



# Long Term Athlete Development

Level I  
Coaching Education and Training Program



This program is made possible through a  
generous grant from the  
Craig H. Neilsen Foundation

Established in 2002, the Craig H. Neilsen Foundation is the largest private foundation dedicated to improving the quality of life for those living with spinal cord injury (SCI), by supporting innovative program services, specialty training and research on effective therapies, interventions and treatments, leading to a cure. Today, the Foundation funds SCI scientific research (basic, translational, clinical and psychosocial research); quality of life programs; postdoctoral and SCI medicine fellowships; and other projects to support the SCI community throughout the United States and Canada.



# **Long Term Athlete Development (LTAD)**

## **Utilizing Proper Strategies to Ensure Life-Long Physical Activity**



## Today's Presentation

1. Introduction to LTAD Model
2. Discuss implications for athletes with disabilities
3. Provide resources for follow up
4. Questions



This will be a brief overview of a great del of information, all of which is available on-line for those who want to receive additional information





When you google LTAD most of the good current information has been developed by the Canadians. The United States has started developing information, with USA Hockey taking the lead.

## What is LTAD?

### Long Term Athlete Development



## Long Term Athlete Development

- LTAD is a “general framework of athlete development with special reference to growth, maturation and development, trainability and sport system alignment.”
- What does this mean?



LTAD provides a framework that is designed to meet the needs of the person regardless of where they are in their developmental process physically, emotionally and mentally. LTAD provides a model that adjusts to the person rather than requiring a person to adjust to a model. This is particularly important for students with disabilities and has additional considerations for students who acquire a disability.

Ideally, this model also provides for a true alignment from school to community to club settings that allows for a student's skills to continue to develop regardless of the setting. Too often students with physical disabilities are left to develop physical literacy skills and sport specific skills either on their own or within a community program.

## Long Term Athlete Development

- A process that identifies sequential stages of training and competition
- Considers physical, mental and emotional development
- Develops a system in which an athletes learn and perform



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## What are the Goals of LTAD?

1. Provide quality training and competition that considers developmental age and critical periods of trainability
2. Provide a common curriculum
3. Properly prepares individuals by giving them physical literacy skills needed for life-long physical activity
4. Provide appropriate pathways for athletes to choose from
5. Provide a means to align recreation, competition, school sports and PE



- 1) This goes back to having the model fit the student rather than the student fit the model. Rather than getting caught up in the words training and competition think of education and opportunity relative to physical education and physical activity and we'll pull that together in a moment as we look at the different stages of LTAD and the two unique stages for people with disability.
- 2) Learn about the various adapted sports that are available for your students and the common terminology used within the sport and activities so that those terms can be used within the PE curriculum. This eliminates the need for students to re-learn skills and activities and promotes a higher level of learning.
- 3) This is the most significant component of LTAD and particularly so for students with a disability. This is the area with the greatest value as it provides the ability for EVERYONE to be active for life.
- 4) Whether it is recreational, competitive or elite sport, or physical activity, the opportunity needs to be provided and available and the foundation is built within the school system.
- 5) How can we utilize this information to bring more opportunities to students with disability and create a seamless migration from school to community, vice versa and develop opportunities within the school?

## LTAD consists of 7 stages

**The first 3 encourage physical literacy and sport for all:**

1. Active Start
2. FUNdamentals
3. Learning to Train

**The next 3 focus on excellence:**

4. Training to Train
5. Training to Compete
6. Training to Win

**The final stage encourages life-long physical activity:**

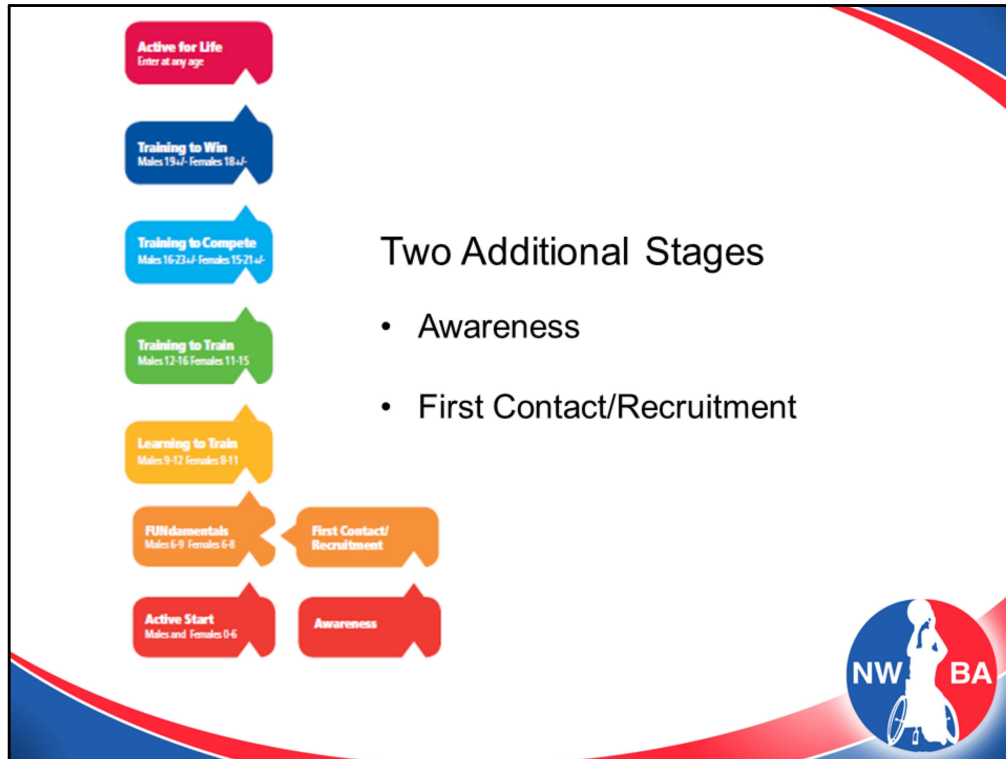
7. Active for Life



These 7 stages were developed based on develop of athletes without disabilities. Adaptations to this has been made to develop a model more representative of athletes with disabilities.



