



LONG TERM DEVELOPMENT FOR 5 PIN BOWLING IN CANADA

Edition 3.0
Sport for Life



Acknowledgements:

Sport for Life writers, editors, contributors, reviewers

Sport Specific content – Dave Post, Ray Brittain, Sheila Carr

TABLE OF CONTENTS

Sport and Physical Activity in Canada

Opportunity Awaits

From LTAD to Long-Term Development in Sport and Physical Activity	1
A truly Canadian Approach	3
About this Resource	4
Sport for Life Mission, Vision, Values	5
Guiding Principles	6
Building a Better System – 5 pin bowling overview	9
Shortcomings & Consequences	9 – 10

Key Factors underlying LTD	11
Personal Factors	11
Organizational Factors	12
System Factors	13

LTD Framework	14
Awareness & First Involvement.....	15
Physical Literacy	17
Building a Solid Foundation	18
Active Start.....	19
FUNdamentals	20
Learn to Train.....	21
The Adolescent Participant in Train-to-Train.....	22
Special Issues in Train-to-Train	22
Train-to-Train	23
Training, Recovery, and Meaningful Competition	24
Train to Compete	25
Active for Life	26

Quality Sport.....	27
A Multi-sectoral Approach	28
A New Way Forward	29
Advancing Long-Term Development in Sport	30

Glossary of Terms.....	31
------------------------	----

Sport and Physical Activity in Canada

Opportunity Awaits

Sport and physical activity remain powerful agents for developing individuals and society as a whole. The benefits of physical activity – expressed in many ways through structured and unstructured sport, recreation, active living, and play- are universally recognized for their vital contributions to health and well-being. At the same time their value overall human development and social-economic enhancement is under-appreciated.

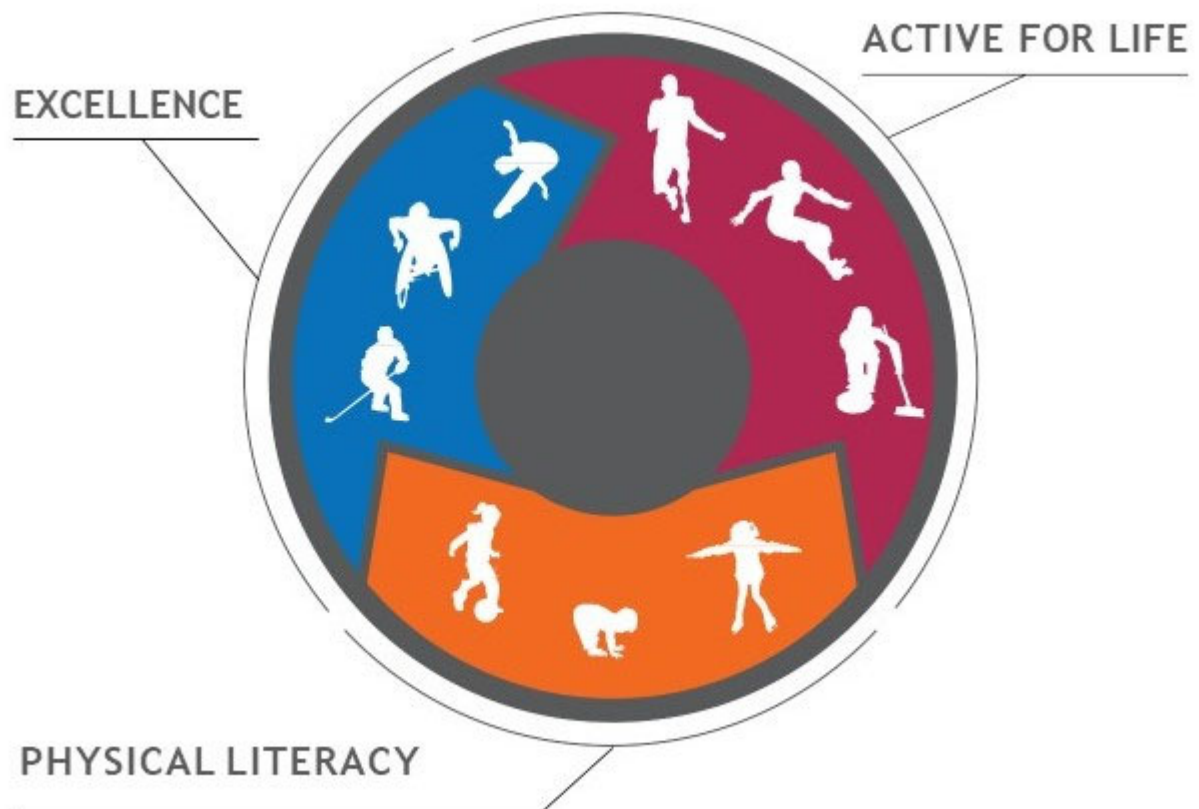


Figure 1: Sport for Life Development Goals

From LTAD to Long Term Development in Sport and Physical Activity

Long-Term Athlete or Participant Development

This document moves away from Long-Term Athlete or Long-Term Participant Development because of the wide range of organizations with which Sport for Life collaborates.

Despite an unwavering belief that every child is born an athlete, Sport for Life has chosen to call this resource Long Term Development in Sport and Physical Activity for these reasons:

- To maintain focus on the key idea that development is a process that takes time and, in that sport, physical activity should look very different, based on the individual stage of development.
- To reinforce the idea that long-term development is important.
- To broaden the focus. Effective development requires the alignment of ALL parts of the Canadian ecosystem, from community programming through to targeted high performance sport experience and this involves far more than just sport organizations.

Throughout this document the term athlete is used when describing individuals striving to achieve their sporting potential, while both the athlete and participant are used when dealing with young children and adults engaged in sport and physical activity.

A TRULY CANADIAN APPROACH

To be truly world-leading, Canada can't simply copy other systems. In the past Canada has attempted to patch gaps in sport and physical activity ecosystem by borrowing from other countries that were achieving international sporting success.

For Canadian athletes to achieve sustained success and to be active for life we need a made in Canada system based on Canadian culture, traditions, and geography. A truly Canadian approach must also reflect our social values, multi levels of political jurisdiction, and our economic realities. Long Term Development in Sport and Physical Activity is a truly Canadian approach.

The first version of Canadian Sport for Life for Long Term Athlete Development set out to address the gaps and shortcomings in the Canadian sport and physical activity ecosystem. Now, Sport for Life concepts are the foundation of policies, resources and programs across Canada. Sport For Life has helped to link the sport, recreation, health and education sectors while aligning programming across the federal, provincial/territorial, and municipal level. More than 60 NSOs have created sport specific frameworks guided by Long Term Athlete Development, which has led to implementation at provincial and territorial levels. Sport for Life has worked in hundreds of communities across the country, and some of them have declared themselves “Sport for Life” communities.



Despite this success, there is need for a renewed Long Term Development Approach. Community sport and physical activity participation in Canada has declined, physical education programs in schools are marginalized, and the sport and community sport delivery system in Canada remains fragmented. There has been rapid growth of “for profit” sport business offering ever more specialized “elite” training at ever-younger ages. There is more to do to create the ecosystem we need, one which inspires every Canadian to pursue both excellence and activity for life.

Long Term Development in Sport and Physical Activity is a framework for the development of every child, youth, and adult to enable optimal participation in sport and physical activity. It considers growth, maturation and development, trainability, and sport system alignment.

About this Resource

First and foremost, this resource is intended for everyone within Canada's sport and physical ecosystem. One of the most persistent issues within this ecosystem is the way some groups continue to be marginalized and ignored. As a result, groups such as girls and women, individuals with disabilities, indigenous peoples, newcomers to Canada, the LGBTQI2s¹ community aging adults and those living in poverty and isolated communities remain underserved and under supported. Most sport and physical programs have not adequately engaged and worked with these populations to design and deliver experiences to meet their diverse needs.

The art of coaching and program design also play a significant role in our framework – and for coaches who must make multiple day-to-day coaching decisions, the framework extrapolates from currently available scientific literature (when no specific research has been undertaken or is available). In doing so we recognize the risk of being wrong - but also recognize that to be world leading we must “push the envelope”. Evidence based conclusions can only be drawn from analyzing published research that takes years to accumulate. Athlete development cannot be both fully evidence based and cutting edge.

The framework recognizes that the cognitive, emotional, moral, and psycho-social development of children are important components of maturation, and significantly contribute to progress from sport from introductory play all the way up to including world-leading performances.

