

# An Outline of LTAD

Sport Canada's Long Term Athlete Development (LTAD) is a framework for full sport system alignment in Canada, integrating health and education with sport and physical activity. The LTAD is an eight-stage model based on the physical, mental, emotional and cognitive development of children and adolescents. Each stage reflects a different point in athlete development. The first three stages encourage physical literacy and sport experiences for all. The next four stages focus on competitive excellence and the final stage encourages life-long physical activity. Following is a general overview of the LTAD progression for cross-country skiing.

Active Start	FUNdamentals	Learning to Train	Training to Train
<p>Focus on learning proper basic movement skills such as running, gliding, jumping, twisting, kicking, throwing and catching.</p> <p>Develop fitness and movement skills as a FUN part of daily life.</p> <p>Avoid being sedentary for more than 60 minutes except when sleeping.</p> <p>Include some organized physical activity, including outdoor activities.</p> <p>Explore risk and limits in safe environments.</p> <p>Introduce cross-country skiing early (e.g. three years of age).</p> <p>Learn to cross-country ski through an organized mix of play and discovery in situations in which children learn to ski naturally with limited formal instruction.</p> <p>Make use of ski facilities with a ski playground/terrain park.</p> <p>Ski frequently during the snow season.</p>	<p>Focus on general, overall development.</p> <p>Acquire basic cross-country ski skills (both classic and skating techniques).</p> <p>Learn ABCs of athleticism: agility, balance and throwing.</p> <p>Mental, cognitive and emotional development is integrated.</p> <p>Utilize medicine ball, Swiss ball, own body strength exercises.</p> <p>Optimal window of trainability for speed and flexibility occurs.</p> <p>Introduce simple rules of ethics of sport.</p> <p>Utilize games to develop skills and fitness.</p> <p>Cross-country ski frequently during snow season (several times a week); participate in many other sports 4-6 times a week year round.</p> <p>Continue to make use of ski playgrounds/terrain parks.</p> <p>Practice sessions are well-structured and monitored.</p>	<p>Major skill learning stage: all basic movement and sport skills (physical literacy) should be learned before entering the Training to Train stage.</p> <p>Develop good technique habits through repeated practice.</p> <p>Utilize games to develop skills, speed, power and fitness/ endurance.</p> <p>On snow focus is balance, agility and rhythm.</p> <p>Include adventure-based activities in seasonal plan.</p> <p>Mental, cognitive and emotional development is integrated.</p> <p>Emphasize group interaction, team building and social activities.</p> <p>Utilize medicine ball, Swiss ball and own body strength exercises.</p> <p>Sport specific training three times a week; participate in other sports three times a week.</p> <p>Play a variety of sports. Focus on developing skills in three sports in particular.</p>	<p>Major aerobic capacity development stage.</p> <p>The onset of the growth spurt and Peak Height Velocity (PHV) are the reference points. Training focus is tied to individual stage of maturation.</p> <p>Development of mental, cognitive and emotional skills.</p> <p>Optimal window for trainability of strength development occurs (females).</p> <p>Optimal window of trainability for speed occurs at the start of this stage for females and the end of this stage for males.</p> <p>Introduce systematic medical monitoring.</p> <p>Plan and prepare for best performance at one event.</p> <p>Sport specific training 6-9 times per week, including complementary sports.</p> <p>Further develop and consolidate sport specific skills.</p> <p>Maintain emphasis on group interaction, team building and social activities.</p> <p>Select two favourite sports based on predisposition.</p>
Learning to Compete	Training to Compete	Training to Win	Active For Life
<p>Develop event specific tactical preparation (individual sprint, team sprint, mass start, interval start, relays, long versus short distance).</p> <p>Refine mental, cognitive, and emotional skills.</p> <p>Optimal window of trainability for strength development (males).</p> <p>Develop technical skills in competitive situations (at high intensity).</p> <p>Increase fitness and medical monitoring.</p> <p>Single, double and triple periodization.</p> <p>Sport specific technical, tactical and fitness training 9-12 times per week.</p>	<p>Optimize event specific tactical preparation (individual sprint, team sprint, mass start, interval start, relays, long versus short distance).</p> <p>Optimize technical skills in competitive situations (at high intensity).</p> <p>Single sport focus.</p> <p>Advanced mental preparation.</p> <p>Focus on improving individual areas of weakness.</p> <p>Single, double or triple periodization.</p> <p>Sport specific technical, tactical and fitness training 9-12 times per week.</p> <p>Consider event specialization (sprint versus distance) for training and performance.</p>	<p>Improve physical capacities by increasing and maximizing the training load (volume and intensity) that an athlete can handle.</p> <p>Further develop technical, tactical skills and mental skills.</p> <p>Individualize all aspects of training and performance to maximize optimization.</p> <p>Primary health prevention through athlete monitoring to optimize training, performance and recovery.</p> <p>Shift in focus to full time commitment to cross-country skiing.</p> <p>Emphasize single, double, triple or multiple periodization.</p> <p>Sport specific technical, tactical, and fitness training occurs 9-15 times per week.</p> <p>Based on predisposition, optimize event specialization (sprint versus distance) for consistent, repeatable performances.</p> <p>High performance sport specialist support is optimized, as is fitness and medical monitoring.</p>	<p>Focus on being physically active for life, with a daily minimum of either 60 minutes moderate daily activity or 30 minutes intense activity (for adults).</p> <p>Transfer from one sport to another.</p> <p>Move from highly competitive sport to lifelong competitive sport through age group competition.</p> <p>Move from competitive sport to recreational activities.</p> <p>Move to sport careers or volunteering.</p>

