WHEELCHAIR BASKETBALL

ATHLETE DEVELOPMENT MODEL
VOLUME 1: LTAD OVERVIEW

WHEELCHAIR BASKETBALL CANADA

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For more information on Long-Term Athlete Development, refer to Canadian Sport for Life and No Accidental

Champions, published by Canadian Sport Centres, or visit **www.canadiansportforlife.ca**

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INTRODUCTION

In Canada, wheelchair basketball enjoys the participation of more than 2,500 member athletes, coaches, officials and administrators across all provinces and territories. As the sport's national governing body, Wheelchair Basketball Canada is committed to excellence in the development, support and promotion of wheelchair basketball programs and services for all Canadians.

To meet this commitment, Wheelchair Basketball Canada delivers programs and services that strengthen the sport from the community grassroots level to high performance competition at the Paralympic Games. The Long-Term Athlete Development (LTAD) model for wheelchair basketball is an integral part of making this happen.

The LTAD model presented in this document presents the rationale and basic guidelines for promoting the sport and developing our athletes at the initiation, developmental, competitive and elite levels in Canada. Through logical training, competition and recovery programs that focus on the needs of athletes at every stage of maturation and development, the LTAD model is designed to achieve Wheelchair Basketball Canada's long-term vision to become the world leader in wheelchair basketball.

BACKGROUND

In the summer of 2008, Wheelchair Basketball Canada presented their 2009-2013 strategic plan for the development, support and promotion of wheelchair basketball in Canada.

The mission was described as:

- 2020 "The World Leader in Wheelchair Basketball"
- Committed to excellence in the development, support and promotion of wheelchair basketball programs and services for all Canadians.

The priorities were to:

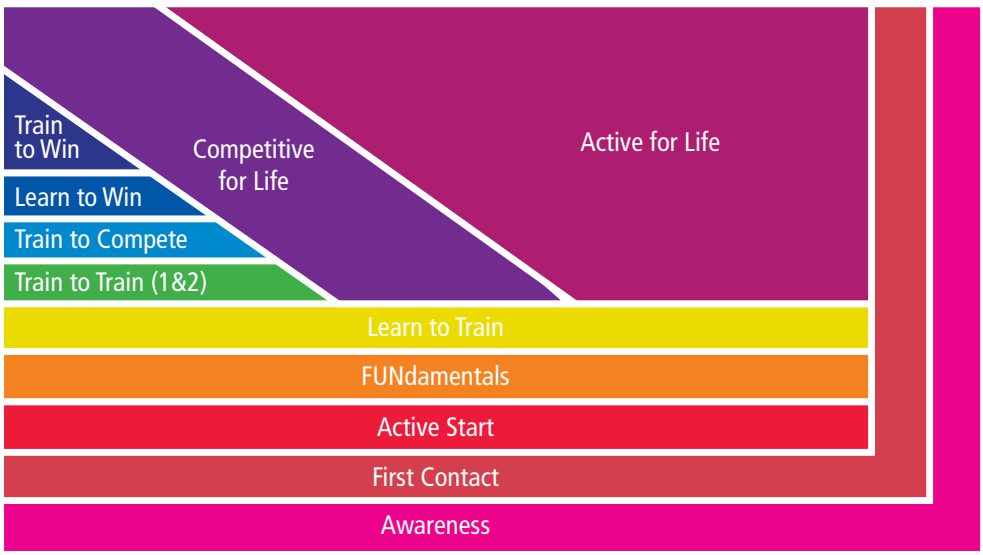
- Recruit new athletes
- Complete the transition to the revised NCCP
- Complete and implement the Sport Development Model

As well, Wheelchair Basketball Canada aims to be first in the world in podium performances by the year 2013. Wheelchair Basketball's LTAD model has been designed to fulfill this mission by providing coaches across Canada with a consistent and quality framework for athlete training, competition and recovery.

LTAD AND WHEELCHAIR BASKETBALL

The LTAD model for Wheelchair Basketball is an adaptation of the Long-Term Athlete Development approach as described by Canadian Sport for Life (CS4L). The rationale behind LTAD is the recognition that better athletic performance and an active nation are both outcomes of a well-defined athlete development pathway.

LTAD aims for optimal training, competition and recovery programming in relation to biological development and maturation. LTAD also promotes equal opportunity and inclusion for all participants, and an athlete-centred approach to coaching and program design. To achieve these aims, LTAD incorporates the most current research in sport science and coaching best practices to deliver optimal programming.



SCIENCE AND SYSTEM

Accordingly, the Wheelchair Basketball LTAD has been designed with the input of sport scientists and coaches from across the country. As a long-term pathway and guideline for training and competition, it shows coaches, parents, volunteers and administrators at the local, provincial and national levels the importance of a systematic and consistent approach to the development of athletes. It also recognizes the importance of recreational and non-elite participation in securing the health of the nation.

The LTAD model is intended to be a guideline for coaches and administrators, not a strict set of dictates that must be followed irrespective of individual athletes and their unique needs. Coaches and administrators understand that each individual's circumstances and resources for involvement in wheelchair basketball vary greatly across Canada. The LTAD guidelines should be applied accordingly, in order to provide athletes with the most positive sport experience possible.

UNDERSTANDING KEY FACTORS

The LTAD guideline will help coaches understand the importance of teaching particular aspects of the game at specific stages of athlete development, considering developmental age, maturation, and other key factors. Using this systematic approach, athletes will consistently develop the skills and abilities needed to achieve excellence in wheelchair basketball, especially if they choose a high performance pathway in the sport. At the same time, the LTAD will ensure that all athletes and participants receive appropriate training to maintain a lifelong passion for the sport and stay active for life.

A CLEAR PATHWAY

The delivery of an aligned, consistent, and systematic approach to athlete development ensures that everyone's needs are being met at every level of programming. The LTAD model also helps players to choose pathways in the sport according to their own interest and aspirations. Some may choose to pursue high-performance competition at the national and international level, and others will be satisfied with recreational participation at the community level.

COACH TRAINING AND SUPPORT

Properly implemented, the LTAD model will ensure that wheelchair basketball coaches are educated about the needs of their players. The development of the coach as a teacher must be a primary focus. Coaches must be supported with frequent clinics and other educational resources through Wheelchair Basketball Canada and the Provincial/Territorial Associations. Coaches should also work with local clubs and organizations to find appropriate equipment that maximizes the functional ability of their athletes.

ATHLETES COME FIRST

A central precept of the LTAD approach is that the voice of our athletes should be heard first. The LTAD model is designed for their benefit, with the hope that they will develop a lifelong passion for the sport, and an enduring desire to participate in healthy physical activity for life.

GOALS OF THE LTAD MODEL

- To provide a consistent, acceptable framework for coaches to use in developing players.
- To provide consistent leadership in the development of wheelchair basketball in Canada.
- To provide age and stage appropriate competition to practice ratios that will allow our players to develop the skills that are fitting for their stage of development.
- To place the suitable emphasis on winning that is required for each stage of development.
- To ensure that the fundamental movement and mental, technical and tactical wheelchair basketball skills are being introduced in a systematic and timely way.
- To ensure appropriate considerations are taken to design programs that will be inclusive and allow everyone the potential for self-fulfillment.
- To recognize the importance of quality leadership at all levels of programming.

THE BASIC LTAD PATHWAY

Apart from a few small modifications, the Wheelchair Basketball LTAD closely follows the seven basic stages of the LTAD model presented in Canadian Sport for Life (2005). The seven stages as described by CS4L are presented below (Figure 1).

The first three stages are intended for all individuals who participate in physical activity and represent the process for acquiring basic physical literacy. Stages four to six, from Train to Train through Train to Win, represent the high-performance option for athletes who wish to build on their basic skills and take their game to the highest competitive ranks.

FIGURE 1: SEVEN STAGES OF LTAD

Athletes with disabilities pass through the same stages as able-bodied athletes presented below, but chronological ages and rates of progress may differ depending on the type and degree of disability. (Source: No Accidental Champions, 2011)

Active Start	Males and Females 0 - 6	Learn FUNdamental movements and link them together in play
FUNdamentals	Males 6 – 9 Females 6 - 8	Learn all FUNdamental movement skills and build overall motor skills
Learn to Train	Males 9 – 12 Females 8 – 11	Learn overall sport skills
Train to Train	Males 12 – 16 Females 11 – 15	Build aerobic base, develop speed and strength, further develop and consolidate sport-specific skills
Train to Compete	Males 16 – 23 +/- Females 15 – 21 +/-	Optimize fitness preparation and sport-, individual-, and position-specific skills as well as performance
Train to Win	Males 19 +/- Females 18 +/-	Focus on podium performances
Active for Life	Enter at any age	Smooth transition from an athlete's competitive career to a lifelong physical activity and participation in sport

Note *that Figure 1 shows the typical age ranges when individuals who are able-bodied pass through each stage. Individuals with disabilities, whether congenital or acquired, may pass through these stages at significantly different ages. They may also pass through the stages at vastly different rates depending on the nature of their disabilities. For example, individuals with acquired disabilities might pass through some stages more than once – first as a person without a disability and later as a person with a disability.*

The wheelchair basketball LTAD includes the Learn to Win stage, as well as age modifications to the existing stages to accommodate the various ways and ages that athletes enter the sport. These modifications are detailed throughout this volume.

TWO ADDITIONAL STAGES

In addition to these seven basic stages, two extra stages are identified for athletes with disabilities: Awareness and First Contact. These extra stages are particularly important for individuals with an acquired disability who, prior to injury or illness, may have had no contact with, and no knowledge of, sport and physical activity for persons with a disability. These additional stages are shown in Figure 2 below.

Figure 2: The CS4L-NAC Model

Awareness and First Contact programs are used to inform and engage potential athletes at all ages since disabilities may be congenital or acquired. (Source: No Accidental Champions, 2011)

AWARENESS STAGE

Opportunities for persons with disabilities to participate in sport and physical activity are not always well known to the general public. The Awareness stage simply signifies the need of sports such as wheelchair basketball to inform the general public and prospective athletes with disabilities of the opportunities available through good communication.

In the case of individuals who acquire a disability, the period following acquisition of a disability is generally one of great change and transition. Some of their previous physical activities may no longer be open to them in the same form, and they may not be aware of the sports and physical activities that are available. Awareness plans and effective communication can help to ease this transition. As well, these plans can increase awareness among parents and people who work with persons with disabilities, such as health care professionals and teachers.

FIRST CONTACT STAGE

The First Contact stage is where persons with disabilities have a positive first experience of the sport and remain engaged. Accordingly, wheelchair basketball groups need to develop programs that provide suitable orientation for prospective wheelchair athletes, helping them to feel confident, comfortable in their surroundings, and welcome among peers and training personnel.

RETENTION

At the end of their careers, wheelchair athletes who retire from competition should be encouraged to remain involved in the sport as coaches, program volunteers, fundraisers, mentors, or officials. Through their experiences in the sport, they can act as role models who provide a wealth of information, expertise and guidance to upcoming athletes.

10 KEY FACTORS OF LTAD

There are 10 key factors that influence Long-Term Athlete Development. These factors reflect the sport science, research, coaching best practices and general principles upon which the LTAD model is built.

1. PHYSICAL LITERACY

Physical literacy is the mastering of fundamental movement skills and fundamental sport skills that permit a child to read their environment and make appropriate decisions, allowing them to move confidently and with control in a wide range of physical activity situations. It supports long-term participation and performance to the best of one's ability. Physical Literacy is the cornerstone of both participation and excellence in physical activity and sport. Ideally, physical literacy is developed prior to the adolescent growth spurt. It has been adopted as the foundation of the Sport for Life concept in Canada.

Children of all abilities need to develop physical literacy by learning a variety of fundamental movement skills at appropriate stages of development. However, they should learn these fundamental skills with and without mobility aids, be it a wheelchair or other device.

Children and youth with physical disabilities need to explore beyond the confines of their mobility aids to increase their physical literacy. If children do not learn fundamental movement skills at the appropriate time in their development, they might not reach their full movement and athletic potential later. For example, if a child's only physical activity up to age 12 has been walking in braces, what kinds of activities and sports will this child be able to pursue later in life?

Since the nervous system develops quickly in children, movement activities that stimulate the nervous system need to be encouraged as early as possible. This includes activities that develop the ABC's of physical literacy – agility, balance, coordination and speed. If children do not develop their movement skills early, their physical activity options may be significantly reduced at later stages of LTAD.

2. SPECIALIZATION

Early specialization in a late-specialized sport, like wheelchair basketball, has been shown to lead to:

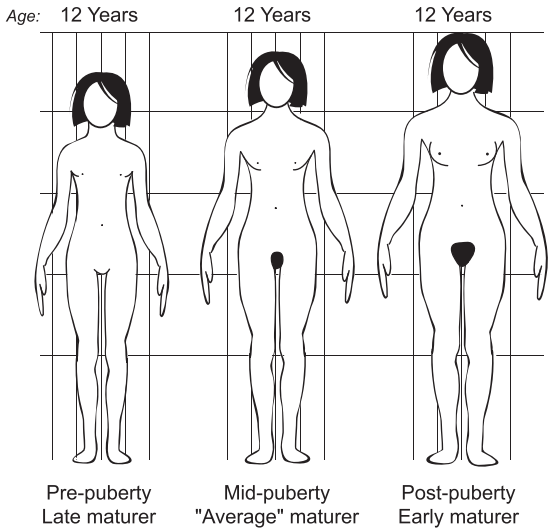
- One-sided sport-specific preparation;
- Lack of the basic fundamental movement skills;
- Overuse injuries;
- Early burnout;
- Early retirement from training and competition and often withdrawal from physical activity;
- A narrowed perception of value and role on the team, particularly as it relates to classification; and
- For Late Entry Athletes, early specialization can lead to an incomplete sport experience that leads to retirement.

