



IN PURSUIT OF PERSONAL EXCELLENCE

Skate Canada's Guide to
LONG-TERM ATHLETE DEVELOPMENT



ACKNOWLEDGEMENTS

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Joannie Rochette
2010 Olympic Bronze Medalist
2009 World Silver Medalist

FOREWORD

Sport is considered an integral part of Canadian culture, acting as a source of national pride when athletes excel at the international, world, and Olympic levels. There is little more exhilarating for fans of sport than watching the maple leaf being hoisted to the strains of *O Canada*. However, sport also serves another equally important role in our country. It provides the opportunity for Canadians to achieve better health and well-being, to learn sport-specific skills, to develop or enhance life skills, and to build and foster relationships with others.

As members of a national sport organization, we all have a responsibility in our respective roles to help each of our members attain their own level of personal excellence. This document — Skate Canada's Long-Term Athlete Development Model — is meant to assist in this regard by presenting the "big picture" of figure skating in Canada.

It is a tool for coaches, clubs, volunteers, officials, professional staff, facility managers, and parents/guardians. It is meant to serve as a guide to assist skaters from their entry into the sport until they choose to leave it, at which point it is hoped that they will have learned all that they can from this wonderful sport in which we are all involved.

We are pleased to present *In Pursuit of Personal Excellence: Skate Canada's Guide to Long-Term Athlete Development*. In general, this document:

- ✓ Clearly outlines the sport-specific skill expectations of athletes at each stage of development
- ✓ Outlines both vertical and lateral progression, with a view of retaining individuals longer in our sport
- ✓ Emphasizes general physical literacy as well as personal development
- ✓ Clarifies the critical role played by Skate Canada coaches at all stages of development
- ✓ Provides an overview of how all stakeholders fit together into a collaborative whole, with a common goal of helping athletes in their pursuit of personal excellence
- ✓ Provides a framework for key decision-making with respect to competition structure, program design, individual short and long-term training plans, infrastructure, rules and regulations.

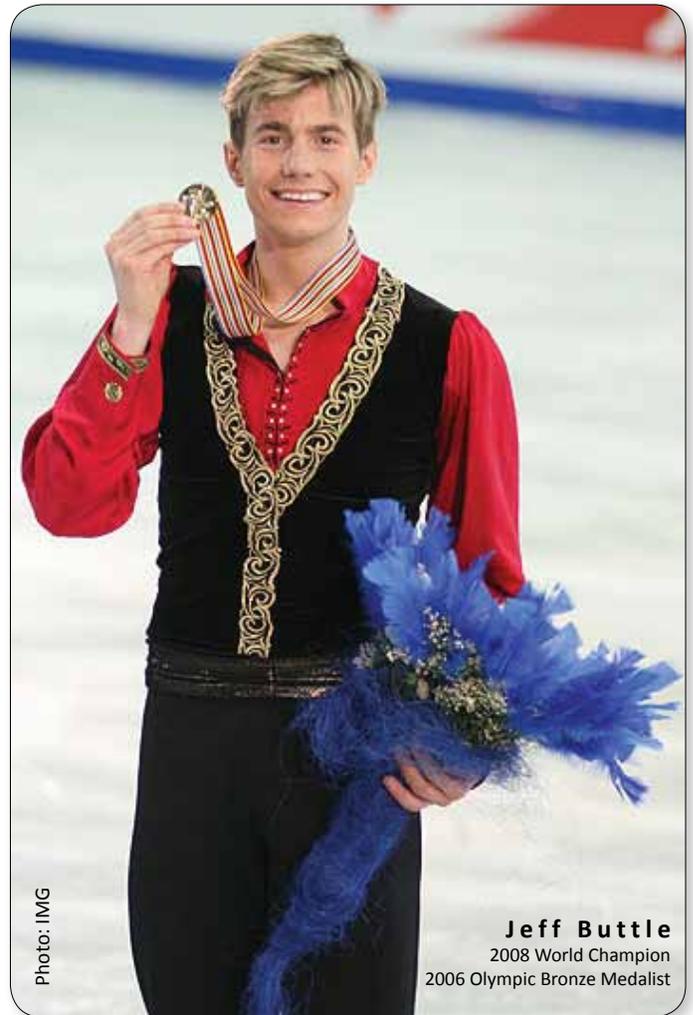


Photo: IMG

Jeff Buttle
2008 World Champion
2006 Olympic Bronze Medalist

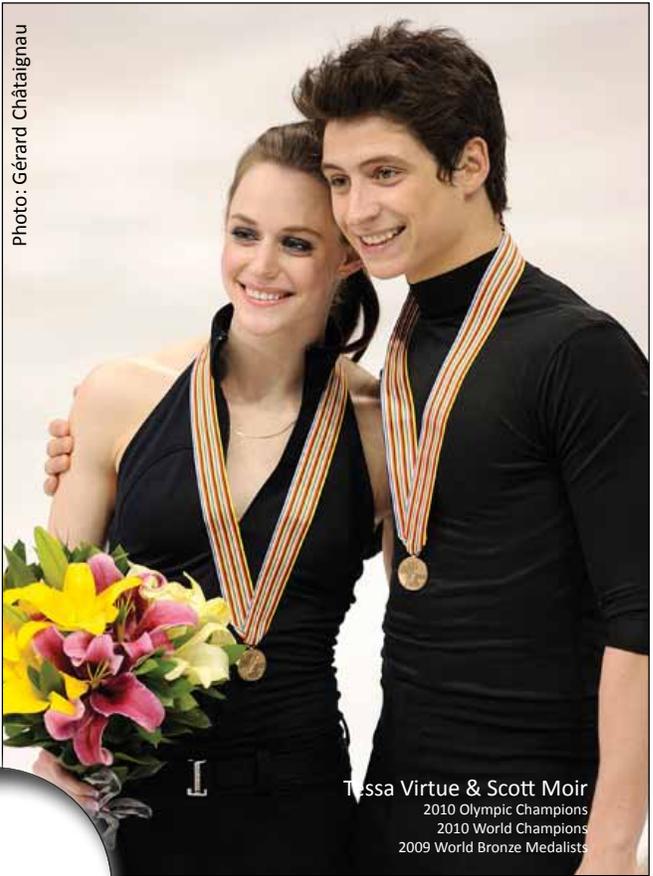
Though change for the sake of change is futile, change for the sake of progression is a necessity. A clear plan of action is required in order for Canadian skaters to remain competitive on the international stage in all disciplines, for participation-based skaters to have opportunities to stay active in skating for life, and for administrators to know how to offer programs for athletes of all needs and abilities. A clear plan of action will also help improve member recruitment and retention. It is this philosophy and the philosophy captured by Skate Canada's mission statement — providing opportunities for every Canadian to participate in figure skating for fun, fitness and/or achievement — that has guided this new approach to athlete development.

Photo: Brett Barden



Joannie Rochette
2010 Olympic Bronze Medalist
2009 World Silver Medalist

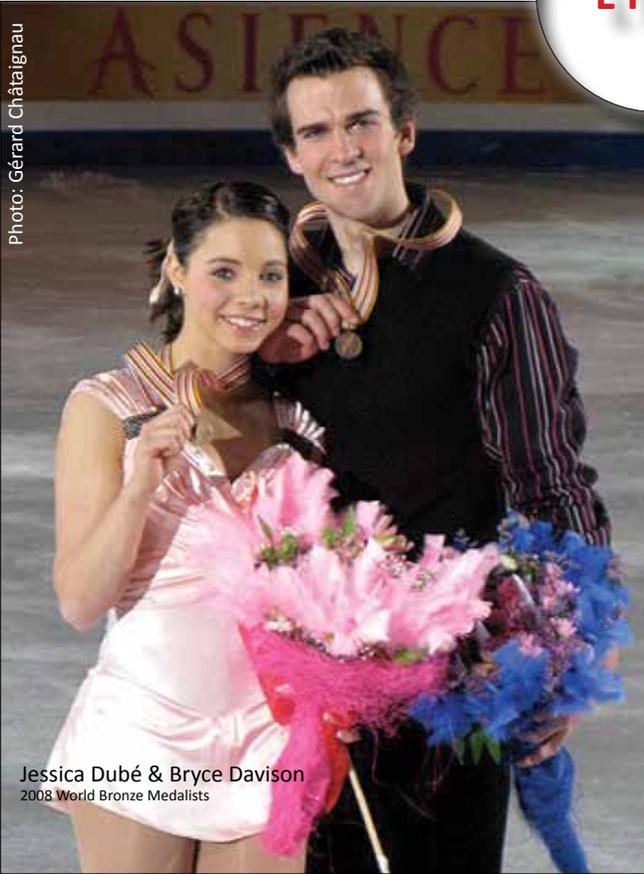
Photo: Gérard Châteignau



Tessa Virtue & Scott Moir
2010 Olympic Champions
2010 World Champions
2009 World Bronze Medalists



Photo: Gérard Châteignau



Jessica Dubé & Bryce Davison
2008 World Bronze Medalists



Photo: Gérard Châteignau

Patrick Chan
2010 World Silver Medalist
2009 World Silver Medalist

OVERVIEW OF LONG-TERM ATHLETE DEVELOPMENT

What is Long-term Athlete Development?

In general, long-term athlete development focuses on how participants and athletes are trained and develop skills and revolves around the essential role played by coaches in the process. It also recognizes the important supporting roles of parents/guardians, volunteers, officials, administrators, sponsors, sport medicine practitioners and sport scientists. Training the right components at the right stage of development is key to the success of all athletes, from beginners to Olympians. This document represents the first step in the redesign of long-term athlete development in our sport. Other components include: competition structure, coach training and development, officials' training and development, sport leadership, sport facilities, equipment, technology, sport medicine and sport sciences.



At the heart of long-term athlete development is the concept of physical literacy which is defined as competency in fundamental movement skills (run, jump, throw, swim) as well as motor skills (ABC's: agility, balance, coordination, speed) and fundamental sport skills (preferably before the age of 12). Historically, skills taught, learned, developed and acquired through the school system enhanced children's abilities to acquire sport-specific skills more quickly.

However, due to government cutbacks and a shift in core subject matters in school curricula we have created physically illiterate individuals. As a result, the ability to develop fundamental movement skills (running, jumping, throwing, adaptations to ice, snow, and water) as well as basic motor skills (balance, coordination, agility, speed, etc.) at an early age is becoming alarmingly non-existent.

What is the Long-Term Athlete Development Model?

The Long-Term Athlete Development Model (LTADM) is a guide or road map for every level of the organization to assist in making the best decisions in the interest of athlete development within our sport. This model addresses gaps in our process and removes roadblocks that result in lost members along the way.

The LTADM provides a reference point for all coaches when developing annual and long-term training plans. It acts as a guide for all support team members when making athlete and program-related decisions. Furthermore, the LTADM directs the refinement and/or redesign of programs and administrative structures so as to maximize the development of all our participants regardless of their personal goals or stage of development.

More specifically, the LTADM defines optimal training, competition and recovery programs based more on biological rather than solely chronological age. By incorporating knowledge gained from the field of exercise science and by tailoring sport development programs around basic principles of growth and maturation, especially during the critical early years of development, the LTADM capitalizes on opportunities in training athletes when bodies will respond the greatest to different training stimuli. At the same time, it emphasizes the intellectual, emotional and social development of the athlete in recognition of the fact that sport can play a positive role in child, youth and adolescent development and the creation of healthy, functional and productive individuals.

What is the role of an individual's age in the LTADM?

Each stage of development refers to chronological age. The chronological age stated relative to the stages of the LTADM represent the ideal pathway towards achieving the level of technical and artistic proficiency needed for a skater to reach the Learning to Win and Living to Win stages. The ages at the Learning/Living to Win stages must be consistent with the age criteria established by the International Skating Union (ISU).

That said, individual skaters are expected to move through the LTADM stages relative to their training commitment and abilities. This will impact the speed with which they acquire the proficiencies needed to progress to the next stage or level. It is imperative to note that figure skating requires not just a certain level of commitment, but also patience and perseverance enabling early, average and late maturing skaters to experience long-term success. Such success will be dependent upon the acquisition of a sound technical foundation early in their development and throughout their individual progression, followed by both broad and specific physiological and mental training.

Why is a Long-Term Athlete Development Model necessary?

In the past, different contextual realities resulted in inefficiencies in the Canadian sport system. That is one of the primary reasons why in 2005, Sport Canada published a resource paper entitled Canadian Sport for Life, a paper which described Long-Term Athlete Development (LTAD). In this landmark paper, it was noted that a new approach to LTAD was required. This was in part due to an overall decline in international victories by Canadian athletes as well as a lack of specific knowledge pertaining to the identification and development of future generations of internationally successful athletes.

In addition, general participation in recreational sport and physical activity was declining; this was considered to be contributing to a decline in the health and quality of life of the population. Based on the findings published in Canadian Sport for Life, all national sport organizations (NSOs) including Skate Canada were mandated to undertake a review of athlete development processes. Each organization has been guided in this review by Sport Canada experts based on 10 key factors that have been suggested to influence long-term athlete development.

The LTADM is the most comprehensive document the organization has created with a clear vision of where we want to be in the future. Critically, Skate Canada's LTADM is not just an elite model. It has been designed to provide a solid foundation for all skaters at all ages and levels, encouraging long-term participation and the opportunity to experience the passion, spirit, and triumph that come with personal achievement. Skate Canada is proud to be an inclusive sport organization. This is demonstrated by the inclusion of Athletes with a Disability. Furthermore, programming and coaching should be completely inclusive regardless of gender, sexuality, race, ethnicity, religion, age, body type and physical and intellectual abilities.

Please keep in mind that Skate Canada's LTADM outlines ideal progression in our sport. There will always be exceptions to the "norm." As such, the LTADM should be viewed as a guide or framework that has flexibility and fluidity. **Not every athlete is going to progress through every stage of the model and that's okay!** An athlete's exit stage will be determined by his/her own goals in the sport. Our responsibility is to make sure that wherever they exit, our members have acquired all the skills that our sport can provide. Of course, it remains our hope that athletes will remain in our sport as long as possible – and indeed, for life.

"Skate Canada's LTADM establishes an optimal development pathway for athletes and participants. The model should be seen as a change agent that will facilitate planning the training, competition and recovery programs based on the developmental age of the skater and the windows of optimal trainability for the 5S's during the growth process. The LTADM will assist athletes in achieving excellence and podium performances as well as promote lifelong enjoyment."

Charles Cardinal
Sport Canada Expert LTAD Consultant to Skate Canada

THE 10 KEY FACTORS INFLUENCING LONG-TERM ATHLETE DEVELOPMENT

There are 10 interrelated factors influencing long-term athlete development that are common to all sport organizations:

1. At least 10 years to reach the top
2. Physical Literacy
3. Specialization
4. Developmental age (growth, development, maturation)
5. Windows of optimal trainability (5 S's)
6. Physical, mental, cognitive, and emotional development
7. Periodization: planning, training, competition and recovery
8. Domestic competition review
9. System alignment and integration
10. Continuous improvement

These 10 factors greatly influenced the development of Skate Canada's LTADM. The experts involved in the process continually visited and re-visited these factors to ensure that our model accurately reflects both contemporary realities facing our sport (and Canadian sport in general), as well as to provide a road map to help us get to where we want to be in the future.

1. At Least 10 Years to Reach the Top

Literature suggests that it takes at least 10 years or more and over 10,000 hours of training to reach international excellence. Of course, these 10,000 hours of training must be effective and take advantage of sensitive periods of athlete development. 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.

2. Physical Literacy

Success in sport, however defined, depends to a great extent on the development of physical literacy. This is defined as competency in fundamental movement skills (run, jump, throw, swim) and motor skills (ABC's: agility, balance, coordination and speed), as well as basic sport skills.

These three key components should be taught in a fun learning environment to equate physicality to enjoyment. It is our goal to ensure that all members registering in a Skate Canada program learn and incorporate the basics early in their involvement in the sport. Children should develop physical literacy before the onset of their growth spurt. Without these basic movement skills and motor skills a child will have difficulty participating in any sport and will have fewer opportunities for athletic success and lifelong enjoyment of physical activity.

Getting the Sequence Right

For children to have success in sport – either as a health related recreational activity or in competition, it is important that they master fundamental movement skills before learning fundamental sport skills, and important that they learn fundamental sport skills before being introduced to specific techniques.



3. Specialization

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. These differ from late specialization sports in that very complex skills are learned before maturation since it becomes more difficult to fully master if taught after maturation. This means that fundamental movement and motor skills as well as basic sport skills must be learned and acquired at an early age in order to maximize athlete progression.

Synchronized skating is a unique discipline as it is also considered a late specialization sport. Participants in Synchronized skating can compete at the highest level of competition once they have achieved more complex Synchronized skating skills that they may not have achieved prior to maturation. They can continue to develop and improve skills as adults if they have achieved very strong sport skills in the Learn to Train and Learn to Compete stages and even begin to specialize in synchronized skating after completing careers in singles, ice dance or pair skating.

Disability sports are also late specialization sports and it is critically important that athletes with a disability be exposed to the full range of fundamental movement and motor skills before specializing in one sport.



4. Developmental Age

Developmental age refers to the degree of an individual's physical, mental, cognitive and emotional maturity. Skate Canada's LTADM — though still tied to chronological age to a certain extent (due in large

part by the age parameters established by the ISU) — emphasizes training based on developmental age, viewing this concept of biological age as paramount to the success of athletic and personal development.

LTAD is based on maturation (growth and development), not chronological age. We all follow the same stages to maturity, but the timing, rate and magnitude of maturity of various qualities differs between individuals. LTAD requires the identification of early, late and average maturation to help design appropriate instruction, training and competition programs according to the readiness of the participant. In order to design a tailor-made training program to the athlete at puberty, it becomes important to determine precisely the onset of the growth spurt and the peak height velocity curve (PHV).

5. Windows of Optimal Trainability (5 S's)

Trainability is the responsiveness (adaptation) to a training stimulus at different stages of growth and maturation. All physiological systems are always trainable, but there are sensitive periods in development when the body is more responsive to specific training. Coaches must be aware and make best use of these sensitive periods of trainability when planning programs. The generic LTAD model identifies five physiological factors as a cornerstone for training and performance. They are referred to as the 5 S's: speed, strength, suppleness, stamina, sport skills (Dick, 1985). See Figure 1 (below) for a visual representation. It is important to note that the trainability of the different systems for children and youth with a disability is not well understood. Applying this information to athletes with a disability is a good example of coaching being an art as well as a science.

In order to develop skills, suppleness and speed, coaches can rely on chronological age. To develop stamina and strength coaches have to take into account the biological age of the skater.

Stamina (Endurance):

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

Strength:

The sensitive period of trainability for strength is determined by developmental age and for females is immediately after PHV or at the onset of menarche, while for males it is 12 to 18 months after PHV. Speed strength and endurance strength can be developed prior to puberty using body weight, lighter weight loads, medicine balls and exercise/stability balls.

Speed:

For males, the first period of sensitivity for speed training occurs between the ages of 7 and 9 years and the second period occurs between the ages of 13 and 16. For females, the first period occurs between the ages of 6 and 8 and the second period occurs between the ages of 11 and 13. The duration of the stimulus is up to five to six seconds for the first window of trainability and up to 20 seconds for the second window.

Skill:

The period of sensitivity for skill training for males is between the ages of 9 and 12 while for females it is between the ages of 8 and 11. This assumes that a foundation of fundamental movement and motor skills have been developed prior to these ages, which will help to increase the trainability of new sport skills.

Suppleness (Flexibility):

The period of sensitivity for suppleness training for both males and females occurs between the ages of 6 and 10. Special attention should be paid to flexibility during PHV.

