holidays from sunrise to sunset, whereas other individuals avoid eating meat during their religious season of Lent.[16]

Modified Diets

Some individuals require limitations of certain foods or fluids due to medical circumstances, illnesses, or chronic diseases. For these reasons, the provider may order a modified diet, also referred to as a "therapeutic diet," based on recommendations from a dietician. A **modified diet** is any diet altered to include or exclude certain components. For example, a client may have a modified diet order due to an upcoming test or procedure, a specific medical condition like diabetes, an allergy like a gluten allergy, or to lose weight.

As previously discussed in Chapter 5, it is critical for the NA to verify the diet orders for every client and then verify the food and fluids on their meal trays are correct based on the diet order. Here are some of the most common diet orders:

- **Low-Sodium:** Salt intake is commonly restricted for individuals with high blood pressure, heart failure, and kidney disease. Salt substitutes may be offered and high sodium condiments, such as ketchup, soy, barbecue and steak sauces, are avoided. This diet is commonly abbreviated as Low NA (sodium) or NAS (No added salt/sodium).
- **Low-Fat:** A low-fat diet is commonly prescribed for individuals with high cholesterol, heart disease, or arterial circulation problems. High-fat dairy and meat products, fried foods, desserts, and baked goods are avoided. However, healthy fats can be consumed from plant-based sources such as olive oil, nuts, avocados, and salmon.
- **Low-Residue or Low-Fiber:** Low-residue or low-fiber diets are commonly prescribed for individuals with bowel disorders. Fiber is found in grains, seeds, fruits, and vegetables, so these food choices are typically avoided.
- **Diabetic or Carb-Controlled:** Carb-controlled diets are typically

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prescribed for individuals with diabetes to help keep their blood sugar in a healthy range. This diet includes reduced intake of carbohydrates, especially from processed sources such as juices, starches such as potatoes and bread, and cereal or pasta that is not whole grain. Good carbohydrate sources include whole fruits and vegetables. Fat intake may also be restricted because it can elevate blood sugar levels. This diet is commonly abbreviated as CHO or CCHO. Many clients with diabetes have orders for a bedside blood glucose test before eating; ensure this test is completed and/or reported to the nurse.

- **Gluten-Free:** The gluten-free diet is typically prescribed for people with gastrointestinal conditions such as celiac disease or irritable bowel syndrome because their symptoms are aggravated by gluten. Gluten is found in wheat, rye, and barley, so rice, oats, and quinoa are good substitutes. There are many gluten-free pasta, cereal, and bread products available.
- **Lactose-Free:** Lactose is removed from the diet for individuals who are lactose intolerant. Lactose is found in milk and dairy products. Soy, almond, or rice milk are good substitutes that provide calcium.
- **Fluid Restriction:** Fluid restriction orders may be temporary, such as several hours before surgery, or permanent, such as for clients with kidney failure or heart failure. The provider prescribes the amount of fluid a person should consume in one day. In a hospital or facility, this amount is typically split across shifts based on meal and snack times while also taking into consideration fluids consumed with medications. Clients on fluid restrictions will also have their fluid intake and output tracked and documented daily as previously discussed in Chapter 5.
- **NPO:** NPO is a common medical abbreviation referring to “nothing by mouth.” NPO may be a temporary order, such as 8-12 hours before surgery, or a permanent order, such as for an individual with a permanent feeding tube due to dysphagia. **Dysphagia** refers to difficulty swallowing that can cause aspiration of liquids and food into one’s lungs and lead to life-threatening pneumonia. Individuals with severe dysphagia may never be able to eat or drink anything without risking pneumonia. Their nutrition is typically given through a permanent tube placed directly into

their stomach (i.e., a PEG tube), or if it is a temporary condition, a tube is inserted through their nose into the stomach (i.e., an NG tube). Residents who are NPO do not typically desire to go to the dining room during meals because they can't eat a regular diet, but be sure to ask their preference.

Diet Texture

In addition to modified diet orders regarding the content of the food choices, the texture of the food may also be modified based on the chewing and swallowing ability of the resident. Common orders for diet textures for residents include regular, mechanical soft, or pureed:

Regular Diet: Regular diets include any texture of food.

Mechanical Soft: Mechanical soft diets include food that is soft or easily mashed with a utensil. Meat is ground to make chewing easier. Fruits and vegetables are boiled to soften any skin, and sometimes it is removed. See Figure 6.3[17] for an image of a mechanical soft diet.

Figure 6.3 Example of a Mechanically-Soft Meal. Used with permission.

17. "dysphagia-meat-and-potatoes-1w03r35.jpg" by Savannah Greiner is used with permission. Access for free at https://sites.udel.edu/chs-udfoodlab/2017/04/10/learning-about-dysphagia/

Pureed: Pureed diets include food that is blended to the consistency of a thick paste. See Figure 6.4[18] for an image of a pureed diet.

Figure 6.4 Example of Pureed Food. Used with permission.

Liquid Consistency

Clients may require a specific type of liquid consistency if they have dysphagia and increased risk for aspiration. The flap that covers the trachea and prevents liquids from entering the lungs when swallowing is called the **epiglottis**. If the epiglottis loses muscle tone, liquid can seep around it into the lungs and cause aspiration pneumonia. Signs of possible dysphagia are when a client continually coughs or clears their throat while eating or drinking. These signs should be reported immediately to the nurse because it can indicate early stages of dysphagia.

Clients with dysphagia typically have orders for thickened liquids. Thickened liquids are easier for the epiglottis to prevent from entering the lungs. Here are common types of liquid consistencies ordered:

Regular or Thin Liquids: No modifications for liquid consistency are required.

18. "dysphagia-pureed-breakfast-1kl60uo.jpg" by Savannah Greiner is used with permission. Access for free at https://sites.udel.edu/chs-udfoodlab/2017/04/10/learning-about-dysphagia/

Nectar Thick (NT): Fluids are modified to have the consistency of thicker juices like a creamy soup.

Honey Thick (HT): Fluids are modified to have the consistency of honey or syrup that pour very slowly and may be consumed with a spoon.

Pudding Thick (PT): Fluids are modified to have semi-solid consistency like pudding. A spoon stands up in pudding-thick liquid.

See Figure 6.5[19] for an illustration comparing liquid consistency.

Figure 6.5 Liquid Consistencies for Regular (Thin), Honey Thick, and Pudding-Thick Liquids

Liquids can be thickened using thickening powder. Pre-thickened liquids from manufacturers typically have a smoother consistency than prepared liquids. See Figure 6.6[20] for an image of a commercial thickening powder in use. Thickening liquid with powder requires exact attention to measurements to ensure the resident receives the correct liquid consistency and does not aspirate the fluid. Ice cubes should not be added to thickened liquids because as they melt, the liquid will become thinner. See Figure 6.7[21] for an image of thickening water.

19. "Honey Thick Liquid," "Pudding Thick," and "Thin Liquid" by Open RN Project are licensed under CC BY 4.0
20. "Powdered Thickener" and "Adding Thickener to Water" by Landon Cerny are licensed under CC BY 4.0
21. "Thickened Water" by Landon Cerny is licensed under CC BY 4.0

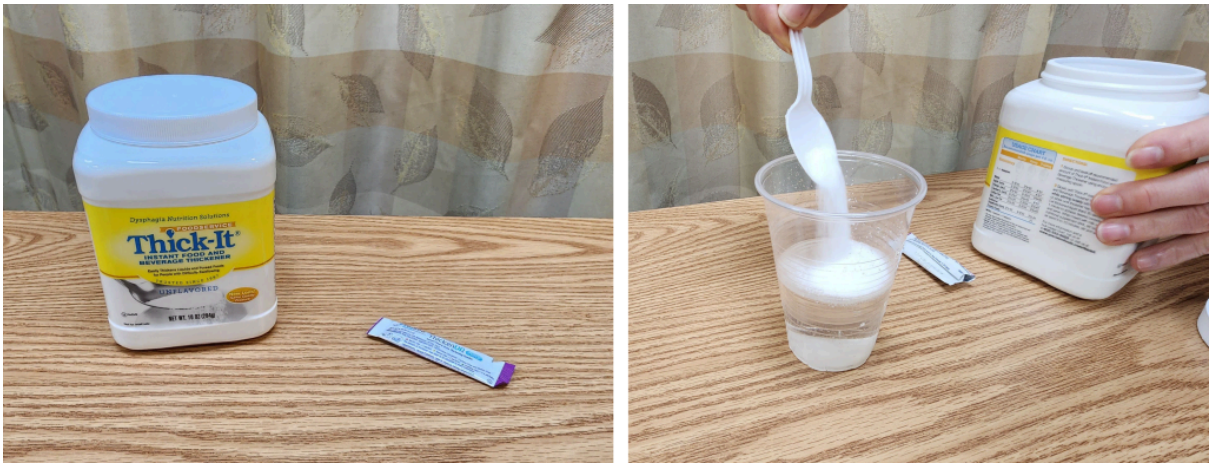

Figure 6.6 Pre-thickened Water

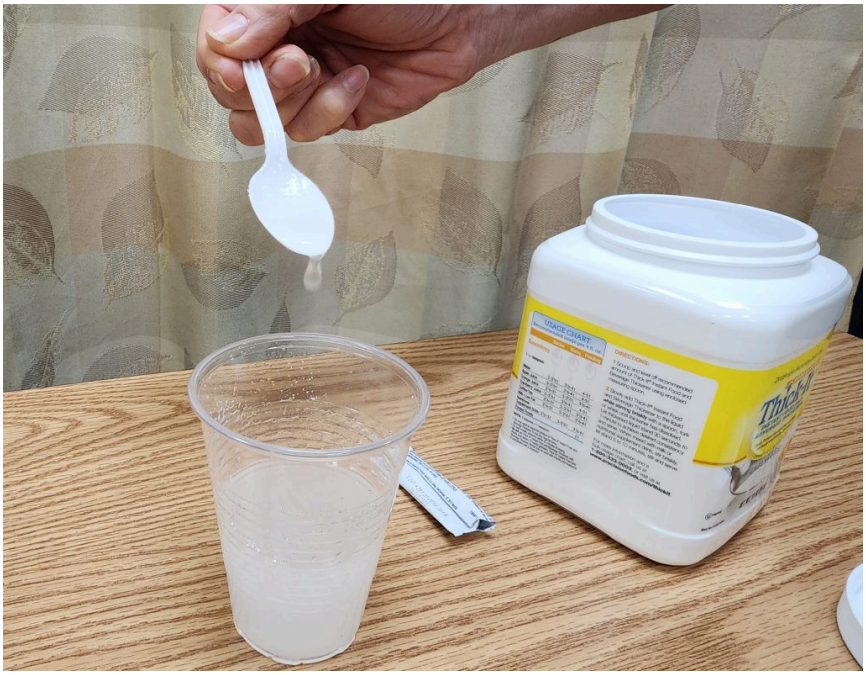

Figure 6.7 Thickened Water

Read additional information on modified diets and liquid consistencies in the Virginia Department of Behavioral Health and Developmental Services PDF.

6.3 Pain

Pain is traditionally defined in health care as, "Whatever the patient says it is, experienced whenever they say they are experiencing it."[1] In 2020 the International Association for the Study of Pain released a revised definition of pain as, "An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage," along with these additional notes:

- Pain is always a personal experience that is influenced to varying degrees by the body's ability to function, how the brain perceives pain, and even how pain has been reacted to or cared for by others in the past.
- Individuals learn the concept of pain throughout all stages of their life.
- A person's report of an experience of pain should be respected.
- Although pain usually serves an adaptive role to protect oneself, it can have adverse effects on function, socialization, and psychological well-being.
- Verbal description is only one of several behaviors that express pain. The inability to communicate does not negate the possibility that a person is experiencing pain.[2]
- Be aware that cultural beliefs and generational norms affect how an individual expresses their pain.

Pain motivates the individual to withdraw from dangerous stimuli, like touching a hot stove. It reminds the body to protect an injured part while it heals, such as not walking on a sprained ankle. Most pain resolves after the painful stimulus is removed and the body has healed, but sometimes pain persists despite removal of the stimulus and apparent healing of the body.

