LONG-TERM CARE

Long-term care includes those services provided in institutional settings, such as a nursing home, rehabilitation center, or adult day care program, after the acute phase of the illness has passed. It often involves restorative care for clients with chronic health care problems.

A. Types of long-term care facilities.
1. Nursing home: Provides services ranging from maintenance to restorative care with skilled nursing and use of certified nursing assistants (CNAs), licensed practical nurses (LPNs), and registered nurses (RNs).
2. Adult day care home: Client lives at home during the evening and overnight hours and spends the day in a facility that provides a range of care from skilled nursing to restorative care.
3. Hospice care: Care is provided in both the home and inpatient care settings; funded by Medicare for the terminally ill older adult, with other programs available for other age groups.
   a. Does not institute life support by extraordinary means.
   b. Emphasis on pain control for client and support of family members through the end-of-life process.
4. Respite care: This is a type of short-term care for the primary caregiver (often a family member) to give caregiver a break from the daily responsibilities of taking care of the long-term client.
5. Rehabilitation center: This is a facility that provides multiple services for the client and family to make adjustments to daily living.
6. Home care: Nursing care is provided in the home to clients who do not need hospitalization, but do need additional assistance with medical problems.
7. Adult housing or assisted living centers: These are places where clients can live independently, but under minimal supervision; meals and other services are offered to the residents.

Rehabilitation

Rehabilitation is the restoration of an individual to his/her optimal level of functioning. This includes physical, mental, social, vocational, and economic parameters.

A. Rehabilitation: term used when an individual has lost functional ability due to illness or injury.

B. Habilitation: term used to refer to congenital problems or deficiencies.

Goals of Rehabilitation

In order for the rehabilitation client to achieve the highest level of productivity, the rehabilitation process must begin when the condition becomes evident, or when the disease is diagnosed.

1. Prevent deformities and complications.
   a. Maintain function and prevent deterioration of unaffected organs or areas.
   b. Prevent further injury to affected area or organ.
   c. Prevent or reduce complications of immobility.
2. Assist client to perform activities of daily living (ADLs) with minimal or no assistance, depending on level of disability.
   Examples of ADLs: Eating, dressing, bathing.
3. Assist client with independent activities of daily living (IADLs).
   Examples of IADLs: Shopping for groceries, paying bills, lawn care.
4. Promote continuity of care when the client is discharged or transferred.

Psychological Responses to Disability

Not every client will progress through all stages of grief in an orderly fashion. Clients will fluctuate between emotional crises.

A. Initial responses of confusion, disorganization, and denial represent a state of internal conflict. Conflict is precipitated by:
   1. Forced dependency.
   3. Threat to personal and family integrity.
B. A period of depression may occur as the client mourns for the lost body function or activity.
C. An anger stage may occur as the client projects blame and hostility on family and health care providers.
D. Adaptation and adjustment will occur as the client begins to redirect his or her energy toward coping with the disability.
E. New situations (e.g., going home from hospital, new job) may precipitate emotional outbursts and trauma.
F. Some clients will refuse to accept their disability and will not put forth any effort to adapt to everyday living.
CARE OF THE CHRONICALLY ILL CLIENT

A chronic illness may be defined as an illness or condition that is present for more than 3 months in a year and interferes with daily function and lifestyle.

Nursing Considerations

A. Client may remain free from symptoms, but must remain in contact with health care provider in order to maintain optimal level of wellness.

B. The condition of the client and the level of the disease will have a variable impact on the client’s lifestyle and coping strategies.

C. The majority of clients with extended health care needs are suffering from at least two chronic health conditions. These conditions may or may not be interrelated.

D. The focus of care for the chronically ill client is on assisting the client to control his/her disease and manage his/her lifestyle. This is true of the pediatric chronically ill client as well as the adult client.
   1. Prevention and management of medical crises.
   2. Control of disease symptoms, which may focus on pain control and comfort measures.
   3. Implementation of the prescribed therapeutic regimens.
   4. Psychosocial implications and adjustment of lifestyle; frequently requires dealing with social isolation.
   5. Adjustments of lifestyle as disease and/or condition changes.
   6. Financial strain to pay for medical care and supplies.
   7. Coping with strain on marriage and on family structure.

E. The majority of clients with chronic health care needs are over 65 years of age. The feeling of powerlessness is not uncommon in the older adult.

Nursing Considerations in the Chronically Ill Pediatric Client

The diagnosis of a child’s chronic illness is a major situational crisis in the family. Support systems, perception of the problem, and coping mechanisms will ultimately determine the resolution of the crisis.

A. Focus care on the child’s developmental age rather than the chronological age. Emphasis should be made on the child’s strengths rather than on the child’s disabilities.

B. Promote the child’s maximal level of growth and development. The current trend is to return the child to the academic environment of the child’s peer group. A variety of supplemental programs are being developed in the school systems to meet the needs of these children.

C. Assess the family response to the child’s illness and evaluate for parental overprotection. Overprotection by the parents prevents the child from developing self-esteem, independence, and self-control over disease and activities of daily living. The practical nurse should observe for the following parental characteristics:
   1. Shows inconsistency with discipline; for example, discipline often differs from that of the other children in the family.
   2. Attempts to protect the child from every discomfort, both physical and psychosocial; for example, frequently restricts play with peers for fear of injury and/or rejection by peers.
   3. Makes decisions for the child without involving the child.
   4. Does not allow the child the opportunity to learn self-care; frequently afraid the child cannot handle the requirements for self-care, for example, encouraging and assisting the diabetic child to become responsible for administration of own insulin.
   5. Continues to do things for the child, even when the child is capable of performing tasks for self.
   6. Shows self-sacrifice and isolation of family from social interactions.

GROWTH AND DEVELOPMENT

A. Normal growth and development progress in a steady, predictable pattern across the life span.
   1. Development progresses in a cephalocaudal (head to tail) manner.
   2. Development progresses from proximal to distal, with a progression from gross to fine motor skills.

B. The developmental age of a client is important to consider in the implementation of nursing care.
   1. Nurses need to be aware of the major developmental milestones.
   2. Nursing care is planned around the client’s developmental level, not his or her chronological age.

