


Texas Children's Professional Education Series
Orthopedics and Sports Medicine

How Young is Too Young?

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Goals

- Be able to describe several factors that are involved in preventing weight lifting injuries
- Be able to describe the risks and benefits of distance running in children
- Be able to recognize the signs and symptoms of overtraining or burnout

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The Pediatric Athlete

- Physiologically and psychologically different needs
  - Can vary from child to child regardless of age
- Lack of skeletal maturity
- Decreased lean muscle mass
- Increased hypermobility

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The Pediatric Athlete

- Growth spurts may increase risk of physeal stress injuries
- There is a steady decline in flexibility until puberty
- Flexibility may be a component of injury but no true causal relationship shown
  - Overuse injuries can occur in hypermobile as well as inflexible young athletes

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Where Do I Start?

- Set a goal
  - Strength? Speed? Agility? A certain distance? Fun?
  - How much time will you be spending?
  - How do I get there?
- Consult with your doctor and make sure your child doesn't have any health conditions that would preclude him or her from starting a strength training program

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Where Do I Start?

- *You have to crawl before you can walk*
- Most kids will benefit the most from basic agility and coordination training
- Learn the rules of your sport first
- Make sure your athlete is old enough to follow instruction well

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Resistance Training

Resistance Training Myths

- Weight Training can harm young athlete's bones
  - Bone mineral density benefits
- You'll stunt your growth if you lift weights too young

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Resistance Training Myths

- Younger athletes can be easily injured while lifting weights
- It doesn't do any good to lift weights until adolescence anyway
- If you do too much cardio, it will hinder gains in strength

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Resistance Training

- Difference between athlete's chronological age and their biological age
- Should be based on "training age"
  - Baseline fitness level
  - Motor skill development
  - Movement competencies
  - Other medical issues

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Resistance Training

- Difficult to increase muscle mass before puberty
- Must be properly supervised
- Contraindicated if hypertensive (>99th percentile systolic BP)

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Resistance Training

- Goals of resistance training
  - Strength
  - Power
  - Hypertrophy
  - Endurance

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Resistance Training

- Start with basic exercises before the more complicated or advanced ones
- Body weight exercises are OK!
- Young athletes may not necessarily "bulk up"
- A properly designed weight training program has not been shown to cause harm to the "growth plates" of young athletes' bones

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Performance Training

Performance Training

- Plyometrics – training method that focuses on power and explosiveness, often involving some form of jumping
- Neuromuscular retraining

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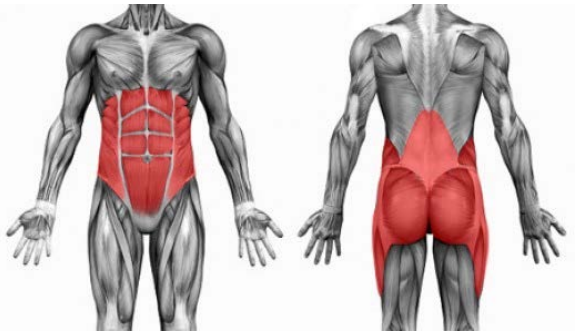
The Core

- Core muscles areas:
  - Abdominal
  - Lumbar paraspinals
  - Gluteal
  - Pelvic and hip



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Emphasizing the Core

- No clear evidence that better core stability correlates with decreased injury rates
- We do know core stability is important to proper biomechanics

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Distance Running

Distance Running

- Not a lot of research has been done
- AAPs stance is that if kids enjoy it, then its ok
- Need to be aware of the risks
- Proper training and supervision needed

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Distance Running

https://www.healthychildren.org/English/healthy-living/sports/Pages/Running.aspx

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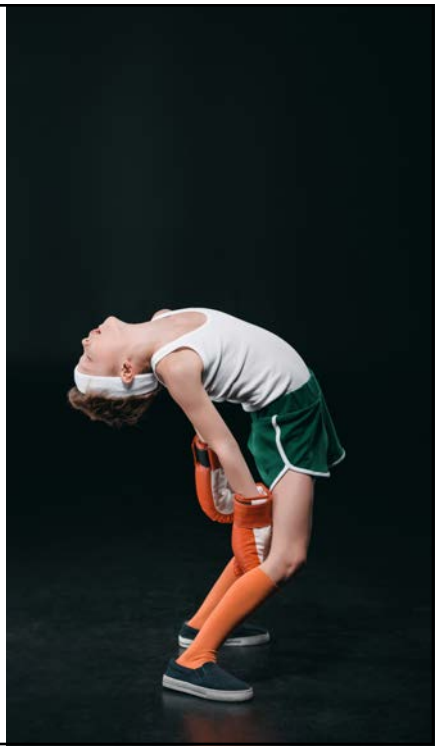
Burnout

A real problem!

Overtraining syndrome or "burnout"



Burnout

- Prolonged decrease in sports performance (> 2 weeks)
- Premature fatigability
- Emotional/mood changes
- Lack of motivation
- Sleep disorders
- Pronounced vegetative somatic complaints
- Overuse injuries
- Immune dysfunction

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Burnout

- Need to evaluate: training load, sleep, rest, competitive stress, psychological state
- Treatment involves a multidisciplinary approach (physician, trainers, nutritionist, psychologist)

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Burnout

- Some sources recommend a fatigue workup along with 2-3 weeks of rest at initial visit.
  - CBC, chem 10, ESR, CRP, Thyroid studies, monospot, β-hCG, etc.
- If improved at follow up then more physiologic fatigue that needs training adjustments
- If NOT improved, then more pathologic and needs prolonged rest

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Burnout

- Emotion plays a big component
- Often kids' entire identities can revolve around a sport
- Sports specialization or the "year-round" athlete

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Burnout

- A potential negative effect of early sports specialization
- Unnecessary stress in sports
  - Child dependent
- Children quit for a variety of reasons
- "Parent as coach" concerns

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Burnout

- AAP Council on Sports Medicine and Fitness (COMSF) recommends:
  - Young athlete not play 1 sport more than 5 days a week and should have 2-3 months off a year

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Summary

- Set realistic goals!
- Resistance training is safe in kids if done right
- Encourage young runners to do so properly
- Burnout is a problem and needs to be addressed

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References

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