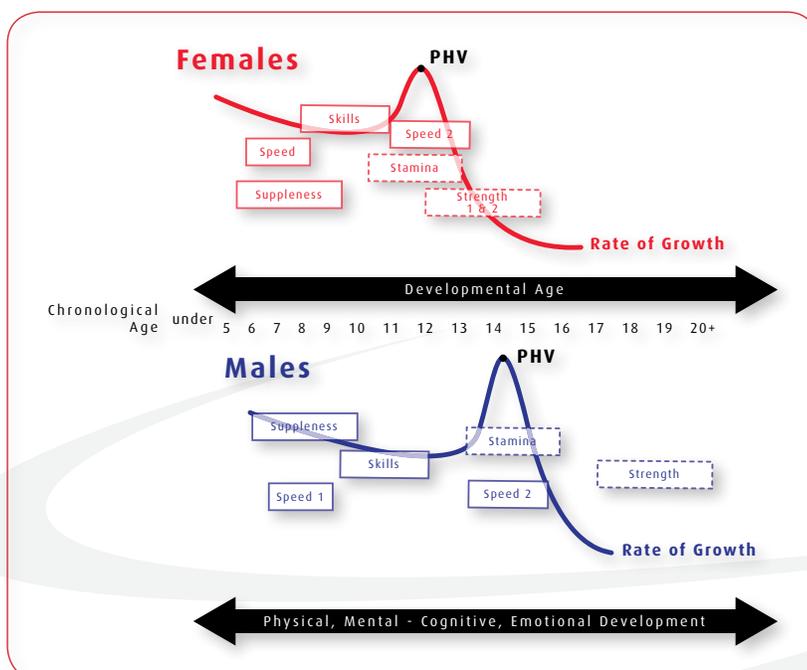


Figure 1. Pacific Sport Optimal Windows of Trainability (Balyi and Way, 2005)

PHV = Peak Height Velocity (See Glossary of Terms Appendix A)

6. Physical, Mental, Cognitive, and Emotional Development ¹

Skate Canada's LTADM adopts a holistic approach with the intention of producing good athletes and good people. As such, the model incorporates mental, cognitive and emotional developmental components in each stage of development. By considering aspects beyond physical and athletic development we hope to equip our members with skills both specific to sport and life in general. The development of the person and the athlete should be the goal of every athlete development program/process.

7. Periodization: planning, training, competition and recovery

Simply put, designing a yearly plan is time management. It means planning the right activities with the adequate degree of difficulty and in the right sequence to reach the training and competition objectives sought. The plan must be broken down into workable units. The proper sequencing of these units is critical for success.

In order to reach optimal performance in a competition environment, the training units have to be sequenced in the following manner.

1. Development of the performance capacity of the athlete. The performance factors are: sport specific skills, routine/choreography coupled with artistic expression, physical components and mental skills
2. Integration of the performance factors in a complex and harmonious blend
3. Preparation of the athlete to perform at identified competitions.

What do coaches need to know in order to design an annual plan?

1. Know how athletic and sport specific forms are developed
2. The requirements or demands of performance/competition at each stage
3. The competition calendar and the relative importance of competition
4. The actual training state of the athlete at the start of a yearly plan
5. The contextual reality that the coach and athlete have to cope with
6. The sport specific LTADM

Planning adequate training, competition opportunities and recovery is critical for the success and well-being of all athletes.



¹ For a complete overview of mental, cognitive and emotional development characteristics when dealing with varying rates of maturation (i.e. early, average, late) and their implications for coaches, please refer to Appendix 1 in the Canadian Sport for Life document or www.ltad.ca

8. Domestic Competition Review

An optimal competition structure at all stages is critical to athlete development; any structure must favour athlete development. The structure of competition in a sport has implications for selection, talent identification, safety, cost and adolescent periodization tailor-made to athletes' developmental ages and their health. The domestic competition and event calendar must support and be consistent with LTAD.

Our current system of competition is based on tradition. In redesigning our competition structure in Canada, we need to consider that each stage of development and level 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 and short-term success. At later stages, it becomes more important for athletes to experience a variety of competitive situations and to perform well at international and other high level events.

9. System Alignment and Integration

With so many partners, across so vast a country, with different demographic composition, system integration and alignment is a major challenge. Long-term athlete development is only successful when all facets of the organization work together in a coordinated and integrated way. We have defined parents, leadership and facilities as the main factors in system alignment and integration. The role of each stakeholder and/or infrastructure will vary according to the specific stage of development. The following provides a brief commentary on parents/guardians, leadership and facilities. Please see **Appendix B** for further information specific to the stage of development.

Role of Parents/Guardians

Parents/guardians play a critical role in athlete development although the exact roles and responsibilities will change according to the stage. It is important to note that at all stages of development, the primary coach needs to direct the development of the athlete in terms of on and off-ice training. Parents/guardians should act as a source of emotional and financial support and be aware of the critical focus of each stage. One of the most significant contributions parents/guardians can make to athlete development is through the provision of healthy diets, the encouragement of lifelong involvement in sport and physical activity, and in particular at the earlier stages of development, by acting as a role model in both of these regards.

Leadership

Leadership in our sport is defined as club, section, national volunteers/board members, professional staff, official and athletes' support team member. The key role of Skate Canada leadership is to support and enhance the decisions being made by the primary coach by providing relevant and appropriate training opportunities, programming, training environments, performance and competition opportunities.

Facilities and Training Environment

Facilities and training environments must first and foremost be safe and accessible for all participants. The specific needs will vary according to programs being offered within the specific facility but beyond appropriate ice conditions, space should be provided for off-ice training opportunities, adequate locker room facilities for all participants/coaches, and space for club promotional materials. Ideally, facilities will be warm and welcoming, creating an environment optimal for athlete progression.

"I make reference to LTAD now every time I'm doing a seminar, a coaching course or having a discussion with colleagues. It makes total sense and is the way to future success in Canadian skating; not just at the highest competitive levels, but from the entry level to Active for Life. I believe in it!"

Louis Stong
Skate Canada Skating Development Advisor
Former World/Olympic Coach

10. Continuous Improvement

While this is the most comprehensive document we have created with respect to long-term athlete development, we cannot rest on our laurels. Long-term athlete development in general needs to respond and react to changes in the sport at the international level, innovation, and new or changing contextual realities. Such flexibility and adaptability will help to ensure the continued successes of our athletes for generations to come.

Before LTAD can be implemented successfully, the many shortcomings and resultant consequences that are impeding the Canadian sport system must be addressed.

Shortcomings

- Developmental athletes over-compete and under-train
- Adult training and competition programs are imposed on developing athletes
- Training methods and competition programs designed for male athletes are imposed on female athletes
- Preparation is geared to the short-term outcome — winning — and not to the process
- Chronological rather than developmental age is used in training and competition planning
- Coaches largely neglect the critical periods of accelerated adaptation to training
- Fundamental movement skills and sport skills are not taught properly
- The most knowledgeable coaches work at the elite level; volunteers coach at the developmental level where quality, trained coaches are essential
- Parents are not educated about LTAD
- Developmental training needs of athletes with a disability are not well understood
- In most sports, the competition system interferes with athlete development
- There is no talent identification (TID) system
- There is no integration between physical education programs in the schools, recreational community programs, and elite competitive programs
- Sports specialize too early in an attempt to attract and retain participants.

Consequences

- Failure to reach optimal performance levels in international competitions
- Poor movement abilities
- Lack of proper fitness
- Poor skill development
- Bad habits developed from over-competition and focused on winning
- Undeveloped and unrefined skills due to under-training
- Female athlete potential not reached due to inappropriate programs
- Children not having fun as they play adult-based programs
- No systematic development of the next generation of successful international athletes
- Athletes pulled in different directions by school, club and provincial teams because of the structure of competition programs
- Remedial programs, implemented by provincial and national team coaches, to counteract the shortcomings of athlete preparation
- Fluctuating national performance due to lack of TID and a developmental pathway
- Athletes failing to reach their genetic potential and optimal performance level.



Photo: Brett Barden

SKATE CANADA'S STAGES OF LONG-TERM ATHLETE DEVELOPMENT

Skate Canada's Long-term Athlete Development Model (LTADM) is divided into a series of stages specific to the sport. Skate Canada's model has been created with six stages:

1. **Learn to Skate**
(age: females 3-8; males 3-9)
2. **Learn to Train**
(age: females 7-11; males 8-12)
3. **Learn to Compete**
(age: females 9-13; males 10-14)
4. **Train to Compete**
(age: females 10-16; males 11-17)
5. **Learn/Live to Win**
(age: female 13-19; male 14-21) 15 +
6. **Active for Life** (any age)

It is our vision that athletes with a disability are incorporated into each stage of development through integration into existing programs in addition to tailor-made opportunities.

Synchronized skating is included as its own section as it has been deemed a late specialization discipline within our sport.

Thus, the philosophy is that athletes will progress through the early stages of the LTADM prior to involvement in synchronized skating.

Each of the six stages is broken down into two main sections:

1. Skills that should be acquired within that particular stage of development
2. General guidelines for club programming and coaching ².

Appropriate development within each stage is essential as the end of one stage acts as the entry point for the next. The text contained in the "Sport-Specific Skills" and "General Skills" tables in each stage, therefore, represent the skills that must be acquired before exiting that specific stage.

Only by following developmental age appropriate activities and building a foundation in each stage for the next can athletes optimally prepare to progress toward their goals. Each stage includes multiple components necessary to overall athlete development including general and sport-specific skills, psychological and social skills, and training-time and competitions.

A summary of Skate Canada's stages is attached as **Appendix C**.



² Specific information as to the correct coaching of skills and athlete progression is included in coaching education materials.



LEARN TO SKATE

The first stage in Skate Canada’s LTADM is Learn to Skate. This stage lays the groundwork for future development both within our sport and in other ice sports as well. As an early specialization sport, participants will likely be coming to skating clubs with minimal to no physical literacy. As such, there are many basic movement skills that must be introduced and acquired in this stage. Participants should also acquire an enjoyment of movement on the ice.

The chronological ages of participants in this stage are:

	Female	Male
Learn to Skate	3 – 8	3 – 9

Ideally athletes are ready to progress to the next stage of development when they reach the upper age. Also note that athletes using Learn to Skate as a way to develop skills for other ice sports might be older than these ages indicate.

Philosophy

The philosophy of Learn to Skate is to provide opportunities for all Canadians to learn to skate in fun, safe, and engaging environments and to evoke interest for life long participation.

General Objectives

- To create a fun and active learning environment that engages skaters’ interest and challenges athletic and personal development appropriate to this particular stage
- To acquire/develop basic sport-specific skills
- To develop fundamental movement skills on-ice (go, stop, turn, jump, spin)
- To introduce motor skills (agility, balance, coordination, speed, rhythm, time/space orientation, dexterity, hand-eye coordination)
- To introduce simple rules and ethics of the sport
- To develop self-confidence, focus and positive attitude
- To instill a love of figure skating.



Photo: Stephan Potopnyk



LEARN TO SKATE

Windows of Optimal Trainability

The following physiological factors must be introduced and developed through specific programming and coaching and in accordance with age and gender:

- ✓ Speed (female: 6-8; male: 7-9)
- ✓ Suppleness (Flexibility) (female/male: 6-10)
- ✓ Quality basic skating skills (“golden age” 8-12)

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, the Learn to Skate stage must:

- ✓ Be coach-directed with assistance from qualified and quality program assistants
- ✓ Emphasize group-based teaching (private lessons could be used for enhancement)
- ✓ Be attractive in sight, sound and touch in order to stimulate and maintain interest and enthusiasm
- ✓ Emphasize fun, safety, and active participation
- ✓ Include demonstrations, movement and repetition
- ✓ Reward all achievements to instill a sense of accomplishment and encourage continued participation
- ✓ Emphasize the teaching and achievement of basic skills as well as the introduction of more complex skills for higher quality foundations and readiness to enter ice sports
- ✓ Use modified and adapted equipment and facilities, tailor-made to the age of the participants including use/size of ice surface on which the program is offered
- ✓ Utilize clear, concise terminology appropriate to the ages of the participants
- ✓ No periodization but well structured programs and practices
- ✓ Incorporate properly trained quality program assistants.

Mission of the Coach

The mission of the coach is to design and implement lessons that ensure the active involvement of all participants. The focus will be on fundamental movement skills and motor skills. Participants will be introduced to activities in order to create motor patterns that will facilitate sport specific skill acquisition at the next stage of athlete development. Learning takes place in a fun and joyful environment.

Coaches have the primary leadership role at this particular stage of development within skating. It is the coach's responsibility to provide adequate skill development based on the LTAD framework. Beyond their responsibility to the athletes, coaches also need to provide information to parents throughout the session. This might include athlete progress reports, skating program information and information related to performance opportunities (for athletes aged 5–8/9).

Coaches must be knowledgeable on child development and be aware of the individual needs of skaters as well as program requirements at the grassroots level. Coaches must also understand the role of grassroots programming in the overall development of athletes and individuals.

At this stage, coaches must be 75% entertainer and 25% technician from the skater's perspective. Ideally, coaches must have managerial expertise and need to act as educators to parents and board members.

Coaching Education and Certification

- NCCP Instruction – Beginner – CanSkate certified coach



Photo: Stephan Potopnyk

Sport Specific Skills

This chart represents the skills participants should be able to demonstrate or show a relative mastery of the skills dependent on the volume of training at the exit point from Learn to Skate.

	Females (3-8) and Males (3-9)
Motor Skills	<ul style="list-style-type: none"> • Development of speed • Ability to move and turn in both directions and on both feet • Development of balance or stillness in one position (while moving) • Awareness of the body and full body movement
Technical	<p>Edges</p> <ul style="list-style-type: none"> • Ability to sustain large and small curves on all four edges (both feet) with speed and flow • Ability to control or manipulate edges at will (i.e. change from outside to inside, etc.) <p>Turns</p> <ul style="list-style-type: none"> • 3-turns and mohawks are introduced and developed • Evidence of ability to perform turns on a curve • Skaters should be able to demonstrate the concept of unweighting (i.e. transfer of weight/feet) <p>Stroking</p> <ul style="list-style-type: none"> • Ability to push equally with both feet from the blade and not the toe pick, with good knee bend and acceleration • Demonstration of proper upper body carriage • Demonstration of proper crosscut technique • Ability to switch directions with minimal loss of momentum or speed <p>Jumps</p> <ul style="list-style-type: none"> • Demonstration of balance and power of up-thrust on basic vertical jumps (power up – jumping straight up and down) on two feet, evolving to one-foot landings • Basic understanding of rotation (1/2 to full turn demonstrated) • Rudimentary ability to demonstrate landing positions <p>Spins</p> <ul style="list-style-type: none"> • Development of basic rotational concepts on two feet, one foot, alternating feet, straight legs, bent knees (i.e. basic sit position) • Ability to manipulate arms (out, in, up, and down) for balance, awareness, and the establishment of a rotating axis • Basic grasp of rotational speed • Introduction of the spiraling edge to achieve rotation (i.e. the twisting technique should not be used) <p>Field Moves</p> <ul style="list-style-type: none"> • Ability to glide in one pose, on each foot, and in each direction • Some ability to perform free foot options (i.e. out, in, up, down) with control • Demonstration of appropriate levels of suppleness (i.e. flexibility) relative to age and sex
Artistic	<ul style="list-style-type: none"> • Understanding of rhythm, demonstrated through skating to the beat in basic music styles/tempo

General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lend themselves toward the overall development of the individual.

Age	Females (3-8) and Males (3-9)
Physiological	<ul style="list-style-type: none"> • Develop motor skills, speed, and suppleness • Demonstrated knowledge of right from left
Psychological	<ul style="list-style-type: none"> • Develop self-confidence and self-esteem through accomplishment while emphasizing fun and enjoyment • Demonstrate basic understanding of the language and rules of the sport • Ability to follow instructions
Social	<ul style="list-style-type: none"> • Willingness to share with and learn from others • Basic understanding of the rules of fair play and cooperation • Understanding that education remains the # 1 priority

On-Ice Training

The following information outlines the ideal amount of time spent on and off the ice at this stage of development. It is critical that an off-ice warm-up of 10 to 15 minutes in length be scheduled immediately prior to the on-ice session. This could be led by a coach, a program assistant, or a qualified parent and/or board member.

The relative amount of time skaters will practice skills and activities will vary according to individual training needs and development.

First part of stage 3 - 5 years of age	Session length:	<ul style="list-style-type: none"> • 30 to 45 minute on-ice, with 15 minute off-ice warm-up prior • Maximum one session/day
	Days/week:	<ul style="list-style-type: none"> • 1-2 days/week
	Weeks/year:	<ul style="list-style-type: none"> • 10 to 20 weeks/ year
Second part of stage 5 - 8/9 years of age	Session length:	<ul style="list-style-type: none"> • 45 to 60 minute on-ice, with 15 minute off-ice warm-up prior • Maximum one session/day
	Days/week:	<ul style="list-style-type: none"> • 2-4 days/week
	Weeks/year:	<ul style="list-style-type: none"> • Minimum: 20 weeks/year • Ideal: 30 to 40 weeks/year

Off-Ice Training

Skaters should be exposed to many different sports or physical activities all year round to develop overall physical literacy and good health. As much as possible, activities should help to develop agility, coordination, balance, speed, flexibility, etc. The specific types of activities will depend on the specific socio-cultural context of the athlete but coaches, parents and clubs are encouraged to explore the different opportunities that exist in their communities including structured and unstructured play. Ideally, these activities should be participated in one to two hours per week, 20 to 40 weeks per year.



Competition³

In the Learn to Skate stage, the primary focus is skill development.

For skaters aged three to five there is no need for any sort of competition. All of their time on the ice should be dedicated to training, as outlined above.

For skaters aged 5 to 8/9, skill presentation/performance should be introduced. Introducing this at an early age can help identify possible talent as well as instill expectations for later development. Skaters do not need to be performing programs at this level but rather focus on elements based on fundamental movements and motor abilities.

Skill presentation should be in the context of participation in fun team meets at the club level where rewards are given but no ranking occurs. These can be held once in a 10 week session ideally with a focus on performance and not competition.

Evaluations are done by coaches with a goal for skaters to achieve a desired performance level for individual achievement.

“This is an invaluable tool for coaches to use as they guide athletes in the right direction. The LTADM will educate parents as they begin in our sport. It is important that young children participate in many activities at this stage – it is crucial to their overall development and well-being.”

Monica Lockie
Skate Canada Coach and Advisory Coaching Committee Chair

³ See Appendix C for the Stages of Athlete/Participant Development Overview.



LEARN TO TRAIN

The second stage in Skate Canada’s LTADM is Learn to Train. In this stage we begin to see more differences between females and males in terms of growth, development, and maturation. Thus, training and coaching adaptations are necessary specific to age and biological sex. Continued development of basic fundamental movements and skills as well as the introduction of more complex figure skating skills are essential.

The chronological ages of participants in this stage are:

	Female	Male
Learn to Train	7 – 11	8 – 12

Philosophy

In the Learn to Train stage skaters are encouraged to acquire a skill set that will allow them to reach the highest level of proficiency that their unique talent and commitment will allow. It is defined by technical development rather than chronological age. There is a free skating bias at this stage as skills learned in free skating will transfer easily to the other disciplines. Technical development is the defining characteristic of this stage. All other development supports and accommodates technical development. Aptitude in other areas such as performance and mental training skills may be identified and should be introduced but should not replace skill acquisition. The volume of training in the Learn to Train stage may not be any greater than others but the range of skill acquired and personal growth attained is substantial.



