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Nutrition and the Young Athlete

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The Coach's Role

- Achieve Athletic Success
- Fair Play
- Develop Confidence
- Develop Social Skills
- **Influence Dietary Habits**

Special Needs

- Calorie and Macronutrient needs
  - Growth & Development
  - Training Demands
  - Recovery from Injuries
  - Menstruation in females

Special Needs

- Mineral Needs
- Risk of Eating Disorders
- Risk for Dehydration
- Supplement Use

Calorie and Macronutrient Needs

Energy Needs

- Challenges
  - Dependence on others for food
- Sizing up Energy Needs
  - Growth Rate
  - Age
  - Gender
  - Size
  - Weight
  - Activity

Assessing Energy Levels

- Child's Energy Needs
  - Adequate growth
  - Energy Levels
  - Performance
  - Weight Changes
  - Mood

Inadequate Energy Intake

- Coaches should discuss with:
  - Parents
    - Performance
    - Energy Levels
    - Is the Child Happy with the Sport?
  - Child
    - Performance
    - Position and Sport
    - Practice

Increased Energy Needs

Increase Intake of Calorie-Dense Foods

- Nut butters, nuts, seeds
- 100% Juices, dried fruits
- Trail mix
- Granola, muesli, grape-nuts
- Hi calorie shakes
  -Blend with 2% milk, peanut or almond butter, fruit, low fat ice cream
- High calorie bars

Decreased Energy Needs

- Never encourage a kid to “diet”
- Parents can work with a child to:
  - Eat less calorie dense foods
    - Fruits, vegetables, whole grains, soups
    - Exercise more
  - Coaches can support a child’s weight loss efforts
    - Providing healthy snacks
    - Teaching what foods are needed to support performance

Healthy Eating – Macronutrients

Carbohydrates

- Energy
- Provides:
  - Fiber
  - Vitamins & Minerals
  - Phytonutrients

Carbohydrates

1. Complex
   - Contains fiber
   - Digest slowly
   - Rich in vitamins and minerals
   - Examples:
     - ✓ Whole grain foods
     - ✓ Vegetables, fruit
2. Simple
   - Raises blood sugar rapidly
   - Examples:
     - ✓ Juice
     - ✓ Candy, sweets

Protein

- **Structural components**
  - Blood
  - Cartilage
  - Ligaments, bones
  - Skin, hair, teeth
  - Muscle tissue
  - Hormones and hormone receptors
  - Enzymes
  - Antibodies
- **Play a role in:**
  - Growth & Repair
  - Muscular contraction
  - Immune system
  - Transmission of nerve impulses
  - Fluid maintenance
  - Electrolyte balance

Fat

- Growth
- Sex hormones
- Prostaglandins
- Cell membranes
- Absorption and transportation of fat-soluble vitamins
- Cushions and protects organs
- Insulation
- Energy

Fat Facts

1. **Unsaturated**
   - Should make up the bulk of fat intake
   - Liquid at room temperature
   - Olive, peanut, corn oil, fatty fish
2. **Saturated**
   - Solid at room temperature
   - Butter, whole milk, cheese
   - Increases body cholesterol levels

Fat Facts

1. **Trans fats**
   - AKA - hydrogenated oils
   - Increases heart disease risk
   - French fries, fried foods, donuts, pastries
   - Listed on food labels

Nutrition Solutions

- ✓ Children should be encouraged to eat when they are hungry but stop when they are full
- ✓ Encourage intake of healthy snacks
- ✓ Children should eat throughout the day
- ✓ Offer water, sports drinks
- ✓ Minimize intake of trans fats, fried food

Nutrition Solutions

- ✓ Focus on fiber-rich foods
- ✓ Eat at least one fruit or vegetable with every meal
- ✓ Offer lean meats, low-fat dairy
- ✓ Parents should include children in:
  - Food preparation
  - Food selection

