing-specific LTAD framework aligns these principles with the sport's development pathway. LTAD is divided into several stages, each of which addresses a specific phase of development, and which is related to an individual's level of maturation, from childhood, through adolescence and into adulthood. Participants who begin to learn a sport as adults will still progress through all the stages of LTAD, but the rate of progress will not be the same as for a child or adolescent beginner. However, LTAD is a starting point for ALL participants no matter what age.

LTAD promotes a healthy, physically literate nation whose citizens participate in lifelong sport and physical activity. An individual who is physically literate has a solid foundation of basic movement and motor skills, which has been developed through early exposure to a variety of physical activities and free play. LTAD supports the development of physical literacy in all children, from early childhood to late adolescence, by promoting quality daily physical activity in the schools and a common approach to developing physical abilities through community, recreational, competitive and elite sport programs.

Physical literacy also makes it easier for people to transfer from one sport to another and to continue sport participation throughout the lifespan. People who have been active in various sports as children can transfer these skills during adolescence and adulthood to facilitate learning of new sport skills, such as fencing.

This document adapts the principles of LTAD to describe an ideal environment for the development of fencers in Canada. It brings together the knowledge and experience of fencing experts and sport scientists, and outlines a development pathway for optimal personal achievement for all fencers regardless of age or level. While the pathway is common for all participants, the rate and extent of development will depend on the goals of individual participants.

The principles of LTAD are equally applicable to participants with a disability. While people with an intellectual disability generally do not participate in fencing programs, wheelchair fencing is developing in Canada, and clubs are gradually acquiring the specialized equipment necessary to support programs for participants with a physical disability. The rate at which a participant with a disability progresses through the stages of LTAD, and the age at which he or she enters each stage, will vary according to the individual and the nature of the disability.

The principles of LTAD support all aspects of sport development. By working within the LTAD framework, we can ensure that program design and organization, coach education and officials training programs are appropriate for the specific needs of fencers across the recreational-competitive-elite continuum. This in turn supports the development of long term plans and budgets for all fencing programs. Finally, LTAD suggests ways that we can improve our current system to create an approach to fencing that provides all participants with the opportunity to achieve their maximum potential.

LTAD is a rapidly advancing field, with ongoing scientific research increasing the level of information and application of LTAD principles. As a result, Fencing's LTAD framework is a living document that will continue to be updated to reflect advances in knowledge.



This LTAD framework will drive changes in several key areas:

Fencers

- Implementing developmentally appropriate training, competition and recovery programs for all participants
- Improving domestic development programs that will lead to better athlete performance
- Increasing and retaining the number of participants of all ages and abilities

Coaches

- Professionalizing coaching and the perception of coaches throughout the sport
- Increasing the number and quality of coaches across Canada
- Implementing national programs for coach training, certification and professional development, which are based on LTAD principles

Officials

- Increasing the number and quality of officials across Canada
- Implementing programs and policies for officials training, certification and professional development, which are situated within the LTAD framework

Leadership

- Ensuring that our decisions and directions are informed by the LTAD framework
- Optimizing the collaboration, sharing and communication between all partners in Canadian fencing
- Ensuring that fencing is governed through an organizational structure that supports efficient and effective LTAD implementation
- Having Canada recognized as a world leader in fencing

Competition

- Ensuring that the competitive schedules and format promote development and are appropriate to the age and stage of development of the fencers for whom they are intended

Facilities

- Ensuring that all fencers can access facilities and equipment that promote development and are appropriate for their age and stage of development

Parents

- Ensuring that parents and participants are educated about the progression and development pathways of fencers and the principles of LTAD for fencing
- Ensuring that parents are educated about the principles of healthy child development

Factors Influencing Long Term Athlete Development

1. The FUNdamentals

Fundamental movement skills (running, jumping, throwing, catching etc.) develop the basic motor qualities of agility, balance and coordination. These qualities support performance in all sports and are known collectively as physical literacy.

In an ideal development model, children should develop physical literacy before the onset of the adolescent growth spurt. However, it is possible to develop physical literacy throughout the lifespan. Physical literacy is a vital part of the development process and is necessary for maximizing sport performance at any level.

There are three activities that are extremely important to the development of physical literacy:

- Athletics: run, jump and throw
- Gymnastics: agility, balance, coordination and speed, as well as the ability to land safely
- Swimming: development of spatial orientation, water safety, and as a foundation for all water based sports

Other cyclical activities such as cycling, skiing and skating, further develop balance while in movement.

These basic movement skills support participation in any sport and increase the opportunities for athletic success and lifelong enjoyment of physical activity.

2. Chronological Age vs Developmental Age vs Sport Development Age

Chronological age refers to the number of years and days elapsed since birth. *Developmental age* refers to the child's relative position on a continuum that begins at birth and culminates in full physical maturity. *Sport development age* refers to the number of years that the fencer has been participating in the sport and is independent of both chronological and developmental age.

LTAD is based on developmental age, rather than chronological age, and is also related to sport development age. While we all follow the same stages to maturity, the timing, rate and magnitude of maturity differs greatly between individuals. As a result, a group of children with the same chronological age may differ by several years in their developmental age and the maturity of physical, motor, cognitive

and emotional qualities. Early maturing adolescents may have as much as a 4-year physiological advantage over their late-maturing peers. Eventually, the late maturers will catch up when they experience their growth spurt.

All fencers begin at the same sport development age, no matter what the age of entry into the sport. Fencers will all progress through the LTAD stages in the same order, but the rate of progress and the amount of time spent at each stage will vary with the individual. Fencers who join the sport at an older age can eventually catch up to fencers who started the sport earlier in life.

3. A holistic approach

It is important to understand that physical, mental, motor and emotional traits all mature at different rates. The coach must consider the whole fencer and not focus only on the technical and physical aspects of training.

4. Specialization

Many of Canada's most successful athletes participated as children in a wide variety of sports and physical activities. The physical literacy and sport skills they developed through this participation have helped them reach the top levels of the sport.

Fencing is a late specialization sport. Although children can begin to learn basic fencing skills at a young age, competitive fencers generally do not reach their peak levels of performance until near adulthood, and can stay at these levels for many years. It is recommended that young fencers continue participation in a variety of sports and not specialize in fencing at too young an age.

5. Trainability

Trainability is the responsiveness, or adaptation, of individuals to a training stimulus at different stages of growth and maturation. All physiological and psychological systems are trainable at any age, but there are sensitive periods in development when certain systems in the body are especially responsive to specific training. A good training program will take advantage of these sensitive periods wherever possible.



LTAD identifies several factors as a cornerstone for training and performance:

Endurance

A sensitive period of trainability for endurance occurs at the onset of Peak Height Velocity (PHV) during the adolescent growth spurt. Aerobic capacity training is recommended before participants reach PHV and is determined by developmental age. Aerobic power should be introduced progressively after growth rate decelerates.