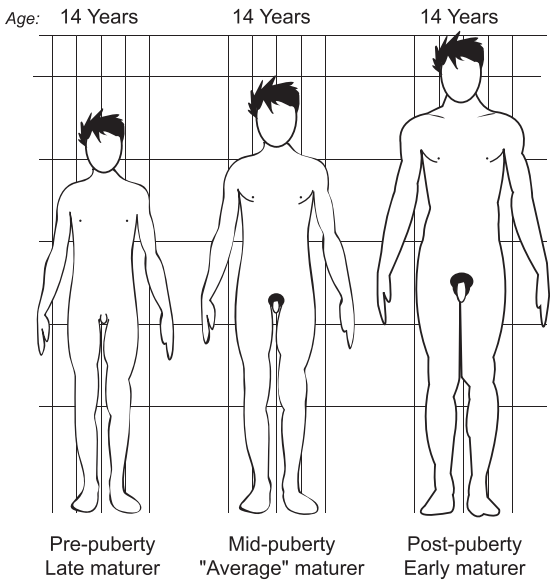
Specialization is not only the concept of specialization in one sport; it is also specialization within the sport. Wheelchair basketball has continually forced the tall player to play in the "post" or players of lower classification to play a narrowly defined role. Often this has meant the adolescent has not been allowed to use all of the skills required to play the game at the later stage of LTAD when other late maturing players catch up and sometimes pass this player. Specialization has also occurred in our training sessions where coaches tend to focus more on team development rather than player development.

3. DEVELOPMENTAL AGE

Everyone passes through the same stages of development from early childhood through adolescence, but the timing and rate of development varies. This is described as the difference between chronological age and developmental age. For example, two children may be the same chronological age (e.g. 12 years old), but they may be four to five years apart in developmental age. Coaches need to take into account these differences in developmental age when they design programs for their adolescent and post-adolescent athletes.

Figure 3: Maturation in Boys and Girls (Adapted from "Growing Up" by J.M. Tanner, 1973)





When considering developmental age, adolescents can be classified as early or late maturers, meaning peak height velocity (PHV), muscle mass growth, and skeletal growth may occur at different times for different athletes. These developmental features are influenced by societal and cultural factors, including each athlete's pre- and post-natal nutrition.

LTAD requires that coaches identify early, average and late maturers in order to design appropriate training and competition programs in relation to each athlete's readiness for training. (See key factor "Sensitive Periods" for more on the subject on training readiness for different athletic capacities.) Physical developmental age can be determined by measuring skeletal maturity or bone age, after which mental, cognitive and emotional maturity should also be considered.

Note that specific disabilities may dramatically change the timing of childhood and adolescent development and maturation.

4. SENSITIVE PERIODS

During human growth and maturation, there are sensitive periods of accelerated adaptation to training where improvements in endurance, strength, speed and skill are especially pronounced. Typically, most sports have ignored these sensitive periods when designing athlete training plans.

The majority of coaches worldwide currently design long and short-term training models, as well as competition and recovery programs, based on the chronological ages of their athletes, and not the sensitive periods. However, research has shown that chronological age is a poor basis in designing athlete training and competition, since musculoskeletal and emotional development of athletes between the ages of 8 and 16 can vary greatly at any given age. From what is known, the same holds true for athletes with a disability. Therefore, superimposing adult training and competition models on children is not a good approach.

The sensitive periods are windows of opportunity that must be capitalized upon. It is during these sensitive periods that children and adolescents are physiologically most receptive to acquiring skills and/or improving specific physical attributes such as strength and endurance.

Ideally, programs should determine the developmental age of their athletes, in addition to their chronological age, so athlete training plans can consider the sensitive periods.

One practical solution is to use the onset of the growth spurt or Peak Height Velocity (PHV) as a reference point for the design of optimal individual programs with relation to sensitive periods of trainability. Peak Height Velocity (PHV) is the age at which the individual's growth rate is fastest during the adolescent growth spurt.

Prior to the onset of adolescent growth spurt, males and females can train together and chronological age can be used to determine training, competition and recovery programs. During and after the growth spurt, the training emphasis needs to be adjusted. The average age for the onset of PHV is 12 years for females and 14 years for males. With respect to athletes with a disability, coaches should be aware that PHV can be impacted by disability. As an example, individuals with spina bifida may experience PHV at an earlier age.

RESEARCH IN THIS AREA INDICATES THAT:

- The sensitive periods for the accelerated improvement of speed occur for males between ages 7 and 9 and between ages 13 and 16. For females these occur between age 6 and 8 and between age 11 and 13 (chronological age). As mentioned previously, these age ranges can vary due to disability.
- There is an accelerated improvement for endurance capacities after the onset of the growth spurt.
- There is an accelerated improvement in strength for males 12 to 18 months after peak height velocity occurs (after growth decelerates).
- There is an accelerated improvement in strength in females immediately after peak height velocity occurs or the onset of the menarche (the onset of the menstrual cycle usually occurs one year or less after the peak height velocity).
- The sensitive period for skill development occurs between age 8 and 11 for females and between age 9 and 12 for males. Fundamental movement skills such as the ABC's of athleticism (agility, balance, coordination and speed) form the basis for all sports. By the time children experience the onset of their growth spurt, these should be able to perform these skills proficiently. The ABCs as they relate to wheelchair athletes would include pushing, throwing, wheelies, hopping the wheelchair, and momentary tilting side to side.
- Research in this area suggests that if able-bodied athletes do not take full advantage of training particular physiological abilities during the sensitive periods, their opportunity for optimum development is lost and cannot be fully retrieved at a later time. Because of the limited research on athletes with a disability, it is difficult to determine the degree to which sensitive periods influence their long-term development.
- The onset of peak height velocity (the adolescent growth spurt) should be a primary reference point in designing optimal training programs. Otherwise, adult training programs tend to be superimposed on young athletes with less than optimal outcomes. For example, an Early Entry athlete may need to reduce their training during the growth spurt in order to give his/her body time to accommodate rapid growth. For the Late Entry athlete who is past PHV, the training program may not correspond to their level of skill development if they have missed skills training prior to PHV.
- Coaches need to be aware of the sensitive periods in developing the basic athletic skills and attributes. Once these are mastered, it is possible to introduce and develop more specialized sport specific skills.

5. PHYSICAL, MENTAL, COGNITIVE AND EMOTIONAL DEVELOPMENT

More than just fitness, the skills of the game need to be addressed. All areas of an athlete's development must be included in sport programs. Training, competitive and recovery programs should consider the mental, cognitive and social/emotional development of each athlete. Decision-making is a major point of emphasis.

In wheelchair basketball, one must be aware of the wide array of disabilities. It is rare that a coach has a homogeneous group of players. Understanding each individual's disability is necessary for coaches to ensure that they are providing each athlete with the correct training (physical, mental, cognitive), and social/emotional support that they need. Every athlete and every disability is different; the ability of the coaches to provide diverse training that reflects this is vital for proper development. For example, special consideration should be paid to Late Entry athletes and their social/emotional development. It may be very different at the various stages of the model in comparison to the Early Entry athlete.

A major objective of LTAD is a holistic approach to athletic development. This includes emphasis on ethics, fair play and character building throughout the various stages – an objective that reflects Canadian values. Coaches must ensure that value is created for every athlete by taking all types of disabilities into consideration without limiting persons with certain disabilities to constricted roles. Programming should be designed considering the athlete's cognitive ability to address these concepts.

6. PERIODIZATION

Periodization refers to creating logical schedules for athlete training, competition, and recovery to optimize performance. Applying sport science, periodized plans organize and manipulate the modality, volume, intensity, and frequency of an athlete's training through long-term (multi-year) and short-term (annual) training, competition, and recovery plans to achieve peak performances when needed.

Annual periodized plans are typically divided into smaller blocks of time called macro, meso, and micro cycles. Macro cycles are the largest blocks within a training phase, usually 8 to 16 weeks in length. Macro cycles are generally composed of meso cycles, which are usually about one month in length. Meso cycles are in turn generally composed of micro cycles, which are usually seven days in length.

Using Terry Orlick's Green Zone and Gold Zone concepts, periodization provides the framework for athletes to manage their training and performance (Gold Zone) in resonance with their everyday life demands (Green Zone). For instance, Gold Zone planning could include the sequencing of training for fitness, skills and tactics within a day of training. Green Zone planning could include planning ahead for key life events such as school exams or projects so that the extra demands of competition don't result in too much stress or even worse, burnout.

Instead of basing training plans on the most recent practice or the current competition situation, coaches are encouraged to use periodization to plan training and select competitions based on a long-term view of athlete needs within the context of an annual or even quadrennial plan. This will generally require greater individualization of training plans for athletes within team sports. A periodized plan that takes into account both Gold Zone and Green Zone factors can also be evaluated more effectively as time goes on.

7. CALENDAR PLANNING FOR COMPETITION

In order to optimize athlete development and ensure participation successes, competition planning at each stage of the LTAD pathway is critical. At certain stages, developing the physical capacities take precedence over competition. At later stages, the ability to compete well becomes the focus. When individuals at the entry levels of LTAD have a heavy competition schedule, rapid development may occur, but performance always plateaus later. Without adequate practice time, fundamental movement skills and fundamental sport skills often get ignored, as does mental and social / emotional training.

SUGGESTED RATIOS		
Active Start	>	No specific Ratios
FUNdamentals	>	All activity FUN based
Learn to Train	>	75% Training 25% Competition
Train to Train	>	75% Training 25% Competition
Train to Train (Phase 2)	>	66% Training 33% Competition
Train to Compete	>	50% training 50% competition and competition specific training
Learn to Win	>	50% training 50% competition and competition specific training
Train to Win	>	50% training 50% competition and competition specific training
Active for Life	>	Based on individual's desire

It is important to understand that each of these ratios are suggested and would not apply to an entire calendar year and not to every athlete. Pre-season and off-season will vary the training ratios as well the entry point of the particular athlete. For example an athlete who is just entering the Learn to Train phase has not yet competed in a true competition. So towards the beginning of this stage, that athlete must learn how the game is played and likely the 25% competition suggestion would not apply until the end of the season. An additional example would be an athlete in the Train to Win stage. The ratio of training to competition will alter considerably as the athlete moves toward the goal competition – World Championships or Paralympic Games. As the athlete gets closer to this event, their training will decrease and the competition will increase.

A considerable obstacle with wheelchair basketball across Canada is the limited availability of appropriate training and competition opportunities. It is essential that athletes are provided the opportunity to train and compete amongst others within the same stages of LTAD as well as with others of their same emotional and social development.

Programs need to be intentionally created and maintained to meet the skills required for the LTAD stage and within the capacities of the athletes. An individual placed in a suitable program at the appropriate level and meeting their appropriate needs will have reduced boredom and frustration. Such planning will also assist in the retention of all athletes.

The reality of wheelchair basketball in Canada is that it is often difficult to create and sustain programs that meet the needs of all the individuals participating, due to variable numbers and geographic challenges, as well as athletes of varying ages and levels of training and experience.

As much as possible, competition and tournament calendars should support and be consistent with LTAD principles and the respective stages, allowing provinces and clubs to adequately plan their particular calendars within the appropriate ratios.

Planning and implementing an optimal competition structure for all stages is the biggest challenge facing team sports in our country.

8. SYSTEM ALIGNMENT

System alignment is essential to the implementation and resulting success of the LTAD model. Ideally activities in schools, communities, clubs, PSO's and NSO's should be fully integrated through LTAD.

With varying entry points of athletes participating in wheelchair basketball, the duration of time they spend at each stage will vary according to age, ability, disability, previous sporting experience etc. Having clearly defined stages and alignment of those stages will assist in the clarity of the athlete pathway. If all sports in Canada follow the same guidelines for LTAD, we will be better able to understand an athlete's general experiences at those stages.

LTAD system alignment is essential when dealing with an athlete with an acquired disability. If the athlete has participated in another sport prior to their disability they will have moved through the stages of LTAD for that sport. Once that athlete then makes the switch to wheelchair basketball, they may have met many of the requirements of the previous stages. Therefore, the duration of each stage will vary according to each athlete's skill acquisition rather than chronological age.

All aspects involved in sport must work together in order to ensure proper alignment and support. LTAD recognizes interdependency, thus relying on the entire sport community to work together. In our current system of multi-sport provincial sport organizations (PSOs) and clubs, having a clear wheelchair basketball LTAD pathway is essential to the success of wheelchair basketball as well as the sport community. Athletes may decide to move from sport to sport or region to region. With proper system alignment and support for the athlete, this type of movement should be seamless. Coaches, officials and administrators should also be able to move seamlessly from one delivery system to the next.

Groups cannot work in isolation. Each element in the system plays a crucial role. For the system to work well, they must be mutually supportive, clear in their roles and responsibilities and clear in how they contribute to the "bigger picture" of athlete development.

Athletes need to see clear pathways for players, coaches, officials and administrators, and there should be multiple entry points for athletes to become involved. These pathways must be available for all three streams of sport: health of the nation, develop the game and compete for the nation.

System alignment also involves integrating all of the ancillary groups into the sport system. This includes such groups as the sport scientists, trainers, managers, nutritionists, therapists, counselling, equipment maintenance, sponsors, etc.

9. EXCELLENCE TAKES TIME

It takes many months and years of training and practice to become the best in your sport. Some research has suggested that a minimum of ten years of practice (sometimes stated as 10,000 hours) is needed for experts in any field to reach elite levels of performance (Ericsson et al. 1993, Ericsson et al. 2007). Other research suggests that elite athletes require 12-13 years of practice to achieve distinction at the international level (Gibbons, 2002).

This is not to say that genetics do not play a role. For example, we know that genetics has influence in physical attributes such as height, vision, and even training of VO2 max. Similarly, social factors and environment have an impact on opportunities for athletes to train, compete, and become identified as talents. However, the precise extent to which genetics and environmental factors determine level of achievement remains unclear and unpredictable.

Therefore, while the relative roles of genetics and environment continue to be researched and discussed, LTAD seeks to offer guidance in the training factors that athletes and coaches can clearly control. Total hours of training is one of these factors.