General Objectives

- To increase the commitment level of athletes to our sport as demonstrated through increased yet effective training time
- To develop the language and rules of figure skating
- To develop the ability to practice/train in different ways (i.e. private and group lessons, as well as independently)
- To develop and consolidate basic sport specific skills while continuing to develop motor skills (agility, balance, coordination, rhythm, time/space orientation, speed, dexterity) and control of movement
- To acquire and demonstrate a good understanding of the mechanics of jumping and spinning
- To develop some understanding of artistic training, under the umbrella of technical training. Artistic knowledge is relative to the technical proficiency and age of skaters
- To introduce conditioning, off-ice technical jumping skills and fundamental mental skills including concentration, self-motivation, visualization, relaxation, positive self-talk and goal setting
- To create awareness and enthusiasm for the various testing and competition opportunities available to athletes in Learn to Train
- Introduce ancillary capacities (warm-up, hydration, cool-down, stretching, etc.)

Windows of Optimal Trainability

The following physiological factors must be introduced and developed through specific programming and coaching and in accordance with age and gender:

- ✓ Skills (“golden age”: 8-12)
- ✓ Speed (female: 6-8; male: 7-9)
- ✓ Suppleness (Flexibility) (female/male: 6-10)
- ✓ Stamina (at the onset of PHV-peak height velocity)

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, the Learn to Train stage must:

- ✓ Focus on technical training. Artistry, choreography and musicality should come under the umbrella of technical training
- ✓ Account for individual training needs and talents. The frequency of practice and number of repetitions must be high enough to ensure learning; however, this will be case-by-case and skill-by-skill. It is not possible to assign a definitive number suitable for all skaters
- ✓ Adhere to the idea that 70% success rate is required for learning to occur
- ✓ Adhere to the principal that the athlete should spend more time training than competing
- ✓ Include the monitoring by coaches of Peak Height Velocity (PHV) and windows of optimal trainability, flexibility, speed, endurance and strength according to age and biological sex
- ✓ Coaches should be knowledgeable on growth, development and maturation process
- ✓ Introduce single periodization (i.e. seasonal and multi-year planning)
- ✓ Account for the social development of each skater through the ways in which programs are offered and delivered by clubs and coaches
- ✓ Provide resources that include parent education
- ✓ Include regular assessments and evaluations which are done primarily by the coach and which include constructive and clear feedback to both the athlete and her/his parent(s)/guardian(s)

Mission of the Coach

The mission of the coach is to teach the basic sport specific skills and elementary artistic expression essential to participate in the chosen activity. Coaches must also introduce physical conditioning and fundamental mental skills. Sport specific skills are coupled with motor skill development. Coaches should continue to encourage children to be involved in several sports in the early part of this stage.

While the skater's parent(s)/guardian(s) will act as her/his manager in this stage, the coach will act as the director of development. Coaches have the option to train as a technical specialist but are also responsible for regular assessments and evaluations of a skater's progression. Coaches have the ability to teach/transfer information in a manner appropriate to age, gender and an ability to teach good skill technique.

All coaches potentially train world-class athletes but simply at a different stage of their development. Therefore, coaches of athletes in this stage of development need to understand figure skating at a level far beyond that at which their skaters may currently perform so they can provide relevant training at the appropriate time in preparation for the skater's future. Coaches should always be able to provide a rationale for why they are teaching a certain skill or concept and how they are using a skater's time.

Coach Education and Certification

The standard of coaching at this level does matter and it will impact future development. It is essential that coaches provide the best available technical training and are knowledgeable on growth, development and maturation.

NCCP Instruction–Intermediate/
Competition-Introduction



SPORT SPECIFIC SKILLS

This chart represents the skills participants should be able to demonstrate or show a relative mastery of the skills dependent on the volume of training at the exit point of Learn to Train. For most athletes, growth spurts will occur during this stage of development. When this is occurring, skills already learned should be maintained. New skills should not be introduced during the growth spurt and competitions should be reduced so as to avoid negative results due to the fast physical changes.

	Females (7-11) and Males (8-12)
Motor Skills	<p>Continued development of balance, agility and coordination demonstrated by:</p> <ul style="list-style-type: none"> • Developing awareness of the relationship between speed and lean • Kinesthetic awareness: repeating shapes and pathways; following movement through space; recognizing steps and being able to describe them, movement combinations, perception of movement in self, opposition of legs, arms and torso • Use of the blade and interface with the ice — changing the balance point (gliding, rocking, sliding), multiple turning/twisting and leaning tasks, use of the toe pick, production and manipulation of force • Understanding the movement of the joints — backbone, hip joint, head, legs and arms, rotational movement of the spine line • Skater’s perception of their own body rhythm
Technical	<p>Edges</p> <ul style="list-style-type: none"> • Able to perform well-controlled strong, fast edges including a back change of edge • Lean, depth of curve, and control demonstrated on both feet and all edges <p>Turns</p> <ul style="list-style-type: none"> • Able to perform step sequences with simple, clean edges and turns • Demonstration of multiple turns executed with flow in both directions and on both feet • Multiple turns, brackets, counters, choctaws and loops are introduced and developed • Skaters should begin learning the rocker mechanism <p>Stroking</p> <ul style="list-style-type: none"> • Demonstration of a very good crosscut technique including push with the blade, acceleration, maintenance of speed and flow and body carriage • Able to vary the timing of crosscuts with ease in both directions both forwards and backwards <p>Jumps</p> <ul style="list-style-type: none"> • Able to perform single jumps with speed and control • Able to execute single Axels and two or more clean double jumps • Developing double/double combination • Some understanding of how doubles will become triples • Consistent and correct air and landing position <p>Spins</p> <ul style="list-style-type: none"> • All forward and backward spinning positions and changes of positions well executed • Able to perform combination spins that include all three basic positions • Demonstration of some basic position variations with minimal to no loss of speed and control <p>Field Moves</p> <ul style="list-style-type: none"> • Ability to perform both supported and unsupported spiral positions as well as other field moves (i.e. spread eagles, Ina Bauers, pivots, etc.) • Demonstrated ability to maintain speed and flow in basic field movement positions • Learning to perform simple field moves in transitions
Artistic	<ul style="list-style-type: none"> • Able to demonstrate an understanding of beat, tempo, dynamics and simple rhythmic patterns through movement • Introduce various musical themes and instill an appreciation of the differences • Introduce use of the full body and different levels of movement (i.e. high, medium, low) • Participation in ballet and other types of dance training in addition to other off-ice classes

General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lend themselves toward the overall development of the individual.

Age	Females (7-11) and Males (8-12)
Physiological	<ul style="list-style-type: none"> • Increased development of motor skills, speed and suppleness • Ability to perform basic strength training movements using own body weight, medicine balls, and stability balls • Beginning to demonstrate appropriate levels of stamina
Psychological	<ul style="list-style-type: none"> • Acquired basic knowledge of fundamental mental skills (i.e. what they are and what their function is) including: <ul style="list-style-type: none"> • Focus and anxiety management strategies • Goal setting • Mental preparation for practice, testing and competition • Positive self-awareness/self-concept
Social	<ul style="list-style-type: none"> • Increased knowledge of the rules and ethics of sport • Some ability to act as both leader and follower and demonstrated ability to cooperate with others • Ability to take risks and/or meet challenges presented • Learning to measure success through self-evaluation • Demonstrated understanding that education remains the most important priority

The following information outlines the ideal amount of time spent on and off the ice at this stage of development. It is imperative that coaches, parents, and support team members recognize that hard training of poor skills thwarts future development.

On-Ice Training

Due to the significant development that occurs in the Learn to Train stage, the table below outlines a progression from time of entry into the stage to point of exit. Note that ice time more than doubles from entry to exit point within this stage. The progression to greater amounts of on-ice training time will occur early in the stage in most cases. That said, it will also be dependent upon specific athlete circumstances and training needs.

Entry	Session length:	<ul style="list-style-type: none"> • 45 to 60 minutes on-ice, with 15 minute off-ice warm-up prior • Maximum one session/day
	Days/week:	<ul style="list-style-type: none"> • 2 to 4 days/week
	Weeks/year:	<ul style="list-style-type: none"> • Minimum: 20 weeks/year • Ideal: 30 to 40 weeks/year
Exit	Session length:	<ul style="list-style-type: none"> • 45 to 60 minute on-ice, with 15 minute off-ice warm-up prior • 1 to 2 sessions/day
	Days/week:	<ul style="list-style-type: none"> • 4 to 5 days/week
	Weeks/year:	<ul style="list-style-type: none"> • Minimum: 40 weeks/year • Ideal: 44 weeks/year

The relative amount of time skaters may practice various activities is expressed below as a percentage of their total ice time at the entry and exit points of the Learn to Train stage. Again, individual training needs will vary with each skater.

Skills/ Activities	Entry	Exit
Technical	100%	60%
	This includes: <ul style="list-style-type: none"> • Edges/Turns • Jumps • Spins • Stroking • Field movements 	This includes: <ul style="list-style-type: none"> • Edges/Turns • Jumps • Spins • Stroking • Field Movements
	Priority given to edges/turns, jumps and spins	Priority given to jumping
Program Components		40%
		This includes: <ul style="list-style-type: none"> • Creative Movement • Ice Dancing • Program Development • Other (as applicable)
		Priority given to program development

Off-Ice Training

In the Learn to Train Stage, skaters should participate in a variety of other sports and activities to become better athletes and more well rounded skaters in both body and mind. As in the Learn to Skate stage, the specific types of activities will depend on the specific socio-cultural context of the athlete but coaches, parents, and clubs are encouraged to explore the different opportunities that exist in their communities. That said, at this stage of development more sport-specific activities such as off-ice technical jumping classes should be introduced to help with body development and awareness and the understanding of movement patterns. It is important to note that the proportion of on-ice to off-ice activity is also seasonal and subject to periodization. Knowledge of the intentions behind warm-up, cool-down, stretching, nutrition, hydration, and rest and recovery should be encouraged.

At point of entry into Learn to Train, skaters should be participating in one to two hours of sport-specific off-ice activity each week, for 20 to 40 weeks of the year. At point of exit from Learning to Train, skaters should be participating in three hours of formalized off-ice activity each week, 44 weeks of the year.

Competition ⁴

At the point of entry and the earlier phases of the Learn to Train stage, emphasis should remain on technical development and training time, with a minimum of competition. At the entry point, one competition per year progressing gradually to between two and four is sufficient. Four to six competitions per year is more than adequate at the exit point of this stage. These competitions will be a combination of element and skill performance and programs, with a focus more on skills in the earlier stages of development.

As skaters progress through the Learn to Train stage, a program will be introduced for the first time with choreography tailor-made for the athlete. Performances will include the presentations of programs; however, skill presentations should remain the primary focus in this stage of development.

Events at the club level remain a priority with a focus on fun, enjoyment, camaraderie, and a sense of personal accomplishment. Rewards might include praise in the form of positive and constructive verbal and written feedback, badges, ribbons, or medals, the opportunity to attend clinics or seminars, public displays of congratulations (e.g. using the local media or a bulletin board in the facility) and, in the latter stages, completion of tests within the Skate Canada STARSkate program.

Evaluation at this level is still primarily the responsibility of the coach although evaluators, judges, and technical specialists will begin to play a role towards the exit point of the stage. The established guidelines for Well Balanced Programs within the Cumulative Points Calculation (CPC) system must direct the choreography and performance of programs.

⁴ See Appendix C for the Stages of Athlete/Participant Development Overview.



LEARN TO COMPETE

The third stage in Skate Canada’s LTADM is Learn to Compete. In this stage we continue to see differences between females and males. These differences must be accounted for in programming and coaching. More complex figure skating skills are introduced and basic fundamental movements are consolidated.

The chronological ages of participants in this stage are:

	Female	Male
Learn to Compete	9 – 13	10 – 14

Philosophy

Athletes in this stage are exposed to greater performance and competition opportunities. The competitive experiences that occur during this phase focus on performance and not solely on outcome and/or results. Training plans become even further individualized to the needs and abilities of the athlete than in the previous stage. It is imperative that athletes consolidate a solid general physical foundation including speed, strength, endurance, and flexibility. It is in this stage which the metamorphosis from participant to athlete occurs. Thus, it is imperative that all individuals involved in athlete development have a solid understanding of this stage of development.

General Objectives

- To consolidate and refine basic skills, and add variations as well as acquiring new skills relevant to the stage of development
- To further develop and consolidate artistic knowledge and expression
- To introduce the competitive aspects of other disciplines of figure skating (i.e. ice dance team, pair teams, synchronized skating team)
- To develop and consolidate a choreographed program tailor-made to the athlete
- To develop a solid conditioning base (speed, strength, endurance, flexibility)
- To further develop fundamental mental skills introduced in the previous stage and to introduce the idea of ideal performance state

- To increase the commitment level of athletes to the sport of figure skating, athletes should be involved in two sports (figure skating and one other but with minor involvement)
- To increase the knowledge and use of the language of figure skating (i.e. CPC judging system, etc.)
- To further develop ancillary capacities (warm-up, hydration, cool-down, stretching, etc.).

Windows of Optimal Trainability

The following physiological factors must be introduced and/or developed through specific programming and coaching and in accordance with age and gender:

- ✓ Suppleness (Flexibility) (female/male: 6-10)
- ✓ Skills (female and male: 8–12)
- ✓ Speed (female: 11-13; male: 13-16)
- ✓ Stamina (at the onset of Peak Height Velocity)

In this stage, the coach must further develop sport specific skills and flexibility as well as introduce strength training using body weight, medicine balls, and exercise/stability balls. On average the onset of Peak Height Velocity (PHV) occurs around 10 years of age for females and around 12 years of age for males. These figures do not take into account individuals who mature earlier or later. It generally takes about two years to reach PHV. The onset of PHV and the peak growth spurt are the two indicators to develop stamina and strength.



Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, the Learn to Compete stage must:

- ✓ Include the monitoring by coaches, of Peak Height Velocity (PHV) and the windows of optimal trainability: speed, endurance and strength for both females and males
- ✓ Account for the growth, development and maturation process
- ✓ Focus on a 75% success rate when performing elements in the program
- ✓ Introduce and develop ice dance and pair skating competitive opportunities
- ✓ Foster the development of an athlete's inner strength and focus in order to be able to push themselves to the limit of full performance capacity on a regular and consistent basis
- ✓ Emphasize the linkages of skills with transitions so as to prepare athletes for competitive and upper STARSkate test programs
- ✓ Include training plans that gradually and progressively increase the training load (volume and intensity) in order to reach competition and testing requirements
- ✓ Encourage the performance of skills and movements in a state of light to moderate fatigue in order to prepare the athlete adequately for competition requirements
- ✓ Emphasize the importance of athletes to focus on the desired performance for a specific competition as opposed to the outcome (score)
- ✓ Provide opportunities for athletes in team events (ice dance, pair, synchronized skating) to develop cooperation, synchronization and conflict resolution strategies
- ✓ Adhere to the principles of single or double periodization in an athlete's yearly plan
- ✓ Emphasize the role and expertise of Skate Canada officials in the judging process, ensuring a smooth transition from coach-based to official-based assessment.

Mission of the Coach

The mission of the coach is to raise the performance capacity of the athletes by focusing on the optimal windows of trainability (i.e. the 5 S's) applicable to females and males in this particular stage of development. Furthermore, coaches need to prepare athletes to perform to an identified personal level of achievement at identified competitions and reach a peak performance at the decisive competition of the year.

Coaches at this level need to frequently visit Section, Skate Canada, and ISU websites to ensure they have the most current technical/program information. They must also continue to develop and provide athletes with a solid foundation in sport specific and general skills. This will not only create strong figure skaters but also healthy and functional adolescents.

Good basics provide the base from which performance and competition can be developed. That said, coaches need to focus on skill acquisition and overall athlete development rather than performance outcomes. As much as possible, coaches of athletes in the Learn to Compete stage should begin to work as a team with support from seasoned coaches. This enhances athlete and coach development. Finally, coaches need to embrace and promote the concept of the Skate Canada "professional" coach.

Coach Education and Certification

NCCP Competition–Introduction/Competition–Development

"Being a figure skating coach gives me an opportunity to share my love of the sport with anyone interested in discovering the joy of moving across the ice. The child's dream of becoming a champion or simply the desire to be active, and explore their own athletic potential are great starting points for a wonderful journey. There are so many new things to learn. The LTADM was created to assist the coaches to help skaters, parents and all other participants to better understand the process of becoming a figure skater. From the very first steps on the ice to learning to train, compete and win to a lifetime of participation for all, one will find helpful information on the types of training, skill level or support needed. There are so many possibilities our sport offers and it only makes sense to see the big picture LTAD will give the reader."

Daniela Sovak
Professional figure skating coach
Education and Training Coaching Subcommittee Chair

Sport Specific Skills - Singles

Athletes should be able to demonstrate a relative mastery of the sport-specific skills outlined below (dependent on volume of training) at the exit point from this stage.

SINGLES	Females (9-13) and Males (10-14)
Technical	<p>Edges/Turns</p> <ul style="list-style-type: none"> All edges and turns acquired are performed with speed, flow, and control on both feet and in both directions Edges and turns are being incorporated into step sequences and spiral/field movement sequences from this stage onward (see below) <p>Stroking</p> <ul style="list-style-type: none"> Execution of correct stroking technique, demonstrating balance, posture, power, speed, and strength in both directions, forwards and backwards <p>Jumps</p> <ul style="list-style-type: none"> Ability to execute all double jumps with good technique including double Axel Beginning to attempt triple jumps with confidence and good technique Double/double jump combinations are consolidated Ability to demonstrate maximal rotation through both on and off-ice jumping drills <p>Spins</p> <ul style="list-style-type: none"> Ability to demonstrate eight revolutions of all basic positions on both feet with good control Mastery of back entries of all basic positions Death drop, flying sit and flying sit with change of foot must be introduced Change combination spin with the three basic positions on each foot must be introduced Difficult variations should be learned off-ice <p>Step Sequence</p> <ul style="list-style-type: none"> Skaters should understand and be able to articulate the turns they are doing Ability to perform turns, steps and edges with proper technique; speed and difficulty will increase as steps and turns are mastered Twizzles, rockers, counters, and loops are introduced into the step sequence <p>Spiral Sequence/Field Movements:</p> <ul style="list-style-type: none"> Ability to perform strong, basic spiral positions on both feet, both directions and all edges with adequate speed and flow Some ability to demonstrate edge changes in a sustained position More difficult variations such as the Biellmann, foot grab, and layover are introduced and practiced off-ice
Artistic	<ul style="list-style-type: none"> Understanding and connecting with more complex rhythmic patterns, instrumentation, tempos Ability to show changes in skating speed related to music (acceleration, movement in small spaces, etc.) Basic ability to portray a story, theme, or character in the majority of their program Ability to provide some input into the development of programs and overall artistry Regular participation in a variety of off-ice dance and/or movement classes Participation in on-ice theatre and creative movement Ability outside of the program to use the full body in movement; some ability to incorporate such movement into the program is emerging Ability to ascertain what particular aspects of a skater's artistry is appealing; ability to explain why one skater may receive higher program component scores than another, drawing on the language of skating

Sport Specific Skills - Pair

PAIR	Females (9-13) and Males (10-14)
Technical	<p>Stroking</p> <ul style="list-style-type: none"> • Introduction and development of basic pair stroking with an emphasis on good tracking in open/closed position and shadowing <p>Jumps</p> <ul style="list-style-type: none"> • Refer to singles on Page 29 <p>Spins</p> <ul style="list-style-type: none"> • Introduction and development of side-by-side spins in all basic positions • Teams should be able to hold quality basic positions for six revolutions <p>Pair Spins</p> <ul style="list-style-type: none"> • Introduction of basic pair spin positions in preparation for combination spins <p>Death Spiral</p> <ul style="list-style-type: none"> • Introduction and development of basic death spiral execution with a focus on the position of the female and the male's pivot • Beginning to add features to increase level of difficulty <p>Twist</p> <ul style="list-style-type: none"> • Beginning to execute double twist at the exit point of the stage <p>Throws</p> <ul style="list-style-type: none"> • Introduction and development of two different throw double jumps <p>Lifts</p> <ul style="list-style-type: none"> • Mastery of correct footwork for all male partners • Introduce and develop basic lifting positions for all female partners • Emphasis is to be on correct lifting technique and safety • There should be no levels or changes of position introduced in this stage <p>Artistic</p> <ul style="list-style-type: none"> • Emphasis should be on unison between partners • Interpersonal engagement should be introduced and developed through program/music choice • Both athletes should be participating in dance classes on a regular basis • See also singles on page 29



Photo: Stephan Potopnyk

"As a system and performance analyst in figure skating, I have often noticed that the skating system is modeled the same at all levels of athletes. As a sport, we have assumed that the only way to become the best in the world is to do what the best in the world is doing right now – even if our athletes are 10 years of development away from being the best in the world. For me, one of the strengths of our LTAD model is that it looks at athletes according to their developmental age AND their skill level, identifying the best thing they could be doing NOW in order to be able to do what the best in the world are doing if and when they get to that skill level. This will challenge us all – but it will also give our athletes the opportunity to maximize their development for as long as they participate in our sport – which we all hope will be for a lifetime!"