Flexibility

Flexibility is always trainable, but is more easily increased in younger fencers. Enjoyable activities for flexibility development should be included in programs beginning at the earliest ages. During the adolescent growth spurt, there may be a decrease in the level of flexibility. In these situations, special attention is needed to design programs that maintain flexibility and reduce the risk of injury. Flexibility is important not only for injury prevention, but also for skill performance.

Motor Abilities

Motor abilities can be developed at any age. Well developed motor abilities enhance skill learning and athletic performance. Games and other fun activities can be used to develop these qualities in all participants.

Skill

Skill is always trainable; however there is a period of particular trainability for skill training in boys between the ages of 9 and 12 years, and in girls between the ages of 8 and 11 years. This assumes that physical literacy has been developed prior to these ages, which will help to increase the trainability of new sport skills. During periods of rapid growth there may be a temporary deterioration in general and specific skill performance. It may be necessary to reduce training or competition until the rate of growth has slowed. Parents, coaches and fencers should be educated about the impact of growth on training and performance and should expect a reduction in the rate of skill learning during periods of rapid growth.

Speed

Speed is always trainable, regardless of the age of the participant.

Strength

Strength is always trainable. Prior to puberty, strength can be developed using body weight, lighter loads, medicine balls and Swiss balls. For girls, a sensitive period of trainability for strength is immediately after peak height velocity or at the onset of menarche, while for boys it is 12-18 months after PHV.

Factors Influencing Long Term Athlete Development

Other factors that contribute to overall athlete development include:

Growth

The rate and extent of growth is highly individual and difficult to predict. Regular monitoring of height and body length measurements will provide important information for planning training, competition and recovery programs.

Mental Skills

Fencing presents both a physical and a mental challenge. Even at the earliest stages of LTAD, fencers will begin to develop the mental skills that support physical and technical preparation. Mental skills are developed progressively, through well-planned training programs and through careful selection of competitive opportunities.

Maintaining the Ideal Performance State

Optimal recovery management allows fencers to maintain a state of performance that is appropriate for their level of participation and places a high degree of importance on the individual's activities away from the field of play. Areas addressed include nutrition, hydration, rest, sleep, and regeneration.

The ideal performance state can be monitored through the identification of fatigue. Fatigue can take many forms. While over-training or over-competition can lead to burnout, improperly monitoring and managing the components of ideal performance can lead to the same result.

Schooling

The demands of school must be considered when planning development programs in fencing. This can include balancing academic loads with other responsibilities, timing of exams and other stresses. When possible, training camps and competitions should complement, not conflict with, the timing of important school events.

Socio-Cultural

The socio-cultural aspects of sport are important. Through sport participation, athletes can develop a broader perspective of the world, an appreciation of ethnic and cultural diversity and a sense of national pride. As athletes begin to travel to competitions, activities that provide an exposure to local history, geography, architecture, cuisine, literature, music, and visual arts should be incorporated into the training plan.

6. Periodization (annual training, competition and recovery plan)

Periodization provides the framework for organizing training, competition and recovery to achieve optimum performance at the required time. A periodized yearly plan that takes into account growth, maturation and trainability principles may be developed toward the end of the *Playing While You Train* stage.

7. Calendar planning for competition

The domestic competitive and event calendar must support and be aligned with LTAD principles. Different stages of development and different levels of participation have different requirements for the type, frequency and level of competition. At some stages of development, training and development take precedence over competitions. At later stages it becomes more important for fencers to experience a variety of competitive situations and to perform well at these events.

Regional, provincial and national competition and event calendars should be coordinated, and tournaments selected according to the priorities of the specific stage of development of the participants/athletes.

8. The ten year rule

Scientific research suggests that it takes a minimum of ten years, or 10,000 hours of deliberate training for a talented athlete to reach elite levels. There are no shortcuts; athlete development is a long term process. Short term performance goals must never be allowed to undermine long term athlete development.

9. System alignment and integration

Physical education, school sports, recreational activities and competitive sport are interdependent. The LTAD framework recognizes that a lifetime of physical activity and athletic excellence are built on a foundation of physical literacy and fitness.

All aspects of the Canadian sport system should be integrated and aligned to achieve these goals. Similarly, all parts of the Canadian fencing system (e.g. coaches, schools, universities, clubs, provincial and national organizations) must be integrated and aligned. Each element in the system plays a crucial role in athlete development. The system should be seamless and based upon a clearly understood set of principles.

10. Ongoing refinement

LTAD is an area of active research, and we are constantly learning more about athlete development. Increased knowledge provides the opportunity to refine our system to better support all participants.

Ongoing refinement ensures that:

- LTAD responds and reacts to new scientific and sport-specific innovations and observations, and is subject to continuous research in all its aspects.
- LTAD, as a continuously evolving vehicle for change, reflects all emerging facets of physical education, sport and recreation to ensure systematic and logical delivery of programs to all ages
- LTAD promotes ongoing education and sensitization of all partners about the interlocking relationship between physical education, school sport, community recreation, life-long physical activity and competitive sport.



Additional Factors for Athletes with a Physical Disability

Since there are many similarities between athletes with a physical disability and able-bodied athletes, athletes with a physical disability can be integrated through any stage of LTAD. However, there are some important differences in the LTAD process:

- Athletes may have been born with a disability (congenital disability) or may have acquired a disability later in life.
- Children with a congenital disability may not have the same opportunity to learn fundamental movement skills because they do not always have the same opportunities for vigorous, physical play during their early years. This is sometimes due to long periods of hospitalization and the lack of suitable physical education programs, but may also be due to parents or caregivers being overly protective. These situations can also occur with an acquired disability.
- Since sport can play an important role in developing self concept and self esteem, programs for athletes with a physical disability should consider the mental, cognitive and emotional development of athletes in addition to physical development.
- Some disabilities may affect muscle mass and aerobic capacity in athletes; therefore athletes with a disability should be carefully monitored for evidence of fatigue. Rest and recovery time should be adjusted as needed.
- Wheelchair fencers may require additional support personnel, compared to able-bodied fencers.
- Wheelchair fencing requires specialized equipment and facilities that are costly and that may not be easily available to all fencing programs.
- Wheelchair fencing is still in its early stages of development in Canada and there are few clubs and coaches able to offer this type of programming.
- Because there may be only a few athletes with the same type or level of disability, access to appropriate competitive experiences may be limited. As well, wheelchair fencers may find themselves competing at an international level after a relatively short time in the sport.
- Fencers with a physical disability will go through the same stages of LTAD, but may pass through each stage at different ages and at different rates than able-bodied fencers.

