The American Development Model for Young Athletes: Youth Soccer Development

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Passionate Coaches?
IDEAL COACHES

http://www.youtube.com/watch?v=aFXpqZzFgy4
CRAZY SPORTS PARENTS?
YOUTH SPORTS

- Is Organized youth sports accomplishing what it’s supposed to?
  - Concussions
  - ACL tears
  - Overuse injuries/Burnout

- YES!! (if you are a sports medicine program)
Are we actually tackling the correct problems in youth sports?
BACKGROUND-OVERUSE INJURIES

- American Medical Society of Sports Medicine (AMSSM)
- Aspen Institute
- American Academy of Pediatrics (AAP)
- National Athletic Training Association (NATA)
- American College of Sports Medicine (ACSM)
- American Orthopaedic Society for Sports Medicine (AOSSM) STOP campaign
- USA Youth Baseball
- Safe Kids Campaign
COUNSELING?
VIDEO GAMES

• Why are video games popular with kids?
  ○ Fun
  ○ Accessible
  ○ Non-discriminatory

○ Are youth sports still like this?
○ Avg screen time/day is 7 ½ hours
Adult-driven Youth Sports

- http://www.youtube.com/watch?v=WdFg6lV-TDg
OBJECTIVES

- To determine what the current state of organized youth sports
- To define the problems and barriers in youth sports
- To discuss solutions to developing a successful developmental program in soccer that increases participation
Youth Sports Participation

- 27 million youth in team sports
- 44 million unique participations in organized sports at some point (6-18 y/o)
- Up to 70% of boys may be in organized sports
- Drop in girls participation (10-12 y/o and 13-15 y/o have dropped to only 30% and 27%
What does it take to be successful in sports?

Jayanthi et al
EARLY SPECIALIZATION MODEL

Onset of Specialization

Hours per week

Early  Middle  Late  Adult

Stage of Development

Adolescence
10,000 hour rule?

- Seen in musicians?
- Does it apply to sports?
- 20 hours/week, 50 weeks/year x 10 year
  - Is this necessary in sports
LATE SPECIALIZATION MODEL