The 7 stages, age breakdowns and key aspects of each stage. Active for Life being the overall goal for all participants.



Tie in the additional two stages, Awareness & First Contact/Recruitment to the need for EVERYONE who works with people with physical disability to be a knowledgeable resource on what is available in sport, recreation and physical activity



## First Contact/Recruitment



Just knowing or being aware is not enough. Once the awareness is provided you need to then provide an opportunity to engage in activity. Ideally this would happen within the school environment as it does for peers without disability but this is often not feasible due to the specialized equipment and expertise that is often required. This is where knowledge of and relationships with community becomes critical.

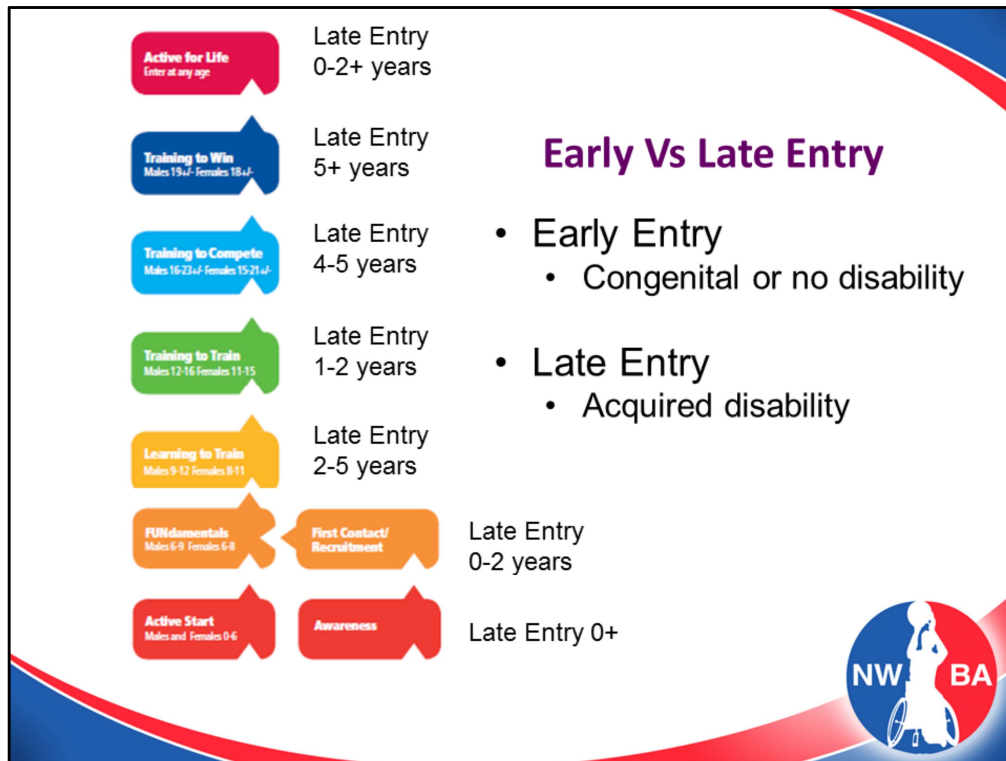
By developing a relationship with a community program you can get help from the experts to provide both equipment and resources for getting your students engaged in appropriate activities that will help them develop not only physical literacy but also fundamental and sport specific movement skills that will allow them to develop the requisite skills for life-long physical activity.



Awareness is about ensuring that people with disability are aware of all of the possibilities that exists relative to adapted sport and recreation. It is imperative that if your work or volunteer duties put you in contact with persons with disability that you are able to function as a resource for the opportunities that are available on a local, state, regional, national, and international level.

There is also a second component to awareness. Not only do people with disability need to be aware of what opportunities there are, they need to be aware that they have the ability to engage in those opportunities. All too often youth with disability do not have an accurate outlook of what they can and should expect of themselves when it comes to physical literacy, sport and recreation. This is often due to the family/caregivers not having an accurate outlook of the ultimate potential of the person with a disability. As such, it is also incumbent upon those that interact as a matter of course with persons with disability to be familiar with different categories of disability and what opportunities typically coincide with that disability category.

Can you imagine an athletically gifted 18 year old boy that learns for the first time that there is a thing called the NCAA and there are athletic opportunities at the collegiate level? This would almost certainly NEVER happen but it does happen to children, youth and adults with disability. They grow up and never know all the opportunity that exists through adapted sport and recreation.



When we start to talk about applying the LTAD model to persons with disability we need to think about the stages not only in terms of chronological ages and where the student is in the physical, emotional and mental maturation process, we need to take into consideration the amount of time that has passed since the acquisition of the disability.

For early entry participants this means that we are talking about individuals that have either been born with their disability and we can use the same age ranges as we would use for a participant without a disability accounting for changes that may need to be made as a result of early or late onset of puberty when we consider the L2T, T2T and T2C stages.

For late entry participants we need to look not only at their chronological age but also the amount of time that has passed since the acquisition of their injury. For example, if we have an active, athletic 14 year old male that has experienced a traumatic spinal cord injury. He would have been entrenched in the T2T stage prior to his injury and been focused on developing aerobic capacity, speed, strength, and sport specific skills. Post-injury, it is imperative that within the first few months that individual be presented with opportunities to develop awareness of what is out there in terms of sport, recreation and physical activity but also be given the chance to start trying these activities. A good rehab hospital, such as Shepherd Center right here in Atlanta, will do all this. The fact of the matter is that many people who experience a traumatic injury aren't ready to jump into adapted sport and recreation in those first few months post injury. All of their energies are spent adjusting to a new life and a new body. That is one of the reasons it is so important that awareness, first contact/recruitment continue within the school environment and the community.

