

# Sports Nutrition for Young Athletes

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# Art & SCIENCE

OF TRIATHLON

2012 INTERNATIONAL COACHING SYMPOSIUM

# Bob Seebohar, MS, RD, CSSD, CSCS

- BS-Exercise and Sport Science
- MS-Health and Exercise Science
- MS-Food Science and Human Nutrition
- Registered Dietitian (RD), Board Certified Specialist in Sports Dietetics (CSSD)
- Exercise Physiologist
- Certified Strength and Conditioning Specialist (CSCS)
- Past Director of Sports Nutrition, University of Florida
- Past Sport Dietitian, United States Olympic Committee
- 2008 Olympic Team Sport Dietitian/Coach
- USAT Level III Elite and Youth/Junior Certified Coach
- Competitive triathlete/ultra-endurance athlete

# Objectives

- Explain specific nutrition considerations for young athletes including:
  - Macronutrients
  - Micronutrients
  - Hydration
- Provide simple to implement, daily nutrition guidelines for young athletes

# Age Definitions

- Children: 4-12 years of age
- Adolescents: 13-18 years of age





# Research

- Youth are often times more mechanically inefficient leading to higher energy expenditures
- Young children need 20-30% more oxygen than adults when running at the same speed
- Youth have higher energy needs than adults, yet research promotes more adult specific nutrient guidelines
- Each young athlete should be individually monitored

# Research

- Self-reported energy intakes of youth (age 7-18) range from around 1600 calories to 4500 calories
  - Gymnastics, swimming, volleyball, dance, running, wrestling, football
- Depends on age, gender and sport
- Remember, our youth are typically playing other sports

# Energy Requirements

- Goal: support growth and training
- Calorie restriction can lead to
  - Delayed puberty
  - Short stature
  - Menstrual irregularities
  - Poor bone health
  - Increased risk of injuries and eating disorders

# Carbohydrate

- Energy supply
  - Mental, physical
- Stored in low amounts
  - Size of youth, even fewer stores
- Endogenous stores/snack opportunities
  - ~20% more utilization of endogenous stores



# Protein

- Youth have higher protein needs than adults but no clearly defined requirements
  - May be 2-3 times higher than Recommended Dietary Intake (RDI)
- When energy intake is adequate, protein intake is typically adequate
  - Growth spurts
  - Vegetarianism

# Fat

- Young athletes can use fat as energy during exercise better than adults
  - Increased fatty acid uptake
  - Lower RER during exercise
- Proper education is critical to get away from fear of fat

# Vitamins

- If energy intake meets energy expenditure, vitamin needs should be met
- Energy restriction can lead to inadequate vitamin intakes
- Deficiencies take an extended period of time to develop

# Minerals

- Most common deficiencies
  - Calcium (bone development)
    - Peak bone mass around 20-22 years of age
  - Iron (oxygen delivery)
    - 40-50% females may be iron deficient
  - Zinc (growth, energy production)
- More common in females

# Education





# Supplements

- Reason for taking supplements
  - Insurance
  - Lack of knowledge
  - Peer pressure
- Educate, do not prescribe

*Micronutrient*  
*Multi*  
*Calcium*  
*Iron, Zinc*

*Sport*  
*Bars, Gels*  
*Drinks*  
*Electrolytes*

*Ergogenic*  
*Pills*  
*Powders*  
*Potions*

# Hydration

- Less developed and efficient thermoregulatory mechanisms
- Greater surface area to body volume ratio
- Smaller child = higher heat production
- Exposed to a faster influx of heat when environmental temperature exceeds skin temperature

# Hydration

- Do young athletes know thirst?
- Sweat rate ranges from 17.3 - 42.6 ounces per hour
- Girls may be less prone to voluntary dehydration due to lower sweat rates
- Voluntary hydration and incidence of dehydration

