

Long Term Athletic Development (LTAD)



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Build
the
“Athlete”
First

Remember a building needs a strong foundation or ?

Many people are marketing their expertise in advanced sport skill development. How many are knowledgeable of the importance of fundamental movement skill development prior to the need for those coaches?

Everyone seems to want to coach at the top end; the most important work comes at the beginning of their career.

Youth Strength and Conditioning Programs should emphasize:

1. Physical Literacy
2. Teach Before You Train
3. Stabilization before Strength
4. Bodyweight before Barbells
5. Range of Motion before Resistance
6. Basic Movement before Sport Specific



LTAD

Scientific research has identified that it takes at least 10 years, or 10,000 hours for talented athletes to achieve sporting excellence. This is being challenged, I know. But there are no short cuts!

There are two ways in which young athletes can improve their performance:

- * Training;
- * Growth and development.

Long Term Athlete Development (LTAD) is about achieving optimal training, competition and recovery, throughout an athlete's career, particularly in relation to the important growth and development years of young people. If a long term approach to training is not adopted there is likely to be a plateau in performance, when growth and development slows significantly, which for some athletes may result in a performance drops. This often leads to athlete drop out before optimum potential has been achieved.

Reasons to Train

- A healthy form of physical activity.
- Strengthens the muscles, bones, tendons and ligaments
- Reduces the risk of injury
- develop athletic potential (Strength, Speed, Agility, Technique and Power).
- Functional Fitness
- Competitive Sport Strength & Conditioning

Remember: Motor learning takes time

Coaches should be cautious of compromising long term athletic development in favor of short term gains, especially if the rationale is a matter of "convenience" .

.....Will Otto Asst. Strength Coach CSU - Fullerton

As they grow movement mechanics change

Technique –Technique - Technique

TEACH THE PROCESS
NOT
THE PRODUCT

The Differences Between Flexibility and Mobility:

Mobility refers to the ability to reach certain positions, whereas flexibility refers to just one factor (joint range of motion) that affects that ability.

Mobility is also dependent on stability, the foundation for which is neuromuscular recruitment. When we test flexibility, we're talking about isolated testing of relaxed muscles/tendons.

To be blunt, we're ignoring the nervous system.

In the whole scheme of things, what is it really about.....MOVEMENT

So lets think and "Change The Mindset"

Youth Fitness, Sport, and Strength Conditioning

15 Minutes – SPEND 15 Minutes of your practice to work on movement.

Wow, think about this, every child:

- * Every practice/every game/ every Physical Education Class
- * 10- 15 minutes of movement development including... acceleration / deceleration / change of direction

What would we accomplish in 1 year, 3 years, 5 years?

• Sequential order of learning

Just as in academic areas, sequential order of learning is important in movement. Remember the saying, "don't put the cart before the horse." Children must learn to crawl before they walk; walk before they run. Doing movements "perfect" before moving forward is a key component.

“As Kimberly Meier-Sims of the Sato Center for Suzuki Studies says, “Practice begins when you get it right.”

Youth Movement and Strength Development

These are examples of Dynamic Warm up and Movement Development that can be done every day, with minimal equipment, to improve fundamental movement and strength training with Youth athletes.

* **15 minutes every day**

* **Cues- what to do NOT what doing wrong**

* **Think Movement/Think Sequence/Think Multi-directional**

Dynamic warm up

1. In Place - Form RunKnee up / Toe Up/alternate up stop, up stop
2. Marching (remember arms)
3. High knee run
4. Skip high knee
5. High Knee Hugs
6. Backwards lunge / backward run
7. Lunge - elbow to instep/hamstring stretch
8. Shuffle
9. Lateral / Forward - Jump and Runs

Bodyweight Movement / Strength

1. Walking Lunge(hands over shoulders, shoulders over hip)
2. Side lunge (slide back leg)
3. Alligator walk
4. Bear crawl
5. Crab walk
6. Jumps (in place/bounds) -Land and hold
7. Single leg (in place/bounds) -Land and hold

Youth Movement and Strength Development:

Bodyweight Strength Training

1. Planks- forward /side/side
2. Push up -(crossfit)
3. Dips
4. Superman
5. Curl ups
6. Squat
7. Bridges /Double, single

Plyometric

1. Line Jumps / 2 feet/side to side
2. Seated "T"
3. Jump /Crawl bridge

Ladder drills:

1. One in the hole
2. Two in the hole
3. Lateral Two in the hole lateral
4. Lateral Two in two out
5. Icky Shuffle

Tudor Bomba

“The road to specialization and athletic mastery is *functionally based on multilateral development*. In any sport the chance to obtain high performance lies with the individual who, during early stages of athletic training, is exposed to plural morphological and functional development, a systematic training during which he/she performs, besides the skills of a chosen sport, other skills and motor actions. Such an athlete should be fast, almost like a sprinter, strong like a weightlifter, resistant like a distant runner, and coordinated like a juggler.....”



