Lesson Plan J

Course: **Practical Nutrition**

Module IV: **Special Nutrition Concerns**

Lesson I: **Nutrition and the School-Age Athlete**

Lesson Length: **15 minutes**

Lesson Equipment and Materials

Equipment
Computer and LCD Projector

Supplies
Dairy Council Food Models or magazine food pictures
Beverage Comparison for Evaluating Beverages - Empty pop cans, water bottles, Gatorade bottles, Juice containers, PowerAde, Red Bull, other energy or sports drinks.

Visual Aids
PowerPoint Slides 1-14

Participant Materials
H-J1 *Test Your Knowledge*
H-J2 *Beverage Comparison Chart*
H-J3 *How to Help the Athlete Eat Right*

Lesson Preparation

1. Read the entire **Lesson Plan J**.
2. **Reproduce all Participant** Materials for handouts.
3. Prepare two separate school lunches with food models or magazine pictures to represent two meals in Setting the Stage.
4. Post **Performance Standards** for participants.

Lesson Outcome

On completion of this course, the learner will demonstrate knowledge and skills needed to incorporate the principles of sound nutrition into the Child Nutrition Program based on the following **performance standards**:

- State ways your foodservice can help the school-age athletes eat a healthful diet.

Lesson Instruction

- **Setting the Stage**
  Focus learner's attention.
  - Show slides 1-3 to review title/topic of presentation, learning objective and set the stage with slide 3.
  - Use food models or magazine food pictures to show two separate school lunch meals. Have participants identify which meal would be more beneficial to an athlete before a game. Examples: 2% milk, grilled hamburger, French fries and chocolate brownie vs. skim milk, spaghetti and meat sauce, fruit cup, and oatmeal cookie.
  - Distribute **HJ1-** ***Test Your Knowledge***

- **In today's lesson...**
  - You will learn the importance of a healthful diet for the school-age athlete.

- **You will be able to...**
  - Contrast the energy and nutrient needs of children at different ages.

- **Identify the Purpose**
  - The topics included in the Special Nutrition Concerns Module were chosen due to their relationship to the overall health and well-being of the children served my school foodservice personnel.

Performance Standard
The learner will:
- Suggest ways your foodservice can help school-age athletes eat a healthful diet.

LESSON CONTENT

Slide 1: Nutrition and the School-Age Athlete

- Title page

Slide 2: Lesson Objectives

- Review session objective with participant

Slide 3: Test Your Knowledge

Activity

- Set the stage for the Test Your Knowledge School Lunch activity by using food models or magazine food pictures to show two separate school lunch meals. Have participants identify which meal would be more beneficial to an athlete before a game. Examples: 2% milk, grilled hamburger, French fries and chocolate brownie vs. skim milk, spaghetti and meat sauce, fruit cup, and oatmeal cookie.

Activity

- Distribute **H-J1** ***Test Your Knowledge*** worksheet for participants to complete.
- Discuss answers

Slide 4: Nutrition Concerns of the School-age Athlete

- The main nutrition concerns for the school-age athlete include:
  - Fluid intake
  - Caloric intake and distribution
  - Vitamins and minerals
  - Pre and post competition meals

Slide 5: Fluids

- Coolants
- Thirst
- Repletion after competition

Slide 6: Hydration Schedule for Physical Activity

- Review recommendations for hydration for prior, during and after activity

Slide 7: Water or Sports Drinks?

- Best fluid? Water for most active bodies is best.
- This is for two reasons: 1. Water rapidly leaves the digestive tract to enter other tissues, and 2. cool water cools the body from the inside out.
- Endurance athletes (distance runners, more than 1 hour of continuous activity) are the exception. They need more from their fluids…than water alone.
- The first priority for endurance athletes should always be

replacement of fluids to prevent heat stroke.

- Endurance athletes also need carbohydrates to supplement their glycogen stores, so glucose replacement is important.
- This is when sports drinks are beneficial.
- In addition, caffeine-containing drinks provide a diuretic effect and can increase dehydration in athletes.

