

CANADIAN FREESTYLE SKI ASSOCIATION

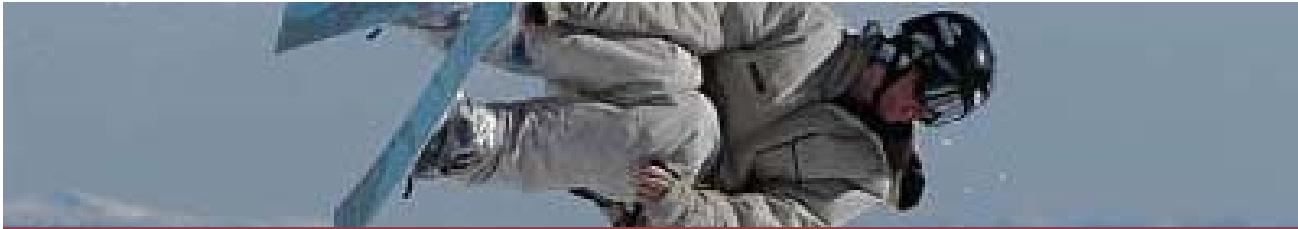
Introduction to Long-Term Athlete Development for
Canadian Freestyle Skiing



**FREESTYLE
SKI
ACROBATIQUE**

VERSION 1.1

August 2006



Acknowledgements

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How to use this document

The CFSA's Long-Term Athlete Development Model has been designed to provide a consistent and systematic guide to developing junior talent and to increase the numbers of people entering the sport of freestyle skiing.

The Model has been designed through a broad consultation process involving a wide variety of experts from within and outside the Canadian Freestyle Ski Association and is a working document, based upon research and good practice from coaches, administrators and specialists around the world. Please note that these guidelines are merely recommendations for the sport as a whole and that coaches, families, educators, officials and athletes need to use them with a degree of flexibility to ensure that the freestyle experience is enhanced for all individuals within the sport.

When referring to the information in this document, please keep in mind that all athletes have their own unique physical, mental, emotional and social needs and require individualized programming by qualified, accredited professionals.

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Foreword

Scientific research has shown that talented athletes must dedicate a minimum of 10 years and 10,000 hours of training to achieve success at the elite level. For Freestyle athletes, success is nothing short of a podium finish at a world-class event. To reach this point, Freestyle athletes must be totally committed to their goals and have the unwavering support of their families, coaches, clubs and provincial and national sport organizations.

The “10-Year Rule” and an athlete-centered system are just two key factors upon which Long-Term Athlete Development (LTAD) is built. LTAD is also supported by principles that focus on the general framework of athlete development with special reference to growth, maturation and development, trainability, periodization and sport system integration and implementation.



Incorporating best practices, current findings and scientific data from a variety of athlete development projects around the world, LTAD is fast becoming the system through which all sport organizations will be able to successfully guide and support athletes towards podium performances and lifelong physical activity.

In its quest to lead athletes to world-class podium finishes, the Canadian Freestyle Ski Association has begun to create its own LTAD Model. This document is an introduction to the Model and a preamble to the challenges the sport of freestyle skiing faces in fostering a culture of excellence at the highest levels of international competition.

We believe the CFSA Long-Term Athlete Development Model is paramount in fostering this culture of excellence and opening the pathway for a bright and prosperous future for our athletes.

Peter Judge

Chief Executive Officer

Canadian Freestyle Ski Association



History

Organized freestyle skiing in Canada took shape when a group led by John Johnston founded the Canadian Freestyle Skiers' Association in 1974. Shortly thereafter, the Canadian Ski Association adopted Freestyle as one of its member disciplines and hired Johnston to administer and organize competitive freestyle programs across the country.

In 1979, the International Ski Federation (FIS) officially accepted Freestyle as a member of the international ski community and the first FIS sanctioned World Cup Freestyle events took place. In February 1986, the first ever FIS Freestyle World Championships were held in Tignes, France. The event was held for the second time in 1989 and has since been held every two years.

Freestyle made its Olympic debut in Calgary in 1988. With the acceptance of moguls as an official medal event in 1992 and with the subsequent acceptance of aerials as a medal event in 1994, Freestyle gained widespread attention and underwent phenomenal growth in Canada and internationally. In 1995, Canada established its own national governing body – The Canadian Freestyle Ski Association (CFSA). At the time of publication of this document in 2006, over 50 Freestyle Ski Clubs exist across the country.

On the international front, approximately 30 countries have developed active Freestyle Skiing programs. At the top of the scale, elite national teams participate each year on the FIS World Cup tour which features events in Canada, the USA, Europe, Scandinavia, Japan, China and Australia.

Freestyle continues to evolve. FIS has officially incorporated 'new style' skiing events, '**half-pipe**' and '**skier-cross**', into their World Cup competition schedule. In addition, new rules in moguls have changed the sport with the introduction of 'off axis' and inverted jumps and the removal of restrictions which will allow for increased variety of manoeuvres in competition.

Disciplines

AERIALS

Olympic Discipline

Aerials is not for the faint of heart. At the National Team level, competitors hit the jumps or 'kickers' at speeds of 60+ km/h, launch themselves some 50 feet in the air and perform triple back somersaults with up to five twists, landing on a steep landing hill most people would be nervous just skiing down.

Judging

Competitors must perform two different jumps consisting of single or multiple somersaults with or without twists. Each jump must vary by one somersault or one twist. Points are awarded for take-off (20% of score), form in the air (50% of score) and landing (30% of score). Scores of both jumps are added together for a final mark.

Competition Format

Competitions are either:

- a) qualification round with a 12-person final; or
- b) (at the lower levels) each competitor gets two jumps.

Results in both formats are the combined score of the competitor's two jumps.



SINGLE MOGULS

Olympic Discipline

Speed, turns and air...

Mogul skiing is probably the most accessible of the Freestyle disciplines and is one of the most exciting and spectacular of all winter sports. Everyone who skis has had to negotiate bumps or moguls at some point and knows how challenging they can be. The incredible skill, athleticism and courage of the world's top mogul skiers make it look easy as they race straight down the fall line at lightening speeds.

