Chapter 1

Food, Nutrition, and Health

Chapter 1 Lesson 1.1

Key Concepts

Optimal personal and community nutrition is a major component of health promotion.

Certain nutrients in food are essential to our health and well-being.

Nutrition and Dietetics

Nutrition

- The sum of the processes involved in taking in nutrients and assimilating and using them
- Food people eat and how the body uses it

Nutrition science

- Scientific knowledge on human food requirements

Nutrition and Dietetics, cont’d

Registered Dietitian (RD)

- Nutrition authority on the health care team
- Other terminology
  - Clinical nutrition specialist or public health nutritionist
  - Check to make sure RD credentialed

Dietetics
Field that applies nutrition science to human health and assists in disease management

- Health and Wellness
- Proper nutrition is essential to good health
- Health includes meeting basic human needs
- Wellness seeks the full development of health potential for all persons
- Wellness Movement and National Health Goals
- Response to medical care system’s focus on illness and disease
- Response to rising health costs
- Focus on lifestyle and personal choices
- Traditional and Preventive Approaches to Health

- Traditional
  - Attempts change only when illness or disease already exists
  - Little value for lifelong positive health
- Preventive
  - Identify risk factors
  - Allows people to choose behaviors to minimize risk of disease

- Signs of Proper Nutrition
- Well-developed body
- Ideal weight for body composition
- Adequate muscle development
- Smooth skin, glossy hair, clear and bright eyes
- Mental and physical alertness
- Ability to resist disease
- Increased life span
- Nutrients in Food
- Provide energy
- Build tissue
- Regulate metabolic processes
- Individual nutrients with specific metabolic functions
- No nutrient ever works alone
- Energy Sources
  - Carbohydrates
    - Primary source of fuel for heat and energy
    - Maintain body’s back-up store of quick energy
    - Should provide 45% to 65% of total kilocalories
- Energy Sources, cont’d
  - Fats
    - Animal and plant sources
    - Secondary (storage) form of heat and energy
    - Should provide no more than 20% to 35% of total kilocalories
Energy Sources, cont’d

Proteins
- Primary function is tissue building
- Should provide 10% to 35% of total kilocalories
- Source of energy when supply from carbohydrates and fats is insufficient

Tissue Building

Proteins
- Provide amino acids
  - Necessary for building and repairing tissues

Vitamins and minerals
- Vitamin C for tissue building
- Calcium and phosphorus
  - Building and maintaining bone

Tissue Building, cont’d

Iron
- Essential part of hemoglobin in the blood

Fatty acids
- Build central fat substance of cell walls

Regulation and Control

Vitamins
Function as coenzyme factors

- Components of cell enzymes in governing a chemical reaction during cell metabolism

Minerals

- Also serve as coenzyme factors

Regulation and Control, cont’d

Other nutrients

- Water
  - Essential base for all metabolic processes

- Fiber
  - Regulates passage of food material through gastrointestinal tract

Types of Nutrition Health

Optimal nutrition

- Obtained from a varied diet
  - Desired amounts should be balanced

Undernutrition

- Less than desired amounts of nutrients
  - Limits work capacity, immune system, mental activity

Types of Nutrition Health, cont’d

Malnutrition

- Reserves depleted
Nutrient and energy intake insufficient

- Overnutrition
  - Excess nutrient and energy intake over time
  - Produces harmful gross body weight
  - Excessive amounts of nutrient supplements over time

Chapter 1

Lesson 1.2

Key Concepts

Food and nutrient guides help us to plan a balanced diet according to individual needs and goals.

Dietary Reference Intakes (DRIs)

Published by the National Academy of Sciences

Updated every 5 to 10 years

Includes recommendations for each gender and age group

DRIs, cont’d

Encompass four interconnected categories of nutrient recommendations

- Recommended Dietary Allowances (RDAs)
- Estimated Average Requirements (EARs)
- Adequate Intake (AI)
- Tolerable Upper Intake Level (UL)
• DRIs, cont’d
  • Recommended Dietary Allowance (RDA)
    — Daily intake of nutrients that meet needs of almost all healthy individuals
  • Estimated Average Requirement (EAR)
    — Intake level that meets needs of half the individuals in a specific group
• DRIs, cont’d
  • Adequate intake (AI)
    — Used when not enough evidence to establish the RDA
  • Tolerable upper intake level (UL)
    — Sets maximal intake unlikely to pose adverse health risks
• MyPyramid
  • Food guidance system
  • Valuable nutrition education tool for the public
  • Goal is to promote physical activity, variety, proportionality, moderation, and gradual improvements
• MyPyramid, cont’d
  • Dietary Guidelines for Americans, 2005
  • Result of growing public concerns in the 1960s
  • Based on chronic health problems of an aging population
  • Relate current scientific thinking to America’s health problems
Nine focus areas

- Adequate nutrients within calorie needs
- Weight management
- Physical activity
- Food groups
- Fats
- Carbohydrates
- Sodium and potassium
- Alcoholic beverages
- Food safety

Updated statement released every 5 years

Reflect current DRIs

Include 18 specific population recommendations

Changing Food Environment

Heightened reliance on fast, processed, or pre-packaged foods

Surveys indicate malnutrition in U.S., however:

- Fast food restaurants are offering lower-fat, health-conscious alternatives
- Chain restaurants are developing new menu items
- Shoppers are using FDA’s nutrition labeling

Summary

Proper food and key nutrients are essential to life and health

Registered Dietitian is the nutrition expert
• Proper nutrition requires carbohydrate, protein, fat, vitamins, minerals, and water
• Established nutrient and food guides for health promotion