C. Physical development is described in Table 2-1.

Dietary Considerations throughout the Life Span

Infant

A. Growth.
   1. Birth weight doubles in 4 months.
   2. Birth weight triples at 1 year.
   3. Infant gains only another 4 to 6 lb until 2 years old. *Example: Birth weight 7 lb; at 4 months infant should weigh 14 lb; another 7 lb will be added in the next 8 months.*
<table>
<thead>
<tr>
<th>TABLE 2-1</th>
<th>GROWTH AND DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth-4 months</td>
<td>Consistently gains weight (5-7 oz per week)</td>
</tr>
<tr>
<td></td>
<td>Posterior fontanel closes</td>
</tr>
<tr>
<td></td>
<td>Responds to sounds and begins vocalizing</td>
</tr>
<tr>
<td></td>
<td>Gains head control → lifts chest → rolls over one way</td>
</tr>
<tr>
<td></td>
<td>Smiles responsive → smiles when spoken to</td>
</tr>
<tr>
<td>4-9 months</td>
<td>Doubles birth weight (gains 3-5 oz per week)</td>
</tr>
<tr>
<td></td>
<td>Teething begins with lower incisors</td>
</tr>
<tr>
<td></td>
<td>Sits with support; begins crawling</td>
</tr>
<tr>
<td></td>
<td>Turns over in both directions</td>
</tr>
<tr>
<td></td>
<td>Laughs aloud</td>
</tr>
<tr>
<td>9-12 months</td>
<td>Birth weight triples</td>
</tr>
<tr>
<td></td>
<td>Head and chest circumferences are equal</td>
</tr>
<tr>
<td></td>
<td>Anterior fontanel begins to close</td>
</tr>
<tr>
<td></td>
<td>Teething: has 6-8 teeth</td>
</tr>
<tr>
<td></td>
<td>Sits alone → moves from prone to sitting position</td>
</tr>
<tr>
<td></td>
<td>Crawling → pulling up → walks holding on to furniture</td>
</tr>
<tr>
<td>Toddler (12-24 months)</td>
<td>50% of height at 2 years</td>
</tr>
<tr>
<td></td>
<td>Exaggerated lumbar curve</td>
</tr>
<tr>
<td></td>
<td>Mobile: walks, runs, jumps</td>
</tr>
<tr>
<td></td>
<td>Walks up and down stairs, one foot at a time</td>
</tr>
<tr>
<td></td>
<td>Begins using eating utensils</td>
</tr>
<tr>
<td></td>
<td>Obeys simple commands</td>
</tr>
<tr>
<td></td>
<td>Begins to develop vocabulary</td>
</tr>
<tr>
<td>Preschool (3-5 years)</td>
<td>Birth length doubles at 4 years</td>
</tr>
<tr>
<td></td>
<td>Coordination continues to improve</td>
</tr>
<tr>
<td></td>
<td>Rides tricycle, throws a ball</td>
</tr>
<tr>
<td></td>
<td>Walks up and down stairs with alternating feet</td>
</tr>
<tr>
<td>School-age (6-10 years)</td>
<td>Growth spurts begin</td>
</tr>
<tr>
<td></td>
<td>Increasingly active</td>
</tr>
<tr>
<td></td>
<td>Very concerned with body image</td>
</tr>
<tr>
<td></td>
<td>Need for conformity: rules and rituals</td>
</tr>
<tr>
<td>Adolescence (11-17 years)</td>
<td>Beginning and completing puberty</td>
</tr>
<tr>
<td></td>
<td>Girls mature earlier than boys</td>
</tr>
<tr>
<td></td>
<td>Very conscious of changes in body</td>
</tr>
<tr>
<td></td>
<td>Rapid growth</td>
</tr>
<tr>
<td>Young adult (18-30 years)</td>
<td>Physical maturity</td>
</tr>
<tr>
<td></td>
<td>Full mental capacity</td>
</tr>
<tr>
<td></td>
<td>Assumes responsibility for own learning</td>
</tr>
<tr>
<td></td>
<td>Adult relationship with parents</td>
</tr>
<tr>
<td>Adult (30-60 years)</td>
<td>Physiological processes begin slow decline</td>
</tr>
<tr>
<td></td>
<td>Cognitive skills peak</td>
</tr>
<tr>
<td></td>
<td>Creativity at maximum</td>
</tr>
<tr>
<td></td>
<td>Increase in community involvement</td>
</tr>
<tr>
<td></td>
<td>Increase in concern for future of society</td>
</tr>
<tr>
<td>Older adult (60+)</td>
<td>Decline of physiological status</td>
</tr>
<tr>
<td></td>
<td>Demineralization of bones</td>
</tr>
<tr>
<td></td>
<td>↓ Cardiac output</td>
</tr>
<tr>
<td></td>
<td>↓ Respiratory vital capacity</td>
</tr>
<tr>
<td></td>
<td>↓ Glomerular filtration rate</td>
</tr>
<tr>
<td></td>
<td>↓ Serum albumin</td>
</tr>
<tr>
<td></td>
<td>↓ Glucose tolerance</td>
</tr>
</tbody>
</table>
4. Newborn will lose weight for the first few days following birth, but should not lose more than 10% of the birth weight or take longer than 10 to 14 days to regain it.
5. Newborn has a higher fluid requirement in relation to body size than an adult.

B. Diet.
   1. Ideal food is breast milk, because it is nutritionally superior to alternatives.
   2. Cereal is usually the first solid food, given at 4 to 6 months; rice cereal is easily digested and less likely to cause an allergic reaction.
   3. Order of introduction of food is cereal, then vegetables or strained fruits with meat being last.
   4. Before adding another food item, wait 4 to 7 days to ensure no allergic or adverse reaction has occurred due to previously added food item.
   5. Maintain infant on formula or breast milk until 12 months old, may need iron supplement after 6 months if on formula.

C. Nursing implications.
   1. Newborns cannot swallow voluntarily until 10 to 12 weeks of age.
   2. Extrusion reflex (pushing food out of mouth with tongue) lasts until 4 months.
   3. Usual progression of food texture is strained to mashed to minced to chopped to cut table foods.
   4. Increase the use of small-sized finger foods as pincer grasp develops (9 months).
   5. Texture of food becomes increasingly important from 6 months to 1 year, but the food must be easily dissolved (e.g., crackers or zwieback).

**PEDIATRIC PRIORITY:** Infants should not be given honey until after their first birthday.

**PEDIATRIC PRIORITY:** Raw carrots, celery, popcorn, nuts and hard candies should not be given until the toddler stage due to problem with choking.

### Toddler

A. Growth.
   1. Steady increases in growth.
   2. Legs grow more rapidly than the trunk.

B. Diet.
   1. Needs 16 oz of milk daily; more than 24 oz can lead to milk anemia (peak incidence at 18 months).
   2. Milk intake should not exceed 800 to 1000 mL daily in toddlers and young children in order to prevent refusal of other foods.
   3. Fruit snacks should be given rather than fruit juices.

4. Prefers finger foods (e.g., bananas, green beans, crackers).
5. Tends to refuse casseroles, salads, and mixed dishes.

C. Nursing implications.
   1. Struggle for autonomy may be manifested by refusal of food, mealtime negativism, and ritualism.
   2. Bribery and rewards for eating should be avoided.
   3. Do not mix food on plate.

### Preschooler

A. Growth.
   1. Growth rate slows and appetite decreases.
   2. Activity level and nutrient requirements remain high.

B. Diet.
   1. Food jags are common; may refuse to eat anything except one food at each meal.
   2. Continues to refuse casseroles and mixed food items.
   3. Finger foods remain popular.

C. Nursing implications.
   1. After-school snacks are popular; encourage fruits, raw vegetable sticks, and peanut butter sandwiches.
   2. Child learns good table manners from imitating parents.
   3. Promote good health habits (e.g., regular exercise; weight control is a balance between physical activity and food intake); encourage routine dental checkups for dental caries.

### School-Age Child

A. Growth.
   1. Growth is slow and steady.
   2. Food intake gradually increases while energy needs per unit of body weight decline.
   3. There is a yearly gain of 3 to 5 kg in weight and 6 cm in height, ending with a growth spurt in puberty.