That 14 year old, who already developed physical literacy, fundamental movement skills, gross and fine motor skills and sport specific skills now needs to relearn all of those skills from a wheelchair and see how they can be applied to different adapted sports. If this is not done what hope does he have to be active for life and prevent secondary health conditions that often accompany paraplegia?



Another way to show the developmental stages of LTAD and what should be the main emphasis of participation during each stage.

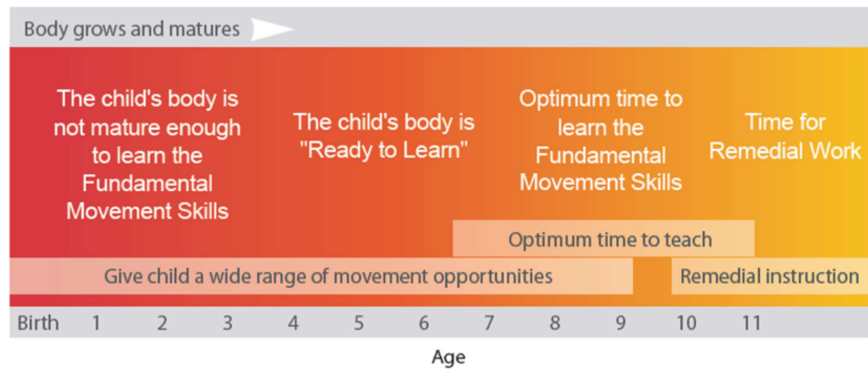
# Physical Literacy

- Development of fundamental movement and sport skills
- Skills that permit a child to move with confidence and with control in a wide range of physical activities

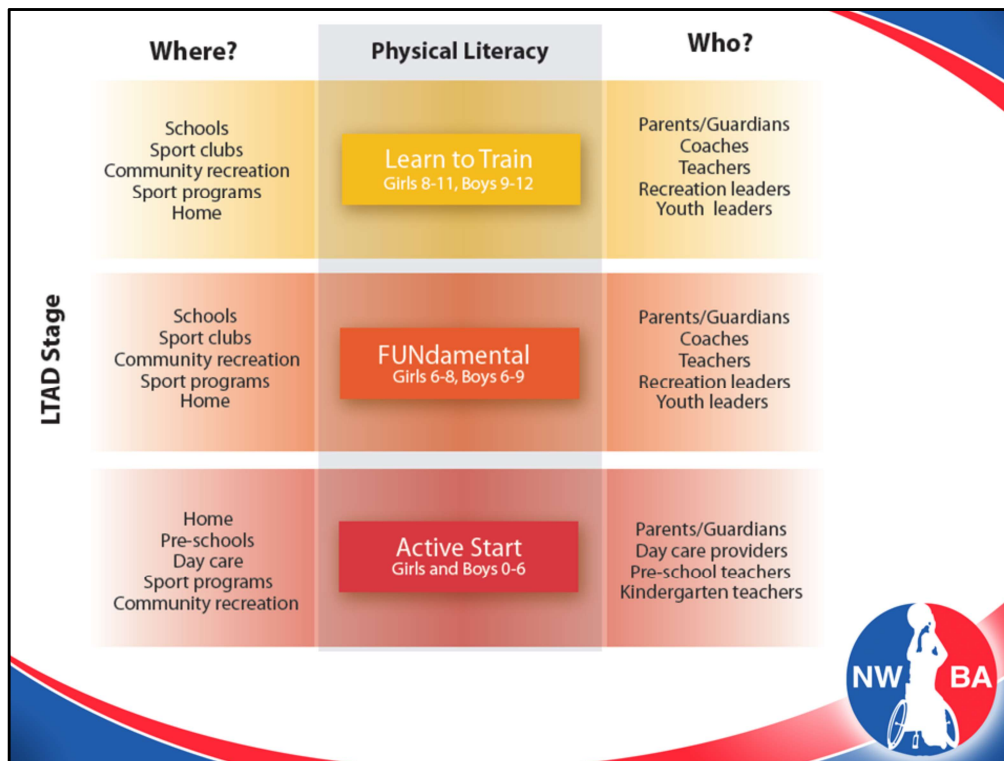


Physical Literacy is the key building block for LTAD. Similar to babies crawling before walking, kids learning their ABC's before reading...developmental movement and sports skills.

## Learning Fundamental Movement Skills



Remember wheelchair basketball skills are learned over time, especially for players with newly acquired injuries.



There are many people who are involved in shaping a person's physical literacy. Can you recall the ones you were involved in?

Unfortunately, athletes with disabilities often do not have as many opportunities as athletes without disabilities.





When we think of Active Start activities, what are some examples of the fundamental movements that students with disabilities may need to develop if they are a student with:

- A mobility impairment and use a manual wheelchair, power wheelchair, walker, crutches
- A visual impairment
- An amputation



<b>FUNDamentals</b>	Males 6-9 Females 6-8	Learn all FUNDamental movement skills and build overall motor skills
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What type of knowledge and information do you need to help students with disability develop complete fundamental movement skills and build overall motor skills?

This stage is based on play and FUN and the key role it plays in a child's development.



Emphasis is on participation in a variety of well structured activities to help students with learn overall sport skills?