Onset of Specialization

Hours per week

Early Middle Late Adult

Stage of Development

Adolescence
### AGE of SPECIALIZATION

<table>
<thead>
<tr>
<th>Study</th>
<th>Sport(s)</th>
<th>Athletes</th>
<th>Evidence for (+):</th>
<th>Study conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hume 1994&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Rhythmic gymnastics</td>
<td>156 across all levels</td>
<td>+</td>
<td>Amount of gymnastic training during development is related to level of attainment. Elites and sub-elites began intense training at similar ages, but elites were involved in fewer other activities from age 4-16, and accumulated more hours training by age 16.</td>
</tr>
<tr>
<td>Law 2007&lt;sup&gt;11&lt;/sup&gt;</td>
<td>Rhythmic gymnastics</td>
<td>6 elite, 6 sub-elite</td>
<td>+</td>
<td>Elites and sub-elites began intense training at similar ages, but elites were involved in fewer other activities from age 4-16, and accumulated more hours training by age 16.</td>
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<tr>
<td>Hellesen 1998&lt;sup&gt;12&lt;/sup&gt;</td>
<td>Men’s soccer, Men’s field hockey</td>
<td>33 international, 39 national, 52 provincial</td>
<td>-</td>
<td>Soccer began practicing at age 5; field hockey at age 9. Hours spent in practice were similar among levels until age 12. After age 12, international players spent more time in practice than national players, and national players spent more than provincial players.</td>
</tr>
<tr>
<td>Hodges 1996&lt;sup&gt;13&lt;/sup&gt;</td>
<td>Wrestling</td>
<td>21 elite, 21 club-level</td>
<td>+</td>
<td>Elite wrestlers spent more time training after age 16 compared to club-level wrestlers. However, since all subjects began intense training at 13.2 ± 0.6 yrs, comparison to early intense training (before age 12) not possible.</td>
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<tr>
<td>Soberlink 2003&lt;sup&gt;14&lt;/sup&gt;</td>
<td>Men’s ice hockey</td>
<td>4 elite</td>
<td>+</td>
<td>Elite players intensified their deliberate hockey training in late adolescence and played other sports during developmental years.</td>
</tr>
<tr>
<td>Carlson 1988&lt;sup&gt;15&lt;/sup&gt;</td>
<td>Men’s and women’s tennis</td>
<td>10 elite, 10 near-elite</td>
<td>+</td>
<td>Elite players began intense training and specialized later (after age 13-15) than near-elites (age 11).</td>
</tr>
<tr>
<td>Lidor 2002&lt;sup&gt;16&lt;/sup&gt;</td>
<td>Various men’s and women’s sports</td>
<td>63 elite, 78 near-elite</td>
<td>+</td>
<td>Elite more likely than near-elite athletes to begin intense training after age 12 and to have played &gt;1 sport during developmental years.</td>
</tr>
<tr>
<td>Gullich 2006&lt;sup&gt;17&lt;/sup&gt;</td>
<td>Olympic sports</td>
<td>1558 German athletes from Olympic promotion programs</td>
<td>+</td>
<td>Elite athletes began intense training and competition in their sport later than near-elites (11.4 yrs vs 10.2 yrs and 13.1 vs 12.0). More elites participated in &gt;1 sport from age 11 than near-elites (64% vs 50%).</td>
</tr>
<tr>
<td>Moesch et al. 2011&lt;sup&gt;18&lt;/sup&gt;</td>
<td>Sports measured in cm3, gms or secs*</td>
<td>148 elite, 95 near-elite</td>
<td>+</td>
<td>Elite athletes began intense training at a later age compared to near-elites. Near-elites accumulated more hours of training by age 9, 12 and 15 than elites, while elites accumulated more training by age 21 than near-elites.</td>
</tr>
<tr>
<td>Baker et al. 2003&lt;sup&gt;19&lt;/sup&gt;</td>
<td>Men’s and women’s field hockey, Men’s basketball, Women’s netball</td>
<td>15 elite, 13 near-elite</td>
<td>+</td>
<td>Elites accumulated more hours of sport-specific practice from age 12 years onwards. However, all subjects began intense training at about age 12, so unable to compare to an early intense training group. Elites had broader range of sports experiences throughout their careers compared to near-elites.</td>
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<tr>
<td>Barynya 1992&lt;sup&gt;20&lt;/sup&gt;</td>
<td>Men’s and women’s swimming</td>
<td>Elite Russian swimmers (number not reported)</td>
<td>+</td>
<td>Swimmers who began specializing before 11 yrs of age spent less time on national team and retired earlier than later specializers.</td>
</tr>
<tr>
<td>Wall 2007&lt;sup&gt;21&lt;/sup&gt;</td>
<td>Boys’ ice hockey</td>
<td>Parents of 8 minor league players (mean age 13.9 yrs) and 4 ex-minor league players (mean age 14.5 yrs)</td>
<td>+</td>
<td>Dropouts began off-ice training earlier than non-dropouts (11.75 vs 13.8 yrs of age) and spent more hours in off-ice training (107 vs 6.8 per yr). Both groups participated in a similar number of other sports (4.75) from 6-13 yrs of age.</td>
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</tbody>
</table>

*Canoeing/kayak, cycling, orienteering, rowing, sailing, skiing, swimming, track and field, triathlon, weightlifting
FACTORS FOR ELITE SUCCESS

- Elite Soccer players
  - More unstructured free play between ages 6-12
- Elite Tennis Players
  - Same Coach
  - Less overall demands for success
Sports Specialization for Success (College)

- 318 athletes, 184 females and 134 males
- Loyola University (Div I)
- Lewis University (Div II)
NCAA athlete success

Sport Distribution

- Basketball: 15%
- Cross Country/Track: 33%
- Volleyball: 18%
- Soccer: 27%
- Golf: 2%
- Softball: 2%
- Baseball: 3%
- Swimming: 0%
P<0.001

Hours Played per Week vs Grade in School

Hours Played Per Week vs Grade in School

3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

Grade in School
Number of Sports Played vs. Grade in School

- Number of Sports Played
- Grade in School

P < 0.001
P<0.001

Months Spent Competing Each Year vs. Period in School

<table>
<thead>
<tr>
<th>Months Competing Each Year</th>
<th>Elementary</th>
<th>Middle</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period in School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

TEAM UP WITH Loyola Sports Medicine and stay in the game!
Athletes Choosing One Main Sport vs Period in School

Percentage of Athletes Choosing One Main Sport

Elementary  | Middle  | High
---          | ---     | ---
50%         | 70%     | 90%
CONCLUSIONS

- Although there is an increase in the amount of annual training, in general, year round training in a single sport does not appear to be necessary to participate in NCAA university athletics.

