

- Chapter 23
- Nutrition Support in Cancer and AIDS
- Chapter 23
 - Lesson 23.1
- Key Concepts
- Environmental agents, genetic factors, and weaknesses in the body's immune system can contribute to the development of cancer.
- Key Concepts, cont'd
- The strength of the body's immune system relates to its overall nutritional status.
- Cancer
- Malignant tumor (neoplasm) can express itself in multiple forms
- Tumors identified by primary site of origin and state of growth
- Stages of tumor development depend on growth rate, degree of functional self-control, and amount of spread
- Causes of Cancer Cell Development
- Underlying cause is the functional loss of cell control over normal cell reproduction from:
 - Mutations
 - Chemical carcinogens
 - Radiation damage
 - Viruses
 - Epidemiologic factors
 - Stress and dietary factors

- Epidemiology
- The Body's Defense System
- Two populations of lymphocytes in immune system
 - T cells
 - Derived from thymus cells
 - Activate phagocytes that attack antigens
 - B cells
 - Derived from bursal intestinal cells
 - Produce antibodies that attack antigens
- T- and B-Cell Development
- Nutrition and Immunity
- Inadequate nutrition weakens the immune system and causes atrophy of tissues in gastrointestinal structures
- Antibodies are proteins
- Nutrition and Healing
- Body tissue strength depends on ability to build and rebuild, which requires optimal nutrition intake
- Protein and key vitamins and minerals, as well as nonprotein energy sources, must be constantly supplied by the diet
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Lesson 23.2
- Key Concepts
- The strength of the body's immune system relates to its overall nutritional status.

- Key Concepts, cont'd
- Nutrition problems affect the nature of the disease process and the medical treatment methods in patients with cancer or AIDS.
- Surgery
- All surgery requires nutrition support for the healing process.
- General condition of cancer patients often is weakened by the disease process.
- Radiation Therapy
- Involves high-energy radiographs targeted on the cancer site
- Often kills surrounding healthy cells as well as cancerous cells
- Nutrition problems driven by site and intensity of radiation treatment
- Chemotherapy
- Highly toxic drugs administered by the bloodstream to kill cancer cells
- Use of monoamine oxidase inhibitors (pretreatment antidepressant drugs) requires tyramine-restricted diet
- Systemic Effects of Cancer
- Several systemic effects cause continuing weight loss
 - Anorexia, loss of appetite
 - Increased metabolism
 - Negative nitrogen balance
- Cachexia
- Extreme weight loss and weakness caused by inability to ingest or use nutrients

- Body feeds off its own tissue protein
- Experienced by half of all cancer patients
- Aggressive nutrition therapy is necessary
- Objectives of Nutrition Therapy
 - Prevention of catabolism
 - Meet increased metabolic demands
 - Relief of symptoms
- Principles of Nutrition Care
- Nutrition assessment
 - Determine and monitor nutritional status
 - Body measurements, calculations of body composition, laboratory tests, physical examination, clinical observation, dietary analysis
- Personal care plan
 - Daily plan for nutrition therapy incorporated into nursing care plan
- Nutrition Needs
- Energy
- Protein
- Vitamins and minerals
- Adequate fluid intake
- Enteral: Oral Diet

- Oral diet with supplementation is optimal when tolerated
- Food plan must include adjustments in food texture and temperature, food choices, and tolerances
- Tips for Controlling Nausea and Vomiting
- Try smaller, more frequent meals.
- Eat more when feeling better.
- Eat drier foods with fluids in between.
- Try cold foods, saltier foods.
- Avoid fatty or overly sweet foods.
- Do not recline immediately after eating.
- Replace fluids and electrolytes.
- Use foods with pleasant aromas.
- Tips for Increasing Energy and Protein Intake
- Add high-calorie condiments, sauces, dressings
- Add extra ingredients during food preparation
- Drink commercial food supplements
- Avoid low-calorie foods and beverages
- Have a meal or snack every 1 to 2 hours
- Enteral: Tube Feeding
- When gastrointestinal tract can be used but patient is unable to eat
- Parenteral Feeding
- When gastrointestinal tract cannot be used

- Peripheral vein feeding (for brief period)
- Central vein feeding (for extended period)
- Prevention
- American Cancer Society
 - Eat a variety of healthful foods
 - Adopt a physically active lifestyle
 - Maintain a healthful weight
 - Limit alcohol consumption
- U.S. Food and Drug Administration
 - Low-fat diets rich in grain products, fruits, and vegetables may reduce the risk of some cancers

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Lesson 23.3

- Key Concepts
- Nutrition problems affect the nature of the disease process and the medical treatment methods in patients with cancer or AIDS.
- Key Concepts, cont'd
- The progressive effects of HIV, through its three stages of white T-cell destruction, have many nutrition implications and often require aggressive medical nutrition therapy.
- Human Immunodeficiency Virus
- Virus causes immune system suppression
- Created a widespread epidemic

- **Stages of Disease Progression**
- **Stage 1: Clinical category A**
 - Flulike symptoms 4 to 8 weeks after initial exposure
- **Stage 2: Clinical category B**
 - Infectious illnesses invade the body
- **Stage 3: Clinical category C**
 - Rapidly declining T-helper lymphocyte counts
- **Goals of Medical Management**
- **Delay progression of the infection and improve the immune system**
- **Prevent opportunistic illnesses**
- **Recognize the infection early**
- **Severe Malnutrition, Weight Loss**
- **Decreased appetite, insufficient energy intake in addition to elevated resting energy expenditure**
- **Major weight loss, eventual cachexia**
- **Causes of Body Wasting**
- **Inadequate food intake**
- **Malabsorption of nutrients**
- **Disordered metabolism**
- **Nutrition Assessment**
- **Anthropometry**

- Biochemical tests
- Clinical observations
- Diet observations
- Environmental, behavioral, and psychological assessment
- Financial assessment
- Principles of Nutrition Counseling
- Motivation for dietary changes
- Rationale for nutrition support
- Provider-patient agreement on plan
- Development of manageable steps for change
- Development of personal food management skills
- Summary
- The general term cancer is given to various abnormal, malignant tumors in different tissue sites.
- The cancer cell is derived from a normal cell that loses control over its growth and reproduction.
- Cancer cell development occurs from mutation of regulatory genes and is influenced by environmental chemical carcinogens, radiation, and viruses.
- Summary, cont'd
- Cell integrity is mediated by the body's immune system, primarily through its two types of white blood cells: T cells that kill invading agents that cause disease and B cells that make specific antibodies to attack these agents.
- Cancer therapy primarily consists of surgery, radiation, and chemotherapy.

- **Summary, cont'd**
- **Likewise, nutrition care of patients with AIDS must be built on knowledge and compassion, with a sensitivity and concern for individual patient needs.**
- **The current worldwide spread of HIV and its fatal consequences have reached epidemic proportions and are still growing.**
- **Summary, cont'd**
- **Nutrition management centers on providing individual nutrition support to counteract the severe body wasting and malnutrition characteristic of the disease.**
- **The process of nutrition care involves comprehensive nutrition assessment and evaluation of personal needs, planning care with patient and caregivers, and meeting practical food needs.**