And while the total number of hours required to reach the top sporting ranks also continues to be debated, LTAD recognizes that the basic evidence points to the same conclusion: there are no shortcuts to achieving excellence in sport. Athlete development is a long-term process (Gibbons, 2002), and elite athletes generally need a decade or more of practice to become world-class. Excellence takes time.

Recognizing the fact that excellence takes time, it would be easy to jump to the conclusion that early specialization is needed to create elite athletes. "If I start young then I will be better sooner." The opposite is actually true. Most athletes only have 10 years at an elite level. Studies on youth participation in sport and dropout suggest that premature specialization may contribute to overuse injuries, burnout, and dropout from activity (Baker, 2003).

In wheelchair basketball, special consideration must be paid to this rule, as it does not apply in the same context as it does able-bodied athletes. One must take into account both chair skills and sport skills and realize that Early and Late Entry athletes will have different experiences when it comes to wheelchair basketball. An Early Entry athlete will have a different accumulation of training, most likely having strong wheelchair skills and possibly some wheelchair basketball experience. A Late Entry athlete may have an array of experience from able-bodied sports, but may not have the comprehensive wheelchair basketball sporting experience, nor the chair skills, due to the lack of time in a chair.

Coaches and parents should be aware that the required years of training do not necessarily translate into being involved in wheelchair basketball for 10 years. Late Entry athletes, in particular, may bring training experience from other sports that can transfer to wheelchair basketball (i.e. basketball, bobsledding, track). This training can be brought forward and can contribute to the years and thousands of training hours that many attribute to success at an elite level.

10. KAIZEN (CONTINUOUS IMPROVEMENT)

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Wheelchair Basketball Canada's vision for 2020 is to be the world leader in wheelchair basketball. To do this, we must be agents for change. This means being proactive in creating innovative programs and services.

We must continue to respond to research to stay up to date and in fact to be trend-setters. We need input from all partners. Wheelchair Basketball has a sport science and medical program plan (SSMP) and is continuing to build Integrated Support Teams (IST) at all levels. These are groups of world-class experts who provide information to the coaches and the athletes on the most recent material. Group decisions are made that produce the best possible training for the athletes. No one can be the expert in all areas of a sport. We must also constantly "mine the data" to share best practices within our sport and from other sports. Change is brought about through improvement and innovation. These changes must be monitored to evaluate their effectiveness.

4 ADDITIONAL FACTORS FOR WHEELCHAIR BASKETBALL

11. EQUIPMENT

Equipment and facilities have broad implications for individuals playing wheelchair basketball. Equipment and facilities refer to more than the court and basketballs. For wheelchair basketball, the accessibility of the gym and supporting components such as washrooms and showers must be addressed when selecting a venue for training or competition. As well, facility and equipment needs change across the developmental model. Coaches need to be aware of how equipment changes as an athlete advances through the LTAD pathway.

As with many sports, wheelchair basketball programs are also in competition for gym time. Wheelchair basketball teams often find themselves lower in scheduling priority. Partnerships need to be developed that address scheduling issues.

The first concern is physical accessibility of the training and competition facility. Athletes must be able to enter the building in which the court is located. There must be appropriate space around the court to provide athletes with a safe distance in the out of bounds area. Bench areas need space for individuals sitting in wheelchairs as opposed to individuals sitting. Wider access to and from the gym is important because most basketball wheelchairs are wider than a standard door.

The second concern in this area is priority in scheduling. It is a given that gym time is at a premium in most communities with most of the time being given to higher profile teams and programs. Every effort should be made to develop partnerships with the individuals who oversee the facilities. Links should be developed between local basketball programs and their wheelchair basketball counterparts.

The third concern in this area is the wheelchair basketball wheelchair. Coaches should become familiar with the repairs and support equipment needed to maintain them and learn to teach these repairs or have somebody assigned to teach them.

Coaches should also learn the basics of measuring a person for a wheelchair. A good resource in this area is a veteran player of a similar class and body type as the player in question. It is important to choose a wheelchair that is adjustable early in a player's development to allow for some experimentation and individualization of the wheelchair setup. Younger and smaller players need to be in smaller wheelchairs to allow skill execution. Consideration should be made for growth, but it should not be a deciding factor in certain measurements as the wheelchair could limit the athlete's execution of skills.

As an athlete proceeds through the LTAD, their equipment will change. Basketballs increase in size and weight, the height of the basket increases and the dimensions of the court changes. Coaches should be aware of these changes and prepare athletes for the next level with these things in mind.

12. ENTRY POINTS

In wheelchair basketball there are two entry points and three entry streams for both athletes and coaches. For athletes these are partly based on biological and developmental ages, and partly on training ages. For coaches these are partly based on coaching experience and partly on basketball experience.

Early Entry athletes enter the sport with little sport experience, minimal basketball experience, and at an early biological or developmental age (typical chronological ages of 5-10 years).

Late Entry athletes typically range in chronological age from 10 years to 40 years and enter the sport through one of two streams. They could have a variety of sport development backgrounds:

A. Late Entry basketball athletes may enter the sport after having progressed through the Canada Basketball model. These athletes will be from differing training and experiential stages of the Canada Basketball model.

B. Late Entry athletes who have other sport backgrounds may choose wheelchair basketball at a later chronological age. Their main sport experiences are from sports other than basketball, and their wheelchair movement skills may be either well developed from other wheelchair sports or not developed as they have come from ambulatory sport backgrounds. Late Entry athletes are more likely to be at several stages depending on the skill they are developing. This means that the skill is the critical variable in coaching. As coaches, we need to constantly assess skill level in Late Entry athletes to adjust coaching and appropriate competition. These entry characteristics are critical for the appropriate recruitment, coaching and development of athletes.

There are also considerations with respect to the functional classification characteristics of athletes such as athletes who use a chair for everyday use (typically classes 1-3) and ambulatory athletes who only play in a chair (typically classes 3-4.5). Since these characteristics are varied and individual, they are to be considered within the contexts of coaching and athlete development, as opposed to the model. There are nine stages to the LTAD model and the activities and progression through the model may vary significantly depending on the entry characteristics.

Characteristics of the athlete to be considered include biological age, sport experience, wheeling experience, and basketball experience. Based on these entry characteristics, athletes can enter, be placed and progress through the model at a pace that is appropriate, individual and optimal.

Early Entry coaches would include individuals whose first coaching experiences are within wheelchair basketball. These coaches may or may not have experience as players.

LATE ENTRY COACHES ALSO COME FROM TWO STREAMS:

a. Coaches who have been trained and/or certified within the Canada Basketball NCCP system will be able to enter at a level commensurate with their basketball experience, and then focus on wheeling skills, wheelchair basketball specific skills and tactics and classification.

b. Coaches who have been trained and/or certified in other sports will need to focus on basketball concepts. These coaches may already be familiar with the concepts of wheeling and classification if their background is in other wheelchair team sports.

For all coaches, there are three places where standard basketball knowledge diverges from wheelchair basketball knowledge in each stage. First, it occurs when we address the different functional abilities of athletes as we teach basketball skills. Second, it occurs when we teach wheelchair specific skills like pushing, bounce stops, etc. Third, it occurs when we address different strategies and tactics that are linked to the lack of lateral movement (i.e. screening, back picking, etc.).

In both streams, coaches will need to function within wheelchair basketball at a level and pace that is appropriate to their individual needs and strengths in wheelchair basketball, and that is related to their experience as a coach.

Coaches may also enter coaching streams with varying experience and knowledge with respect to disabling conditions and functional classification.

Coaches who enter the sport with a disability sport background will find they need to learn about basketball specific factors. They may also find that some of their assumptions may be challenged.

Coaches who enter the sport with no prior experience working with athletes with a disability are encouraged to do what they do best, which is simply to coach! Coaching an athlete who happens to have a disability is just coaching. In fact, coaches who love coaching and who strive to individualize their coaching to meet the needs of each athlete are perfect for the job.

Coaches will gradually learn the nuances of functional ability and wheelchair movement. Athletes and other coaches will gladly share their knowledge and experiences with a new coach who demonstrates the desire to coach athletes at their appropriate LTAD level.

For athletes and coaches, the entry point will determine where they fit within the LTAD pathway. They will then move through and between the various stages at an individually determined rate.

13. CLASSIFICATION

Wheelchair basketball has additional sport-specific rules that make it unique. One of those rules is a team balance rule, also referred to as the classification system. The team balance rule says that no more than 14 points can be placed on the court at any one time. Each of the five players on the court is given a point value based on his/her functional ability. Functional ability is simply the amount of muscle you have to use when you are playing. This allows players of different functional ability to compete fairly on the court at the same time. For greater detail on the system see the appendix.

Players and coaches should understand the classification system and the functional ability on which it is based and understand the philosophies behind it.

First, the primary focus for the athlete and coach when the athlete is beginning to learn the game is on functional ability. This will affect how a player performs the various skills. Every athlete may be able to perform a particular skill; the performance of that skill may be different based on functional ability.

As an example, a person with complete paralysis from the chest down will generate power and stability for a shot by leaning into the backrest of the wheelchair. Meanwhile, an individual that is a single-leg below-knee amputee will use some leg function and back extension.

Athletes should have an understanding of their functional ability so they use all their functional muscles. Coaches need to understand functional differences so that they can adjust their skill instruction to an athlete's functional ability.

Second, coaches and athletes should understand how functional ability and wheelchair installation or sitting position interact. It is extremely important that an athlete be in the correct sitting position. The coach and the athlete should consider not only the position or role the athlete plays on the court (i.e. guard, forward, center), but also the individual's functional ability.

Third, an over-emphasis on a player's classification too early in the development process can cause an athlete to connect his/her long-term success to their classification. If an athlete's long-term success is seen as being limited to their classification, then ultimate success is not completely controllable. Athletes will not focus on the area which ultimately will lead to their greatest success and over which they have the most control – skill development through quality practice.

Fourth, there is an appropriate time for an athlete and coach to integrate classification into the player's development. That point will come when classification plays a significant role in the tactics and strategies in the game, typically after the Train to Train stage.

Lastly, classification officials are officials like any other in the game. For players to maximize their potential, we need great classifiers who provide accurate classifications so athletes and coaches have a reference point.

14. COACHING

Quality coaching is critical to successful delivery of LTAD. Coaches of wheelchair basketball athletes should have a clear understanding of the Wheelchair Basketball LTAD coaching philosophy and ensure that they are aligned with that philosophy, especially in relation to the specific LTAD stages of their athletes.

In addition to philosophy, there are several other aspects of which coaches should be aware.

First, when coaching athletes with a disability, coaches should understand the nature of each athlete's disability and how it impacts the athlete's execution of the skills of wheelchair basketball. All athletes may perform all of the skills of wheelchair basketball, but they may use their functional muscles differently in the performance of those skills.

Second, coaches need to be creative in designing practices that address a group of athletes that are in different stages of development from one another, as well as individual athletes that are themselves in multiple stages of development. In order to maximize the potential of each athlete, practices must be designed with a broader range of development in mind and cannot be created with a traditional, narrow focus.

Third, all coaches should have familiarity with all stages of the LTAD pathway. In particular, the coach who has been coaching basketball players at the highest levels of the Canada Basketball LTAD or who has played at the highest levels of the Wheelchair Basketball LTAD should still understand how to teach pushing. Just as with the athletes in the LTAD, a Late Entry coach should not skip or bypass a stage in their coaching development.

Fourth, it is particularly important that coaches encourage mature players and former players to enter coaching and stay involved in the sport. This begins with involvement in coaching early in a player's career. It is especially important that we prepare and encourage female athletes to pursue coaching so as to develop a pool of female coaches. The population of women in wheelchair basketball is much smaller than males, so special attention must be given to developing and recruiting women for coaching.

Fifth, in the LTAD pathway, all coaches are given equal value based on their own level of competency. A great coach is recognized for being great regardless of the stage of development of their athletes. It is not necessary and sometimes detrimental to take the great Learn to Train coach and move them up to Train to Compete. We must also recognize that the head coach of a national team may not be the best person to coach athletes at the Train to Train stage. It is for this reason that great coaching is recognized without concern for the stage at which it is occurring.

THE 10 Ss OF TRAINING AND PERFORMANCE

Under LTAD, the essential training elements that coaches and programmers need to consider when working directly with athletes are described as the 10 Ss of Training and Performance.

FIVE BASIC Ss

STAMINA (ENDURANCE)

The sensitive period for training stamina occurs at the onset of the adolescent growth spurt (known as Peak Height Velocity). Aerobic capacity training is recommended before children reach their fastest rate of growth (PHV). Aerobic power should be introduced progressively after growth decelerates.

STRENGTH

The sensitive period for training strength in females is immediately after their fastest rate of growth (Peak Height Velocity, or PHV) or at the onset of menarche (first menstruation). For males, the sensitive period is 12 to 18 months after their fastest rate of growth.

SPEED

For males, the first sensitive period for training speed 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 sensitive period for training speed occurs between the ages of 6 and 8 years and the second sensitive period occurs between the ages of 11 and 13 years. (To date, all research on speed training has been done according to chronological age.)

SKILL

The sensitive period for skill training begins at age 9 for males and age 8 for females. Skills can be trained throughout the lifetime of the athlete, but the rate of skill adaptation and improvement steadily diminishes after the onset of the adolescent growth spurt.