Patricia Chafe
President, Jump Beyond Inc. and
National Team Consultant

Sport Specific Skills - Ice Dance

ICE DANCE	Females (9-13) and Males (10-14)
Technical	<p>Stroking</p> <ul style="list-style-type: none"> • At entry develop correct stroking technique relating posture and balance to flow, power and speed • Develop and execute forward and backwards stroking in all dance positions (focus on proper holds) in a variety of stroking patterns • Introduce and develop the concept of tracking <p>Lifts</p> <ul style="list-style-type: none"> • Introduce lifts off-ice developing difficult positions for the female and proper lifting dynamics for the male • Develop proper footwork for males on rotational lifts • Working within the skaters' abilities a team should be able to achieve mid-level lifts. At exit a team should have the tools to do at least a variety of high-level short lifts • Develop spread eagle variations for males at entry to this stage <p>Twizzles</p> <ul style="list-style-type: none"> • Develop continuous 3-turn mechanisms focusing on rotation initiation, check and balance point • Introduce twizzles on all edges and both directions • Experiment with a variety of different features appropriate to level of skater • At exit of stage they should have the tools to achieve high level twizzles <p>Spins</p> <ul style="list-style-type: none"> • Focus and develop all basic positions including camel position for male • Develop difficult variations separately, later combining them • Develop 'revolution counting' awareness <p>Edges/Turns/Step Sequences</p> <ul style="list-style-type: none"> • All edges in all positions focusing on balance, holds, tracking and power generation from circle-to-circle. Can and should be done individually as well • Develop knowledge of every turn. At exit of stage should be able to execute all turns individually and with a partner in different holds • Introduce and develop exercises combining edges, turns and music
Artistic	<ul style="list-style-type: none"> • Participation in ballet classes is highly recommended as basic dance movements are developed; ballroom dance should also be introduced. • Exposure to other forms of dance (e.g., modern, hip-hop, jazz, African, etc.) as available • Develop and consolidate understanding of different time signatures (i.e. 2/4, 4/4, 3/4, 6/8) and the application of time signatures to pattern dances and free dance • Develop an understanding of musical phrasing • Exposure to the arts through available channels (dependent upon an athlete's contextual reality)

General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lean toward the overall development of the individual.

	Females (9-13) and Males (10-14)
Physiological	<ul style="list-style-type: none"> Continued development of speed, stamina, and strength (NOTE: This is the optimal window of trainability to develop strength in females) Development of flexibility, in particular during an athlete's growth spurt Particular attention to males' flexibility at entry to stage if not already developed (the window is closing!)
Psychological	<ul style="list-style-type: none"> Further development of fundamental mental training skills and an increased understanding of their role and importance Ability to define/explain the Ideal Performance State Continue to consolidate management and anxiety management strategies; self-awareness of when and what is required Ability to explain the role and importance of setting short, medium, and long-term goals For pair and ice dance teams and synchronized skaters: some basic understanding of conflict resolution strategies, partner communication, continued involvement in all facets of skating, in particular, free skating focusing on spinning, jumping and field moves. Tests and competition should be encouraged
Social	<ul style="list-style-type: none"> Thorough knowledge of the rules and ethics of sport should be shared with younger skaters Demonstrated ability to take risks and/or meet challenges presented Increased ability to measure success through self-evaluation; ability to focus on personal achievement rather than outcome Continued understanding that education/schooling remains the most important priority

LEARN TO COMPETE

On-Ice Training

The relative amount of time skaters may practice various activities can be expressed as a percentage of their total ice time per phase. Again, individual training needs will vary with each skater. Skaters will spend about 70-75% of their on-ice time dedicated to technical training which includes: jumps, spins, edges/turns, stroking, field movements. Skaters will spend about 25-30% of their time on program component development (skating skills noted in technical, transitions, performance/execution, choreography, interpretation) which includes reinforcement of body lines, facial/body expressions, attention to detail with priority given to program development.

Session length:	<ul style="list-style-type: none"> 1 or 2 – 45 to 60 minute sessions/day
Days/week:	<ul style="list-style-type: none"> 4 to 5 days/week
Weeks/year:	<ul style="list-style-type: none"> 44 to 46 weeks/year

For skaters participating in singles and pair skating in this stage, at entry, they should spend approximately 25% of their on-ice time doing pair skills and 75% on singles skills. At point of exit, their time should be divided 50/50 between pair and singles training.

Off-Ice Training

At the Learn to Compete stage, athletes should be participating in off-ice activities three to five days per week, and 46 to 48 weeks of the year. Each session should be approximately one hour in length and should include some type of dance and movement classes for both males and females. Strength training sessions for females are of particular importance. Sessions should focus on exercises that utilize body weight, medicine balls, and exercise/stability balls.

Stamina also needs to be a focus for both females and males and cardiovascular conditioning sessions should be introduced. We encourage athletes at this level to remain involved in another sport outside of figure skating, but on a minimal commitment level.

Competition ⁵

This stage of development is critical to an early skill acquisition sport such as figure skating. It is also the phase when most athletes will experience their peak growth, development and maturation. Thus, there are great windows of opportunity for developing skills and acquiring new ones. Too many competitions take away from training as the athlete is always preparing and refining skills for competition rather than for present and future skill progression. In other words, too much competing at this level will hinder overall athlete development. **Over-competing should be avoided at all costs.**

In preparation for competition, quality program run-throughs are imperative. During the summer (i.e. July, August, September) back-to-back program run-throughs should be added to the athlete's training plan. In addition, to refine and perfect programs, focus on particular sections should be encouraged and monitored. Coaches must instill in the athlete the understanding that the "training" of the program is the key to consistent performances in competition. Also, the more thoroughly executed programs are in practice will make competitions seem more like training sessions. Every run-through is a simulation!

As the competitive season begins, athletes should be performing one to two run-throughs per day, plus continue to work on sections of the program to consolidate their skills and the performance of those skills in the context of the choreography. In preparation for those competitions designated as important in the athlete's yearly plan, there should be one full run-through of the program per day and re-working of any sections of the program as necessary.

Similar to a gradual and progressive increase in the intensity of training as an athlete progresses through the Learn to Compete stage, the number of competitions should also gradually increase. For optimum athlete development, the recommendation for the number and timing of competitions is indicated in the chart below:

Number of Competitions in the Learn to Compete Stage			
Age	Spring/Summer	Fall	Winter
9 - 11 years	One	Two	Two
12 - 14 years	One or two	Two or three	Two

The format of competitions should include elements and program component based events as well as competitions in which full programs are performed. The format of competition will depend on the time of year. Generally speaking, elements-based competitions should be held in the spring and summer. Full program competitions can be introduced in the latter stages of the summer and in the fall in preparation for qualifying competitions.

⁵ See Appendix C for the Stage of Athlete/Participant Development Overview.

BMO



TRAIN TO COMPETE

The fourth stage in Skate Canada’s LTADM is Train to Compete. At this stage we begin to see progression to national-level competitions and, potentially, expose certain athletes to international opportunities. Coaches will begin to rely on and manage the expertise of other individuals to foster a solid support team for athletes.

The chronological ages of participants in this stage are:

	Female	Male
Train to Compete	10 – 16	11 – 17

Philosophy

The Train to Compete stage emphasizes the pursuit of excellence at the national level. Athletes with the required abilities will also be exposed to the demands of international competitions. Athletes will be focused exclusively on figure skating when they reach this stage.

General Objectives

- To refine and sequence basic sport skills at competition intensity/density
- To increase and improve athletes’ repertoires of skills in practice and to increase the success rate of the skills executed in competition
- To foster growth of athletes in specific disciplines in preparation for national and international levels of competition (as applicable). At this stage coaches, skaters and parents need to ensure that athletes are in the discipline that will best maximize their development and achievement in the sport
- To develop/consolidate new artistic knowledge through programs/choreography tailor-made for the athlete(s) but also in other on and off-ice activities
- To develop general and specific physical conditioning identified through scheduled fitness tests while further optimizing ancillary capacities (i.e. knowledge of warm-up, cool-down, stretching, nutrition, hydration, rest and recovery, etc.)

- To further develop theoretical knowledge and practice of fundamental mental skills. The Ideal Performance State is developed and refined
- To increase the overall number of competitions, while also providing opportunities for national and/or international-type competitions for athletes with the required abilities
- To develop the performance capacity of the athlete/team in order to reach peak performance at pre-determined times of the year.

Windows of Optimal Trainability

The following physiological factors must be refined and consolidated through specific programming and coaching and in accordance with age and gender:

- ✓ Skills (further develop)
- ✓ Speed (female: 11-13; male: 13-16)
- ✓ Suppleness (Flexibility) (further develop)
- ✓ Stamina (onset of PHV)
- ✓ Strength (female: immediately after PHV and onset of menarche; male 12-18 months after PHV)



Photo: Stephan Potopnyk

TRAIN TO COMPETE

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined below the Train to Compete stage must:

- ✓ Ensure that training intensity is always high to optimal. Sub-maximal intensity will alter the motor coordination of athletes
- ✓ Mirror competition requirements/environment. Greater time should be spent on modelled competition conditions than on controlled conditions (block repetition of the sequence of skills)
- ✓ Account for the growth, development, and maturation process for both females and males
- ✓ Adequately monitor fatigue and recovery
- ✓ Foster ultimate athlete development through the choice of competitions (timing, location, focus, follow-up, etc.)
- ✓ Make use of an integrated support team (IST): physiologist, psychologist, dietician, etc. led by the primary coach

- ✓ Apply single, double, or triple periodization (if required) that is tailor-made to athletes' needs and competition calendars
- ✓ Encourage athletes to be focused on one sport only.

Mission of the Coach

The mission of the coach is to integrate the performance factors in a complex and harmonious blend in order for athletes to perform on a regular and consistent basis at identified major events domestically and internationally. Personal development is critical at this stage.

Coaching Education and Certification

NCCP Competition–Development/High Performance

NOTE: Mentoring is strongly recommended to help developing coaches achieve international excellence as a coach.

Sport Specific Skills - Singles

Athletes should be able to demonstrate a relative mastery of the skills below at the exit point from Train to Compete.

SINGLES	Females (10-16) and Males (11-17)
Technical	<p>Stroking</p> <ul style="list-style-type: none"> • Increased quality of posture and edge control • Increased power, speed and strength <p>Jumps</p> <ul style="list-style-type: none"> • Females have mastered three triples and are training all triple jumps; triple/triple combinations are introduced and developed • Males have mastered five triples and one triple/triple combination; triple Axel introduced <p>Spins</p> <ul style="list-style-type: none"> • Demonstrated ability of strong basic positions with speed and ease of transition • Able to execute some difficult and innovative positions <p>Step Sequences</p> <ul style="list-style-type: none"> • Ability to incorporate all difficult turns and steps with control and confidence • Beginning to demonstrate the ability to include creative use of turns, edges and steps • Expanded use of the body and levels of movement <p>Spiral Sequence/Field Moves</p> <ul style="list-style-type: none"> • Ability to perform a wide repertoire of difficult spiral variations on both feet, all edges and in both directions • Evidence of the development of creative field movements

Sport Specific Skills - Pair

PAIR	Females (10-16) and Males (11-17)
Technical	<p>Stroking</p> <ul style="list-style-type: none"> • Increased quality of posture and edge control • Increased power, speed, and strength • Ability to perform basic stroking in both directions in unison <p>Jumps</p> <ul style="list-style-type: none"> • Females and males have mastered the double Axel and one triple jump; able to perform these jumps with reasonable speed, control and unison <p>Spins</p> <ul style="list-style-type: none"> • Able to perform strong basic positions with speed and ease of transition • Evidence of the development of difficult and innovative positions/ variations <p>Pair Spins</p> <ul style="list-style-type: none"> • Basic pair spin positions performed with control, confidence and fast rotation (with a focus on positive grade of execution) • Evidence of the development of innovative and difficult positions/ variations <p>Lifts</p> <ul style="list-style-type: none"> • Mastery of lifts from groups three, four, and five • Males: should be able to demonstrate the mastery of proper footwork <p>Throws</p> <ul style="list-style-type: none"> • Able to demonstrate all throws from Axel to double Lutz • Teams should have mastered double throws and have begun to execute some successful throw triple jumps <p>Twists</p> <ul style="list-style-type: none"> • Introduction and development of double twist <p>Death Spirals</p> <ul style="list-style-type: none"> • Females: should have the ability to demonstrate all basic positions • Males: should have the ability to perform the pivot with speed, power, and control • Able to execute all basic death spirals with positive grades of execution; evidence of some increase in degree of difficulty on those death spirals with stronger basic positions <p>Step Sequences</p> <ul style="list-style-type: none"> • Ability to incorporate all difficult turns and steps with control and confidence • Beginning to demonstrate the ability to include creative use of turns, edges and steps • Expanded use of the body and levels of movement <p>Spiral Sequence/Field Moves</p> <ul style="list-style-type: none"> • Ability to perform a wide repertoire of difficult variations on both feet, all edges, and in all directions • Evidence of the development of creative field movements

ICE DANCE	Females (10-16) and Males (11-17)
<p>Technical</p>	<p>Stroking</p> <ul style="list-style-type: none"> • Development of power is evident in basic stroking patterns and shapes • Strong movement and flow in all basic and creative positions • Strong flow and movement in both directions • Mastery of tracking and all dance holds <p>Lifts</p> <ul style="list-style-type: none"> • Work towards mastery of creative entries • Secure all fundamental difficult positions for lifting partner (focus on man) • Develop and secure entry and exit flow and control for lifted partner (focus on woman) <p>Twizzles</p> <ul style="list-style-type: none"> • Four revolution twizzles are expected • Experiment and work towards mastery of one foot twizzles and various entry edges • Secure difficult positions before twizzles begin to revolve <p>Pattern Dances</p> <ul style="list-style-type: none"> • The introduction and mastery of ISU Junior level dances • Introduction of Senior ISU dances should they remain a portion of the event • Edge quality, flow and unison to be secured and now showing promise • Speed added to the performance of dances • Continuing and moving towards more complex dances <p>Spins</p> <ul style="list-style-type: none"> • Develop all families of positions • Develop consistent rotation speed and number • Develop both simple and combination type spins <p>Step Sequences</p> <ul style="list-style-type: none"> • Refine and develop a variety of turns • Become consistent at turn execution • Develop all turns considered difficult • Secure positions during turn performance
<p>Artistic</p>	<ul style="list-style-type: none"> • Demonstration through performance of new levels of artistic knowledge • Performance of choreography and programs that are tailor-made to the athlete; ability to make the choreography and program “one’s own” • Increased ability to perform transitions and connecting steps (while minimizing the number of crosscuts) in programs with speed, flow and ease of movement
<p>Unison</p>	<p>In all of the aforementioned technical and artistic skills, pair and ice dance teams must be able to demonstrate unison in:</p> <ul style="list-style-type: none"> • Body movement and alignment • Turns and steps • Body rhythm and musical awareness

General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lean toward the overall development of the individual.

	Females (10-16) and Males (11-17)
Physiological	<ul style="list-style-type: none"> • Development of speed, stamina and strength • Flexibility enhanced (in particular during the growth spurt) • Continued monitoring of the onset of peak height velocity (PHV) and growth spurts by the coach
Psychological	<ul style="list-style-type: none"> • Demonstrated knowledge and practical application of the following fundamental mental skills: <ul style="list-style-type: none"> • Focusing and refocusing (ability to handle distractions) • Effective short, middle and long-term goal setting • Visualization • Self-management (schedules, training, school, etc.)
Social	<ul style="list-style-type: none"> • Ability to manage personal relationships effectively (i.e. friends, coach, parent, support team) regardless of scenario • Ability to deal effectively with conflicts • Increased ability to measure success through self-evaluation • Continued understanding that education remains the most important priority • Basic understanding of the role of the media and sponsors in the sport (provided through introductory media relations workshops)

On-Ice Training

The wide age range of athletes in this stage necessitates a carefully thought out on and off-ice training plan that reflects not only the age of the athlete but also the specific phase of the yearly training plan. The table below outlines a progression from time of entry into the stage to point of exit. There will be a gradual progression from entry to exit points that is reflective of specific training needs dependent upon the individual athlete's circumstances.

Session length:	<ul style="list-style-type: none"> • 45 to 60 minute sessions • 2 to 3 sessions/day <ul style="list-style-type: none"> – 1 to 2 technical sessions/day* – 1 to 2 sessions on stroking, edges/ turns, choreography, presentation, etc.
Days/week:	<ul style="list-style-type: none"> • 5 days/week
Weeks/year:	<ul style="list-style-type: none"> • 44 to 48 weeks/year

* Technical sessions should include one program run through of both short and free programs everyday in the pre-competition and competition phase.

Off-Ice Training

Athletes should be warming up at minimum 30 minutes per day, but optimally one hour per day. This should include a full body warm-up, off-ice jumps and lifts (as applicable), and mental preparation. It should also include 30 minutes of stretching/cool-down at the end of the day. Each day should include a review of short, medium and long-term goals.

In addition to warm-up and cool-down periods, athletes optimal off-ice activity at this level ranges from four hours (for younger ages) to 13 hours (for older athletes). All off-ice activity should be focused on enhancing on-ice performance. This might include off-ice jump classes, dance, movement and theatre classes, core strength conditioning, flexibility work, cardiovascular enhancement and overall strength training.

Competition ⁶

Athletes should begin to focus on competing against one another, learning to strategize for the best outcome possible.

There remains a focus on technical skill development during the spring and summer phases of the yearly training plan. Choreography of new programs should be completed as early as possible following the end of the previous competitive season and continue to train/develop program components (adding more difficult technical elements late spring/early summer).

Competitions will serve multiple purposes. Element and program component based competitions should still figure into training and competition plans but may increase in quantity from the previous stage. Full program competitions should be a focal point of the late summer and fall, in preparation for qualifying competitions.

For optimum athlete development, the recommendation for the number and timing of competitions is as follows:

Number of Competitions			
Type	Spring/Summer	Fall	Winter
Technical Elements	3 to 5	1 or 2*	1 or 2*
Program Components	2 to 3		
Full Program	1 or 2 (late summer)	2 or 3	As applicable

* For those athletes not progressing to or beyond qualifying competitions

“Figure skating’s LTAD model provides an organized and systematic guide for everyone involved in the sport. Coaches, skaters, judges, parents, volunteers, administrators and clubs will love the simplistic approach to development.”

Michelle Leigh
Skate Canada World/Olympic Coach

⁶ See Appendix C Stages of Athlete/Participant Development Overview.





LEARN TO WIN/LIVE TO WIN

The fifth stage in Skate Canada's LTADM is Learn to Win/ Live to Win. Only a small percentage of athletes will reach this stage of development. Coaches and support teams will require extensive knowledge of what is required to compete at the highest level of international competition (i.e. World Championships and Olympic Games). Athletes play a significant role in their own development at this stage. Leadership and facilities must be completely integrated in order to provide full support to athletes in their pursuit of excellence at this most elite level.