1. Pasero, C., & MacCaffery, M. (2010). *Pain assessment and pharmacological management* (1st ed.). Mosby.
2. International Association for the Study of Pain. (2017, December 14). *Terminology*. https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698

Pain can also occur in the absence of any detectable stimulus, damage, or disease.[3,4]

Factors Affecting Pain

There are many factors that affect how a person perceives pain, how they will act while they are in pain, and how they communicate their pain to others. See Table 6.3a for common factors that influence pain.[5]

Table 6.3a Factors Affecting Pain[6]

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6. Pain Management Best Practices Inter-Agency Task Force. (2019, May 9). *Pain management best practices.* U.S. Department of Health and Human Services. https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf

Biological Factors	Psychological Factors	Social Factors
• Nociception • Brain function • Source of pain • Illness • Medical diagnosis • Age • Injury, past or present • Genetic sensitivity • Hormones • Inflammation • Obesity • Cognitive function	• Mood/affect • Fatigue • Stress • Coping • Trauma • Sleep • Fear • Anxiety • Developmental stage • Meaning of pain • Memory • Attitude • Beliefs • Emotional status • Expectations	• Culture • Values • Economic • Environment • Social support • Coping mechanisms • Spirituality • Ethnicity • Education

There are endless sources of pain. For example, as people age, osteoarthritis is a common cause of pain. **Osteoarthritis** is a type of arthritis causing inflammation or swelling of the joints due to daily wear and tear on the body. The extent of a person's arthritis can be affected by repeatedly performing physically demanding tasks such as those found in jobs such as health care, construction, and manufacturing. Topical medications and treatments such as arthritis cream, ice, or heat can be very effective in managing arthritis pain.

Acute Versus Chronic Pain

The duration of a person's pain can be classified as either acute or chronic. **Acute pain** has limited duration and is associated with a specific cause. It is often attributed to a specific event, such as a fracture, childbirth, or surgery,

and should lessen as the body heals. Acute pain usually causes observable physiological responses such as increased pulse, respirations, and blood pressure. The person may also have excessive sweating called **diaphoresis**.[7]

Chronic pain is ongoing and persistent for longer than six months. It typically does not cause a change in vital signs or diaphoresis. Chronic pain can affect an individual's psychological, social, and behavioral responses and impact daily functioning. Chronic medical problems, such as osteoarthritis, spinal conditions, fibromyalgia, and peripheral neuropathy, are common causes of chronic pain. Chronic pain can continue even after the original injury or illness that caused it has healed or resolved. Some people suffer chronic pain even when there is no past injury or apparent body damage, and it may not be located in a specific area of the body.[8]

People experiencing chronic pain often have other physical effects that are stressful on the body such as tense muscles, limited ability to move around, lack of energy, and appetite or sleep changes. Emotional effects of chronic pain include depression, anger, anxiety, and fear of reinjury. These effects can limit a person's ability to return to their regular work or leisure activities.[9,10]

Objective and Subjective Signs of Pain

The concepts of objective and subjective data were previously discussed in the Chapter 1, "Guidelines for Reporting" subsection. Subjective signs of pain are what the person reports to you, such as "My stomach hurts" or "My knees ache when I walk." Objective data is observable, such as the change in vital signs that can occur when an individual is experiencing acute pain. Signs of pain can also include nonverbal responses such as grimacing, guarding the

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10. Cleveland Clinic. (2020, December 8). *Acute vs. chronic pain*. https://my.clevelandclinic.org/health/articles/12051-acute-vs-chronic-pain

injured body part, rocking, rubbing the area, or moaning. See Figure 6.8[11] for an image of observable signs of pain.

Figure 6.8 Observable Signs of Pain

When an individual is unable to communicate pain due to cognitive deficits, recognizing objective signs of pain is vital for providing comfort measures and improving their quality of life. The Pain Assessment in Advanced Dementia (PAINAD) is an example of a tool that nurses and NAs use to identify the presence of pain in individuals who are unable to verbally report it.[12] See the PAINAD scale in Table 6.3b. A number is identified for each row and the total number is their pain rating.

Table 6.3b PAINAD Scale[13]

11. "238074231_2485ed053b_o" by Erik Ogan is licensed under CC BY-SA 2.0
12. Warden, V., Hurley, A., & Volicer, L. (2003). Development and psychometric evaluation of the pain assessment in advanced dementia (PAINAD) scale. *Journal of the American Medical Directors Association, 4*(1), 9-15. https://doi.org/10.1097/01.JAM.0000043422.31640.F7
13. Warden, V., Hurley, A., & Volicer, L. (2003). Development and psychometric evaluation of the pain assessment in

Item	0	1	2
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation.	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.
Negative vocalization	None	Occasional moan or groan. Low-level speech with a negative or disapproving quality.	Repeated trouble calling out. Loud moaning or groaning. Crying.
Facial Expression	Smiling or inexpressive	Sad. Frightened. Frowning.	Facial grimacing.
Body language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.
Consoling	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract, or reassure.

advanced dementia (PAINAD) scale. *Journal of the American Medical Directors Association, 4*(1), 9-15. https://doi.org/10.1097/01.JAM.0000043422.31640.F7

6.4 Comfort Measures

Nursing assistants (NAs) should report subjective and objective signs of clients' pain to the nurse for further assessment. After assessing the client, the nurse may choose to administer medication with provider order and/or provide other nonpharmacological treatments. The nurse may delegate tasks to the NA such as the application of over-the-counter topical medications, ice, or heat. The NA may also assist with repositioning and massage.

Topical Medications

Topical medications are applied to the skin and are typically over-the-counter (OTC) medications, meaning no prescription is needed to obtain them. Topical analgesics may come as a cream, gel, spray, or patch. An example of a topical analgesic is "Icy-Hot" cream.

There are also other types of topical medications an NA may be delegated to apply, such as antifungal medications (e.g., Nystatin in powder or cream form) or barrier creams to reduce the risk of skin breakdown or assist in healing of opened areas. When applying topical medications, it is important to use diligent infection control measures to prevent the medication from becoming contaminated. See the "Topical Medications" Skills Checklist for steps on how to properly apply topical medications.

Ice and Heat Applications

Applying ice and heat can also be delegated from the registered nurse to the NA. To safely apply ice or heat, first place a thin barrier on the skin, such as a towel or washcloth, to avoid damaging the tissue. Ice may be placed in a plastic bag, or cold therapy may be available in a disposable package. In some situations, a reusable gel pack may be placed in the freezer between uses.

Heat applications may include using an electrical heating pad or a reusable microwavable pack. The NA should discuss the setting for the heating pad or the time the pack should be warmed in the microwave with the delegating

nurse. The NA should feel the pack's temperature before placing it on the resident.

Ice or heat applications are typically left on for 15-20 minutes. If the resident is unable to communicate, the NA should lift the pack, check the skin temperature, and look for any redness every five minutes to prevent damage to the skin. If the ice or heat applications are not disposable, ensure they are sanitized according to agency policy before providing them to the resident.

Positioning and Massage

Pain may arise when a client remains in one position too long or is placed in a position that causes pressure on a sensitive area such as a joint, tendon, or muscle. Residents who are unable to move on their own should be repositioned at least every two hours, and some may require more frequent repositioning due to pain or skin issues. Clients can be maintained in a position of comfort by placing pillows to prevent discomfort between joints and bony prominences or to support the body and prevent them from rolling out of the position. For information on proper positioning, see Chapter 8.

Massage provides relaxation by reducing soreness and tension in muscles. It also increases circulation by promoting blood flow. However, a massage should never be provided over red or swollen areas. A massage given to a resident for pain relief should last about 3-5 minutes. For specifics on giving a massage, see the 5.17 "Back Rub" Skills Checklist in Chapter 5.

Other Comfort Measures

In addition to the previously described interventions to reduce pain, NAs can further help reduce clients' pain by offering distractions, such as talking with the resident about pleasant or interesting things that the resident enjoys, looking at photos or magazines, playing board games, or listening to music. Deep breathing, mindfulness techniques, aromatherapy, and light range of motion (ROM) activities can also help calm the resident and ease their pain.

Read more about providing ROM activities in Chapter 9. See Figure 6.9[1] for images of nonpharmacological treatments for pain.

Figure 6.9 Nonpharmacological Treatments for Pain

> Read more about pain management for older adults from the University of Iowa.

1. "Massage-hand-4.jpg" by Lubyanka is licensed under CC BY-SA 3.0, "Biofeedback_training_program_for_post-traumatic_stress_symptoms.jpg" by Army Medicine is licensed under CC BY 2.0, "Tai_Chi1.jpg" by Craig Nagy is licensed under CC BY-SA 2.0, "Musicoterapia_Imidiman_flickr.jpg" by Midiman is licensed under CC BY 2.0, "Cold_Hot_Pack.jpg" by Mamun2a is licensed under CC BY-SA 4.0, "pexels-photo-1188511.jpeg" by Mareefe is licensed under CC0, "STOTT-PILATES-reformer-class.jpg" by MHandF is licensed under CC BY-SA 3.0, "prayer-2544994_960_720.jpg" by Himsan is licensed under CC0, and "gaming-2259191_960_720.jpg" by JESHOOTS-com is licensed under CC0

6.5 Effects of Prescribed Routine Medications

NAs may not be aware of all the medications a client is receiving, but the nurse should inform the NA of potential harmful side effects to report when a new medication has been prescribed. The NA should be vigilant for possible side effects, especially if it is known that a new medication has been prescribed. Common side effects to report to the nurse are as follows:

- Dizziness
- Drowsiness
- Change in cognition (i.e., new confusion)
- Constipation; diarrhea; or dark, bloody or tarry stools
- Nausea or vomiting
- Dry mouth
- Ringing in the ears
- Itchy skin or rash
- Increased urination or discolored urine
- Muscle aches
- Bleeding gums
- Increased bruising

6.6 End-of-Life Care

There are many circumstances and medical diagnoses that may cause an individual to approach the end of their life. The natural aging process and chronic conditions such as heart failure (HF), chronic obstructive pulmonary disease (COPD), cancer, and advanced dementia may lead to end-of-life care.

All nursing care should be provided in a holistic, person-centered approach, but during end-of-life care, all caregivers must be fully attuned to the needs and wishes of the person. Caregivers often have a long-standing relationship with the dying person, but it is critical to not assume their client's preferences. Communication must be more frequent and intentional during end-of-life care because a patient's needs can change quickly. Additionally, attitudes and mental outlooks often fluctuate for the patient and their loved ones during this difficult time when many decisions need to be made. It is essential for caregivers to find an appropriate balance of interventions and space for the dying person and their loved ones. Use techniques discussed in Chapter 1 for therapeutic communication and making observations of facial expressions and body language to guide your interactions with the resident and their loved ones.

As discussed in Chapter 2.6, "Health Care Settings," hospice care is a choice offered to individuals approaching end of life. **Hospice care** is offered to patients who are terminally ill and expected to live less than six months. Hospice provides comfort to the client and supports the family, but curative medical treatments are stopped. It is based on the idea that dying is part of the normal life cycle. Hospice care does not hasten death but focuses on providing comfort.[1] For example, a cancer patient may choose to no longer receive chemotherapy due to its severe side effects but will continue to take medications to manage pain and nausea. While nutritional intake is still important, food choices center around those that are pleasurable to the client rather than meeting their daily requirement of nutrients.