Judging

Competitors rip down the 22-30 degree mogul course and launch themselves off two jumps on the way down under the scrutiny of a panel of seven judges. Marks are awarded for the technical quality of the skier's turns (50%), the two aerial manoeuvres (25%) and speed (25%). While speed is a factor, the fastest skier across the finish line does not necessarily win.

Competition Format

Competitions are either:

- a) qualifying round with a single descent, followed by a final featuring the top 12 or 16 competitors from the first round; or
- b) the best of two runs.



DUAL MOGULS

World Championship Discipline

Head-to-head action...

In Dual Moguls, competitors race head-to-head in knock-out rounds. The added adrenaline of racing side-by-side means skiers often push themselves beyond their limits, resulting in either spectacular crashes or some of the most awesome bump skiing you will ever see.

Dual Moguls became a separate FIS discipline in 1996 and officials hope it will join Single Moguls and Aerials as an Olympic event in the future.

Judging

Similar to Single Moguls, a panel of seven judges award marks for turns, speed and air, deciding by a show of panels who will go forward to the next round. Again, the fastest skier over the finish line is not necessarily the winner.

Competition Format

Competitions are either:

- a) single run qualification round (as per Single Moguls) to seed the Duals, which would usually be 16 pairs of Duals; or
- b) elimination rounds of the entire field of competitors based on seeding from either the results of a prior Dual competition or a prior Single Moguls competition.



SKIER-CROSS

World Cup Discipline

This event is similar to the NASCAR of the ski world. In this event, athletes ski down the equivalent of a mini downhill course with a variety of "elements" (jumps, turns, hits, rollers) in groups of four. The object of the exercise is to make it down the course the fastest but also in one piece. The course is very tight so there are plenty of opportunities for mishaps, which make these races very exciting to watch (and participate in - if you dare!).

Judging

No judging - this is a speed event.

Competition Format

Single speed run for seeding, followed by a final featuring the top 32 men and top 16 women. Each group is divided into four riders per heat. The top two per heat move on to the next round.



HALF-PIPE

The NEWEST World Cup Discipline

In Half Pipe or “Pipe” skiers fly off the side of a Half-pipe built with up to 6-metre-high walls and perform a multitude of flips, spins and grabs (a competitor can usually manage to complete 5 or 6 jumps (hits) in a run); in this case, however, the take-off and landing are one in the same so the athlete’s trajectory is essentially STRAIGHT UP! The highest skilled athletes can land and ski into their next hit going backwards which is just amazing to watch!

Judging

A panel of five or seven judges award marks for Air, Style*, and Landing with a degree of difficulty (DD) multiplier.

* Style is essentially showmanship - how much “personality” the athletes put into the jumps.

Competition Format

Competitions are either:

- a) single run qualification round followed by a top-12 final; or
- b) the best of two runs.



TABLE TOP (or “Big Air”)

Non World Cup discipline

In Table Top, skiers fly off a gentler form of kicker and perform combinations of flips, spins and grabs and can choose to take off, or land, either forwards or “switch” (backwards). The event combines the skill and execution of aerials with the freedom of expression of the “Free Ride” movement. This event also provided the basis for the development of many of the cool new jumps now being performed in Moguls. In many cases now, both Classic Aerials and Table Top formats are combined into a single event.

Judging

A panel of five or seven judges award marks for air, style* and landing with a DD multiplier.

*Style essentially means “showmanship” (i.e. how much personality the athletes put into the jumps).

Competition Format

Competitions are either:

- a) single jump qualification round followed by a top-12 final; or
- b) best one jump of two; or
- c) best two jumps of three.



Mission

The mission of the Canadian Freestyle Ski Association is to develop, in a safe and ethical manner, Olympic and World Champions in all disciplines of the sport of Freestyle skiing.

OUR MISSION will be achieved by employing our strengths in the pursuit of our core strategies, while respecting at all times the fundamental values that guide our conduct as we work towards our vision of the desired future.

We will develop programs that enable current and future members to participate in all freestyle skiing disciplines recognized by the CFSA, with priority given to developing competitive programs in the following disciplines:

- 1st Olympic Moguls and Aerials
- 2nd Skier-Cross and Half-Pipe
- 3rd Table Top Aerials

OUR CORE STRATEGIES include:

- Implementing a national plan that supports the development of athletes in all freestyle disciplines from the club to the World Cup level.
- Expanding programs and initiatives focused on athlete recruitment and retention.
- Procuring a sufficient number of High Performance training facilities in Canada.
- Ensuring that our athletes have access to the best possible competitive opportunities.
- Improving training and educational opportunities for freestyle coaches, officials and judges.
- Strengthening public awareness of the sport of freestyle skiing and our High Performance athletes.
- Securing financial resources to successfully achieve our goals.

OUR PLAN OF ACTION is based on the establishment of a new freestyle athlete pathway using LTAD framework and principles. The CFSA has three primary reasons for introducing a Long-Term Athlete Development approach.

1. To identify and address gaps and challenges in the current athlete development system.
2. To develop a unified and comprehensive sport system that engages members, families, business partners and stakeholders alike.
3. To develop a dynamic planning tool that is relevant today and evolving for the future.

Challenges and Initiatives

Employing the LTAD approach will address many important issues in three key areas of the CFSA sport system:

1. Athlete Development
2. Coach, Judge and Officials Development
3. Organizational Development

Athlete Development

Challenges	Development Initiatives
Young athletes under-train and over-compete.	<ul style="list-style-type: none">• Design a new training and competition structure based on LTAD principles (see Appendix I).• Review and improve training options for athletes through the implementation of a new “Club Mark” program.
Need for a national athlete recruitment and retention strategy.	<ul style="list-style-type: none">• Establish a new athlete development pathway based on LTAD principles (see Appendix II).• Develop and enhance multi-sport partnerships with feeder sports and other sport organization.• Integrate the new RBC Jumps & Bumps program to the club system.• Increase girls’ programs and sport participation by 40%.• Encourage athletes to specialize in specific disciplines according to their geographic location and access to training facilities.
Need for training programs designed specifically for females up to the provincial level.	<ul style="list-style-type: none">• Offer more girls-only training camps and club programs.
Need for more training facilities.	<ul style="list-style-type: none">• Expand partnerships with ski resorts, local communities and businesses.