Development of wheelchair fencers requires two additional LTAD stages, compared with the able-bodied LTAD framework. These stages are called **Awareness** and **First Contact**, and they are particularly important for individuals with an acquired disability. These individuals, prior to injury or illness, may have had no contact with fencing, may not be aware that wheelchair fencing exists as a competitive and recreational opportunity, or may even have no knowledge of sport programs for athletes with a disability.

The purpose of the Awareness and First Contact stages, therefore, is to inform individuals of opportunities in fencing and to provide ways in which they can experience the sport. A positive first experience can go a long way to encouraging participation in both recreational and competitive sport activities.



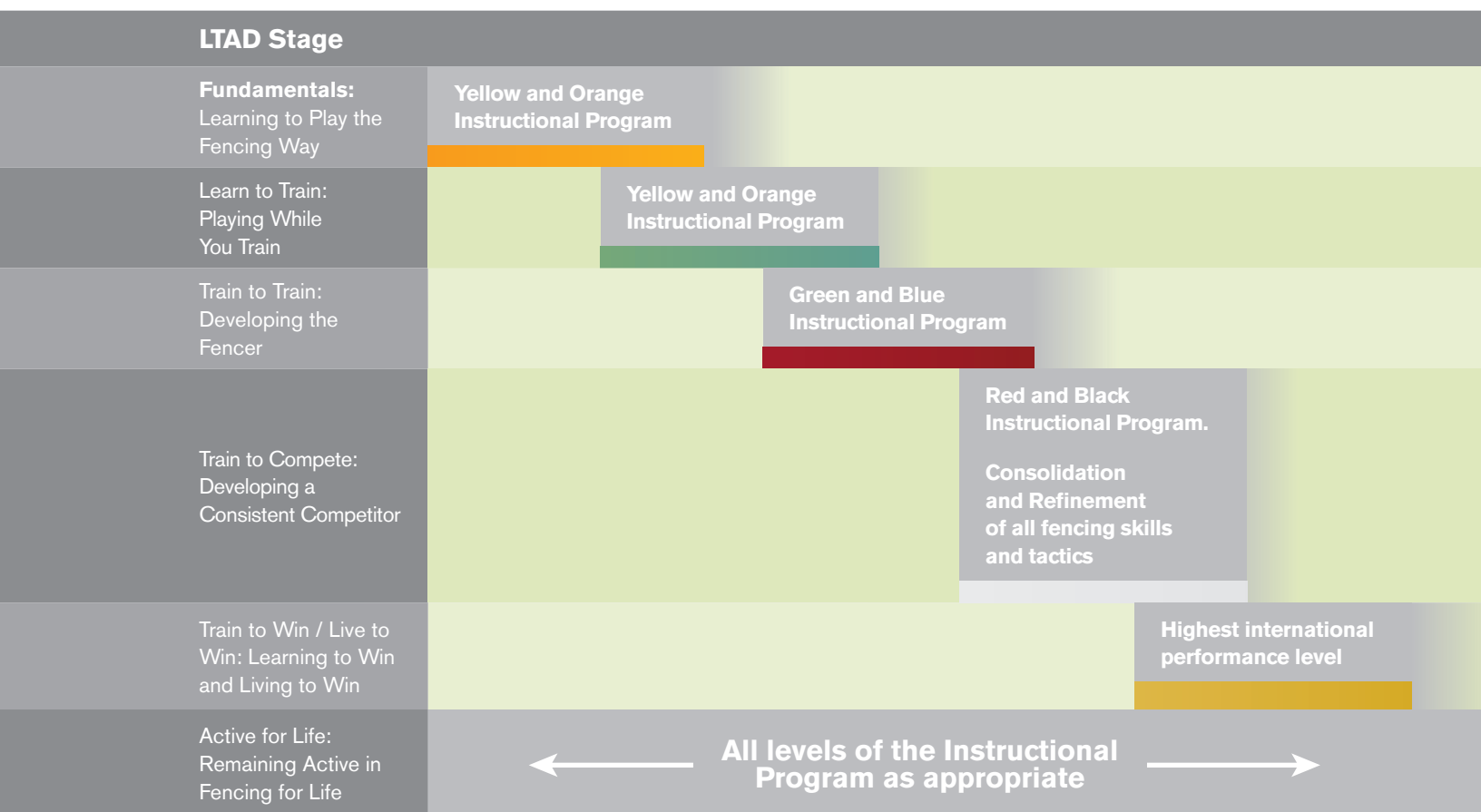
Long Term Athlete Development and the CFF Instructional Program

The CFF Instructional Program is a progressive development program that is designed to develop fencers with

- Strong technical knowledge
- Good tactical observation skills
- A capacity for adaptation
- A more complete general knowledge of fencing

The program is divided into five separate, but related performance factors: *technical*, *tactical*, *rules*, *refereeing* and, at the higher levels, *coaching*. There are six levels within the Instructional Program and the fencer must be evaluated in each performance factor to move from one level to the next. Evaluation of the highest levels of the program is done at CFF Regional Training Camps.

There is no age limit for participation in the Instructional program. Progression through the program depends on the ability of the fencer to meet the requirements for achievement in each level. Progress through the different stages of LTAD is related to a fencer's progression through the Instructional program as outlined in the table below.







The Stages of Long Term Athlete Development for Fencing

Active Start

Goals and objectives of this stage

- To introduce basic fencing skills and rules in a fun and safe environment, using modified equipment based on age and physical size
- To introduce and develop fundamental movement skills
- To develop basic motor skills (agility, balance, coordination)
- To develop eye-hand coordination

Guiding principles for the program

- Coaches are NCCP certified "Introduction to Community Sport"
- Fun and participation: "learn while having fun, and having fun while learning" in a safe, stimulating and positive learning environment
- Ratio of 1 certified coach for every 8 – 10 participants
- Introducing physical literacy
- Using:
 - modified fencing equipment
 - clear, simple communication of all instructions
 - group lessons
 - well-planned training sessions that flow smoothly from one segment to the next
 - general games to introduce speed, agility, coordination and balance, physical literacy
 - a regular routine that creates a predictable pattern of activities for participants

CFF Instructional Program

- In this stage, participants will focus on Yellow level
- Transition point to next stage is based on rate of development of physical literacy
- Yellow level does not need to be completed prior to exiting this stage
- No testing

Etiquette and behaviour

- Cooperation with partners, concepts of fair play, respect for a safe environment

Fencing training

- 1 – 2 sessions of 45 min duration per week
- Multiple terms of 8 – 10 weeks

Physical training

- Children should participate in several other activities to develop eye-hand coordination, agility, balance and coordination, speed and overall fitness

