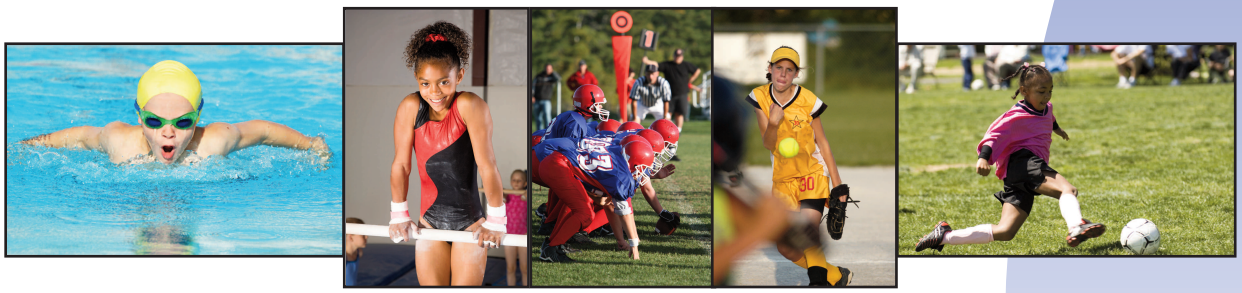
Nutrition

Fact Sheet

Fueling the School-Aged Athlete – Eat to Compete

Keep the Body Fueled

Children and adolescents involved in sports and other physical activities have to work hard to be successful. Extra demands placed on their bodies during training and competition requires additional energy beyond what is needed for overall health and growth. The body uses energy from food to support physical activity and build and repair muscle and body tissue. The amount of extra energy needed depends on many factors such as age, body size, growth, and the type, intensity, and duration of the physical activity. Energy needs of physically active children and adolescents will fluctuate from day to day and from one individual to another. An adolescent female distance runner might need 2,500 calories a day while an adolescent male might need 3,600 calories a day (Eisenmann & Wickel, 2007). In contrast, an eight year old female gymnast might need only 1,650 calories per day (Petrie, Stover, & Horswill, 2004).



School-Aged Athlete Energy Needs

Children and adolescents whose energy needs are being satisfied are better equipped to

- compete,
- reach optimal performance levels, and
- recover quickly after intense activities.

If energy requirements are not being met, problems can occur such as

- a drop in performance,
- loss of concentration,
- delayed repair of muscle,
- slow recovery from injuries, and
- weight loss.

Meet Energy Needs

Providing the extra energy a young athlete needs can be accomplished by eating healthy foods. A meal pattern of three meals and three snacks per day distributes energy intake throughout the day. This pattern is well-suited for young appetites and the young athlete's anatomy. Similar to a car with a smaller gas tank that needs to be filled more frequently, children have smaller stomachs than adults and eat less at one time. Feeding children more often can provide the extra energy they need. Most children will eat when they are hungry, and physical activity can stimulate appetite. During training, some children may eat more at meal and snack times while others will add extra snacks throughout their day.

Meal patterns should be flexible and designed to meet the needs of the individual athlete. Providing young athletes with a variety of healthy foods will supply additional energy and also vitamins, minerals, and other nutrients that allow the body to meet the demands of the extra activity. Planning ahead and keeping regular mealtimes are a good idea.

Specific nutrients that provide the body with fuel

- **Carbohydrate** – a preferred fuel source, providing energy to do physical work like running and jumping.
- **Fat** – an important form of stored energy and a primary fuel source during less intense activities like walking.
- **Protein** – some used for fuel, but the body prefers to use it to build and repair muscle and other tissues.

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The *Dietary Guidelines for Americans* provides suggestions for selecting a healthful diet that will meet an athlete's needs (U.S. Department of Health and Human Services and U.S. Department of Agriculture [USDA], 2005). Currently, the recommended mix of fuel nutrients for young athletes is a diet that supplies 50–60% of total calories from carbohydrate, 15–20% from protein, and 25–35% from fat (American Dietetic Association, 2009; Dietary Guidelines Advisory Committee, 2004; Meyer, O'Connor, & Shirreffs, 2007). Using these recommended percentages, a young athlete requiring 2,400 calories a day would consume about 330 grams of carbohydrate, 90 grams of protein, and 80 grams of fat.

Young athletes can meet their energy and nutrient needs by planning meals and choosing healthy foods. Breads, cereal, pasta, fruits, and vegetables are excellent sources of carbohydrates. Emphasize whole grains by looking for whole wheat, whole oats, or whole-grain barley as the first word on an ingredient label. Lean meats, fish, poultry, eggs, lowfat milk, lowfat yogurt, and lowfat cheese are all good protein sources for the athlete. Healthy fats can be found in nuts and vegetable oils used to prepare and flavor foods. The USDA's MyPyramid for Kids is an excellent resource for helping young athletes choose the types and amount of food they need (U.S. Department of Agriculture, 2005).

Sample Menu for a Young Athlete (2,400 Calories)

(Provides 55% of calories from carbohydrate, 20% from protein, 30% from fat)

Breakfast	
Oatmeal	1 cup
Brown Sugar	1 teaspoon
Whole Wheat Toast	1 slice
Peanut Butter	1 tablespoon
Lowfat Milk	1 cup
Strawberries	½ cup
Snack	
Lowfat Fruit Yogurt	1 cup
Granola Bar	1 bar
Lunch	
Beef Vegetable Soup	1 cup
Whole-Grain Rolls	2 small
Soft Margarine	2 teaspoons
Peaches	½ cup
Lowfat Milk	1 cup
Snack	
Carrot Sticks	½ cup
Apple Slices	½ cup
Dinner	
Grilled Chicken Tenders	4 ounces
Sweet Potatoes	½ cup
Broccoli	½ cup
Yellow Squash	½ cup
Corn Bread	2 ½ inch square
Snack	
Popcorn	3 cups
Grape Juice	½ cup

For More Information

American College of Sports Medicine. www.acsm.org
American Dietetic Association. www.eatright.org
Board Certified Specialist in Sports Dietetics (CSSD) by State as of 2008. www.cdrnet.org
Eat Smart. Play Hard. ™ www.fns.usda.gov
Kidnetic. www.kidnetic.com
MyPyramid for Kids. www.mypyramid.gov
President's Council on Physical Fitness and Sports. www.fitness.gov
SCAN–Sports, Cardiovascular, and Wellness Nutrition – A Practice Group of the American Dietetic Association. www.scandpg.org

References

American Dietetic Association. (2009). Position of the American Dietetic Association, Dietitians of Canada, and the College of Sports Medicine: Nutrition and athletic performance. *Journal of the American Dietetic Association, 109,* 509-526.

Dietary Guidelines Advisory Committee. (2004). *The Report of The Dietary Guidelines Advisory Committee on Dietary Guidelines for Americans, 2005.* U.S. Department of Health and Human Services and U.S. Department of Agriculture. Retrieved June 26, 2008, from http://www.health.gov/DietaryGuidelines/dga2005/report/default.htm

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Meyer, F., O'Connor, H., & Shirreffs, S. M. (2007). Nutrition for the young athlete. *Journal of Sports Sciences, 25,* 73-82.

Petrie, H. J., Stover E. A., & Horswill, C. A. (2004). Nutritional concerns for the child and adolescent competitor. *Nutrition, 20,* 620-631.

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For more information, contact NFSMI at 800-321-3054 or www.nfsmi.org.

This project has been funded at least in part with Federal funds from the U.S. Department of Agriculture, Food and Nutrition Service through a grant agreement with The University of Mississippi. The contents of this publication do not necessarily reflect the views or policies of the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The University of Mississippi is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA Employer.