Vitamin & Mineral Needs

Vitamins

- Vitamins
  - Coenzymes – ensure proper enzyme functioning
  - Athletes do not have an increased need
  - Found in:
    - Multivitamin
    - Fruits, vegetables
    - Breakfast cereals
    - Whole grain foods

Minerals

- Structural Integrity
  - Bones
  - Teeth
  - Hemoglobin
  - Component of insulin, enzymes
  - Formation of hormones

Minerals

- Regulate several body processes
  - Fluid balance
  - Acid/base balance
  - Muscle contraction
  - Nerve impulses
  - Wound healing
  - Metabolism of carbohydrates, fat, protein

Athletes do not have an increased need but, children in general may have low intakes of calcium and iron

Calcium

- Rapid bone formation in children increases need
- Children typically have a low intake
- Low intake:
  - Children who restrict their calorie intake
  - Females
  - Increased risk of fractures, shin splints

Iron

- Carries oxygen to the blood and muscles
- Anemia can impair athletic performance
- Marginal iron deficiency might impair athletic performance
- Girls especially at risk for low intake

Iron

- Animal sources are preferable to vegetable sources of iron
- Good sources:
  - Red meat
  - Turkey
  - Chicken
  - Breakfast cereals
  - Beans
  - Chickpeas
  - Oat bran
  - Spinach
  - Turnip greens
  - Bread

Multivitamin Mineral

- Children over 2 should take a child's multivitamin mineral supplement
- They do not need anything "special"
  - High-potency: at least 2/3 of the nutrients are 100% DV
  - Mega-ripoff?
- USP – it will dissolve in your gut
- Take with a meal

Eating Disorders
&
Disordered Eating

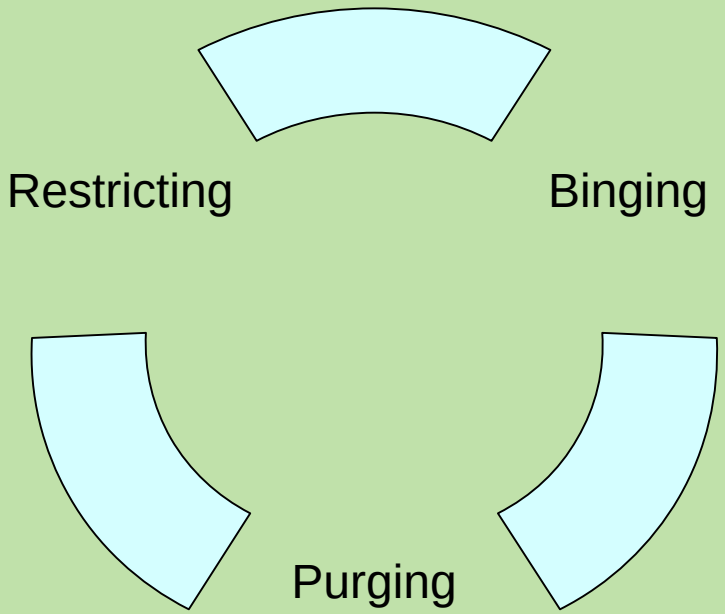
Normal Eating

- Eat when hungry
- Eat until satisfied
- Demonstrate moderate food restraint
- Overeat at times and also under eat at times
- Leave food on your plate
- Flexible eating

Eating Disorders

- Anorexia Nervosa
- Bulimia
- Disordered Eating
  - Binge Eating Disorder
  - Chronic Overeating
  - Body Dysmorphic Disorder

There Can Be Crossover



- Anorexics may purge
- Bulimics and Binge Eaters may restrict in between binges
- One eating disorder may lead to another

Eating Disorders

- Increased Risk:
  - Female
  - Dieting behavior
  - Middle or upper-class
  - Dysfunctional families
  - History of physical and/or mental abuse
  - Sport that stresses thinness
  - Perfectionist tendencies

Characteristics

- Insecurity, worthlessness
- Difficulty forming close relationships
- Goal-oriented, achievement-driven
- Trouble expressing emotions