B. Diet.
   1. Food intake is more varied.
   2. Enjoys most foods, with vegetables being least favorite.

C. Nursing implications.
   1. After-school snacks are popular; encourage fruits, raw vegetable sticks, and peanut butter sandwiches.
   2. Child learns good table manners from imitating parents.
   3. Promote good health habits (e.g., regular exercise; weight control is a balance between physical activity and food intake); encourage routine dental checkups for dental caries.

### Adolescent

A. Growth.
   1. Rapid growth rates and maturation changes make adolescents vulnerable to nutritional deficiencies.
2. Girl’s peak growth occurs between 10 and 13 years of age.
3. Boy’s peak growth occurs between 11 and 14 years of age. Energy needs are highest in boys between 15 and 18 years of age, when muscle mass is developing.

B. Diet.
1. Diets in general are deficient in calcium and vitamin C.
2. Out of 10 girls, 6 eat only two thirds of the nutrients required. Girls tend to be deficient in iron, while boys tend to be deficient in thiamine.

Adult
A. Growth.
1. For ages 20 to 80, body fat in proportion to body weight increases 35%.
2. For ages 20 to 80, plasma volume decreases by 8%.
3. For ages 20 to 80, lean body mass and total body water decrease by 17%.
B. Diet.
1. Energy requirements decrease with age.
   Example: 55-year-old man requires 2400 kcal; at age 76 requires only 2050 kcal. Example: 55-year-old woman requires 1800 kcal; at age 76 only requires 1600 kcal.
2. Improved financial status during middle adulthood increases intake of rich foods and frequency of dining out.
3. Obesity gradually becomes a problem as a sedentary lifestyle develops.
C. Nursing implications.
1. Encourage adherence to a prudent diet pattern.
2. Promote a regular exercise program.
3. Reduce sodium intake to 3 to 6 g daily.
4. Maintain serum cholesterol level at or below 200 mg/dl, with high-density lipoprotein (HDL) level above 35 mg/dl.

Nutritional Evaluation
A. Determine nutritional needs.
B. Examine client profile: age, sex, height, weight, socioeconomic status, culture.
C. Determine nutritional status: food habits; observe for physical signs indicative of nutritional status.
D. Determine disease or pathophysiological process.
E. Be alert to high-risk clients: overweight; underweight; surgery of GI tract; problems with ingestion, digestion, or absorption; and clients on intravenous (IV) therapy for 10 days or more.

**OLDER ADULT PRIORITY:** Usually it takes more time for an older person to eat and early satiety is reached. Encourage frequent small feedings rather than three meals a day. May need additional liquid supplements.

Older Adult
A. Diet.
1. Encourage a diet high in fiber, iron, vitamin C, and thiamine with adequate sources of calcium.
2. If confined to bed rest, the older adult requires an increased fluid intake as high as 3 L/day to promote good renal function, providing there are no fluid restrictions (e.g., heart failure).

**OLDER ADULT PRIORITY:** The older adult may intentionally restrict fluids because of nocturia or stress incontinence.
Diet Therapy for High-Level Wellness

A. MyPyramid (Figure 2-1).
B. Prudent diet.
   1. Increased amounts of fruits, vegetables, and grains.
   2. Reduced amounts of animal fats, cholesterol, refined sugar, salt, and alcohol.
C. Adaptations to the MyPyramid Plan (see Figure 2-1).
   a. Meat: increase amounts of fish, chicken, turkey, and veal; also increase use of legumes, nuts, and seeds as a source of protein; limit egg yolks to two or three weekly, including those used in cooking.
   c. Fruits and vegetables: increase total intake.
   d. Grains, breads, and cereals: select whole-grain products and eat at least 3 oz every day.

Therapeutic Meal Plans

* A therapeutic meal plan or prescription diet is a modification of an individual's normal nutritional needs based on the pathophysiological disease process (Table 2-2).

TEST ALERT: Collect data on client's nutrition or hydration status; identify client's ability to eat (chew, swallow); provide for nutritional needs by encouraging client to eat, feeding client, or assisting with menu.

COMMUNICABLE DISEASES

* TEST ALERT: Understand communicable diseases and modes of organism transmission (airborne, droplet, contact); apply principles of infection control.

A. Incubation period: time from exposure to the pathogen until clinical symptoms occur.
B. Communicability: period of time in which an infected person is most likely to pass the pathogens to another person.
C. Prodromal period: begins with early manifestations of the disease or infection and continues until there are overt clinical symptoms characteristic of the disease.
D. Vaccinations for health care workers (Table 2-3).

Parotitis (Mumps)

Characteristics

A. An acute viral disease characterized by tenderness and swelling of one or both of the parotid glands and/or the other salivary glands.
B. Incubation period: 14 to 21 days.
C. Transmission: direct contact and droplet.
D. Communicability: immediately before and after swelling begins.

Data Collection

A. Prodromal: headache, fever, malaise.
B. Acute phase: Swelling of salivary glands (peaks in 3 days), leading to difficulty in swallowing, earache.
C. Complications.
   1. Postinfectious encephalitis.
   2. Sensorineural deafness.
   3. Orchitis, epididymitis.
**Figure 2-1: MyPyramid**