Ultimately, both sporting excellence and a healthy population are outcomes of a sport and physical activity development process that is top quality, well designed, inclusive of all and properly implemented.

Long-Term Development in Sport and Physical Activity is a uniquely Canadian, world leading design – NOW is the time to fully implement it.



Photo courtesy of Coronation Lanes Wednesday seniors.

¹ LGBTQI2S stands for Lesbian, Gay, Bisexual, Transgender, Queer (or Questioning), Intersex, and Two-Spirit. We use this acronym due to its broad scope. However, we recognize that this is a time of change in terms of language around sexual orientation, gender equity, and gender expression, and that “Gender and Sexually Diverse Community” is used more prominently by various groups in certain sectors.

SPORT FOR LIFE'S MISSION, VISION, AND VALUES

This resource is produced by the Sport for life Society (formerly Canadian Sport for Life) and is consistent with the Society's vision and mission.

OUR VISION

Everyone has the opportunity to participate in quality sport and physical literacy experiences.



CSPBA – Inter Provincial Championship



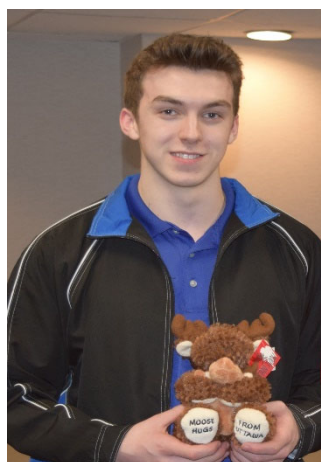
CSPBA – Youth Challenge

OUR MISSION

To develop physical literacy and improve the quality of sport by creating, sharing, and mobilizing knowledge, to act as a catalyst for governments, institutions, and organizations, to improve programs and services.

OUR VALUES

- Collaboration
- Innovation
- Inclusion
- Integrity



Sportsmanship Award – Youth Challenge 2017

GUIDING PRINCIPLES

Long – Term Development in Sport and Physical Activity is built on four guiding principles:

QUALITY

IS KEY

Every child, youth and adult deserve a quality experience every time they participate in physical activity or sport. Quality means good programs, in good places, delivered by good people.

OPTIMAL

PROGRAMING IS CRITICAL

This means giving every participant in sport and physical activity what they need, when they need it, and in a way, they need it to make the most progress. Optimization is participant centered and developmentally appropriate.

INCLUSION

IS NON-NEGOTIABLE

Inclusion is both the removal of physical, cultural, economic, attitudinal barriers to participation, and the designing of activities so that individuals are not excluded. Being allowed to take part is not enough. **Every** participant must feel safe, welcomed, and included. Supports need to be in place to engage and support the diverse needs of participants, across all the dimensions that make up that individual. Every program and service should be set up to welcome all – inclusion is a topic because our system currently excludes. We must refrain to: everyone has the opportunity, and exclusion is the exception and rather than the norm.

COLLABORATION

MAKES THE SYSTEM BETTER

Individuals and organizations will deliver more quality experiences when they work together. Communities, sport organizations, and the health and education sectors all benefit from alignment of programming and collaboration. For example, one participant may be active in different sports or physical activities, including recreation or club programs, physical education, as well as school sport. If the organizations pull that individual in different directions, good development is less likely.

WHAT'S NEW AND ENHANCED IN THIS THIRD EDITION?

Sport for Life is focused on improving the quality of sport and physical activity in Canada, which is why we continuously improve this framework. The objective of the framework is to promote both sporting excellence at the highest international level and life-long engagement in health-enhancing physical activity. This third edition brings a number of important updates and enhancements.

Not all sport and physical activity experiences are good. This resource supports leaders to improve the quality of sport and physical activity delivery. We want “good programs, delivered by good people, in good places.” Good programs are developmentally appropriate, based on the physical, cognitive, emotional and moral stages of development of participants. Quality sport and physical activity ensures that safe sport ² is an essential element for all people involved.

Quality sport

based on Long-Term Athlete Development is...



Figure 2: Quality Sport Cycle

² Safe sport provides a training and competitive environment for athletes, coaches, officials, and volunteers that is free of abuse, harassment, and discrimination. Organizations have policies and procedures in place that are consistent with national sport standards to ensure sport participants are safe. Additionally, safety includes the physical aspect of the equipment and training practices.

The “Rectangle” has evolved: First involvement and Awareness are integral components of everyone’s initial experiences in sport and physical activity. Physical literacy, while vital during the early stages, is not confined to the early stages – it can and should continue to be developed throughout the life course. The Podium Pathway describes the sport-defined excellence stages of Long-Term Development in Sport and Physical Activity and specifically applies to athletes on a trajectory toward podium results at the highest level of their sport. The updated rectangle reflects these changes.

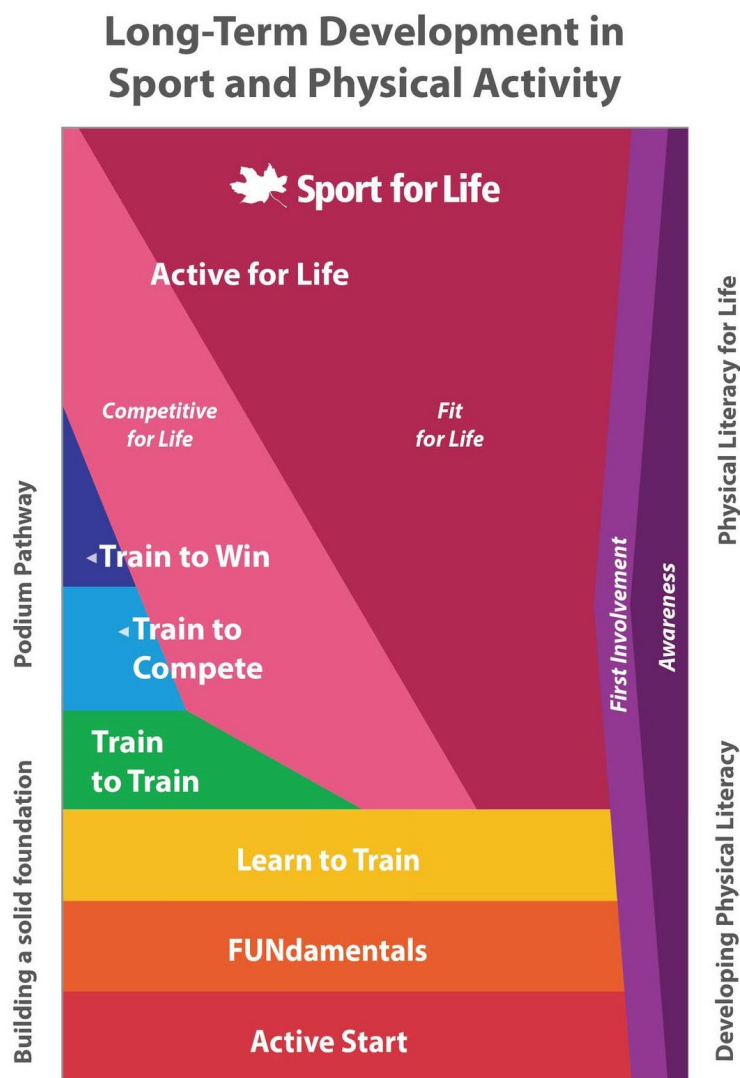


Figure 3: Sport for Life Rectangle

Evolution of Inclusion: Sport for Life strives to advance inclusion by ensuring that underserved populations of girls and women, individuals with disabilities, indigenous Peoples, newcomers to Canada, the LGBTQ12S community, aging adults, and those living in poverty and isolated communities have access to barrier-free and quality sport and physical activity opportunities.

BUILDING A BETTER SYSTEM - 5 Pin Bowling Overview

Given some of these trends, how can the C5PBA and CS4L initiative provide appropriate programs to attract and retain a diverse group of people to participate in fitness activities associated with bowling?