- There appears to be early introduction to the university sport without widespread early specialization.
Risks of Sports Specialized Training and Growth

- >1200 young athletes
- Sports Training Ratio >3:1 (Organized:Free Play)
- Total Sports hours approach 20 hours/week
  - Jayanthi, et al.
Enjoyment
- 14 y/o or greater, mean 8.9
- <14 y/o, mean 9.3 (p=0.000)

Satisfaction
- 14 y/o or greater, mean 8.6
- <14 y/o, mean 9.0 (p=0.000)
Swimmers who specialized early spent less time on the national team and retired from swimming earlier than athletes who specialized late
- Gould, et al.

**Reasons for sports attrition:**
- other activities
- lack of playing time
- lack of success
- lack of fun, boredom
- injury.
Physical Activity Attrition

- While there is increasing training and specialization in competitive youth sports with age
  - May result in some attrition

- BUT...Significant attrition in school aged populations around 12 y/o) in less competitive kids
PHYSICAL ACTIVITY ATTRITION

- **High rates of attrition**
- Popular sports such as baseball, basketball and soccer see **major drop-offs in participation rates by the end of the middle school years, as travel teams take over.**
  - Sporting Good Manufacturer Association (SGMA)
- **The declines continue through the end of the high school years (SGMA, 2010).**
  - Adapted from Aspen Institute Project Play
Where is our focus?

[Pie chart showing distribution between Intensive/specialized, Competitive athlete, and Non-athlete categories]
DON’T MISS THE BOAT!
MAIN PROBLEM

- We have many children who are disengaged from sports participation and physical activity as there is not an adequate environment for participation.
ASPen INSTITUTE-PROJECT Play

The Aspen Institute’s PROJECT Play
Reimagining Youth Sports in America
What's wrong with where we're going?

For starters, many athletes spend too much time traveling, competing and recovering from competition and not enough time preparing for it. Second, there is too heavy a focus on the result rather than the performance. This attitude leads to long-term failure, as coaches forget the development of skills to focus on specific game tactics. And third, too many athletes are specializing too early. An early focus on just one or two sports often leads to injuries, burnout and capping athletic potential.

This way of thinking has led to 60% of players dropping out before PeeWees and 20% dropping out after only one season leading to an overall decline in retention since 2000.

Coach Herb Brooks was famous for saying that, “Great moments are born from great opportunities.”
Well this is our opportunity. Our time to get right.

The American Development Model is a nationwide model for successfully developing American hockey players. It is a tool that will ensure every kid will have the same chance to succeed.

By implementing ADM, associations will see an increase in player retention. Again, ADM is a set of guidelines designed specifically to help kids reach their full potential.
THE PROBLEMS

• “Many athletes spend too much time traveling, competing and recovering from competition and not enough time preparing for it.”

• “Second, there is too heavy a focus on the result rather than the performance.”
  - This attitude leads to long-term failure, as coaches forgo the development of skills to focus on specific game tactics.

• And third, too many athletes are specializing too early on. An early focus on just one or two sports often leads to injuries, burnout and capping athletic potential.
  - ADM-USA Hockey
THE RESULT-USA Hockey

• 60% of players dropping out before PeeWees and 20% dropping out after only one season leading to an overall decline in retention since 2000.