Coach, Judge and Officials Development

Challenges	Development Initiatives
Need for LTAD principles to be a mandatory part of the professional development process.	<ul style="list-style-type: none"> Integrate LTAD principles to training programs for coaches, judges and officials.
Top coaches work predominantly with elite athletes.	<ul style="list-style-type: none"> Support and encourage top coaches to work with development level clubs and athletes.
Need for PSO's to ensure that coaches, officials and judges are properly trained and certified.	<ul style="list-style-type: none"> PSO's and facilitators gain full understanding of the new NCCP as well as any new judging and officiating rules. PSO's to develop professional development strategies for their coaches, judges and officials.

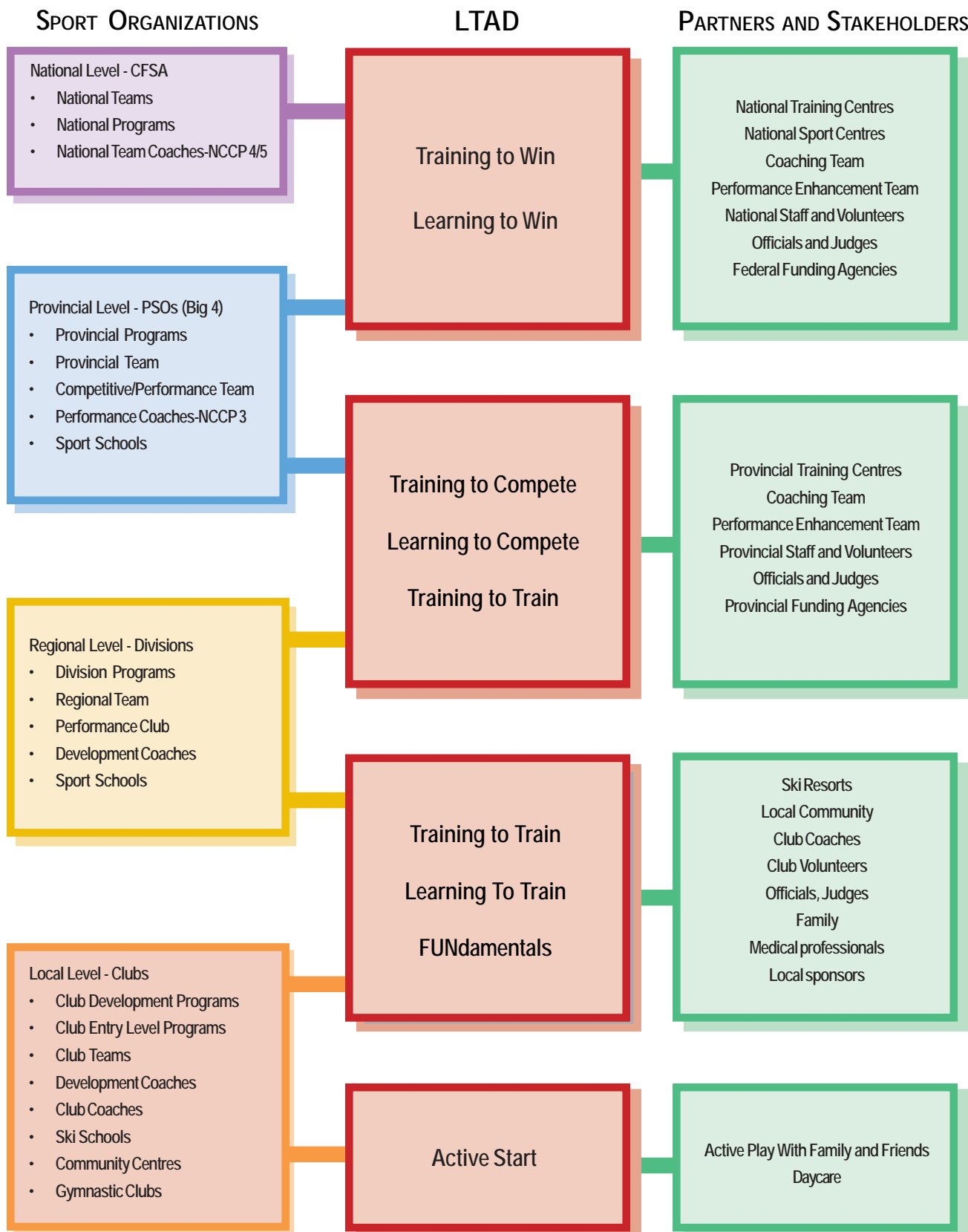
Organizational Development

Challenges	Development Initiatives
Need for CFSA and PSO's to work together towards future operational improvements.	<ul style="list-style-type: none"> Adopt the LTAD approach and work towards a unified sport system. Improve office and information technology operations at the NSO and PSO levels. Develop a data mining system (membership, performance analysis, etc.) Broaden base of salaried staff and volunteers at all levels.
Need for more financial resources to achieve goals.	<ul style="list-style-type: none"> Review and prioritize spending based on LTAD principles. Expand partnerships with stakeholders. PSO's to create self-sustaining strategies.
Need for increased promotion of sport and elite athletes.	<ul style="list-style-type: none"> Intensify efforts aimed at the promotion of Freestyle programs, events, athletes and coaches.

A UNIFIED SPORT SYSTEM

The Integration of LTAD to the Canadian Freestyle Sport System

Long-Term Athlete Development is athlete centered, coach driven, and administration, sport science and sponsor supported.



Introduction to the Canadian Freestyle Ski LTAD Model

Long-Term Athlete Development is a sport development framework that is based on human growth and development. All young people follow the same pattern of growth from infancy through adolescence but there are significant individual differences in both the timing and magnitude of the changes that take place. Notably, human growth and development happens without training, however, training can enhance all of the changes that take place.

The scientific community has reported that there are critical periods in the life of a young person in which the effects of training can be maximized. This has led to the notion that individuals in their formative years should be exposed to specific types of training during periods of rapid growth and that the types of training should change with the patterns of growth. This type of training has been used by Sport Canada and its team of experts to devise a seven stage Canadian LTAD framework that has been adapted for Freestyle skiing.