<table>
<thead>
<tr>
<th>Diet</th>
<th>Purpose/Use</th>
<th>Foods Allowed</th>
<th>Foods Restricted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear liquid</td>
<td>To begin introduction of food after removal of NG tube, after GI surgery.</td>
<td>Liquids that are clear</td>
<td>Milk products, juice with pulp, any solid food; anything that is not liquid at room temperature</td>
</tr>
<tr>
<td>Full liquid</td>
<td>To begin introduction of food; used after removal of NG tube or after GI surgery</td>
<td>Any food that is liquid at room temperature</td>
<td>Any solid food</td>
</tr>
<tr>
<td>Soft diet</td>
<td>To progress diet as tolerated; food should be easy to chew and swallow</td>
<td>Soft, tender foods easy to swallow and digest</td>
<td>Highly seasoned foods, whole grains, fruits, vegetables, nuts, fried foods</td>
</tr>
<tr>
<td>Mechanical soft diet</td>
<td>To assist clients who cannot chew effectively</td>
<td>Soft foods that are easy to chew and swallow</td>
<td>Tough foods that are difficult to chew and swallow</td>
</tr>
<tr>
<td>Bland diet</td>
<td>To eliminate foods irritating to the digestive system; used in clients after GI surgery and those with peptic ulcer disease and GI inflammatory problems</td>
<td>Milk, custards, refined cereals, creamed soups, potatoes (baked or broiled); all foods are white; no bright-colored food</td>
<td>Highly seasoned or strong-flavored foods; tea, colas, coffee, fruits, whole grains, raw fruit, most vegetables</td>
</tr>
<tr>
<td>Low-residue diet</td>
<td>To decrease fiber or stool in GI tract; acute episodes of enteritis, diarrhea; before and/or after GI surgery</td>
<td>Clear liquids, meats, fats, eggs, refined cereals, white bread, peeled white potatoes, small amount of milk</td>
<td>Cheeses; whole grains; raw fruits and vegetables; high-carbohydrate foods, which are usually high in residue and fiber</td>
</tr>
<tr>
<td>High-residue diet</td>
<td>To prevent constipation and prevent acute diverticulitis</td>
<td>Raw fruits and vegetables; whole grains; high-carbohydrate foods, which are high in residue and fiber</td>
<td>Indigestible fibers: celery, whole corn; seeds such as sesame and poppy; foods with small seeds</td>
</tr>
<tr>
<td>Lactose-free diet</td>
<td>To prevent GI effects of lactose intolerance</td>
<td>Nonmilk products, yogurt</td>
<td>Milk and milk products, processed foods that may have dried milk as filler</td>
</tr>
<tr>
<td>PKU diet</td>
<td>To control intake of phenylalanine, an essential acid; affected children cannot metabolize it</td>
<td>Specially prepared infant formula if infant is not breast-fed, vegetables, fruits, juices, some cereals, and breads; may allow 20-30 mg of phenylalanine per kilogram of body weight to fulfill normal growth needs</td>
<td>Most high-protein foods, including meat and dairy products, are significantly reduced</td>
</tr>
<tr>
<td>Low-fat/low-cholesterol diet</td>
<td>To prevent gall bladder spasms, clients with increased cholesterol levels, or problems with malabsorption of fat (cystic fibrosis)</td>
<td>Low-fat or fat-free milk, fruits, vegetables, breads, cereals, reduced amounts of red meat</td>
<td>Egg yolks, whole milk, fried foods, processed cheese, shrimp, avocados, pastries, butter</td>
</tr>
<tr>
<td>Low-sodium diet</td>
<td>To reduce sodium intake to decrease retention of fluids, especially in clients with cardiac disease or hypertension</td>
<td>Salt-free preparations, fresh fruits, vegetables with no added salt</td>
<td>Processed foods, smoked or salted meats, prepared foods, frozen and canned vegetables, breads and pastries</td>
</tr>
<tr>
<td>High-potassium diet</td>
<td>To replace lost potassium in clients taking diuretics and/or digitalis</td>
<td>Dried fruits, fruit juices, fresh fruits (e.g., bananas, apricots, grapefruit, oranges, and tomatoes)</td>
<td>No specific restrictions</td>
</tr>
<tr>
<td>Renal diet</td>
<td>Control potassium, sodium, and protein levels in clients with renal problems</td>
<td>High biological protein (limited intake): eggs, milk, meat; decreased sodium products and decreased potassium (cabbage, peas, cucumbers are low in potassium)</td>
<td>High-potassium foods (dried fruits), high-sodium foods (processed foods), salt substitutes with high-potassium content</td>
</tr>
<tr>
<td>Low-purine diet</td>
<td>To decrease serum levels of uric acid; prescribed for clients with gout and high levels of uric acid</td>
<td>Vegetables, fruits, cereals, eggs, fat-free milk, cottage cheese</td>
<td>Glandular meats, fish, poultry, nuts, beans, oatmeal, whole wheat, cauliflower</td>
</tr>
</tbody>
</table>

*GI, Gastrointestinal; NG, nasogastric; PKU, phenylketonuria.*
Health Care Interventions
A. Preventive: measles, mumps, and rubella (MMR) immunization (see Figure 2-2, Figure 2-3). MMR vaccine should not be given to pregnant or severely immunocompromised clients.
B. Bed rest until swelling subsides.
C. Fluids and soft, bland food.
D. Orchitis: warm or cold packs; light support to scrotum.
E. Cool compresses applied to swollen neck area.

Rubeola (Measles, Hard Measles, Red Measles)

Characteristics
A. An acute viral disease characterized by fever and a rash.
B. Incubation: 10 to 20 days.
C. Transmission: direct contact with respiratory droplet.
D. Communicability: 4 days before rash to 5 days after rash appears.

Data Collection
A. Prodromal: fever, malaise, cold-like symptoms.
B. Koplik’s spots: small, irregular red spots noticed on the buccal mucosa opposite the molars; usually appear 2 days before rash.
C. Acute phase: begins 3 to 4 days after prodromal symptoms; maculopapular rash begins on face and gradually spreads downward from head to feet.
D. Photophobia, conjunctivitis, and bronchitis.
E. Complications: otitis media, pneumonia, laryngotracheitis, and encephalitis.

Health Care Interventions
A. Preventive: MMR immunization (see Figure 2-2, Figure 2-3). MMR should not be given to pregnant or severely immunocompromised clients.
B. Bed rest until fever subsides, acetaminophen or ibuprofen for fever control.
C. Dim lights to decrease photophobia.
D. Tepid baths and lotion to relieve itching.
E. Encourage intake of fluids to maintain hydration; temperature may spike 2 to 3 days after rash appears.

Rubella (German Measles, Three-Day Measles)

Characteristics
A. An acute, mild systemic viral disease that produces a distinctive 3-day rash and lymphadenopathy.
B. Incubation: 14 to 21 days.
C. Transmission: nasopharyngeal secretions, direct contact.
D. Communicability: from up to 7 days before rash until 5 days after rash.

Data Collection
A. Prodromal: low-grade fever, headache, malaise, and symptoms of a cold.
B. Rash first appears on face and spreads down to neck, arms, trunk, and then legs.
C. Diagnostics: persistent rubella antibody titer of 1:8 usually indicates immunity.
D. Complications: can have teratogenic effects on fetus.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Recommendations in brief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Give 3-dose series (dose #1 now, #2 in 1 month, #3 approximately 5 months after #2). Give IM. Obtain anti-HBs serologic testing 1–2 months after dose #3.</td>
</tr>
<tr>
<td>Influenza</td>
<td>Give 1 dose of influenza vaccine annually. Give inactivated injectable influenza vaccine intramuscularly or live attenuated influenza vaccine (LAIV) intranasally.</td>
</tr>
<tr>
<td>MMR</td>
<td>For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give SC.</td>
</tr>
<tr>
<td>Varicella (chickenpox)</td>
<td>For HCP who have no serologic proof of immunity, prior vaccination, or history of varicella disease, give 2 doses of varicella vaccine, 4 weeks apart. Give SC.</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis</td>
<td>Give all HCP a Td booster dose every 10 years, following the completion of the primary 3-dose series. Give a 1-time dose of Tdap to all HCP younger than age 65 years with direct patient contact. Give IM.</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>Give 1 dose to microbiologists who are routinely exposed to isolates of N. meningitidis.</td>
</tr>
</tbody>
</table>

CHAPTER 2  Health Implications Across the Life Span

Recommended Immunization Schedule for Persons Aged 0 Through 6 Years—United States • 2009

For those who fall behind or start late, see the catch-up schedule

<table>
<thead>
<tr>
<th>Vaccine ▼</th>
<th>Age►</th>
<th>Birth</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>15 months</th>
<th>18 months</th>
<th>19–23 months</th>
<th>2–3 years</th>
<th>4–6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Age</td>
<td>HepB</td>
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<td>Rotavirus</td>
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<td>RV</td>
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</tr>
<tr>
<td>Diphtheria, Tetanus, Pertussis</td>
<td>DTaP</td>
<td>DTaP</td>
<td>DTaP</td>
<td>DTaP</td>
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<tr>
<td>Haemophilus influenzae type b</td>
<td>Hib</td>
<td>Hib</td>
<td>Hib</td>
<td>Hib</td>
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<tr>
<td>Pneumococcal</td>
<td>PCV</td>
<td>PCV</td>
<td>PCV</td>
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<tr>
<td>Inactivated Poliovirus</td>
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<td>IPV</td>
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<tr>
<td>Influenza</td>
<td>MMR</td>
<td>MMR</td>
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<tr>
<td>Measles, Mumps, Rubella</td>
<td>Varicella</td>
<td>Varicella</td>
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<tr>
<td>Hepatitis A</td>
<td>HepA (2 doses)</td>
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<td>Polio</td>
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<tr>
<td>Diphtheria, Tetanus, Pertussis</td>
<td>DTaP</td>
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<tr>
<td>Haemophilus influenzae type b</td>
<td>Hib</td>
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<tr>
<td>Pertussis (Whooping Cough)</td>
<td>DTaP</td>
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</tbody>
</table>

Data Collection
A. Sudden onset of high fever.
B. As fever drops, a maculopapular, nonpruritic rash appears abruptly; rash blanches or fades under pressure and disappears in 1 to 2 days.
C. Complications: febrile seizures.