The chronological ages of participants in this stage are:

	Female	Male
Learn to Win	13 – 19	14 – 21
Live to Win	15+	15+



Philosophy

The athlete is fully prepared (physically, mentally, technically, strategically) with the confidence and attitude that they can win at the highest levels of international competition.

General Objectives

- To create and deliver athlete-centered, coach-driven programs which optimize and integrate all performance factors (Appendix D) relative to the international competition calendar (periodization)
- To instill an attitude that encourages the athlete to be self-motivated, self-directed and to accept responsibility in the pursuit of international excellence
- To optimize fitness, mental and performance preparation
- Refine/maintain all sport specific skills
- To manage all demands related to an athlete's career (support staff, sponsors, media, etc.) seamlessly and effectively
- To begin exploring aspects related to post-sport careers.

Windows of Optimal Trainability

The following physiological factors must be a focus for continued improvement in the Learn/ Live to Win stage in order to stay competitive at the highest international level:

- ✓ Speed (female: 11-13; male: 13-16)
- ✓ Strength (female: immediately after PHV and onset of menarche; male 12-18 months after PHV)
- ✓ Further development of suppleness (flexibility) and stamina

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, the Learn to Win/Live to Win stage must:

- ✓ Encourage the athlete to be self-driven, motivated and to take responsibility. Athletes must believe they can be the best
- ✓ Adopt a “No Excuses” philosophy and develop and instill a winning attitude, demanding excellence and being tough when necessary (in a way that distinguishes the athlete from the person)
- ✓ Incorporate opportunities to compete against the best athletes in other parts of the world
- ✓ Encourage excellence in all aspects of performance in order to be successful in international competitions
- ✓ Revolve around creating optimal performance in competition. Training during the competitive phase must simulate competitions. The focus must be on doing everything the skater is capable of doing consistently in practice, on demand and when it counts
- ✓ Apply single, double and triple periodization (if required) which is tailor-made to the international competition calendar and athletes’ contextual realities
- ✓ Gear training towards a complex integration of the performance factors (10 S’s) in order to meet the specific competition requirements (periodization)
- ✓ Mirror competition requirements/environment. Greater time should be spent on modelled competition conditions than on controlled conditions (block repetition of the same skill or sequence of skills)
- ✓ Monitor fatigue and rest/recovery adequately. Frequent breaks might be included (depending on the needs of the athletes) so as to avoid injuries
- ✓ Draw on the expertise of people with different knowledge, expertise and experiences.

Mission of the Coach

The mission of the coach is to model all aspects of training and performance in order to help the athlete reach the podium at major international events. The training structure of high performance athletes is a mirror image of the coordinated and goal-adapted method. Because of the international competition calendar, training is punctual and temporary focus is on special preparation for a major event. The primary coach must be able to direct/manage the support team. Athletes need to have multiple personnel with specific expertise contributing to their overall performance.

Coaches at this stage of development need to have a clear understanding of the following:

- Sponsorship
- Agents
- Media relations
- Managing a support team
- Importance of being a role model
- The roles and mandates of the ISU, Skate Canada, national coach consultants, Skate Canada sections, and mentor coaches

Coaching Education and Certification

NCCP Competition–High Performance
Link with National Coaching Institutes (NCIs) and mentors



Photo: Gérard Châteaigneau

Sport Specific Skills - Singles

SINGLES	Females (13-19/15+) and Males (14-21/15+)
Technical	<p>Stroking</p> <ul style="list-style-type: none"> • Refine quality of posture and edge control • Achieve optimal power, speed and strength <p>Jumps</p> <ul style="list-style-type: none"> • Females have mastered all triple jumps, one or two triple/triple combinations including introduction and mastery of the triple Axel • Males have mastered all triples including the triple Axel and various triple/triple combinations; quadruple jumps are introduced and consolidated • All jumping skills are performed with consistency and are of the highest quality (i.e. positive GOE) <p>Spins</p> <ul style="list-style-type: none"> • At this level both females and males must be executing the highest level spins with strong basic, difficult, and innovative positions • Speed of rotation and quality of positions/edges must result in positive GOE <p>Spiral Sequence/Field Movements</p> <ul style="list-style-type: none"> • Ability to perform a variety of spread eagles, Ina Bauers, arabesques, and innovative positions on both inside and outside edges multi-directionally while integrating creative transitions into the program • Mastered the execution of spiral sequences that achieve the highest level and positive GOE <p>Step Sequences</p> <ul style="list-style-type: none"> • Mastered the execution of step sequences that achieve the highest level and positive GOE • Emphasis must be on the execution of quick transitions from steps to turns, with full use of the upper body

“LTAD is a valuable resource that provides a systematic pathway for an athlete to grow and develop from the Learn to Skate level to the international level. As coaches we must not only be aware but implement age appropriate skill development, utilize the windows of trainability and provide a way and means to physiological and psychological development.

I believe using the LTAD and working together with defined roles will allow our Canadian skaters to continue to develop and attain international excellence and remain leaders on the world stage.”

Lee Barkell
World/Olympic Coach

PAIR	Females (13-19/15+) and Males (14-21/15+)
<p>Technical</p>	<p>Stroking</p> <ul style="list-style-type: none"> • Equal/matching strength in strokes • Stroking is performed with high levels of speed and power <p>Jumps</p> <ul style="list-style-type: none"> • Both partners have mastered two different triple jumps; one is performed in combination <p>Spins</p> <ul style="list-style-type: none"> • At this level pair teams must be executing the highest level spins with strong basic, difficult, and innovative positions • Speed of rotation and quality of positions/edges should result in positive GOE <p>Pair Spins</p> <ul style="list-style-type: none"> • Difficult and innovative pair spin positions performed with control, confidence, and fast rotation (with a focus on positive GOE) <p>Throws</p> <ul style="list-style-type: none"> • Mastery of two different throw triple jumps <p>Lifts</p> <ul style="list-style-type: none"> • Mastery of lifts from ISU Groups 3, 4, and 5 • Ability to consistently perform advanced level lifts with positive GOE <p>Twists</p> <ul style="list-style-type: none"> • Mastery of a triple twist or, at minimum, ability to perform a Level 4 double twist consistently <p>Death Spirals</p> <ul style="list-style-type: none"> • Able to execute high level, difficult and innovative death spirals with positive GOE <p>Spiral Sequence/Field Movements</p> <ul style="list-style-type: none"> • All pair teams must do the highest level spiral sequence possible with qualities that result in positive GOE • Flexibility and originality is mandatory and must be superior in both male and female athletes • Innovative and difficult field movements must be incorporated into both programs (e.g. on entries into throws and lifts) and performed with control, speed and flow <p>Step Sequences</p> <ul style="list-style-type: none"> • All pair teams must be executing the highest level step sequence possible and achieving positive GOE • Difficult turns must be refined at this stage and performed with control, speed, and flow • Both partners must incorporate the use of the upper body and low, medium, and high levels in their movements

Sport Specific Skills - Ice Dance

ICE DANCE	Females (13-19/15+) and Males (14-21/15+)
<p>Technical</p>	<p>Stroking/Edges</p> <ul style="list-style-type: none"> • Stroking must be performed with effortless power and flow, combined with a superior ability to lean and change direction at high speeds • Acquisition of power during stroking must be invisible and soundless • It is essential that both partners are equal in this regard <p>Skating Skills</p> <ul style="list-style-type: none"> • Athletes must demonstrate the ability to perform all turns (both directions), show extreme co-ordination and a balance of creative hops, steps, split jumps, etc. • Athletes must be capable of utilizing full body movement • Demonstrated mastery of quality extension and body line is mandatory • Athletes can generate power that breathes effortless flow and quietness on the ice <p>Pattern Dances</p> <ul style="list-style-type: none"> • Both partners must be able to perform all pattern dances with power, speed, flow, pinpoint timing, accuracy and consistency of pattern • Both athletes must also be able to display a high level of interpretive ability regardless of the rhythm of the dance <p>Dance Spins</p> <ul style="list-style-type: none"> • Must be performed at the highest level possible and receive positive GOE • Both partners must be able to execute spins in both directions with a maintenance of high speed of rotation • Spins must incorporate strong and difficult positions and incorporate creative entries and exits <p>Step Sequences</p> <ul style="list-style-type: none"> • Both skaters must be able to perform all complex turns multi-directionally at high speed, both side-by-side and in dance hold • Executing the sequence with finite attention to music phrasing is vital <p>Twizzles</p> <ul style="list-style-type: none"> • Both partners must be able to twizzle on both feet and in both directions at high speeds • Twizzles must be executed seamlessly and in complete unison, while incorporating both arm and leg features • Twizzles should be incorporated into the programs in such a way that they stand out (i.e. to look like it is a relevant part of the program and not an isolated element) <p>Field Movements</p> <ul style="list-style-type: none"> • Though not required elements, field movements should be incorporated into program choreography and transitions • Both athletes should demonstrate superior flexibility, body control, innovative positions, strength and fluidity <p>Lifts</p> <ul style="list-style-type: none"> • Lifts must be executed with good timing and demonstrate superior flexibility of both athletes, strength, speed and flow • Athletes must be able to execute lifts with difficult and innovative entries and exits that maximize the position options allowed by the rules of the sport • Lifts must blend seamlessly into the choreography of the program and be performed in such a way so as to receive positive GOEs

Sport Skills

Artistic	<p>In all disciplines, athletes must:</p> <ul style="list-style-type: none"> • Be expressive, musical, and highly stylized • Understand the deep meaning behind the chosen music and theme of movement • Demonstrate quality choreography that sets them apart from the competition • Have a body that is trained well in various types of dance so as to maximize performance • Have expressive arms • Consistently carry themselves with confidence and have a magical connection with the judges and the audience that provides a “wow” factor each and every time <p>In Pair and Ice Dance, teams must:</p> <ul style="list-style-type: none"> • Have an emotional connection between partners, that also draws the judges and audience into the performance • Be able to express an emotional connection for all different types of music, rhythms, themes, stories, etc.
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General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lean toward the overall development of the individual.

	Females (13-19/15+) and Males (14-21/15+)
Physiological	<ul style="list-style-type: none"> • Optimal development of the 5 S’s (Speed, Stamina, Strength, Skills, Suppleness)
Psychological	<ul style="list-style-type: none"> • Working relationship with a sport psychologist/mental trainer well-established • Mastery of anxiety management and relaxation techniques • Clearly developed strategies and tactics for competition • Clearly developed mental preparation plan (pre-competition, competition) and ability to set/reset short, medium, and long-term goals • Competition debrief
Social	<ul style="list-style-type: none"> • Evidence of the ability to maintain a healthy balance between sport and life (i.e. family, friends, education) • Development of future career plans, post-competitive life • Ability to work comfortably with the media and with sponsors

LEARN TO WIN/LIVE TO WIN

The above represents the skills athletes will need during this particular stage of development and those that they will have mastered at the exit point from Learn to Win/Live to Win.

On-Ice Training

On and off-ice training needs to relate to the specific phase of the yearly training plan. Adaptations should be made according to an athlete's/team's circumstances. The quality of work is far more important than the quantity of work. Rest and recovery must be allowed to maximize training and to prevent injuries, fatigue and/or illness.

Singles	Session length:	<ul style="list-style-type: none"> • 45 to 60 minutes • 3 sessions/day <ul style="list-style-type: none"> • 2 technical sessions (including program run-throughs during competitive phase) • 1 session on stroking, edges/turns, spins, choreography, etc.
	Days/week	<ul style="list-style-type: none"> • 5 days/week
	Weeks/year	<ul style="list-style-type: none"> • 48 weeks/year
Pair	Session length	<ul style="list-style-type: none"> • 45 to 60 minutes • 3 or 4 sessions/day <ul style="list-style-type: none"> • 2 sessions for pair skating • 1 session for jumps and spins • 1 session on stroking, edges/turns, spins, choreography, etc.
	Days/week	<ul style="list-style-type: none"> • 5 days/week
	Weeks/year	<ul style="list-style-type: none"> • 48 weeks/year
Ice Dance	Session length	<ul style="list-style-type: none"> • 45 to 60 minutes • 3 sessions/day <ul style="list-style-type: none"> • 1 session to include stroking/edge/turn work
	Days/week:	<ul style="list-style-type: none"> • 5 or 6 days/week
	Weeks/year:	<ul style="list-style-type: none"> • 48 weeks/year

Off-Ice Training

All athletes should be participating in 10 to 14 hours of off-ice training each week, for 48 weeks of the year. In general, off-ice training needs to have the same commitment as on-ice training and needs to include short, medium and long-term goals. Specific work done off-ice must reflect the principles of periodization and take into account the age, growth and development of the athlete. Furthermore, at this level off-ice programs should be very sport-specific and based on the individual needs and fitness test results of the athlete.

Ballet/dance classes should be incorporated into the training plan for all disciplines due to the positive crossover effect with skating. Athletes will ideally participate in two to five ballet classes per week, depending on need and discipline. Strength and conditioning classes are also critical at this stage and should be scheduled five days per week. Off-ice jumping classes should be continued for singles and pair skaters and incorporated into off-ice warm-up sessions. Pair skaters need to be performing lifts off the ice every day. Ice dancers must incorporate flexibility classes and dance classes different from ballet (e.g. ballroom, contemporary, lyrical, jazz, hip hop, Latin, etc.) All disciplines would benefit from acting or theatre classes.

As part of rest and recovery, regularly scheduled massage and/or chiropractic appointments are essential. All athletes need to continue to develop and consolidate the mental skills required for this level of competition. Pair and ice dance teams need to foster communication and conflict resolution skills.

Competition ⁷

At this level, it is about doing it when it counts—plain and simple. There must also be recognition that more is not better. Athletes often arrive at their peak events (i.e. Worlds and Olympics) physically and mentally exhausted because adequate rest and recovery has not been taken following the national championships. Given the nature of the international event calendar, athletes, coaches and applicable leadership need to plan training, competition, and recovery wisely. This includes the establishment of realistic and attainable performance targets/goals. As the competitive calendar is somewhat different for Junior and Senior athletes, the following table is broken down by level:

	Junior	Senior
Spring	Technical development	Technical development
Summer	Monitoring (mid-summer) Competition (August)	Technical development (continues) Monitoring (mid-summer) Competition (August)
Fall	ISU Junior Grand Prix events and/ or qualifying events	ISU Grand Prix events
Winter	ISU Junior Grand Prix Final (December) Nationals (January) ISU Worlds Junior Figure Skating Championships (March)	ISU Grand Prix Final (December) Nationals (January) ISU Four Continents Figure Skating Championships (January/February) Olympics (February: every four years) ISU World Figure Skating Championships (March)
NOTES:	<ul style="list-style-type: none"> • Approximately 5 to 7 competitions (Junior) and 5 to 10 competitions (Senior) annually • Technical skill development is priority between April and July for Junior athletes and April to August for Senior athletes • Junior athletes must be ready to compete by the end of August • Performance targets must be based on program execution in monitoring and competition • Continual analysis of programs and elements is required so as to maximize points in international competitions • Senior athletes need to balance training with show/tour opportunities 	

⁷ See Appendix C Stages of Athlete/Participant Development.





ACTIVE FOR LIFE

The sixth stage in Skate Canada's LTADM is Active for Life. There is no specific age bracket for this particular stage; it includes all ages. Providing opportunities for athletes to remain active in skating for life not only helps promote general health and wellness, but also acts as a base from which to draw volunteers and officials.

Participants can enter this stage at essentially any age. According to LTAD, if children have been correctly introduced to activity and sport through Learn to Skate and Learn to Train programs, they will have developed the necessary motor and fundamental movement skills (physical literacy) and confidence to remain Active for Life in virtually any sport they like. They may decide to continue participating in their sport at the recreational level, or they may become involved in the sport as an official or coach. They might also try new sports and activities; examples could be a figure skater taking up golf or a tennis player starting to cycle.

Canada's sport system should encourage athletes to:

- ✓ Move from one sport to another. For example, a gymnast becomes an aerial skier
- ✓ Move from one aspect of sport to another. For example, skater to guide for blind athletes
- ✓ Move from competitive sport to recreational activities such as hiking and cycling
- ✓ Move from highly competitive sport to lifelong competitive sport through age group competition such as Masters Games
- ✓ Upon retiring from competitive sport, move to sport-related careers such as coaching, officiating, sport administration, small business enterprises or media
- ✓ Move from competitive sport to volunteering as coaches, officials or administrators.

Philosophy

The Active for Life stage is entirely focused on providing opportunity for lifelong participation in skating. Social, mental and physical development are enhanced through involvement. Participants should understand the concept of physical literacy and experience gains in health, wellness and functionality.

General Objectives

- To welcome participation at any level from Learn to Skate to post-Living to Win
- To promote a long-term, physically active and healthy lifestyle through the sport of figure skating
- To create a seamless system of delivery at the club level that allows a member at any stage of development to be integrated into club programming.

Windows of Trainability

In this stage the windows of trainability, or the 5 S's, are always trainable and individually specified with reference to physiological testing, health issues and consistent tracking.

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined above, the Active for Life stage must:

- ✓ Provide a fun, safe, supportive and cooperative environment from which all participants can learn, progress and improve their skating
- ✓ Continue to train the 5 S's (stamina, strength, speed, suppleness and skills)
- ✓ Recognize the age and ability of all participants in order to provide appropriate goals and progress
- ✓ Provide sound technical and biomechanical information to promote safe skill development
- ✓ Promote the concept of personal achievement and success. Participation is a significant achievement and must be recognized: the acquisition of a skill, test and/or placement in a competition should be rewarded.

Mission of the Coach

The mission of the coach is to facilitate life-long participation in the sport for the pleasure and wellness derived. Coaches must be knowledgeable on adult development and be aware of the individual needs of skaters as well as program requirements at the grassroots levels through to more competitive adult members. Coaches at the Active for Life stage must have the ability to recognize the physical and cognitive needs of the general public entering our programs.

In addition, coaches must have the tools to recognize deficiencies and develop a plan of action to enhance the cognitive and physical development of the participant, thus making the learning process easier and more productive.

Coaching Education and Certification

NCCP Instruction–Intermediate

Sport Specific Skills

Skill development and acquisition covers basic skills to complex skills. Development will be athlete and coach driven and assessed. Progression must be based on individual needs, understanding, safety and abilities.

	All Ages
Motor Skills	<ul style="list-style-type: none"> Tailor-made programs to service the needs of the participants (e.g. adults) (refer to the Learn to Skate and Learn to Train stages)
Technical	<ul style="list-style-type: none"> Tailor-made programs to service the needs of the participants (e.g. adults) (refer to the Learn to Skate and Learn to Train stages)
Artistic	<ul style="list-style-type: none"> Tailor-made programs to service the needs of the participants (e.g. adults) (refer to the Learn to Skate and Learn to Train stages)

General Skills

General skills (i.e. physiological, psychological, and social) are developed through involvement in the sport and lean toward the overall development of the individual.

	All Ages
Physiological	<ul style="list-style-type: none"> Knowledge of healthy nutritional strategies. This might include considerations for caloric intake, portion size, low alcohol, salt, fat intake, heart healthy choices, lower cholesterol levels, regulate blood sugars, etc. Continued development (or introduction) of the 5 S's: strength, stamina, speed, suppleness and skills. The nature and extent of the training of these fundamental skills will depend on the participants' needs and abilities, however, risk/safety management are of utmost importance for all participants Suppleness may be the most important area for the Active for Life group and should be trained daily
Psychological	<ul style="list-style-type: none"> Develop self-confidence, positive outlook and self-esteem Consistently demonstrate the ability to set realistic goals with a true sense of a larger picture Invest in the emotional education and stability of peers, teammates and others Master the ability to focus, refocus and execute the cognitive elements to achieve set goals and tasks Focus management strategies: attentional control, concentration, focus, refocus, info-processing, managing distractions, positive self-talk, replacing thoughts Anxiety management strategies: breathing, relaxation, visualization Mental preparation: within a practice and for competition Knowledge and functional use of the Ideal Performance State
Social	<ul style="list-style-type: none"> Encourage group as well as individual peer dynamics in a variety of sport and social situations Participation is paramount: encourage volunteer activities to give back to sport Be an active, supportive and positive role model for peers and younger athletes

On-Ice Training

Private lesson instruction time should be at the discretion of the participant and can be augmented with group instruction. Learn to Skate athletes should be in a group scenario as much as possible but one which is aligned with their level and goals.