1.	Active for Start	fundamental movement skills	learn to ski
2.	FUNdamentals	physical literacy	introduction to freestyle skiing
3.	Learning to Train	building technique and establishing the basics	develop freestyle ski skills
4.	Training to Train	building the engine	develop discipline specific skills
5.	Learning to Compete/ Training to Compete	optimizing the engine	faster - higher
6.	Learning to Win/ Training to Win	tuning the engine	fine tuning
7.	Active for Life	lifelong physical activity	ski for life

INTRODUCTION TO THE CANADIAN FREESTYLE SKI LTAD MODEL

		GENERIC AGE LEVEL	SKILL LEVEL	PROGRAM LEVEL	COACHING LEVEL
STAGE 1	Active Start	INFANT Females & Males 0-6	Fundamental movements with play	Non-structured active play	Not needed
STAGE 2	FUNDamentals	CHILDHOOD Female 6-8 Male 6-9	Fundamental movement skills	Clubs, recreation, schools, holiday camps Entry level program (RBC Jumps & Bumps Program)	CFSA In-Training Club Coach and/or CSIA Park & Pipe Instructor Intro to Beginners Multi-Sport A Coaching Ethics Course
STAGE 3	Learning To Train	LATE CHILDHOOD Female 8-11 Male 9-12	Fundamental sports skills including freestyle ski skills	Clubs, ski schools, regional camps Entry level program (RBC Jumps & Bumps Program)	Certified Club Coach Intro to Beginners Competition Multi-Sport A & B Coach Ethics Coaching Ethics Course
STAGE 4	Training To Train	ADOLESCENCE Female 11-15 Male 12-16	“Building the engine” & developing discipline specific skills	Clubs, provincial camps Training Program	Certified Development Coach Competition/Development Theory 3 Officials & Judges Training Courses
STAGE 5	Learning To Compete	LATE ADOLESCENCE Female 16-18 Male 17-19	“Optimizing the engine” & consolidating discipline specific skills	Provincial team, competitive club program	Certified Performance Coach NCCP Level 3 Sport Science & Medicine Support
STAGE 5	Training To Compete	EARLY ADULTHOOD Female 18-20 Male 19-21	“Optimizing the engine” & consolidating discipline specific skills and fitness	Provincial & National Team (NTC)	Master Coach Program Director NCCP Level 3-4 Sport Science & Medicine Support
STAGE 6	Learning To Win	ADULTHOOD I Female 20+ Male 20+	“Maximizing the engine” & fine tuning discipline specific skills and fitness	Provincial & National Team (NTC)	National Team Coach NCCP Level 4-5 Sport Science & Medicine Support
STAGE 6	Training To Win	ADULTHOOD II Female 22+ Male 22+	“Maximizing the engine” & perfecting discipline specific skills and fitness	World Cup Team (NTC)	National Team Coach NCCP Level 4-5 Sport Science & Medicine Support
STAGE 7	Active 4 Life	Any Age	Enjoyment and play	Move from competitive sport to recreational activity	Not needed

Active Start

Age: Females and Males 0-6



KEY FOCUS: To teach children fundamental movements and link them together into play, as well as introduce children to skiing.

KEY DELIVERY: Community programs and non-structured active play

KEY DEVELOPMENT OBJECTIVES

PHYSICAL

- make physical activity part of the child's daily life
- develop physical activity and basic movement skills
- undertake movements which challenge and teach balance skills
- encourage running, jumping, twisting, kicking, throwing and catching through a variety of activities

PSYCHOLOGICAL

- explore risks and limits in safe environments
- develop the child's self concept
- help identify the child's preferred learning style
- help spark the child's imagination
- create fun activities and improve the child's skills through repetition



FUNdamentals

Age: Females 6-8; Males 6-9



KEY FOCUS: To develop fundamental movement skills and basic Freestyle ski skills.

KEY DELIVERY: Freestyle ski clubs, RBC Jumps & Bumps Program, ski schools and alpine clubs

The FUNdamentals stage should be structured and fun. The emphasis during this stage is on developing basic movement literacy and fundamental movement skills. The skills to be developed are the:

- **ABC'S** (Agility, Balance, Coordination, Speed)
- **RJT** (Running, Jumping, Throwing)
- **KGB'S** (Kinesthetics, Gliding, Buoyancy, Striking with the body)
- **CK'S** (Catching, Kicking, Striking with an implement).

In order to develop basic movement literacy successfully, participation in as many sports as possible should be encouraged. Speed, power and endurance should be developed using FUN and games. In addition, children should be introduced to simple rules and the ethics of sports. No periodization should take place but there should be well-structured programs with proper progressions that are monitored regularly.

KEY DEVELOPMENT OBJECTIVES

PHYSICAL

Develop:

- strength and coordination to stand, jump and land on skis
- stamina to ski a specific length of a run
- speed, agility and balance

PSYCHOLOGICAL

Focus on:

- fun and motivating skiing activities
- confidence building and sense of achievement
- reaction/response and adjustment training
- individual/group participation in a safe structured environment
- self-awareness and respect for others



TRAINING

Introduce:

- warm-up and cool-down
- nutrition and hydration
- staying warm
- on/off hill safety and etiquette
- exposure to Freestyle skiing (RBC Jumps and Bumps program)

Training volume is one half-day per week for 6-10 weeks. Sessions are an average of 2-4 hours each in length. Additional participation in four of the following sports is recommended: freestyle skiing, gymnastics, biking, skate boarding, soccer, martial arts, diving etc.

COMPETITION

Athletes should participate in:

- competitions such as the RBC Jumps and Bumps fun club event
- simulated competitive games relating to Freestyle skiing

Focus on fun and participation versus individual results. Completion of skills should be emphasized and recognized. Judging should be performed by parents, coaches and older athletes.

FREESTYLE SKI SPECIFIC SKILLS

Athletes should demonstrate the ability to:

- maintain athletic body position/stance on skis
- parallel ski on a variety of snow or simulated snow conditions
- execute proper take-off and landing
- control air and speed on a variety of surfaces and conditions

Introduce athletes to:

- park features and skills
- single aerial manoeuvres
- water ramp
- inverts on trampoline
- multiple levels of free skiing on a variety of surfaces and terrain

EQUIPMENT NEEDS

Athletes require proper fitting:

- boots
- bindings
- skis, poles, helmet, gloves and goggles
- under and outer wear
- running shoes

COACH CERTIFICATION

Mandatory: CFSA Club Coach (includes Air, Moguls & Park) or CSIA Park & Pipe

Supplementary: CSIA Level 1; Trampoline Level 2

Learning to Train

Age: Females 8-11; Males 9-12
(stage ends at onset of growth spurt)



KEY FOCUS: To develop an athlete's fundamental sport skills (including Freestyle skiing skills).