Health Care Interventions
A. Primarily symptomatic; bed rest until fever subsides.
B. Preventive: MMR immunization (see Figure 2-2, Figure 2-3). MMR should not be given to severely immunosuppressed clients.
C. Pregnant women should avoid contact with children who have rubella. If not immunized before pregnancy, vaccination should not be given until completion of pregnancy.

Roseola Infantum (Exanthema Subitum)
Characteristics
A. A common, acute benign viral infection, usually occurring in infants and young children (ages 6 months to 3 years), characterized by sudden onset of a high temperature, followed by a rash.
B. Incubation period: usually 5 to 15 days.
C. Transmission: unknown, generally limited to children ages 6 months to 3 years.
D. Communicability: unknown.

Data Collection
A. Sudden onset of high fever.
B. As fever drops, a maculopapular, nonpruritic rash appears abruptly; rash blanches or fades under pressure and disappears in 1 to 2 days.
C. Complications: febrile seizures.

Health Care Interventions
A. Symptomatic: provide tepid baths, offer fluids frequently, keep child cool.
B. Acetaminophen and/or ibuprofen for fever control.

Diphtheria
A. An infection caused by Corynebacterium diphtheriae.
B. Incubation period: 3 to 6 days.
C. Transmission: direct contact, contaminated articles (fomites).
D. Communicability: variable, usually 2 weeks, but may be longer
E. Smooth, white or gray membrane over tonsillar region; hoarseness and potential airway obstruction.
F. Preventive: diphtheria, tetanus, and pertussis (DTaP) immunization (see Figure 2-2, Figure 2-3) beginning at 2-4 months of age.

Pertussis (Whooping Cough)
A. An acute inflammation of the respiratory tract caused by Bordetella pertussis; is most severe in children under 2 years of age.
B. Incubation period: 6 to 20 days; average, 7 days.
C. Transmission: air droplet, communicability is greatest before onset of paroxysms of coughing.
D. Prevention: DTaP immunization. (see Figure 2-2, Figure 2-3)
Tetanus (Lockjaw)

A. An acute, very serious, potentially fatal disease characterized by painful muscle spasms and convulsions caused by the anaerobic gram-positive bacillus *Clostridium tetani*.

B. Incubation period: generally from 2 days to 2 months; average is 10 days.

C. Transmission: through a puncture wound that is contaminated by soil, dust, or excreta that contain *Clostridium tetani* or by way of burns and minor wounds (e.g., infection of the umbilicus of a newborn).

D. Prevention

1. Careful cleansing and debridement of wounds.
2. Immunization: DTaP (Figure 2-2); adult tetanus toxoid (Td) every 10 years (see Figure 2-3).
3. Encourage all clients to maintain current immunization.

Poliomyelitis

A. An acute, contagious disease affecting the central nervous system.

B. Incubation period: 5 to 35 days; average, 7 to 14 days.

C. Transmission: fecal-oral or pharyngeal-oropharyngeal contact.

Scarlet Fever (Scarlatina)

A. Group A beta-hemolytic streptococcal infection that often follows acute streptopharyngitis.

B. Incubation period: 1 to 7 days; average, 3 days.

C. Transmission: direct contact or droplet of nasopharyngeal secretions.

D. Communicability: variable, approximately 10 days.

E. Sudden onset of high fever and tachycardia, “strawberry” tongue.

F. Diagnostics: history of a recent streptococcal infection, positive antistreptolysin-O (ASO) titer, and a throat culture positive for group A beta-hemolytic streptococci.

G. Complications: otitis media, tonsillar abscess, glomerulonephritis.

H. Health Care Implications

1. Administration of a full course of penicillin (or erythromycin in penicillin-sensitive clients).
2. Encourage intake of fluids to prevent dehydration during febrile phase.

---

**Recommended Adult Immunization Schedule**

**UNITED STATES · 2009**

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

<table>
<thead>
<tr>
<th>VACCINE</th>
<th>AGE GROUP</th>
<th>19–26 years</th>
<th>27–49 years</th>
<th>50–59 years</th>
<th>60–64 years</th>
<th>≥65 years</th>
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</thead>
<tbody>
<tr>
<td>Tetanus, diphtheria, pertussis (Td/Tdap)*</td>
<td>1 dose annually</td>
<td>1 dose every 10 yrs</td>
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<tr>
<td>Human papillomavirus (HPV)*</td>
<td>3 doses (females)</td>
<td>2 doses</td>
<td>1 dose</td>
<td>1 dose</td>
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</tr>
<tr>
<td>Varicella*</td>
<td>2 doses</td>
<td>1 dose</td>
<td></td>
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</tr>
<tr>
<td>Zoster*</td>
<td>1 dose</td>
<td>1 dose</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Measles, mumps, rubella (MMR)*</td>
<td>1 or 2 doses</td>
<td>1 dose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza*</td>
<td>1 dose annually</td>
<td>1 dose</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal (polysaccharide)*</td>
<td>1 or 2 doses</td>
<td>1 dose</td>
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<td></td>
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</tr>
<tr>
<td>Hepatitis A*</td>
<td>2 doses</td>
<td>3 doses</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Hepatitis B*</td>
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<td></td>
<td></td>
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<tr>
<td>Meningococcal*</td>
<td>1 or more doses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Covered by the Vaccine Injury Compensation Program.

---

Infectious Mononucleosis
A. An acute, self-limiting infectious disease caused by the Epstein-Barr virus; member of the herpes group of viruses, occurring most often among young persons under 25 years old, often called the “kissing disease.”
B. Incubation period: 30-50 days.
C. Transmission: direct or indirect contact with oral secretions—intimate contact, sharing same drinking cup, hand to mouth; probably oral pharyngeal route.
D. Onset of symptoms occurs anytime from 10 days to 6 weeks after exposure; may be acute or insidious; malaise, sore throat, fever with generalized lymphadenopathy.
E. Diagnostic: a positive heterophil antibody test (titer of 1:160 is considered diagnostic); positive Monospot test result.

Cancer

Characteristics of Cancer
* Cancer must be regarded as a group of disease entities with different causes, manifestations, treatment, and prognoses. The basic disease process begins when normal cells undergo change and begin to reproduce in an abnormal manner.

