

NUTRITION SUPERVISION





ADOLESCENCE

Overview

Adolescence is a period of dramatic physical, cognitive, social, and emotional changes. It is divided into three stages:

- **Early Adolescence**—Ages 11 to 14, marked by pubertal changes and concrete thinking oriented toward the present, but a growing capacity for abstract thought
- **Middle Adolescence**—Ages 15 to 17, characterized by independence, experimentation, future-oriented thinking, and problem-solving abilities
- **Late Adolescence**—Ages 18 to 21, a time of important personal and vocational decisions and refined ability to think logically and solve problems

Growth and Development

- Adolescents achieve final 15 to 20 percent of their adult height and gain 50 percent of their adult weight.
- Adolescents accumulate up to 40 percent of their adult skeletal mass.

- Nutrient needs are greatest during peak periods of growth (sexual maturity rating [SMR] 2 to 3 in females, 3 to 4 in males).
- Females complete most physical growth about 2 years after menarche. (Mean age of menarche is 12 1/2 years.)
- Males begin puberty about 2 years later than females.
- Males experience major growth spurts and increases in muscle mass during middle adolescence.
- Adolescents are developing an identity and becoming independent adults.

Eating Behaviors

- Foods can have symbolic meanings. Adolescents may use foods to establish individuality and express their identity.
- Experimentation and idealism during adolescence may lead to certain eating behaviors (vegetarianism).
- Adolescents eat more meals and snacks away from home, including many fast foods high in fat and calories.
- Interest in new foods, including those from different cultures and ethnic groups, is common.



Physical Activity

- By participating in physical activity with their adolescents, parents emphasize the importance of physical activity—and show them that it can be fun.
- Physical activity usually occurs in group settings. Adolescents' participation may be influenced by peers.
- Competitive physical activities appeal to some adolescents, but others enjoy noncompetitive activities.





Common Nutrition Concerns

Food Intake

- Adequate consumption of protein-rich foods (meat, beans, dairy products) is extremely important, providing adolescents with B vitamins, iron, and zinc.
- Inadequate consumption of protein-rich foods may impair growth, increase risk of iron-deficiency anemia, and delay sexual maturation.
- Consumption of certain vitamins (folate, vitamin A, vitamin B₆) and minerals (iron, calcium, zinc) is often inadequate, especially among females.
- Inadequate consumption of dairy products (source of calcium) may reduce peak bone mass and increase risk of osteoporosis.
- In females of childbearing age, inadequate consumption of folic acid is associated with increased risk of giving birth to an infant with neural tube defects.
- Iron-deficiency anemia is common, especially among females whose iron requirements increase as a result of rapid growth and the onset of menarche.

- Inadequate consumption of fruits and vegetables (sources of dietary fiber, vitamins A and C, and minerals) is associated with increased risk of many types of cancer.
- Consumption of fat, saturated fat, and sodium often exceeds recommended amounts, increasing risk of cardiovascular disease, obesity, and some types of cancer.

Body Image

- Changes associated with puberty affect adolescents' satisfaction with their appearance.
- For males, increased size and muscular development that come from physical maturation usually improve their body image.
- For females, physical maturation may lead to dissatisfaction with their bodies, which may result in weight concerns and dieting.
- Social pressure to be thin and the stigma of obesity can lead to unhealthy eating behaviors, poor body image, and eating disorders.
- Adolescents may try fad diets and other unsafe weight-loss methods, underestimating the health risks associated with them.

NUTRITION SUPERVISION THROUGHOUT ADOLESCENCE



An adolescent's nutrition status should be evaluated during nutrition supervision visits or as part of health supervision visits. Health professionals can do the following:

- Begin nutrition supervision by asking key interview questions. Continue by using screening and assessment and counseling guidelines.
- Recognize that interview questions, screening and assessment, and counseling should be used as appropriate and will vary from visit to visit and from adolescent to adolescent.

Interview Questions

Eating Behaviors and Food Choices

For the Adolescent

- Which meals do you usually eat each day? How many times a week do you skip breakfast? Lunch? Dinner?
- How often does your family eat meals together?
- What snacks do you usually eat? How many?
- What do you usually eat and drink in the morning? Around noon? In the afternoon? In the evening? Between meals?

- How many servings of milk did you have yesterday? Of other dairy foods?
- How many fruits did you eat yesterday? How many vegetables?
- Are there foods you won't eat? If so, which ones?
- How often do you drink soft drinks?
- What changes would you like to make in the way you eat?

For the Parent

- How often does your family eat meals together?
- Do you have any concerns about Stephanie's eating behaviors?
- Do you think Stephanie eats healthy foods?

Food Resources

For the Adolescent or Parent

- Who usually buys the food you eat? Who prepares it?
- Are there times when there is not enough food to eat or not enough money to buy food?



Weight and Body Image

For the Adolescent

- How do you feel about the way you look?
- How much would you like to weigh?
- Are you trying to change your weight? If so, why? What are you doing to change it?

Physical Activity

For the Adolescent

- Do you think you are getting enough physical activity? Why (or why not)?
- Which physical activities do you participate in? How often? For how long each time?
- How much time do you spend each day watching television and videotapes and playing computer games?

For the Parent

- Do you have any questions or concerns about Lin's participation in physical activity?
- Which physical activities does Lin participate in? How often? For how long each time?

Screening and Assessment

- Measure adolescent's height and weight and plot on standard growth chart to determine nutrition and growth status. Deviation from expected growth pattern should be evaluated. This may be normal or may indicate a nutrition problem.
- Use body mass index (BMI) to determine nutrition status and overall health. Calculate BMI by dividing weight by square of height (kg/m^2) or by referring to BMI chart. Compare BMI to norms listed for sex and age on chart.
- Evaluate appearance of adolescent's skin, hair, teeth, gums, tongue, and eyes.
- Obtain adolescent's blood pressure.
- Assess adolescent's risk for familial hyperlipidemia. (See Hyperlipidemia, pp. 60–61.)
- Assess all sources of water used by family to determine need for fluoride supplements. If adolescent is not getting enough fluoride, refer to a dentist or primary care health professional.
- Ask about regular dental checkups.