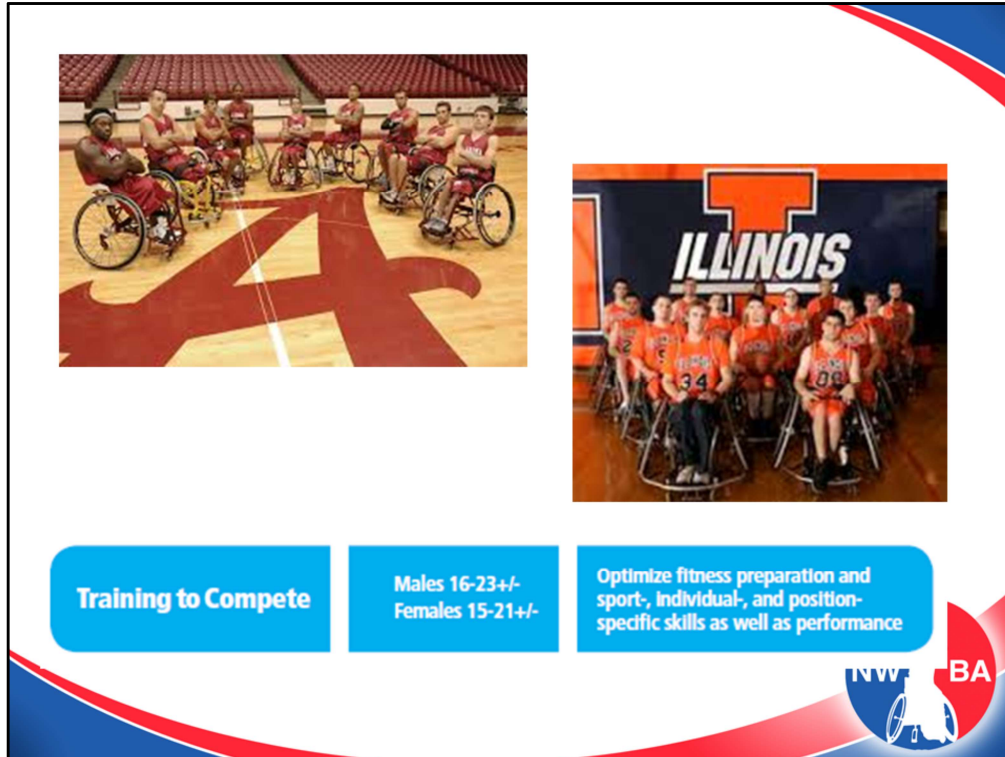
Emphasis still on fun, not competition. How does that fit into the NWBA at this age?



<b>Training to Train</b>	Males 12-16 Females 11-15	Build aerobic base, develop speed and strength, further develop and consolidate sport specific skills
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Start of emphasis on key components of sport: endurance, speed, strength as well as more technical skills and sports strategies.



**Training to Compete**

Males 16-23+/-  
Females 15-21+/-

Optimize fitness preparation and sport-, individual-, and position-specific skills as well as performance

NWBA

Time to optimize training in one sport and on specific position and skill development.

Depending on training and competition, there will still be some athletes doing more than one sport.

Also many athletes at this age do not make the leap to elite sports but continue to play on a semi-competitive, recreational level...which is fine and supports the key goal of Sports for Life.



Time into advanced coaching, professional development, knowing where the resources are to ensure athletes get the right coaching.

Time to specialize on a single sport, intense structured training for elite competition.





Transition phase from competitive career to life long physical activity. This can happen at any age and can happen in one sport while an athlete is still competing in another sport.

## **The 10 Key Factors Influencing LTAD for Athletes with Disabilities**

1. The 10-Year Rule
2. The FUNdamentals
3. Specialization
4. Age Factors
5. Trainability
6. Physical, Mental, Cognitive, and Emotional Development
7. Periodization
8. Calendar Planning for Competition
9. System Alignment and Integration
10. Continuous Improvement





# 1.The 10-Year Rule



10 years or 10,000 hours of training to become an elite athlete – Paralympian.

## 2. The FUNdamentals



This is the time to acquire basic sport skills in a variety of sports while having FUN!

## 2. The FUNdamentals

Barriers to developing FUNdamentals:

- Overly protective parents...
- Lack of adequate APE or PE
- Inclusion difficulties
- Medical issues



There are several barriers facing kids with disabilities. Remember to role of the Individual Education Plan (IEP) in a child's education. IEP should include a well defined physical activity component.

### 3. Specialization



Caution NOT to specialize too early. Kid need a full range of experiences. Many time very difficult for kids with disabilities due to lack of organized programs and structured Adapted Physical Education.

## 4. Age Factors



The NWBA faces the challenge of programs with a wide range of ages, developmental levels, learning abilities and associated conditions based on the disabilities of the children involved.

## 4. Age Factors



Really no such model in sport for kids without disabilities.

## 5. Trainability



Trainability: represents the window of time when a person can benefit the most from training and competition.

The general model is based on athletes without disabilities and does not take into account the various factors that influence athletes with disabilities.

More research is needed in this area.

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



Given the various disabilities of players in the NWBA, people develop at different rates, different maturity levels etc.



## 7. Periodization



Periodization could be a presentation on its own right. It represents scheduling rest around training competition to enable an athlete to have peak performances at the right time. It involves knowing your athletes and knowing who needs more rest than others. Key part of your seasonal plan, pre-season, competition season, post-season.



## 8. Calendar Planning for Competition



We have the challenge of a long season with lots of practice and few opportunities for competition. Coaches need to be creative with practices to keep players interests.

Resources are always an issue, often limiting teams from traveling for more competitions.