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Hospice is a service provided by Medicare and can be delivered in a person's home or in a facility such as a nursing home or hospital. To qualify for hospice care, a hospice doctor and the client's primary doctor must certify that the person is terminally ill with a life expectancy of six months or less. The client signs a statement choosing hospice care instead of curative care covered by Medicare. Hospice coverage includes the following:

- All items and services needed for pain relief and symptom management
- Medical, nursing, and social services
- Medications for pain management
- Durable medical equipment for pain relief and symptom management
- Aide and homemaker services
- Physical therapy services
- Occupational therapy services
- Speech-language pathology services
- Social services
- Dietary counseling
- Spiritual and grief counseling for the client and their family
- Short-term inpatient care for pain and symptom management in a Medicare-approved facility, such as a hospice facility, hospital, or skilled nursing facility that contracts with the hospice agency
- Inpatient respite care, which is care provided in a Medicare-approved facility so the usual caregiver (like a family member or friend) can rest. The client can stay up to five days each time respite care is needed. Respite care can occur more than once but only on an occasional basis.
- Other services that Medicare covers to manage pain and other symptoms related to the terminal illness and related conditions the hospice team recommends[2]

After two physicians agree that a person qualifies for hospice, a nurse from a hospice agency completes an assessment and makes care

2. Ouellette, L., Puro, A., Weatherhead, J., Shaheen, M., Chassee, T., Whalen, D., & Jones, J. (2018). Public knowledge and perceptions about cardiopulmonary resuscitation (CPR): Results of a multicenter survey. *The American Journal of Emergency Medicine, 36*(10), 1900-1901. https://doi.org/10.1016/j.ajem.2018.01.103

recommendations. If the client is in a nursing home, their hospice team will coordinate with the facility team to manage the client's needs and wishes. Visits are scheduled at intervals designated by the hospice team. A hospice nursing assistant may come to the facility to provide cares because they can spend more time with the enrolled hospice client than routinely provided by the facility staff. This extra time can reduce pain that may occur during cares by moving at a slower pace and allowing for periods of rest. The additional social interaction is also beneficial for the hospice client. To improve quality of life, hospice may also provide additional resources such as spiritual chaplains, music therapists, or volunteers who simply visit with the client if they do not have friends or family available.

If a hospice client remains in their own home, the hospice agency provides durable medical equipment like a hospital bed and other items to make caring for the client easier, such as a commode, shower chair, or mechanical lift for moving the client. The hospice nurse and nursing assistant visit regularly based on the needs of the client and their family. The nurse's or nursing assistant's visits may also serve as respite, allowing the loved ones a reprieve from caring for the client themselves.

Nursing assistants may choose to work for a hospice agency and receive additional training to better understand and provide end-of-life care.

Ethical and Legal Considerations

End-of-life care often includes unique complexities for the patient, family, and nurse. There may be times when what the physician or nurse believes to be the best treatment conflicts with what the patient or family desires. There may also be challenges related to decision-making that cause disagreements within a family or cause conflict with the treatment plan. Additional challenging factors during end-of-life care include availability of resources and insurance company policies.[3]

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Despite these complexities, it is important for the care team to honor and respect the wishes of the patient. Despite any conflicts in decision-making among health care providers, family members, and the patient, the team must always advocate for the patient's wishes. If a nursing assistant notices conflicts or is questioned by the client or family members, they should notify the nurse. Nurses have practice guidelines for ethical dilemmas in the American Nurses Association's Standards of Professional Nursing Practice and Code of Ethics. These resources assist the nurse in implementing expected behaviors according to their professional role as a nurse.[4]

If complex ethical dilemmas occur, many organizations have dedicated ethics committees that offer support, guidance, and resources for complex ethical decisions. These committees can serve as support systems, share resources, provide legal insight, and make recommendations for action. The nursing assistant should always include their supervisor in any questionable situation and feel supported in raising concerns within their health care organization if they believe an ethical dilemma is occurring.[5]

Do-Not-Resuscitate Orders and Advanced Directives

Additional legal considerations when providing care at the end of life are do-not-resuscitate (DNR) orders and advance directives.

Do-Not-Resuscitate Orders

A **Do-Not-Resuscitate (DNR) order** is a medical order that instructs health care professionals to not perform **cardiopulmonary resuscitation (CPR)** if a patient's breathing stops or their heart stops beating. CPR is emergency treatment provided when a patient's blood flow or breathing stops and may involve chest compressions and mouth-to-mouth breathing, electric shocks

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to restart the heart, breathing tubes to open the airway, or cardiac medications.

A DNR order is written with permission by the patient (or the patient's health care power of attorney, if activated). Ideally, a DNR order is set up before a critical condition occurs. A DNR order is recorded in a patient's medical record and only refers to not performing CPR and does not affect other care. Wallet cards, bracelets, or other DNR documents are also available for individuals to have at home or in nonhospital settings.

The decision to implement a DNR order is typically very difficult for a patient and their family members to make. Many people have unrealistic ideas regarding the success rates of CPR and the quality of life a patient experiences after being revived, especially for patients with multiple chronic diseases. For example, a recent study found the overall rate of survival leading to hospital discharge for someone who experiences cardiac arrest is about 10.6 percent.[6]

Nurses can provide up-to-date patient education regarding CPR and its effectiveness based on the patient's current condition and facilitate discussion about a DNR order. Nursing assistants can provide CPR based on their scope of practice within their state. If a nursing assistant witnesses a cardiac event, their first action should be to notify the nurse.[7]

Advance Directives

Advance directives include the health care power of attorney (POA) and living will. The **health care POA** legally identifies a trusted individual to serve as a decision-maker for health issues when the patient is no longer able to speak for themselves. It is the responsibility of this designated individual to carry out care actions in accordance with the patient's wishes. A health care

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POA can be a trusted family member, friend, or colleague who is of sound mind and is over the age of 18. They should be someone who the patient is comfortable expressing their wishes to and someone who will enact those desired wishes on the patient's behalf.[8]

The health care POA should also have knowledge of the patient's wishes outlined in their living will. A **living will** is a legal document that describes the patient's wishes if they are no longer able to speak for themselves due to injury, illness, or a persistent vegetative state. The living will addresses issues like ventilator support, feeding tube placement, cardiopulmonary resuscitation, and intubation. It is a vital means of ensuring that the health care provider has a record of one's wishes. However, the living will cannot feasibly cover every possible potential circumstance, so a health care power of attorney is vital when making decisions outside the scope of the living will document.[9]

A financial power of attorney may also be appointed to manage the client's money matters when they are no longer able to do so. The financial POA can be the same person as the health care POA or a different individual. The financial POA may be enacted independently of the health care POA, meaning that the client can still make their own health care decisions even if their finances are controlled by their designee. The client should select both POAs when they are still able to make sound decisions. Two physician signatures are required to enact each POA to avoid a conflict of interest and ensure the client truly cannot make appropriate decisions. If a client has not filed these legal documents and is deemed incompetent, a state guardian will be appointed as their financial and health care POA.[10]

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Signs of Impending Death

As a person nears dying there are several notable physiological changes, especially with circulation, breathing, intake, and appearance of skin. The heart rate will slow and blood pressure lowers, creating cool extremities that may appear **cyanotic** (blue), pale, or dark. Respirations may become very irregular, referred to as Cheyne-Stokes breathing. **Cheyne-Stokes respirations** can be observed as gaps in breathing of several seconds, and long and labored or quick and shallow inhalation and exhalation. There may be gurgling or rattling of the lungs when breathing. Intake will decrease and eventually stop altogether, and output will follow the same pattern. Mottling, which looks like severely wrinkled and purple-bluish color skin, often occurs in dependent areas or lower legs and feet.

At some point, the dying person becomes unresponsive, which often leads to the jaw opening. Although the dying person may no longer communicate, hearing is the last sense to fail. It is critical that caregivers continue to talk to the dying person as if they were alert and able to understand.

Care for the Dying Person

Because the end of life is a very emotional time, the person needs to be supported and involved in their care as much as possible to maintain their sense of control. Interventions should center on quality of life and comfort measures. Another important aspect is including loved ones. Their level of involvement should be discussed with the client at an appropriate time when they are able to communicate and understand the conversation. In a long-term care facility, the care team has this conversation with the resident, and it is implemented into the care plan for the nursing assistant to carry out.

Attention to pain is very important. Notify the nurse 10-15 minutes before you plan on providing care so they can assess the resident's pain and determine if pain medication is needed prior to assisting the resident.

Repositioning should occur hourly due to decreased circulation and a high risk for skin breakdown. Incontinence care and all other hygiene should be

completed in bed, and their skin should continue to be moisturized. Massage can help with circulation if it is tolerated by the resident. Due to the jaw opening and breathing with the mouth open, oral care using a moist swab should be done hourly. Consider applying lip balm or other moisturizer at the same time.

The room should be quiet, and lighting should be lowered to the resident's comfort level. Scents from flowers, deodorizer, or perfumes may be more irritating than normal and should be avoided. Visiting times, as well as the amount of people in the room, may be determined by the nurse. A private area with refreshments away from the resident room should be available for loved ones to gather and rest as needed.

Be aware that hearing is the last sense to go. Explain to the patient what you are doing before you do it and be conscientious of the words being used near the patient. Encourage family members and staff members to talk to the patient even if they are not responding; talking can be comforting to the patient, family members, and caregivers.

Stages of Grief

There are several stages of grief that may occur due to any major life change, including end of life and death. It is helpful for caregivers to have an understanding of these stages so they can recognize the emotional reactions as symptoms of grief and support patients and families as they cope with loss. Famed Swiss psychiatrist Elizabeth Kubler-Ross identified five main stages of grief in her book *On Death and Dying*. Patients and families may experience these stages along a continuum, move randomly and repeatedly from stage to stage, or skip stages altogether. There is no one correct way to grieve, and an individual's specific needs and feelings must remain central to care planning.[11]

Kuber-Ross identified that patients and families demonstrate various characteristic responses to grief and loss. These stages include denial, anger,

11. This work is a derivative of Nursing Care at the End of Life by Lowey and is licensed under CC BY-NC-SA 4.0

bargaining, depression, and acceptance, commonly referred to by the mnemonic "DABDA." See Figure 6.10[12] for an illustration of the Kubler-Ross Grief Cycle. Keep in mind that these stages of grief not only occur due to loss of life, but also due to significant life changes such as divorce, loss of friendships, loss of a job, or diagnosis with a chronic or terminal illness.[13]

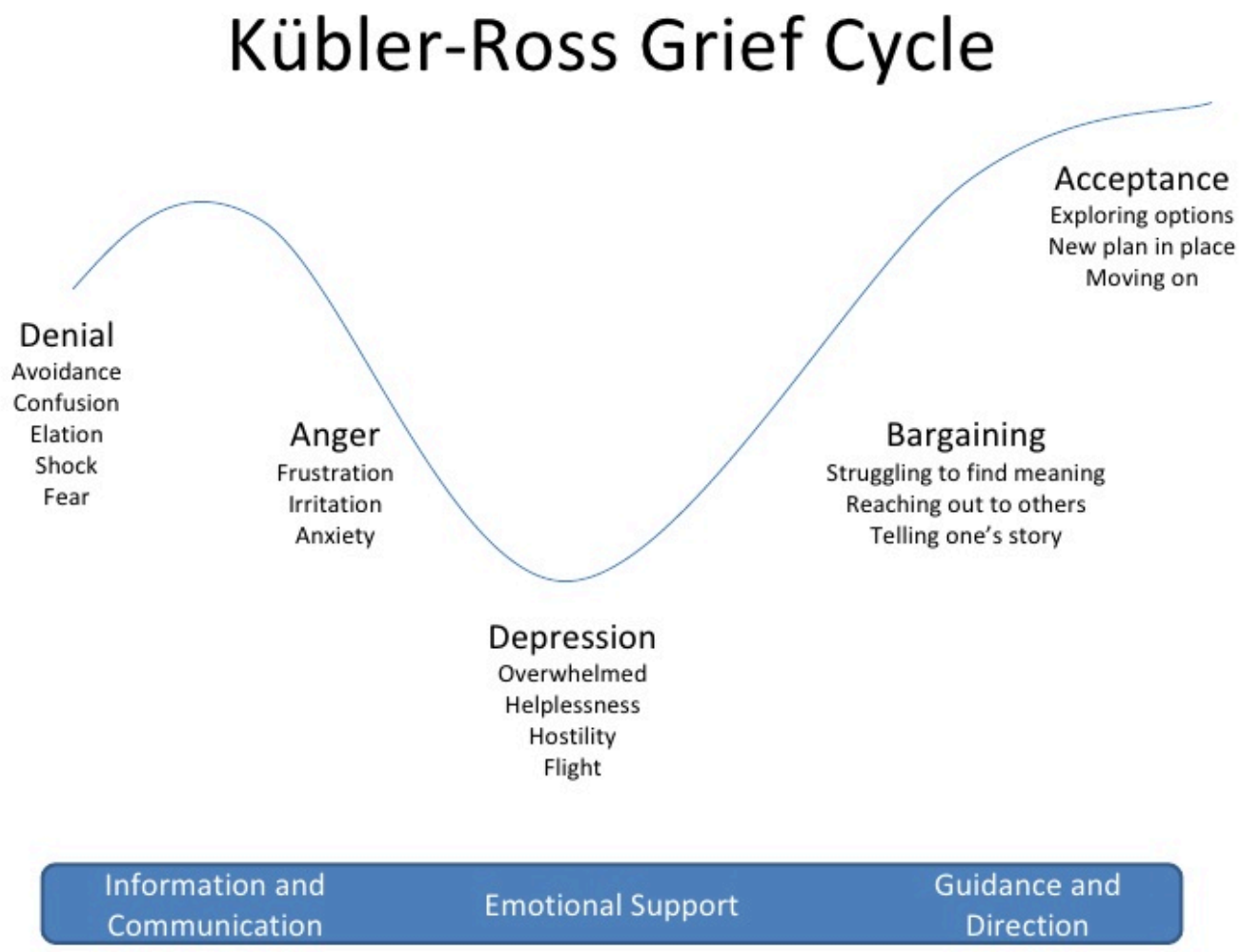

Figure 6.10 Kubler-Ross Grief Cycle

Denial

Denial occurs when the individual refuses to acknowledge the loss or pretends it isn't happening. This stage is characterized by an individual

12. "Kubler-ross-grief-cycle-1-728.jpg" by U3173699 is licensed under CC BY-SA 4.0
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stating, “This can’t be happening.” The feeling of denial is self-protective as an individual attempts to numb overwhelming emotions as they process the information. The denial process can help to offset the immediate shock of a loss. Denial is commonly experienced during traumatic or sudden loss or if unexpected life-changing information or events occur. For example, a patient who presents to the physician for a severe headache and receives a diagnosis of terminal brain cancer may experience feelings of denial and disregard the diagnosis altogether. See Figure 6.11[14] for an image of a person reacting to unexpected news with denial.