Early Specialization

VS

Long Term Multilateral Development Program.

- EARLY SPECIALIZATION
Performance improvements were immediate

Best performances between 15-16 because of early adaptation

Performance inconsistencies within competitions.

By 18, many athletes quit or burnout

Forced adaptation accounted for a high rate of injuries.

MULTILATERAL PROGRAM
Performance improvements were continuous

Best performances over 18 due to physical and mental maturation

Performance consistencies within competitions

After 18, many athletes were starting to come into their own

Gradual adaptation accounted for a low rate of injuries

* Comparison between Early Specialization and Multilateral Development
Nagorni, M.F. (1978). Facts and fiction regarding junior's training. . In: T.O. Bompa (2000). Total Training for Young Children. United States: Human Kinetics. (pp. 4-5). (Original work published in Moscow: Fizkultura i Spovt, vol.6).

* , D. (1982). Trainingslehre. In: T.O. Bompa, (2000). Total Training for Young Children. United States: Human Kinetics. (p. 4). (Original work published in Berlin: Sportverlag).

Keys to Athletic Development.....

Vern Gambetta

Run



Jump



Throw



Keys to Athletic Development.....

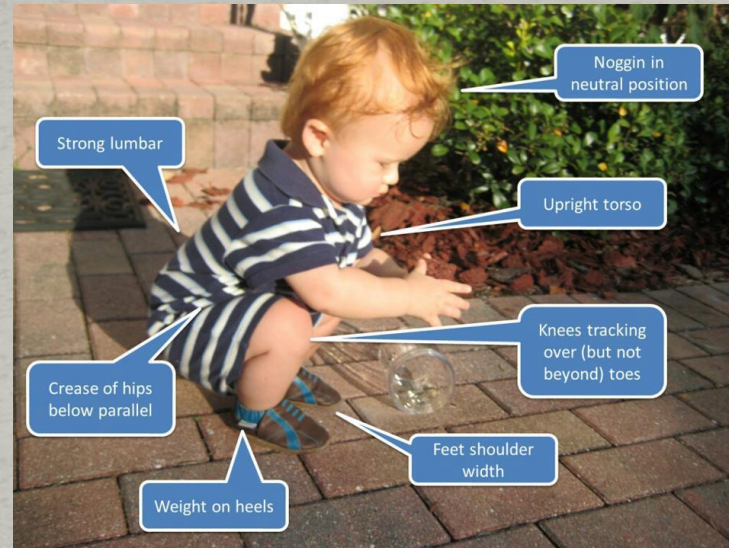
Vern Gambetta

- Squat



- Pull

- Press



Keys to Athletic Development.....

Vern Gambetta

- Snatch



- Clean



- Jerk



- Olympic Weightlifting:
“Coordination Training with
Appropriate Resistance”

A number of scientists have reported that there are critical periods in the life of a young person in which the effects of training can be maximized. This has led to the notion that young people should be exposed to specific types of training during periods of rapid growth and that the types of training should change with the patterns of growth. These have been used by *Dr. Istvan Balyi* to devise a five stage LTAD framework that has been adapted to Performance Training.