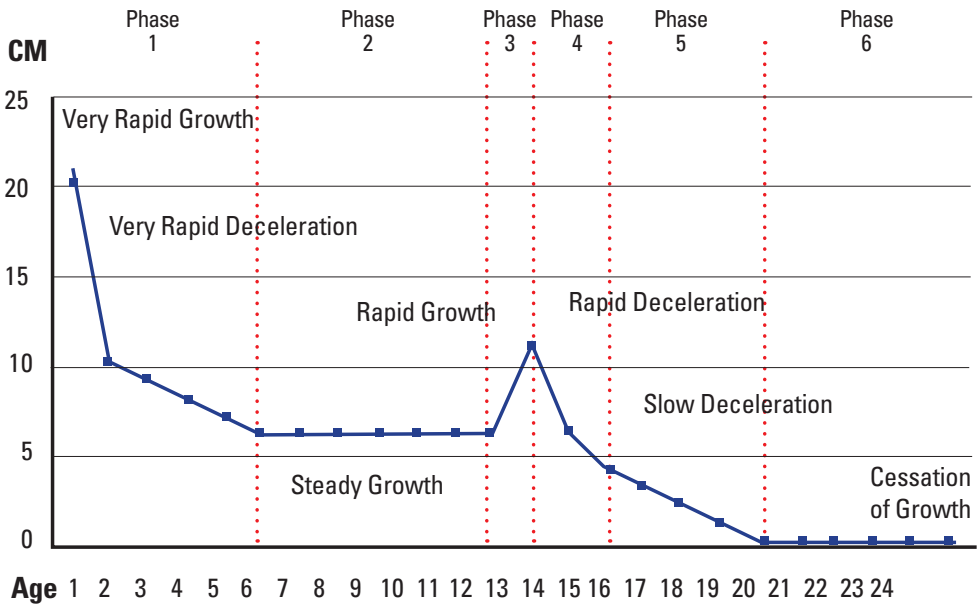
SUPPLENESS (FLEXIBILITY)

The sensitive period for training suppleness in both females and males occurs between the ages of 6 and 10 years. However, special attention should be paid to flexibility during the adolescent growth spurt due to the sudden growth of bones, which makes muscles very tight and increases stresses on ligaments and tendons.

FIVE ADDITIONAL Ss

STRUCTURE / STATURE

The structure/stature component links the six stages of growth to the sensitive periods of trainability. Coaches and parents can use stature measurements (e.g. height) before, during and after maturation as a guide for tracking developmental age. Such tracking then allows coaches to address the sensitive periods of accelerated adaptation to training of key physical capacities such as stamina, strength, speed, skill and suppleness (flexibility).



PHASES OF MEASUREMENT

Phase 1: Very rapid early growth, followed by rapid and then slow deceleration of growth until age 6.

Phase 2: Steady growth from age 6 until the onset of the growth spurt (GS).

Phase 3: Rapid growth until peak height velocity (PHV).

Phase 4: Rapid deceleration of growth.

Phase 5: Slow deceleration of growth.

Phase 6: Cessation of growth.

(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. While overtraining or over-competition can lead to burnout, improperly addressing sustenance can lead to the same results.

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 competition tours should complement, not conflict, with the timing of major academic events at school.

Overstress should be monitored carefully, including the everyday stresses related to schooling, exams, peer groups, family, boyfriend or girlfriend relationships, and increased training volumes and intensities. Coaches and parents should work together to establish a good balance between all factors.

SOCIO-CULTURAL

Sports 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
- Geography
- Literature
- Diversity
- Architecture
- Music
- History
- Cuisine
- Visual art

THE LTAD PATHWAY FOR WHEELCHAIR BASKETBALL

The Wheelchair Basketball LTAD recognizes that every individual chooses a different pathway in his or her quest to find self-fulfilment through the game. Wheelchair basketball by its very nature is a competitive game. Through the LTAD process, athletes can find their place on a continuum from having fun learning and playing the game to competing for medals at the highest level of play.

The Wheelchair Basketball LTAD stages are designed to provide wheelchair basketball athletes with age-appropriate skills training and competition at each stage of their maturation and development. Throughout the LTAD pathway, athletes have the right to choose where on the competitive continuum they wish to participate.

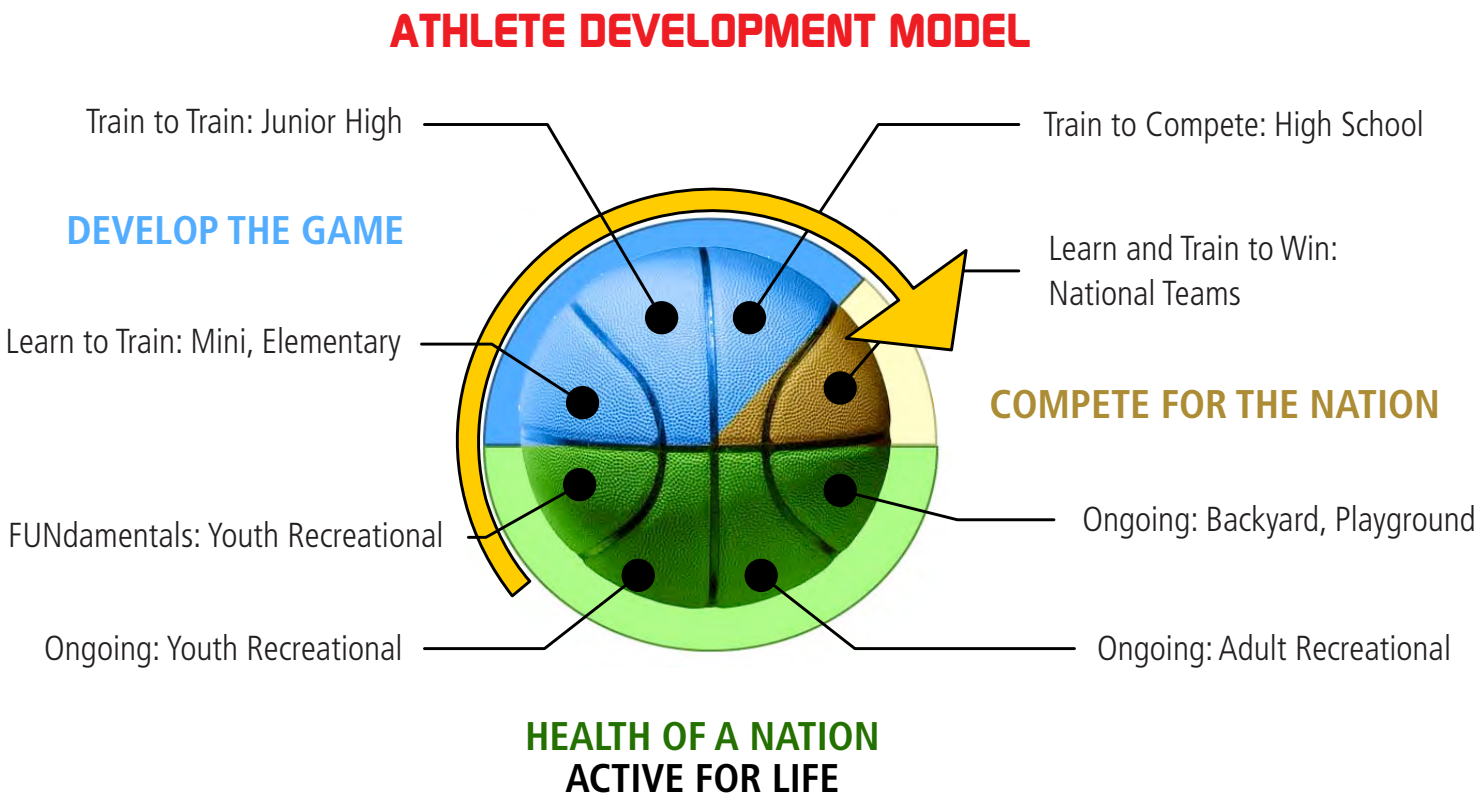
Some athletes may aspire to compete at the highest level possible, while others will prefer to enjoy the game at more recreational level. The LTAD model recognizes that fun and participation should be the priority at the younger ages. As they mature and develop in their skills and game knowledge, they can pursue higher levels of competition if they wish.

Eventually, even those athletes who play at the highest levels will want to exit the high-performance competitive stream. They may choose to return to recreational play that provides enjoyment and wellness through regular activity, or they may retire from play and take roles as coaches, officials, volunteers or administrators in the sport. These opportunities are crucial for maintaining the health of the individual and the nation.

Figure 3 shows how the stages of the Wheelchair Basketball LTAD model relate to each other in developing and retaining athletes through their lifetime.

Figure 3: Wheelchair Basketball LTAD

Adapted from Canadian Basketball Athlete Development Model, 2008.



STAGES 1, 2, AND 3: PHYSICAL LITERACY

The first three stages of the Wheelchair Basketball LTAD focus on delivering the kinds of experiences in activity and sport that will develop physical literacy in all participants. In accordance with the definition put forward by Canadian Sport for Life, physical literacy represents the mastering of fundamental movement skills and fundamental sport skills that permit a child to read their environment and make appropriate decisions, allowing them to move confidently and with control in a wide range of physical activity situations.

Physical Literacy is the cornerstone of both participation and excellence in physical activity and sport. Individuals who are physically literate will develop the skills and confidence to participate in a wide range of physical activity and sports throughout their lifetime. Through physical literacy, our children can hope to experience greater health and quality of life through their lifespan, while also acquiring the foundation skills to pursue competitive sport if they so choose.

1. ACTIVE START

Females and males 0-6 years

Wheelchair basketball is a late maturation sport and therefore does not recommend any formal, adult organized basketball at the Active Start stage. Infants, toddlers and preschool children simply need to be physically active in free play and physical activity that features a minimum of structure. This develops essential motor coordination while children explore a range of movement in a supportive, non-judgemental environment.

2. FUNDAMENTALS

Females 6-8 years, males 6-9 years

The FUNdamentals stage is where children acquire fundamental movement skills. The underlying message during this stage is that children should have fun in all activities. Through fun games and activities that encourage a love of sport, children begin to develop basic physical, affective, cognitive and psychosocial skills. This is the foundation upon which the child's personal and athletic potential should be built.

The Wheelchair Basketball LTAD recognizes that there are two sub-phases of the FUNdamentals stage. The first is called the Movement phase, where children generally ages 6 to 7 years learn wheelchair basketball simply through the fundamental movement skills. The second phase is the Modified Games phase, where children ages 8 and 9 years learn the competitive game of wheelchair basketball through modified games such as 1-on-1 and 2-on-2.

Unfortunately the FUNdamentals stage is often neglected within sport programming across the country. Inexperienced coaches are often put in charge of teaching children at these ages. As a consequence, children may miss key elements in their skill development, and some may even lose interest in participating. However, proper coach development and training can easily address these issues.

3. LEARN TO TRAIN

Females 8-11 years, males 9-12 years

The Learn to Train (L2T) stage is the period of basketball skills development. This period is often called the "skill hungry years" or the "golden age of skills learning" as it is one of the most important periods of motor development for children. During this time, children are developmentally ready to acquire the fundamental movement skills and foundation sport skills that are the cornerstones of all athletic development. Basic basketball skills should be emphasized, but participation in other sports should also be encouraged. Basic exercises in psychological skills such as goal setting and concentration can be introduced.

Stages 4 and 5: Developing the Game

The next two stages of the Wheelchair Basketball LTAD focus on developing each athlete's abilities in game play. The intensity and frequency of competition is increased, but not at the expense of a continued focus on fundamental skills.

4. TRAIN TO TRAIN

Females 11-15 years, males 12-16 years

The Train to Train (T2T) stage introduces athletes to many of the technical and tactical parts of basketball. A more strategic, structured approach to training should be adopted. However, fundamental movement skills should still be developed during this period. Fundamental skills need continued development to help athletes reach their full athletic potential regardless of how intense training becomes in later years.

All too often, the competition-to-practice ratio often becomes skewed to competition during this period. There is often too much emphasis on competing to win and not enough on teaching fundamentals. For example, practices may focus too much on practicing sets, press break or scrimmaging, before a player can make a left handed lay-up. Training programs should focus on developing well-rounded wheelchair basketball players. This can only happen if coaches emphasize development of the individual player more than team tactics.

Players need to learn the game, not a position. Individual development is the foundation.

Similar to the FUNdamentals stage, there are two distinct phases of the Train to Train stage. During this stage, there is a progressive movement from the recreational play to more intense competition. It presents the possibility of a split in the competition/fun continuum for athletes. Many athletes will not like the shift to the competition side and will decide to remain active in a more recreational setting. Others will choose the more competitive side of the continuum. Both sides are important. The problem is when only one side of the continuum is available for delivery.

5. TRAIN TO COMPETE

Females 15-21+/- years, males 16-23+/- years

The Training to Compete (T2C) stage addresses athletes who have chosen the high-performance competitive pathway. This stage applies very specific physical and mental training for wheelchair basketball. Athletes should be introduced to all aspects of the game and should begin to refine all technical aspects and most tactical components. Athletes may also begin high performance training (i.e. provincial teams, club teams), and they need to compete against quality competition in order to improve. A high level of intensity should be associated with all training endeavours. Individualized training that responds to the needs of each athlete is paramount.

Stages 6 and 7: Compete for the Nation

The next two stages of the Wheelchair Basketball LTAD involve athletes 18 years and older. All of their technical, tactical, physical, mental and ancillary skills and capacities should be fully established. The focus now is on refining all skills and capacities. Shorter periods of training at high level of intensity accompanied by frequent recovery breaks to avoid burnout are recommended.

6. LEARN TO WIN

Females 18-23+/- years, males 18-25+/- years

At the Learn to Win (L2W) stage, wheelchair basketball activities should be fully integrated with sport science and sport medicine programs. Athletes at this stage may be competing in the NCAA.

7. TRAIN TO WIN

Females 23+/- years, males 25+/- years

These players will be playing professionally and aspiring to represent Canada in international competition.

Stages 8 and 9: Health of the Nation

All successful players will have one thing in common – a love or passion for the game. We must ensure that we provide an environment that allows players to get "hooked" on wheelchair basketball so we can retain them in the game and keep them Active for Life (A4L) or Competitive for Life after they retire from high-performance play.

8. ACTIVE FOR LIFE

Females and males any age

During the Active for Life (A4L) stage, players move from high-performance competition into more recreational programs. Some may be retiring from play altogether, so efforts should be made to retain them in the wheelchair basketball system as coaches, administrators, officials, volunteers and other supporting roles. This will not only enhance their health and lifelong wellness, but it will also enhance the development and continuity of the sport of wheelchair basketball.