Figure 6.11 Denial

Anger

Anger in the grief process often masks pain and sadness. The subject of anger can be quite variable; anger can be directed to the individual who was lost, internalized to self, or projected toward others. Additionally, an individual may lash out at those uninvolved with the situation or have bursts of anger that seemingly have no apparent cause. As a nursing assistant, you may possibly be the target of someone’s projected anger. Health care professionals should

14. “Young-indian-with-disgusting-expression-showing-denial-with-hands-42509-pixahive.jpg” by Sukhjinder is licensed under CC0

be aware that anger may often be directed at them as they provide information or provide care. It is important that health care team members, family members, and others who become the target of anger seek to recognize that the anger and emotion are not a personal attack, but rather a manifestation of the challenging emotions that are a part of the grief process. It often comes from a loss of control in the situation and a feeling of helplessness or hopelessness. If possible, the nursing assistant can provide supportive presence and allow the patient or family member time to vent their anger and frustration while still maintaining boundaries for respectful discussion. Rather than focusing on what to say or not to say, allowing a safe place for a patient or family member to verbalize their frustration, sorrow, and anger can offer great support. See Figure 6.12[15] for an image of a patient experiencing anger.

Figure 6.12 Anger

Bargaining

Bargaining can occur during the grief process in an attempt to regain control of the loss. When individuals enter this phase, they are looking to find ways to change or negotiate the outcome by making a deal. Some may try to make a deal with God or their higher power to take away their pain or to change their

15. "Child's_Angry_Face.jpg" by Babyaimeesmom is licensed under CC BY-SA 4.0

reality by making promises to do better or give more of themselves if only the circumstances were different. For example, a patient might say, “I promised God I would stop smoking if He would heal my wife’s lung cancer,” or “I’ll go to church every week if I can be healthy again.” There may also be thoughts such as “Why isn’t this happening to me instead of my child?”

Depression

Feelings of depression can occur with intense sadness over the loss of a loved one or the situation. Depression can cause loss of interest in activities, people, or relationships that previously brought one satisfaction. There is no pleasure or joy surrounding anything. Additionally, individuals experiencing depression may experience irritability, sleeplessness, and loss of focus. It is not uncommon for individuals in the depression phase to experience significant fatigue and loss of energy. Simple tasks such as getting out of bed, taking a shower, or preparing a meal can feel so overwhelming that individuals simply withdraw from activity. In the depression phase, it can be difficult for individuals to find meaning, and they may struggle with identifying their own sense of personal worth or contribution. Depression can be associated with ineffective coping behaviors, and nursing assistants should watch for signs of self-medicating through the use of alcohol or drugs to mask or numb depressive feelings. Any remarks made about feeling depressed or talk of self-harm should be reported immediately. Other symptoms to report include noticed changes in behavior such as isolation or withdrawal from activity, sleeping more or less, and decreased interest in hygiene and self-care. Further discussion about depression can be found in Chapter 10. See Figure 6.13[16] for an image of an individual demonstrating feelings of depression.

16. “Depressed_(4649749639).jpg” by Sander van der Wel is licensed under CC BY-SA 2.0

Figure 6.13 Depression

Acceptance

Acceptance refers to an individual understanding the loss and knowing it will be hard but acknowledging the new reality. The acceptance phase does not mean absence of sadness but is the acknowledgement of one's capabilities in coping with the grief experience. In the acceptance phase, individuals begin to re-engage with others, find comfort in new routines, and even experience happiness with life activities again. This may be observed by a person saying, "I want to make the most of the time I have left by spending it with my family" or "I'd like to plan the arrangements for my funeral" or "I know this will be painful and difficult, but I will be okay with the supports I have." See Figure 6.14[17] of an image representing an individual who has reached acceptance of the new reality related to his loss.

17. "Contentment_at_its_best.jpg" by Neha Bhamburdekar is licensed under CC BY-SA 4.0

Figure 6.14 Acceptance

Assisting in the Grieving Process

As already discussed, the grieving process is different for each individual and is not easily predicted. The best action for the caregiver is to listen closely and offer support to the individual. Other possible interventions for the NA to assist with the grieving process are described in Table 6.6.

Table 6.6 Suggested Actions by the Nursing Assistant According to the Client's Stage of Grief

Stage of Grief	Suggested Actions by the Nursing Assistant
Denial	• Offer support and give the person time to sort through feelings. • Do not respond with messages such as “You will get over this” or “Everything will be fine eventually.”
Anger	• Explain cares provided and refer to the nurse if needed. • Listen to the client and/or their loved ones without judgment or offering opinions. • Involve the client in choices regarding their cares as appropriate to give them a sense of control.
Bargaining	• Assist in contacting a spiritual or religious counselor.
Depression	• Offer activities the client previously enjoyed. • Encourage participation in ADLs. • Report behavioral changes to the nurse.
Acceptance	• Validate thoughts and any plans made. • Focus on quality of life.

If the dying client lives in a facility, it is important to consider how their death may affect other residents, as well as the staff members. Some facilities may offer grief counseling that includes sharing thoughts, feelings, or memories of the deceased in a group or individual setting. A memorial service may be held at the facility for residents and staff separate from the family’s plans. Staff and residents will also work through the grieving process, so offering the same

interventions as listed above is warranted. Additionally, it is good to promote self-care by maintaining adequate nutritional intake and sleep.

6.7 Postmortem Care

The nurse will determine when an individual has died and follow agency policies. If loved ones are present, allow them to stay with the person's body as long as needed for them to say goodbye. If they express any religious or cultural preferences, they should be accommodated as much as possible. For example, individuals from some cultures prefer to cleanse their loved one's body after death. When sufficient time has been granted, the nursing assistant will prepare the body for transport.

When postmortem care is provided, it is appropriate to ask the family to leave the room. You will provide a bed bath to the resident and then position them in correct alignment. A new gown should be placed on the resident. Because urine or feces is often expelled when the resident is moved for transport, a clean incontinence brief should be provided after the bath is completed. The resident's eyelids and mouth should be gently closed if they are still open. A rolled towel can be placed under the chin to stabilize the jaw. Cover the resident to the neck with clean linens, leaving the face and head uncovered. Check facility policy for applying an identification bracelet.

The postmortem care process can be very difficult for a new nursing assistant or whenever it is completed the first few times. Be sure to ask for assistance from a more experienced nursing assistant or the nurse or consider completing the postmortem cares with another staff member to ease the difficulty of the experience.

6.8 Skills Checklist: Topical Medications

1. Gather Supplies: Topical medication, gloves, medicine cup, medicine spoon (if medication is in a jar), and barrier
2. Routine Pre-Procedure Steps:

    - Knock on the resident's door.
    - Perform hand hygiene.
    - Maintain respectful, courteous, and professional communication at all times.
    - Introduce yourself and identify the resident.
    - Provide for privacy.
    - Explain the procedure to the resident.

3. Procedure Steps:

    - Put on gloves.
    - Place the appropriate amount of medication from the tube, jar, or bottle in a medicine cup. If the medication is in a jar, use a medication spoon to scoop out the medication. Do not put your hands directly into the jar. If using a tube, do not squeeze the medication onto your gloved hand.
    - Place the medication on a flat surface with a barrier.
    - Clean the area where the medication is to be applied. If there is a patch, confirm with the nurse that it should be removed.
    - Remove gloves, turning them inside out.
    - Perform hand hygiene.
    - Put on clean gloves.
    - Using your gloved hand, apply medication from the cup onto the affected area. Be sure to gently rub in the medication so it can be absorbed by the skin for maximum effectiveness.
    - Remove gloves, turning them inside out.

4. Post-Procedure Steps:

- Perform hand hygiene.
- Check the resident's comfort and if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and the privacy curtain.
- Perform hand hygiene.
- Document and report any skin issues or changes to the nurse.

View a YouTube video[1] of an instructor demonstration of topical medications:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=828#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Topical Medications. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/ZJGNFg6ccYM

6.9 Learning Activities

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=831#h5p-43

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An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=831#h5p-46

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=831#h5p-74

VI Glossary

Acute pain: Pain with limited duration and associated with a specific cause. It usually causes observable responses such as increased pulse, respirations, and blood pressure. The person may also have diaphoresis.

Advance directives: Legal documents including the health care power of attorney (POA) and living will.

Cardiopulmonary resuscitation (CPR): Emergency treatment provided when a patient's blood flow or breathing stops and may involve chest compressions and mouth-to-mouth breathing, electric shocks to restart the heart, breathing tubes to open the airway, or cardiac medications.

Cheyne-Stokes: Irregular respirations associated with approaching death that are observed as gaps in breathing of several seconds and long and labored or quick and shallow inhalation and exhalation.

Chronic pain: Ongoing and persistent pain for longer than six months. It typically does not cause a change in vital signs or diaphoresis.

Cyanotic: A bluish discoloration of the skin.

Diaphoresis: Excessive sweating.

Do-Not-Resuscitate (DNR) order: A medical order that instructs health care professionals to not perform cardiopulmonary resuscitation (CPR) if a patient's breathing stops or their heart stops beating. A DNR order is only written with permission by the patient (or the patient's health care power of attorney, if activated).

Dysphagia: Difficulty swallowing that can cause aspiration of liquids and food into one's lungs and lead to life-threatening pneumonia.

End-of-life care: Term used to describe care provided when death is imminent and life expectancy is limited to a short number of hours or days.

Epiglottis: The anatomical flap that covers the trachea and prevents liquids from entering the lungs when swallowing.

Health Care Power of Attorney (POA): Legal identification of a trusted individual to serve as a decision-maker for health issues when the patient is no longer able to speak for themselves. It is the responsibility of this designated individual to carry out care actions in accordance with the patient's wishes.

Hospice care: Care provided to patients who are terminally ill when a health care provider has determined they are expected to live six months or less. Hospice provides comfort to the client and supports the family, but curative medical treatments are stopped. It is based on the idea that dying is part of the normal life cycle.

Living will: A legal document that describes the patient's wishes if they are no longer able to speak for themselves due to injury, illness, or a persistent vegetative state. The living will addresses issues like ventilator support, feeding tube placement, cardiopulmonary resuscitation, and intubation.

Macronutrients: Carbohydrates, proteins, and fats that make up most of a person's diet and provide energy, as well as essential nutrient intake.

Modified diet: Any diet altered to include or exclude certain components. For example, a low-salt diet is an example of a modified diet.

NPO: A common medical abbreviation referring to "nothing by mouth."

Osteoarthritis: A type of arthritis causing inflammation or swelling of the joints due to daily wear and tear on the body.

Pain: An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.

Postmortem care: Care provided after death has occurred through transfer to a morgue or funeral provider.

Quality of life: The degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events.