**“For those young skiers who doubt the value of a full commitment to becoming the best – now is the only time in your life when it is possible. Later is too late. Then you will always wonder how good you could have been.”**

Dave Rees,  
President of Cross Country Canada



“Compelling scientific evidence demonstrates that physical activity plays a key role in improving health and in preventing disease and premature death. Physical activity reduces the risk of many conditions, including heart disease, obesity, high blood pressure, Type II diabetes, osteoporosis, stroke, depression and colon and breast cancer”

Physical Activity and Health, Population & Public Health Branch, Health Canada

**“The objective is to take advantage of the high receptiveness to motor learning in young children by providing learning situations that work for this age group. In early childhood the emphasis should be on play and discovery with limited formal instruction.”**

NCCP Introduction to Community Coaching Reference Materials

“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,  
Canadian LTAD Sport Expert Group



## Long-Term Athlete Development



# Cross-Country Skiing

A Sport For Life



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For more information visit: [www.cccski.com/ltad](http://www.cccski.com/ltad)





## Active Start

Males and Females 0-6

Cross Country Canada (CCC) encourages children to be involved in lifelong activity and to begin cross-country skiing at an early age through the Bunnyrabbit Program.

This is an essential period for acquiring fundamental movement skills that lay the foundation for more complex movements.

## FUNDamentals

Males 6-9 Females 6-8

Fundamental movement skills are mastered, motor development emphasized and basic cross-country ski skills learned. For optimal sport specific acquisition, all the basic ski skills, both classic and skating, should be learned before the end of this period.

To help children learn these skills, CCC's Jackrabbit Program provides guidance on equipment, technique, the appropriate number of practice sessions per season and the other elements that constitute an appropriate sport program that conforms to LTAD principles.

## Learning to Train

Males 9-12 Females 8-11

Important period for motor development, and an optimal window of trainability for motor-coordination. Children are developmentally ready to acquire the general sport skills that will be the cornerstone of their athletic development. Fitness becomes increasingly important.

CCC's Track Attack Program is designed to promote the continued development of physical literacy and fitness, and to enhance competence in the basic skills required to excel in cross-country skiing.

## Training to Train

Males 12-16 Females 11-15

Important period for developing aerobic capacity, which is especially critical for cross-country skiing (a lot of skiing at low intensity!).

Social and emotional considerations are very important. Team building, group interaction and social events should be emphasized.

## Learning to Compete

Males 16-20 +/- Females 15-19 +/-

Fitness preparation, sport and individual specific skills are developed. The development of self awareness and independence should be emphasized.

The gradual seamless integration of training and racing into the overall timetable and lifestyle of the aspiring competitive athlete.

## Training to Compete

Males 20-23 +/- Females 19-23 +/-

Important period for individualized fitness preparation. Fitness and medical monitoring is increasingly sophisticated, and sport and individual specific skills are mastered. Self-awareness and independence become increasingly important.

Athletes learn to compete internationally.

## Training to Win

Males 23 +/- Females 23+/-

During this stage athletes focus on high performance and undertake multi-year preparations for major events (i.e. Olympics, World Championships).

All aspects of training and performance are highly individualized. Podium Performances.

## Active for Life

This stage can be entered at any age.

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

# Ski Playground to Podium

Participation in cross-country skiing - a "sport for life" - can enhance the health, fitness and mental well-being of Canadians of all ages.

Cross-country skiing is a late specialization sport. During the first three stages of the LTAD, children grow and improve within the sport through programs permitting a broad exposure to activities that develop overall motor and sport skills. Following the first three stages there is a transition to either further development and excellence in cross-country skiing or life-long participation in skiing and/or other sports at the recreational or less competitive level. For athletes who wish to pursue excellence, increasing specialization in cross-country skiing and an expanding focus on competition permit them to mature athletically and aspire to national and international podiums. Regardless of the level of excellence or sport-mastery achieved however, participation in cross-country skiing – a "sport for life" - can enhance the health, fitness and mental well-being of Canadians of all ages.



"As a child growing up in the Canadian Rockies the outdoors was my playground and my skis were my toys. I can't really quantify the importance of being outdoors during that period because I can't imagine what my childhood experience would have been like without it. It has shaped my family, the person I became as an adult, and the community I now choose to surround myself in."

Sara Renner, Olympic Silver Medalist in Cross-Country Skiing

"FUNDamental movement skills and FUNDamental sports skills = physical literacy."

Canadian Sport For Life

"As a youth I was always encouraged to participate in a wide range of sports. In time, however, cross-country skiing became my main sport focus and ultimately my passion. Positive role models then and now helped fuel my love of skiing and my desire to seek excellence. I continue to believe that I can reach my goal of Olympic medals"

George Grey, National Ski Team

"A full service club provides a progression of athlete development opportunities for skiers throughout the various stages of the LTAD."

NCCP Introduction to Community Coaching Reference Materials

"Ultimately, top level performance comes down to athletes believing in themselves. Along the way they must commit to their plans, their support team and to hard work. But when the gun goes off, it is their belief that they will prevail that will make the difference."

Dave Wood, Head Coach, National Ski Team