Facilities and equipment

- Gym space should have adequate lighting, modified equipment (e.g. Leon Paul Mini Fence), access to water, parent observation area
- School classrooms can be used
- Should be free of distractions from other groups, all adults present are appropriate role models

Competition

- There is no competition in this stage



FUNDamentals:

Learning to Play the Fencing Way

Goals and objectives of this stage

- To develop basic fencing skills and rules in a fun and safe environment, using modified equipment based on age and physical size
- To develop fundamental movement skills
- To develop basic motor skills (agility, balance, coordination)
- To introduce basic mental skills (focus, memory, respect, self-control, positive attitude, introduce comprehension of concept of winning and losing)
- To develop eye-hand coordination

Guiding principles for the program

- Coaches are NCCP certified “Instructor Beginner” (Aide-moniteur)
- Fun and participation: “learn while having fun, and having fun while learning” in a safe, stimulating and positive learning environment
- Ratio of one coach for every 5 participants
- Introducing:
 - the “when” and “why” of technical actions
 - basic fencing terminology and convention, both in training and in competitive-type (bout) situations
 - problem-based learning
- Developing:
 - physical literacy
 - physical balance (be sure to train both left and right sides)
 - observation skills through self-refereeing
- Using:
 - modified fencing equipment
 - clear, simple communication of all instructions
 - group lessons with partner work. There are no individual lessons in this stage
 - basic footwork and fencing technique activities in all lessons
 - well-planned training sessions that flow smoothly from one segment to the next
 - general games to develop speed, agility, coordination and balance, fencing specific games, physical literacy
 - a regular routine that creates a predictable pattern of activities for participants

CFF Instructional Program

- In this stage, participants will complete Yellow and may start to work on Orange material as appropriate
- Transition point to next stage is after completion of the Yellow level
- Testing standards are under club control
- Time spent in this stage is crucial to success at later stages

Etiquette and behaviour

- Staying within the area of the piste, saluting and shaking hands, cooperation with partners, respecting the beginning and end of bouts (i.e. waiting until ‘allez!’ rather than starting to move on ‘prêtes!’), agreeing on validity of hit, good sportsmanship, concepts of fair play
- Basic sense of priority for foil and sabre

Fencing training

- 1 – 2 sessions of 45 min to 1 hour duration per week
- Multiple terms of 10 –12 weeks
- Schedule training to follow the school year, or use summer camp model

Physical training

- Children should participate in several other activities to develop eye-hand coordination, agility, balance and coordination, speed and overall fitness
- Children should be introduced to strategic-thinking games such as chess

Facilities and equipment

- Gym space should have adequate lighting, modified equipment (e.g. Leon Paul Mini Fence), access to water, parent observation area
- School classrooms can be used to introduce fencing to children
- Should be free of distractions from other groups, all adults present are safe and are appropriate role models

Competition

- There is no formal competition in this stage.
- Monitor participant progress and provide individual results in a progress report, not in a ranking

Learn to Train: Playing While You Train

Entry to the Stage

- Entry to this stage is after completion of an introductory program

Goals and objectives of this stage

- To develop/consolidate good training habits and an appreciation that training demands a lot of work, but that it is still enjoyable
- To develop/consolidate basic technical skills
- To develop/consolidate basic tactics
- To develop an increased skill repertoire
- To develop/consolidate basic mental skills
- To develop advanced motor skills
- To introduce general physical conditioning
- To introduce formal competition and the competitive environment

Guiding principles for the program

- Coaches are NCCP certified "Instructor Beginner" (Aide Moniteur) and "Introduction to Competition". There may be more than one coach
- Competition-related development must be supervised by competition stream coaches
- Instilling a passion for fencing
- Maintaining a safe, stimulating, positive training environment
- Long term development over short term results
- Monitoring the growth and development of all participants and adjusting the training program on an individual basis
- Developing:
 - a strong work ethic
 - the ability to cope with winning and losing
 - critical reflection ability and experience in the training and competition environment
 - decision making skills
 - basic tactical and critical thinking
- Encouraging appropriate behaviour in training and competition

CFF Instructional Program

- During this stage, participants will complete Orange level of the program
- Testing standards are under club control
- Introduce tactics and strategy

Etiquette and behaviour

- Consolidate proper fencing etiquette: – salute, handshake, talk with referee using proper terminology and no arguing
- Know and understand the basic rules of fencing
- Demonstrate appropriate training behaviour and attitude, and show respect for peers, coaches and volunteers
- There must be clear communication about program goals and expectations between parents, athletes and coaches

Facilities and equipment

- Access to electric equipment
- By the end of this stage, fencers should have all their own equipment, and be able to do simple repairs
- Mirrors in the salle are good to help with self-assessment
- Video equipment is useful to help in the development of the athlete

Fencing training

- 2 – 4 sessions per week of 1.5 – 2 hours each
- Volume of training should be increased gradually and progressively
- 40 weeks of the year
- For the most part, winning in the club does not matter. What is most important in the training environment is to attempt, train and perfect technical and tactical skills
- In the training environment there must be a strong group work ethic. Mistakes are learning opportunities, not catastrophes
- It is important to understand the role of training partners in the club – they are not opponents. Training is different from competing in that if fencers do not cooperate with training partners, then neither will get the full benefit of the training

Mental skills training

- Develop focus, memory, respect, self-control, self-discipline, positive attitude
- Develop/consolidate comprehension of concept of winning and losing

Physical training

- Physical conditioning for children and adolescents should be done primarily using own body (e.g. squats with no weights, crunches, back extensions), with medicine balls or low resistance equipment like elastic bands, stationary wall targets
- Fencers should continue participation in a variety of other sports that ensure symmetrical, whole body development

Competition

- In this stage, competition is used as a tool that is part of the process of long-term development. Carefully selected competitions provide an opportunity for ongoing skill and tactics development. However, there is no focus on competitive results.
- Select and use competitions to ensure a balance of self-confidence and technical/tactical development
- Formal and informal (e.g. in-club) competitions are both important
- Include regular monthly in-club competitions + competitions with other clubs
- Begin to introduce the concept of travelling to a competition
- Single peak periodization (one focal competition, which could be either provincial, regional or national championships, depending on the stage of development of the fencer)
- All competition-related development must be overseen by a competition stream coach
- Officials are contextually aware, competent and certified



Train to Train: Developing the Fencer

During this stage, athletes will be well prepared to enjoy success in fencing, whether they choose to train or compete within the participation stream (i.e. move to the Active for Life stage) or they are selected into the pursuit of excellence stream (move to the Train to Compete stage).