Major Dysfunction in the Cell
A. Cellular proliferation: cancer cells divide in an indiscriminate, unregulated manner.
B. There is a loss of contact inhibition. The cancer cells have no regard for cellular boundaries; normal cells respect boundaries and do not invade adjacent areas or organs.
C. Tumors (neoplasm).
1. Benign: encapsulated neoplasm that remains localized in the tissue of origin.
   a. Exerts pressure on surrounding organs.
   b. Will decrease blood supply to the normal tissue.
2. Malignant: nonencapsulated neoplasm that invades surrounding tissue. The stage of the neoplasm determines whether or not metastasis or spread to distant body parts has occurred. There are four primary mechanisms by which the metastasis spreads:
   a. Vascular system: cancer cells penetrate vessels and circulate until trapped. The cancer cells may penetrate the vessel wall and invade adjacent organs and tissues.
   b. Lymphatic system: cancer cells penetrate the lymphatic system and are distributed along lymphatic channels.
   c. Implantation: cancer cells implant into a body organ. Certain cells have an affinity for particular organs and body areas.
   d. Seeding: a primary tumor sloughs off tumor cells into a body cavity, such as the peritoneal cavity.
D. Etiology:
1. Viruses
2. Exposure to carcinogens: sunlight, radiation, tobacco use, or chemical agents can produce toxic effects by altering DNA structure in body sites distant from chemical exposure (e.g., dyes, asbestos)
3. Genetic and familial factors
4. Hormonal agents: tumor growth is promoted by disturbances in hormonal balance of the body’s own (endogenous) hormones or administration of exogenous hormones (e.g., prolonged estrogen replacement, oral contraceptives).

Prevention
A. Cancer prevention.
   1. Eat a balanced diet that includes fresh fruits and vegetable, adequate amount of fiber, and a decreased fats and preservatives; avoid smoked and salt-cured foods containing increased nitrates.
   2. Avoid exposure to known carcinogens—e.g., cigarette smoking and sun exposure.
   3. Maintain weight in normal range
   4. Get enough rest and sleep.
   5. Decreased stress, or perception of stress, improves ability to effectively manage stress.
   6. Regular exercise, encourage least 30 minutes of moderate to vigorous exercise 5 days a week.
   7. Limit alcohol use.
B. Screening guidelines—early detection.
   1. Pap test: screening should begin within 3 years of becoming sexually active or at age 21; thereafter should be done annually or every 2 years. Age 30, after 3 normal Pap tests, then Pap screening every 3-4 years.
   2. Digital rectal examination (DRE): DRE with prostate-specific antigen blood test should be offered to men annually beginning at age 50. African-American males and those men with strong family history should begin at age 45.
   3. Colon: beginning at age 50, all clients should have either a yearly fecal occult blood test or a flexible sigmoidoscopy every 5 years and/or both, depending on the client’s risk factors.
   4. Breast: annual mammogram and clinical breast exam (CBE) for women over 40. Women ages 20-39 should have a CBE every 3 years. Monthly breast self-examination is an option for women in their 20s, but does not replace need for CBE or mammogram.
   5. Testicular self-examination: monthly from age 20 to 40.
Treatment of Cancer

A. Diagnostic studies.
   2. Tissue biopsy.
   5. Spiral computed tomography (CT).
   6. Cytology studies (bone marrow aspiration, urine and cerebrospinal fluid analysis, cell washings, Pap smears and bronchial washings).
   7. Position emission tomography (PET) scan.
   8. Tumor markers.
   9. Sigmoidoscopy or colonoscopy examinations—including stool for occult blood.
   10. CBC, chemistry profile, liver function tests.
   11. Bone marrow examination (if hematolymphoid malignancy is suspected).

B. Biopsy.
   1. Used for definitive diagnosis.
   2. Needle: tissue samples are obtained by aspiration or with a large-bore needle.
   3. Incisional: tumor mass may be too large for removal; this may be done for staging the disease level. Incisional: a scalpel or dermal punch is used to obtain a tissue sample.
   5. Endoscopic biopsy: direct biopsy through an endoscopy of the area (gastrointestinal, respiratory, genitourinary tracts).

Goals of Cancer Therapy

A. Cure: client will be disease-free and live to normal life expectancy.
B. Control: client’s cancer is not cured but controlled by therapy over long periods of time.
C. Palliative: maintain as high a quality of life for the client when cure and control are not possible; neither hastens nor postpones death, but provides relief of symptoms experienced by the dying client.
D. Prophylaxis: provide treatment when no tumor is detectable but when client is known to be at risk for tumor development, spread, or recurrence.

Modalities of Cancer Treatment

A. Surgery: excision of the tumor or extensive resection of tumor and surrounding tissue.
   1. Evaluate any adverse effects of previous treatment and their implications for proposed surgery (e.g., poor nutritional status or fibrosis from effects of radiation therapy that may lead to poor wound healing, leukopenia from chemotherapeutic agents).
   2. Evaluate extent of disfigurement or debilitation caused by surgery and consider its impact on client (e.g., ostomy formation, amputation).
   3. Promote healthful self-image and return to normal lifestyle by recommending cancer support groups and other rehabilitation resources.
B. Chemotherapy: overall goal of chemotherapy is to attack the cancer cell during its most vulnerable stage.
   1. Chemotherapy agents are administered in doses large enough to damage or kill cancer cells, but small enough to limit adverse effects to safe and tolerable levels.
   2. Nursing implications in chemotherapy (Table 2-4):
      a. Collect data on client for symptoms of bone marrow depression (increased bruising and bleeding, sore throat, fever).
      b. Prevent exposure of client to people with communicable diseases.
      c. Before therapy, establish a baseline regarding intake and output, bowel habits, oral hygiene, psychological status, and family relationships.
      d. Monitor fluid intake and output; maintain adequate hydration to prevent urinary complications.
      e. Client education.
         (1) Client should avoid all over-the-counter (OTC) medications while on chemotherapy.
         (2) If treated on an outpatient basis, client should not alter dosages and should maintain schedule of administration.
   
   TEST ALERT: Follow procedures when handling biohazardous materials (such as sharps, radioactive sources, and chemotherapeutic materials).

C. Radiation therapy.
   1. The purpose of radiation therapy is to destroy the rapidly dividing cancer cells. Cells that are reproducing rapidly are more sensitive to the radiation.
      a. Time: client care should be coordinated to allow greatest amount of care to be provided in shortest time frame possible.
      b. Distance: except when giving direct care, attempt to maintain a distance of 6 feet from the source of radiation.
      c. Shield: some institutions provide lead shielding; generally not necessary if time and distance principles are observed.
   2. Common side effects of radiation therapy.