KEY DELIVERY: Freestyle club development programs

During this stage, athletes should learn how to train and develop the skills of a specific sport. There may be participation in complimentary sports (i.e. those sports which use similar energy systems and movement patterns). Athletes should also learn the basic technical/tactical skills, and ancillary capacities including:

- warm up and cool down
- stretching
- hydration and nutrition
- recovery
- relaxation and focusing.

The Learning to Train stage coincides with peak motor coordination. The emphasis, therefore, should be on skill development through training. The recommended training to competition ratio for this stage is 90% to 10%. Coaches should use a single periodization format.

Training should include the use of "own body weight" exercises, medicine ball and Swiss ball exercises as well as developing suppleness. Playing games is also encouraged as a team activity. While the focus is on training, competition should be utilized to test and refine skills.

If athletes miss the Learning to Train stage of development or if coaches focus mainly on competition, athletes will fail to reach their full potential.

KEY DEVELOPMENT OBJECTIVES

PHYSICAL

Further develop strength, coordination, stamina, agility and balance.

Introduce:

- speed and agility movements (i.e. lateral hops, foot drills, etc.)
- sport specific movement exercises
- rotational and inverted awareness
- flexibility range of movement
- physical monitoring through fitness guidelines

PSYCHOLOGICAL

Further develop:

- FUN and motivating skiing activities
- confidence building and sense of achievement
- reaction/response and adjustment training
- individual/group participation in a safe structured environment
- group awareness, feeling a part of a team
- self-awareness and respect for others

Introduce:

- positive thinking
- setting and completing simple goals
- relaxation techniques
- basic imagery
- maintaining focus
- making decisions
- understanding what it means to be a part of a team

TRAINING (90%)

Further develop:

- warm-up and cool-down
- nutrition and hydration
- staying warm
- on/off hill safety and etiquette
- exposure to Freestyle skiing

Introduce:

- basic rules
- Code of Ethics
- assuming responsibility (i.e. gearing up independently)
- concept and implementation of single periodization

Training volume is three sessions per week throughout the year. Two sessions should include training on snow or water ramp (2-3 hours in duration) plus one trampoline session (60 minutes). For trampoline, athletes are expected to jump effectively for about 10–15 minutes of a 60-minute session. Additional participation in an acrobatic program and two other sports is recommended.

COMPETITION (10%)

Introduce competition through fun and inexpensive (local) events. Participate in two fun club or regional competitions (air, moguls and park) per season (a season is defined as 8-13 weeks per year) with a very small focus on results. Introduction of E licensed judges.

FREESTYLE SPECIFIC SKILLS

Athletes should demonstrate the ability to:

- maintain active stance and balance using all joints effectively in a variety of planes of movement
- execute basic mogul skiing technique (absorption/extension, fall line and co-ordination of pole plant)
- demonstrate controlled skiing on a variety of surfaces and terrain
- execute basic jumps with tricks in a mogul course
- grind rails (entering and exiting both directions)
- perform jumping skills (increase amplitude and perform rotational tricks, grabs and combos)

Coaches should introduce athletes to water ramps and single plane inverted manoeuvres.

EQUIPMENT NEEDS

Athletes require proper fitting:

- boots (flexible)
- bindings
- skis (air and moguls)
- poles, helmet, gloves and goggles
- under and outer wear
- running shoes
- water ramp skis, boots and wet suit/dry suit
- mouth guard

Coaches should introduce athletes to ski equipment maintenance and safety (ie: binding regulation, waxing, sharpening).

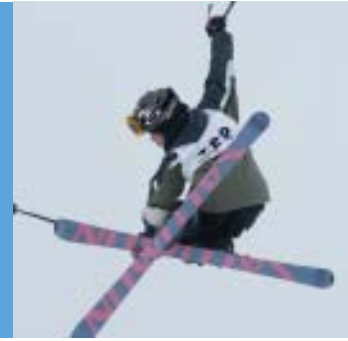
COACH CERTIFICATION

Mandatory: CFSA Club Coach

Supplementary: CSCF 1; CFSA Development Coach (Air); CFSA Development Coach (Moguls); CSIA 2; Trampoline 2

Training to Train

Age: Females 11-15; Males 12-16
(Dependent on Growth Spurt - PHV)



Specialization begins approximately mid-way through this transition stage, when both females and males reach the approximate age of 15 years.

KEY FOCUS: To build an aerobic base and develop speed and strength as well as consolidate basic freestyle ski skills, develop discipline specific skills and introduce annual training programs.

KEY DELIVERY: Freestyle development club and regional teams
(Provincial Sport Organizations)

Aerobic conditioning is emphasized in this stage and there should be greater individualization of fitness and technical training. The focus should continue on training rather than competition and training should consist of high volume, low intensity workloads. It is important to emphasize that high volume, low intensity training cannot be achieved in a limited time period, and therefore, the time commitment to training should increase significantly. Through these competitions, athletes should learn basic tactics and mental preparation. Coaches should use single or double periodization for the training year.

During the Training to Train stage, training should continue to develop suppleness and include the use of “own body weight” exercises as well as medicine ball and Swiss ball exercises. Toward the end of this stage, coaches should prepare athletes for strength development. For girls, this occurs at the end of this stage, while for boys, it occurs at the beginning of the next stage (Learning to Compete). Strength training for athletes should include learning correct weight-lifting techniques and the ancillary capacities (i.e. how to warm up and warm down, how to stretch and when to stretch, how to optimize nutrition and hydration, how and when to taper and peak, how to prepare mentally, how to regenerate and how to create pre-competition, competition and post competition routines). As in the Learning to Train stage, if insufficient time is devoted to this stage or it is missed, athletes will never reach their full potential.