# Hydration Guidelines

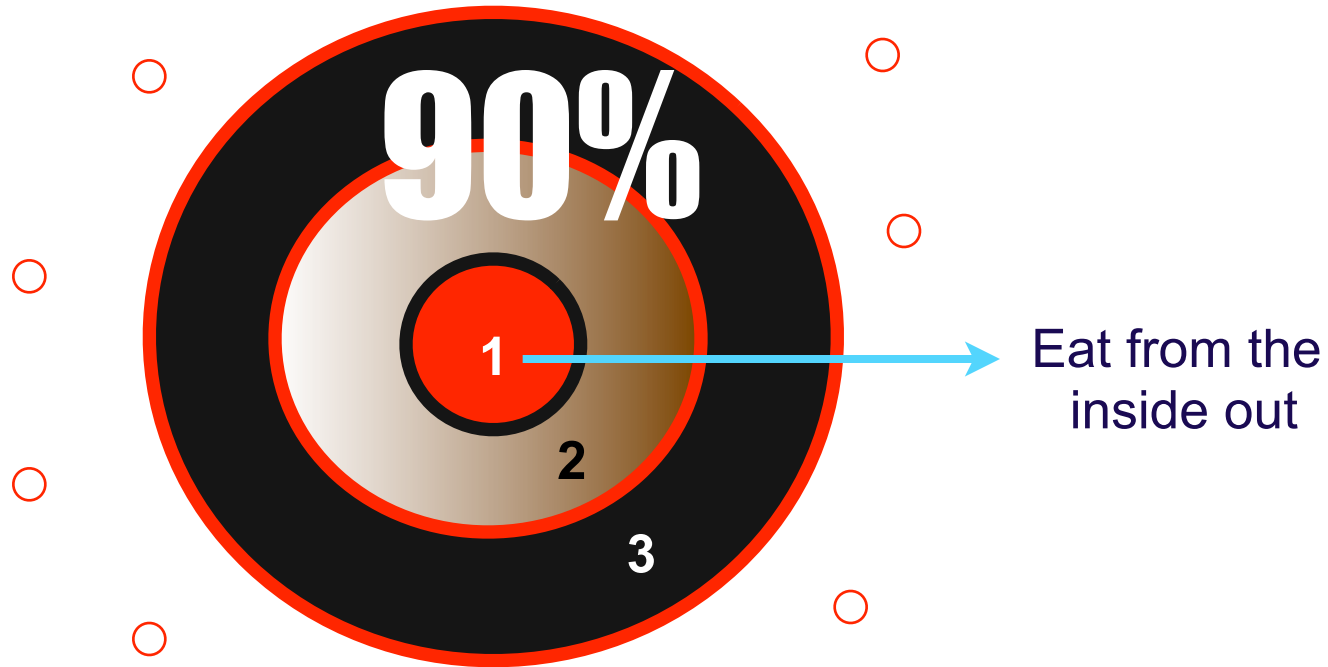
- *Before*
  - Drink until not thirsty plus 4 ounces for children
  - Drink until not thirsty plus 8 ounces for adolescents
- *During*
  - Drink 4 ounces every 15 minutes
- *After*
  - Drink at least 16 ounces

# Teaching Youth: Simple is Sustainable





# FuelTarget™



1: Lean proteins/healthy fats

2: Fruits and vegetables

3: Whole grains/healthier starches

○ "Misses"