PART VII

CHAPTER 7: DEMONSTRATE REPORTING AND DOCUMENTATION OF CLIENT DATA

7.1 Introduction to Demonstrate Reporting and Documentation of Client Data

Learning Objectives

- Measure temperature, pulse, and respiration
- Measure weight and height
- Recognize normal and abnormal blood pressure readings
- Identify normal and abnormal vital signs
- Measure intake and output
- Document client data
- Prioritize the reporting of data
- Recognize signs of client discomfort

Nursing assistants collect and document client data such as vital signs, height, weight, intake, and output. While performing cares and collecting data, nursing assistants spend a lot of time with residents and may observe subtle changes in behavior, mood, mobility, and cognition, as well as signs of discomfort. They report these observations promptly to nurses to ensure safe, quality, holistic care. This chapter will discuss collection of this data, as well as prioritization of data that should be immediately reported to the nurse.

7.2 Documenting and Reporting Data

Documentation is legally required for nursing assistants and other health care team members to record client observations and care provided in the medical record. Documentation is used to ensure continuity of care across shifts and among health care team members, to monitor standards of care for quality assurance activities, and to provide information for reimbursement purposes by insurance companies and Medicare or Medicaid. Documentation may also be used for research purposes or, in some instances, for legal concerns in a court of law.[1] For these reasons, always document the care you provide and never document for someone else. Review Chapter 1, "Documenting and Reporting" for details on how observations should be recorded. The facility or employer should provide training on how to document according to their expectations and what should be included in the client's record.

Charting by exception (CBE) is a common type of health care documentation indicating routine care and collection of data were completed. Notes are only written for abnormal findings or anything out of the ordinary. CBE is designed to keep documentation concise and reduce the amount of time required for documentation. CBE may include checklists and flowsheets as efficient means of documenting that standards of care have been provided. For example, nursing assistants may document activities of daily living (ADL) or vital signs on a flow sheet. See an example of an ADL flowsheet using the information in the following box. Keep in mind that documentation is reviewed and submitted by agencies for insurance reimbursement, so it is imperative that charting is accurate and up-to-date.

> See a PDF example of an ADL flowchart.

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In addition to documenting client cares and data collected, nursing assistants also report findings to the nurse. When observations are normal, they can be reported at routine times such as during shift change report. However, abnormal vital signs or significant changes in client status pertaining to breathing, circulation, cognition, pain, or falls should be immediately reported to the nurse for rapid assessment and intervention to ensure client health and safety.

Nursing assistants use critical thinking skills to determine what should be immediately reported to the nurse. If you are unsure about the significance of a finding, it is best to report it to the nurse and allow them to determine what is needed for the resident. It is never incorrect to report information to the nurse. However, waiting to report an important finding can negatively impact the client's health, so use a cautious approach and report anything that seems out of the ordinary. As you gain experience, your critical thinking skills will grow and improve.

Throughout this textbook, observations are described that should be immediately reported. Review Chapter 3.2 ("Emergency Situations") and Chapter 6.3 ("Pain") for additional information. The "Normal Ranges for Vital Signs" section in this chapter can be used to determine when vital signs are out of range and should be reported to the nurse.

7.3 Recognizing Signs of Client Discomfort

While performing cares, obtaining vital signs, or collecting other data, the nursing assistant may notice subjective or objective signs of discomfort in the client.

Subjective signs of discomfort are what the person reports to you such as, “My stomach hurts,” or “I feel achy when I walk.” Subjective reports cannot be verified objectively and must be reported based on what the person communicates. For this reason, when documenting subjective data, write exactly what the client said in quotations. For example, a nursing assistant might document: The client stated, “My stomach hurts.”

Objective data are observable and verifiable. Nursing assistants may suspect a client is experiencing discomfort based on nonverbal signs, such as grimacing, guarding the injured body part, rocking, rubbing the area, or moaning. When a client is unable to verbally communicate, noticing objective signs of pain is integral for providing comfort measures and improving their quality of life. Review the Pain Assessment in Advanced Dementia (PAINAD) in Chapter 6 (“Pain”) that is used to observe and document objective signs of pain.

> Review the concepts of objective and subjective data in the Chapter 1.5, “Guidelines for Reporting” subsection.

7.4 Obtaining Vital Signs

Vital signs are taken upon admission to a facility and then routinely (e.g., weekly in long-term care settings or every shift in inpatient care settings). They are also obtained when there is a change in client condition (e.g., a suspected infection), after a fall, or with some medication changes.

Vital signs are taken at regular intervals to establish a client's baseline, evaluate trends, and determine if a client is experiencing a variance outside their normal range. Many factors can affect vital signs, including activity level, medications, recent intake, or age.

Vital signs include temperature recorded in Celsius or Fahrenheit, pulse, respiratory rate, blood pressure, and oxygen saturation using a pulse oximeter. Obtaining a pain rating is often considered a sixth vital sign. Read about pain ratings in the "Pain" section of Chapter 6.

See Figure 7.1[1] for an image of a nursing assistant obtaining vital signs. Obtaining vital signs may be delegated to a nursing assistant for stable patients, depending on the state's scope of practice for nurse aides and agency policy and training.[2]

1. "US Navy 110714-N-RM525-060 Hospitalman Seckisiesha Isaac, from New York, prepares to take a woman's temperature at a pre-screening vital signs stat.jpg" by U.S. Navy photo by Mass Communication Specialist 2nd Class Jonathen E. Davis is licensed under CC0
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Figure 7.1 Obtaining Vital Signs

Temperature

Accurate temperature measurements provide information about a patient's health status and guide clinical decisions made by the nurse. For example, an elevated temperature (referred to as a fever) can indicate the client is experiencing an infection. Body temperature is documented in degrees Celsius (°C) or Fahrenheit (°F).

There are several methods for measuring body temperature based on the client's developmental age, cognitive functioning, level of consciousness, health status, and agency policy. Common methods of temperature measurement include oral, axillary, tympanic, rectal, and temporal routes. Each of these routes is further discussed in the following subsections, and Skills Checklists are provided later in the chapter.

When documenting a client's temperature, it is important to document the route used to obtain the temperature because of normal variations in temperature in different locations of the body. For example, axillary temperature can be one degree or more lower than an oral temperature. See normal temperature ranges according to method in Table 7.5a in the "Normal Ranges for Vital Signs" section of this chapter.

Oral Temperature

Oral temperature is taken in the mouth under the tongue. Normal oral temperature is 35.8 – 37.3°C (96.4 – 99.1°F). An oral thermometer is shown in Figure 7.2.[3] The device has blue coloring indicating its use as an oral or axillary thermometer, as opposed to a rectal thermometer that has red coloring. Oral temperature is reliable when it is obtained close to the sublingual artery at either side of the base of the tongue. Some factors can cause an inaccurate measurement using the oral route. For example, if the patient recently consumed a hot or cold food or beverage, chewed gum, or smoked prior to measurement, a falsely elevated or decreased reading may be obtained. Oral temperature should be taken 15 to 25 minutes following consumption of a hot or cold beverage or food or 5 minutes after chewing gum or smoking.[4]

Figure 7.2 Oral Thermometer

Axillary Temperature

Axillary temperature is taken in the armpit. The axillary method is a minimally invasive way to measure temperature and is commonly used in children or in adults with impaired cognition who may not tolerate oral or

3. "Thermometer-oral-768x548.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/02%3A_Temperature/2.17%3A_Oral_Temperature
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tympanic routes. It uses the same electronic device as an oral thermometer (with blue coloring), but the probe is placed in the armpit. The axillary temperature can be as much as one degree lower than the oral temperature. See Figure 7.3.[5] for an image of a nursing assistant taking an axillary temperature.[6]

Figure 7.3 Axillary Temperature

Tympanic Temperature

Tympanic temperature is taken using a device placed in the ear. It is more accurate than oral or axillary measurement because the tympanic membrane in the ear shares the same artery that perfuses the hypothalamus (the part of the brain that regulates the body's temperature). The tympanic temperature is typically 0.3 – 0.6°C higher than an oral temperature. See Figure 7.4[7] of a

5. "Axilla-Temperature-1-768x596.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/02%3A_Temperature/2.19%3A_Axillary_Temperature
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7. "Tympanic-Thermometer.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/02%3A_Temperature/2.18%3A_Tympanic_Temperature

tympanic thermometer. The tympanic method should not be used if the patient has a suspected ear infection.[8]

Figure 7.4 Tympanic Thermometer

Rectal Temperature

Rectal temperature is taken in the rectum. It is the most accurate measurement method but is considered an invasive procedure. Some sources suggest its use only when other methods are not appropriate. However, when measuring infant temperature, it is considered a gold standard because of its accuracy. An adult requiring a rectal temperature should be placed in the Sims' position. (See Chapter 8 for positioning techniques.) The rectal temperature is usually 1°C higher than oral temperature. A rectal thermometer has red coloring where the probe attaches to the device to distinguish it from an oral/axillary thermometer.[9] See Figure 7.5[10] for an image of a rectal thermometer.

8. This work is a derivative of Nursing Skills by Chippewa Valley Technical College and is licensed under CC BY 4.0
9. This work is a derivative of Nursing Skills by Chippewa Valley Technical College and is licensed under CC BY 4.0
10. "Rectal Thermometer" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

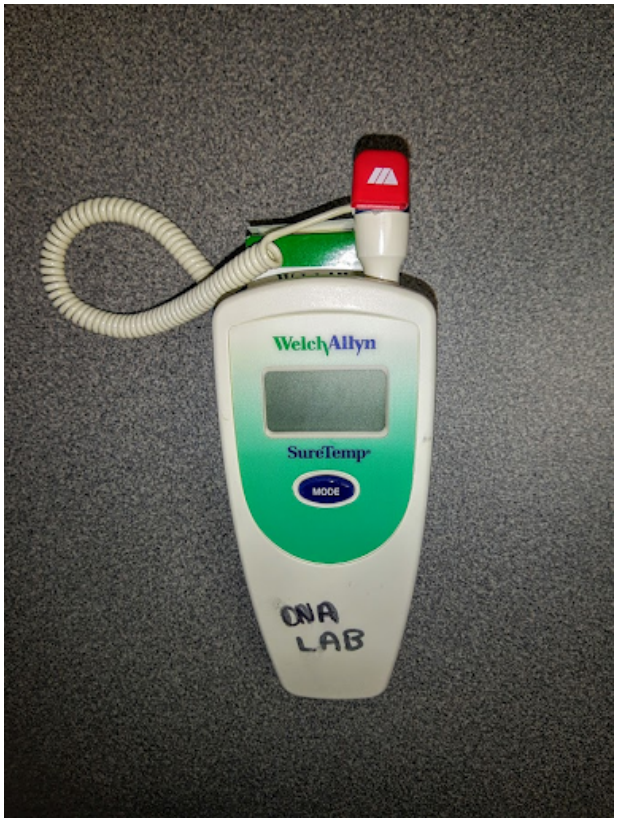

Figure 7.5 Rectal Thermometer

Temporal Temperature

Temporal temperature is taken by using a device placed on the forehead. Temporal thermometers contain an infrared scanner that measures the heat on the surface of the skin resulting from blood moving through the temporal artery in the forehead. Temporal temperature is typically 0.5°F (0.3°C) to 1°F (0.6°C) lower than an oral temperature. It is a quick, noninvasive method, but accurate measurement is dependent on good contact with the skin and good placement on the forehead. See Figure 7.6[11] for an image of a temporal thermometer.

