Long Term Athlete Development

A clear path to better sport, greater health, and higher achievement.

John Scriven
Aims

• To Ignite Passion for Athlete Development.
• To Try to Make It Fun!
• To Work With Sports To Help Create Change.
Objectives

• Discuss Current Athlete Development Models
• LTAD Origins, Principles & Philosophy
• LTAD Basics
• Stages of LTAD - 10 Key Factors Including the 10 Ss.
• Implementation and Alignment
Learning Outcomes

• Understand challenges with traditional athlete development models.
• Awareness of LTAD development and background.
• Recognise best practice in athlete development.
• Describe the basics of LTAD.
  - 7 stages of LTAD.
  - The 10 factors.
Current Athlete Development Models

• Jean Cote’s Developmental Model of Sport Participation

• Istvan Bayli’s Long Term Player Development

• Abbot et al’s Psychological Characteristics of Developing Excellence

• Bailey and Morley's Model of Talent Development in Physical Education
Typical Model

National Representation

Local Representation

Club

Community Sport
Problems.....

- All models based on chronological age.
- No consideration for biological, emotional or psychological maturations differences.
- Only focus’s on athletes who make the cut (elitist).
- Eliminates participants until only a few remain.
- Does not value players who do not progress.
- Sport does not care where eliminated players went.
- Disconnects sport and recreation.
- Recreation is seen as ‘outside’ the model.
- Created in the 60’s still used in many sports today.
Onwards and Upwards

• 1989 Sanderson introduced ‘athlete development’.

• Took into consideration the growth and maturation process of young, developing athletes.

• Considered developmental age as a crucial factor rather than chronological age.
• 2005 Bayli et al introduced ‘a practical model’ called LTAD/PD for Canada.

• This included an international collaboration of specialists to include:
  - Empirical coaching observations & experiences.
  - Coaching science.
  - Human growth, development and maturation.
  - Alignment to technical coaching best practice.
  - Health, participation and physical literacy.
  - Business leadership.
Long-Term Athlete Development 2.0

Canadian Sport for Life

Canadian Sport for Life
quality sport & physical activity

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The Philosophy of LTAD
Why is LTAD/PD different?

• It recognises the participation, elite and school based systems are MUTUALLY DEPENDANT upon each other.

• It recognises all parts of the sport association are MUTUALLY DEPENDANT.

• It aligns all aspects of associations to a SHARED VISION. All resources draw in the same direction.
Heath & Wellness

Organized Sport and Podium Performances

Recreation and Lifelong Participation

School Sports and Physical Education
The 8 Key Pillars of LTAD/PD

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<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Athletes</strong></td>
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<td><strong>2</strong></td>
<td><strong>Coaches</strong></td>
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<td><strong>3</strong></td>
<td><strong>Training</strong></td>
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<td><strong>4</strong></td>
<td><strong>Competition</strong></td>
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<tr>
<td><strong>5</strong></td>
<td><strong>Leadership</strong></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>Sport medicine &amp; sport science</strong></td>
</tr>
<tr>
<td><strong>7</strong></td>
<td><strong>Facilities &amp; equipment</strong></td>
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<tr>
<td><strong>8</strong></td>
<td><strong>Parents</strong></td>
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</table>
Sport Specific Models

Every Single Sport
Premise of Successful Athlete Management.

• If you want to teach Latin to Johnny, you have to know Latin and you have to know Johnny

• If you want to teach table tennis to Johnny, you have to know table tennis and you have to know Johnny

• We know sport very well BUT we do not know Johnny or Jane from age 9 to 16!
Current Challenges to Athlete Development

Shortcomings

1. Developmental athletes over compete and undertrain.
2. Adult training and competition programs are imposed on developing athletes.
3. Preparation tends to be geared to the short-term outcome – winning - and not to the process.
4. Critical periods of accelerated adaptation to training are missed.
5. Fundamental movement skills and sport skills are not taught properly.
6. Parents are not educated by the sport.
7. The best coaches only work with the best.
8. Females are subjected to male programmes.
9. Developmental athletes have poor exposure to age relevant high level competition.

Consequences

1. Failure to reach optimal performance level.
2. Poor movement ability and injury.
3. Poor skill development.
4. Developmental (children) not having fun!
5. No systematic development of the next generation.
6. Bad habits formed from over competition focused winning.
7. Lack of proper fitness.
8. Fluctuating national performance levels.
9. Drop out.
Fixing Past Challenges

• LTAD has been developed for a reason.

• Many traditional approaches to sport have led to reductions in participation numbers, led to results, and even caused injury.