Shortcomings

- Developing bowlers continually compete even in practice. Even practice sessions are turned into competitions increasing games to practice ratio.
- Adult competitions are imposed on younger developing bowlers.
- Access to facilities for practice and training is a challenge when trying to increase skill development.
- There is little focus on the fitness component and developing physical capabilities needed for bowling.
- Time is not taken to work on fundamental movement skills during the skill window in youth bowlers.
- There is minimal acceptance of the importance of quality coaching. Furthermore, the best and most knowledgeable coaches work with the elite bowlers.
- Very few coaches have knowledge of both bowling and the needs of athletes with a disability.
- A system of talented identification and selection does not necessarily identify the best bowlers and provide the best program for them to excel.
- Athletes may come to bowling before adolescence and specialize too early.
- Many stakeholders involved in bowling do not understand Long Term Development in Sport and Physical Activity.
- Preparation is geared to the short-term outcome – winning and not the process of developing the bowler.
- Chronical rather than development age is used in training and competition planning.
- Parents are not educated about physical literacy and Long-Term Development and Physical Activity.
- In bowling the competition system interferes with athlete development.

Consequences

What are the results of these shortcomings?

- Developing bowlers do not develop skills that are important to tournaments.
- Children may not have fun participating in adult type programs as they could if competition were modified based on the characteristics of children and adolescents.
- Bowlers have difficulty putting in quality hours necessary to become better bowlers.
- Bowler's advance without necessary agility, balance, and coordination that are critical to be a successful bowler.
- Bowlers may start bowling with a supervisor who does not have technical knowledge of the sport. Beginning bowlers may develop bad habits that may inhibit their progress and success in bowling.
- Bowlers with a disability may be shortchanged by not being taught effectively or necessary modifications are not made to accommodate the athletes needs.
- Talent may not be recognized and fluctuate at national levels.
- Without an understanding of Long-Term Development in Sport and Physical Activity, changes in programs will be challenging.
- Limited skills development due to under-training.
- Poor habits developed from over-competition focused on winning.

Key Factors Underlying Long – Term Development in Sport and Physical Activity

To help all Canadians enjoy and research their potential in sport and physical activity, we need to apply a rational, progressive Long Term Development framework. The following key factors are the basis of that Long Term framework. They operate three levels: the individual (personal factors), each sport and physical activity – supporting organization (Organizational factors) and across the Canadian system as a whole (system factors).

Personal Factors

1. Developing **physical literacy** in the early stages lays the foundation for later success and life-long engagement in physical activity for health.
2. **Quality Environments:** By providing enhanced learning and training environments from a very early stage, greater physical literacy and improved sport-specific skills are developed. Individuals carry this advantage to subsequent stages of Long-Term Development. A quality training and competition environment is a safe environment physically, mentally, and social-emotionally. Please note, an enhanced learning and daily training environment is not the same thing as early over-specialization!
3. **Developmental Age:** People grow and develop at different rates. Sport and physical activity need to take each individual's stage of growth and development into account when designing training competitions and recovery programs. Long term Development addresses the complete physical, mental, cognitive, and emotional development of participants – not just physical characteristics and performance qualities. Training, competition, and recovery programs also need to consider the mental, cognitive and emotional development of each participant.
4. **Sensitive Periods:** As children grow and develop, there are times when different types of practice and training will have a greater effect. These “sensitive periods” provide a special opportunity to train and develop important skills and physical capabilities that have a greater return on time invested and that can impact athlete performance though the life course.
5. **Predisposition:** Not all individuals are equally capable in all sports, and both enjoyment and success are related to how proficient an individual is in the sport they play. Sampling many sports during the Learn to Train stage and early Train to Train can help participants find sports and physical activities to which they are well suited.
6. **Excellence Takes Time:** To reach full potential, athletes need well planned, progressive, high-quality training over many years. Success cannot be rushed and, in many cases, athletes or performers may have pursued sport for 8 to 12 years of training and competition before mastering the activity. A hot house approach can produce early winners, but it hinders long term development and ultimate athletic success and can lead to burnout and overuse injuries.
7. **For life:** An over-the-life-course approach acknowledges there are critical periods in early life when social, and cognitive skills, habits, coping strategies, attitudes, and values are more easily acquired. These early abilities and skills develop durability in a person's health in later life. It also considers life transitions - from late adolescence to early adulthood for example – where life trajectories and future health can change positively or negatively. Taking a life-course approach, leaders are encouraged to reflect on the effects of programs on their participants' years into the future.

Organizational Factors

1. Sports need to update their Long-Term Development **framework** to ensure they are incorporating the latest sport, societal and science developments.
2. Long-Term Development is most successful when it is **fully embedded** in a sport organization. This includes governance, the competition structure and rules, coaching education, and officials' development.
3. **Awareness and First Involvement:** Participants need to be made aware of a wide range of sporting and physical activity opportunities, and their first involvement should be a positive (safe, welcoming and inclusive) experience.
4. **Different Activities:** Have different demands and different pathways.
 - **High Acrobatic:** such as gymnastics, diving and figure skating are early specialization sports that favor small bodies capable of fast rotation.
 - **High Kinesthetic:** Activities where developing an early “feel” for the environment or equipment is important. Examples would be swimming, soccer and racquet sports.
 - **Common (standard):** typical timing of specialization, with peak performance in late-20s or early-30s.
 - **Late specialization:** Sports in which peak performance can occur in the mid-30s or later, such as golf, rowing, or triathlon.
 - **Transfer:** These are sports that individuals do not generally take part in prior to late adolescence, such as bobsleigh.
5. **Appropriate Specialization:** There are right and wrong times to specialize in sport or physical activity and this depends on the type of sport. Specialize too early, and athletes may limit their development and success at older ages. Specialize too late, and an athlete may miss key development opportunities. Except in early specialization sports – such as gymnastics, figure skating and diving – athletes should not over specialize until their early teens. Before that they should participate in a wide range of sports and activities to build a high level of physical literacy and well-rounded sport skills.
6. **Periodization:** Is time management of training in annual and seasonal training plans in order to bring about optimal improvements in athlete performance at the right time. Periodization plans connect the Long-Term Development stage of the athlete with the training and development requirements at that stage.
7. **Competition:** Athletes need to train and compete according to training-to-competition ratios that develop skills and fitness while preventing injury and burnout. The quality of competition and the training of competitive events needs to serve the needs of the participant, allowing them to test the stage-appropriate skills they are developing.
8. **Transition:** Development in sport has many transitions – the transition into a sport, the transition between Long-Term Development stages, transition between sports, and the transition to be active for life. Transitions that are well planned and well executed maximize sport talent enabling individual potential to be reached.

System Factors

System factors are important for policy makers and organizational leaders, informing the ways organizations cooperate and collaborate to build an optimal system

1. **Collaboration:** There is an opportunity to improve collaboration between organizations, sectors and systems to support optimal development of the individual to succeed.
2. **System Alignment:** Many sports work with Sport for Life, own the podium and the Coaching Association of Canada and others to create programs and resources. To avoid confusion, it is essential that content (e.g. skills, drills and tactic/strategy) and the language used to describe them be consistent across all documents. It is equally important that the sport specific content at Learn to Train and Train to Train merge seamlessly with the demands of the sports excellence stages of the podium pathway including winning style of play and gold medal profile where appropriate.
3. **Safe and Welcoming:** The system should plan to welcome all participants by providing Safe Sport programming. Diversity is a reality and corresponding participant-centered programs supporting diversity are a necessity .
4. **Diversification:** To develop a well-rounded individual, it is important that they participate in many activities and multiple sports. Parents must not be pressured to choose a single sport for their child too early. Because sport and physical activity is delivered by sport-specific organizations, local early childhood programs, in recreation programs, by physical education and school sport, and by active living programs offered within the health system, there is a need to ensure that programs are aligned, that individuals are not pulled in different directions by different programs, and that the overall demands placed on individual are kept reasonable.
5. **Long – Term Development:** Excellence takes time, so it is essential organizations do not build systems that create pressure for immediate success. Systems, business models, processes and metrics (e.g. series points or rankings) must not influence sports leaders and coaches to favor earlier and more intense sport specialization – particularly pressure to play a single sport year-round. Sport organizations and funding agencies must reward long-term impact over short term outputs.
6. **Continuous Improvements:** The concept of continuous improvement is integral to Long Term Development in Sport and Physical Activity. By constantly seeking improvements in our understanding and practice, this framework will continually evolve to accommodate new breakthroughs in sport science and physical literacy research, new innovations in technology, and evolving best practices in coaching and instruction.
7. **Evidence Based:** To shift from the old paradigm, evidence supporting the new is critical. This means assessment, monitoring and research in all aspects of sport and physical activity programming and practice.