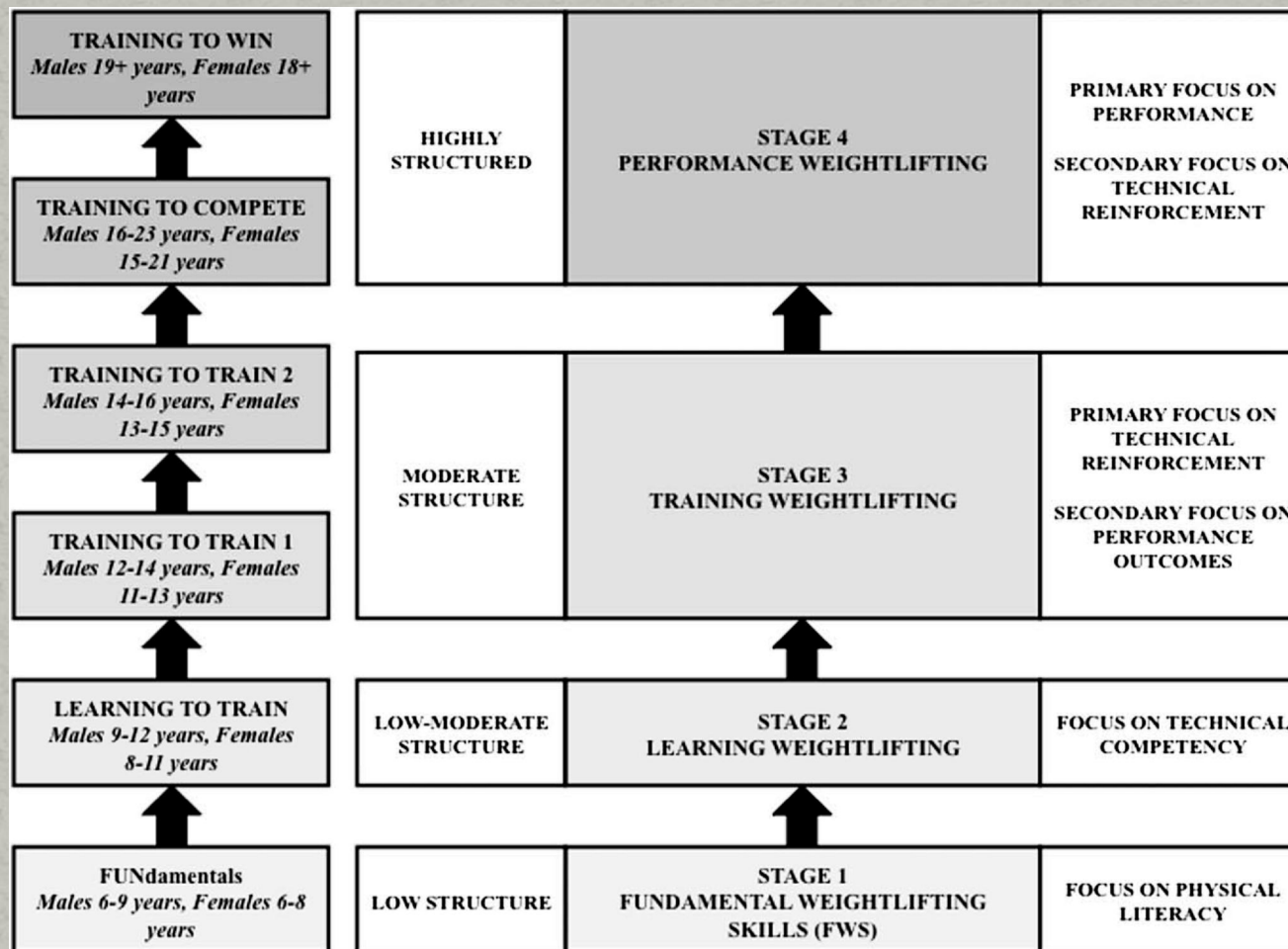
1. **FUNdamental** – basic movement literacy;
2. **Learning to Train/ Weightlifting Skills** - in addition to all other movement skills, building on technique. At this stage development of fundamental skills and strength will lead to overall success of the athlete over the length of his/her career
3. **Training to Train** – building the engine
4. **Training to Compete** – optimizing the engine
5. **Training to Win** – maximizing the engine