• LTAD is designed to maintain participation, increase results, and protect our athletes.
Improving Health

• LTAD is also driven by serious concerns for the health of all Canadians.

• Trends over the past two decades have been towards less physical activity and sport participation,

• rising rates of obesity, type 2 diabetes, and increased risk of heart and stroke disease.

• LTAD aims to mitigate these trends by promoting lifelong engagement in physical activity and sport.
How can LTAD Help?

• Attract people to sport & retain them
• Identify gaps in the current system and establish a clear player pathway
• Provide integrated effective and enjoyable programmes for developing and performing players
• Provide a planning tool to optimise performance
• Align with NGBs and Sport Strategy.
No Magical Unicorns.....

- Athlete development/performance should be:
  - Accountable.
  - Predictable.
  - Scientifically Validated.
  - Organised
  - SMART and Efficient
  - Fun
Break! Where are you?
From The Old To The New

Excellence

Participation

Foundation

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LTAD: Participation, Excellence and Health
## 7 Stages of LTAD

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Start</td>
<td>Males and Females 0 - 6</td>
<td>Learn FUNdamental movements and link them together in play</td>
</tr>
<tr>
<td>FUNdamentals</td>
<td>Males 6 – 9</td>
<td>Learn all FUNdamental movement skills and build overall motor skills</td>
</tr>
<tr>
<td></td>
<td>Females 6 - 8</td>
<td></td>
</tr>
<tr>
<td>Learn to Train</td>
<td>Males 9 – 12</td>
<td>Learn overall sport skills</td>
</tr>
<tr>
<td></td>
<td>Females 8 – 11</td>
<td></td>
</tr>
<tr>
<td>Train to Train</td>
<td>Males 12 – 16</td>
<td>Build aerobic base, develop speed and strength, further develop and</td>
</tr>
<tr>
<td></td>
<td>Females 11 – 15</td>
<td>consolidate sport-specific skills</td>
</tr>
<tr>
<td>Train to Compete</td>
<td>Males 16 – 23 +/-</td>
<td>Optimize fitness preparation and sport-, individual-, and position-specific</td>
</tr>
<tr>
<td></td>
<td>Females 15 – 21 +/-</td>
<td>skills as well as performance</td>
</tr>
<tr>
<td>Train to Win</td>
<td>Males 19 +/-</td>
<td>Focus on podium performances</td>
</tr>
<tr>
<td></td>
<td>Females 18 +/-</td>
<td></td>
</tr>
<tr>
<td>Active for Life</td>
<td>Enter at any age</td>
<td>Smooth transition from an athlete’s competitive career to a lifelong</td>
</tr>
<tr>
<td></td>
<td></td>
<td>physical activity and participation in sport</td>
</tr>
</tbody>
</table>
We have all the nuts and bolts, we just need to align them.
"Henry! Our party’s total chaos! No one knows when to eat, where to stand, what to . . . Oh, thank God! Here comes a border collie!"
Structured development at all stages.
Performance Pathway
Developmental Pathway
Athletic Foundation
Physical Literacy
Take the Focus off the “Icing”
Impressive Feats on Shaky Foundations
Make Cake so Good it Doesn’t Need Icing
Section 2 - LTAD Basics

‘Children, youth and adults need to do the right things at the right time to develop in their sport or activity’ (Balyi & Sheppard 2010).
• LTAD encompasses the ‘10 key factors to performance’.

• Provides a pathway/curriculum to success.

Many Roads to Rome – Which is right?
How do we know? Intuition?
10 Key Factors

- Physical Literacy
- Specialisation
- Developmental Age
- Sensitive Periods
- Mental, Cognitive and Emotional Development
- Periodisation
- Competition
- Excellence Takes Time
- System Alignment and Integration
- Continuous Improvement
Physical literacy is the cornerstone of participation and excellence in physical activity and sport.
If you can't
Catch Jump Run
Swim Throw
You won't take part in
Soccer
Basketball
Volleyball
Track and Field
Squash
Badminton
Rugby
Tennis

If you can't
Catch Jump Throw
Swim Run
You won't take part in
Baseball
Softball
Bowling
Soccer
Goalball
Football
Rugby

If you can't
Throw Jump Run
Swim Catch
You won't take part in
Swimming
Diving
Water Polo
Scuba
Kayaking
Sailing
Surfing
A reversed procedure?

• First we make a player and after we want to make an athlete out of the player?

• We have to make an athlete first and make a player out of the athlete!