## 9. System Alignment and Integration



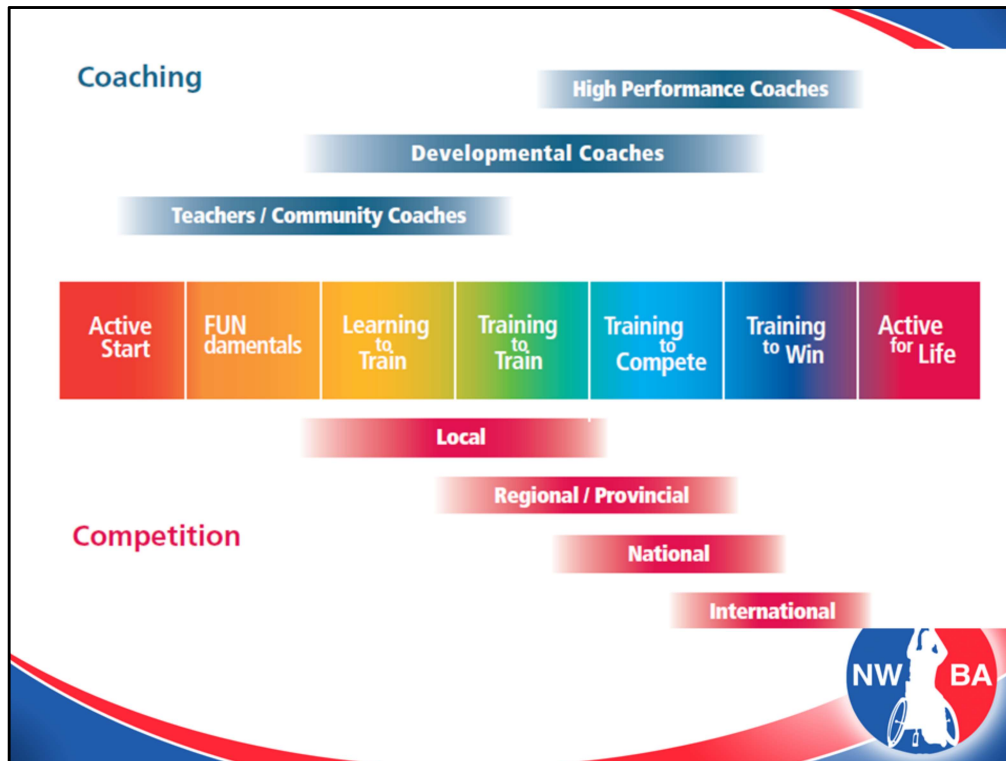
Vertical integration model emphasizes inclusion and cooperation of not only the NGB but eh state and local sport groups.

USA Hockey leads the way in support of the US National Sled Hockey team.

## 10. Continuous Improvement



Continuous improvement is the nature of sport, especially sport that involves equipment. Also includes coaching, sports medicine, training programs etc.



A model that shows when different level of coaches play a role in LTAD.

# Ten Pillars of Support

1. Coaching
2. Competition
3. Funding
4. Equipment
5. Facilities
6. Training and Competition Partners
7. Sports Science
8. Officials Support
9. Athlete Support
10. Talent Development



The Canadian LTAD system also suggests that there are 10 Pillars of Support for athletes with disabilities.

## Ten Pillars of Support: Coaching



Emphasis is on coaching education. Most NGB's have an established programs. The NWBA has become to establish a national plan with this Level I certification program.



## Ten Pillars of Support: Competition



Recognizes the lack of competition opportunities for athletes with disabilities. Promotes regional competitions and inclusive opportunities.





A new national initiative promoting adapted sports at the high school level. Check out the website of a variety of great resources including a wheelchair basketball handout.

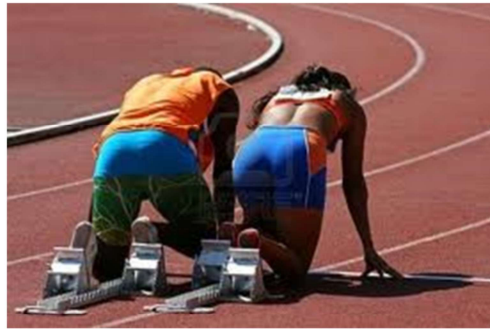
## Ten Pillars of Support: Funding, Equipment, Facilities



Funding, equipment and facilities represent the three most challenging issues for NWBA programs.

Possible funding sources for wheelchair: Challenge Athletes Fund, Equipment Loan Programs, Participant give back programs

## Ten Pillars of Support: Training and Competition Partners

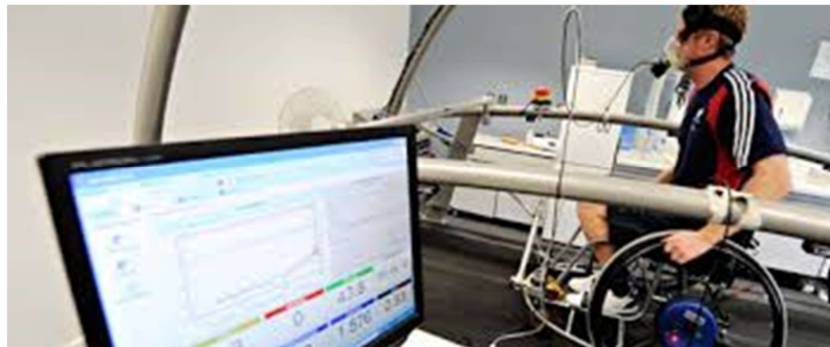


This area recognizes that certain sports require “partners” to assist athletes in training and competition.

Examples shown here: a running guide for visually impaired track athletes and a Sport Assistant in the sport of Boccia.

Can you think of any others?

## Ten Pillars of Support: Sports Science



Sports Science is another area that Paralympic sport has a lot of catching up to do. Being involved in sports science programs is difficult for most local programs unless they are able to affiliate with local colleges or universities. Both NWBA national teams have increased sports science programs over the past 8 years.

Paralympic Research & Sports Consortium is headed by the Lakeshore Foundation.

## Ten Pillars of Support: Officials Support



Concentrates on officials education, recruitment and retention.

