Supplementation and Pediatric Population

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Objectives

A. Establish the importance of a multivitamin and mineral supplement in the pediatric population.
B. Demonstrate the effectiveness of a good quality protein supplement in the pediatric population.
C. Differentiate a good quality supplement versus a poor quality supplement.
Overview

A. Introduction: Lydia and Cory
B. The problem we are facing in regards to health, fitness and supplementation
C. Practical approach and solutions
Adolescents Today

A. What our Children are dealing with..
   a. Obesity
   b. Low nutrient-dense intake
   c. Lower activity levels
   d. Higher stress and pressure to perform

B. How they are dealing…
   a. Supplements
      i. 46% of adolescents report taking supplements such as zinc, weight loss, and creatine (Wilson 2006)
   b. Weight loss pills
   c. Not dealing with it at all
What is a Dietary Supplement?

A. Dietary ingredient
   a. A vitamin; mineral; herb or other botanical; amino acid; dietary substance for use by man
to supplement the diet by increasing the total dietary intake; or a concentrate, metabolite,
constituent, extract, or combination of the preceding substances
   b. Federal Food, Drug, and Cosmetic Act

B. Supplements include vitamins, minerals, herbs, amino acids and enzymes.

C. Manufactured in forms such as capsules, softgels, powders, tablets, and liquids
Importance of supplementation

A. Multivitamin
   a. Provides vitamins and minerals needed for growth
   b. Fills in the gaps in diet
   c. Meet RDAs

B. Protein
   a. Higher needs for active children
      i. 0.45-0.60 grams per pound of body weight
   b. Harder to meet needs
   c. Recommendations:
      i. 10-30% of calories should be protein
      ii. RDAs lower than actual for active needs

<table>
<thead>
<tr>
<th>Recommended Dietary Allowance for Protein</th>
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<tbody>
<tr>
<td>Grams of Protein Needed/Day</td>
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<tr>
<td>Children ages 1-3</td>
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<tr>
<td>Children ages 4-8</td>
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<tr>
<td>Children ages 9-13</td>
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<tr>
<td>Girls ages 14-18</td>
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<tr>
<td>Boys ages 14-18</td>
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<tr>
<td>Women ages 19-70+</td>
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<tr>
<td>Men ages 19-70+</td>
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</table>
Importance of supplementation

A. Omega 3
   a. Brain health & growth
      i. Concussions
   b. Fight inflammation
   c. Recommendation:
      i. 9 to 13 years (boys): 1.2 grams/day
      ii. 9 to 13 years (girls): 1.0 grams/day
      iii. 14 to 18 years (boys): 1.6 grams/day
      iv. 14 to 18 years (girls): 1.1 grams/day

B. Probiotic
   a. Promote healthy gut biome early
   b. Help growth and development of children
      i. Vitamin B
Selecting safe and effective supplements

A. Contamination
   a. 776 adulterated products between 2007 and 2016 (Tucker 2018)
   b. Common contamination:
      i. sildenafil for sexual enhancement supplements
      ii. sibutramine for weight loss supplements
      iii. synthetic steroids or steroid-like ingredients for muscle building supplements
   c. Unintentional
      i. Heavy Metals
      ii. Pesticides
      iii. Bacteria
   d. Intentional
      i. Erogenic aids
      ii. Banned weight loss agents i.e. Synephrine (bitter orange)
Selecting safe and effective supplements

A. Educate
   a. Increased education for young athletes regarding supplement use, parents and coaches should to be targeted to help the athletes make the appropriate choices. (McDowell 2007)
   b. Understand the label

B. Evaluate
   a. Quality control increased over years
   b. Low, Moderate, High contamination risk

C. Recommend
   a. Brands that can be trusted
### Understanding the Label

#### Nutrition Facts
- **Serving size:** 2/3 cup (55g)
- **Calories:** 230
- **Fat:** 8g (10%)
- **Saturated Fat:** 1g (5%)
- **Cholesterol:** 0mg (0%)
- **Sodium:** 160mg (7%)
- **Total Carbohydrate:** 37g (13%)
- **Dietary Fiber:** 4g (14%)
- **Protein:** 3g

#### Drug Facts
- **Active ingredient:** Chlorpheniramine maleate 2 mg
- **Purpose:** Antihistamine
- **Uses:** Temporarily relieves these symptoms due to hay fever or other upper respiratory allergies: sneezing, runny nose, itching, watery eyes,itchy throat
- **Warnings:**
  - Ask a doctor before use if you have:
    - Glaucoma
    - A breathing problem such as emphysema or chronic bronchitis
    - Trouble urinating due to an enlarged prostate gland
  - Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives
  - When using this product:
    - Drowsiness may occur
    - Avoid alcoholic drinks
    - Alcohol, sedatives, and tranquilizers may increase drowsiness
    - Be careful when driving a motor vehicle or operating machinery
    - Excitability may occur, especially in children
  - Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.

#### Supplement Facts
- **Serving Size:** 1 Tablet
- **Amount Per Serving:**
  - **Vitamin A (as retinyl acetate and 50% as beta-carotene):** 5000 IU (100%)
  - **Vitamin C (as ascorbic acid):** 60 mg (100%)
  - **Vitamin D (as cholecalciferol):** 400 IU (100%)
  - **Vitamin E (as dl-alpha tocopheryl acetate):** 30 IU (100%)
  - **Thiamin (as thiamin mononitrate):** 1.5 mg (100%)
  - **Riboflavin:** 1.7 mg (100%)
  - **Niacin (as niacinamide):** 20 mg (100%)
  - **Vitamin B6 (as pyridoxine hydrochloride):** 2.0 mg (100%)
  - **Folate (as folic acid):** 400 mcg (100%)
  - **Vitamin B12 (as cyanocobalamin):** 6 mcg (100%)
  - **Biotin:** 30 mcg (100%)
  - **Pantothenic Acid (as calcium pantothenate):** 10 mg (100%)

- **Other ingredients:** Gelatin, lactose, magnesium stearate, microcrystalline cellulose, FD&C Yellow No. 6, propylene glycol, propylparaben, and sodium benzoate.
Brands to Trust

A. 3rd party Testing
   a. Look for seal of approval:
      i. USP
      ii. NSF for Sport
      iii. Informed Sport

B. Klean Athlete
C. Thorne
D. Orgain
E. Vega Protein
Resources

a. Natural Medicine Database  
b. Drug/Nutrient Interaction Guide  
c. NIH Nutrient Fact Sheets  
d. USDA Database  
e. Consumer Labs  
f. USDA 411 Supplement Guide
Conclusion

A. Reviewing the need for supplementation
B. Informed decisions
C. Appropriate prescription
D. Educate, Evaluate, Recommend
References