Private lessons to practice time should adopt a one to three ratio (i.e. one private lesson per three sessions). A high performance athlete will require more individual instruction and a more specific, individualized and intensive training plan.

Session length	<ul style="list-style-type: none">• 45 to 60 minutes
Days/week	<ul style="list-style-type: none">• 1 to 6 days/week• 1 to 10 hours/week depending on level/goals
Weeks/year	<ul style="list-style-type: none">• 25 to 40 weeks/year

Off-Ice Training

Participants considered in the Active for Life stage should be encouraged to participate in off-ice training 52 weeks per year. This will give them a fitness plan for life which will not only keep them healthy and fit but will enhance their sport activities. Generally, three to five hours per week of various activities which enhance stamina, strength, speed and suppleness is adequate. The specific types of activities will vary dependent upon socio-cultural context, participant interest, instructor availability, etc. Some examples of potential activities include resistance training, yoga, tai chi, core conditioning, walking, running, swimming, dance and movement classes, etc. A yearly plan should be designed to incorporate the peak training periods, competition periods, testing, off-ice training, active rest periods specific to the goals/needs of the athlete. Proper warm-up and cool-down techniques should be established, enforced, and practiced. This should involve heart rate elevation, muscle stretching, heart rate recovery, etc. for all on-ice and off-ice activities.

Competition ⁸

Given the multiple levels included within the Active for Life stage, there are different performance and competition criteria which reflect the stages of development outlined earlier. In many, for those athletes at the equivalent of Learn to Skate and Learn to Train, the focus of competition and testing should remain on presentation of skills. As skaters advance, choreographed programs can be introduced appropriate to the individual and level of competition. The content and evaluation of these programs will be dictated by the rules of the specific tests and competitions in which the athlete is participating. In terms of evaluation, the same evaluation process should be in place as in other stages (i.e. coach and evaluator/judge).

“What an exciting time for Skate Canada! We have a new model, LTAD, to guide us to greater success in the development of skating.”

Let’s all get behind the LTAD model as it offers valuable learning and development strategies for skating for all members of Skate Canada from the grassroots to competitive skaters, coaches, officials and volunteers.”

Shannon Cotnam
Skate Canada Board member

⁸ See Appendix C Stages of Athlete/Participant Development Overview.



LTAD FOR SYNCHRONIZED SKATING

The stages of the Synchronized Skating LTADM demonstrate skill progression for people who progress from Active Start onwards. Athletes who enter at any stage after Active Start may attain skill levels at a different rate. Coaches, sport leaders, and parents should be familiar with the stages of the LTADM for singles, pair, and ice dance as it is expected that athletes will progress through that model either before or simultaneously with the synchronized skating model outlined in this chapter. In other words, the primary intention of the synchronized skating model is to focus on team development; individual development is outlined in the preceding pages. Importantly, in an effort to avoid as much repetition as possible, General Skills (i.e. Physiological, Psychological and Social) are the same as those included in the LTADM for singles, pair, and ice dance and as such have not been included in the pages that follow. The same is true for the role of parents and guardians, leadership, and facilities and training environment.

LEARN TO SKATE

Please refer to the Learn to Skate stage on pages 15-19.

LEARN TO TRAIN

Recommended Skating Level

It is assumed that skaters at this level have completed CanSkate before beginning in this stage.

Philosophy

The Learn to Train stage remains an introductory stage as most athletes will not have participated in synchronized skating. Participation at this stage in this sport is encouraged before Learn to Compete and the emphasis must be on creating a place for all. This is the stage when most skaters should discover what synchronized skating is all about and how much fun it can be.

General Objectives

The general objectives of the Learn to Train stage for synchronized skating are:

- ✓ To foster a love of synchronized skating
- ✓ To introduce and develop the idea of team work
- ✓ To introduce basic synchronized skating skills.



Guiding Principles

In order to allow athletes/teams to develop and acquire the skills outlined below, the Learn to Train stage must:

- ✓ Provide a place for all individuals
- ✓ Allow for new coaches to be introduced to synchronized skating
- ✓ Emphasize the development of good synchro basics
- ✓ Must allow for balance between individual skating, other sports and synchronized skating.

Coaching Education and Certification

Coaches teaching synchronized skating are encouraged to become certified at the NCCP Intermediate STARSkate/ Provincial Coach level in synchronized skating.

Sport Specific Skills - Learn to Train Stage for Synchronized Skating

The following chart represents the skills participants should be able to demonstrate at the exit point from Learn to Train. Their mastery of these skills is relative to the volume of synchronized skating undertaken.

On-Ice Training

At the beginning of this stage (younger ages), one to 2.5 hours of on-ice synchro training as a team is required. At the end of the stage (later ages) 2.5 to four hours of on-ice synchro training as a team is required. This should be augmented with two to four hours of additional skating training (STARSkate or Juvenile/Pre-Novice Singles). All training time with the team should be with coach supervision. Teams should be training (as a team) between 10 and 20 weeks of the year.

Off-Ice Training

At early categories in this stage, teams should be participating in up to thirty minutes of off-ice warm-up, cool-down and/or team building activities. Time allocated for team off-ice activities should increase gradually through the categories, up to one hour a week for the same activities listed above.

All athletes should be participating in other sports and physical activities at this time.

Motor Skills <ul style="list-style-type: none"> • Agility, Coordination, Balance • Spatial/time orientation • Rhythm (acceleration/ deceleration) • Body Awareness 	<ul style="list-style-type: none"> • Skaters should become aware of their body and space relative to others, yet only at an introductory level – they do not yet have the full ability to “maintain their spacing” when unattached • Second window for speed falls in this age bracket, therefore continue activities that require the skaters to skate at their top speeds: forward, backwards, and sometimes while holding on to one to two other skaters • This is also the stage of critical motor development – it is the “window of accelerated adaptation to motor coordination”. • Core skating skills need to be developed: quality stroking, edges, turns (as high as each skater is able) – but with very strong basics • The window for flexibility is also overlapping into this stage (6-10 years) and so special attention to flexibility should continue • Develop strength by using own body weight as well as medicine or exercise balls • Endurance is developed through practices • Because of the team nature of the sport, it is necessary for athletes to develop a sense of time and space and how it relates to other skaters on the ice.
Technical Skills	Edges <ul style="list-style-type: none"> • Can skate on edges forward and backwards Turns <ul style="list-style-type: none"> • Can do one foot turns from forward to backwards • Can do all Mohawks • Can sustain edges after these turns • May be able to do backward 3-turns with balance before the turn • Loops are introduced Stroking <ul style="list-style-type: none"> • Forward and backward crosscuts have been acquired • Has at least two different stopping options forward and backward Jumps <ul style="list-style-type: none"> • Not required in unison, however should be mastering all single jumps individually Spins <ul style="list-style-type: none"> • Not required in unison, however should be mastering Group 1 Spins and should be developing Group 2 spins individually* Field Moves <ul style="list-style-type: none"> • Skaters should be capable of Group 1 Free Skating moves and should be developing their skills for Group 2 moves*
Artistic Skills	Advanced sense of rhythm and body placement through creative movements to music on and off the ice

* Difficulty groups of features as defined by the ISU

Complementary activities could include dance (ballet, jazz, etc), gymnastics, soccer and/or other activities that are of interest to the participant.

Competition ⁹

At the Learn to Train stage, emphasis should remain on training and not on competition. That said, some opportunity for competition can be introduced at a rate of one competition per ten week session. Performances should remain evaluated on GOEs but program component scores are introduced, with a specific emphasis on skating skills, performance execution and interpretation. At the beginning of this stage the focus remains on awarding of achievements based on pre-established standards or team goals as set by the coach rather than on rank ordering. By the end of the stage teams may be introduced to Regional events and rank ordering of results.

LEARN TO COMPETE

Recommended skating level

Skaters are assumed to have completed Primary STARSkate tests and may have participated in synchronized skating previously, but this is not essential.

Philosophy

The Learn to Compete stage is the most important development stage for an athlete in synchronized skating. The age range of this stage includes the most variation in chronological versus biological/developmental ages; thus, it is important to allow some flexibility in age ranges. At this stage synchro skaters appreciate that working hard as a team can be rewarding and fun.

General Objectives

The general objectives of Learn to Compete stage for synchronized skating are:

1. To increase focus on the ability to perform skills in a competition setting
2. To develop competitive experiences based on performance and not solely on outcome or results
3. To further develop skills, remain focused on training and improving the basics.

Guiding Principles

In order to allow athletes/teams to develop and acquire the skills outlined below, the Learn to Compete stage must:

- ✓ Allow for skating to become the dominant activity
- ✓ Introduce national-level competitions
- ✓ Account for the fact that this stage is a window of accelerated adaptation to aerobic, speed, and strength training. Off-ice physical training is very important

Coaching Education and Certification

NCCP Instruction – Intermediate /Competition–Introduction

On-Ice Training

Teams should be training as a team for four to six hours per week, augmented by two to six hours per week of individual skill development (STARSkate or competitive singles, pair, or dance). Team training should be at least 20 weeks per year (a full winter season) and up to 40 weeks per year, depending on ice availability. All training time with the team should be with coach supervision.

Off-Ice Training

Off-ice training must begin to take on particular physical significance. Teams should be doing up to three sessions a week in which aerobic, strength and flexibility training are included. A team off-ice training program should be formalized at this level.

Competition ¹⁰

Performances to be evaluated on all components as per Skate Canada. Double peaks can be introduced at this level if a national competition will be included in the calendar. All competitions will include a formal ranking and teams should strive to participate in three to four competitions (including one peak competition) per season.

⁹ & ¹⁰ See Appendix C for the Stages of Athlete/Participant Development Overview.

Sport Specific Skills - Learn to Compete Stage for Synchronized Skating

The following chart represents the skills participants should be able to demonstrate at the exit point from Learn to Compete.

Motor Skills <ul style="list-style-type: none"> • Agility, Coordination, Balance • Spatial/time orientation • Rhythm (acceleration/ deceleration) • Kinesthetic awareness 	<ul style="list-style-type: none"> • Skaters are now aware of their body and space relative to others, and have the ability to “maintain their spacing” when unattached • Flexibility, strength and aerobic capacity must have strong focus • Because of the team nature of the sport, it is necessary for athletes at this level to be mastering a sense of time and space, and how it relates to other skaters on the ice
Technical Skills	Edges <ul style="list-style-type: none"> • Stability and balance on all edges is established • Can introduce variation of body positions when skating forward Turns <ul style="list-style-type: none"> • Same-circle turning is well established both forward and backward – with complete stability before and after turns • Change-circle turns are introduced • Introduce multiple rotation twizzles – perhaps not yet integrated into programs • Can perform all loops Stroking <ul style="list-style-type: none"> • Power in stroke is emphasized • Multiple stopping options are established Jumps <ul style="list-style-type: none"> • Mastering jumping ability – increasing strength and confidence in jumps • Learning to jump in unison in small groups Spins <ul style="list-style-type: none"> • Group 1 and 2 spins are mastered and skaters are developing Group 3 spins* • Introduce the ability to be able to adjust speed of rotation to allow for unison Field Moves <ul style="list-style-type: none"> • Group 1 and 2 Free Skating moves are mastered and should be developing their skills for Group three moves*
Artistic Skills	<ul style="list-style-type: none"> • Encourage individual creative expression and presentation • Advanced ability for sharp and precise movements

* Difficulty groups of features as defined by the ISU

TRAIN TO COMPETE

SYNCHRONIZED SKATING

Recommended Skating Level

Skaters should have participated in synchronized skating prior to entering these categories – but this is not essential. Skaters should have completed intermediate STARSkate tests as a minimum and gold level by the time they are competing in the senior category.

Philosophy

Teams at this level should be training towards the pursuit of excellence at the national level. By Senior, athletes are participating principally in synchronized skating only. They may continue in training singles, ice dance or pairs as a part of their individual training. Skaters have demanding sport-specific physical, tactical, and technical training programs which prepare them for the demands of elite performance and competition.

General Objectives

The general objectives of Train to Compete as related to synchronized skating are:

- To optimize fitness preparation for the sport
- To optimize individual and team technical and performance skills.

Guiding Principles

In order to allow athletes/teams to develop and acquire the skills outlined, the Train to Compete stage must:

- ✓ Emphasize skating as the dominant activity
- ✓ Prepare athletes for national competition
- ✓ Encourage the idea of “skating to win” and doing one’s best, but there remains a focus on training and perfecting the basics
- ✓ Emphasize off-ice training as this is a window of accelerated adaptation to aerobic, speed, and strength training
- ✓ Emphasize developing ability to perform skills in a variety of competitive conditions
- ✓ Include simulations as part of the team’s training

Coaching Education and Certification

NCCP Competition–Development

On–Ice Training

Training must be year round, with high intensity (40 to 45 weeks per year). Athletes should be spending up to eight hours of on-ice training with the team. An additional two to four hours of on-ice training should be included in order to improve individual skills.

Off–Ice Training

Fitness programs must be an integral part of the training program, and should be individualized to the needs of each team member. A team warm-up and cool-down should be integrated into the schedule. Given the importance of flexibility, stretching is an extremely important component of this team training. Training may be done together or individually, but should be designed to meet individual team member needs.

Off–ice training should be a minimum of three hours per week. However, to be competitive, an optimal amount of four to 13 hours per week is recommended. This can be lighter during the competitive season. Off-ice classes should include lifts and the development of skills required for basic lifts.

Competition ¹¹

Performances are to be evaluated on all components as per ISU regulations. Double and triple peaks can be introduced at this level as national and International competitions are included in the calendar. All competitions are to be externally evaluated (judging panels, etc.). Note that in this stage, competition includes competition-specific training. Given the current constraints of the competition calendar, this should include at least four to five competitions per year. Until the system can create a calendar which allows for the ideal, the deficit should be made up with simulations and performances.

Sport Specific Skills - Train to Compete Stage for Synchronized Skating

The following chart represents the skills participants should be able to demonstrate at the exit point from Train to Compete.

Motor Skills <ul style="list-style-type: none"> • Agility, – coordination, balance • Spatial/time orientation • Rhythm (acceleration/ deceleration) • Kinesthetic awareness • All general motor skills well developed through the previous training stages – either in the synchronized skating discipline or other skating disciplines 		SYNCHRONIZED SKATING
Technical Skills	Edges <ul style="list-style-type: none"> • Increased control on edges • Demonstration of knee rhythm in edge work Turns <ul style="list-style-type: none"> • Mastery of rockers, counters and double + twizzles Stroking <ul style="list-style-type: none"> • Ability to demonstrate enhanced power, speed and flow in stroke Jumps <ul style="list-style-type: none"> • Sufficient proficiency in the basic skills to be able to adapt to the creative designs of the program, tactical needs of the scoring or changes introduced through ISU regulations Spins <ul style="list-style-type: none"> • As above, for Jumps • Mastery of all spins at Groups 1, 2, and 3* Field Moves <ul style="list-style-type: none"> • Mastery of all moves at Groups 1, 2, and 3* • Flexibility should be well developed at this point • Ability to adjust field movements to allow for unison with proper tracking 	
Artistic Skills	<ul style="list-style-type: none"> • Skaters are able to perform all ranges of expression • Skaters are sharp in their movements and can express any musical highlight or nuance 	

* Difficulty groups of features as defined by the ISU

¹¹ See Appendix C for the Long-Term Athlete Development Synchronized Skating Competition Overview.

LEARN TO WIN/LIVE TO WIN

Recommended Skating Level

Skaters must have acquired all high-level skating skills before entering this stage, through completion of gold level tests and diamond dances. It is highly recommended that they have participated in synchronized skating before this stage; however, exceptional skaters in another discipline may cross into synchronized skating at this stage.

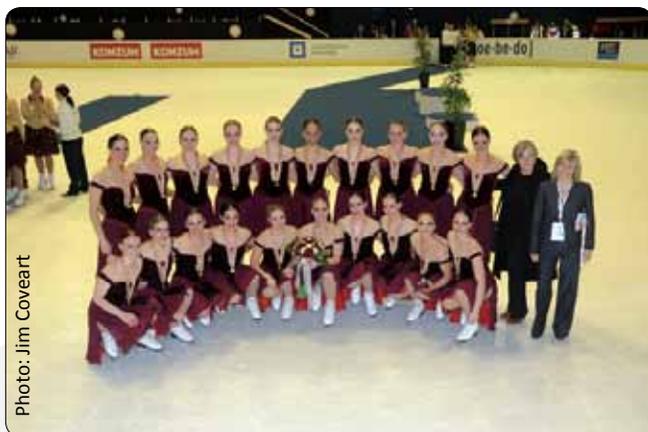
Philosophy

Teams at this level should be fully prepared (physically, mentally, technically, strategically) with the confidence and attitude that they can win at the highest levels of international competition.

General Objectives

The general objectives of Learn to Win/Live to Win as related to synchronized skating are:

- To create and deliver athlete-centered, coach-driven programs which optimize and integrate all performance factors (the 5S's) relative to the international competition calendar
- To instill an attitude that encourages the athlete to be self-motivated, self-directed, and to accept responsibility in the pursuit of international excellence
- To optimize fitness, mental, sport skill and performance preparation.



Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, the Learn to Win/Live to Win stage must:

- ✓ Encourage the athlete to be self-driven, motivated, and take responsibility; athletes must believe they can be the best
- ✓ Adopt a “No Excuses” philosophy and develop and instill a winning attitude, demanding excellence and being tough when necessary (in a way that distinguishes the athlete from the person)
- ✓ Incorporate opportunities to compete against the best athletes in other parts of the world
- ✓ Revolve around creating optimal performance in competition; training during the competitive phase must simulate competitions. The focus must be on doing everything the skater is capable of doing consistently in practice, on demand, and when it counts
- ✓ Apply single, double, and triple periodization (if required) which is tailor-made to the international competition calendar and athletes’ contextual realities
- ✓ Gear training towards a complex integration of the performance factors (10 S’s) in order to meet the specific competition requirements (periodization)
- ✓ Mirror competition requirements / environment—greater time should be spent on modelled competition conditions than on controlled conditions (block repetition of the same skill or sequence of skills)
- ✓ Monitor fatigue and rest/recovery adequately; frequent breaks might be included (depending on the needs of the athletes) so as to avoid injuries
- ✓ Draw on the expertise of multiple personnel
- ✓ Frequent preventive breaks permitting recovery to avoid overtraining and injuries.

Coaching Education and Certification

NCCP Competition-Development/High Performance

On-Ice Training

Teams should be training 10 to 12 hours weekly as a team. This should be augmented by four to five hours of individual skill training. Teams should be training 48 weeks per year and be on the ice five to six days per week.

Off-Ice Training

Teams should be participating in 10 to 14 hours of off-ice training each week, for 48 weeks of the year. Specific work done off-ice must reflect the principles of periodization and take into account the age, growth, and development of the athlete. Furthermore, at this level off-ice programs should be very sport specific and based on the individual needs and fitness test results of the athlete. Dance classes must be incorporated into the training plan for all disciplines; ideally, athletes will participate in between two and five dance classes per week, dependent on need and discipline.