Slide 8: What to Look for in a Sports Drink During Exercise…

- Carbohydrate content
  - <7%
  - 14 g
  - Type: sucrose, glucose, fructose
- Calorie content – 50-60 calories
- Electrolytes - Sodium at least 100mg and Potassium at least 28 mg
- No carbonation, no caffeine

Activity

- Distribute **H-J2** ***Beverage Comparison Chart*** for the Evaluating Beverages activity. You may use either the beverage comparison chart and/or use real labels from Gatorade, soda, milk, PowerAde, Juice, Red bull (or other energy drinks), and water. Evaluate them based on the criteria above to see if they would be good choices for re-hydration for athletes.

Slide 9: Caloric Intake and Distribution

- Adequate calories – dependant on gender, age, activity level, height and weight; with most boys (ages 14-18) needing 2000-3000 calories and girls of the same age needing 1800-2400 calories.
- Carbohydrates:
  - Provide energy for the body and fuel activity
  - Complex carbohydrates
    - Fuel muscles
    - 60-70% calories should come from carbohydrates
    - Review good sources of complex carbohydrates
    - Glycogen stores
    - Carb-loading

Slide 10: Caloric Intake and Distribution

- Slightly increased need in protein for athletes, however, protein consumption in the United States is adequate to cover the increased needs.
- Athletes who eat a well balanced, high carbohydrate, moderate

protein diet will be adequate.

- Most do not need increase protein, special foods, protein shakes or protein supplements.
- Protein needs are from 12-15% of total calories.

Slide 11: Caloric Intake and Distribution

- Vitamins are needed for the growth and repair of body tissues, but only small amounts are needed.
- Eating a variety of nutrient rich foods from the food pyramid will provide the athlete with adequate vitamins.
- Minerals: Athletes are typically concerned about minerals that are lost in sweat.
- Replacement of those minerals again can be replaced by eating a variety of nutrient rich foods from the food pyramid post activity.
- Iron and calcium tend to be deficient are typically deficient in teens and special attention may need to be paid to these minerals.

Slide 12: Meals for Competition

- High in complex carbohydrates and low in fat
- Moderate in calories (300-800 calories)
- Easily digestible meal
- 3-5 hours prior to competition
- Fluid schedule as on slide 6

Slide 13: Post Competition Considerations

- Adequate rehydration
  - The main focuses for post-competition include rehydration of fluids lost. This is 2 cups of water for each pound lost during activity.
- Adequate carbohydrates
  - In addition adequate carbohydrates are needed to restore glycogen stores. This can easily be done in a post activity meal rich in complex carbohydrates.

Slide 14: The Vegetarian Athlete

- *Semi-vegetarians* eat dairy, eggs, chicken and fish but no other meats. Iron can be a problem for these athletes.
- *Pesco-vegetarians* eat fish, dairy, and eggs, but no poultry or meal. These athletes may also have a problem getting adequate iron.
- *Lacto-ovo vegetarians* eat dairy products and eggs, but no fish, poultry or meat. Again, these vegetarians may have a problem receiving enough iron.

- *Vegans* eat no products that come from animals, so iron deficiency is likely unless they consume plenty of iron-enriched grain products, dry beans, peas and lentils and leafy green vegetables. They also may become deficient in calcium since dairy products are the main source of dietary calcium. A calcium supplement is usually recommended. In addition Vitamin B-12 is not found in plant foods. Some cereals are enriched, but vegans should receive injected B-12 to ensure adequacy. They also need to be sure that they receive adequate protein. Plants do not provide all of the essential amino acids so protein foods need to be combined to ensure adequacy (for example beans, lentils, and peas are good protein sources, but are missing a few amino acids. When combined with grains such as rice, corn and wheat they provide the amino acids that are missing in the beans, peas and lentils).

♦ **PERFORMANCE CHECK**

Slide 15: What is Your Role in Foodservice?

Activity

- Review handout **H-J3** ***How to Help the Athlete Eat Right*** to summarize main points and give ideas on what they can do for student athletes.

♦ **Closure**

- School-age athletes need someone in the school setting to provide accurate information concerning what to eat. The information provided in this lesson will help you influence both present and future eating habits of athletes and other students.

♦ **Independent Practice**

- Arrange for a qualified health professional to talk to student athletes about the importance of good nutrition.