9. COMPETITIVE FOR LIFE

Females and males any age

There is an important transition period in the LTAD continuum between having fun through participation to winning medals at the highest level of play. Many Learn to Train athletes may not be able to enter the high performance LTAD stages due to a lack of skills, late maturation, or a lack of awareness of opportunities. Competitive for Life participation allows time to stay active and involved in the game. Time spent here allows the athlete to develop a better-informed decision as to their chosen pathway: develop, stay, compete or become active for life.

Flexibility in the Stages

It is important to note that there are overlaps between LTAD stages. The transition from one stage to the next is actually a gradual transition rather than a concrete separation because the stages are based on developmental age rather than chronological age. For early entry athletes, chronological age provides only an approximate guide to the stages. For example, early-entry wheelchair athletes may vary considerably in their development according to their disability and early physical activity experience.

The same can hold true for late-entry wheelchair athletes. They may even be in several stages at one time according to their previous experience in physical activity. This is an essential dynamic for coaches to understand, and instruction should be adjusted accordingly in both cases.

It is also important to note that entry into the Learn to Train and Train to Train stages is based on the maturation and developmental age of each athlete. Young people mature at different rates, and you cannot rush human maturation. Chronological age is a poor measure for determining athlete training routines and competition, since the musculoskeletal and mental and emotional development of athletes can vary greatly at any age.

The intent of the LTAD process is to adjust the training content and competition formats to the developmental realities of the players, observing their individual levels of maturation and whether they are early or late entry athletes into the sport of wheelchair basketball. Through this approach, the LTAD approach seeks to optimize the development of all athletes over the long term according to their personal aims and aspirations in the sport.

WHEELCHAIR BASKETBALL LTAD STAGES IN DETAIL

Athletes with disabilities have two extra LTAD stages—Awareness and First Contact. They are particularly important for individuals with an acquired disability who may not have been aware of sport and physical activity for persons with a disability.

AWARENESS

AGES: EARLY ENTRY/LATE ENTRY: +0 YEARS

Sport opportunities for persons with disabilities are not always known, so people who acquire a disability may have no knowledge of what sports are available to them. The Awareness stage informs the general public and prospective athletes with disabilities of the available opportunities.

Those who acquire a disability generally experience great change and transition. Some of their previous physical activities may no longer be viable as they were prior to acquiring the disability. These individuals may not be aware of the many sporting and physical activities that are available to them.

Awareness plans and effective communication about sport programs for athletes with disabilities can help to ease this transition for the individual. As well, they can foster awareness among parents and people who work with persons with disabilities. Sport and recreation organizations need to make their offerings and resources known.

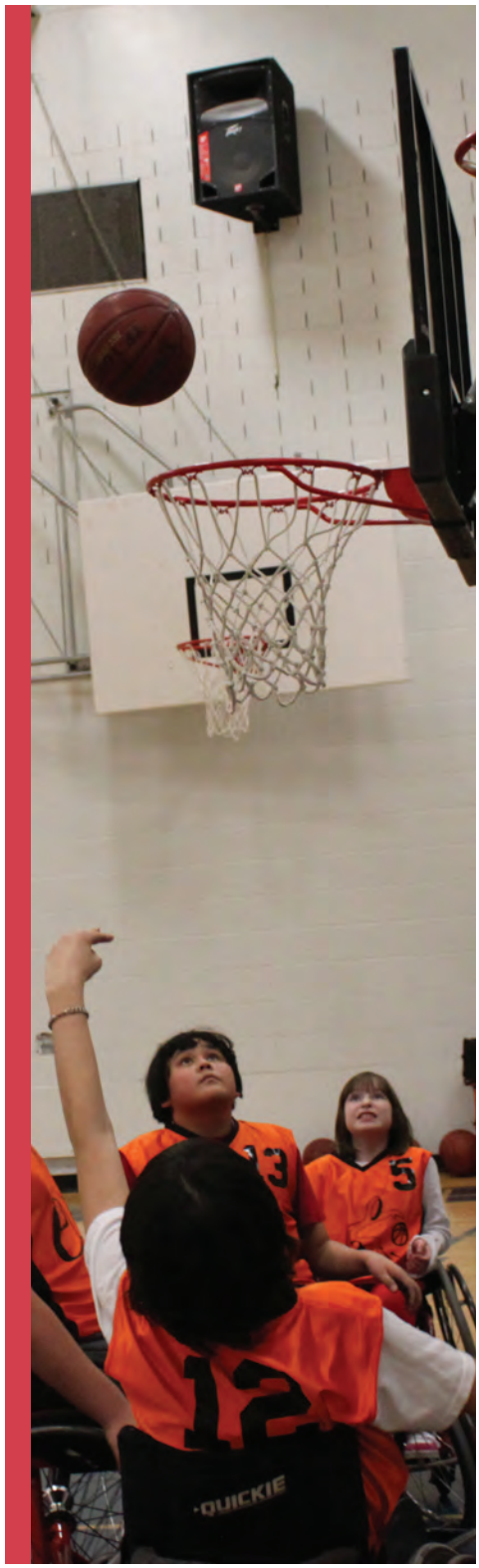
FIRST CONTACT

AGES: EARLY ENTRY/LATE ENTRY: 0+ YEARS

Sports only have small opportunities to create a positive environment for prospective athletes. It may not be easy for them to make the first approach to a sport, and if they don't have a positive first experience, they me be lost to sport and to a healthy lifestyle.

The First Contact stage should ensure persons with disabilities have a positive first experience with an activity and remain engaged. Organizations need to train coaches and develop programs that provide suitable orientation for prospective athletes with disabilities, helping them to feel confident and comfortable in their surroundings.

Since people become disabled at any age, no ages have been assigned to these two stages. The lifelong importance of an Active Start cannot be over-emphasized.



ACTIVE START

AGES: EARLY ENTRY: 0-6 YEARS
LATE ENTRY: 0+ YEARS

The objective is to learn fundamental movements and link them into play. Physical activity is essential for healthy child development. Among its other benefits, physical activity also:

- Enhances development of brain function, coordination, social skills, gross motor skills, emotions, leadership and imagination;
- Helps children to build confidence and positive self-esteem;
- Helps to build strong bones and muscles, improves flexibility, develops good posture and balance;
- Improves fitness, reduces stress and improves sleep;
- Promotes healthy weight;
- Helps children learn to move skilfully and enjoy being active.

Physical activity should be fun and part of the child's daily life, not something they are required to do. Active play is the way young children are physically active. For this reason it is recommended to steer clear of adult organized wheelchair basketball at this time. Children with disabilities are encouraged to take part in organized physical activity and active play. Physical therapy is not a replacement for physical activity and should not be presented as such. Children with disabilities should be encouraged to participate in activities that require the use of their mobility aid and activities that can be done without the use of a mobility aid. For those children who use a wheelchair for ambulation, they should be taught how to properly move a wheelchair. It is important for the healthy development of children with disabilities that they acquire the habits of lifelong activity.

Children during this time rapidly outgrow their mobility aids (such as bicycle, skipping rope, etc). Communities need to find effective ways – equipment swaps or rentals, for example – to ensure that all children have access to the equipment they need to be active. Early Entry (Ages 0-6):

- Not physical therapy as a replacement; more movement skills.

LATE ENTRY:

- More physical therapy, the individual may be going through physical therapy as part of this stage as they are re-learning their body and how their body functions.
- Learning how their body functions differently than what they had originally learned when they were younger. Depending on their amount of functional ability, their ability to re-learn will differ.

Inclusive:

- Having them do movement skills alongside their peers at that age group.
- May be doing a lot of things that are similar to therapy, but do not call it therapy.
  - Coaches need to be creative.
  - Encourage children to get rid of mobility aids (i.e. crutches, chair); encourage the creative use of their mobility aids.
- Free play and unstructured situations are vital.
- Above all else: everything should be FUN.

Awareness:

- Families becoming aware that using a chair can be a good way for their child to get some activity; it can be viewed as a piece of sporting equipment instead of something that inhibits them.
- Being active at this stage will prevent further injury rather than cause it.
- Being active now will promote participation in physical activity as they grow older (i.e. having physical education classes in early grades will allow teachers to expect students in the next grade).

First Contact:

- Gymnastics programs, swimming programs and martial arts programs are excellent ways for athletes at this level to find other sports that develop their movement skills. Kids must be aware that these programs are out there!

Recommendations:

- Outreach programs at early-childhood education facilities to show how a chair is used
  - Enable them to get varied experiences in a wheelchair

FUNdamentals

AGES: EARLY ENTRY: FEMALES 6-8 YEARS, MALES 6-9 YEARS

LATE ENTRY: +0-2 YEARS

The goal at this stage is to learn fundamental movement skills through wheelchair basketball and other activities in a positive fun way. The athletes will be introduced to basic basketball skills. The goal is not to win, but rather to have fun while playing sports, and to ensure the success of each individual athlete. The emphasis should be on giving athletes the fundamental movement skills of agility, balance, coordination and speed, thereby developing their physical literacy. Providing these basic athletic skills will build a base for the athlete that will enable him or her to develop to their full physical potential in later years.

In the Wheelchair Basketball LTAD plan, the FUNdamentals stage is subdivided into two phases: FUNdamentals Movement and FUNdamentals Modified Games.

FUNDAMENTALS MOVEMENT

Ages: females 6-7 years, males 6-8 years

Objective: To learn fundamental movement skills through wheelchair basketball and other activities in a positive, inclusive and fun way. The emphasis is on a variety of fun games (including wheelchair basketball) to teach fundamental movement skills and introduce basic basketball skills.

FUNDAMENTALS MODIFIED GAMES

Ages: females 7-8 years, males 8-9 years

Late Entry: +0-2 years onset of disability

Objective: To learn the basic basketball skills through modified games while still emphasizing fundamental movement skills in a fun and inclusive environment.

During this phase, modified games (1-on-1, 2-on-2, 3-on-3, and 4-on-4) are used to consolidate fundamental movements and help in teaching basic basketball fundamentals. During this stage the basic building blocks on which the game is built are being established. There are two parts:

1. Fundamental movements – Pushing forwards, pulling backwards, stopping, starting, pivoting, turning, hopping tilting and getting up. When movements are combined they create things such as agility, balancing, throwing, catching, hoping with the wheelchair, etc. It is also important that players can perform these fundamental movements in the three planes of the body – the frontal, which divides the body between front and back; the sagittal, which divides the body into right and left; and the transverse which divides the body into top and bottom.
2. Basic basketball fundamentals – these include pushing position, dribbling, passing and shooting. It is important that the athletes again are able to perform these skills using the many planes of the body. The key fundamental in regard to motivation is enjoyment. Players need to develop a love and passion for play. The technical decisions are based around simple decisions: should I pass or shoot? Should I dribble left or right?

EARLY ENTRY:

- When they enter the school system, children should expect physical activity, just as they would in the community.
- Children may already have a chair: they need to have a sport chair.
  - will be a challenge with some children that are in chairs and others that are not.
  - need to have the appropriate wheelchair to maximize their potential.

LATE ENTRY:

- Every Late Entry athlete will go through this stage because they won't have pushed a chair.
- Their sport experience will dictate what they do in other areas, but it does not allow them to skip this level.
- All late entry athletes will need to be involved in wheelchair propulsion as one of the fundamental movement skills; take the time to teach them so they can more quickly and accurately learn other skills in the future.
- Still make it fun (for retention) and wheelchair basketball an enjoyable experience.
- Need to be aware of the different wheelchairs as it is common that Late Entry athletes may not have one. How do you get them in a wheelchair?
  - FINDING the appropriate wheelchair is an important consideration to ensure their first contact is a positive one and so that they can see the opportunity to grow and improve/greater likelihood of success because of being in the right wheelchair. Can allow them to be fast and agile (speed and agility); maximizes their ability to learn skills at this level.

Inclusion:

- Early entry athletes are meant to be involved in Canada Basketball's Community Coach programs, Steve Nash Youth Basketball, youth/ community programs.
- Does not have to be stand-alone wheelchair program.
- For kids who don't have a wheelchair, a local club can provide one or cone of silence rules can be applied.
- Coaches' responsibility (at each level) is to work with the athlete to maximize their abilities.
- Coach need to have an awareness of the wheelchair at each level.
- Finding a wheelchair that will optimize their playing experience is key.
    - See the appendix: contact your local wheelchair basketball association for further information.

Awareness:

- Promotion by community coaches/ youth basketball.
- Wheelchair basketball group doing demonstrations, going into schools, etc.
- Parents have varying attitudes: some tend to be over-protective, while others "throw" their kids into activities.
- At this point, parents and coaches should become more aware of finding a piece of equipment that appropriately fits the individual so they can maximize their potential.

First contact/recruitment:

- Community coach programs, Steve Nash Youth Basketball, all kids should be welcome.
- Local basketball teams and groups going to the schools and helping to promote.
- Recommendation: A coach at this level should expand their first contact/recruitment efforts beyond rehabilitation facilities and include schools in accessing resources like Bridging the Gap.

Social/Emotional

- Aware of the difference in this area between Active Start and the Early and Late Entry athletes.

Functional Ability

- Coaches should be aware of different levels of functional abilities as a component to their instruction.
- Coaches should be aware of where a player can reach and continue to be stable (to the right/left side, in front of their chair, above their head, twisting, reaching down – combination of balance and range of motion/ movement).
- Range of movement (how far they can move out of their chair), how stable they are with a ball above their head.

LEARN TO TRAIN

AGES: EARLY ENTRY: 8-11 FEMALES, 9-12 MALES

LATE ENTRY: +1-2 YEARS

Objective: To learn basic basketball skills while still emphasizing fundamental movement in a fun inclusive environment.

At this stage, technical skills can start to be emphasized. While players should start to learn intermediate skills, the basic fundamentals are still important since many children will also use this stage as an entry level. Emphasis is on applying the basic skills to game-like situations. The players learn to make decisions on when to use the skills and how the skill should be properly applied.

