Adolescent Nutrition

Chapter 14 &  p. 381-385, 390-397

Key Nutrition Concepts

Sexual and biological maturity more important than chronological age.

Unhealthy eating practices.

Concrete thinking with limited abstract reasoning until late adolescence.

Eating behaviors are multifactorial.

Family meals decline but remain important.

Most diets lack adequate fruits, vegetables, whole grains, and calcium but many exceed kcals.

Key Nutrition Concepts

~ half of peak bone mass is accrued in adolescence, if energy & nutrients are present

Most adolescents consume less that half of the recommended calcium

Messages should appeal to adolescent interests

 Key Terms

Adolescence: 11 - 21 years of age

May be younger for AA girls.

A time of profound changes

biological

emotional

social

cognitive

Puberty = time when body matures from that of a child to an adult

Time of change

Nutritional needs effected by

Biological growth

Psychosocial changes

Cognitive development

Normal Physical Development

Puberty occurs during early adolescence

Biological changes include:

 -sexual maturation

 -increases in ht & wt

 -accumulation of skeletal mass

 -changes in body composition

Lots of individual variation in rate but everyone eventually gets there

Sexual Maturation Rating (SMR)  “Tanner Stages”

Scale of secondary sexual characteristics development

SMR 1= prepuburtal growth & development

SMR 2 - 4 = occurrences of puberty

Females: breast development, pubic hair & menarche

Males: testicular & penile development & pubic hair

SMR 5 = sexual maturation has concluded

Psychosocial Development

Develop:

 -personal identity

 -moral & ethical value system

 -feelings of self-esteem or self-worth

 -a vision of occupational aspirations

Three periods of development:

 -Early adolescence (11 to 14): concrete thinkers

 -Middle adolescence (15 to 17): emerging abstract reasoning

 -Late adolescence (18 to 21): abstract reasoning

Health and Eating-related Behaviors

Factors affecting eating behaviors

 -Peer influence

 -Parental modeling

 -Food availability, preferences, cost & convenience

 -Personal & cultural beliefs

 -Mass media

 -Body image

Snacking is common and contributes greatly to E consumption

Family meals

Vegetarian Diets

About 4% report following a vegetarian diet

Reasons include:

 -cultural or religious beliefs

 -moral or environmental concerns

 -health beliefs

 -to restrict fat and/or calories

 -a means of independence from family

Always assess for adequacy

Concern for vegetarian athletes

Physical activity

Definition:

Daily (or near daily) physical activity as part of play, games, sports, work, transportation, recreation, physical education or health promotion.

 > 3 d/wk: bone and muscle strengthening

Benefits:

Aerobic endurance

Muscular strength

Less obesity

More dense bones

Higher self-esteem and self-concept

Less anxiety and stress

Energy & Protein Requirements

Energy needs are influenced by:

 - Activity level (declines in adolescence)

 - BMR

 - Consider lean and fat mass

 - Pubertal growth & development

 - Not chronological age

Males > need that females

> increases in ht, wt & LBM -> higher BMR

Protein DRI: 0.85 g/kg body wt

CHO & Fat Requirements

CHO: “> 130 g/d”

45-65% of calories

26-38 g fiber/d

Fat:

Required as dietary fat and essential fatty acids for growth and development

25-35% of calories from total fat

<10% calories from saturated fat

Calcium

Adequate intake to ensure peak bone mass

Greater absorption rates during adolescents

~ 4 times more calcium retained during early adolescence vs. early adulthood

DRI: 9-18 years is 1300 mg/d

19-30 y.o. = 1000 mg/d

Dairy, calcium-fortified foods & supps

Include weight bearing physical activities & enough calories

Iron

Increased iron needs related to:

 -rapid rate of linear growth

 -increase in blood volume

 -menarche in females

Recommendations:

Heme (ferrous) vs. nonheme (ferric)

Vitamin D

Vitamin D:

Facilitates intestinal absorption of calcium and phosphorus

Essential for bone formation

Also: immunity, inflammatory modulator, skeletal muscle Fx, BP, serum glucose, TAG, metabolic syndrome, HDL, BMI and abdominal obesity

Synthesized via skin exposure to ultraviolet B

Food sources: fatty fish, fish oils, egg yolks of hens fed Vitamin D fortified feed

Majority of vitamin D from vitamin D fortified foods (milk, breakfast cereals, margarines, and some juices)

IOM & AAP = supp to meet RDA 600 IU/d

Folate

Required for:

 DNA, RNA & protein synthesis

DRI:

400 mcg/d

Folic acid vs. folate

Behaviors that increase risk of inadequacy:

Breakfast skipping

Not consuming fortified foods

Promoting Healthy Behaviors

Identify what matters to them

Teens are “present oriented”

Concerned about appearance

Achieving/maintaining a healthy wt

Energy

Sports performance

Academic performance

Environmental or moral aspects of food

Parents as gatekeepers

Supplement use

Multivitamin and/or minerals used by ~26%

Associated with higher household income, more food security, having health insurance, and better diet quality

Ergogenic aids

Steroids (3.5%), GH, creatine (8-51%), protein powders, AA, energizers, banned substances, weight loss products

Assess for use

Nutritional Considerations for Active Adolescents

Over half play organized sports

Increased needs for energy, protein & some vitamins/mins

Needs = PA + growth/development

Higher during intense training & competition seasons

May need “500-1500” additional calories/day

Protein: 0.85 g protein /kg + sport

May be 1.2-1.8 g protein/kg

Special concern for vegetarian athletes and aesthetic/weight-class athletes

Considerations for Assessment

Nature of sport

Duration of training sessions

Duration of season

Level of competition

Type of training

Sweat rate and consistency

Special diet, supplement use

Body Dissatisfaction

May result from normal changes during adolescence

Body image & self-esteem are intertwined

Occurs in both sexes

61% female & 31% of male adolescents diet to “lose weight.”

With age: dieting decreases among males and increases among females.

Low levels of body satisfaction

Use unhealthy weight control behaviors

Use physical activity to change shape/size

Ways to think about your body

Dieting Behaviors driven by body dissatisfaction

Females: Dieting common among Hispanic (66%) & White (60%), black (54%)

Males: Dieting among Hispanic (40%), White (29%), black (26%)

Dieting & unhealthy wt control behaviors may -> overweight adult

Dieting occurs in youth who are not overweight.

Restrictive eating can lead to binge-eating

Consider **Entire** Eating Continuum

 The Continuum of Weight-related

Concerns & Disorders

Three Main Eating Disorders

Anorexia nervosa

Under-eating kcals, inaccurate body image & irrational fear of wt gain

Restricting type & binge purge type

May result in feeling more “in control” of their body/life

Bulimia nervosa

Recurrent episodes of rapid uncontrolled eating of large amounts of food in a short period of time, feeling of lack of control, shame or guilt, followed by some method of purging

Purging & non-purging

Vomiting, laxatives, diuretics, enemas, fasting, exercise

Self-evaluation unduly influenced by body shape

Binge-eating disorder

Same as BN but no compensatory behavior. At least 1d/wk for 3 mos.

Disordered Eating

Etiology & Solution

Common contributing factors for eating disorders

Environmental

Familial factors

Interpersonal factors

Personal factors

Prevention is key

Target factors that contribute to body dissatisfaction

Help increase self-acceptance

Body = “instrument” rather than an “ornament”