   NURSING PRIORITY: Adverse effects are related to the radiation dose delivered within a specified time, the method of delivery, and the client’s overall health status.
### Table 2-4: Nursing Implications and Chemotherapy

<table>
<thead>
<tr>
<th>Problem</th>
<th>Nursing Implications</th>
</tr>
</thead>
</table>
| Bone marrow suppression: Thrombocytopenia (decreased platelets) | 1. Initiate bleeding precautions and observe for bleeding tendency (bruising, hematuria, bleeding gums, etc).  
2. Decrease invasive procedures; minimize injections. |
| Anemia (decreased hemoglobin)                    | 1. Fatigue is normal with chemotherapy; client should report any significant increase in fatigue.  
2. Encourage diet high in protein, calories, and iron; administer iron supplements. |
| Leukopenia (decreased white cells)               | 1. Advise health care provider regarding any unexplained temperature elevation above 100° F.  
2. Monitor white cell (neutrophil) levels.  
3. Protect client from exposure to infections: frequent hand hygiene, location of room, screen visitors, etc.  
4. See Goals for Home-Care. |
| Pulmonary toxicity                                | 1. Monitor for persistent nonproductive cough, fever, exertional dyspnea, and tachypnea.  
2. Medications may be cumulative, pulmonary complications may be fatal. |
| Hyperuricemia (increased serum levels of uric acid) | 1. Encourage fluid intake up to 3000 mL daily, if allowed.  
2. Assess for involvement of the kidney, ureters, and bladder.  
3. Allopurinol (Zyloprim) may be used as prevention or as treatment. |
| Alopecia                                          | 1. Encourage client to wear something to cover the scalp (e.g., wig, scarf, turban, hat).  
2. Avoid exposure of scalp to sunlight.  
3. Do not rub scalp; do not use hair rollers, hair dryers, curlers, or curling irons.  
4. Hair usually grows back in 3-4 weeks after chemotherapy; is usually a different texture and color. |
| Stomatitis (mucositis)                           | 1. Encourage good oral hygiene and frequent oral checks.  
   a. Encourage frequent mouth rinses of saline solution to keep mucous membranes moist.  
   b. Brush teeth with a small, soft toothbrush after every meal and at bedtime.  
   c. Remove dentures to prevent further irritation.  
2. Avoid alcohol, spicy or hot foods; mechanical soft, bland diet may be ordered.  
3. Rinse mouth with antacid solutions or viscous lidocaine for pain control. |
| GI: anorexia, nausea and vomiting, diarrhea, and constipation | 1. Assist client to maintain good nutrition.  
   a. Discuss food preferences with client and dietitian; encourage small, frequent meals.  
   b. Correlate meals with antiemetic medications.  
   c. Encourage family to provide client with favorite foods.  
   d. Increase calories, protein, and iron; encourage supplemental vitamins.  
2. Monitor hydration status and electrolyte imbalances.  
3. Evaluate skin around anal area in the client with diarrhea; prevent excoriation.  
4. May be prone to constipation—maintain high fluid and high fiber intake.  
5. Monitor weight |
| Tissue irritation, necrosis, ulceration from infusion therapy | 1. Monitor infusion site for infiltration, extravasation and for infection.  
2. Extra precautions should be taken to prevent extravasation (infusion of chemotherapy medication into subcutaneous tissue): tape securely, assess for blood return, observe for continuous flow of IV. |
a. Skin reactions.
   (1) Skin erythema, followed by dry desquamation of the skin in the treatment field.
   (2) Wet desquamation, particularly in areas of skinfolds (breast, perineum, axillary); skin may be blistered.
   (3) Loss of hair on the skin in the treatment field.
   (4) Skin pigmentation and discoloration.

b. Gastrointestinal disturbances are more pronounced when radiation is delivered to areas closely associated with the GI tract.

c. Cystitis when radiation source is near to urinary tract.

d. Radiation pneumonitis.

3. Nursing implications for a client with an internal radiation source (implant or sealed source) (Box 2-2):
   a. Private room and bath.
   b. A lead container and tongs should be present in the client’s room.
   c. If implant becomes dislodged, it should be picked up with the forceps and returned to the lead container. Notify radiation therapist or officer immediately.
   d. Observe time, distance, and shield precautions.
   e. Examples of this type of radiation therapy include uterine implants, testicular implants, or implants used in head and neck tumors.
   f. Inform all people coming in contact with the client of the specific precautions necessary.
   g. Use badges or radiation monitors for caregivers having direct client contact.
   h. List on the client’s chart:
      (1) Type of radiation.
      (2) Time inserted.
      (3) Anticipated removal time.
      (4) Specific precautions for the type of radiation used.

4. Nursing implications for the client receiving systemic radiation therapy.
   a. Systemically administered radionuclides (radioisotopes) may cause radioactive body secretions.
   b. May be necessary to have the linens and trash checked for radioactivity before removing them from the room.

Nursing Interventions

- **Goal:** To maintain client at optimal psychosocial level.
  A. Encourage verbalization.
  B. Assist client to understand disease process and therapeutic regimen.
  C. Include family in the care.
  D. Assist client to cope with changes in body image due to hair loss.
     1. Encourage client to select a head covering they are comfortable with (e.g., wig, turban, scarf, cap).
     2. Instruct client with regard to hair care.
        a. Use mild protein-based shampoo and conditioner to help prevent hair dryness.
        b. Advise client to shampoo only every 3 to 5 days.
        c. Teach client to pat, not rub, hair dry after shampooing to avoid excessive handling of brittle hair.
        d. Encourage client to avoid excessive brushing to prevent tearing or unnecessary manipulation of hair.
        e. Suggest client sleep on a satin pillowcase to decrease hair tangles and friction.
        f. Discourage use of electric hair dryers, hot rollers or crimpers, hair clips, sprays, dyes, or permanents to prevent further hair damage.
  E. Recognize client’s emotional outbursts and anger as part of coping process.
  F. Encourage measures to maintain ego.
     1. Allow client to participate in own care and decision-making.
     2. Maintain active listening.
     3. Encourage personal lifestyle choices (e.g., clothing, makeup, hobbies).

- **Goal:** To maintain nutrition.
  A. Diet: appropriate to age level.
     1. Increase calories; increase protein intake.
     2. Supplement diet with vitamins.
     3. Institute small, frequent feedings.
     4. Increase fluid intake.
     5. Use between-meal supplements.
  B. Total parenteral nutrition (see Chapter 13).
  C. Prevent and/or decrease complications associated with nutrition.
     1. Anorexia.
     2. Nausea and vomiting.
     3. Stomatitis.
        a. Follow good oral hygiene after each meal and at bedtime.
        b. Observe oral mucosa daily.
        c. Provide nonirritating foods.
        d. Keep mucous membranes moist; encourage fluid intake to prevent dehydration.

- **Goal:** To maintain normal elimination pattern.
  A. Provide adequate fluids and fiber in diet to prevent constipation.
B. Prevent and/or decrease complications of diarrhea.
  1. Antidiarrheal medications.
  2. Low-residue, high-protein, bland diet.
  3. Evaluate fluid status.
  4. Prevent anal irritation.
     a. Thorough cleansing of rectal area with mild soap and water.
     b. Avoid irritation of the rectal area.
     c. Use ointments and sprays to decrease discomfort and promote healing.

C. Prevent urinary tract infections, primarily cystitis.
  1. Maintain adequate fluid intake: 3000 mL/day.
  2. Frequently assess for symptoms of cystitis (see Chapter 18).
  3. Avoid bladder catheterization if possible.
D. Minimize embarrassment of incontinence and provide appropriate hygiene measures.