11. "49894280938_74504454c3_h" by Adafruit Industries is licensed under CC BY-NC-SA 2.0

Figure 7.6 Temporal Thermometer

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=896#h5p-50

Pulse

Pulse refers to the pressure wave that expands and recoils arteries when the left ventricle of the heart contracts. It can be palpated at many points throughout the body as shown in Figure 7.7.[12]

12. "Radial-brachial-carotid-and-apical-pulse-final-930x1024.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/03%3A_Pulse_and_Respiration/3.15%3A_What_is_Pulse%3F

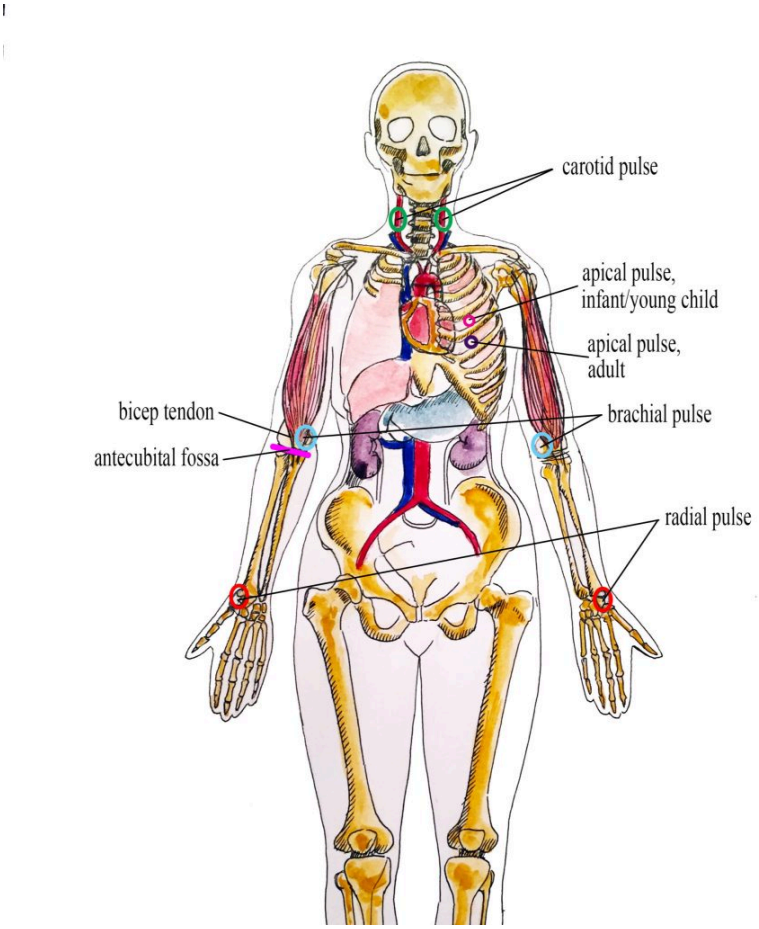

Figure 7.7 Common Pulse Assessment Locations

Nursing assistants typically obtain the radial pulse because it is easily accessible. See Figure 7.8[13] for an image of a nursing assistant obtaining a radial pulse. To locate the radial pulse, ask the client to hold the palm of their hand upwards. Draw an imaginary line from the extended index finger of the resident past the wrist to the radial bone and then palpate the radial pulse just inside the radial bone. Use your index and third finger when palpating a pulse; never use the thumb because it has its own pulse, and you may inadvertently count your own heart rate rather than the heart rate of the client. When obtaining a pulse, the patient should be seated comfortably with their arms and legs uncrossed. If the patient is lying down, this may lower their heart rate so their position should be documented.

13. "Radial-pulse-correct.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/03%3A_Pulse_and_Respiration/3.18%3A_Radial_Pulse

Figure 7.8 Radial Pulse

Pulse is measured in beats per minute. The normal adult pulse rate (heart rate) at rest is 60–100 beats per minute, with different ranges according to age.[14] See normal pulse ranges by age in Table 7.5b in the "Normal Ranges for Vital Signs" section of this chapter.

The pulse rate should be regular, meaning the frequency of the pulsation felt by your fingers is an even tempo with equal intervals between pulsations. However, heart conditions can cause irregularities in heart rate, called arrhythmias. When an irregular pulse is noted, it should be documented and reported to the nurse. It is considered best practice to assess a patient's pulse for a full 60 seconds, especially if there is an irregularity to the rhythm.[15]

Respiration

Respiration refers to a person's breathing and the movement of air into and out of the lungs. Inspiration refers to the process causing air to enter the lungs, and expiration refers to the process causing air to leave the lungs. A respiratory cycle (i.e., measured as one breath for the respiratory rate) is one sequence of inspiration and expiration (i.e., the chest rises and falls once).[16]

The quality of a person's breathing is normally relaxed and silent. However, loud breathing, nasal flaring, or the use of accessory muscles in the neck,

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chest, or ribs is a sign of breathing problems (referred to as **respiratory distress**). People who are experiencing respiratory distress naturally assume a **tripod position**, meaning they lean forward and place their arms or elbows on their knees or on a bedside table to help improve lung expansion. If a patient is demonstrating new signs of respiratory distress as you are obtaining their vital signs, immediately notify the nurse.[17]

Respirations normally have a regular rhythm in children and adults who are awake. A regular rhythm means that the frequency of the respiration follows an even tempo with equal intervals between each respiration. However, newborns and infants commonly exhibit an irregular respiratory rhythm.[18]

Normal respiratory rates vary based on age. The normal resting respiratory rate for adults is 12–20 breaths per minute, whereas infants younger than one year old normally have a respiratory rate of 30–60 breaths per minute.[19] See normal respiratory rate ranges by age in Table 7.5c in the "Normal Ranges for Vital Signs" section of this chapter.

When obtaining a respiratory rate, the most accurate measurement is obtained when the client is not aware you are watching their breathing; knowing they are being observed can unconsciously change their breathing pattern. For this reason, many nursing assistants count the client's respirations while they appear to be taking their pulse. (This is one exception to the standard rule of explaining to the client what you will be doing.)

When counting respirations, it can be difficult to see a complete respiratory cycle. Respirations can be observed by looking at the client's shoulders move up and down with each breath, the stomach or chest rising and falling, or the clothing around the ribs moving. You may have to ask the client to remain quiet while respirations are being observed because talking or moving changes the respiratory rate. Respirations are documented as the number of

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breaths per minute, with each cycle of inspiration and exhalation counting as one breath.

Blood Pressure

Blood pressure is the measurement of the force of blood against the walls of the arteries as the heart pumps blood through the body. It is reported as millimeters of mercury (mmHg). This pressure inside the arteries changes when the heart is contracting compared to when the heart is resting and filling with blood. For this reason, blood pressure is expressed as two numbers called systolic pressure and diastolic pressure (e.g., 120/80). **Systolic blood pressure** (the top number of the fraction) is the pressure in the arteries during **systole** (i.e., when the ventricles are contracting and causing the ejection of blood into the aorta and pulmonary arteries). **Diastolic blood pressure** (the bottom number of the fraction) is the resting pressure in the arteries during **diastole** (i.e., the phase between each contraction of the heart when the ventricles are filling with blood).[20]

Depending on your state's scope of practice for nursing assistants and the training you receive at the facility where you work, you may be delegated the task of taking blood pressure with an automated cuff. Be aware of the client's health status because there are circumstances when blood pressure should not be taken on a certain arm, such as an arm containing a fistula for dialysis, an intravenous (IV) line, or implanted birth control. If the person has had a mastectomy, blood pressure should not be taken on the arm on the side of the mastectomy.

When obtaining a blood pressure, allow the person to rest in place for a few minutes or an inaccurately high blood pressure may be obtained due to recent activity. Position the person in a seated position with their legs and arms uncrossed and the elbow of their arm at heart level supported by a table or your arm. Lying down or standing will change the blood pressure reading,

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so document if the client is standing, sitting, or lying down when the blood pressure is measured.

Raise the client's sleeve or assist the client to remove their arm from their sleeve. Place the artery marker on the blood pressure cuff directly on the skin above the client's brachial artery. To find the brachial artery, gently flex the arm and feel for the bicep muscle, which is the larger muscle of the upper arm. The brachial artery is located towards the inside of the base of the bicep muscle.

See the different sizes of blood pressure cuffs in Figure 7.9.[21] In adults, "regular" or "large" cuffs are typically used based on the size of the client's upper arm.

Figure 7.9 Different Sizes of Blood Pressure Cuffs

It is vital to ensure the cuff fits appropriately on the person's arm in order to obtain an accurate blood pressure measurement. An undersized cuff will cause an artificially high blood pressure reading, and an oversized cuff will produce an artificially low reading. When applying the cuff to the client's arm,

21. "BP-Multiple-Cuff-Sizes.jpg" by British Columbia Institute of Technology (BCIT) is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/vitalsign/chap ter/how-is-blood-pressure-measured/

the end of the cuff should be within the indicated range margins on the cuff. See Figure 7.10[22] for an image of the range designated on the cuff.

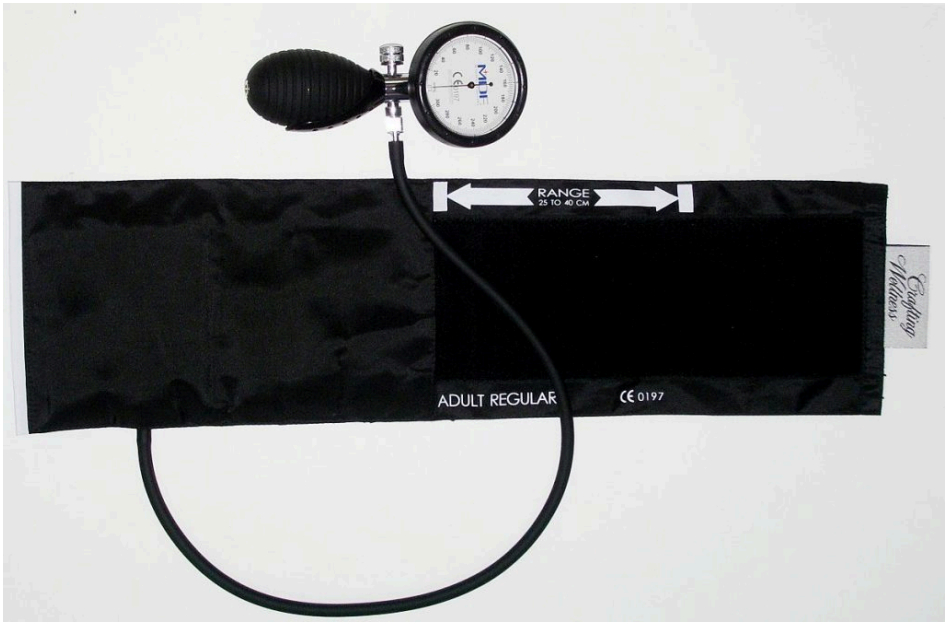

Figure 7.10 Range Markings to Ensure Proper Cuff Size

After the cuff is in place, press the start button on the monitor. The cuff will automatically inflate to a specific pressure and then deflate at a rate of 2 mmHg per second. The monitor digitally displays the blood pressure reading when it is done. See Figure 7.11[23] for an image of an automatic blood pressure monitor. Abnormal blood pressure readings should be promptly reported to the nurse. See normal and abnormal blood pressure ranges in Table 7.5d in the "Normal Ranges for Vital Signs" section of this chapter.

22. "Sphygmomanometer&Cuff.JPG" by ML5 is in the Public Domain
23. "Automatische bloeddrukmeter (0).jpg" by Harmid is in the Public Domain

Figure 7.11 Automatic Blood Pressure Monitor

Oxygen Saturation

Patient oxygenation status is assessed routinely using pulse oximetry. **Oxygen saturation**, also referred to as SpO2, is a client's oxygenation status measured by a pulse oximeter. SpO2 estimates a person's oxygenation level based on how much hemoglobin in their red blood cells is "saturated" with oxygen. The target range of SpO2 for an adult is 94-98%. For patients with chronic respiratory conditions, such as chronic obstructive pulmonary disease (COPD), their normal range for SpO2 is often lower (e.g., 88% to 92%).

Although SpO2 is an efficient, noninvasive method to assess a patient's oxygenation status, it is an estimate and not always accurate. For example, severe anemia (i.e., decreased level of hemoglobin in the blood) or decreased peripheral circulation can cause an inaccurately low SpO2 level.[24]

A pulse oximeter includes a sensor that measures light absorption of hemoglobin to estimate oxygen saturation. See Figure 7.12[25] for an image of a pulse oximeter. The sensor can be attached to the patient using a variety of

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25. "02-Sat-Apparatus-1-1-1024x682.jpg" by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Vital_Sign_Measurement_Across_the_Lifespan_(Lapum_et_al.)/04%3A_Oxygen_Saturation/4.09%3A_How_is_Oxygen_Saturation_Measured%3F

devices. For intermittent measurement of oxygen saturation, a spring-loaded clip is attached to a patient's finger or toe. However, this clip is too large for use on newborns and young children, so the sensor is typically taped to a finger or toe. An earlobe clip is an alternative for patients who cannot tolerate the finger or toe clip or have a condition (such as vasoconstriction and poor peripheral perfusion) that can affect the results. Fingernail polish causes inaccurate measurement and should be removed from the nail of the finger being used for measurement.[26]

Figure 7.12 Pulse Oximeter

When documenting a client's oxygen saturation level, it is vital to document if the client was receiving supplemental oxygen or if the reading was taken while they were breathing room air. If supplemental oxygen was being provided, the type of oxygenation device and the amount of oxygen being delivered should also be documented (e.g., "Oxygen saturation of 90% while receiving oxygen via nasal cannula at 2 Liters/minute").