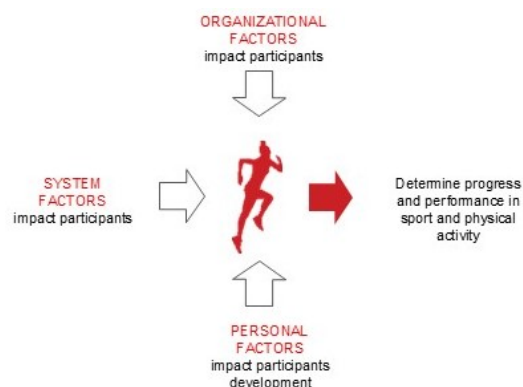


Figure 4: Key Factors underlying Long-Term Development in Sport and Physical Activity

Long- Term Development in Sport and Physical Activity Framework

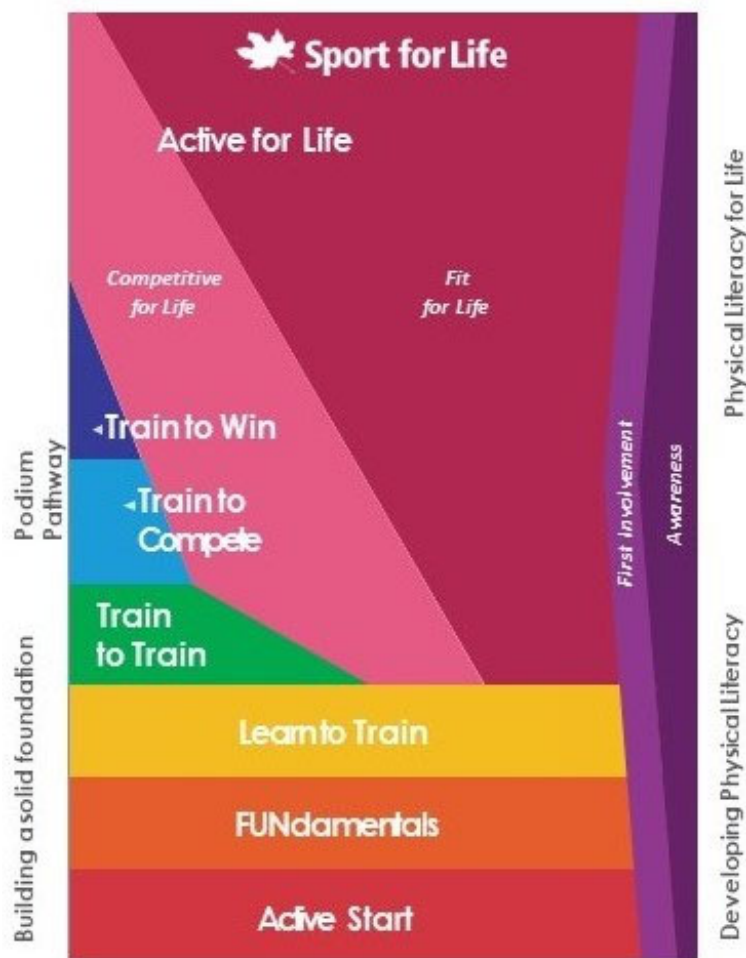


Figure 3: Sport for Life Rectangle

The three main goals of Long-Term Development in Sport and Physical Activity are to support the development of physical literacy, strive for excellence, and empower people to be active for life. The Sport for Life rectangle diagram depicts developmental paths toward attaining these goals. The rectangle includes all who are active, until the old pyramid models that systematically exclude individuals who do not reach the pinnacle of sporting success.

The basic Sport for Life Long-Term Development in Sport and Physical Activity framework has 7 stages. In addition, there are two pre-stages, and the Active for Life stage is sub-divided into two phases for greater clarity.

AWARNESS AND FIRST INVOLVEMENT

Getting children, youth and adults into sport and physical activity is critical to creating a more active, healthier population and generating sporting success for Canada. The process of getting people involved – and keeping them – has two distinct pre-stages.

Awareness: you need to be aware of an activity in order for you, or someone within your care, to take part in it, so you need to know:

- That it exists, and
- Where to find it.

Being made aware of sport and activity options is particularly important for underserved groups:

- girls and women,
- individuals with disabilities,
- Indigenous Peoples,
- newcomers to Canada
- individuals identifying as LGBTQI2S
- aging adults, and
- those living in poverty or in isolated communities.

First Involvement: Once someone knows about a sport or activity and decides they want to try it out, their first experience with that activity becomes critically important.

A positive first involvement is likely to bring them back to continue, and a negative experience makes their return far less likely. Organizations should carefully plan the first experience of new participants to ensure:

- there are no barriers to participation – especially for persons with a disability and those from visible and invisible minorities,
- that new participants feel included, knowing they will be welcomed back the next time,
- that new participants have the opportunity to get to know current participants,
- that it is affordable for participants to get and stay involved,
- that there is appropriate facilities and equipment, and
- the leader of the program has the appropriate skills to adapt to the participant's needs.

For example, opportunities for persons with disabilities to participate in sport and physical activity are not always well known to the general public. The purpose of awareness is to inform the public and prospective participants, of all abilities and backgrounds, of the range of opportunities available. To this end, sport and recreation organizations need to develop awareness plans to make their offerings and resources known. The purpose of First Involvement is to ensure everyone has a positive first experience of an activity and remains engaged. Accordingly, organizations need to train coaches and develop programs that provide suitable orientation for any and all prospective participants, helping them to feel confident, comfortable, and safe in their surroundings, and welcome among peers and training personnel.

Awareness Check list:

- Provide information about the opportunities for all abilities and backgrounds.
- Provide opportunities for all abilities and background to practice or compete in the same location and all at the same time.
- Provide marketing and collateral material that showcases and is welcoming to all abilities and encompasses the diversity of the population, including information on websites, newsletters, and publications. It is also important to include translation options where appropriate.
- Provide opportunities within the school system for all abilities and background to take part in.
- Provide opportunities for elite athletes to speak at school about sport and the opportunities it provides for BOTH able bodied athletes and those with a disability. Ensure diversity of gender, culture and backgrounds for these presentations.
- Engage with community recreation programs, and provide information to program organizers on where they can direct anyone showing interest in getting active.

First Involvement Check list:

- Provide training to coaches and leaders (and other first point individuals such as secretaries) to deal with the initial approach by a person with a disability or from a different background. Develop and practice a script.
- Provide opportunities for and be welcoming to ALL new participants.
- Develop an accessibility checklist that leagues or facilities can use to determine if sport and physical activity opportunities are accessible. These checklists should include the four facets of universal accessibility.
- proactively follow up with first time participants a few days after their first involvement to let them know they are welcomed back and to gather feedback on any improvements that the organization could make to make the experience better.
- Engage the participants in their sport at their own comfort level, where possible. Allow flexibility in length of commitment (short or long- term) especially for first timers.

PHYSICAL LITERACY

Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.

Physical literacy is the catalyst for change from the World Health Organization and the Public Health Agency of Canada to sector-specific policies including the Canadian Sport Policy, the recreation framework and Active 2020, the concept of physical literacy has become a key element in the way we think about physical activity. The importance of physical literacy development is now embedded in provincial / territorial and municipal plans, policies and curriculum.

Physical literacy is a lifelong journey, it begins to develop in early childhood and grows into a greater array and complexity of skills, capabilities and understanding during adolescence and adulthood. At different stages of life, physical literacy may serve different purposes and answer different needs for different individuals. For some people, physical literacy will provide a foundation for athletic success, while for others it may provide the means to pursue a vocational career. For example, it will provide the means to live a healthy active lifestyle at all stages of life and grant the opportunity to age gracefully in good health.

Providing a quality physical literacy experience should be the key focus of everyone involved in delivering physical activity, including everyone from teachers, coaches, and recreation leaders to administrators and policymakers in education, sport, recreation, and health. Different individuals, groups, and sectors of society are involved at different stages, and it is important that they work together for the benefit of children and adults who may be physically active with different groups and organizations.

Given the importance of physical literacy within the Long-Term Development in Sport and Physical Activity framework, a separate document *Developing Physical Literacy 2.0* had been developed and is available from Sport for Life.



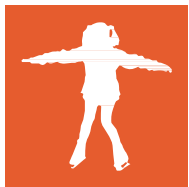
Figure 5: Physical Literacy Cycle

BUILDING A SOLID FOUNDATION

The first three stages: Active Start, FUNdamentals, and Learn to Train are designed to give Canadians the best possible start in sport and physical activity.



Active Start is about mastering basic human movements and developing habits of physical activity.