## Ten Pillars of Support: Athlete Support



Discuss the need for more services and resources available to elite athletes - i.e. National Teams

USOC support of Nationals Teams

Training Stipends

Health Insurance

High Performance camps

## Ten Pillars of Support: Talent Development



NWBA is working on a programs to start the process of athlete identification much sooner. Annual high performance camps, U 23 and U25 national teams, expanded collegiate programs and joint national championships all contribute a process that identify future talent earlier in the process.

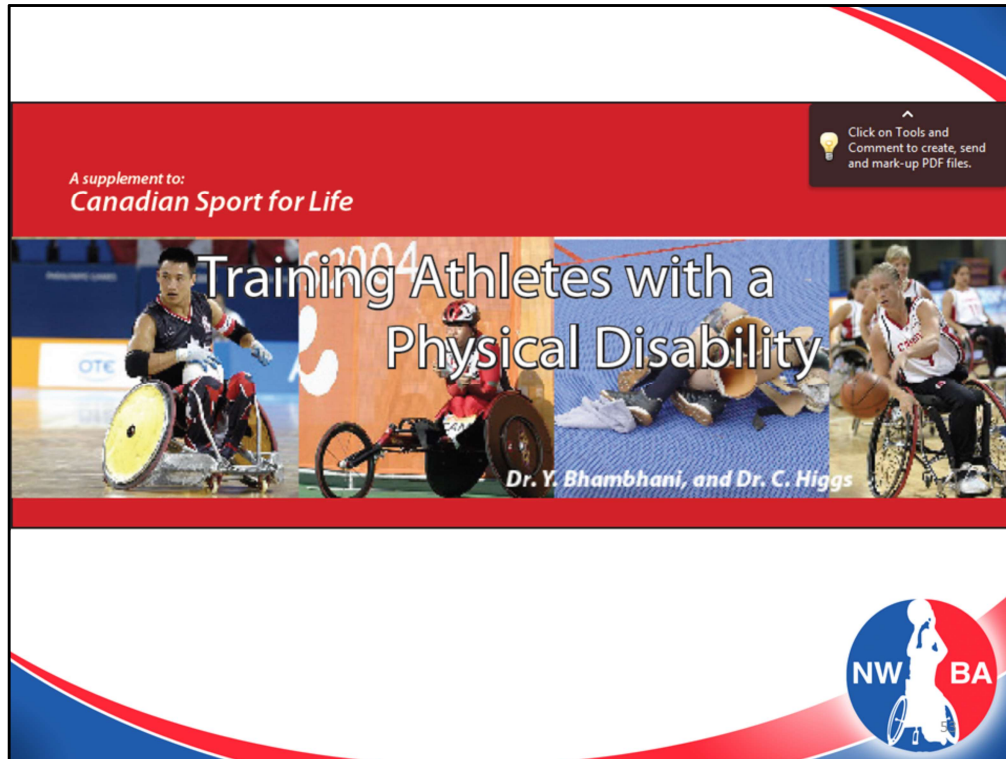




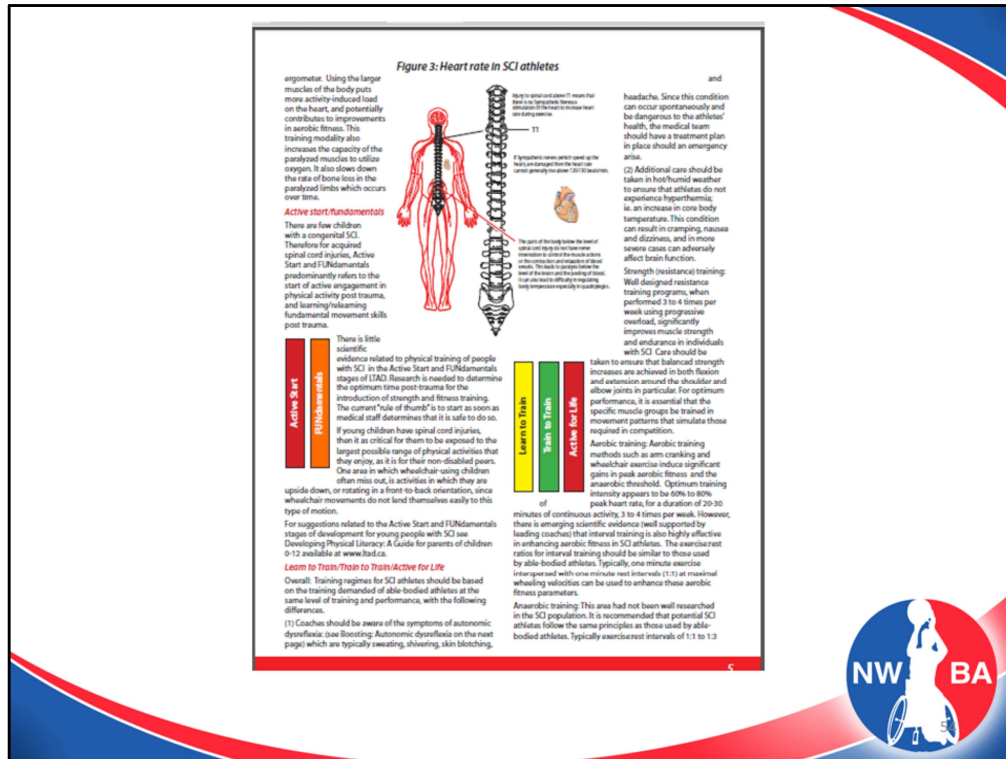
There are a great deal of resources on the Canadian Sports for Life website.







A 35 page manual that provides details on all the information provided in this presentation.



Good general information on the most common disabilities: Cerebral Palsy, Spinal Cord Injured, Amputations, Visual Impairments.