Entry to the Stage

- Entry to this stage is after completion of Orange level of the Instructional Program

Goals and objectives of this stage

- To increase the skill repertoire, develop, consolidate and refine technical skills, tactics and strategy
- To consolidate and refine eye-hand coordination, agility, balance and coordination
- To consolidate and refine mental skills
- To develop an individual fencing style
- To develop sport specific flexibility, speed, strength, anaerobic and aerobic endurance
- To successfully implement and adapt performance skills in a variety of competitive situations
- To introduce concepts of sport science
- To prepare for competition in other cities, provinces and countries
- To Learn to manage nutrition, sleep, warm-up, pre-competition routine, travel, recovery and regeneration

Guiding principles for the program

- Coaches are certified NCCP "Introduction to Competition" and "Competition Development". There may be more than one coach
- Long term development over short term results
- Nurturing the passion for competitive fencing
- Guiding the fencer toward specialization with an appropriate weapon
- Developing:
 - a responsible and autonomous athlete
 - the coach/athlete partnership
 - team concepts
 - the ability to adapt to change
- Ensuring
 - competition supports and enhances ongoing development, and does not replace it
 - the fencer maintains interpersonal relationships with peers, coaches and other fencers
- Optimizing the use of sport science for the individual athlete

CFF Instructional Program

- During this stage, participants will complete the Green and Blue levels
- Testing standards are under provincial control
- Automation and chaining of technical skills from prior levels of the Instructional Program

Etiquette and behaviour

- Know and understand the rules of fencing and good sportsmanship
- Appropriate training and competition behaviour, including interactions with peers, officials, coaches
- Sense of respect for opponents
- There must be clear communication about goals and expectations between parents, athletes and coaches
- Introduce the athlete to CCES and WADA requirements for anti-doping
- The athlete must learn how to communicate effectively and appropriately with peers, coaches, officials and parents

Facilities and equipment

- Access to full-length pistes and scoring equipment that uses current timing; floors must be wood sprung (or equivalent) to minimize injuries
- Fencers must have own equipment, including electric equipment for competitions
- Must know how to check if equipment is working and how to do basic trouble-shooting and repairs
- Must have access to non-sport specific equipment such as mats, balls etc., which will help support training
- Must have access to an integrated support team

Fencing training

- 5 – 7 training sessions per week of 1.5 – 2 hours per session
- 45 weeks of the year, including training camps
- Increase training hours progressively with age

Mental skills training

- Time management, goal setting
- Arousal and impulse control
- Introduce concept of competition readiness (ideal performance state)
- Visualization, independence
- Managing losing and winning

Physical training

- Optimize the sensitive periods of trainability for adolescent-aged athletes
- Other activities to promote symmetrical, whole-body development

Competition

- The purpose of competition is to develop team concepts and to learn to compete
- Avoid emphasizing results except where they serve development
- Appropriate competitions include:
 - Provincial Games
 - Canada Games
 - Canadian Selection Circuit (CSC), provincial and national championships
 - Regional and Super Youth circuits
 - North American Cup (including Div 2 and Div 3)
 - Junior, Cadet and Youth North American Cup
 - International development competitions
- Suggested training to competition ratios:
 - 3-4 weeks training to 1 development competition
 - 8 weeks of training to 1 performance competition
- Single or double peak periodization



Train to Compete: Developing a Consistent Competitor

Entry to the Stage

- Transition to this stage is after the Blue level of the Instructional Program

Goals and objectives of this stage

- To cultivate the vision and dream of being a top international level fencer
- To make choices which enable a full commitment to the sport
- To provide an introduction to the CFF High Performance Program (HPP)
- To develop consistency of performance with a continued emphasis on the process of athlete development over final outcome
- To refine established technical and tactical skills
- To continue to develop technical and tactical skills
- To develop individual fencing style in a variety of competitive situations
- To optimize all aspects of physical conditioning for performance
- To refine the ability to understand the key principles related to training, competition and recovery
- To successfully manage nutrition, sleep, warm-up, pre-competition routine, international travel, recovery and regeneration
- To consolidate routines for mental readiness for ideal performance state

Guiding principles for the program

- Coaches are NCCP certified "Competition Development" / "Competition High Performance" and have the opportunity for ongoing professional development at the international level. There may be more than one coach
- The coach and athlete fully understand the roles and responsibilities of themselves, each other, and other IST members with respect to the optimal development of the athlete
- Ensure regular and ongoing communication between coaches, athletes and families
- Use of sport science is maximized to facilitate optimal development of the athlete as an individual
- Develop collaborative relationships with coaches at national or regional training centres to ensure that the goals and needs of the athlete are met
- Integrate individualized training programs with HPP requirements
- Interactions between higher and lower level training groups
- Consolidation of team concepts
- Consolidation of team training group for optimal success

CFF Instructional Program

- Red level of the program. Some, but not all athletes may go on to complete their black level

Etiquette and behaviour

- Athletes must take responsibility for the use of controlled or banned substances, including prescription medications
- Athletes must follow provincial/national code of conduct or athlete agreements
- Athletes can communicate effectively with media
- Maintain personal integrity and be a public ambassador for the club, province or territory



Facilities and equipment

- Must have a specialized salle for training, as well as a facility for equipment repairs
- Athletes should take advantage of invitations to train in a national or regional training centre, in which all required services are present
- All athletes should have access to Canadian Sport Centre services and Integrated Support Team

Fencing training

- 5 sessions weekly; minimum 15 hours per week of fencing training
- Individual lessons and group training
- 45 – 48 weeks per year, including training camps
- Need exposure to training in other countries and with training partners from other countries
- The athlete may move to a different club, coach or city to benefit from an enhanced training environment
- Competent, well-trained officials can assist with technical and tactical development

Mental skills training

- Athlete is developing emotional maturity and independence; is becoming mentally autonomous
- Development of ability to manage life skills
- Refine competition-specific mental preparation to optimize competition readiness (ideal performance state)
- Develop the attitude of the athlete: commitment, initiative, courage, self-discipline, consistency, mental toughness, the will to win, strong concentration and focus, confidence and emotional stability
- Resistance to mental fatigue
- Precision and sureness of execution
- Adaptability to unforeseen circumstances
- Relaxation techniques

Physical training

- Conditioning training is year-round
- Cross training to refine physical literacy, core physical skills, hand-eye coordination
- 2 – 3 sessions per week of conditioning, according to the individual needs of the athlete

Competition

- Consolidate team concepts
- The fencer's individual plan will determine the goal of each competition – training, selection or peaking
- Competitions are important for developing confidence, specific endurance and consistency of performance
- Competition should address the athlete's development and progress and not merely go after points and event qualification
- Fencers may compete in junior and senior events simultaneously
- Single or double peak periodization
- Appropriate competitions include:
 - North American, French or German circuits
 - Pan American Championships
 - Junior World Cups
 - Junior World Championships
 - World Cup



Train to Win: Learning to Win and Living to Win

Entry to the Stage

- Entry into this stage is after the completion of Red level
- Typically, consistent performance is not seen until after at least 10,000 hours of deliberate training