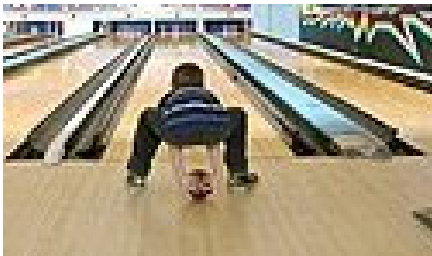


FUNdamentals is about developing fundamental movement skills and enjoying being physically active.



Learn to Train is about learning a wide range of bowler foundation skills.

Children pass through these stages in large part simply because they are growing and developing. Adults when learning a new sport or physical activity pass through the FUNdamental and Learn to Bowl stages. Transition from stage-to-stage is therefore **development based**.



ACTIVE START

Males and females' birth to approximately 6 years of age.

Begin the physically literacy journey

Make activity FUN and part of the child's daily routine.

Activity and movement skills are developed.

Focus on developing motor and balanced skills in a variety of movements.

Meet the 24-hour movement guidelines for young children of being active for 180 minutes daily.

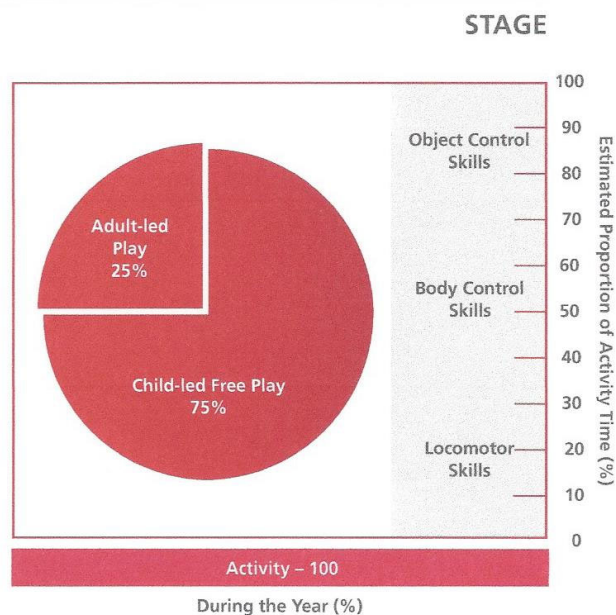


Figure 6: Active Start Activity Summary

Encourage play	Include activities that develop executive function:
- Structured (adult led 25%) - Unstructured (child led, and - Opportunities for play in natural environment	- Working memory - Cognitive flexibility, and - Building self control

Provide a series of challenges with both success and failure to help develop better confidence.

Exploration of risks and limits in a safe environment – including outdoor play in nature.

Create mini challenges to extend children's comfort range.

Ensure activities are fun and allow for social connectedness.



FUNdamentals

Boys approximately 6 – 9 years, and girls 6 – 8 years.

Further development of physical literacy

Develop fundamental movement skills, with emphasis on participation and having FUN on a daily basis.

Emphasize activities that develop agility, balance, coordination and speed – The ABC's. The building block for Canadians to move more.

Encourage running, wheeling, throwing and catching.

Build up physical capabilities through medicine ball, Swiss ball and own body-weight strength exercises.

Introduce simple rules and etiquette of sport, with a focus on fair play and respect for others.

No periodization, but well- structured programs.

- structured (35% adult led)
- opportunity (for free play 50%)
- instruction (15%)

Continue to build executive functions:

- building working memory
- increasing mental flexibility
- strengthening inhibition control

Provide and respect children's activity choices.

Competition should be informal with no records of results

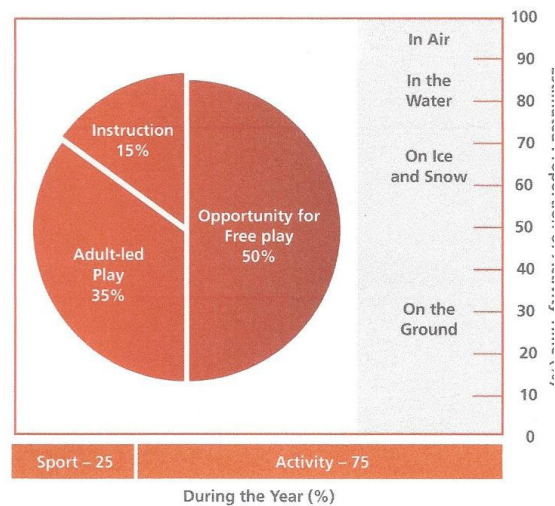
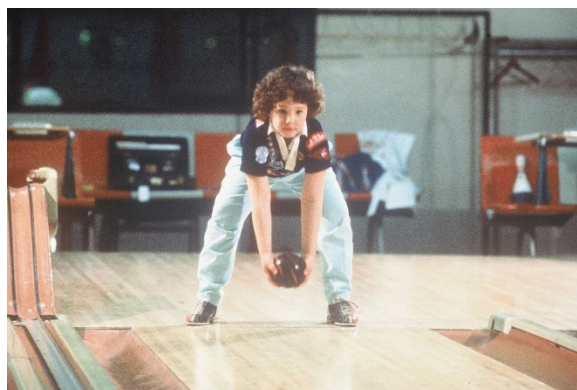


Figure 7: FUNdamentals Activity Summary



Learn to Train

Boys from approximately 9 and girls approximately 8 to onset of adolescent growth.

Continue to develop physical literacy

Brain and body primed for skill acquisition. Build fundamental skills in a wide range of sports and activities – before entering Train to Train stage.

Ensure environment promotes and supports fun and friendship.

Avoid early over- specialization.

Take into account individual's variations in physical, physiological, cognitive, emotional, and moral obligations.

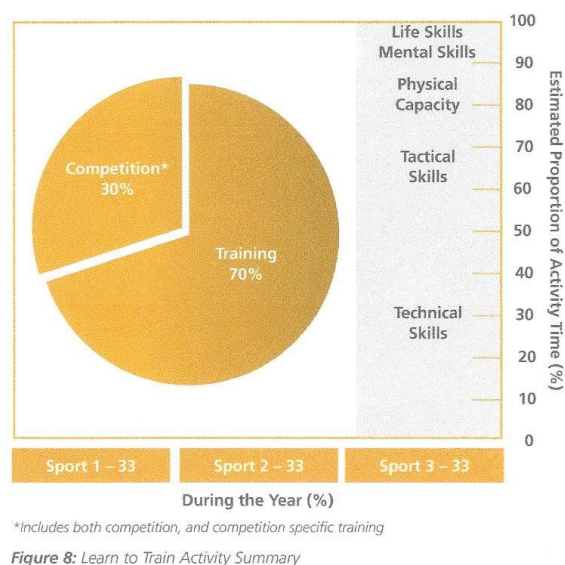
Build up physical capabilities through medicine ball, Swiss ball and own body – weight strength exercises, with additional focus on building flexibility and arm/leg speed.

Introduce ancillary capabilities: warm-up, cool down, nutrition, hydration, and recovery including sleep and mental preparation such as anxiety control.

Introduction to formal local competition, with emphasis on fair play and opportunities to try different events.

In this stage training should be 70% of their time and 30% focus in competition.

Sport-specific training 3 times a week plus participation in other sports or physical activity 3 times a week.



The Adolescent Participation: Train To Train



It is at the Train-to-Train stage – which often starts in early adolescence – where the future of many athletes is made or broken.

Train to Train coincides with the transition from childhood to adulthood, when many individuals make the decision to strive for excellence and commit to being an athlete. Sometimes that decision is made for them, through injury, lack of opportunity, or inability to progress.

Train to Train also marks entry into the excellence stages of Long-Term Development. As athletes achieve success, they will transition in the podium pathway.

Special Issues in Train to Train

Train to Train is critical for the development and retention of athletes. There is so much going on in the lives of youth during adolescence that is not surprisingly many drop out of sport and physical activity. A collaborative, coherent approach among coaches, organizations and system stakeholders is needed to support the Train to Train athletes' continued development toward excellence, or transfer into ongoing active for life. When the stakeholders understand the issues and show patience in development, more youth will be retained in sport and physical activity and progress to Train to compete.