• The Myth That it “Just Happens”
Multifaceted Responsibility

- Recreation
- Organized Sport
- Physical Education and School Sport

- Clubs, School and Community Supported
- Parent Led
- Child Centred

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Questions

• Are we doing it?
• How well are we doing it?
• Is it part of our coaching ethos?
• What are the effective ratios of general vs specific training at the different developmental age groups?
• How does our training differ from our senior programmes to our junior programmes?
• Are juniors following a miniaturised senior programme?
• Do we educate parents?
Sports can be classified as either early or late specialization.

<table>
<thead>
<tr>
<th>Early</th>
<th>Late</th>
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</thead>
<tbody>
<tr>
<td>Acrobatic (gymnastics, diving, figure skating)</td>
<td>Early (basketball, rugby, football, hockey, skiing).</td>
</tr>
<tr>
<td>Highly kinaesthetic (e.g. snowboard, surfing, swimming, synchro, equine).</td>
<td>Standard (majority of all sports)</td>
</tr>
<tr>
<td>Demanding and complex motor skill requirement (e.g. table tennis)</td>
<td>Late (cycling, wakeboard, sailing)</td>
</tr>
<tr>
<td></td>
<td>Very late/transfer (rowing, triathlon, volley ball, bobsled)</td>
</tr>
</tbody>
</table>
Dangers of Early Specialisation in Late Sports

- Quick performance improvement.
- Best performances achieved at 15-16 years.
- Inconsistency in performance in competition
- High % of burn out by age 17-18, athletes may completely quit sport
- Prone to injury because of muscular unbalance and forced adaptation
- One-sided, sport-specific preparation
- Lack of ABCs, poor basic movement competency and fundamental sports skills
- Medal focused sets expectations too high for later life.
- Early retirement from training and competition.
- Eating disorders (Baker et al, 2009).
Benefits of ‘Slow Cooking’ in Late Sports

• Multilateral Development
• Slower performance improvement
• Athletes develop realistic expectations.
• Athletes usually get best performance at 18 years and older towards the age of physiological and psychological maturation
• Consistency of performances in competitions
• Much longer athletic life
• Far fewer injuries as a result of a stronger athletic literacy.
• Ultimately a higher level of performance.
• Early Specialisation sports
  - Regardless of the negative consequences – early specialisation is necessary

• Late Specialisation
  - No real advantage in early specialisation
  - High negative consequences.
Early vs Late LTAD Models

Early Specialisation Model
1. Training to train
2. Training to complete
3. Training to win
4. Retirement/Retainment

Late Specialisation Model
1. Fundamentals
2. Learning to train
3. Training to train
4. Training to complete
5. Training to win
6. Retirement/Retainment
• Children of the same chronological age can differ by several years in their level of biological maturation.
Growth

(Adapted and modified from Ross & Marfell-Jones, 1982)
Questions

• Do we differentiate training based on chronological age or on developmental age?

• Do we make considerations for gender differences?

• How do we identify when the right times are for certain training?
Sensitive Periods

**Females**
- Speed
- Suppleness
- Skills
- Speed
- Stamina
- Strength 1 & 2
- Rate of Growth

**Males**
- Suppleness
- Skills
- Speed 1
- Stamina
- Speed 2
- Strength

Developmental Age
Physical, Mental - Cognitave, Emotional Development

Chronological Age
under 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20+

PHV
The Ten S’s of Training and Performance

1. Stamina
2. Strength
3. Speed
4. Skill
5. Suppleness
6. Structure/Stature
7. Schooling
8. (p)Psychology
9. Sustainance
10. Socio-cultural
Questions

• At what point do we integrate these?
• How much should we do?
• How often?
• Males vs females?
• Best practice?
• How do we measure?
• Is it appropriate?
• Do we have the skills?
The Role of Monitoring Growth
Questions

• Do we take into consideration all of the 10’s for athletes in our care?

• Are we taking into consideration the critical periods of sensitivity to key skill development?

• Do we therefore develop the ‘whole’ athlete?
Mental, Cognitive and Emotional Development

HUMILITY
RESPECT
LEADERSHIP
INTEGRITY
ETHICS
FAIR PLAY
ATHLETE
Periodisation & Programming
Questions

• What is periodisation?
• How do you do it?
• Step by step planning control.
• Developmentally relevant planning and programming.
Google Earth Analogy

- Zoom Level 1 – Multi Year LTAD Plan
- Zoom Level 2 – Yearly Plan
- Zoom Level 3 – Phase Plan
- Zoom Level 4 – Monthly Plan
- Zoom Level 5 – Weekly Plan
- Zoom Level 6 – Session Plan
Example Annual Plan – Zoom 2

The diagram illustrates an annual plan divided into two main periods: Preparation Period and Competition Period. The winter months are January, February, March, and April, while the summer months are October, November, December, January, and February. The preparation periods are highlighted in blue, and the competition periods are highlighted in orange. The transition periods are represented by light blue and light orange colors, respectively.