Goals and objectives of this stage

- Full and long-term commitment to the national team concept
- Full commitment to the pursuit of international excellence
- Delivering consistent performance on demand
- To adapt to ever-changing environments to cope with the demands of international excellence
- Early in the stage: performing consistently in top 32 in Worlds/ World Cup competition
- Later in the stage: win medals at Olympic Games and World Championships
- Effectively manage daily, weekly activities
- Explore post-fencing career transitions, and prepare for this (e.g. increase career preparation)

Guiding principles for the program

- Coaches are NCCP certified "Competition High Performance". National Coaches are also very involved at this level. The national coach is responsible for individualizing the training, competition and recovery/regeneration plans of athletes in this stage
- The national coach is the primary coach of national team athletes, and athletes at this stage may make heavy use of centralised training facilities which afford opportunities for extended training with their peers.
- The national coach must lead the Integrated Support Team
- The national coach must lead a coaching team
- To refine the use of sport science to optimize athlete development

Etiquette and behaviour

- Maintain personal integrity and be a public ambassador for the sport, for CFF and for Canada
- Athletes take responsibility for the use of controlled or banned substances, including prescription medications
- Athletes maintain standards for doping, nutrition
- Athletes follow national code of conduct or athlete agreements

Facilities and equipment

- Facilities and equipment must meet international standards

Fencing training

- 12 – 30 hours per week for 2 – 3 hours per session, according to the specific needs of the athlete's training program
- Year-round training in a national training centre, with the national training group

Mental skills training

- To optimize routines for mental readiness for ideal performance state
- Athlete has developed emotional maturity and is mentally autonomous
- Athlete is prepared to manage the demands of media surrounding a major event such as Olympics

Physical training

- According to the individual athlete's needs
- Optimize sport specific physical preparation (endurance, dynamics, power, speed, flexibility and speed change)

Competition

- The objective of competing is to win medals at world level (FIE) competitions
- Athlete and coach must have the highest knowledge of rules of fencing, and be able to use it to positively affect performance
- Competitions according to the national team program
- Extensive international travel requirements
- Double or multiple peak periodization, for Team World Cup, Pan Am, World Championships and Olympic Games, depending on the international calendar



Enjoy Fencing for Life!

Active for Life: Remaining Active in Fencing for Life

Entry to the Stage

- May occur at any age, when individuals transition from various levels of competitive fencing to life-long physical activity and/or alternate roles in fencing
- Optimal time to identify people who could work professionally in the sport, or assume volunteer leadership roles
- Later entry (e.g. university programs, adult programs etc.) may occur at any age

Goals and objectives of this stage

- Health, fun and well-being; sense of community richness and diversity
- Development and maintenance of fencing skills, both in training and in competition
- Being physically active and participating in fencing and other sport activities;
- Transition to other aspects of fencing such as refereeing, coaching, sport admin, volunteerism, assisting with programs for participants with physical disabilities, at various levels
- Performance level depends on individual participant goals

Guiding principles for the program

- Participation in the sport and in the competitive environment should be enjoyable for all
- Coach must understand and respect the various motivations of participants
- Recognize the importance of the social factor for adult participants
- Provide incentives that encourage adults to remain in fencing programs
- Coaches must facilitate and encourage fencers to try new ways of doing things
- Physically active lifestyles lead to overall fitness and general well-being (sport for life)
- Participation in other aspects of fencing helps evolve and grow the sport and enrich the fencing community
- Coach is aide-moniteur and above, plus specialized knowledge in adult education principles, and ability to direct participant to other aspects of fencing participation (e.g. refereeing, sport administration)

CFF Instructional Program

- Use the Instructional Program to provide challenge and satisfy participant goals
- Participants may be at any stage of Instructional Program

Etiquette and behaviour

- Respect for others, for yourself and for the sport
- Complete understanding of the need for rules, regulations and structure
- Must acknowledge, respect and recognize the contribution and commitment of volunteers
- Provide positive encouragement, appreciation for unique skills and talents
- Participants can often act as role models for others, and can bring a variety of external experience and knowledge to the sport

Facilities and equipment

- Community or sport centres, universities, clubs that showcase a variety of activities
- Equipment is matched to participant's ability, level and goals

Fencing training

- Participation time must fit the lifestyle and needs of the individual
- Training plans are individualised, meeting the specific needs of participants

Mental skills training

- Encouragement of the idea that participation in physical activity is fun and contributes to a healthy mental and emotional well-being. Important to coaches and officials as well as athletes

Physical training

- Include physical conditioning as appropriate for the participant/athlete
- For adolescent-age participants, monitor individual growth and development and adjust training to accommodate periods of rapid growth
- Train with a focus on injury prevention and recovery and regeneration
- Physical training should support fitness for life concepts (adults are independent learners)

Competition

- The purpose of competition is to enjoy life-long competitive fencing in a fun and social environment. The amount and type of competition will depend on the individual, their lifestyle and their commitment to the sport
- Planning and periodization will depend on the performance level and goals of the fencer
- Training and competition is based on intrinsic motivation and enjoyment
- Competitions may include age-group competitions, regional, university, adult novice, team events etc.
- Focus on enjoyable training, with enough tournaments to satisfy the participant's competitive goals/desires, and fulfil curiosity of competition and challenge

Appendices

Resource List

Resources from Organizations and Institutions

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Fencing's LTAD Partners

Everyone who is involved in fencing in Canada is part of the Canadian sport system, and is a partner in sport development. The ongoing growth of fencing depends on supportive partnerships between a wide variety of organizations and individuals:

Fencers:

benefit from excellence in programming and coaching, at all stages of development and all levels of interest and ability

Coaches

work as professionals to design and implement participation and training programs that respect the principles of LTAD

Parents

understand and support the principles of LTAD and their importance in a child's development, understand coaching decisions and be supportive partners in participant progression, training and competition

Officials, sport leaders and volunteers

work within the national, provincial and club level structure to support and respect the principles of LTAD in all decisions

Fencing Clubs

provide programs that reflect the principles of LTAD; support and value their coaches through ongoing professional coaching development that matches the specific developmental needs of their fencers.

Provincial/Territorial Fencing Associations

provide encouragement and resources for fencing clubs, and ensure that provincial development programs, competitive structure and major events respect and support the principles of LTAD. They work with CFF to integrate and align their programs according to the principles of LTAD.

Canadian Fencing Federation (CFF)

provides national leadership and assists Provincial and Territorial associations to integrate and align all programming to respect the principles of LTAD

Integrated Support Teams

work with competitive fencers and their coaches to ensure fit, healthy, and successful athletes

Sponsors and Partner Organizations

CFF is part of a large network of sport partnerships. Some of these partnerships provide funding and support to CFF, some assist with coach training and development, while others are part of the delivery system for fencing programs.