Simple developmentally appropriate tactics should be used to allow the children to play team basketball. The basic strategies revolve around basic offence and defence. Emphasis is on proper spacing and understanding of team play. Fitness is done through the game. Enjoyment is still a major component. Simple goal setting and concentration skills are also introduced.

EARLY ENTRY:

Wheelchairs:

We should:

- Continue to recognize that athletes should be in a wheelchair that maximizes their potential. Growth may have occurred that may require a new wheelchair or adjustments in their current wheelchair. In addition, they might have to tune up their wheelchair depending on their functionality and ability.
- Start to see some differences due to disability; puberty will set in for some athletes with spina bifida for example, so wheelchairs will be altered due to this.

LATE ENTRY:

- Similar to the needs of a Late Entry athlete of the FUNdamentals stage.
- Need to focus on wheelchair-specific skills – axle to castor, pivoting, concepts of position.
- Fundamental basketball skills need to be learned as well.
- Quality of their wheelchair skills development from a fundamental stage will significantly improve the learning experience at this stage.

Inclusion:

Two options at this level:

- Wheelchair team (e.g.Steve Nash Youth Basketball), you bring wheelchairs for them to jump in.
- Continue with one or two kids in a wheelchair (cone of silence rule).

Awareness:

- Club teams go into the school so kids can try it out.
- Coaches have to be aware of the social emotional and skill level of the children.
- First contact/recruitment:
  - Community coach programs, Steve Nash Youth Basketball, all kids are welcome.
  - Local basketball teams and groups going to the schools and helping to promote.
  - Continue to bridge the gap between youth basketball coaches, club teams in neighborhood, etc.
  - Remember: awareness and first contact/recruitment programs need to continue at each stage.

Social/Emotional:

- Be aware of puberty for people with spina bifida and other disabilities that have an early onset of puberty.
- May be some children participating who come from lower stages and may not be as socially or emotionally equipped for what is going on at this prepubescent stage. May also have athletes coming from upper stages who are physically more developed but socially at this level.
- Late Entry individuals bring multiple levels and we must be aware of how these groups mix; athletes need to be aware of this too, not just coaches.
- Need to have strong, healthy relationships with adults.
- Coaches: you are going to have individuals who are less developed in this area, as well as ones who are very developed. Must be aware of this gap and make it a part of your planning.

Functional Ability:

- Classification becomes a factor at this stage.
- Exploratory classification takes place at this level.
  - Kids, parents and coaches can now talk to classifiers, which will get them educated about the body, answering questions about how they will change as they develop; Will provide clarity on a variety of things that would otherwise not have necessarily been clarified
  - Coaches need to be aware of functional ability as it relates to instruction of skills
  - All players should continue to learn all skills
  - Athletes and parents should be introduced to the classification system and an understanding

of how that is linked to their specific functional ability

- At this level of competition, players may be playing with players of different classifications.
- They will start learning the classification process, even if it's just for educational purposes, because they may be playing up

Research shows that this is the most important time for children to learn sport skills. One of the most important periods of motor development for children is between the ages of 9-12 (Balyi and Hamilton, 1995; Brohms, 1985; Rushall; 1998; Viru et al., 1998 and 1999). During this time, children are developmentally ready to acquire the fundamental movement skills and sport skills that are the cornerstones of all athletic development. The fundamental skills described previously as "physical literacy" should be taken to a higher level at this stage. In addition, the basic wheelchair basketball skills should be mastered, but participation in other sports is still encouraged.

Young athletes at this stage need to learn the basic routines of regular training. They should be introduced to the basic technical/tactical basketball skills and ancillary capacities including: warm up and cool down, stretching, hydration and nutrition, recovery and regeneration and mental preparation. Parents should be educated in this information. (See www.canadiansportforlife.ca; Developing Physical literacy: A Guide for Parents of Children Ages 0 to 12 and Steve Nash Youth Basketball Parent's Guide.) This knowledge base is developed further in the later LTAD stages.

This focus on training rather than on competing should be reflected in the annual competition calendar for this group of athletes. Over-competing wastes valuable training time. Conversely, not enough competition inhibits the practice of technical skills (e.g. decision making) in a realistic competition environment, as well as learning how to cope with the physical and mental challenges presented by competitions. The key is to find the proper balance.

For the Late Entry athlete, this is a critical stage for developing wheelchair skills. The Competition Review for Wheelchair Basketball Canada will be tasked with determining the minimum number of competitions that allows the players to apply their skills in a competitive environment and develop games sense, but which do not exceed the maximum number of games that will inhibit training and development. Inclusion should be stressed, particularly for the Late Entry athlete.

The Late Entry athlete should be encouraged to join an inclusive league that emphasizes more touches on the ball and more principles of play. This is especially important in areas that do not have a lot of athletes. The inclusion of modified games that promote touches and principles of play is encouraged. One example might be a game where everybody must touch the ball before the team is allowed to attempt a shot.

TRAIN TO TRAIN

AGES: EARLY ENTRY:
FEMALES 11-15 YEARS,
MALES 12-16 YEARS

LATE ENTRY: +2-5 YEARS

Objective: To introduce the basic technical and strategies of "global" basketball with a more structured approach to training, and begin to build the physical and mental engine of the future high-performance athlete.

TRAIN TO TRAIN, PHASE 1

Ages: Females 11-13 years, males 12-14 years

At ages 11-13 females and 12-14 males, the emphasis is still on refining the fundamentals and consolidating the technical skills. Developmentally appropriate tactics become more important. The physical capacities that need to be trained are now completely dependent on the developmental age of the individual.

Coaches must be aware of the differences in maturation rates and allow for appropriate accommodation. The goal at this stage is to continue to build the athletic base. Many skills will be introduced here and these skills will be emphasized. Avoid the temptation to compensate for the lack of skills with higher level tactics. The use of zones and presses will be introduced in the second phase, at the end of this stage, when players have acquired a complete grounding in the basic skills.

The goal is to develop basketball players as opposed to positional players. This stage can still be an entry level for many players. Coaches should recognize this fact and be aware of the stage below in order to assist the athlete in accelerating his/her learning.

"We need to train our young players as athletes first – develop their athletic base. Then we need to add "basketball" skills and concepts. But mostly we need to quit playing so many games and start teaching the fundamentals of the game. Kids want to learn – it is up to us to teach them."

- Canada Basketball Women's National Team Head Coach, Allison McNeill

TRAIN TO TRAIN, PHASE 2

Females 13-15 years, males 14-16 years

At ages 13-15 females and 14-16 males, athletes should be refining their technical skills. Some athletes will begin to become creative. Tactics such as zone offence/defence and presses/press breaks are added during this stage. Near the end of this stage, simple strategies can be employed. When various technical skills are combined to form a system of play, you have created a tactic. These are conceptual in nature and still allow the players freedom to make decisions. Teams will have tactics for transition, offence, defence etc. Individualized training is important for the player to improve.

"The reason why so many athletes plateau during the later stage of their careers is primarily because of an overemphasis on competition instead of on training during these important periods (L2T and T2T) in athletic development."

- Istvan Balyi

EARLY ENTRY:

Wheelchairs:

We should:

- Continue to recognize that athletes should be in a wheelchair that maximizes their potential. Growth may have occurred that may require a new wheelchair or adjustments in their current wheelchair. In addition, they might have to tune up their wheelchair depending on their functionality and ability.
- Start to see some differences due to disability; puberty will set in for some athletes with spina bifida for example, so wheelchairs will be altered due to this.

Late Entry:

- Similar to the needs of a Late Entry athlete from the Learn to Train stage; it is a continuum from one stage to the next, it is not a stagnant process.
- The Late Entry athlete will need to have spent time on skills from the previous stages.

Inclusion:

- 3 types of inclusion
  - The able bodied child jumps in the wheelchair; starting to play with friends, brothers, sisters, etc.
  - Team atmosphere (i.e. Steve Nash Youth Basketball) – bring in the extra wheelchairs for the team.
  - Inclusion within the recreation competition, active for life section of the model. (The elite pathway is more likely all wheelchair).

Awareness/First Contact/Recruitment/ Retention:

- Large age group to recruit athletes and a critical age group for mental stages, as they are starting to develop lifestyle choices.
- Continue to emphasize Bridging The Gap programs, going into the schools, clubs, etc.
- With puberty, there has to be awareness of the disparity between different individuals.
- Begin to address the issue of retention:
  - Coach: helping athletes become aware of the different playing options at this level as the athlete starts to look; let them be aware that there are different options.
  - Coaching: drill creativity! Kids are going to get bored.

Social/Emotional:

- Very important component at this stage.
- Kids are going to start to see themselves as being "different" and others are going to start to see them as different (body image, self esteem, confidence, what am I capable of doing, and what am I never going to be capable of doing).
- Playing up, playing down – this issue is magnified at this stage.
- Realize that the disability does not define the person; nothing is impossible (take the positive spin).
- Personal hygiene – problems in this area can lead to health issues and personal issues; kids can quickly get labeled which can lead to kids being left out.
- Early and newer Late Entry: a lot of kids at this stage for the first time are going to places and practices that are out of their comfort zone.
  - Kids are transitioning into becoming more independent (dependence to independence).
  - Independent living skills: coaches need to be aware of being sensitive to the point that early entry athletes and early Late Entry athletes are gaining greater levels of independence which can create problems in social situations. Coaches need to encourage all to be sensitive to these situations. Refer to the Parent's Guide for more information.
  - Be aware: this could be the first over night/travelling situation for many.

Functional Ability:

- At 16 you have to be re-classified due to body changes
- Coaches need to be aware of functional abilities as they relate to skill development without slotting them into a spot on the team; need to still continue to learn ALL skills and ALL roles
- Classification still evolving. Classification to be reviewed at a later stage.

TRAIN TO COMPETE

AGES: EARLY ENTRY: FEMALES 15-18+/- YEARS, MALES 16-18+/- YEARS

LATE ENTRY: +4/5+ YEARS

Objective: To introduce athletes to all aspects of the game and begin to refine all technical and strategic components. The major objective of the stage is to learn how to compete under any circumstances.

During this stage, the basic fundamentals should be taken to the creative level. Players will be introduced to many higher level technical skills that allow them to start to specialize. Players will be exposed to most if not all strategies of the game. When various technical skills are combined to form a system of play you have created a strategy. These are conceptual in nature and still allow the players freedom to make decisions. Teams will have strategies for transition, offence, defence, etc.

High intensity individual and sport-specific training is now provided to athletes year round. The major objective is to learn to compete under any kind of circumstance. Athletes, who are now proficient at performing both basic and sport-specific skills, learn to perform these skills under a variety of competitive conditions during training.

Athletes should begin to have season plans for conditioning and motivational training, taking into consideration the sum of the parts of their basketball year (e.g. high school, club, provincial, national). Plans should be developmentally appropriate and should include quality individualized training. At this stage in their development, the serious athletes will be focused and determined to become the best players they can become. Athletes need significant amounts of technical and tactical feedback if they are to properly develop skills. Athletes must train at a high level of intensity and must be challenged to improve by the coaching staff.

Special emphasis is placed on optimum preparation by modelling training and competition. Fitness programs, recovery programs, psychological preparation and technical development are now individually tailored to a greater degree. This emphasis on individual preparation addresses each athlete's individual strengths and weaknesses.

Consideration must also be given to athletes who are late entering into the sport. A coach must be aware that these athletes may be at the Train to Compete stage with regard to attributes but at lower stages in terms of basketball skills. With proper coaching, these Late Entry athletes can be brought successfully into the basketball system.

LEARN TO WIN

AGES: EARLY ENTRY: FEMALES 18-23+/- YEARS, MALES 18-25+/- YEARS

LATE ENTRY: +4/5+ YEARS

Objective: To establish all of the technical, strategic, physical, mental and ancillary skills and capacities needed to compete at the highest level.

At this stage, the emphasis is on refinement of all technical skills. Basic tactical skills should also be in the refinement stage. Many should be in the creative stage. The athletes will have been introduced to all strategies and specialization and that is important. When a team adjusts or emphasizes a strategy in preparation for a specific opponent, the coach is applying tactic. The season plans become very specialized for each athlete.

At this point the athlete should have a very good understanding of all the basketball specific and position specific skills that are needed to be successful. The athlete should understand that a great deal of time must be spent refining these skills in order to be competitive at the highest levels.

After 10-15 years of training, it is practically impossible to increase the volume of training for an athlete. Therefore the quality, intensity and individual specificity of training should be refined. Research and practical experiences have shown that for the elite athlete, the key to improvement lies in the optimal manipulation of the intensity and frequency of training.

The athletes must also understand that they must train at a high level of intensity under game/pressure situations in order to continue to improve. Athletes at this level should be encouraged to make themselves available to local clubs and programs in order to assist in First Contact and Recruitment programs. They can be influential and valuable role models for new athletes.

TRAIN TO WIN

AGES: EARLY ENTRY:
FEMALES 23+/- YEARS,
MALES 25+/- YEARS

LATE ENTRY: +5-10+ YEARS

Objective: To optimize performance for domestic and international competition.

The athletes should be able to work on refinement and creative skills. The major emphasis can be on high level tactics and strategy. Athletes need very personalized programs. Preparation also needs to begin for retirement and transition into other phases of the athletes' life.

All facets of the game have already been introduced, emphasized, developed and refined. An emphasis on refinement must still exist as improvements can be made on all technical and tactical areas throughout an athlete's career. There will be many new strategies, offensive and defensive sets and philosophies that will depend on the individual coach. A successful player will be able to adapt and accept the desired philosophy. Coaches should continue to encourage athletes at this level to make themselves available to local clubs and programs in order to assist in First Contact and Recruitment programs.

As in the Learn to Win stage, the athlete can still make gains in terms of strength and endurance through refined individualized training programs. Speed, skill and suppleness must still be trained to maintain these capacities at optimal levels.

Athletes at this stage face conditions that are very often unique:

- Playing for the Canadian National team;
  - The continual pursuit of performance excellence; becoming a world-class athlete and representing Canada at the highest level of international competition.
  - The commitment and passion to play for multiple years.
  - Accepting different roles within the team.