Table 1: Special Issues to address at the Train to Train Stage

TRAIN TO TRAIN ATHLETES			
...feel that sport is	...report that they	...lack balance	Other Issues
Too focused on results	Don't feel welcome	Demands by multiple sports	Unqualified coaches
Too expensive, too far away	Have poor leadership	Demands by multiple teams	Training not developmentally appropriate
Not athlete centred	Feel unsafe (physically)	No athlete planning between sports	Prone to injury
No longer fun, is unfair	Feel unsafe (psychologically)	Academic and life demands not considered	Training is not periodized
Too easy or too hard	Lack of support	Meaningless competition	Training load increased too rapidly
Taking up too much time	Can't balance sport, school, friends and part time work	Conflict between club and school – rep and club etc.	Not making sufficient progress

Train to Train

Period of the adolescent growth spurt around the age 11 – 15 for females and 12 – 16 for males

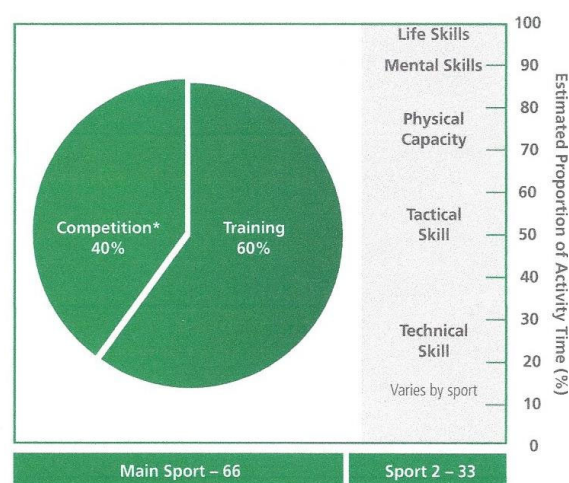
A critical stage in the development of high-performance athletes. During this stage participants typically:

- commit to high performance and begin their journey on their sport's pathway, or
- enter Competitive for Life in their sport of choice, or
- drop out of sport.

For those on their sports pathway, this is the stage for tremendous skill refinement, and for greater position/event specialization.

Major fitness development stage: aerobics and strength. The onset of the adolescence growth spurt and the time of Peak Height Velocity (PHV) are key markers and growth must be tracked. Stage for development of whole-body speed.

- Cultivate life skills.
- Ensure the environment promotes and supports fun and friendship.
- Greater attention to mental preparation.
- Develop ethical approach to sport including respect for opponents and fair play and commitment to doping-free sport.
- Formalized competition and standings/rankings.
- Build ancillary capabilities and sport life balance.
- Single or double periodization.
- Sport-specific training six to nine times per week including complimentary sports.
- Training 60% of the time and 40% competition.



*Includes both competition, and competition specific training

Figure 9: Train to Train Activity Summary



2017 Inter Provincial Championship – Team NWT

Training, Recovery and Meaningful Competition

Training, recovery and meaningful competition are critical components of Long-Term Development in Sport and Physical Activity.

Developmentally Appropriate Training:

- increase duration, volume and intensity progressively,
- takes advantage of sensitive periods,
- is based on the stage of physical development of the participant,
- supports the individual needs of the participants,
- incorporates equipment and playing spaces that are appropriate for the stage of the participant,
- uses movement preparation as part of the warmup, and
- develops all around athleticism and general fitness before sport-specific fitness.

Optimum Recovery

- recognizes that recovery is as important as training,
- is sufficient to allow participants to recuperate before next training session or competition,
- recognizes that quality sleep can help in skill learning and retention as well as in physical recovery, and
- requires post-training and post-competition nutrition.



2022 Youth Challenge

Meaningful Competition

- is designed to support what has been practiced in training,
- is modified in term of game duration, size of the playing area and rules to match developmental of participants,
- offers equal competition opportunities by keeping participants in events rather than eliminating them (A finals, B finals, C finals, round robins, and cross-overs),
- in early stages, focuses on the process of competing and using recently learned skills in competitive situations – not on results, and
- is in the “challenge zone” - not too difficult or too easy, resulting in close competition without blowouts or humiliating defeats, and cuts down on travel time and cost.

Train to Compete

Dependent on sport progress – beyond adolescence growth spurt. Athletes generally at provincial or early national level.

Requires specialized coaching in specialized training environment.

The stage of specialization in sport or event then specific training design for physical conditioning and technical/practical preparation to maximize development.

Test tactics and practice under competitive conditions.

Evidence-based training built on testing to identify strengths and weaknesses.

Optimize ancillary capabilities, and balance sport, work/school and family/friend life obligations.

Advanced mental preparation, and practice under highly competitive conditions.

Strengthen ethical approach to sport including respect for opponents, fair play and commitment to doping-free sport.

Sport-specific technical, tactical and physical capacity training 9 to 12 times per week.

In this phase training about 40% of the time and 60% competition.

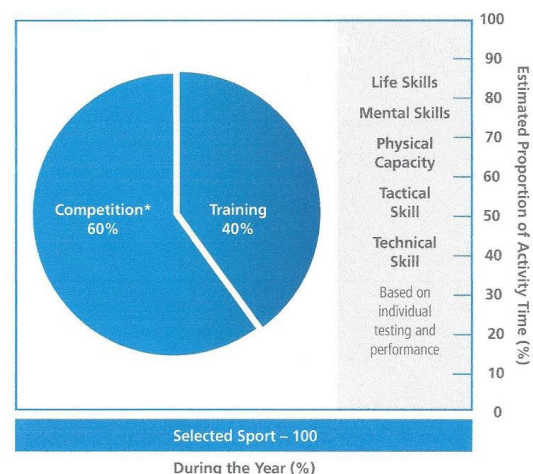


Figure 11: Train to Compete Activity Summary



Active for Life



The overwhelming majority of people playing just about any sport fall into the Active for Life stage. Having built a solid foundation in the first three stages of the framework, they progress to playing the sport or sports of their choice for enjoyment, satisfaction or for health benefits they obtain. Some compete in organized sport, while others do not.

Competitive for Life is the phase of Active for Life for those who compete within the formal structure of their sport. This could be local bowling tournaments, provincial fun tournaments or Master's events. It differs from Fit for Life because competitive athletes are striving to improve and to win and they train accordingly.

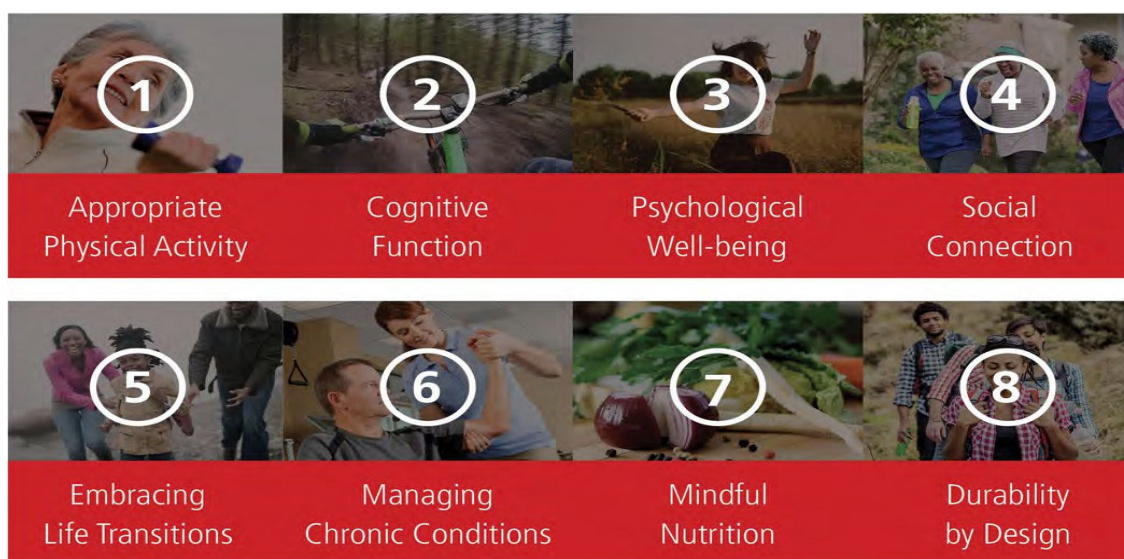
Fit for Life is the phase for those who participate simply they get satisfaction from sport or physical Activity. They may, from time to time, compete at a recreational level, but that is not their primary purpose. Fit for Life also describes those who engage in non-sporting physical activity.

Sport and Physical Activity Leaders include those individuals who contribute in ways other than being an athlete or participant in the sport or activity itself, such as coaches, instructors, officials, and administrators.

An individual is not restricted to one of these pathways at any given time. Often individuals in the Active for Life stage will be actively involved in multiple pathways.