Strength, conditioning, and flexibility classes are also critical at this stage and should be scheduled five days per week. Off-ice classes should include lifts and the development of skills required for difficult and innovative lifts. Synchro skaters would benefit from acting or theatre classes. As part of an athlete's rest and recovery, regularly scheduled massage and/or chiropractic appointments are essential.

Competition ¹²

Teams should be performing a short and free program in competition and are evaluated on all components as per ISU regulations. Double and triple peaks can be introduced at this level as national and international competitions are included in the calendar. All competitions to be externally evaluated (judging panels, etc.) and include a formal ranking. Given the current constraints of the competition calendar, this should include at least five to six competitions per year as well as simulations and additional performances.

Sport Specific Skills - Learn/Live to Win Stage for Synchronized Skating

The following chart represents the skills participants should be able to demonstrate or a relative mastery of the skills dependent on the volume of training.

<p>Technical Skills</p>	<p>Edges</p> <ul style="list-style-type: none"> Athletes must be capable of utilizing full body movement in the performance of all edges in both directions Demonstrated mastery of quality extension and body line is mandatory in the performance of all edges in both directions <p>Turns</p> <ul style="list-style-type: none"> Athletes must demonstrate the ability to perform all turns (both directions), show extreme co-ordination, and a balance of creative hops, steps, split jumps, etc. <p>Stroking</p> <ul style="list-style-type: none"> Stroking must be performed with effortless power and flow, combined with a superior ability to lean and change direction at high speeds Acquisition of power during stroking must be invisible and soundless Athletes can generate power that breathes effortless flow and quietness on the ice <p>Jumps</p> <ul style="list-style-type: none"> Sufficient proficiency in the basic skills to be able to adapt to the creative designs of the program, tactical needs of the scoring or changes introduced through ISU regulations Should be able to adapt timing of jumps to adapt to the needs of choreography and unison of team <p>Spins</p> <ul style="list-style-type: none"> As above for jumps Mastery of all spins at Groups 1, 2, and 3* <p>Field Moves</p> <ul style="list-style-type: none"> Ability to perform any field move with innovative positions multi-directionally while integrating creative transitions into the program Mastery of all moves at Groups 1, 2, and 3*
<p>Artistic Skills</p>	<p>Skaters have total command of their performance and their interpretation of the music is masterful They demonstrate personal innovation in their creativity and expression</p>

* Difficulty groups of features as defined by the ISU

¹² See Appendix C for the Stages of Athlete/Participant Development Overview.

ACTIVE FOR LIFE

Philosophy

The Active for Life stage is entirely focused on providing opportunity for life-long participation in skating. Social, mental, and physical development are enhanced through involvement in synchro skating and/ or in other sports and physical activities. The skills and attitudes learned in synchro skating will help skaters succeed in whatever active lifestyle they choose.

General Objectives

The general objectives of Active for Life as related to synchronized skating are:

- To welcome participation at any level from Learn to Skate to post-Live to Win
- To promote a long-term, physically active and healthy lifestyle through the sport of figure skating
- To create a seamless system of delivery at the section level that allows a member at any stage of development to be integrated into programming
- To remain ambassadors of the sport of synchro skating and to share their knowledge in varying capacities.

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined the Active for Life stage must:

- ✓ Provide a fun, safe, supportive and cooperative environment from which all participants can learn, progress, and improve their skating
- ✓ Continue to train the 5 S's (stamina, strength, speed, suppleness and skills)
- ✓ Recognize the age and ability of all participants in order to provide appropriate goals and progress
- ✓ Provide sound technical and biomechanical information to promote safe skill development
- ✓ Promote the concept of personal achievement and success. Participation is a significant achievement and must be recognized. The acquisition of a skill, test, and/or placement in a competition should be rewarded

Coaching Education and Certification

NCCP Instruction–Intermediate



Photo: Jim Coveart

Sport Specific Skills - Active for Life for Synchronized Skating

The following chart represents the skills participants should be able to demonstrate or a relative mastery of the skills dependent on the volume of training.

Technical Skills	<p>Edges</p> <ul style="list-style-type: none"> • Can skate on edges forward and backwards <p>Turns</p> <ul style="list-style-type: none"> • Can do one-foot turns from forward to backwards • Can do all Mohawks • Can sustain edges after these turns • May be able to do backward 3-turns with balance before the turn • Loops are introduced <p>Stroking</p> <ul style="list-style-type: none"> • Forward and backward crosscuts have been acquired • Has at least two different stopping options forward and backward <p>Jumps</p> <ul style="list-style-type: none"> • Not required in unison, however should be mastering all single jumps individually <p>Spins</p> <ul style="list-style-type: none"> • Not required in unison, however should be mastering Group 1 Spins and should be developing Group 2 spins individually* <p>Field Moves</p> <ul style="list-style-type: none"> • Skaters should be capable of Group 1 Free Skating moves and should be developing their skills for Group 2 moves*
Artistic Skills	Advanced sense of rhythm and body placement through creative movements to music on and off the ice

* Difficulty groups of features as defined by the ISU

Advanced skills may be developed/incorporated as appropriate for the team composition. These skills represent the basics that should be developed to allow for successful participation in synchronized skating.

On-Ice Training

The exact on-ice training load will depend on the goals and objectives that are set by the team. The ranges are as follows :

Session length:	<ul style="list-style-type: none"> • 45 to 60 minutes
Days/week:	<ul style="list-style-type: none"> • 1 to 6 days/week • 1 to 10 hours/week depending on level/goals
Weeks/year:	<ul style="list-style-type: none"> • 25 to 40 weeks/year

Off-Ice Training

Participants considered in the Active for Life stage should be encouraged to participate in off-ice training 52 weeks per year. This will give them a fitness plan for life which will not only keep them healthy and fit but will enhance their sport activities. Generally, three to five hours per week of various activities which enhance stamina, strength, speed, and suppleness is adequate. The specific types of activities will vary dependent upon socio-cultural context, participant interest, instructor availability, etc. Some examples of potential activities include resistance training, yoga, tai chi, core conditioning, walking, running, swimming, dance and movement classes. A yearly plan should be designed to incorporate the peak training periods, competition periods, testing, off-ice training and active rest periods

specific to the goals/needs of the athlete. Proper warm-up and cool-down techniques should be established, enforced, and practiced. This should involve heart rate elevation, muscle stretching, heart rate recovery, etc. for all on and off-ice activities.

Competition

Within the category of Active for Life the volume of competition to training should be individually defined. Because of the team nature of synchronized skating, it will be important that the majority of the team has consistent commitment to the ratio of training and competition goals for the team in any given season.



ATHLETES WITH A DISABILITY

Athletes with a disability are integrated into Skate Canada's LTAD stages of development as appropriate, as well as having tailor-made opportunities. There is no specific age bracket as athletes may enter skating at any age. Skating programs and coaching requirements must reflect this reality. Athletes with a disability pass through the same stages as able-bodied athletes, although the ages and rate of progression may differ.

Philosophy

LTAD for athletes with a disability is focused on providing opportunity for social, mental, and physical development through the sport of skating. Participants should be introduced to the concept of physical literacy and experience gains in health, wellness, and functionality. As in all stages of development age, gender, sexuality, race, ethnicity, body type, physical and intellectual abilities, accessibility and geography should not be factors in the provision of opportunities to this potentially large group of athletes.

General Objectives

- To encourage integration and life long participation in skating at all levels, as part of a healthy lifestyle activity choice;
- To foster partnerships between Skate Canada and other athletes with a disability groups. These groups include athletes with an intellectual disability through Special Olympics Canada, athletes who are deaf or have a hearing impairment through Canadian Deaf Sports Association and athletes with a physical disability through Paralympics.

Windows of Trainability (5 S's)

Very little is known about periods of optimum trainability for individuals with a disability. In the absence of information to the contrary, it is suggested that the windows of trainability (5 S's) are always trainable and require specific individual physiological testing, a thorough review of health issues, constant and consistent tracking.

Guiding Principles

In order to allow athletes to develop and acquire the skills outlined, programs and coaching for athletes with a disability must:

- ✓ Provide a fun, safe, environment that will enhance learning and mastering of skating skills
- ✓ Provide appropriate guidelines for the 5 S's for all athletes with a disability;
- ✓ Recognize the abilities and limitations of all athletes with a disability and set realistic, safe and competitively fair progression within a test/competition system
- ✓ Provide sound technical, biomechanical and adaptation information to promote safe skill development
- ✓ Promote the concept that participation and progressive learning equals success;
- ✓ Promote that all athletes with a disability are equally valued members of Skate Canada
- ✓ Encourage all coaches to work with athletes with a disability
- ✓ Integrate effectively with existing programs and be cost effective, utilize ice well, and work toward program growth and development.



Photo: Special Olympics

ATHLETES WITH A DISABILITY

For additional information related to athletes with a disability, please refer to the following documents:

1. *Long-Term Athlete Development for Athletes with an Intellectual Disability*. Special Olympics Canada 2007 http://www.specialolympics.ca/en/images/pdfs/soc_ltad_dec_4_2007_english.pdf
2. *No Accidental Champions*. Sport Canada's LTAD Guide for Athletes with a Disability 2006
3. *Coaching Athletes with a Disability*. Coaching Association of Canada 2005

Mission of the Coach

The primary mission of the coach is to facilitate lifelong participation in the sport for the pleasure and wellness derived through personal achievement, development, and success.

Coaches must have the tools to recognize deficiencies and develop a plan of action to enhance the cognitive and physical development of the participant, thus making the learning process easier and productive.

Coaching Education and Certification

Coaches teaching athletes with a disability must be educated and certified to coach at the level at which the athlete is participating. In addition, specific disability training is necessary; the first stages are best done within the sport organization specific to the athlete's disability (e.g. SO, Paralympics, Deaf Sport, etc.) This gives figure skating coaches a better understanding of policies, procedures, philosophies and athlete care needs. It also provides an opportunity to learn from other coaches of athletes with disabilities.

NCCP Instruction - Intermediate/Competition
Introduction

Sport Specific Skills for Athletes with a Disability

	All Ages
Technical	<ul style="list-style-type: none"> Development of skills will be highly individualized and guided by a qualified Skate Canada coach Generally, a combination of Learn to Skate and Learn to Train programs in conjunction with tailor-made programs for athletes with a disability should provide opportunity for technical development.
Artistic	<ul style="list-style-type: none"> Development of skills will be highly individualized and guided by a qualified Skate Canada coach Free skate programs give the opportunity for artistic growth through musicality, creativity, interpretation and performance. SO rules currently have the inclusion of free skate programs from Level 1 through Level 6. No additional testing system or competitive category for athletes with a disability is recommended Athletes with a disability who can and wish to further their artistic development may transfer to a parallel Skate Canada program.

GENERAL SKILLS

General skills are developed through involvement in the sport and lean toward the overall development of the individual.

	All Ages
Physiological	<ul style="list-style-type: none"> Continued development/introduction of the 5 S's. The nature and extent of the training of fundamental motor and movement skills will depend on the participant's needs and abilities. However, risk/safety management are of utmost importance for all participants. Suppleness may be the most important area for the athletes with a disability group and should be trained daily Skill development and acquisition covers basic skills to those required at the high performance level. Progression must be based on individual needs, understanding, safety and abilities Knowledge of healthy nutritional strategies including considerations for caloric intake, portion size, low alcohol, salt, fat intake, heart healthy choices, lower cholesterol levels, regulate blood sugars, hydration, recovery nutrition, disordered eating, etc.
Psychological/ Social	<ul style="list-style-type: none"> Social, emotional, and cognitive development is vast in this group. However, all athletes with a disability should strive towards the same fundamental skill developments as athletes in Learn to Skate, Learn to Train, and Active for Life.

On Ice Training

Session length:	<ul style="list-style-type: none"> • 45 to 60 minutes
Days per week:	<ul style="list-style-type: none"> • One to six days per week • One to 10 hours per week depending on level/goals
Weeks per year:	<ul style="list-style-type: none"> • 25 to 40 weeks per year

Off-Ice Training

Athletes with a disability should be encouraged to participate in off-ice training 52 weeks per year. This will give them a fitness plan for life which will not only keep them healthy and fit but will enhance all of their sport activities. Generally, three to five hours per week of various activities which enhance stamina, strength, speed, and suppleness is adequate. The specific types of activities will vary dependent upon socio-cultural context, participant interest, instructor availability, etc. Some examples of potential activities include resistance training, yoga, tai chi, core conditioning, walking, running, swimming, dance and movement classes, etc. Proper warm-up and cool-down techniques should be established, enforced, and practiced. This should involve heart rate elevation, muscle stretching, heart rate recovery, etc. for all on and off-ice activities.

General Notes on Training Athletes with a Disability

In general, SO Level 1 and 2 athletes should be under instruction at all times. Group classes should be small; a one-to-one coach /athlete ratio should be used as much as possible. Many athletes at this level may only have the opportunity to skate one day per week and should be encouraged to participate in other relevant off-ice activities like rhythmic gymnastics, soccer, swimming, running, movement and flexibility classes, etc.

Level 3 athletes and higher will achieve optimum development with a one-to-one practice/private lesson ratio in addition to group classes.

It is important to give the athlete time to discover independent practice but not to leave too much time alone because in most cases bad habits form quickly without continuous technical reminders.

Athletes who are selected to provincial and national teams are required to do a minimum of three, one-hour training sessions per week total (on and/or off-ice) and up to a maximum of six sessions per week.

A yearly plan should be designed to incorporate the peak training periods, competitions, testing, on and off-ice training loads, nutrition, recovery, mental skills training and active rest periods, specific to the goals/needs of the individual athlete.

Competition ¹³

Given the multiple levels included within this particular stage of development, there are different performance and competition criteria which reflect the stages of development outlined earlier. For those athletes at the equivalent of Learn to Skate and Learn to Train, the focus of competition and testing should remain on presentation of skills. As skaters advance, choreographed programs can be introduced appropriate to the individual and level of competition. The content and evaluation of these programs will be dictated by the rules of the specific tests and competitions in which the athlete is participating. In terms of evaluation, the same evaluation process should be in place as in other stages but with additional training specific to the assessment and judging of athletes with special needs (i.e. coach and evaluator/judge).

“The Long-Term Athlete Development Model provides a solid foundation for the development of all Canadian figure skaters including athletes with a disability. The basic ground work of the LTAD provides for integration with adaptations as needed for athletes with a disability. It also leads to improved training and future opportunities. This gives all athletes with a disability the chance to be the best they can be.”

Elizabeth Roman
Skate Canada Coach
Special Olympics World Team Head Coach – Figure Skating

¹³ See Appendix C for the Long-Term Athlete Development Overview.



CONCLUSION

Skate Canada's LTADM provides athletes and coaches with the fundamental tools to support the progression of skaters from the beginning stages through to podium placements at World Championships and Olympic Games — if that is the athlete's goal in any discipline. The LTADM also helps our skaters who are focused on participation to develop the skills needed to enjoy a lifetime of participation in the sport — both on and off the ice. It also recommends the ways in which programming can be offered and/or adapted for skaters with special needs.

Virtually every stakeholder in our sport can make use of this document. At the club and section level, this document will help in skater development by outlining what athletes require at different stages in order to maximize rather than hinder their progression. Clubs and coaches can use the framework to determine what the ideal number of hours are to train on and off the ice at the various stages, which may assist when negotiating ice requirements each year.

Parents can use the LTADM to help them understand the key stages of athlete development necessary for success taking into account the growth, development and maturation process, along with the right mix of skills, coaching, and support. The LTADM will guide the Skate Canada Board of Directors and National Office staff as well as volunteer and professional administrators involved in program delivery at all levels of skating in Canada.

Building the Future: The 7 Pillars of LTAD

The creation of Skate Canada's LTADM is the first step or pillar in a multi-phase project but it is an immensely important document. It provides the framework and gives direction from which the following factors and programs that influence athlete development, as defined by Sport Canada, will be assessed and restructured. This includes a more thorough and complete review of:

1. Participants/Athletes
2. Domestic competition structure
3. Coaching education, training, and certification
4. Officials' education, training, and certification
5. Leadership at the club, section, and national levels
6. Sport facilities and equipment
7. Sport medicine and sport sciences.

In other words, the work has really just begun but with this document as our guide and reference point we will undoubtedly surge ahead to ensure that all of our athletes have the best opportunities in our sport. Whether his/her goal is to become Olympic champion, complete all the STARSkate tests, participate on a synchronized skating team, return to the sport as an adult, use the fundamental skills learned in our sport to apply to other sports, or learn to enjoy the kinaesthetic pleasure associated with body movement it is important that we all work together to foster the pursuit of personal excellence.

"If you do what you've always done, you will get what you've always gotten."

Unknown

"We have evolved as a person when we have changed things. Every person has this power."

Unknown

GLOSSARY OF TERMS

Adaptation refers to a response to a stimulus or a series of stimuli that induces functional and/or morphological changes in the organism. Naturally, the level or degree of adaptation is dependent upon the genetical 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.

Adolescence is a difficult period to define in terms of the time of its onset and termination. During this period, most bodily systems become adult both structurally and functionally. Structurally, adolescence begins with an acceleration in the rate of growth in stature, which marks the onset of the adolescent growth spurt. The rate of statural growth reaches a peak, begins a slower or decelerative phase, and finally terminates with the attainment of adult stature. Functionally, adolescence is usually viewed in terms of sexual maturation, which begins with changes in the neuroendocrine system prior to overt physical changes and terminates with the attainment of mature reproductive function.

Ancillary Capacities refer to the knowledge and experience base of an athlete and includes warm-up and cool-down procedures, stretching, nutrition, hydration, rest, recovery, restoration, regeneration, mental preparation, and taper and peak. The more knowledgeable athletes are about these training and performance factors, the more they can enhance their training and performance levels. When athletes reach their genetic potential and physiologically cannot improve anymore, performance can be improved by using the ancillary capacities to full advantage.

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 neuromuscular or motor development. It is often divided into early childhood, which includes pre-school children aged one to five years, and late childhood, which includes elementary school-age children, aged six through to the onset of adolescence.

Chronological age refers to 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 two decades of life.

Critical periods of development refers to a point in the development of a specific behaviour when experience or training has an optimal effect on development. The same experience, introduced at an earlier or later time, has no effect on or retards later skill acquisition.

Development refers to the interrelationship between growth and maturation in relation 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 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.

Peak height velocity (PHV) is the maximum rate of growth in stature during growth spurt. The age of maximum velocity of growth is called the age at PHV. Peak strength velocity (PSV) is the maximum rate of increase in strength during growth spurt. The age of maximum increase in strength is called the age at PSV.

Peak weight velocity (PWV) is the maximum rate of increase in weight during growth spurt. The age of maximum increase in weight is called the age at PWV.

Physical literacy refers to the mastering of fundamental motor skills and fundamental sport skills.

Post-natal growth is commonly, although sometimes arbitrarily, divided into three or four age periods, including infancy, childhood, adolescence, and puberty.

Puberty refers to the point at which an individual is sexually mature and able to reproduce.

Readiness refers to the child's level of growth, maturity, and development that enables him/her to perform tasks and meet demands through training and competition. Readiness and critical periods of trainability during growth and development of young athletes are also referred to as the correct time for the programming of certain stimuli to achieve optimum adaptation with regard to motor skills, muscular and/or aerobic power.

Skeletal age refers to the maturity of the skeleton determined by the degree of ossification of the bone structure. It is a measure of age that takes into consideration how far given bones have progressed toward maturity, not in size, but with respect to shape and position to one another.

Trainability refers to 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."

SYSTEM ALIGNMENT AND INTEGRATION: STAKEHOLDER ROLES AND RESPONSIBILITIES AND FACILITY REQUIREMENTS

Parents/Guardians

Parents/guardians play a critical role in athlete development at all stages of development though, of course, the exact roles and responsibilities will change according to the stage. This chart is meant to provide a general overview of some of the key roles and responsibilities at the various stages of development. It is important to note that at all stages of development the primary coach needs to direct the development of the athlete in terms of on and off-ice training.