KEY DEVELOPMENT OBJECTIVES

PHYSICAL

Focus on general and sport specific training related to:

- aerobic speed and endurance
- speed, agility and coordination
- physical monitoring through fitness guidelines (i.e. peak height velocity - PHV)
- strength training and flexibility
- range of motion/movement
- prevention of injuries

PSYCHOLOGICAL

Further develop:

- positive thinking
- setting and completing goals
- relaxation techniques
- basic imagery
- maintaining focus
- making decisions
- being part of and contributing to a team and organization

Introduce annual training plan:

- athlete log books
- workshops and evaluations
- giving 100% effort
- introduce LTAD
- competition preparation
- debriefing
- Sport Science & Medicine Teams

TRAINING (75%)

Further develop:

- warm-up and cool-down
- nutrition and hydration
- staying warm
- on/off hill safety and etiquette
- basic competition rules
- adherence to Code of Ethics
- assuming responsibility (i.e. gearing up independently)

Coaches should introduce air site and water ramp safety.

Training volume is 3-4 sessions per week throughout the year. Two sessions to include training on snow or water ramp (2-4 hours each in duration) plus two trampoline sessions (60-90 minutes each). Additional participation in an acrobatic program and one other sport is recommended.

COMPETITION (25%)

Athletes should increase their range of competition to six events in club, provincial, Provincial Winter Games (PWG) and Junior National events (air, moguls, half pipe and aerials). There should be a focus on refinement of skills with each competition. Licensed judges oversee competitions.

FREESTYLE SPECIFIC SKILLS

Athletes should demonstrate the ability to:

- combine rotations, positions and inverts
- utilize and control speed to increase performance for both mogul and air events
- refine mogul specific skills (upper body position, pole plants timing, knee roll)
- complete an invert and a spin on snow and on water grind a variety of rail features with alternate grind positions
- execute consistent and accurate performance of skills
- possess spatial awareness

Athletes should perform:

- basic trampoline skills
- inverts on snow and water
- speed checks safely and with confidence
- 4-5 Aerial tricks with a high level of proficiency (90% of perfect score)
- controlled take off (95%) for well established tricks and jumps, 70-80% for new tricks
- orientation, technique (body position, rotation, landing, style and amplitude)
- speed control for jumps, rails and pipe

EQUIPMENT NEEDS

Athletes require proper fitting:

Aerials

- wet suit or dry suit
- ski boots for water ramp and snow that allow for an upright and straight body position
- life jacket
- fiberglass skis
- jumping skis (140-160cm)
- mouth guard
- helmet
- twin tip skis for new school tricks

Moguls

- mogul specific skis
- suitable boots with proper support
- helmet
- mouth guard
- mogul-length poles (maximum length the pole will come to hip bone)
- knee patches on pants (for maximum visual highlights)

Half-Pipe

- twin tip skis for switch take-off and landing
- helmet
- mouth guard
- softer flexing boots
- poles of appropriate length

COACH CERTIFICATION

Freestyle Basic

Mandatory: CFSA Development Coach (Air or moguls or Park) plus Trampoline 2

Supplementary: CFSA Performance Coach, Officials and Judges Training Courses, CSIA 3; CSCF 1

Learning & Training to Compete Aerials, Moguls & Park

Age: L2C Females 16-18; Males 17-19
T2C Female 18-20; Males 19-21



KEY FOCUS: To optimize fitness preparation, specialize in one freestyle ski discipline, acquire discipline specific skills and learn to compete.

KEY DELIVERY: L2C: Performance Freestyle Club and Provincial Team
T2C: Provincial and National Development Team

Sport specific specialization begins in the Learning to Compete stage. Coaches and athletes will determine discipline specialization. During the Learning and Training to Compete stages, there should be a continued emphasis on physical conditioning with the focus on maintaining high volume workloads with increasing intensity. The number of competitions should be similar to the end of the previous stage (Training to Train), with an emphasis on developing individual strengths and improving on individual weaknesses through modeling and nurturing technical and tactical skills. As a result, coaches should plan on either double or triple periodization of the training year. In addition, the ancillary capacities should be refined so they are more specific to the athlete's needs. During this stage, training should also focus on developing maximum strength gain through the use of weights. This should be coupled with continued work on core body strength and suppleness maintenance.

KEY PERFORMANCE OBJECTIVES

PHYSICAL

Learning to Compete (L2C)

Athletes should:

- begin to specialize in specific strengthening
- enhance power and agility through plyometrics/weightlifting
- be introduced to an individualized periodization plan
- optimize speed and power while skiing
- utilize recovery and regeneration methods
- adhere to fitness guidelines
- utilize individual specific injury prevention exercises
- endure the rigors of training and competition while improving technique

Training to Compete (T2C)

Athletes should:

- be able to maximize specific strength, power and agility
- be introduced to a multiple periodization plan supported by a sport science and medical treatment team (i.e. physician, physical therapy, massage, chiropractic, etc.).
- be able to maximize speed and power while skiing

PSYCHOLOGICAL

L2C & T2C athletes should focus on:

- decision making (i.e. weather conditions)
- advanced mental preparation
- social psychology and team dynamics
- the integration of mental, cognitive and emotional development
- 24-hour commitment
- adapting to changing environments (i.e. travel, accommodations, cultures, etc.)

Coaches should train the athlete to:

- consistently give 100% effort (competitive spirit)
- be independent and responsible for own training
- perform consistently in competitions
- understand the outcomes of negative and positive thinking
- evaluate self and situations realistically

T2C athletes also require media training & distraction management.

TRAINING & COMPETITION

Coaches should focus on:

- refined competition plans
- devoting 60% of athlete's available time to the development of technical and tactical skills and improving fitness
- devoting 40% of athlete's training to competition and competition-specific training
- single or double periodization
- building a rest & recovery plan into training and competition
- having athletes specialize in freestyle skiing

AERIAL SPECIFIC SKILLS

Athletes should demonstrate:

- automatic arm drops for any back full in tight body line
- straight off jump to landing
- learning to spin (double full)
- good vision on any double full (twist timing)
- consistent perfection on easier/warm-up DD jumps
- fine-tuning of previous stage jumps
- consistent and controlled take-offs (100% on easy tricks, 75-85% on newer tricks-consistent trajectory)
- appropriate selection of jumps for competition

Routines & Competency Skills:

- athletes should demonstrate level 5+ routines
- refined aerial specific skills

MOGULS SPECIFIC SKILLS

Learning to Compete (L2C)

Athletes should:

- learn to time components (i.e. knee roll, lead change, wrist drive, knee angulations)
- perform twisting and off-axis inverts
- demonstrate the ability to create new tricks
- utilize speed during jumping
- show consistency on a multitude of different courses