Warning Signs

- **Dramatic loss of body weight (25% of BW)**
- **Weight fluctuations**
- **Preoccupation with food and weight**
- **Possibly vegetarian or “allergic” to certain foods**
- **Avoid food related social events**
- **Eating rituals**
- **Mood swings**

Warning Signs

- Purging
- Intense denial of illness
- Baggy layers of clothing
- Pale (anemia)
- Increased risk of infections, injuries, illness
- Preoccupation with diet
- Frequent injuries
- Hair loss
- Lanugo – abnormal hair growth

Warning Signs

- Dry skin
- Brittle nails
- Constipation
- Hypothermia
- Low heart rate
- Low blood pressure, orthostatic hypotension

Prognosis

- Eating disorders are a chronic condition – they do not go away over night.
- Some individuals die from these conditions
- Majority have persistent food and weight preoccupations

The Coach's Role

- Respect and Trust
- Care
- Support
- Keep an open line of communication
- Be a Role Model

What Can Parents & Coaches Do?

- Promote Healthy Eating
- De-emphasize weight
- Confront?
- Recognize Signs/Symptoms & Refer
- Provide Healthy Snacks

Hydration

Functions of Water

- Waste product removal
- Solvent for chemical reactions
- Transport medium (blood)
- Lubrication
- Temperature regulation

Hydration

- Young Athletes:
  - Don’t sweat as efficiently to help dissipate heat
  - Produce significant metabolic heat
  - Typically aren’t very diligent about drinking
  - Core body temperature can rise very rapidly

Dehydration: Warning Signs

- Thirst
- Irritability
- Headache
- Weakness
- Dizziness
- Cramps
- Nausea
- Decreased Performance

Preventing Dehydration & Heat Illness

- Acclimate a child to warmer weather
- Adjust exercise & rest periods
  - How acclimated the children are
  - Humidity
  - Temperature
  - Sun exposure
- Choose lightweight, light colored clothing

Fluid Needs

- **Pre Exercise:**
  - 2 hours prior: drink freely to hydrate
  - 15 minutes prior: 5-9 oz cold water
- **During Exercise:**
  - Every 20 minutes: 5-9 oz of cold water or sports drink
- **Post Exercise**
  - Drink 24 oz for every pound lost during exercise

Supplement Use

Supplements

- Generally not recommended in children
- Teenagers:
  - Protein shakes
  - Hi calorie shakes
  - Creatine?
    - Considered safe but, insufficient research in this age group
    - Consider only after diet and training program are tweaked and supplementation is discussed with a sports nutritionist and a trained health care professional.

An Effective Nutrition Plan

Pre-Game/Event/Meet

- Meal 2-4 hours prior to practice/competition
  - High carbohydrate
  - Low in fat
  - Easily digestible
- Snack 30 minutes before
  - High carbohydrate
  - Low fat, low fiber

Pre-Game Meal Ideas

- Sandwich with lean meat and fruit (banana, grapes)
- Pasta with tomato sauce
- Bagel with peanut butter and jelly, fruit
- Cereal and skim milk

Pre-Game Snacks

- Fruit
- Nutrition bars
- Fig bars
- Sports drinks
- Oatmeal cookies
- Dry cereal
- Pretzels
- ½ bagel

During Competition

- Depends on sport
- For competition over 1 hr – include sports drinks
- All day events:
  - Have food available between games, events
  - Water and sports drinks

Post-Game

- Drink Up
- Eat a meal or snack within 30 minutes
  - Chocolate milk!
  - Energy/nutrition bar
  - 100% fruit juice + string cheese/yogurt

For More Information

- BAM: www.bam.gov
- My Pyramid: www.mypyramid.gov
- http://www.empoweredkidz.com/
- www.kidshealth.org
- National Association of Anorexia Nervosa and Associated Disorders: http://www.anad.org
- Eating Disorders Awareness and Prevention: www.edap.org
- NIH, Office of Dietary Supplements
- http://dietary-supplements.info.nih.gov/Health_Information/Vitamin_and_Mineral_Supplement_Fact_Sheets.aspx

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