❖ Goal: To prevent and/or decrease infectious process.
A. Carefully assess for temperature elevations greater than 100˚ F orally.
B. Administer antibiotics.
C. Maintain good personal hygiene.
D. Child should be isolated from communicable diseases, especially chickenpox.
E. Frequently assess for potential infectious processes – urinary tract, upper respiratory tract.
F. Do not clean bird cages or cat litter boxes.
G. Cook or peel fruits and vegetables.

NURSING PRIORITY: Implement measures to protect the immunocompromised client.

❖ Goal: To prevent and/or decrease hematological complications (see Chapter 9).
A. Observe for bleeding problems associated with bone marrow depression.
   1. Increased bruising.
   2. Bleeding gums.
   3. Hematuria.
   4. Anemia (decreased hemoglobin levels).
   5. Nosebleed (epistaxis).
   6. Presence of blood in the stool.

NURSING PRIORITY: Advise client to use electric razor and a soft-bristle toothbrush, and avoid dental flossing if gums are bleeding.

B. Anemia.
   1. Maintain adequate rest; encourage client to pace activities to avoid fatigue.
   2. Assess respiratory and cardiac systems and report changes to RN.
   3. Encourage a diet high in protein, vitamins, and iron.

❖ Goal: To maintain activity level.
A. Encourage daily activities appropriate to developmental level.
B. Assist client to evaluate activity patterns and encourage periods of rest.
C. Avoid fatigue.

❖ Goal: To relieve pain (see Chapter 3).
A. Evaluate client’s and family’s response to pain.
B. Evaluate characteristics of pain.
C. Promote general comfort, identify and implement nonpharmacologic approaches to pain relief (positioning, imagery, hypnosis, etc.).
D. Administer medications for pain relief.

**Goal:** To recognize complications specific to radiation and chemotherapy.
A. Alopecia.
B. Hemorrhagic problems.
C. Gastrointestinal distress.
D. Bone marrow depression (myelosuppression).
E. Skin reactions.
F. Decreased immune response.

**Home Care**

**Goal:** To effectively manage pain to provide client optimal rest and pain relief.
A. Assist client to identify provoking and alleviating factors and adjust environment accordingly.
B. Assist client with nonpharmacologic pain therapies (Chapter 3).
C. Layer pain management strategies as needed; medicate with narcotic and non-narcotic analgesics as necessary.
D. Assess effectiveness of therapies and medications and modify as necessary.

**Goal:** To decrease or limit exposure to infection.
A. Limit number of people having direct contact with the client.
B. Good oral hygiene: regular flossing if there is no bleeding problem and no tissue irritation; soft toothbrush; avoid irritating foods.
C. Client should avoid coming in direct contact with animal excreta (cat litter boxes, bird cages, etc).
D. Teach client to take his or her temperature daily and report temperature over 100° F (38° C).
E. Use antipyretics cautiously because they tend to mask infection.
F. Teach client about radiation-induced skin reactions and provide nursing care for these skin reactions (Box 2-2).
1. Moisturize skin 3 to 4 times a day with nonperfumed, nonmedicated cream or lotion.
2. If moist desquamation occurs, cleanse gently with normal saline solution; area should be gently patted dry or air-dried; expose areas to air for 10 to 15 minutes three times a day.
3. Avoid use of perfumes, deodorants, powders, and cosmetics to affected area.
4. Wear loose-fitting cotton clothing; avoid swimming.
5. If dry desquamation is present, apply lotion that is not perfumed, not medicated, and does not contain alcohol.
H. Teach client importance of frequent handwashing.

**Goal:** To maintain optimum psychosocial function
A. Provide opportunities for client to express feelings, concerns, and fears.
B. Encourage activity; one of the best activities is walking for about 30 minutes at a rate that is comfortable.

**Study Questions: Health Implications Across the Life Span**

1. The nurse finds the client’s radiation implant in the bed. What is the best nursing action?
   - 1 Using tongs, replace it in the lead container in the room.
   - 2 Immediately evacuate the client and all others from the room.
   - 3 Wearing gloves, replace the implant into the body cavity.
   - 4 Call radiation control to pick up the implant.
2. What immunizations will be given to an infant within the first 6 months?
   - 1 Varicella, diphtheria, polio, hepatitis B.
   - 2 Diphtheria, pertussis, tetanus, hepatitis B, polio.
   - 3 Polio, measles, mumps, rubella, diphtheria, tetanus.
   - 4 Varicella, measles, mumps, rubella, diphtheria.
3. The mother of a newborn asks when she can begin to give her infant solid food. What is the best response?
   - 1 Begin cereals at 3 months; then begin fruits at 6 months.
   - 2 Start fruits as the first solids at 6 months, then vegetables.
   - 3 Fruits can be started at 3 months, followed by cereal.
   - 4 Cereals are started at 4-6 months, followed by fruit or vegetables.
4. A mother arrives at the office with her 9-month-old infant for a well-baby check. What observation would cause the most concern?
   - 1 Cannot sit alone without support.
   - 2 Shows no interest in walking.
   - 3 Anterior fontanel remains open.
   - 4 Does not respond to name.
5. The nurse understands that the major difference between benign tumors and malignant tumor is that malignant tumors:
   - 1 Are encapsulated and immovable.
   - 2 Grow at a faster rate.
   - 3 Invade adjacent tissue and metastasize.
   - 4 Cause death while benign ones do not.
6. The nurse understands that there are general adverse effects of antineoplastic drugs. Select all that apply:
   __ 1 Peripheral edema.
   __ 2 Anorexia.
   __ 3 Stomatitis.
   __ 4 Increase in urine specific gravity.
   __ 5 Alopecia.
   __ 6 Nausea.

7. What is important to teach a client regarding self-care during radiation therapy?
   1 Remove skin dye tattoos between treatments
   2 Avoid exposure to the sun and do not remove dye markers
   3 Reduce carbohydrate and protein intake during treatments.
   4 Decrease fluid intake and increase carbohydrate intake after treatment.

8. A client on chemotherapy therapy is experiencing nausea and vomiting. What is the best nursing action?
   1 Give antiemetics and monitor hydration.
   2 Administer oral care and assess for mouth lesions.
   3 Decrease fluid intake and monitor renal function.
   4 Record daily weight and encourage small meals.

9. At what age does a child begin to discriminate between the mother’s face and a stranger’s face?
   1 One month
   2 Six weeks
   3 Four months
   4 Thirty weeks

10. A client is receiving chemotherapy for lung cancer. The nurse understands that the medication can cause renal damage. What is an important nursing action?
    1 Encourage fluids to increase the acidity of urine.
    2 Monitor daily weight and daily intake and output.
    3 Decrease fluids to reduce edema formation.
    4 Monitor urinalysis for presence of bacteria.

11. A client is on furosemide (Lasix) for his heart condition. What foods would the nurse encourage the client to eat?
    1 Breads and fortified cereals.
    2 Dried fruits and juices
    3 Leafy green vegetables
    4 Lean red meat and whole grains.

12. A client arrives in the emergency department with a penetrating wound he received while working chopping trees. What is an important nursing action?
    1 Cleanse the wound with antibacterial solution
    2 Administer gamma globulin intramuscularly
    3 Anticipate notifying poison control for plant toxicology.
    4 Determine when client received last tetanus injection.

Answers and rationales to these questions are in the section at the end of the book titled Chapter Study Questions: Answers and Rationales.