### Information for Parents

If you would like to learn more about how you can create the best possible sport for life experience for your children, please visit [www.ltad.ca](http://www.ltad.ca) and access our more

**Active for Life**  
Any age.  
After becoming physically literate, participate in lifelong physical activity and sport.

The development of fundamental movement skills and fundamental sports skills that permit a child to move confidently and with control in a wide range of physical activity, sport and dance situations. It also includes the ability to "read" what is going on in their environment and react appropriately to those events.

Sport makes a major contribution to the health and development of individuals and the communities in which we all live. It provides an opportunity for kids and adults to be active when inactivity rates threaten the health and quality of life of Canadians. Sport also provides participants with valuable lessons on teamwork, fair play and the value of working towards goals. The existing sport system is generally falling short of its potential due to some of the weaknesses explained on the next page.

Long-Term Athlete Development

Canadian Sport for Life

Parents Need to Recognize...

Over Competing and Under Training

Many athletes spend too much time resting, traveling, competing and recovering from competition and not enough time preparing for it. In team games players share a puck, ball, or ring, thus limiting skill development. In practice players can have one each.

Too Much Emphasis on Winning at Young Ages

Too many coaches and parents focus on the result, rather than performance. This attitude leads to long-term failure as coaches force the development of skills to focus on specific game tactics.

Inappropriate Training Programs

Too often, adult training programs are imposed on children and boys programs used for girls. Children are not small adults and girls develop differently than boys. Younger athletes (6 to 8/9 years) need to spend more time developing basic movement skills and then (8/9 to 11/12 years) sport specific skills. As athletes get older, the focus should gradually shift towards fitness and tactics.

Specialization

As athletes get older, they will need to specialize in 1 or 2 sports if they are to be successful. Younger athletes should participate in several sports and all sports should spend some time developing basic skills such as running, jumping, throwing, balance, agility, coordination and speed. An all around athlete will have the ability to play a variety of sports well and specialize later. An early focus on just one or two sports often leads to injuries, burn-out and limited skill development.

System Alignment

Coaches of different teams and different sports often compete for an athlete's time and effort, leading to scheduling conflicts and the over-training of athletes. Parents need to understand Canadian Sport for Life LTAD to support alignment of the sports system.

Factors Parents Should Consider...

Fundamentals

Learning a wide range of movement and sport skills provides the basis for lifelong enjoyment of physical activity and a successful athletic career.

Specialization

Athletes should not specialize in one sport too soon.

Developmental Age

Children mature at different rates. Early maturers must not get complacent, as late maturing athletes will catch up.

Trainability

While coaches need to understand trainability, parents need to educate themselves about proper rest, sleep, fluids and nutrition.

Physical, Mental, Cognitive and Emotional Development

Parents need to support the efforts of athletes and encourage fair play, effort, skill development and individual improvements.

Competition Planning

Competition should serve the development of the athlete. While athletes should always try to win, winning is not the most important factor - learning from competition is. Athletes who compete too much often train too little. Competition also increases costs.

System Alignment and Integration

Coaches need to be informed by parents of a child's other activities so that they can adjust individual training programs.

No Accidental Champions - Athletes with a Disability (AWAD)

AWADs are first and foremost athletes, and for this reason, virtually everything in the able-bodied LTAD is applicable. Between 10% and 14% of Canadians have a disability and, for optimum health, it is critical that all Canadians, with or without a disability, fully engage in physical activity. Canadians with a disability who aspire to the highest levels of sport performance also need a sport system to help them achieve their goals.

For this reason, and to ensure the long-term health of its population, Canada has created an LTAD model for AWADs.

Athletes, with and without a disability, need to acquire FUNDamental movement and sport skills, or physical literacy, through fun and games, and this needs to be achieved prior to puberty.

Children with a disability face difficulties in acquiring FUNDamental skills because:

- overly protective parents, caregivers, rehabilitation facility staff, teachers, and coaches shield them from the bumps and bruises of childhood play.
- adapted physical education is not well developed in all school systems.
- some coaches and programs do not welcome children with a disability to their activities because of a lack of knowledge about how to integrate them.
- it takes creativity to integrate a person with a disability into a group activity where FUNDamental skills are practiced and physical literacy is developed.

www.LTAD.ca

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**"The bottom line is everyone has the right to participate in sport programs, there are enough success stories to guide and support inclusive programs."**

**Mary Blechard PhD**



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

**Chantal Petitclerc**

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

**Colin Hogg PhD**



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

**Richard Way MBA**



**Long-Term Athlete Development: Athletes with a Disability**



A supplement to  
"Canadian Sport for Life"