Physical literacy, increased activity and recreational sport – being “fit for life” – can be the gateway to a healthier Canada. The benefits of regular physical activity are well documented: sustained long-term health, increased social connectedness, improved general mental and physical well-being and better quality of life. Yet in spite of the clear evidence demonstrating numerous benefits associated with regular exercise, particularly for mature adults, only 15% of Canadian adults meet national physical activity recommendations and rates of sport participation have declined in the past several decades among Canada's growing population of older adults.

There are 8 essential factors for healthy adulthood and successful aging: they describe the basic elements of the Active for Life stage and are the key components of being durable by design. The 8 factors are dependent, and each is critical to be fit for life.

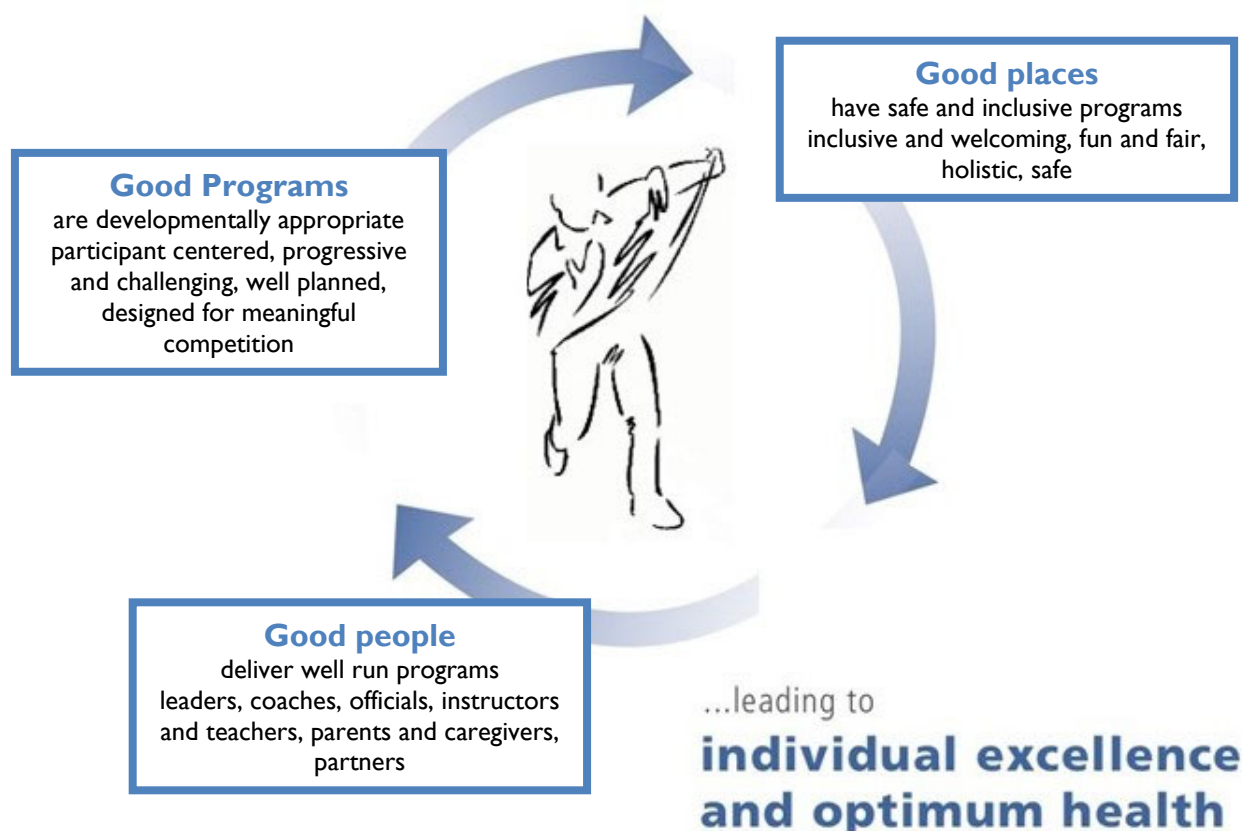


Quality Sport and Physical Activity

At its essence, quality sport and physical activity is achieved when good people do the right thing at the right times. Quality sport and physical activity is developmentally appropriate, well run, safe and inclusive. These components each compromise a number of elements that lead to quality experience in any sport and physical activity program. The following checklist has key points that are useful when planning programs.

Quality sport

based on Long-Term Athlete Development is...



A Multi- Sectorial Approach

Across their life span individuals come in contact with the school system and physical education; sport at the community, school, provincial/territorial level, community recreation programming; and the health system. It is in everyone's best interest that ALL of these organizations and sectors work together and follow a common approach to developing physical literacy and athletic potential thereby ensuring that everyone has access to quality sport and physical activity. The common objective must be to create retention in sport and physical activity and reduce dropout. Confusion, frustration, and burnout that can result from trying to work in an uncoordinated system and tend to increase dropout rates. Long-Term Development is a vehicle for system change because it acknowledges that physical education, school sports, competitive sports, and recreational activities are mutually interdependent. It stands in sharp contrast to the current Canadian sport system. Traditionally, physical education in schools, community activity, and elite sports have been developed separately; an approach that is ineffective and expensive. It fails to ensure that all children, including those who may choose to become elite athletes, are given a solid foundation and knowledge base – physical, technical, tactical, and mental – upon which to build their athletic abilities. When stakeholders work together, everyone wins.