- Taking personal responsibility for the continual development and implementation of;
  - Yearly training plans (Y.T.P.)
  - Personal improvement plans (P.I.P.)

- Adjusting to the lifestyle of a professional athlete;
  - Playing in a foreign country.
  - Accepting and dealing with the responsibilities, expectations, and pressures.
  - Dealing with agents.
  - Cultural adjustments; language, food and local customs.
- Financial planning.
- Social aspect of their lives; family, friends, and personal relationships.
- Preparing to make the transition from being a high performance player to some other aspect of the game; coach, referee, administrator or active for life player.
- Continual lifelong involvement in the growth and development of wheelchair basketball in Canada.
- Being a mentor to others.

ACTIVE FOR LIFE

The transition from competitive sport to lifelong physical activity.
AGES: MAY OCCUR AT ANY AGE.

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

Wheelchair basketball programs need to facilitate:

- Movement from one sport to another. For example the 16-year old wheelchair basketball player becomes a rower or the 12 year old gymnast becomes a wheelchair basketball player;
- Movement from one aspect of the wheelchair basketball to another. For example assisting athletes with a disability in order that they may enjoy the game;
- Movement from competitive wheelchair basketball to recreational activities;
- Movement from competitive wheelchair basketball to volunteering as a coach, official or administrator;
- Movement to sport-related careers such as coaching, officiating, sport administration, small business enterprises or media; and
- Movement from highly competitive wheelchair basketball to lifetime competitive wheelchair basketball through age group competitions such as Master's Games.

A positive experience in sport is key to retaining athletes after they leave the competitive stream.

Wheelchair basketball must make the shift from cutting athletes to re-directing them to sports where they are pre-disposed to train and perform well.

COMPETITIVE FOR LIFE

Remaining engaged in competitive play without entering the high-performance pathway.
AGES: MAY OCCUR AT ANY AGE.

There is an important transition period in the LTAD continuum between having fun through participation to winning medals at the highest level of play. Many Learn to Train athletes may not be able to enter the high performance LTAD stages due to a lack of skills, late maturation, or a lack of awareness of opportunities. Competitive for Life participation allows time to stay active and involved in the game. Time spent here allows the athlete to develop a better-informed decision as to their chosen pathway: develop, stay, compete or become active for life.

OPPORTUNITIES FOR ABLE-BODIED PLAYERS

Wheelchair Basketball is first and foremost a sport. It is unique in that the piece of sporting equipment, the basketball wheelchair, allows individuals with disabilities to compete. However, this should not preclude able-bodied athletes from participating by playing in wheelchairs as well.

Individuals who are able-bodied should be encouraged to participate at all levels where they are currently allowed. It is especially important at the early LTAD stages, and during the Active for Life stage, as there is a strong social component to engaging players in the game.

Coaches should not make assumptions about the knowledge level of able-bodied players. We might assume an able-bodied athlete will have knowledge of the game merely because they have played basketball, but each athlete's previous sport experience may be very different. These players need to go through the same training stages in wheelchair basketball as other athletes. Coaches should understand that they may bring experience like the Late Entry athlete that can be applied to an area of the Wheelchair Basketball LTAD.

By including able-boded athletes, a very strong social and educational benefit occurs. Individuals who are able-bodied view individuals with disabilities differently when they see them in a sport setting. They value individuals with disabilities for what they can do instead of what they cannot do because of the meritocracy of sport.

While individuals who are able-bodied cannot currently compete in the Paralympics, they can compete as high as the national championships in Canada. Canada is a leader in this area.

LTAD IMPLICATIONS

The process to develop the Wheelchair Basketball LTAD was extensive, inclusive and comprehensive. Knowledge was sought from experts across Canada and in-depth discussions have analyzed how our sport can integrate the LTAD approach into all that we do.

This process initiated re-thinking every aspect of our sport, including the three most difficult changes:

SYSTEM ALIGNMENT

Aligning the wheelchair basketball community under one set of developmentally appropriate rules.

SYSTEM ALIGNMENT AND INTEGRATION

Developing and integrating clear pathways which allow players, coaches, officials and administrators to progress through the system. These pathways must permit players to be involved in three distinct streams; health of the nation (recreational in nature), develop the game, and compete for the nation. The pathways must also build positive relationships between the educational and club delivery systems.

COMPETITION SCHEDULES

Ensuring the appropriate ratio of training to competition at all ages and stages of development. Prior to our LTAD review, wheelchair basketball has used a delivery stream called "competition." This was not a planned process. As a consequence, the majority of our developing players in the competition stream are playing too many games without the opportunity to gain proper practice of the skills needed to play the game.

LTAD IMPLEMENTATION

The Wheelchair Basketball LTAD model is intended to guide wheelchair basketball organizations at all levels in the review their existing training and competition program delivery. At each stage of LTAD, and especially the early stages, there may be a number of organizations in a given location that will be involved in implementation. For LTAD implementation to be effective, groups involved in delivering programs need to develop and encourage co-operative relationships at each LTAD stage to address key shortcomings in the development system.

GENERAL CONSIDERATIONS

As a start, the characteristics and program delivery criteria for each LTAD stage need to be understood by each local authority (PSOs, school boards, clubs, etc.). At the same time, there needs to be a recognition that some local authorities may not be able to deliver LTAD programming to full effect due to challenges in resources.

COACHING

Each local authority will need to make a strong effort to educate coaches according to the stage of the athletes they are coaching. This will likely mean that the current system by which coaches are educated must be revised to ensure that coaches learn how address the specific needs of athletes at each developmental stage.

COMPETITION

We must recognize that not all athletes wish to pursue high performance competition. Being overly structured and competition focused may turn some athletes off the sport. These athletes should be placed in less time consuming and less intense environments than athletes who wish to compete at the highest level.

At the same time, it is essential that athletes are provided the opportunity to train and compete amongst others within the same stages. A lack of appropriate competition through the stages poses a challenge to athlete development and must be taken into consideration when planning competition.

FACILITIES

Another very important part of the implementation program is the need for facilities. The limited availability of adequate training opportunities is a considerable obstacle for wheelchair basketball across Canada. It is obvious that our traditional practice-to-game ratios are imbalanced – i.e. we have had too many games and too few practices. If we are to change this, athletes will need more practice time, which means more gym time.

To get more practice time for our wheelchair athletes, the basketball community must work together to find gym times at affordable prices and become involved in lobbying to build more facilities. As well, the chance for recreation opportunities is dwindling as the cost and need for facilities continue to rise. If we want to address the health of the nation, we need to continue to provide these recreational opportunities.

EQUIPMENT

Wheelchair basketball athletes also face obstacles in obtaining equipment to play the game. Appropriate equipment and the cost of equipment can be major barriers for athletes. Coaches need to learn how to assist athletes in choosing appropriate equipment, and to assist them in obtaining that equipment in a cost-effective manner.

FINANCIAL CONCERNS

We must find a way to keep the cost of our programs low. Wheelchair basketball is traditionally a sport played by all cross sections of society. With costs constantly on the rise, we are losing some of our best athletes. We have seen instances where some of our best athletes are not involved in programs and do not receive the proper training because they cannot afford it. This is an issue for athletes as they decide what programs to join, and one that we must seriously consider when organizing training programs.

LTAD RECOMMENDATIONS

RECOMMENDATIONS: PHYSICAL LITERACY

- Develop education and resource guides to assist parents, coaches and administrators in understanding the key physical characteristics of individual disabilities.
- Develop resources that assist coaches in the development of physical literacy skills in youngsters with physical disabilities.
- Focus physical activity on a large variety of opportunities and FUN.
- Provide numerous activity opportunities for children to participate in a variety of environments in multiple settings during all seasons.
- Creatively develop basic fitness components using a variety of games and fun activities as children with physical disabilities will present unique abilities and deficits in movement patterns unlike their peers.
- Establish an abilities focused environment as the base from which to develop from.
- Promote programming for inclusive and integrated environments.
- Create tasks and games that allow individuals to learn agility, balance and coordination without the use of their mobility aids.

RATIONALE

- Children at the FUNdamentals stage must experience multiple activity opportunities in a variety of settings in order to develop physical literacy skills to the fullest of their potential.
- The key to the development of physical literacy and the promotion of an active lifestyle are the multiple experiences and opportunities which children are involved in.
- Inclusion and integration offer an increased number of physical activity opportunities for children with physical disabilities.
- Such opportunities are of social and emotional benefit for all involved as well.
- Many weaknesses of sport-specific skills can be linked to ineffective or poorly developed movement skills. If the movement skill is not corrected first, the sport skill will suffer. A wheelchair basketball example is the lay-up. If a child has a problem with balance and locomotion in a wheelchair, a fundamental movement, he/she will struggle to develop the proper rhythm in executing a lay-up.

RECOMMENDATIONS: SPECIALIZATION

- During the FUNdamentals, L2T and T2T stages of LTAD, develop "global" players. These are players who have worked on all the skills and have trained to execute the appropriate skill based on cues.
- Include individualized training in defensive work. A global player also needs to be able to defend in different locations and based on different match-ups.
- Make use of offences and defences that encourage flexible positioning in the developmental stages of LTAD.
- Include fundamental movement skills as part of daily warm ups in training and in competition.
- Develop strategies that allow for coaches to account for early, average, late maturers and Late Entry athletes.
- Develop strategies to help with athlete identification vs. athlete selection. Currently we are selecting from the players who "show up" to try out. We need to identify future players and ensure that they receive the proper multi-skilled training at the early stages of LTAD. Many are exiting our sport in the later stages of LTAD or arrive there without the necessary skills they need to compete.
- Find the means to include athletes who are able-bodied in all stages of programming and the resources needed to be developed to show coaches how this can be accomplished.
- Develop the resources needed to show coaches how to adapt skill instruction based on classification with the knowledge that all skills need to be learned, but the final execution may be different based on classification/function.

RATIONALE

- Every child is an athlete and needs the proper grounding in movement in order to develop an appreciation for physical activity and therefore derive the health benefits. This will also let them make wiser decisions as to which pathway of sport to choose.
- The inability to detect the "great athlete" until after maturity.
- To reduce boredom, frustration, burn outs and drop outs.
- To ensure that all children and Late Entry athletes develop the skills necessary to play at the next stage of LTAD if they wish.

RECOMMENDATIONS: SENSITIVE PERIODS

- Educate so they know when the windows are and what training is appropriate.
- Encourage all parties to be aware of the physical readiness of athletes with a disability relative to the onset of disability. The athlete with more recent acquisition may be less ready than the athletes with a longer disability experience. Conversely, athletes with a longer disability experience may have muscle imbalances or reduced range of motion as a result of their disability.
- Develop a resource that will make it easy for coaches and teachers to apply the LTAD appropriate training.
- Make use of the LTAD wall chart to monitor peak height velocity.
- Recognize that males and females grow at different rates.
- Recognize the impact disability can have on the training program and be prepared to adjust programs to meet the needs of different levels of disability experience and different types of disabilities.
- Reduce competition schedule to actually allow athletes to train.
- Individualize training plans.
- Avoid some traditional practices such as:
  - long slow distance pushing as the only method to improve aerobic capacity;
  - static flexibility training pre activity;
  - the use of strength training with heavy weights at inappropriate times; and
  - lack of speed training in all phases of training.
- Due to a significant lack of research in this area, it is of paramount importance that research in this area be made a priority.

RATIONALE

- Every child is an athlete and needs the proper grounding in movement in order to develop an appreciation for physical activity and therefore derive the health benefits. This will also let them make wiser decisions as to which pathway of sport to choose.
- Trainability is based, largely, on scientific research on individuals who are able-bodied.
- It allows our athletes to maximize their potential.

RECOMMENDATIONS: PHYSICAL, MENTAL, COGNITIVE AND EMOTIONAL DEVELOPMENT

- Those who deliver basketball programming need to review how they are currently developing the physical, mental and social/emotional abilities of their athletes. Also, how are ethics and values being taught and modeled within the organization.
- Decision making or "when" to use skills is to be emphasized at all stages of LTAD. This is based on keys that the athlete detects, not on coaches' commands.
- Coaches need to progress athletes through the various stages of LTAD with the goal of creating a self-reliant athlete who has the physical, mental and social/emotional skills to make their own decisions on their future.
- Work needs to be done in accounting for the differences between female and male athletes.
- Templates need to be developed to aid all parties in delivering holistic training.
- A key component of the new NCCP is the holistic approach.
- Mental and emotional/social training needs to be delivered in conjunction with the physical training. It cannot be seen as an "add on" to be done outside the practice and competition site.
- Individualized training plans at the appropriate stage.
- Selections, scholarships and awards. Rewarding players solely on the basis of their physical superiority can lead to societal problems in the future. This has occurred mostly on the male side of the sport, but is becoming a problem on the female side also.

RECOMMENDATIONS: COMPETITION PLANNING

- As much as possible, competition and tournament calendars should support and be consistent with LTAD principles and the respective stages, allowing provinces and clubs to adequately plan competition calendars according to appropriate training and competition ratios.
- Allow 3 v 3 games through the FUNdamentals, L2T, up to 4 v 4 at the T2T stage. This does not require 10+ players at the same level to play a game. It also increases player's touches on the ball, shooting opportunities, etc.
- Permit playing up & playing down. This allows for greater competitive and training opportunities at appropriate stages, and enables athletes to

grow and develop in various contexts.

- Stagger the competition calendar to allow athletes to join varying teams, groups and camps.
- Be mindful of the suggested ratios and make sure that athletes are not at risk of burnout.