PARK SPECIFIC SKILLS

Learning to Compete (L2C)

Athletes should:

- work on a broad base of skills
- perform a variety of skills with control
- perfect tricks learned in earlier stages
- experiment with a variety of tricks at different amplitudes
- develop opposite spins 540+ and regular spins 720+
- increase amplitude with switch tricks
- be able to control off-axis tricks

Training to Compete (T2C)

Athletes should:

- consistently execute components (i.e. knee roll, lead change, wrist drive, knee angulations)
- maximize degree of difficulty of jumps
- maximize individual styles of skiing
- successfully perform on a multitude of different courses

Training to Compete (T2C)

Athletes should:

- be able to perform higher risk stunts if they can demonstrate consistency and a high level of control of skills
- perfect half-pipe run in all weather conditions
- build amplitude

Coaches should build a technical strategy for the athlete (i.e. the order in which the athlete is most comfortable performing their tricks).

EQUIPMENT NEEDS... AERIALS, MOGULS AND HALF-PIPE

Athletes require proper fitting:

Aerials

- wet suit and/or dry suit
- ski boots for water ramp and snow that allow for an upright and straight body position
- life jacket
- fiberglass skis (2-3 pairs)
- jumping skis (140-160cm) 3-4 pairs of jumping skis each season
- helmets for water jumping and snow
- mouth guards

Moguls

Air Training

- wet suit and/or dry suit
- ski boots for water ramp and snow that allow for an upright and straight body position
- life jacket
- 3 pairs of jumping skis (140-160cm)
- helmets for water jumping and snow
- mouth guards

Mogul Training

- mogul skis (check with manufacturers)
- proper alpine bindings
- mogul length poles (maximum length the pole will come to hip bone)
- knee patches on pants (for maximum visual highlights)
- helmets for water jumping and snow
- mouth guards

Half-Pipe

Air Training

- wet suit and/or dry suit
- ski boots for water ramp and snow that allow for an upright and straight body position
- life jacket
- fiberglass skis (2-3 pairs)
- jumping skis (twins optional) 3-4 pairs of jumping skis each season
- helmets for water jumping and snow
- mouth guards

Half-Pipe Training

- high level twin tip skis with sharp edges
- helmets for water jumping and snow
- mouth guards

COACH LEVELS

Required L2C: High Performance Coach (NCCP Level III), working with a Sport Science & Medicine Support Team

Recommend T2C: Begin Master/National Coach NCCP Level IV-V, working with a Sport Science & Medicine Support Team; Level III Trampoline

Note: Seek professional education and development options: coach exchange programs, CAC programs, seminars, CFSA CED program and alternatives/options (University degree), National curriculum for sport, etc.

Learning to Win & Training to Win Aerials, Moguls & Half-Pipe

Age: L2W Female/Male 20+
T2W Female/Male 22+



KEY FOCUS: Learn to perform on demand and give podium performances.

KEY DELIVERY: Canadian Freestyle Ski National Team and Canadian National Sport Centres

This is the final stage of athletic preparation. The emphasis should be on specialization and performance enhancement. All of the athlete's physical, technical, tactical, mental and ancillary capacities should now be fully established with the focus shifting to the optimization of performance. Athletes should be trained to peak for specific competitions and major events. Therefore, all aspects of training should be individualized for specific events. There should be either double, triple or multiple periodization, depending on the events for which the athlete is being trained. During this stage, training should continue to develop core body strength, overall strength and suppleness.

KEY PERFORMANCE OBJECTIVES

All of the athlete's physical, technical, mental and performance lifestyle capacities are fully established.

PHYSICAL

Coaches should:

- maximize individual training programs
- provide physical assessments to athletes four times per year

PSYCHOLOGICAL

Coaches should optimize athletes' skills in:

- decision-making
- advanced mental preparation to deal with the varied challenges of international competition
- media relations and public speaking
- self-awareness and knowledge of sport

TRAINING & COMPETITION

Coaches should:

- train athletes to peak for major competitions
- plan for athletes to compete 10-16 x per year
- ensure athletes take frequent rest and recovery breaks to prevent physical and mental burnouts during the training and competition year

In the Learning to Win stage coaches should:

- devote 50% of athlete's available time to the development of technical and tactical skills and improving fitness
- devote 50% of athlete's available time to competition specific training activities

In the Training to Win stage coaches should:

- devote 25% of athlete's available time to the development of technical and tactical skills and improving fitness
- devote 75% of athlete's available time to competition specific training activities

Aerial Skills

Athletes should be able to:

- create technical innovations
- refine highest DD manoeuvres
- possess excellent spatial awareness
- consistently perform on easier DD jumps
- develop an effective competition strategy

Mogul Skills

Athletes should be able to:

- create technical innovations
- refine skiing skills and tactics as applied to competitions
- refine aerial components
- consistently execute components (i.e. knee roll, lead change, wrist drive, knee angulations)
- maximize DD in jumps
- maximize individual styles of skiing
- perform consistently on a multitude of different courses

Half-Pipe skills

Athletes should be able to:

- create technical innovations
- refine half-pipe run as applied to competitions
- refine off-axis tricks and spins
- consistently execute technical components
- maximize individual styles of skiing
- perform consistently on a multitude of different courses

EQUIPMENT NEEDS

Same as Learning & Training to Compete, see page 28.

COACH LEVELS

Required: Master Coach Level IV, working with a Sport Science & Medicine Support Team

Recommended: Master Coach Level V plus Trampoline Level III

Active for Life

Age: Enter at Any Age



KEY FOCUS: To move retiring high performance athletes from competitive sport to sport-related positions (employed or volunteer).

KEY DELIVERY: Canadian Sport System and Canadian Freestyle Ski Association

KEY DEVELOPMENT OBJECTIVES

The philosophy of fitness for life prescribes retired athletes to maintain a minimum of 60 minutes moderate daily activity or 30 minutes of intense activity. In the Active for Life stage, individuals should continue to enjoy skiing as well as participating in other sports.

Examples of Freestyle careers or volunteer opportunities:

- coaches
- officials
- judges
- program directors
- program coordinators
- coach coordinators
- administrative positions at the National Sport Organization (NSO) and Provincial Sport Organization (PSO) levels

Concluding Comments

Integrating LTAD to the Canadian Freestyle system is a large-scale effort and will take an estimated 8-10 years to complete. However, LTAD principles and practices are already being adopted by many individuals in the sport.