# FuelTarget™ Foodlist

Lean Protein/ Healthy Fat	Fruits/Vegetables	Whole Grains	Misses

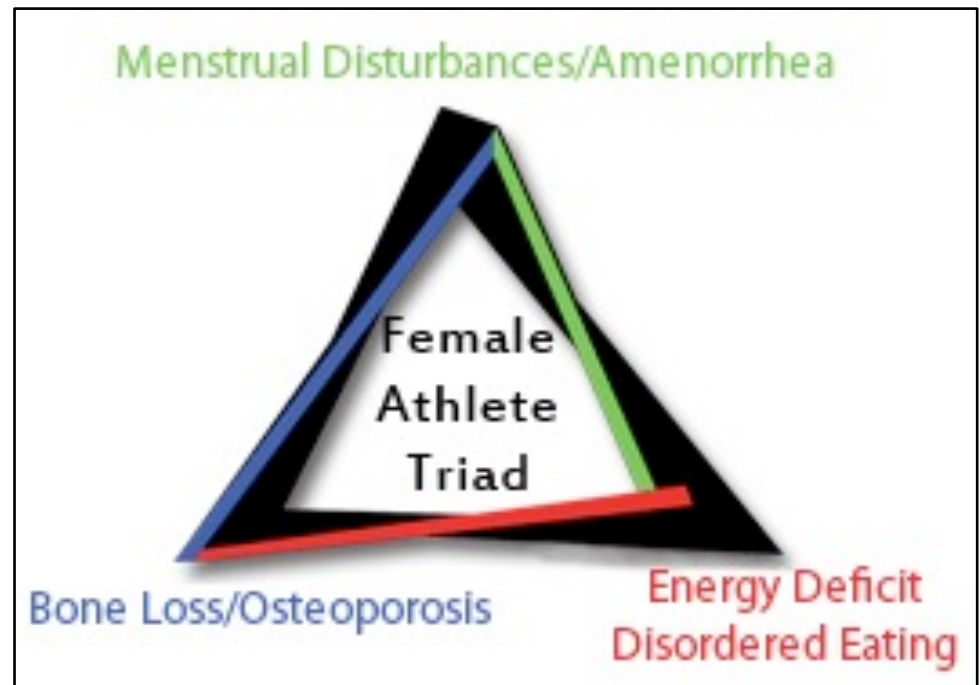
# Nutrient Timing

Before	During	After
1-3 hours	During	1-60 minutes
Light snack or meal	Hydration Electrolytes (maybe)	Light snack or meal

Teach food first model

# Female Athlete Triad

- Body image in boys and girls
- Careful communication



# Food Choices

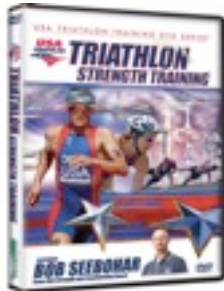
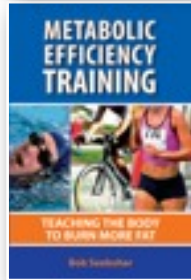
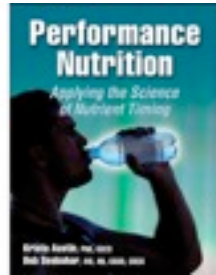
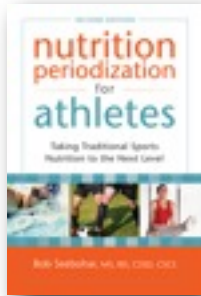
- Hunger: biological, habitual, emotional
- Time/convenience
- Family: parental role
- Influence: peers, teachers, teams
- Health/body image
- Cost
- Cravings: blood sugar
- “Picky” eaters/repetition



# Summary

- Use simple methods to teach young athletes
- Model the behavior
- Encourage self-reliance (education)
- Get them involved (goal setting, assessing, planning)
- Praise change, do not criticize

# Contacts and Resources



**Sports Nutrition:** [www.fuel4mance.com](http://www.fuel4mance.com)

**Coaching Educational Resources:** [www.multisportuniversity.com](http://www.multisportuniversity.com)

**Youth Triathlon:** [www.kidsthattri.org](http://www.kidsthattri.org)

**Adult Triathlon:** [www.teamemc.com](http://www.teamemc.com)

**[coachbob@fuel4mance.com](mailto:coachbob@fuel4mance.com)**

## E-books

- Sodium Loading Protocol for Endurance Athletes
- Neuromuscular, Dynamic and Functional Exercises for Athletes
- Caffeine Protocol for Athletes
- The Athlete's Food Guide to Metabolic Efficiency
- The Metabolic Efficiency Recipe Book

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