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7.5 Normal Ranges for Vital Signs

Temperature

The average body temperature is 98.6° F (37° C), but normal body temperature can range between 97° F (36.1° C) to 99° F (37.2° C), depending on the activity level or the time of day. Older adults have lower body temperatures; a reading of 96° F (36° C) is not unusual. See Table 7.5a for average temperature ranges according to the measurement method. In general, notify the nurse for temperatures greater than 38° degrees C (100.4° degrees F) because this indicates a fever.

Table 7.5a Normal Range of Temperatures According to Method[1,2]

Method	Average Range C	Average Range F
Oral	35.8 – 37.3°C	96 – 99°F
Axillary	34.8 – 36.3°C	94.6 – 97.3°F
Tympanic	36.1 – 37.9°C	96.9 – 100.2°F
Rectal	36.8 – 38.2°C	98.2 – 100.7°F
Temporal	35.2 – 36.7°C	95.3 – 98°F

Pulse

Heart rate varies greatly from newborns to adults. In general, immediately report an adult's pulse rate that is less than 60 or higher than 100 to the nurse. See Table 7.5b for normal heart rate ranges by age.

Table 7.5b Normal Heart Rate Ranges by Age[3]

1. This work is a derivative of Nursing Skills by Chippewa Valley Technical College and is licensed under CC BY 4.0
2. RB Health Partners, Inc. (n.d.). *ADL CNA flow sheet.* [Form]. http://anha.org/members/documents/ADLCNAFlowSheet2.pdf
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Age Group	Heart Rate
Preterm	120 – 180
Newborn (0 to 1 month)	100 – 160
Infant (1 to 12 months)	80 – 140
Toddler (1 to 3 years)	80 – 130
Preschool (3 to 5 years)	80 – 110
School Age (6 to 12 years)	70 – 100
Adolescents (13 to 18 years) and Adults	60 – 100

Respiration

Respiratory rate varies greatly from infants to adults. In general, report an adult's respiratory rate immediately to the nurse if it is less than 12 or greater than 20. See normal respiratory rate ranges by age in Table 7.5c.

Table 7.5c Respiratory Rate Ranges by Age[4]

Age	Normal Range
Newborn to one month	30 – 60
One month to one year	26 – 60
1-10 years of age	14 – 50
11-18 years of age	12 – 22
Adult (ages 18 and older)	12 – 20

Blood Pressure

Blood pressure (BP) is categorized into three ranges: low blood pressure (**hypotension**), normal blood pressure, and high blood pressure (**hypertension (HTN)**). In general, 120/80 mmHg is considered a normal adult blood pressure reading. See blood pressure ranges for adults for categories of hypotension, normal, and hypertension in Table 7.5d. Systolic and/or diastolic

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blood pressure readings outside the normal range should be immediately reported to the nurse.

Table 7.5d Blood Pressure Ranges for Adults[5]

Category	Systolic Reading	Diastolic Reading
Hypotension (low BP)	Less than 90 mmHg	Less than 60 mmHg
Normal	91-129 mmHg	61-89 mmHg
Hypertension (high BP)	130 mmHg or higher	90 mmHg or higher

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7.6 Measuring Weight and Height

Height and weight are documented upon admission to a facility as a baseline measurement and then taken routinely. Accurate weights are required for calculating medication dosages, ensuring adequate food and fluid intake, and monitoring chronic conditions such as heart failure (because weight gain is often the first indication of an impending problem).

If a resident requires **daily weights** as documented in their care plan, their weight should be taken on the same scale at the same time every day, before any food or fluids are consumed, and while wearing a similar amount of clothing. The weight is documented, and weight changes of 3 pounds over 24 hours or 5 pounds within a week should be immediately reported to the nurse to address any possible complications. See the "Measuring Weight for Ambulatory Residents" Skills Checklist for measuring weight for more details.

If a resident is nonambulatory, the nursing assistant should weigh the wheelchair and any associated accessories (such as foot pedals or a chair cushion). After the resident is dressed and groomed, the nursing assistant should bring them to the scale, obtain the weight, and then subtract the weight of the chair and associated accessories. See Figure 7.13[1] for an image of weighing a resident on a wheelchair scale.

If a resident requires transfer with a full-body mechanical lift, some lifts have a scale function that can weigh the resident as they transfer from bed to wheelchair.

1. "HOM-2600KL-2.jpg by unknown author is used on the basis of Fair Use.

Figure 7.13 Wheelchair Scale. Used on the basis of Fair Use.

Height

Resident height is typically obtained on admission and documented in the medical record. Because height rarely changes, measurement is rarely repeated. See the "Measuring Height for Ambulatory Residents" Skills Checklist for measuring the height of an ambulatory person with a stadiometer. Figure 7.14[2] shows a person being measured with a stadiometer. If a resident is nonambulatory or unable to stand, their height can be measured with a tape measure while they are lying in bed. Height is recorded in inches or millimeters based on agency policy.

2. "stadiometer-3.jpeg" by unknown author is used on the basis of Fair Use.

Figure 7.14 Measuring Height With a Stadiometer. Used on the basis of Fair Use.

Body Mass Index

Nursing assistants may be asked to obtain a height and weight to calculate a resident's Body Mass Index (BMI). **Body mass index (BMI)** is a calculated measure of body fat based on a person's height and weight. It is calculated by dividing weight in kilograms by the square of their height in meters. BMI is used to evaluate if an individual is underweight (BMI less than 18.5), normal (BMI 18.6-24.9), overweight (BMI over 25), or obese (BMI over 30). Elevated BMI measurements are associated with cardiovascular disease, type 2 diabetes, and other chronic diseases.[3]

3. This work is a derivative of StatPearls by McNeil-Masuka and Boyer and is licensed under CC BY 4.0

7.7 Measuring Intake and Output

Nursing aides assist with documenting clients' intake and output. **Intake** refers to the amount of fluids the client ingests, and **output** refers to the amount of fluids that leave the body. Total intake should be nearly equal to total output every day, but some fluids, referred to as "**insensible losses**," cannot be measured, such as fluids lost through the respiratory system, sweat, and stool. Therefore, urine is the most commonly measured output. Other fluids, like wound drainage in a drainage device, are also measured.

Fluids are typically documented as milliliters (mL). See the Chapter 5.7, "Documentation of Food and Fluids" subsection for review of converting ounces to mL and additional information on measuring intake and output.

Fluid intake is routinely documented with meal intake. Some clients with certain health conditions also have their output measured and documented every shift. Intake and output are then calculated over a 24-hour period and monitored by the nurse. A client's **intake and output ("I&O")** may be closely monitored by the nurse due to illness, a new medication, or a circulatory or urinary condition. See Figure 7.15[1] for an example of a 24-hour intake and output documentation record.

1. "Intake and Output Record.PNG" by Chippewa Valley Technical College is licensed under CC BY 4.0

INTAKE AND OUTPUT RECORD

Patient Name: _____ Date: _____

INTAKE			OUTPUT		
Time	Amount	Type of Intake	Time	Amount	Type of Output
2300-0700					
Shift Total					
0700-1500					
Shift Total					
1500-2300					
Shift Total					

Figure 7.15 Sample Intake & Output Documentation Record

7.8 Skills Checklist: Oral, Tympanic, Axillary, Rectal and Temporal Temperatures

1. Gather Supplies: Thermometer; probe covers for oral, rectal, axillary, or tympanic thermometer. See Figure 7.16[1] at the end of this checklist for an image of various types of thermometers.
2. Routine Pre-Procedure Steps:

    - Knock on the client's door.
    - Perform hand hygiene.
    - Introduce yourself and identify the resident.
    - Maintain respectful, courteous, and professional communication at all times.
    - Provide for privacy.
    - Explain the procedure to the client.

3. Procedure Steps:

    - Oral temperature
    - Remove the probe from the device.
    - Slide a probe cover (from the attached box) onto the oral thermometer without touching the probe cover with your hands.
    - Place the thermometer under the client's tongue at either side of the base of the tongue.
    - Instruct the person to keep their mouth closed.
    - Leave the thermometer in place for as long as is indicated by the device manufacturer, usually indicated by a beep.
    - Read the digital display of the results.
    - Discard the probe cover in the garbage without touching the cover.
    - Place the probe back into the device.

4. Tympanic temperature

1. "Thermometers" by Landon Cerny is licensed under CC BY 4.0

- Remove the tympanic thermometer from its holder.
- Place a probe cover on the thermometer tip without touching the probe cover with your hands.
- Ask the client to keep their head still.
- For an adult or older child, gently pull the outer ear up and back to visualize the ear canal.
- For an infant or child under age 3, gently pull the outer ear down.
- Insert the probe just inside the ear canal.
- Do not force the thermometer into the ear.
- Hold the device in place until it beeps (within a few seconds after the temperature is measured).
- Read the results displayed.
- Discard the probe cover in the garbage without touching the cover.
- Place the device back into the holder.

5. Axillary temperature

    - Remove the probe from the device.
    - Place a probe cover (from the attached box) on the thermometer without touching the cover with your hands.
    - Ask the client to raise their arm or gently raise their arm for them.
    - With the probe facing towards the back of the resident, place the thermometer probe in the armpit on bare skin as high up into the axilla as possible.
    - Ask the patient to lower their arm or gently lower it for them.
    - Leave the device in place until it beeps, usually about 10–20 seconds.
    - Read the displayed results.
    - Discard the probe cover in the garbage without touching the cover.
    - Place the probe back into the device.

6. Rectal temperature (Use the red probe)

    - Put on gloves.

7. Position the patient:

- For infants, place them in a supine position and raise their legs upwards toward their chest.
- For older children and adults, assist them into a side lying position and explain the procedure.
- Remove the probe from the device.
- Place a probe cover (from the attached box) on the thermometer.
- Lubricate the cover with a water-based lubricant.
- Gently insert the probe 2–3 cm or less inside the anus, depending on the patient's size.
- Remove the probe when the device beeps.
- Read the result.
- Discard the probe cover in the trash can without touching it.
- Cleanse the device as indicated by agency policy.
- Remove gloves, turning them inside out and discard.
- Perform hand hygiene.

8. Temporal temperature

    - Remove eyeglasses from the client if they are worn.
    - Place the sensor on their forehead, ensuring good skin contact.
    - Slowly slide the thermometer across the forehead to the ear, maintaining contact with the skin at all times.
    - Stop when the sensor reaches the hairline and read the displayed result.

9. Post-Procedure Steps:

    - Check for resident comfort and ask if anything else is needed.
    - Ensure the bed is low and locked. Check the brakes.
    - Place the call light or signaling device within reach of the resident.
    - Open the door and privacy curtain.
    - Perform hand hygiene.
    - Document temperature and report abnormal findings to the nurse.

Figure 7.16 Thermometers

View a YouTube video[2] of an instructor demonstration of obtaining a temperature:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=987#oembed-1

View a YouTube video[3] of an instructor demonstration of obtaining a rectal temperature:

2. Chippewa Valley Technical College. (2022, December 3). Obtaining a Temperature. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/rZftX0z6aKo
3. Chippewa Valley Technical College. (2023, January 5). Rectal Temperature. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/LKg2OS2D3rQ

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=987#oembed-2

7.9 Skills Checklist: Pulse

Pulse

1. Gather Supplies: Watch or clock with a second hand
2. Routine Pre-Procedure Steps:

    - Knock on the client's door.
    - Perform hand hygiene.
    - Introduce yourself and identify the resident.
    - Maintain respectful, courteous, and professional communication at all times.
    - Provide for privacy.
    - Explain the procedure to the client.