**No Accidental Champions**

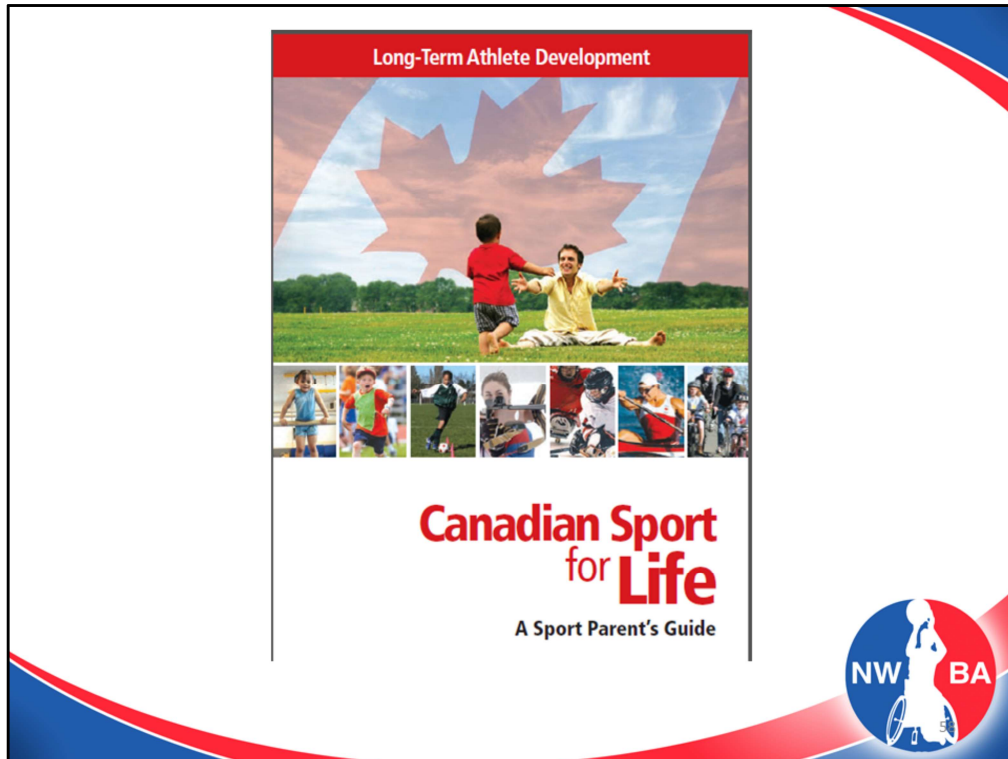
For more information visit [www.LTAD.ca](http://www.LTAD.ca)



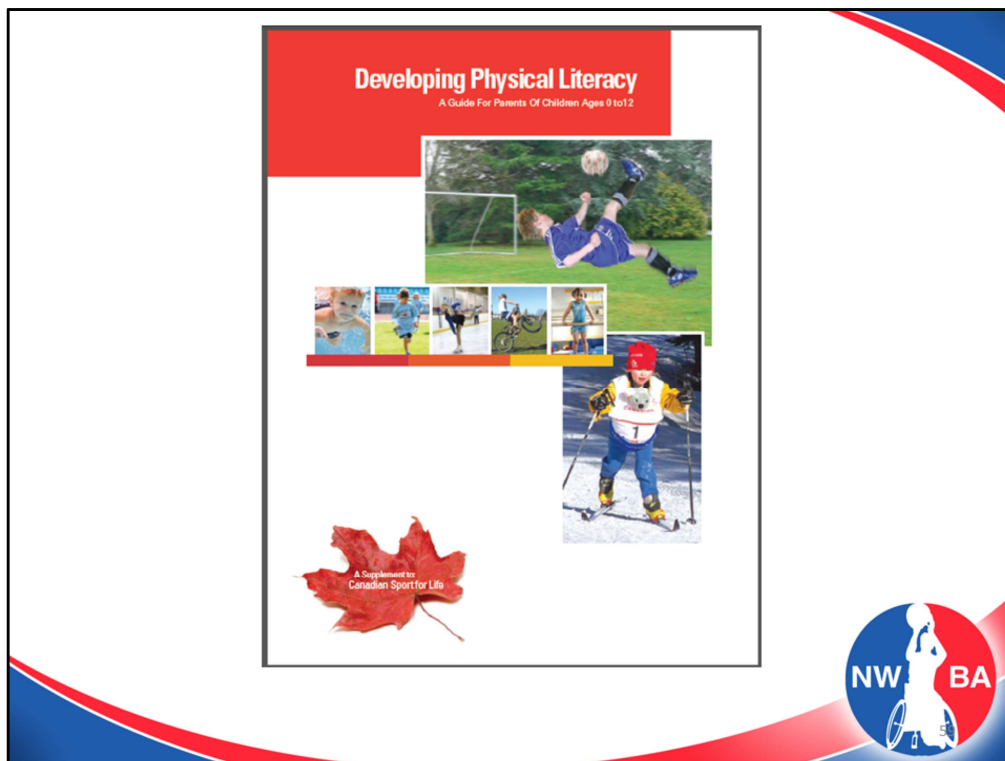



2 page poster





Material designed and written specifically for parents.





Canadian Sport for Life

# Recovery and Regeneration for Long-Term Athlete Development

Angela Calder

*"Recovery is what you do between training sessions and races so that you can train hard and perform well at the next session"*  
Cross country skier

## Recovery is an Important Training Principle

The main role of recovery is to help athletes adapt faster to training. This is done by reducing fatigue so athletes can "bounce back" and be ready for the next session or event. This process is a critical step in the "overcompensation" model (Figure 1).

**Figure 1: Overcompensation Model: The Principle of Recovery**

Both work and recovery are very important stages of the adaptive process. Without the appropriate training stimuli there would be no improvement in performance and no resulting fatigue. To maximize the receptivity for athletes to learn, adapt, and improve, it is important for them to aim to begin any training session or event in a non-fatigued state.

## Recognizing Fatigue

Prescribing training loads is a complex matter and coaches and athletes spend considerable time developing appropriate programs to suit both the developmental stage and performance level of an athlete. However, identifying fatigue from different types of training and stress tends to get much less attention and may even be overlooked by both the coach and athlete. A good coach understands not only what is being stimulated but also what is being fatigued.

There are several categories of training and competition fatigue for coaches and athletes to consider (Table 1). If the coach can recognize the main causes of fatigue and the corresponding expressions of these in the athlete, then specific recovery and regeneration strategies can be selected to deal with this fatigue.

## Recovery and Long-Term Athlete Development

Human growth, maturation and training experience underpin Balyi's Long Term Athlete Development model. These factors have a critical bearing on the developmental stages of athletic adaptation and trainability. Chronological age is a poor indicator of individual development especially for adolescents as there is great individual variability in the rate of growth and maturation during puberty. The rapid changes that occur physically, cognitively, socially and psychologically during adolescence are a golden opportunity for the coach to provide

Detailed resources on more specific topics.

