

An Outline of LTAD

LTAD is a training, competition, and recovery framework for individuals at all stages of life.

The first 4 stages, with their respective approximate age ranges, are generally appropriate for all late-specialization sports. In the Training to Compete and Training to Win stages, age ranges vary from sport to sport.

LTAD focuses on the general framework of athlete development with special reference to growth, maturation, and development.

LTAD is a framework for full sport system alignment in Canada, integrating health and education with sport and physical activity.

Active Start

Focuses on learning proper movement skills such as running, jumping, wheeling, twisting, kicking, throwing, catching, skating and skiing

Not sedentary for more than 60 minutes except when sleeping

Some organized physical activity

Exploration of risk and limits in safe environments

Active movement environment combined with well-structured gymnastics and swimming programs

Daily physical activity

FUNDamentals

Focuses on general, overall development

Integrated mental, cognitive, and emotional development

Elements of athletics: running, jumping, wheeling, and throwing

Medicine ball, Swiss ball, and own body strength exercises

Introduce simple rules and ethics of sport

No periodization, but well-structured programs

Daily physical activity

Learning to Train

Major skill learning stage: all basic movement and sport skills (physical literacy) should be learned before entering Training to Train

Overall physical, mental, cognitive, and emotional development

Introduction to mental preparation

Medicine ball, Swiss ball, and own body strength exercises

Introduce ancillary capacities

Single or double periodization

Sport specific training 3 a times week; participation in other sports 3 times a week

Training to Train

Major fitness development stage: endurance, strength, and speed

Overall physical, mental, cognitive, and emotional development

Develop fundamental mental skills

Introduce free weights

Develop ancillary capacities

Frequent musculoskeletal evaluations during PHV (growth spurt)

Single or double periodization

Sport specific training 6-9 times per week including complementary sports

Training to Compete

Sport, event, position specific physical conditioning

Sport, event, position specific technical and tactical preparation

Sport, event, position specific technical and playing skills practised under competitive conditions

Overall physical, mental, cognitive, and emotional development

Advanced mental preparation

Optimize ancillary capacities

Single, double, or triple periodization

Sport specific technical, tactical, and fitness training 9-12 times per week

Training to Win

Focus on high performance

Maintenance or improvement of physical capacities

Further development of technical, tactical, and playing skills

Modelling all possible aspects of training and performance

Frequent preventive breaks permitting recovery to avoid injuries

Maximize ancillary capacities

Single, double, triple, or multiple periodization

Sport specific technical, tactical, and fitness training 9-15 times per week

Active For Life

Focus on being physically active for life with a minimum of 60 minutes moderate daily activity or 30 minutes of intense activity for adults

There is a better opportunity to be Active for Life if physical literacy is achieved before Training to Train

Transfer from one sport to another

Move from highly competitive sport to lifelong competitive sport through age group competition

Move from competitive sport to recreational activities

Move to sport careers or volunteering

“The health and well-being of the nation and the medals won at major Games are simple by-products of an effective sport system.”

Istvan Balyi PhD



“At the first four stages, our children are competing too often with over-zealous parents and coaches wanting to win, robbing them of the opportunity to have fun and develop skills that will enable them to be successful.”

Steve Norris PhD

“Athletes with a disability go through the same stages as all children. They need support and challenges from their parents and coaches to reach their potential.”

Colin Higgs PhD



“Parents should understand LTAD and coaches should have knowledge on how to train the developmental athlete.”

Charles Cardinal M.Sc.



“First our children need an active start to develop movement and sport skills so they are physically literate. Then they can strive for excellence and or be active for life.”

Richard Way MBA

Long-Term Athlete Development



Canadian Sport for Life



Active Start

Males and Females 0-6

Fitness and movement skills development as a FUN part of daily life



FUNdamentals

Males 6-9 Females 6-8

Learn all FUNdamental movement skills and build overall motor skills

Play many sports

Focus on the ABCs of Athleticism: ability, balance, coordination, and speed



Learning to Train

Males 9-12 Females 8-11

Learn overall sport skills

Acquire sport skills that will be the cornerstone of athletic development

Play a variety of sports focusing on developing skills in three sports in particular



Training to Train

Age is growth-spurt dependent
Males 12-16 Females 11-15

Build an endurance base, develop speed and strength towards the end of the stage, and further develop and consolidate sport specific skills

Select two favourite sports based on predisposition



Training to Compete

Age varies depending on sport
Males 16-23 +/- Females 15-21 +/-

Optimize fitness preparation and sport, individual, and position specific skills and learn to compete internationally



Training to Win

Ages are sport specific based on national and international normative data
Males 19 +/- Females 18 +/-

Podium Performances



Active for Life

Enter at any age

A smooth transition from an athlete's competitive career to lifelong physical activity and participation in sport



Playground to Podium

Planning for the sporting excellence and well-being of Canadians.

Sports can be classified as either early or late specialization. Early specialization sports include artistic and acrobatic sports such as gymnastics, diving, and figure skating. This outline is for late specialization sports.



"I was involved in many sports growing up, which helped me develop many physical and psychological skills, which helped me when I focused on speed skating at the age of 17. It paid off as I stood on top of the podium 10 years later."

Catriona Le May Doan,
Olympic and World Champion

"As a developing athlete, my coaches encouraged an intense but highly social program that kept our training group hungry for more work, and eager to take on new challenges. We worked hard, but in an environment with a lot of variety, where fun was always a major priority. Success came easily to our group as we made the transition to international competition because another challenge was just what we were looking for."

Adam Van Koerverden,
Olympic Champion



"I have gone through all the same stages of development as Canada's other elite athletes. From training hard as a teenager, through learning to compete on the international stage, to standing on the Olympic podium, my development has taken time and perseverance."

Chantal Petitclerc,
Olympic, Paralympic, and World Champion

"I knew I always had the ability to perform at the highest levels, but my peaking was always hampered by serious injuries in the middle of the competitive phase. When I came to understand the value of adequate recovery, through regular therapy and regeneration techniques, I was able to perform consistently throughout the year. Being uninjured during the competitive season enabled me to spend more time on race specific preparation and modelling practices and that ultimately played a major role in my bronze medal performance at the 2005 world track and field championships."

Tyler Christopher,
World Championship medallist



"Even though one must specialize quite young in my sport - diving - I still had to go through all the stages described in the Long-Term Athlete Development Model; I just had to go through them a bit quicker."

Alexandre Despatie,
Olympic medallist and World Champion

"I believe in the power of play to develop a healthy child. My childhood was very physical, full of fun and creative, self-organised, unstructured play. I tried many different sports, particularly running, and developed a healthy, strong body that loved to move. I was 17 when I first discovered rowing and found that my active childhood had laid the foundation needed for me to be successful competing in a sport I loved."

Silken Laumann,
Olympic medallist and World Champion



"When I was growing up, I trained many, many more times than I played games, which allowed me to develop the skills and the physical conditioning to play at the world's highest level."

Owen Hargreaves,
England and Bayern Munich, Champion League Winner

"Winning medals in both Summer and Winter Olympics was not easy. I believe the most crucial ingredient to my success as an athlete was my development as a youngster in an incredible range of community and school sports. From ringette to hockey, ballet to gymnastics, softball to soccer, track and field to volleyball, roller speed skating to speed skating and cycling, I was able to develop the attributes that carry me to success on the international playing field. I also learnt how to have fun with sport long before I knew what the pressure of competition entailed. I learnt how to play before I learnt how to win, and now I do both!"

Clara Hughes,
Winter and Summer Olympic Games medallist