YOUTH PHYSICAL DEVELOPMENT (YPD) MODEL FOR MALES																					
CHRONOLOGICAL AGE (YEARS)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21+	
AGE PERIODS	EARLY CHILDHOOD			MIDDLE CHILDHOOD							ADOLESCENCE							ADULTHOOD			
GROWTH RATE	RAPID GROWTH ↔			STEADY GROWTH ↔							ADOLESCENT SPURT ↔				DECLINE IN GROWTH RATE						
MATURATIONAL STATUS	YEARS PRE-PHV ←										PHV		→ YEARS POST-PHV								
TRAINING ADAPTATION	PREDOMINANTLY NEURAL (AGE-RELATED) ↔										COMBINATION OF NEURAL AND HORMONAL (MATURITY-RELATED)										
PHYSICAL QUALITIES	FMS	FMS			FMS			FMS													
	SSS	SSS			SSS			SSS													
	Mobility	Mobility							Mobility												
	Agility	Agility							Agility				Agility								
	Speed	Speed							Speed				Speed								
	Power	Power							Power				Power								
	Strength	Strength							Strength				Strength								
	Hypertrophy											Hypertrophy		Hypertrophy						Hypertrophy	
	Endurance & MC			Endurance & MC							Endurance & MC				Endurance & MC						
TRAINING STRUCTURE	UNSTRUCTURED			LOW STRUCTURE							MODERATE STRUCTURE			HIGH STRUCTURE				VERY HIGH STRUCTURE			

Dr. Rhodri Lloyd 2012

YOUTH PHYSICAL DEVELOPMENT (YPD) MODEL FOR FEMALES																						
CHRONOLOGICAL AGE (YEARS)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21+		
AGE PERIODS	EARLY CHILDHOOD			MIDDLE CHILDHOOD					ADOLESCENCE								ADULTHOOD					
GROWTH RATE	RAPID GROWTH			↔ STEADY GROWTH ↔					ADOLESCENT SPURT				↔ DECLINE IN GROWTH RATE									
MATURATIONAL STATUS	YEARS PRE-PHV					← PHV →					YEARS POST-PHV											
TRAINING ADAPTATION	PREDOMINANTLY NEURAL (AGE-RELATED)								↔ COMBINATION OF NEURAL AND HORMONAL (MATURITY-RELATED)													
PHYSICAL QUALITIES	FMS	FMS		FMS		FMS																
	SSS	SSS		SSS		SSS																
	Mobility	Mobility					Mobility															
	Agility	Agility					Agility				Agility											
	Speed	Speed					Speed				Speed											
	Power	Power					Power				Power											
	Strength	Strength					Strength				Strength											
		Hypertrophy					Hypertrophy		Hypertrophy								Hypertrophy					
	Endurance & MC	Endurance & MC					Endurance & MC								Endurance & MC							
	TRAINING STRUCTURE	UNSTRUCTURED			LOW STRUCTURE					MODERATE STRUCTURE				HIGH STRUCTURE				VERY HIGH STRUCTURE				



CURRENT SPORT SYSTEM ISSUES

The following are some general observations of sporting systems from around the world:

- * Young athletes under-train, over-
compete;*
- * Low training to competition ratios in
early years;*
- * Adult competition superimposed on
young athletes;*
- * Adult training programs
superimposed on young athletes;*
- * Training in early years focuses on
outcomes (winning) rather than process
(Optimal Training)*



CURRENT SPORT SYSTEM ISSUES

- * Chronological age influences coaching rather than biological age;**
- * Poor training between 6-16 years of age cannot be fully corrected (athletes may never reach genetic potential);**
- * The best coaches are encouraged to work at elite level;**
- * Coach education tends to skim the growth, development and maturation of young people;**
- * Coaches, Athletes and Parents need to be educated in LTAD principles;**
- * Administrators and officials need to be educated in LTAD principles.**

Ultimately the problem in Youth Sports is:

We do a poor job on Fundamentals

then jump immediately to Train to Win

Weightlifting?

LTAD FRAMEWORK

Long Term Athlete Development (LTAD) is a sports development framework that is based on human growth and development. In short, it is about adopting an athlete centered approach to athletic development.

All young people follow the same pattern of growth from infancy through adolescence, but there are significant individual differences in both the timing and magnitude of the changes that take place. It is however important to stress that human growth and development happens without training, *however Olympic Weightlifting training can enhance all of the changes that take place.*

Keeping this in mind, In Weightlifting, we need to use this time to build basic strength and teaching technique using PVC, Versa Bars and/or wooden dowels.