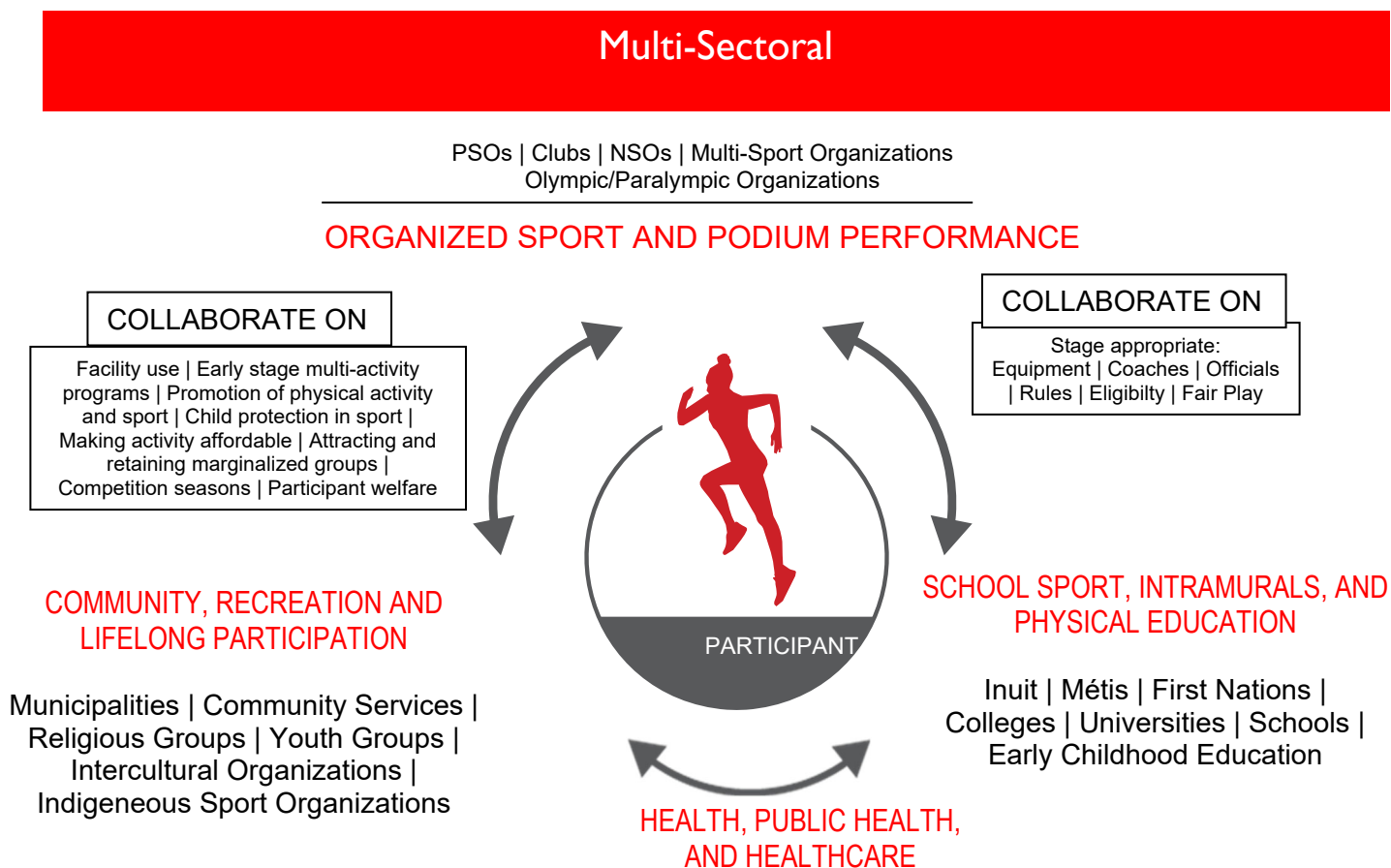


Figure 16: Multi-sectoral

A NEW WAY FORWARD

Although we have come a long way since the Canadian Sport for Life: Long-Term Athlete Development 1.0 resource paper was released in 2005, there remains a long way to go. We still need a system-wide paradigm shift that includes policy makers; national, provincial, territorial, and local associations; as well as program deliverers. Changing a long-established system is never easy, but breaking down the task makes it less daunting. A real paradigm shift will require moving:

- From a system that cuts and excludes participants to a system that includes everyone and helps those who are not having the success they want, transfer to other sports or activities in which they can thrive.
- From age-based programs that are appropriate for the average participant to stage-of-development appropriate participation for all.
- From chasing wins and accumulating points for standings in leagues, to athletes taking part in meaningful competition where blow-outs are rare, and learning can take place.
- From training children and youth as though they were miniature adults to providing them with periodized training appropriate to their stage of development.
- From a focus on physical activity to a focus on developing physical literacy across the lifespan from preschoolers to seniors.
- Towards all levels within sport, from grassroots to national championship teams working together to maximize benefits and reduce overlaps while providing athletes and participants a clear, unified, path to reach the sporting goals.
- From community sport, recreation, education, health and performance sport working in isolation to all system working together with common goals and common purpose.
- To a Canadian sport system that is both good for sport and good for society

Table 2 : The Change we need

Lead	From	To
System (refer to governments, NOCs, MSOs, etc.)	Exclusionary development models (pyramid)	Inclusive development framework (rectangle)
System	Goals for Sport	Goals for society
System	Separate systems	System alignment
System	Physical activity	Physical literacy
System	Working alone	Working together
Organizations (refers to NSOs, PTSOs, & LSOs)	Chasing wins	Meaningful competition
Organizations	Exclusion/cutting	Inclusion/transfer/tiering
Organizations	Age-based coaching, training and competition	Stage-based coaching, training and competition
Organizations	National team single-sport periodization	Stage-based periodization

Advancing Long–Term Development in Sport and Physical Activity across Canada

The ultimate goal for Sport for Life is to fundamentally change sport and physical activity in Canada for the better, and this requires aligning the actions of:

- governments at the federal and provincial/territorial level,
- sport and physical organizations, and
- coaches and leaders who work daily with athletes and participants.

It also requires:

- awareness, education, and training of leaders,
- delivery of quality sport and delivering physical literacy programs,
- alignment of policies, including funding models, between federal and provincial/territorial ministries responsible for sport and physical activity,
- alignment of sport and physical activity best practices within and across sectors,
- providing evidence through research and assessment, and
- inclusion of all, which requires planning and intentional supports.

This figure takes a “Logic Model” approach and illustrates the primary actors of influence within our sport ecosystem, their contributions and responsibilities to the advancement of Long-Term Development in Canada through identified outcomes and impact.

Table 3: A Catalyst for Cultural Change

Who	Responsibility	To Promote	Leading to	Resulting in	Outcomes	Long-Term Development Impact
Governments (F-PT)	Long-Term Development pathway and physical literacy policies	Sport for Life Framework at F-P/T levels	Sector and system alignment	Sport for development and physical literacy strategies	Sport for Life contributing to community health and wellness	
Organizations	Long-Term Development frameworks (for all participants)	Good: leadership governance policy staffing	Quality programming	Developmentally appropriate activity and competition	Greater retention of athletes and participants	
Leaders and coaches	Long-Term Leadership and Coaching Development framework and education strategy	Stage-based coach/leader training curriculum	Stage-based periodization and training	Developmentally appropriate training and physical activity	Planned meaningful competition	

Glossary of Terms

Adaptation: is response to a stimulus or a series of stimuli that induces functional and/or morphological changes in an athlete, and the degree of adaptation is dependent on both the generic endowment of the individual and their history of training – since it becomes more difficult to make gains as individuals approach their generic limits. Exercise science has provided well-researched and well understood guidelines for generating optimal adaptations. Adaptations can be either positive or negative.

Adolescence: is the period between childhood and adulthood. During this period, most body systems become adult in both structure and function. Structurally, adolescence begins with an increase of growth in stature, which marks the onset of adolescent growth spurt. The rate of increase in height reaches a peak, begins to slow, and ends with the attainment of adult stature.

Ancillary Capacities refer to the mental and physical abilities of an athlete other than sport technical skills and physical training. It 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 performance factors, the more they can enhance their training and performance levels. When athletes reach their generic potential and physiologically cannot improve anymore, sport performance can be improved by using the ancillary capacities to full advantage.

Athlete Development Matrix (ADM) within Long–Term Development in Sport and Physical Activity framework, the ADM describes the skills and the attributes of athletes progressing through the stages of the framework.

Childhood ordinarily spans the end of infancy – the first birthday – to the start of adolescence and is characterized by relatively steady progress in growth and maturation and rapid progress in cognitive and motor development. It is often divided into early childhood, which includes preschool children aged 1 to 5, middle childhood, from ages six to eight or nine, and late childhood, for age eight or nine to the onset of adolescence.

Chronical Age is the “number of years and days elapsed since birth”. Children of the same chronical age can differ by several years in their level of growth and maturation.

Development refers to “the interrelationship between growth and maturation in relationship to the passage of time. The concept of development also includes the social, emotional, intellectual, and motor realms of the child”. 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 the changes in structure and function, in the athlete’s progress toward maturity; for example, in the change of cartilage in the bone in the skeleton, in the change to teeth from (baby teeth to adult teeth), in changes to sex organs, or in the changes in body portions. Maturation takes place at varying rates and at different times in each individual.

Developmental age is the age in years and months of the average youth with the same development as the individual in question. Development age can be based on different body systems, including skeletal maturity or sexual maturity and different systems may give slightly different developmental ages, and therefore should be treated as an approximation unless measured by skilled evaluators with specialized equipment. In sport developmental age should be used as an indicator.

Enhanced Training environments: refers to NSO (C5PBA) driven identification and development of environments for targeted athletes that include leading coaches, and that advance support in technology research, sport science and sport medicine.

Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life. In more practical terms is the life-long development of fundamental movement skills and fundamental sports skills in a wide variety of environments.

Puberty refers to the stage of maturation during which an individual becomes sexually mature and able to reproduce.

Quality Sport means good, developmentally appropriate, values-based programs, run in a safe, welcoming and inclusive environment by good people who are adequately qualified and are committed to the True Sport principles.

Readiness refers to the child's level of growth maturity, and development that enables them to perform tasks and meet demands through training and competition. Readiness and sensitive periods of trainability during growth and development of young athletes signal the correct time for using certain stimuli to achieve optimum adaptation in skills, physical capacities, and competition.

Sensitive periods of development refer to a period in the development of a specific behavior or body adaptation when experience or training has a greater impact than that of other times. All systems are always trainable, and a sensitive period is when a system has optimal trainability

Trainability is the responsiveness of individuals to training stimuli. Trainability can refer to the speed of adaptation to training a stimulus or the degree of adaptation for a given level of training stimulus.

Training age is a measure of how long an athlete has been training in a specific sport.

True Sport Policy

- Reinforce a sport organization's commitment to creating a values-based and principles-driven culture from executive boardroom to the field of play.
- Give context to a sport organization's commitment to manage risk effectively.
- Enhance a sport organization's brand, reputation and image.
- Perform educational function for staff, Board of Directors, members and stakeholders.
- Help to ensure a sustainable transfer of philosophy as leadership changes over.

REFERENCES

Sport for Life document Handbook of References. sportforlife.ca/handbook-of-references

Bowling Federation of Canada LTAD 2.0