RATIONALE

- Fewer players on the court allow for more playing time and contribution opportunities for every athlete. Individuals will not become 'pigeon-holed' into a specific role based on skill and classification. This also allows for more competition in a location where the limited number of athletes at a particular level does not enable them to field a variety of teams.
- By providing an opportunity for an athlete to play at a higher level, we can provide more training opportunities. We can also enable that athlete to be in a different role through 'playing up'. They will learn and develop different skills and be able to address varying issues.
- By providing an opportunity for an athlete to be involved at a lower level, we can also provide more training opportunities. We can also ensure these athletes are learning and developing different skills than they would at their usual levels.
- In order to ensure individuals are not exceeding their suggested ratios, whether they are 'playing up' or "playing down" this time must still factor into the equation. We still need to make sure that the athletes are not spending too much time at the gym.

RECOMMENDATIONS: SYSTEM ALIGNMENT

- Continue the movement toward one rule set.
- Formation of an LTAD rules committee to look at modifications for each stage of development.
- Continue to grow ways to bring the wheelchair basketball community together.
- Work to develop positive working relationships with all deliverers of wheelchair basketball.
- Continue to educate the grassroots as to the importance of LTAD.
- Develop resources to enhance sharing.
- Engage all partners in the process.
- Engage all levels of government to assist in aligning the system.

RATIONALE

- Without an aligned system we cannot impact the "game".
- Sport Canada is moving to accountability. LTAD alignment is one of the key factors. Provincial sport organizations are also moving to the implementation of LTAD. This will move across ministries (i.e. health and education at the provincial level, sport and wellness at the federal level).
- An aligned system allows basketball to be a leader and have a positive influence in all areas of the Canadian Sport System and society.

RECOMMENDATIONS: EXCELLENCE TAKES TIME

- Delay specialization until the appropriate time.
- Focus on multi-sport skills in the pre-peak height velocity stages (before the onset of the growth spurt during puberty).
- Move to specialization in wheelchair basketball after adolescent growth spurt. Position specialization should occur later during the Train to Compete stage.
- Educate the parents, coaches and players to assist them in making appropriate decisions.
- To be an elite athlete, eventually specialize in your chosen sport.
- Training includes multiple positive repetitions of the skills of the game. You do not become a great ball handler, passer and shooter through playing the game. Self-practice has always been a key to becoming great in these areas.
- Develop relationships with other sports to stop the vicious cycle of competing for younger and younger athletes.

RATIONALE

- Every child is an athlete and needs the proper grounding in movement in order to develop an appreciation for physical activity and therefore derive the health benefits. This will also let them make wiser decisions as to which pathway of sport to choose.
- To avoid burn out at an early age.
- When athletes reach the point where they need to specialize they will have the foundation required to excel at their highest level and the mental freshness to put in the required time.
- To avoid overuse injuries.

- Poor decisions are being made too early in a child's development. This leads to a diminished number of athletes staying in the sport in the later years when they can specialize.

RECOMMENDATIONS: KAIZEN (CONTINUOUS IMPROVEMENT)

- Establish advisory committees to analyze current practices. These committees should be a cross section of the wheelchair basketball community. It is not wise to have all members from a similar background and specialists in the same stage of LTAD; gather input and feedback from individuals outside of Canada (current and retired players, coaches, administrators, etc.) to continually grow the knowledge base about the sport internationally.
- Develop action plans to determine implementation strategies.
- Monitoring needs to be undertaken to determine the impact of the strategy.
- Share best practices across the country.
- Conduct sport-specific research to explore the concepts and ideas that are currently in use.

RATIONALE

- LTAD is a living, growing process and with constant monitoring it will become a productive and well used document
- By engaging all parties in the process, we create ownership of LTAD at all levels.

RECOMMENDATIONS: EQUIPMENT

- Provide coaches and administrators with a guide on the required specifications and considerations relating to physical accessibility.
- Develop partnerships with local clubs sharing a facility.
- Provide coaches with educational materials on measuring wheelchairs and fitting athletes to wheelchairs.
- Give all wheelchair manufacturers access to clubs to create competition.
- Continue to develop and conduct research into the design of wheelchair basketball wheelchairs and materials used in their design.
- Ensure that players have access to the appropriate size basketballs, baskets and courts.
- Create an inventory of wheelchairs so that individuals can rent a wheelchair for a nominal fee. This would allow an individual to participate in the sport without a large initial investment and allow the club to regain money on their initial investment.
- Develop a modified score sheet that more accurately reflects or encourages developmentally appropriate games (e.g. points for good passes, catches, etc.).

RATIONALE

- In order for full inclusion and a positive experience, athletes must have access to facilities that allow the completion of basic needs.
- There are opportunities for shared scheduling that are created out of different equipment needs across the LTAD such as smaller courts or running cross court games for younger athletes.
- The fit of the basketball wheelchair plays a significant role in the ability of the athlete to maximize their skill and therefore their sport experience.

STRATEGIC INITIATIVES

Following from the LTAD Recommendations, a number of key initiatives have been identified to improve Canadian wheelchair basketball and create sustainability. It is strongly recommended that the following steps be taken to help create a basketball system that will allow all athletes to achieve their goals from the time of entry until the Active for Life stage.

FIRST PRIORITY: SYSTEM ALIGNMENT

Players, coaches, officials, parents, administrators, classifiers, schools and individuals affiliated with the medical profession must be aware of the LTAD pathways. There needs to be a smooth transition from one stage to the next. This can only occur when all wheelchair basketball deliverers within the Canadian wheelchair basketball community are aligned with the LTAD model. One set of rules for the game is an example (the primary rules are the same, but the secondary rules are modified to be LTAD appropriate).

SECOND PRIORITY: COACHING DEVELOPMENT

The coach is the single, most important person in the implementation of the key principles of the LTAD model. Most of the other priorities will not occur if we do not impact the coach. Coaching education and ensuring coaching competency are keys to success. Coaches need to balance the individual development of the athletes with getting the players to work together as a team.

THIRD PRIORITY: COMPETITION ALIGNMENT & PERIODIZATION

Many of the problems within the sport of wheelchair basketball are a result of the imbalance between competition and training. At each stage of the model, appropriate practice to competition models must be adhered too. The Competition Review working group is researching and developing recommendations.

FOURTH PRIORITY: INDIVIDUALIZED TRAINING

As stated above, in the second priority, the coach is responsible for balancing individual development with team play. Currently the pendulum has swung to the side of team play. Coaches need to develop in players the passion to improve. Coaches need to know how to teach the skills that are appropriate for their athletes' stage of development. The coach should be able to improve that athlete so that he/she can play at the next stage if the athlete so desires. The coach should not be the limiting factor. At any stage of the LTAD model the athletes will benefit immensely from improving their skills whether these are basketball, mental, physical or life skills.

FIFTH PRIORITY: MONITOR GROWTH AND DEVELOPMENT DURING PUBERTY

A key principle of the LTAD model is to recognize that athletes at different stages are not to be coached the same. The coach, parents and administrators need to understand the physical, mental and social /emotional characteristics of the children. This is especially important during puberty when each child is at a different developmental age. This is the time when many children drop out of sport. By monitoring growth and development during the growth spurt, we will be better able to address the individual needs of the child and hopefully keep them active in sport.

GLOSSARY OF TERMS

Acquired Disability: Refers to an individual who becomes disabled through accident or illness not just after birth but after traditional abilities are typically acquired.

Adaptation: 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 genetic 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: A period in growth and maturation that is difficult to define in terms of the time of its onset and termination, but generally corresponds to the early and mid-teen years. During this period, most bodily systems become adult both structurally and functionally. Structurally, adolescence begins with 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.

Age: In athlete development, age may refer to a number of different measures:

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 2 decades of life.

Developmental Age refers to the degree of physical, mental, cognitive and emotional maturity. Physical developmental age can be determined by skeletal maturity or bone age after which mental, cognitive and emotional maturity is incorporated.

Relative Age also plays an important role in coaching decisions. The relative age effect describes the observations that a greater number of performers born early in the years are over-represented in junior and senior elite squads compared with what would be expected based on national birth rates. This means that a child born on January 1st may participate in the same programs as a child born on December 31st of the same year – although one is almost a year older than the other. It is well documented that relative age has a great advantage in athletic selection. In many different sports the relative age effect is clear to see.

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.

Training Age:

- General Training Age refers to the number of years in training, sampling different sports.
- Sport-Specific Training Age refers to the number of years since an athlete decided to specialize in one particular sport.

Ambulatory: The ability to walk with or without aids such as crutches, canes or a walker.

Ancillary Capacities: The knowledge and experience base of an athlete and includes warm-up and cool-down procedures, stretching, nutrition, hydration, rest, recovery, restoration, regeneration, metal 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.

Awareness: The first stage of the LTAD for sport s for people with a disability. It is at this stage that people learn of the opportunity for sport for people with a disability through public service announcements, educational materials and demonstration programs as examples.

AWAD: Athlete with a disability.

Basketball Wheelchair: A wheelchair that is specifically designed for the sport of wheelchair basketball meeting the rules and regulations of the sport. Typically, the wheels sit at an angle to the seat, there is an additional wheel or two between the large rear wheels and the wheelchair has strapping used to keep the player in the wheelchair and give the player greater control.

Bridging the Gap: It is a program that allows individuals to see and try a variety of parasports during a single day session.

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 1 to 5 years, and late childhood, which includes elementary school-age children, aged 6 through to the onset of adolescence.

Classification: A number assigned to each player based on the amount of functional muscle they have to use. Players can be assigned a number from 1.0 to 4.5 (1.0, 1.5, 2.0, 2.5, etc.). The greater the amount of functional muscle a person can use the higher the point value assigned to them. Classification is part of the team balance rule that says you must have 5 players on the court with the total value of the players' classification not to exceed 14 when all are added to together.

Cognitive Abilities: An individual's ability to think, reason or remember.

Development: 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.

Dynamic Mobility involves moving parts of your body and gradually increasing reach, speed of movement, or both. Do not confuse dynamic stretching with ballistic stretching. Dynamic stretching consists of controlled leg and arm swings that take you gently to the limits of your range of motion. Ballistic stretches involve trying to force a part of the body beyond its range of motion. In dynamic stretches, there are no bounces or "jerky" movements. An example of dynamic stretching would be slow, controlled leg swings, arm swings, or torso twists.

First Contact: A program (like Bridging the Gap) that introduces a person to a parasport.

Functional Ability: Refers to the muscles a player can actively use to execute the skills of wheelchair basketball.

Fundamental Movement Skills: The basic movements any person should learn in the process of becoming physically literate. For a person in a parasport, this will include other skills like pushing, pulling, pivoting, and turning a wheelchair, wheelies and it can also include skills that incorporate the use of a mobility aid like a cane to hop or jump.

Growth: 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."

Inclusion: The process of involving players who have a disability alongside their peers who are able-bodied.

Integration: Similar to inclusion, this can be the process of incorporating individuals who are able-bodied into wheelchair basketball games or it can be the process of incorporating individuals with disabilities into an able –bodied program like Steve Nash Youth Basketball programs.

Ideal Performance State (IPS): A state reached when all physical, psychological, technical and tactical elements of one's game come together.

Late Entry Athletes: Athletes who have acquired their disability later in life, usually after completing several of the LTAD stages, but it can refer to an individual who has only completed the first of the LTAD stages.

Learning Styles: The different ways that people learn best (i.e. visual, auditory, and haptic).

Maravich Drills: Ball handling and dribbling drills used to improve ball handling and hand quickness.

Menarche: The first menstrual period of an individual.

Mobility Aids: The implements that individuals use to improve their mobility. They include things like canes, crutches and wheelchairs.

Overstress: To place too much emphasis on or to be subjected to excessive physical or emotional stress.

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

Periodization: Periodization refers to creating logical schedules for athlete training, competition, and recovery to optimize performance. Applying sport science, periodized plans organize and manipulate the modality, volume, intensity, and frequency of an athlete's training through long-term (multi-year) and short-term (annual) training, competition, and recovery plans to achieve peak performances when needed.

Physical literacy: Physical literacy is competence and confidence in fundamental movement skills and fundamental sport skills, combined with the ability to read the environment and make appropriate decisions. Physical literacy allows individuals to enjoy a variety of sports and physical activities.

Playing Up/Down: When a player trains or competes with athletes at an LTAD stage above or below their

current level. It is most often used when referring to younger players who would like to play against more advanced athletes or Late Entry athletes who are still adjusting to moving the wheelchair and are competing against younger athletes.

PNF: Stretching (or proprioceptive muscular facilitation) is one of the most effective forms of flexibility training for increasing range of motion. It usually involves contracting the muscles isometrically for 20 seconds. The muscle is then relaxed before a new stretch is applied to the muscle.

PSO: Provincial Sport Organization

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

Pushing: Refers to how a wheelchair basketball player generally moves the wheelchair. It can refer to pushing the wheelchair forward or backwards.

Readiness: 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.

Ready to Push: The position a person's body/trunk, hands and eyes are in just before they push or just as they start to push.

Sensitive Periods of Accelerated Adaptation to Training: points in the development of a specific attribute when experience or training has an optimal effect on the development of that attribute (e.g. speed). The same training, introduced at an earlier or later time, may be less effective.

Spina Bifida: A common type of disability that results in complete or incomplete loss of function and sensation from the point at which the spinal cord was compromised.

Static Stretching: Stretching a muscle (or group of muscles) to its farthest point and then maintaining or holding that position, whereas Passive stretching consists of a relaxed person who is relaxed (passive) while some external force (either a person or an apparatus) brings the joint through its range of motion.

Trainability: 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."

Ultra-short Interval training: A form of endurance training based on the principle that sufficiently short intervals of intense work do not produce lactic acid accumulation. It is appropriate for developing alactacid and aerobic endurance and provides the opportunity for specific skill training at competition intensity. It is used for training phases where specific training is important. When this work is alternated with short rest periods, it is possible to complete a large amount of training at competition quality. Ultra-short intervals do not produce lactic acid accumulation. It is when lactic acid accumulates that fatigue becomes devastating and adequate recovery then takes a markedly greater time.

Wheelchair Skills: The basic movements an individual must learn and be able to do in order to move a wheelchair when playing wheelchair basketball.

Wheeling Experience: The amount of time a person has spent pushing around either in an everyday or standard wheelchair or a wheelchair basketball wheelchair.

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