Uses for Weightlifting:

- * Strength & Conditioning for Competitive Sport
- ” Functional Fitness
- * Triple Extension



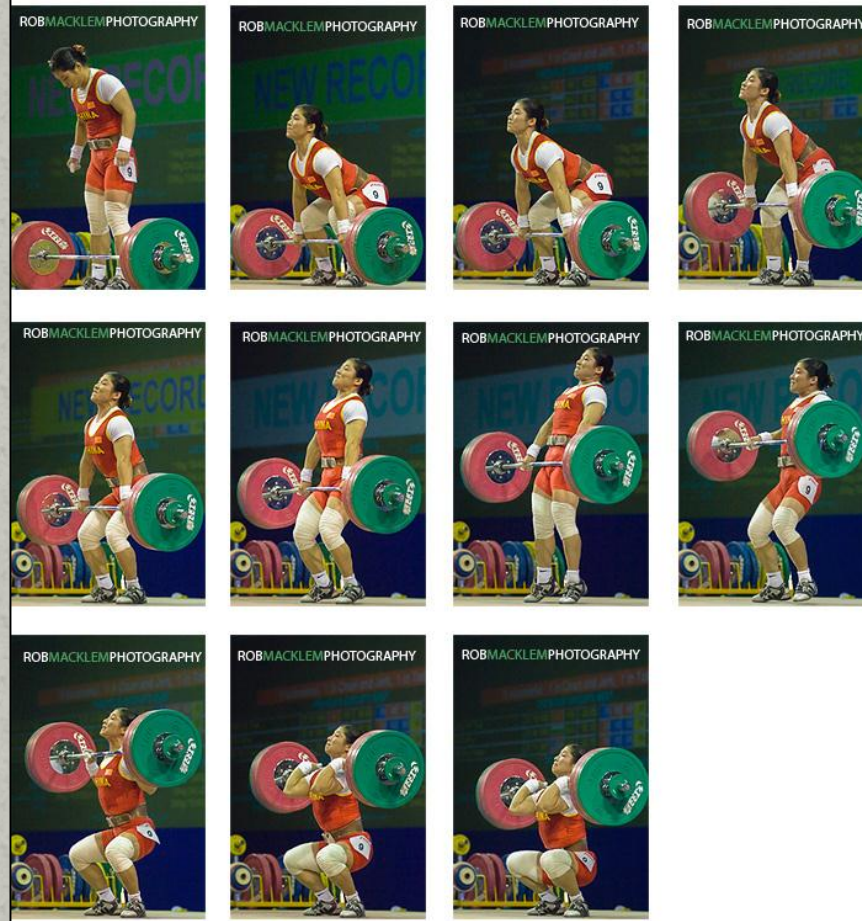
Snatch Sequence

**Pete Kelley
2003 Nationals**

***Bruce Klemens
Photos***

Clean Sequence

Haixia LIU China 63kg 142kg

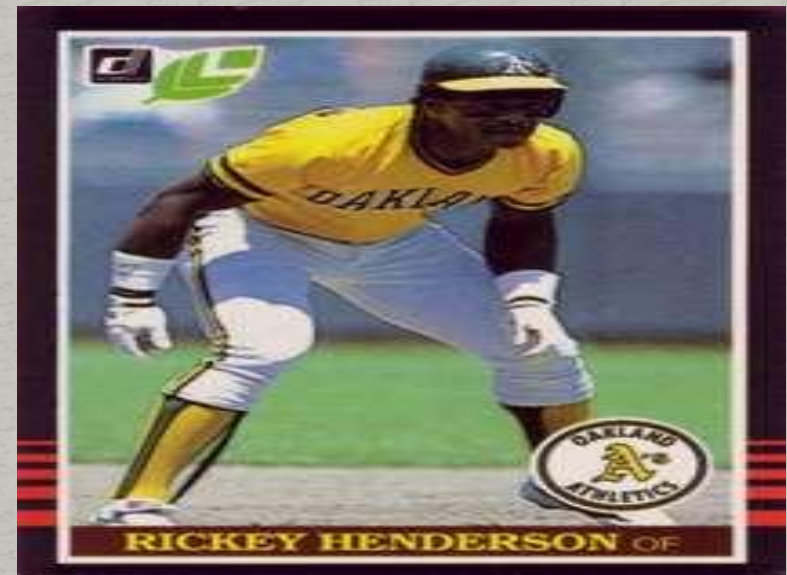


Absorbing Impact Forces And Reacting

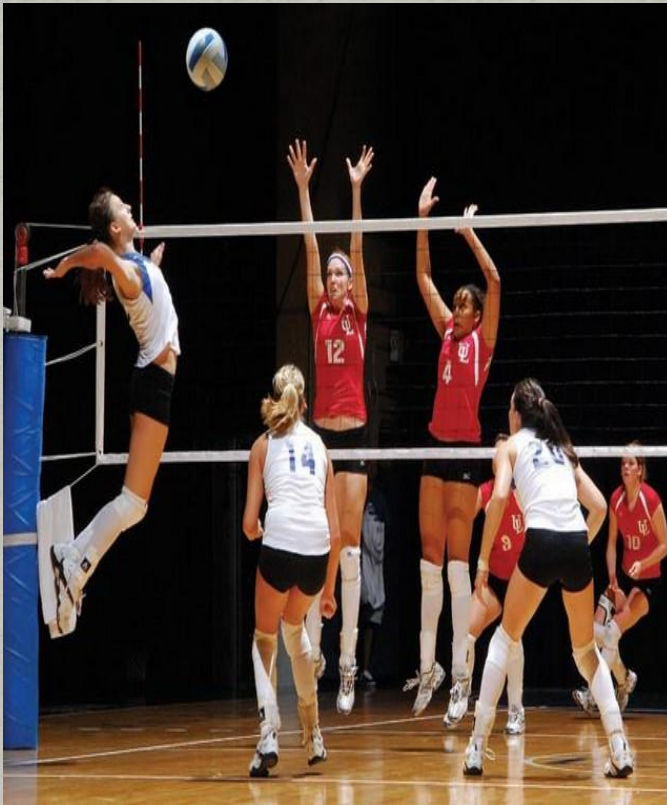
When a running back hits a linebacker, or linebacker makes a tackle, are they not applying, absorbing and reacting off forces

- When a basketball player goes up for a rebound....
- when a second baseman catches a ground ball.....
- Hurdler goes over a hurdle....
- Shotput/discuss thrower.....
- Etc....etc.....

POWER POSITION



Triple Extension



Absorbing Impact Forces



Full Squat



Clean Pull – Full Squat



Power position-Triple Extension-Squat



Svetlana Svetlana Tsarukaeva (born 25 December 1987) is a [Russian weightlifter](#).

She won the 2006 Women's Junior World Championships in the 58 kg category, with a total of 231 kg.^[1]



[Olympic Games](#)

Silver	2012 London	– 63 kg
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[World Weightlifting Championships](#)

Gold	2011 Paris	63 kg
Silver	2009 Goyang	63 kg
Silver	2007 Chiang Mai	63 kg
Silver	2006 Doha	58 kg

6 Reasons “kids” Quit Sports

- **They’ve lost interest.** After a year of playing, maybe your eight-year-old realizes that soccer isn’t as great as she thought it would be...that’s probably okay.
- **They’re not having fun.** Even for my college athletes, fun is important. We play games, not works, sport should be fun.
- **They’re tired of playing.** Think about the youth sport carousel: practice a couple of times a week after school, get up early on Saturdays and Sundays to play in tournaments...it can be a grind. I always wonder how the parents balance it all, maybe it would be a similarly good question to wonder how the kids manage it.
- **There’s too much emphasis on winning.** While I believe in the value of teaching winning and losing with grace, if the coach or parent is just focused on winning (at all costs), I’m sure it can be taxing on the kid. I certainly don’t think everyone should get a trophy at the end of the day, but we’ve got to teach the children that there are winners beyond what the scoreboard shows.
- **They want to participate in other activities.** Hopefully we want to create well-rounded children who play basketball and lacrosse...but who are also artists and singers and members of the orchestra. Participation in sports shouldn’t exclude our children from loving other things.
- **They feel too much pressure.** It’s probably the coach in me saying this, but pressure from the moment (needing to hit a free throw shot to win the game) is a great life lesson. Pressure from their mom and dad in the car on the way home as they dissect every moment of the game is probably not the best.
- *Of course, there may come a time for middle or high school aged kids to focus on a particular sport, but there’s no need to rush it. Ultimately, we all want kids to love sports. We believe that sports are great for many reasons, let’s make sure we don’t steal the love of the game away from our kids.*

*That's All
Folks*

Thank You Very Much

I leave you this quote: Karl Deutsch, Professor of International Peace, Harvard

“The single greatest power in the world today is change.....The most reckless irresponsible thing we could do in the future would be to go on exactly as we have for the past 10 or 20 years.”

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