Stage of Development	Roles/Responsibilities of Parents/Guardians
Learn to Skate	The primary role of parents/guardians at the Learn to Skate stage is to act as good role models, providing balanced, healthy food choices and subscribing to an active and healthy lifestyle which may include family ice skating. Individuals at this stage of development should also be provided with the opportunity to try several activities related to skating (e.g. in-line skating, road hockey) as well as being active in other sport and physical activity opportunities. Transportation to and from activities is also important at this stage of development. Parents/guardians should foster an environment of fun and enjoyment around physical activity.
Learn to Train	The role of parents/guardians at the Learn to Train stage remains similar to that established in Learn to Skate. The responsibilities include providing balanced, healthy food choices and subscribing to an active and healthy lifestyle. There should be a fervent interest in children's activities but also openness to hearing and accepting children's preferences. Individuals at this stage of development should continue to be encouraged to participate in activities outside of skating. Transportation to and from activities is also important at this stage of development. Parents/guardians should assume a managerial role and help to organize and prioritize activities (i.e. school, skating, other activities, social life).
Learn to Compete	Parents/guardians have a key role in the development of the young skater and can instill discipline by continuing to manage athletes' schedules for school, skating, and social activities. Parents/guardians also remain responsible for dietary needs. In most cases, parents/guardians will continue to transport their children to and from on and off-ice activities, though car-pooling may be necessary given work commitments (it is also better for our environment!). Parents/guardians need to be supportive and provide encouragement along with financial and emotional support. Because of the increased role of performance and competition at this stage of development, parents/guardians need to ensure that they are supporting the achievement of personal targets at competitions (e.g. Personal Best). The focus needs to be on performance and not on result outcomes. Regular communication with coaches on issues that may affect athletes and their training (e.g. home situations, school, etc.) should occur. At the same time, parents/guardians need to let coaches take control of on and off-ice development of athletes. At this stage of development, support teams may begin to expand to include such people as choreographers, specialized off-ice trainers, sport psychologists or mental trainers, in addition to the main coach. It is very important that parents/guardians understand their role so that the skater may progress in harmony with the expectations of the coaching staff.

Stage of Development	Roles/Responsibilities of Parents/Guardians
<p>Train to Compete</p>	<p>Parents/guardians continue to have a key role in the development of athletes at this stage of development. Parents/guardians instill discipline by continuing to manage schedules for school, skating, and social activities though with increasing input from the athlete. Parents/guardians also remain responsible for dietary needs. Provide encouragement along with financial and emotional support. Athletes need to be aware of the financial realities of skating at this level as well as the shifting focus from personal achievement to outcome. There should be regular communication with coaches on issues that may affect training (e.g. home situations, school).</p> <p>If it has not happened in the previous stage, at this stage of development an athlete’s support team will begin to expand and now include such people as choreographers, specialized off-ice trainers, sport psychologists or mental trainers, in addition to the main coach. It is very important that parents/guardians understand each role so that the skater may progress in harmony with the expectations of the coaching staff. The primary coach remains the director of athlete development.</p>
<p>Learn to Win/ Live to Win</p>	<p>The age range in this stage of development is considerable. At younger ages, the primary coach remains the director of the training program and personal support team. Parents/guardians must remain role models in terms of healthy living and providers of positive support. Older athletes in this stage will become much more involved in the direction of their own training plans and will accept responsibility for their overall commitment in the pursuit of excellence at this level. Parents/guardians and personal support teams must continue to contribute to an environment that allows athletes to achieve independence while also providing a supportive and positive respite from the stresses and demands related to participation at the elite levels of figure skating.</p>
<p>Active for Life</p>	
<p>Athletes with a Disability</p>	<p>Parents/guardians play a critical role in terms of encouraging the athlete to remain active and involved in the sport of skating. They also play an important role in providing and encouraging athletes to make healthy lifestyle choices, to make appropriate decisions, and to support and assist in the implementation of these decisions as well as contribute to the athlete’s overall life plan. All members of the support team, regardless of the specific role, must be consistent with support through successes as well as failures, recognizing the importance and place of both in one’s life journey.</p>

Leadership

It is imperative to note that coaches have the primary leadership role at all stages of development. Individuals in other leadership roles (e.g. club, section, national volunteers and employees, officials, and other support team members) must support and enhance the decisions being made by the primary coach by providing relevant and appropriate training opportunities, programming, training environments, performance and competition opportunities, etc. This table outlines how the various leaders in the organization can contribute to each stage of athlete development.

Stage of Development	Leadership Roles
Learn to Skate	Club board members play a significant role at this stage of development particularly in parent education. Working in conjunction with the coach(es) in the club, board members are expected to deliver the best possible programming for athletes at this level, as outlined in this document.
Learn to Train	Club board members continue to play a key role at this stage of development, in delivering the best possible programming for athletes at this level. Other Skate Canada officials including evaluators, judges, technical specialists, and skating program experts at the section and national levels begin to have more of a role towards the latter phases of the Learn to Train stage as athletes begin to participate in the STARSkate program. These individuals must be aware of what is expected of athletes at this stage of development and contribute to athlete development and progression in a positive and meaningful way.
Learn to Compete	<p>Clubs, sections, and national decision-makers must reach the needs of the nine to 14 year old skaters. Young teens have specific needs in regards to attention and structure because at this age the skater may be tempted by another sport or activity and skating needs to be fun and stimulating for all levels. The training schedule is extremely important at this stage.</p> <p>The athlete can also become a role model and leader at this stage of development. Athletes with the right attitude and training habits both on and off the ice can have a huge impact on the younger skaters at the club. Athletes will become involved with their section during this stage through section youth camps, workshops, seminars and other opportunities. They may become part of a “travel team” that goes to a competition selected by the section. They will also be monitored and tracked at this level by section skater development personnel or the national office depending on their age, ability, and level of competition. The athlete may have access to attend provincial-level competitions, seminars and national development camps. Skaters will become more accountable because of the rules that govern their skating, and learn to understand the judging system so they can do evaluations of their performances with their coaching team in order to find and address areas for improvement. They can, in turn, talk about and share their experiences within the club environment (as can their parents and coaches!).</p>
Train to Compete	Clubs, sections, and the national board and office need to work in conjunction with one another so as to optimize athlete development. Clubs and Sections need to be aware of national and international opportunities and provide this information to coaches. Clubs and sections should be offering seminar and training camp opportunities that reflect the overall strategy of Long-term Athlete Development, working in collaboration with national level programs. Athletes and parents can continue to develop their own leadership capacity by becoming more involved in the development of other athletes in their respective club and/or section.

Stage of Development	Leadership Roles
Learn to Win/ Live to Win	<p>The primary/head coach is the lead but works closely with the national and section high performance staff. It is imperative at the Learn to Win/Live to Win stage that everyone involved in an athlete's development are working cohesively with each another and have the athlete's needs as the starting point for all decisions. The more an athlete can focus on training and what he/she can control the better the outcome will be. Depending on the needs of athlete's training, he/she may wish to assume more of a leadership role in their club, section or at the national level.</p>
Active for Life	<p>Adult skaters are critical to the long-term survival of our sport and will become vital components of a sizeable volunteer base, filling such roles as resources for professional services, committee/board members, sponsors for the association or athletes. They comprise a considerable portion of the demographic and disposable income. Furthermore, adult skaters usually become the advocates of Adult skating programs in the clubs, increasing membership numbers across the country.</p> <p>An important facet for successful programming at the Active for Life stage is the commitment from clubs, sections, and the national board and office to include this stage of development in strategic planning for the future. The national association must have an infrastructure in place to allow these athletes to participate and progress in sport without restriction. The local club/school must implement this infrastructure and adult programming in the overall plan.</p> <p>Partnerships at this level can provide significant gains including shared programming, development of state-of-the art facilities that are of benefit to all stages of development. Much work can be done in this area, as well, with respect to various partnerships with other sporting organizations such as Aboriginal Sports Circles to encourage participation on the First Nation Reserves across our country.</p>
Athletes with a Disability	<p>There are multiple national and provincial organizations both within skating and specific to athletes with disabilities that are involved in this phase of LTAD. Programs for athletes with a disability should be mandated at the national level, in conjunction with Special Olympics and other organizations for athletes with a disability, and then supported through section and club implementation. Individuals with knowledge of the needs of athletes with a disability should be encouraged to be more involved at all levels of skating – club, section, and national so as to ensure seamless and appropriate program delivery to our members in this category.</p>

Facilities and Training Environments

Recognizing that every situation will be different, the following information is meant to act as an ideal scenario in terms of facilities and training environment with a view of clubs working in cooperation with facility operators and municipalities to create the best environment possible for athlete development.

Stage of Development	Facilities and Training Environments
Learn to Skate	<p>Safety must be everyone's top priority. An Emergency Action Plan is required for all clubs. As the CanSkate program encourages the use of various on-ice teaching tools (e.g. balls, markers) knowledge of what is allowable by the facility and municipality is critical.</p> <p>As much as possible an off-ice room should be available as well as access to support services such as physiotherapy. If no off-ice room is available, a lobby or locker room will suffice. Clubs should strive to create a skating space in the facility to create visibility of the various programs and activities available to members of the community. Proper music equipment is essential.</p>
Learn to Train	<p>Requirements at this stage remain consistent with those of the Learning to Skate stage though skaters closer to the exit point of Learning to Train may begin to experience more formalized activities in other training facilities (e.g. dance studios, martial arts schools, etc.). Coaches and parents/guardians should be aware of the conditions of these ancillary facilities and the certifications and qualifications of those instructing the programs offered therein.</p>
Learn to Compete	<p>Clubs and/or training centres need to be aware of the resources required to train skaters at this stage. Most skaters of this age concentrate their training only on-ice. It is mandatory that an off-ice training schedule be developed and implemented by each club and/or training centre. These sessions may be held within the same facility as the ice rink or may need to be held elsewhere. Safety and quality instruction remains a top priority. Community colleges and universities often have excellent specialists on staff and adequate to excellent facilities which may be taken into consideration.</p>
Train to Compete	<p>Similar to the Learning to Compete stage, clubs and/or training centres need to be aware of the resources required to train skaters at this stage. It continues to be mandatory that an off-ice training schedule be developed and implemented by each club and/or training centre. These sessions may be held within the same facility as the ice rink or could be held elsewhere. Safety and quality instruction remains a top priority. Community colleges and universities often have excellent specialists on staff and adequate to excellent facilities. Some skaters in this stage might also be eligible to access services at national sport centres. These opportunities should be explored by the athlete's support team. Athletes might also need to consider making use of regional and national training centres reflecting the move at this stage toward an integrated support team system.</p>

Stage of Development	Facilities and Training Environments
<p>Learn to Win/ Live to Win</p>	<p>At this level, there needs to be an atmosphere that enhances motivation for elite-level athletes. An ideal training environment is required, including the best training times, temperature, ice conditions, and overall training schedule. All services should be centralized and the easiest way to facilitate this is through use of national and regional sport centres. Off-ice training should be facilitated within the same venue as the arena as much as possible to make better use of an athlete's time. Athletes in the Learning to Win/Living to Win stage also need opportunities to train with other athletes at the same level through training camps, monitoring, group fitness testing, etc. Athletes may also benefit from interaction and training with athletes in other sports (e.g. speed skating, hockey).</p>
<p>Active for Life</p>	<p>Adult sport and long-term activity in sport is a huge market. Facilities need to have the programs to attract these clients which already include a social environment, off-ice training facilities, medical service access, etc. Costs for adult programs must be reasonable and the programs themselves must be of quality high enough to ensure membership retention and future recruitment. Adults should have their own designated area (dressing room or meeting room) in addition to their own bulletin board in the facility to announce events like test days and local to international adult competitions, as well as posting rule or technical changes. This board might also be used to advertise items for sale, skating equipment stores, local partnerships (i.e. potential relationships with a local fitness facility, dance studios).</p>
<p>Athletes with a Disability</p>	<p>Programs for athletes with a disability need to be incorporated into clubs. Trained coaches, current information, and a willingness to include programs are the main things a club requires. Some facilities may not be accessible for athletes with a physical disability. An analysis of what modifications need to be made to a facility (external and internal) should be undertaken and provided to the appropriate persons in the community. Such assessments can be undertaken with special needs organizations and/or other sporting organizations in the community.</p>

STAGES OF ATHLETE/PARTICIPANT DEVELOPMENT OVERVIEW

The following table outlines what athlete development experts have defined as the optimal balance of performance and competition at the various stages of development. This document will provide the basis for the Competition Review, the second phase of the Long-term Athlete Development process as defined by Skate Canada.

	Learn to Skate	Learn to Train	Learn to Compete	Train to Compete	Learn to Win / Live to Win	Active for Life
Skater Profile	Females: 3-8 yrs Males: 3-9 yrs	Females: 7-11 Males: 8-12	Females: 9-13 Males: 10-14	Females: 10-16 Males: 11-17	Females: 13-19 Males: 14-21 Living to Win: 15+	All ages
Current System	CanSkate	STARSkate Beginner-Elementary	Juvenile-Pre-Novice	Novice-Senior	International ISU Jr./Sr. Grand Prix World/Olympic	Adult Skate
Training Time (all sessions include min. 15 min off-ice)	1: 30-60 min session 1-4 days/week 10-40 weeks/year	1-2:45-60 min sessions 2-5 days/week 20-44 weeks/year	2: 45-60 min sessions 4-5 days/week 44-46 weeks/year	2-3: 45-60 min sessions 5 days/week 44-48 weeks/year	3-4: 45-60 min sessions 5 days/week 44-48 weeks/year	1-3: 45-60 min sessions 1-6 days/week 25-40 weeks/year
Windows of Trainability (5S's = Speed, Stamina, Strength, Sport Skills, Suppleness) See below.	Skills: M&F 8-12 yrs Flexibility: M&F: 6-10 Speed: M 7-9, F: 6-8	Skills: M&F 8-12 yrs Flexibility: M&F: 6-10 Speed: M 7-9 F: 6-8 Stamina M12-13 F10-11	Skills: M&F 8-12 yrs Flexibility: M&F: 6-10 Speed: M13-16 F11-13 Stamina M12-13 F10-11	Skills: M&F 8-12 yrs Flexibility: M&F: 6-10 Speed: M13-16 F 11-13 Stamina M12-13 F10-11	Speed: M 13-16 F 11-13	5S's are always trainable
Element/Skills Competitions	No competitions but skill presentation in isolation to standard	No competitions but skill presentation in isolation to standard	Technical Skills & Program Component competitions	Technical Skills & Program Component competitions	Yes	Technical Skills & Program Component competitions
Performance Targets	Personal achievement standards: Bronze, Silver, Gold	Personal achievement standards: Bronze, Silver, Gold	Personal and established achievement standards	Maximizing points for rank order	Maximizing points for rank order	As appropriate to level of athlete
Program (Solo)	No	Yes, but towards exit of stage	Yes (free only)	Yes (short and/or free)	Yes (short and free)	Yes – according to level/ability
Evaluation	Coach	Coach Officials	Coach Officials	Officials	Officials	Coach Officials
Level of Competition	Club-level team events	Club, Interclub, Invitational	Regional / Provincial	Regional / Provincial National	Regional / Provincial National, international	From club to international
Competition Exposure	1/session	2 -3/year at point of exit	6 events maximum/year	3-5 skills comps 2-3 PC comps 3-7 solo comps	5-7 comps (Learn2W) 5-10 comps (Live2W)	As appropriate to level of athlete
Suggested Program Changes	Minor changes to skills in each stage, Add 5S's to program, Changes to club program delivery	New skills program to replace Skating Skills, Free Skate test changes Ice Dance - minor	Changes to entry to competition (tests/standard) and level of event defined by age/skill level	No major changes Competitive categories defined by age/skill level	Determined by ISU calendar and criteria	Changes to be adapted following CanSkate/STARSkate and competition structure revisions

- STAMINA: (Endurance) begins with the onset of PHV Age 10 - 11 for females, Age 12 - 13 for males PHV = Peak Height Velocity (growth spurt)
- STRENGTH: Females Window 1 - immediately after PHV; Window 2 with onset of menarche, 12 - 18 months after PHV for males
- SUPPLENESS = Flexibility

PERFORMANCE FACTORS (THE 10 S's)

Five Basic S's of Training

If we want to encourage our children in sport and lifelong activity, as well as create the potential to compete internationally, we need to build our sport programs around principles that respect the developmental needs of all children. LTAD is a progressive pathway of development that recognizes the distinct stages of physical, mental, cognitive and emotional development in child athletes. The 10 S's of training below provide more detail on the windows of optimal trainability components.

Stamina (Endurance)

The optimal window of trainability for stamina occurs at the onset of the growth spurt. Aerobic capacity training is recommended before children reach their fastest rate of growth. Aerobic power should be introduced progressively after their growth rate decelerates.

Strength

The optimal window of trainability for girls is immediately after their fastest rate of growth and at the onset of menarche (first menstruation), while for boys it is 12 to 18 months after their fastest rate of growth.

Speed

For boys, the first speed training window occurs between the ages of 7 and 9 years and the second window occurs between the ages of 13 and 16. For girls, the first speed training window occurs between the ages of 6 and 8 years and the second window occurs between the ages of 11 and 13 years.

Skill

The window for optimal skill training begins at the age of 9 for boys and the age of 8 for girls. This window ends at the onset of the growth spurt (12).

Suppleness (Flexibility)

The optimal window of trainability for suppleness in both girls and boys occurs between the ages of 6 and 10. Special attention should be paid to flexibility during the growth spurt.

Five Additional S's of Training

Structure/Stature

The structure/stature component links the six stages of growth to the windows of optimal trainability. Coaches and parents can use stature measurements (i.e. height) before, during, and after maturation as a guide for tracking developmental age. Such tracking then allows coaches to address the critical or sensitive periods of physical development (endurance, strength, speed and flexibility) and skill development. Diagnostics for identifying strengths and weaknesses are critical for properly considering structure and stature in the design of training plans.

(p)Sychology

Sport is a physical and mental challenge. The ability to maintain high levels of concentration while remaining relaxed and confident is a skill that transcends sport and enhances everyday life. To develop the mental focus for success at high levels, young athletes need mental training that complements their physical training, designed specifically for their gender and LTAD stage. Even at young ages, mental training is critical since dealing with success and failure impacts children's continuation in sport and physical activity.

Sustenance

When the body performs physical activity, it must be replenished with a broad range of components. Sustenance prepares athletes for the volume and intensity required to optimize training and live life to the fullest. Sustenance includes nutrition, hydration, rest, sleep, and regeneration – all of which need to be applied differently to training and lifestyle plans depending on the LTAD stage. In managing sustenance and recovery, parents can assist coaches by identifying fatigue. Fatigue can come in many forms including metabolic, neurological, psychological, environmental, and travel fatigue. While overtraining or over-competition can lead to burnout, improperly addressing sustenance can lead to the same result.

Schooling

In designing training programs, school demands must also be considered. Programs should account for school academic loads, timing of exams, and school-based physical activities. When possible, training camps and competitions should compliment, not conflict, with the timing of major academic events at school. Over-stress should be monitored carefully, including the everyday stresses related to schooling, exams, peer groups, family, boyfriend or girlfriend relationships, and increased training volume and intensities. Coaches and parents should work together to establish a good balance between all factors.

Socio-Cultural

Sport and physical activities often present children with social and cultural experiences that can enhance their holistic development. These experiences can broaden their socio-cultural perspective by providing increased awareness of: Ethnicity, Diversity, History, Geography, Architecture, Cuisine, Literature, Music and visual art. Through periodized annual planning, a child's activity or sport can offer much more than a simple commute between the activity venue and the home or hotel room.



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