The diagram also includes sections for general preparation and specific preparation, with the pre-comp period and competition period. The months are labeled from left to right, with the transition periods occurring at the end of the preparation periods and the beginning of the competition periods.
• Lead by example.

• Massive undertaking by Education, Health, Recreation and Sport Communities!

• Most of the work has been done.
Competition

• How was your competition structure designed?
• Who designed it?
• Is it developmentally driven or fixture driven?
• How much is too much, or too little?
• What amount and quality is needed to make a high performer?
• Is more just better?
• Periodisation of competition! New concept!
‘It takes 10 years of extensive practice to excel at anything’ (Simon Nobel Laureate, 1982).

Slow cooking produces the best results.

12-15yrs to medal at the Olympics (USOC).

Do what is right for the athlete, not what is right for the parent, club or committee.
Kaizen – Continuous Improvement

KAIZEN - Continuous improvement
Elimination of waste

KAI  Change

ZEN  Good (or better)
‘The definition of insanity is doing the same thing over and over and expecting different results.’

“Albert Einstein
What to do tomorrow:

• Get excited about developing some awesome athletes and people!
• Put on association agendas.
• Task a member to champion the development of a policy.
• Read your NGBs or Canadian sport specific manual.
• Be an agent of change!
• Come to our other workshops.
Summary

• LTAD
  - A Tool for Change – a paradigm shift.
  - Structure in the ‘Jungle of Sport’.
  - Sensitive Periods – Trainability
  - Age = Developmental
  - Monitoring Growth
  - Biological Markers
  - Developmentally Appropriate Training Programmes
  - Developmentally Appropriate Competitions
  - Slow cooking for Best Performance and Long Term Participations.
How Can the JSF Help?

• S&C Workshops.
• Further LTAD Implementation Workshops.
• Working Partnerships
• ASDP.
• Expertise.
Thank you! – Questions?
Group Work
# Tennis Case Study

## MALES

<table>
<thead>
<tr>
<th>Stage #</th>
<th># of Peaks</th>
<th># of tournaments per year</th>
<th># of matches per year</th>
<th>Types of Competition</th>
<th>Physical Training (At the end of this stage)</th>
<th>Tennis Training (includes group, private, &amp; practice matches)</th>
<th>Other Matches (practices/leagues, etc.)</th>
<th>Total # of hours/week</th>
<th>Rest and Repetition weeks per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage #2 5-6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>½ court, within the club environment</td>
<td>4 hrs (which includes 2.5 hrs of other sports)</td>
<td>1-4 hrs (may include up to two private lessons)</td>
<td>15-25</td>
<td>N/A</td>
</tr>
<tr>
<td>Stage #2 7-8</td>
<td>0</td>
<td>7-12</td>
<td>21-36</td>
<td>0</td>
<td>½ court tournaments – club</td>
<td>4.5-5 hrs includes 2.5-3 hrs of other sports</td>
<td>4.9 hrs/week</td>
<td>25-40</td>
<td>8-12</td>
</tr>
<tr>
<td>Stage #3 9-10</td>
<td>0</td>
<td>10-15</td>
<td>30-45</td>
<td>20-30</td>
<td>U10 Provincial (full court transition ball)</td>
<td>5.6 hrs (which includes 3 hrs of other sports)</td>
<td>8-10</td>
<td>30-40</td>
<td>14-16</td>
</tr>
<tr>
<td>Stage #3 11-12</td>
<td>0</td>
<td>15</td>
<td>45-60</td>
<td>30</td>
<td>U12 and U14 Provincial events U12 and U14 National events U12 and U14 National events</td>
<td>5.5 hrs (which includes 3 hrs of other sports)</td>
<td>10-12</td>
<td>48</td>
<td>16-18</td>
</tr>
<tr>
<td>Stage #4 13-15</td>
<td>2</td>
<td>15</td>
<td>45-60</td>
<td>30</td>
<td>U14, U16 Provincial events U14, U16 National events International age group events U14 Western Canada Summer Games Atlantic Summer Games Ontario Summer Games Top players at 14 may begin playing ITFs and U15 National events</td>
<td>5-8</td>
<td>12-14 (including group and private)</td>
<td>48</td>
<td>20</td>
</tr>
<tr>
<td>Stage #5</td>
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**when physical training is the priority *when tennis is the priority**