In the effort to create a unified sport system, the CFSA's priorities over the next two years will include:

1. Promoting LTAD as the key to athlete and organizational success at all levels of the sport.
2. Developing programs at the provincial and club levels to improve athlete recruitment and retention.
3. Creating a data mining system to improve research methods and information sharing.
4. Fostering more partnerships with ski resorts, local communities and businesses to secure added training facilities.
5. Designing a new training and competition structure.
6. Integrating LTAD to the new NCCP program as well as to training programs designed for judges and officials.
7. Creating a marketing and communications plan aimed at increasing national awareness of the sport and its athletes.
8. Fostering stronger and additional partnerships with stakeholders to secure ample financial resources.

As the sport of freestyle continues to evolve, the CFSA welcomes your comments and feedback.

Appendix I

Training and Competition Structure

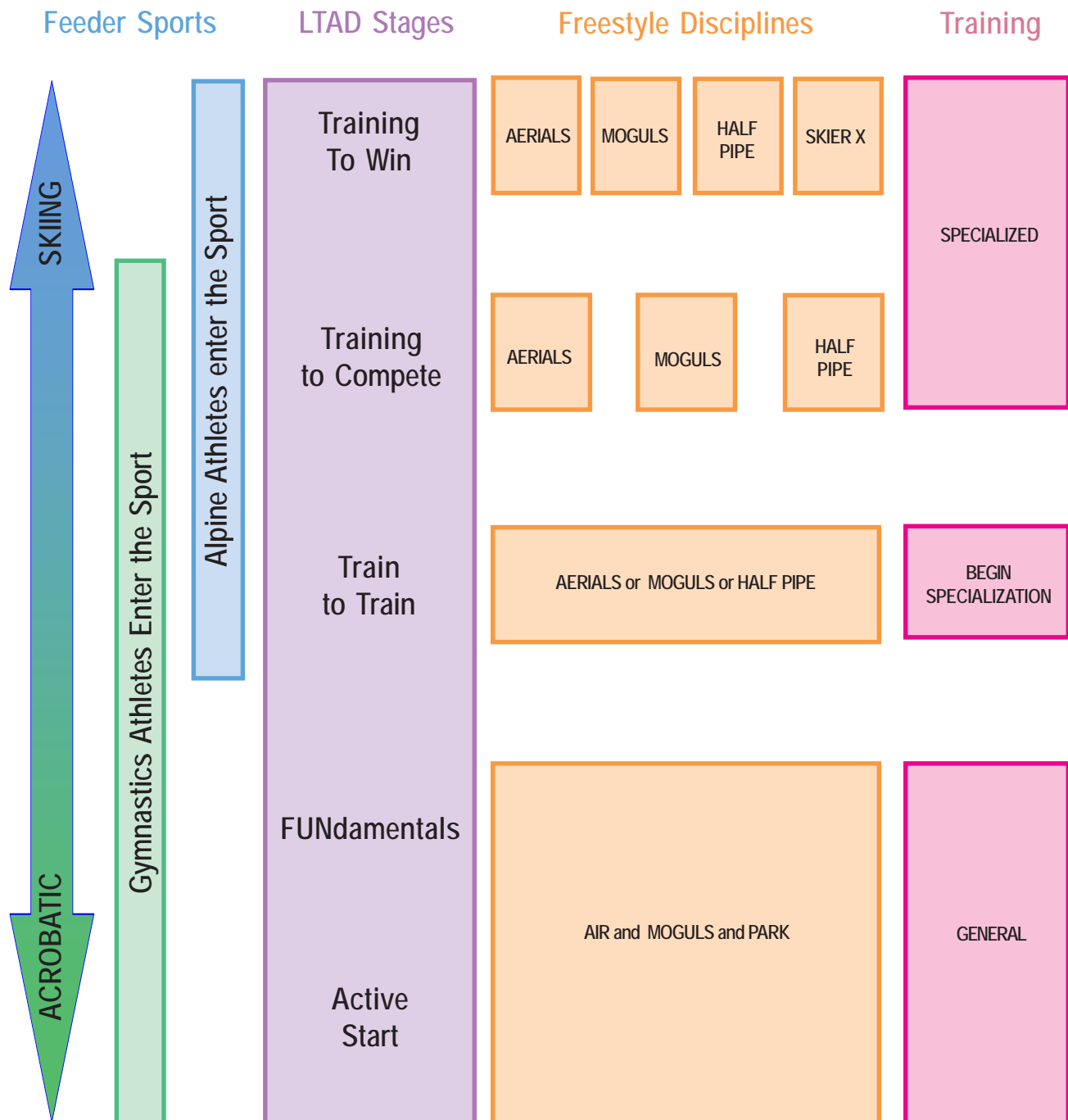
A scientifically-designed competition schedule is crucial to the health and well-being of the athlete and is a vital ingredient in peak performance as well as safety issues. Coaches and family members need to pay close attention to the recommended training and competition ratios to ensure that injuries and burn-out do not occur.

Recommended Performance Path	FUNdamentals	Learning to Train	Training to Train	Learning to Compete Training to Compete	Learning to Win Training to Win
Number of Competitions Annually	All activities FUN based	2-4	6-8	6-10	8-12
Training and Competition Ratios	None	90/10	75/25	60/40	Learning to Win 50/50 Training to Win 25/75
Competitive Events	FUN Club Events	Club events Regional events	Jr. Nationals Provincials Provincial Games Regional events	Sr. Nationals Canada Games Canadian/Series Selected Nor-Ams Provincials	Sr. Nationals Nor-Ams World Cups Olympics
Event Disciplines	Try: Air and Moguls and Park	Train: Aerials Moguls Half Pipe	Train: Aerials or Moguls or Half Pipe Begin to specialize in one discipline	Compete: Aerials or Moguls or Half Pipe Compete in one discipline	Win: Aerials or Moguls or Half Pipe Win in one discipline

Appendix II

The New CFSA Athlete Development Pathway

The relation of LTAD to Canadian Freestyle feeder sports, disciplines and specialization training is central to building a new athlete development pathway.



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