Stunting

- If height-for-age is below third percentile, evaluate to determine whether growth is stunted and whether adolescent may benefit from improved nutrition or treatment of other underlying problems.
- Low height-for-age is usually the result of genetics, not stunting.

Thinness

- If BMI is below fifth percentile, assess for eating disorders and diseases such as cancer, diabetes mellitus, thyroid disease, infections (tuberculosis [TB], human immunodeficiency virus [HIV]), gastrointestinal disease or malabsorption, and renal disease. (See Eating Disorders, pp. 56–57.)

Overweight

- If BMI is between 85th and 95th percentiles, adolescent is at risk for overweight and needs further screening.
- If BMI is at or above 95th percentile for age and sex, adolescent is overweight and needs in-depth medical assessment. (See Obesity, pp. 66–67.)

Iron-Deficiency Anemia

- Screen all menstruating, nonpregnant females for iron-deficiency anemia every 5 to 10 years.
- Screen females at risk for iron-deficiency anemia (those with extensive menstrual or other blood loss, low iron intake, or previous diagnosis of iron-deficiency anemia) annually.
- Screen males ages 12 to 18 with history of iron-deficiency anemia, special health care needs, or low iron intake.
- Screen adolescents 18 years and older only if risk factors are present.

Physical Activity

- Determine how much physical activity adolescent participates in weekly.



Counseling

Discuss with Adolescent and/or Parents:

Physical Development

- How adolescent compares with others on standard growth chart
- Upcoming physical changes and specific concerns
- Healthy body weight (determined by genetics, not social standards)
- Normal physical changes (weight changes, variations in height, weight, and growth rates)
- For females, normal widening of hips and fat accumulation in hips, thighs, and buttocks (Fat accumulation ranges from 15 to 18 percent of body weight before puberty, 20 to 25 percent at end of puberty.)
- For males
 - Mild weight gain before growth spurt (at 9 to 13 years of age)
 - Decrease in percentage of body fat during growth spurt
 - Increase in percentage of body fat after puberty (by age 18, about 15 to 18 percent of body weight)

- For late-maturing males, reassurance that growth is normal (Use charts that plot height velocity by age and SMRs to ease concerns.)
- Accepting body size and shape when pubertal development is complete

Eating Behaviors

- Choosing healthy foods (bread, cereal, rice, pasta; fruits and vegetables; dairy products; meat, poultry, fish, beans, eggs, nuts)
- Eating a variety of healthy foods at and away from home
- Making family meals a priority
- Importance of not skipping meals
- Energy requirements (influenced by growth, physical activity level, and body composition)
- Calories needed per day (2,500 to 3,000 for males, about 2,000 for females)
- Additional calories (600 to 1,000) needed per day if adolescent participates in vigorous physical activity

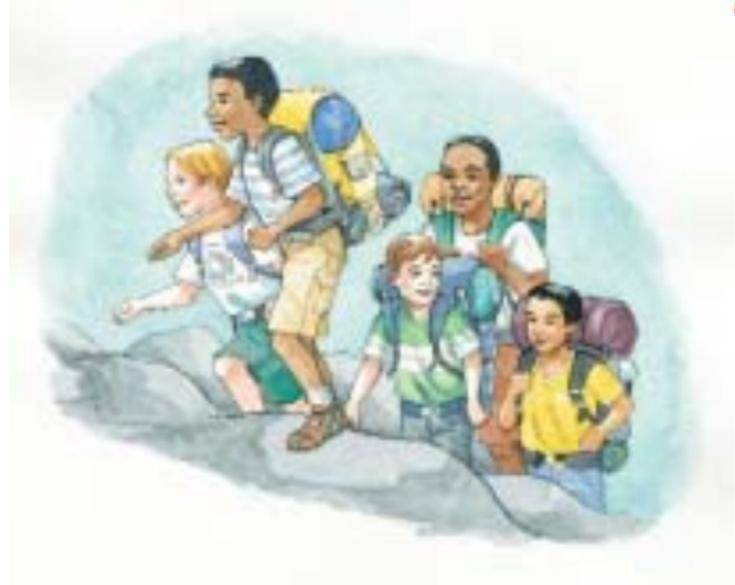


Oral Health

- Using community water fluoridation as safe, effective way to reduce risk of dental caries (If bottled water is preferred, recommend brand with fluoride added at a concentration of approximately 0.8 to 1.0 mg/L [ppm].)
- Providing fluoride supplementation if water is severely deficient in fluoride (less than 0.6 ppm)

Weight and Body Image

- Developing positive body image
- Range of healthy body weights (People come in unique sizes and shapes.)
- Safely achieving and maintaining healthy body weight
- Assuring adolescents that they are loved and accepted as they are, regardless of their size or shape
- Avoiding unhealthy weight-loss practices





Physical Activity

- Importance of participating in physical activity on most, if not all, days of the week
- Incorporating physical activity into daily life (using stairs instead of elevator or escalator), participating in activities with friends and family (walking, hiking, biking)
- Drinking enough fluids when physically active
- Using appropriate safety equipment (helmets, wrist guards, elbow and knee pads)
- Reducing sedentary behaviors (watching television and videotapes, playing computer games), especially if adolescent is overweight
- Finding safe settings for physical activity

Substance Use

- Dangers of using alcohol, tobacco, and other drugs
- Dangers of using performance-enhancing products (protein supplements, anabolic steroids)