• Year round travel teams and national championships for U12’s were not positive effects on participation
THE SOLUTION (ADM)

- **Play**
  - Focus on skill development in younger players during fun practices rather than tactical means to win.
  - Age appropriate skill development
- **Love**
  - Discourage early specialization and year round training. Make them fall in love with the sport, rather than feel like it is a “chore”
  - Play multiple and other sports
- **Excel**
  - May add more intense training through adolescence and introduce competition.
EARLY POSITIVE EXPERIENCES-Aspen Institute

- Universal Access
- Age Appropriate
- Dosage/Duration
- Fun
- Incentives and Motivation
- Feedback to Kids
- Teach/Coach/Mentor
Universal Access

- Under represented groups - Increase Participation
  - Female
  - Low Income Families
  - Children with disabilities
  - Obesity
Age Appropriate Play

- 0-5 “Active, Creative Play”
- 6-8 “Introduction to fundamental motor skills”
- 9-12 “Prepare for skill building”
- 13-16 “Skill building” (competition)
- >16 can be intense training with emphasis on success

- Eliminate travel teams, regional/national competition at young ages (12 year old)
Dosage/Duration

- **60 minutes physical activity daily (minimum)**
  - 6-12 y/o most kids meet these guidelines
  - Biggest drop off is 12-15 y/o (few kids meet these guidelines)
- **How much is too much?**
  - Limit weekly organized sports hours to reduce risk of serious overuse injury
  - Less hrs/week then age (i.e. if 12, <12 hrs/week)
  - Sports Training Ratio <2:1 (Organized:Free Play)
    - Jayanthi et al.
TRAINING RULES

- Take at least 1-2 days off/week
- Don’t compete in 2 sports or teams at the same time that would require >5 days/week of training or competition
- Recommend neuromuscular training programs as part of warm up to decrease injury risk
- Have at least 2-4 months off/year from your main sport
- Do not exceed 16 hours/week training/competition.

TEAM UP WITH Loyola Sports Medicine and stay in the game!
Fun

- Make environment fun
  - Avoid bullying (peer or coach)
  - Create focus on physical activity rather than competition particularly for 12-15 y/o age group.
Incentives and Motivation

- Verbal recognition is valuable
- Incentivizing and motivation with external pressures such as trophies and winning may affect self-esteem
- Do not “punish” with increased exercise
- Reward progress not outcome
Feedback to Kids

- Use developmental milestones as goals to achieve.
- Encourage positive “off field” successes (school, exercise, sportsmanship, social behavior)
Teaching/Coaching/Mentoring

- Teach life skills
- Engage parents in the process
- Maintain appropriate athlete to coach ratio, so each player feels they are getting some attention
Physical Literacy

- Physical developmental milestones for all children

and stay in the game!
Adolescents who play sports are eight times as likely to be active at age 24 as adolescents who do not play sports.

(Sports Participation as Predictors of Participation in Sports and Physical Fitness Activities in Young Adulthood, Perkins, 2004).
Physical Activity

- There is substantial evidence that physical activity can help improve academic achievement, including grades and standardized test scores. (GAO, 2012).
Benefits of Athletics

- High school athletes are more likely than non-athletes to attend college and get degrees; team captains, MVPs achieve in school at even higher rates (US Department of Education, 2005).
Organized Sports

- More likely to have healthy habits
- Fruits/vegetables
- No relationship to sugary foods
Where does organized sports fail?

- ¼ children playing organized sports are obese
- >1/2 of obese youth participate in organized sports (Wickel et al.)

- It is possible that the mere “participation” in organized sports does not mean there is sufficient physical activity. Wickel et al.
FUTURE TOPICS

- Neuromuscular training as part of warm up to reduce risk of lower extremity injuries and ACL injuries.

- Hamstringing and adductor program as well as recovery techniques after practice/competition
FUTURE TOPICS

• What is there to recognize about concussion risk for the coach and how to effectively return them to sport

• Heat/fluid/nutritional issues
TRACK (Training Risk Assessment and Counseling in Kids)

CONTROL N=252
- a
- Risk Assessment
- Risk Assessment
- Risk Assessment

INTERVENTION N=252
- Serial counseling
- Risk Assessment
- SPORT Counseling
- Risk Assessment
- SPORT Counseling
- Risk Assessment
- SPORT Counseling
CONCLUSIONS

- Adopt American Development Model to improve participation
- Encourage multiple sports, free play, and limit intense training until late adolescence.
- Increase access to under represented groups.
Thank you!

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