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Nutritional Guidelines and Energy Needs for Active Children

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25.1. LEARNING OBJECTIVES

After completing this chapter, you should have an understanding of the following:

• The purpose and goals of the Dietary Guidelines for Americans.
• MyPyramid Food Guidance System, its calorie criteria, and the six main food groups and the foods that are found in each of those groups.
• The positive impact family meals have on children’s overall nutrition.
• The daily recommended intake of calories for children.
• The role of carbohydrates, proteins, and fats as sources of energy for children.
• The importance of vitamins, minerals, fibers, and water in children’s diets.

25.2. INTRODUCTION

Participation in regular physical activity during childhood will positively contribute to the development of a healthy lifestyle. Children who participate in physical activity are more likely to engage in physical activity throughout adulthood (1). Being physically active has numerous physiological and psychological benefits including but not limited to lowering the risk of heart disease, type 2 diabetes, and some cancers; maintaining optimal weight and body fat; assisting in building bones and muscles; increasing overall fitness level; enhancing self-esteem; and reducing stress and feelings of depression (2). Children should participate daily in 60 min of moderate to vigorous physical activity (3). Additionally, these physical activity experiences should include a wide array of...
skills and behaviors, be designed and implemented in a developmentally appropriate environment, and contribute to the children’s enjoyment of participation in physical activity. Currently, it is estimated that more than 35 million children in our country participate in physical activity through engagement in organized youth sports (4).

Active children require more energy to maintain normal growth and development. Energy balance is maintained when the energy one takes in is equal to the energy one expends. Individuals take in or consume energy through food and beverages they eat. Likewise, individuals expend or use energy through engagement in activity. Imbalance in the energy equation occurs when energy input does not equal energy output. Weight loss occurs when energy output is greater than energy input. Weight gain takes place when energy input is greater than energy output (5).

Energy imbalance has contributed to the epidemic proportion of children in our country who are at risk of overweight and obesity. Recent estimates suggest that 16% or more than 9 million of our children and teenagers are overweight (6). Sedentary lifestyles and poor dietary habits have negatively impacted many children’s energy balance. Our high-tech society has in part contributed to children’s lack of physical activity. Screen time (i.e., computers, television, and video games) often detracts from children’s time that could be spent participating in physical activities (7). Children’s dietary habits are also significantly influencing our country’s childhood obesity epidemic. Where and what children are eating have changed over the years. For example, our children are consuming more foods prepared outside of the home (preschool, school, and fast food). We have also witnessed a rise in the intake of calories children take in from snacks, a sharp increase in calories consumed from sweetened beverages, and an overall decrease in children’s consumption of fruits and vegetables (8). Portion sizes continue to increase in restaurants, grocery stores, and even vending machines. Expanded portion sizes contribute to our increase in daily total caloric intake (9–11).

Understanding nutrition guidelines to provide energy needs for children is critical in today’s world. Adhering to evidence-based guidelines will promote children’s optimal growth and development as well as combat and prevent our current childhood obesity epidemic.

25.3. RESEARCH FINDINGS

25.3.1. Dietary Guidelines

Every 5 years, a report is issued by the United States Department of Agriculture (USDA) and the Department of Health and Human Services that serves as a guideline for healthy eating and living for the citizens of the United States. The Dietary Guidelines for Americans 2005 (12) differs from previous reports in that it is aimed toward individuals who are responsible for educating the public about nutrition, diet, and exercise; therefore, it is more scientific in its presentation than previous editions and may be accessed at http://www.health.gov/dietaryguidelines/dga2005/document/.

Many Americans are unaware of how much physical activity is required to manage weight, how many calories should individuals consume, or how to lose/gain weight in a healthy manner. Therefore, the Dietary Guidelines for Americans 2005 (12) outlines these very topics in its initial chapters. This report gives examples of caloric