Adaptation

A response to a stimulus or a series of stimuli that induces functional or morphological changes in the organism. Naturally, the level or degree of adaptation is dependent upon the genetic endowment of an individual. However, the general trends or patterns of adaptation are identified by physiological research, and guidelines are clearly delineated of the various adaptation processes, such as adaptation to muscular endurance or maximum strength

Armband Program

See 'Instructional Program'

CCES

The Canadian Centre for Ethics in Sport. A Canadian organization whose aim is to promote ethical behaviour at all levels of the Canadian sport system

Childhood

Ordinarily spans the end of infancy – the first birthday – to the onset of puberty and is characterized by relatively steady progress in growth and maturation and rapid progress in neuromuscular or motor development. It is often divided into early childhood, which includes preschool children aged 1 to 5 years, and late childhood, which includes elementary school-age children, aged 6 through to the onset of puberty

Chronological Age

The number of years and days elapsed since birth. Growth, development, and maturation operate in a time framework; that is, the child's chronological age. Children of the same chronological age can differ by several years in their level of biological maturation. The integrated nature of growth and maturation is achieved by the interaction of genes, hormones, nutrients, and the physical and psychosocial environments in which the individual lives. This complex interaction regulates the child's growth, neuromuscular maturation, sexual maturation, and general physical metamorphosis during the first 2 decades of life

Competition Day or Weekend

The date of a focal competition

Development

The passage to, or percentage of maturity of various traits including social, emotional, intellectual, physical and motor qualities

Development Competition

A competition which is used to provide a learning experience for the fencer, and which assists in preparing the fencer to achieve his or her goals. The primary focus is on the relative progress of the fencer, rather than on the competitive results

Directed Bout

Bouts in which fencers are given directions to focus on particular skills, techniques, tactics, or some combination thereof

Growth and Maturation

The terms *growth* and *maturation* are often used together and sometimes synonymously. However, each refers to specific biological activities. Growth refers to "observable, step-by-step, measurable changes in body size such as height, weight, and percentage of body fat." Maturation refers to "qualitative system changes, both structural and functional in nature, in the organism's progress toward maturity; for example, the change of cartilage to bone in the skeleton"

Ideal Performance State

The mental, emotional and physical condition of the fencer during an important competition, which allows the fencer to perform optimally

Instructional Program

A national program which encourages development of technical, tactical and other supporting skills, similar to a 'belt' system in the martial arts. Please see the CFF website for more information

Glossary of Terms

Integrated Support Team (IST)

The group of specialists that works with the fencer under the guidance of the coach to provide medical and sport science support. The IST may include physicians, physiotherapists and massage therapists, chiropractors, sport nutritionists, sport psychologists, skill acquisition scientists and biomechanics specialists

Leon Paul Mini Fence

Specially modified fencing equipment that is designed for children. Swords are made from foam or plastic

Menarche

The first menstrual period, a key marker of female puberty

Modified Equipment

Fencing equipment that has been adapted to meet specific needs of a fencer, for example, weapons made smaller for young fencers, or a piste that been redesigned for use in wheelchair fencing

Peak Height Velocity (PHV)

The maximum rate of growth in stature during growth spurt. The age of maximum velocity of growth is called the age at PHV

Performance Competition

An important competition in which the athlete is expected to perform optimally, and where results are of primary focus

Periodization

The structuring of short and long term training, competition and recovery periods to provide optimum performance on a given date

- **Single peak or periodization**– one preparatory and one competition period within the year
- **Double peak or periodization**– two preparatory and two competition periods within the year
- **Multiple peak or periodization** – competing all year round while maintaining physical and technical skills

Physical Conditioning

Training that develops the physical qualities of power, strength, endurance and flexibility. May be general conditioning or sport specific, technical training that is used as conditioning

Physical Literacy

The mastering of fundamental motor skills and fundamental sport skills. "A physically literate person moves with poise, economy and confidence in a wide variety of physically challenging situations, is perceptive in reading all aspects of the physical environment, anticipates movement needs or possibilities and responds appropriately with intelligence and imagination" (Margaret Whitehead, 2001)

Plasticity

The ability to successfully perform a skill or action under a variety of circumstances; the ability to adapt skill performance in response to an unpredictable challenge

Power

Performance of a movement or skill requiring a large amount of muscular strength, in the fastest possible time

Puberty

The phase of growth that begins with onset of hormonal changes in the reproductive system and ends with sexual maturity

Reaction

The ability to respond quickly to a stimulus. Reaction time is a measure of the ability of an individual to respond quickly and appropriately to a stimulus

Readiness

The individual's level of growth, maturity, and development that enables him/her to perform tasks and meet demands through training and competition

Symmetry

Equal development of musculature and functionality on opposite sides of the body (e.g. left and right). Symmetry is important for balanced movements, maintaining proper body alignment and posture, and is an important factor in preventing injury

Trainability

The genetic endowment of athletes as they respond individually to specific stimuli and adapt to it accordingly. Malina and Bouchard (1991) defined trainability as “the responsiveness of developing individuals at different stages of growth and maturation to the training stimulus”

Training Competition

A competition whose focus is the development or refinement of particular skills, techniques, tactics, or some combination thereof

Training Partner

A fellow athlete, often (but not necessarily) from the same club or team, who shares similar training goals and philosophies. Training partners will often work together in drills or directed bouts to help each other master specific technical or tactical skills. The spirit of working with a training partner is one of collaboration, rather than competition, and the emphasis is on improvement, rather than ‘winning’

Training and Performance Factors

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

WADA

The World Anti-Doping Agency. The international organisation created in 1999 to promote, coordinate and monitor the fight against doping in sport in all its forms

The Seven Pillars of LTAD: Our Strengths and Our Vision

Athletes

Our strengths:

- Fencing encompasses three weapons that each offer unique challenges for different types of athletes
- Fencing is a sport that can be enjoyed by anyone; there is no “fencing body type”
- Fencing supports a sense of fun, social interaction and holistic development regardless of the age and ability level of the athlete
- Many dedicated, talented athletes involved in Fencing across Canada
- Some senior and junior athletes achieving solid international success
- Many opportunities to be active for life in Fencing – coaching, officiating, volunteering and playing
- Fencing has been re-admitted to the Canada Games starting in 2013
- Small but committed group of athletes with physical disabilities involved in wheelchair fencing

Our vision:

- To create an athlete development pathway that ensures developmentally appropriate training, competition and recovery of all fencers
- To monitor the growth and development of all athletes
- To ensure that young fencers are physically literate
- To have an integrated talent identification system that is based on LTAD
- To recruit more athletes at all ages and levels
- To educate all athletes about the CFF
- To ensure a healthy foundation of fencers at the recreational and competitive levels, particularly at the provincial and national levels
- To design and implement systematic athlete development programs according to scientifically based data and knowledge, and to ensure that this model integrates athletes, coaches and officials
- To improve international results by offering better domestic development programs
- To encourage a higher rate of retention of fencers aged of 14-17
- To encourage fencers to continue in the sport after Canada Games
- To ensure that all fencers have suitable training partners
- To increase the number of fencing opportunities available across the country to athletes with a physical disability

Coaches

Our strengths:

- Strong base of highly motivated coaching talent
- Coaches are good at short-to mid-term athlete development and have a history of producing excellent cadet and junior athletes
- Development of the NCCP transition is ongoing; Fencing has completed context approval for Aide-Moniteur context
- There is a strong base of coaches who have completed Level 4 NCCP
- Many coaches are also active athletes, officials and administrators

Our vision:

- To design and implement a complete Canadian system of fencing, and a coach training, certification and mentorship program that supports it
 - To have the most knowledgeable coaches working with young, developmental athletes, and not just at the elite level
 - To ensure that the national coach is the recognized leader of national team programs
 - To attract fencing coaching expertise to Canada to assist with program development, and to retain these coaches
 - To bring together coaches of varying backgrounds and expertise to collaborate and cooperate for the benefit of fencing in Canada
 - To improve international performances by offering better development programs
- To develop and implement national policies regarding coach training and certification and to ensure that all coaches are certified according to the context in which they are coaching
 - To identify, recruit and educate more coaches, especially females
 - To provide coaches with a thorough knowledge of the periods of accelerated adaptation to training, and on the growth changes during adolescence
 - To ensure that coaches have the ability to modify training programs to accommodate individual needs of athletes
 - To educate coaches to incorporate more flexibility in their teaching/coaching strategies
 - To develop basic fencing skills before introducing tactics and strategy
 - To educate coaches on the specific training needs of female athletes
 - To ensure that all coaches have a better knowledge of the rules of fencing; to ensure that all coaches are certified officials at the appropriate context
- To increase the levels of professionalization in coaching and to recognize the importance of coaches in all stages of LTAD
 - To educate all coaches about the CFF Core Values
 - To educate coaches on the need to place a higher value on the services that they provide
 - To create an association of Canadian fencing coaches
 - To develop the attitude, knowledge and ability in coaches of how to create more inclusive programs
 - To educate coaches on the need for national training centres

The Seven Pillars of LTAD:

Our Strengths and Our Vision

Officials

Our strengths:

- Many dedicated officials who help athletes strive to reach their goals
- Many officials are also athletes or coaches

Our vision:

- To recruit and train more officials, especially female
- To educate all officials about CFF core Values
- To increase the number of competent international level officials in Canada
- To develop and implement national programs and policies for officials training, certification and ongoing professional development and to situate them within the LTAD framework
- To ensure that officials training develops an awareness of meeting athlete needs (e.g. injury or other emergency situation)
- To have the most knowledgeable officials working at all levels, not just at elite levels
- To provide mentorship opportunities for young officials
- To improve recognition of officials at all levels

Competition

Our strengths:

- Competition is available to all ages, abilities and levels of play
- CFF is experienced in international events hosting

Our vision:

- To ensure that athletes do not over-compete at the earlier stages of LTAD
- To review the competition structure to ensure that elite selection occurs at the optimal time, and does not eliminate potential talent
- To ensure that competitions are scheduled at appropriate times in the training year
- To ensure that competition formats are appropriate to the age and stage of development of the athletes
- To provide more opportunities for competition at the later stages of LTAD
- To promote the philosophy of using competition as a training and development opportunity
- To ensure that the yearly calendar of fencing activities addresses the needs of all levels of athletes, and that the calendar is a cooperative effort between all fencing partners (national, provincial, local and university)
- To modify rules and space to accommodate the needs of younger fencers
- To improve the organization and administration of competitions in Canada

Leadership

Our strengths:

- CFF has a commitment to address change where it is required, and an organizational structure that facilitates the process of change
- Well-educated base of members with a passion and dedication for the sport
- The volunteer base has a strong skill set that is valuable to fencing
- There are many stakeholders with a strong desire to succeed
- Diverse influences from many countries allow Canada to see best practice strategies from around the world
- CFF has a commitment to provide services to all age groups and abilities
- CFF and its members have strong survival skills
- Due to its membership structure, CFF has direct access to its athletes, coaches and officials

Our vision:

- To ensure that all CFF decisions and actions reflect our stated values, and are dedicated to the success of the sport
- To articulate a clear direction for the future, and a business plan that supports this direction
- To increase the efficiency and effectiveness of decision-making within CFF
- To ensure that staffing is in place at the national level to support and maintain an ongoing coaching development system
- To recruit, retain and recognize volunteers, administrators, coaches and athletes at all levels
- To promote a sense of professionalism through all aspects of the sport; to establish CFF as a model of organizational excellence
- To establish CFF as an international leader in athlete, coaching and officials development in every level of the sport
- To ensure effective succession planning for board, volunteer and staff positions
- To build a sense of a Canadian fencing community, and a pride in being part of this community
- To ensure that the CFF LTAD framework is supported by the provincial/territorial governments, who will provide incentives to provincial/territorial fencing associations to implement the national framework
- To improve the sense of collaboration, sharing and communication between CFF, its provincial affiliates, clubs and individual members
- To promote CFF programs and increase awareness of the sport and CFF
- To improve and increase the representation of Canadian fencing on international federation committees
- To use membership data more effectively
- To revisit the current coach certification legislation with regard to the current status of the NCCP
- To improve and increase the resources available to our membership
- To further the inclusion of Fencing in CIS and CCAA programs

The Seven Pillars of LTAD:

Our Strengths and Our Vision

Facilities and Equipment

Our strengths:

- Basic facilities are available in most large cities in Canada
- Equipment is easily obtainable by most participants

Our vision:

- To increase the number of full-time fencing salles across Canada
- To encourage multi-purpose facilities to accommodate the needs of a fencing program
- To ensure that equipment is easily accessible to all participants
- To ensure that adapted equipment is easily available to meet individual needs of all participants (i.e. related to age and ability)

Parents

Our strengths:

- Parents are the key figures in supporting their child's goals related to fencing activities
- Large number of passionate and supportive parents involved in the sport who contribute in various roles

Our vision:

- To educate parents about LTAD, especially related to:
 - the importance of physical literacy
 - the basic rules of fencing
 - the importance of training and basic skill development as a precursor to competition
 - the growth changes that occur during adolescence
- To ensure parents are informed about the costs of equipment, travel and facility use
- To educate parents about the CFF Core Values

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