3. Procedure Steps:

    - Locate the radial pulse by placing the tips of your fingers on the side of the resident's wrist.
    - Count the pulse for 60 seconds.

4. Post-Procedure Steps:

    - Check on resident comfort and ask if anything else is needed.
    - Ensure the bed is low and locked. Check the brakes.
    - Place the call light or signaling device within reach of the resident.
    - Open the door and privacy curtain.
    - Perform hand hygiene.
    - Document pulse and report abnormal findings to the nurse.

View a YouTube video[1] of an instructor demonstration of obtaining a pulse:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=990#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Obtaining a Pulse. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/Q82Fn8pLDtg

7.10 Skills Checklist: Respirations

1. Gather Supplies: Watch or clock with a second hand

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Count respirations for 60 seconds.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document respiratory rate and report abnormal findings to the nurse.

View a YouTube video[1] of an instructor demonstration of obtaining respirations:

1. Chippewa Valley Technical College. (2022, December 3). Obtaining Respirations. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/yljzSZHqbq8

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=992#oembed-1

View a YouTube video[2] of an instructor demonstrating obtaining temperature, pulse, and respirations in a sequential procedure:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=992#oembed-2

2. Chippewa Valley Technical College. (2022, December 3). Obtaining Temperature, Pulse, and Respirations. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/_NRc4zEYrNI

7.11 Skills Checklist: Measuring Height for Ambulatory Residents

1. Gather Supplies: Gait belt and stadiometer

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Put nonskid footwear on the resident.
- Apply a gait belt if indicated on the care plan.
- If the resident is in a wheelchair, assist the resident to the stadiometer and lock the brakes.
- Assist the resident to stand and walk to the stadiometer.
- Slowly turn the resident so their back is near the stadiometer and they are facing away from the supporting wall.
- Instruct the resident to look forward and keep their chin up.
- Gently lower the stadiometer arm to the top of the resident's head.
- Note the measurement.
- Raise the stadiometer arm.
- Assist the resident back to the wheelchair if used.
- Remove the gait belt if it was applied.
- Unlock the brakes if the resident is seated in a wheelchair.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.

- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document height and report abnormal findings to the nurse.

View a YouTube video[1] of an instructor demonstration of measuring height:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=994#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Measuring Height. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/T_h4uMnh3UA

7.12 Skills Checklist: Measuring Weight for Ambulatory Residents

1. Gather Supplies: Gait belt and scale

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Verify the resident is wearing nonskid footwear.
- Balance (or zero) scale.
- If the resident is in a wheelchair, apply the brakes.
- Assist the resident to stand, using a gait belt as needed.
- Walk the resident to the scale.
- Assist the resident to step on the scale.
- Check that the resident is centered on the scale.
- Check that the resident has their arms at their side.
- Ensure the resident is not holding on to anything that would alter the reading of the weight.
- Adjust the weights until the scale is in balance or read analog scale.
- Assist the resident back to a seated position.
- Remove the gait belt if it was used.
- Release the brakes if the resident is seated in a wheelchair.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.

- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document weight and report abnormal findings to the nurse.

View a YouTube video[1] of an instructor demonstration of measuring weight:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=996#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Measuring Weight. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/QnQoEwdcG1k

7.13 Learning Activities

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=907#h5p-47

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=907#h5p-48

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=907#h5p-52

VII Glossary

Axillary temperature: Temperature taken in the armpit using the same device as when taking an oral temperature. It can be as much as one degree lower than the oral temperature.

Blood pressure: The force of blood against the walls of the arteries as the heart pumps blood through the body reported in millimeters of mercury (mmHg). It is expressed as two numbers: systolic pressure and diastolic pressure.

Body mass index (BMI): A calculated measure of body fat based on a person's height and weight.

Charting by exception (CBE): A common type of health care documentation where routine care is provided and notes are only written for abnormal findings or anything out of the ordinary. It is designed to keep documentation concise and reduce the amount of time required for documentation.

Daily weights: Client weight taken at the same time every day, on the same scale, in similar clothing, and before any food or fluids are consumed.

Diastole: The phase between each contraction of the heart when the ventricles are filling with blood.

Diastolic blood pressure: Resting pressure within the arteries during diastole.

Hypertension (HTN): Elevated blood pressure.

Hypotension: Low blood pressure.

Insensible losses: Fluid loss that cannot be measured, such as fluids lost through the respiratory system, sweat, and stool.

Intake and output (I&O): Fluid intake and output measured and documented every shift.

Oral temperature: Temperature taken in the mouth under the tongue.

Output: Fluids that leave the body, including urine output that is measured.

Oxygen saturation (SpO2): Oxygenation status by a pulse oximeter based on how much of hemoglobin in red blood cells is "saturated" with oxygen.

Pulse: The pressure wave that expands and recoils arteries when the left ventricle of the heart contracts. It can be palpated at many points throughout the body.

Rectal temperature: Temperature taken in the rectum. It provides the most accurate temperature measurement but is considered an invasive procedure.

Respirations: The movement of air into and out of the lungs. Inspiration refers to the process causing air to enter the lungs, and expiration refers to the process causing air to leave the lungs.

Respiratory distress: Problems breathing.

Systole: The phase of the heartbeat when the ventricles contract, causing the ejection of blood into the aorta and pulmonary arteries.

Systolic blood pressure: The maximum pressure within the arteries during systole.

Temporal temperature: Temperature taken by using a device placed on the forehead that measures the heat on the surface of the skin resulting from blood moving through the temporal artery in the forehead.

Tripod position: A position that people experiencing respiratory distress naturally assume by leaning forward and placing their arms or elbows on their knees or on a bedside table to help improve lung expansion.

Tympanic temperature: Temperature taken using a device placed in the ear. It is more accurate than oral or axillary measurement because the tympanic membrane in the ear shares the same artery that perfuses the hypothalamus (the part of the brain that regulates the body's temperature).

Vital signs: Vital signs include temperature recorded in Celsius or Fahrenheit, pulse, respiratory rate, blood pressure, and oxygen saturation using a pulse oximeter.

PART VIII

CHAPTER 8: UTILIZE PRINCIPLES OF MOBILITY TO ASSIST CLIENTS

8.1 Introduction to Utilize Principles of Mobility to Assist Clients

Learning Objectives

- Examine types and uses of restraining devices
- Use alternatives to restraints
- Assist with moving or positioning a client
- Promote joint mobility, body alignment, and activity
- Assist with ambulation
- Use client transfer techniques
- Apply prosthetic and orthotic devices

Mobility is the ability to move one's body parts, change positions, and function safely within the environment. It is one of the most important factors for remaining independent. **Immobility**, the inability to independently move and change positions, is a major reason why people are admitted to long-term care facilities for assistance to complete their activities of daily living (ADLs). Declining mobility can negatively affect many aspects of one's health, especially in the musculoskeletal, respiratory, integumentary, circulatory, and digestive systems. Complications of immobility will be further discussed in Chapter 9.

Nursing assistants (NAs) have a major responsibility for assisting clients who have decreased mobility. Some clients require minor assistance to ambulate safely or move from their bed to a chair, whereas other clients require full assistance for repositioning in bed and/or transferring. NAs also assist in maintaining a resident's level of functioning by promoting joint mobility and applying prosthetics and orthotics. This chapter will review moving and positioning clients, as well as promoting their joint mobility.

In some circumstances, medical restraints may need to be applied to clients who are at risk for hurting themselves or others. This chapter will also review various types of restraints and how to prevent complications that can result from decreased movement.

8.2 Moving and Positioning Clients

When a resident is admitted to a facility or begins receiving home health care, assessments are completed by health care staff (including nurses, physical therapists, and occupational therapists) to determine their care needs. Examples of assessments include their ability to complete hygiene and grooming needs, as well as the amount and type of assistance required to safely reposition themselves in bed, move in and out of bed into a chair, and walk (if they are able). The findings from these assessments are implemented into the client's care plan that the nurse and NA carry out. Roles of various therapists will be further discussed in Chapter 9.

Repositioning in Bed

As discussed in the "Skin Care" section in Chapter 5, clients who are immobile must be repositioned every two hours to prevent pressure injuries and other complications of immobility that will be further discussed in Chapter 9. Moving residents must be done carefully because their skin can easily be damaged by improper handling. Due to the effects of aging on the integumentary system, older adults can develop pressure injuries from friction and shear when repositioned or from lying in one position for long periods of time in bed. **Pressure injuries** (formerly called pressure ulcers or bedsores) are localized damage to the skin or underlying soft tissue, usually over a bony prominence, as a result of intense and prolonged pressure and/or shear.[1]

Shear happens when skin moves one way but the underlying bone and muscle stay fixed or move the opposite direction. Shear can occur when an individual sits up in a bed, chair, or wheelchair, and gravity causes the bone and muscle to slide down while the skin is pulled in the opposite direction by the sheets or clothing. **Friction** is caused when skin is rubbed by clothing,

1. Edsberg, L. E., Black, J. M., Goldberg, M., McNichol, L., Moore, L., & Sieggreen, M. (2016). Revised national pressure ulcer advisory panel pressure injury staging system: Revised pressure injury staging system. *Journal of Wound, Ostomy, and Continence Nursing: Official Publication of The Wound, Ostomy and Continence Nurses Society, 43*(6), 585–597. https://doi.org/10.1097/WON.0000000000000281

linens, or another body part and can cause chafing. Chafing typically occurs when the skin has inadequate moisture. See an illustration of sheer and friction in Figure 8.1.[2]

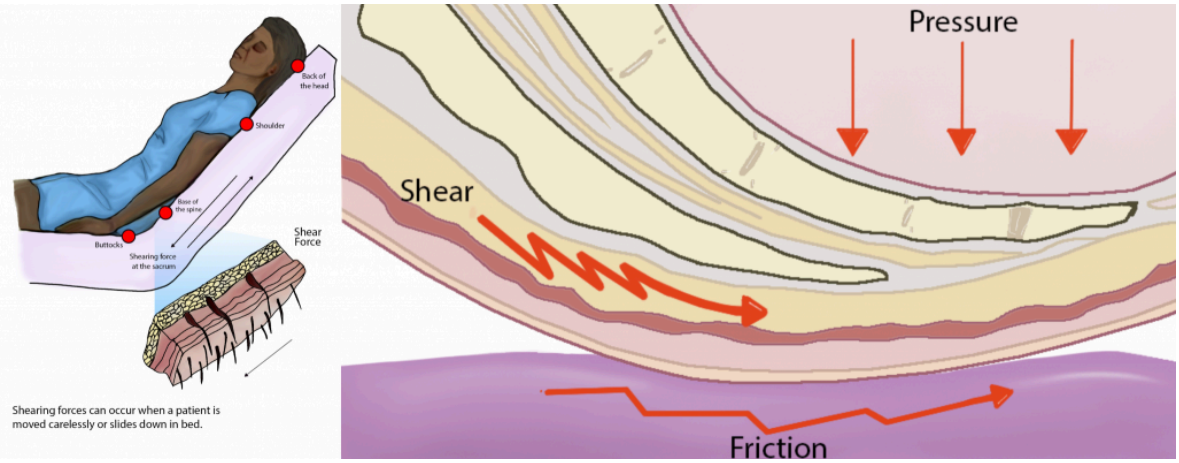

Figure 8.1 Friction and Shear Causing Pressure Injuries

> For additional information on friction and shear, visit the Wound Care Education Institute's Friction vs. Shearing in Wound Care web page.

To prevent friction and shear, residents should be moved in bed with a lift sheet. The **lift sheet**, also called a draw sheet, is placed between the resident and the bottom or fitted sheet. (Review types of linens in "Making an Unoccupied Bed Checklist" in Chapter 3.) The lift sheet protects the client's skin by creating a barrier when the client is moved so the friction that occurs happens between the lift sheet and fitted sheet rather than the resident's skin and the fitted sheet. Lift sheets also protect the client's skin from bruising and skin tears that can occur when moving the client by assistants

2. "Shear Force" and "Shear Force Closeup" by Meredith Pomietlo at Chippewa Valley Technical College are licensed under CC BY 4.0

putting their hands directly on a client's limbs. A **skin tear** is a separation of skin layers caused by shear, friction, and/or blunt force. Lift sheets should always be used to reposition a client who requires assistance, and failing to do so is considered neglectful due to the high probability of skin injury. See Figure 8.2[3] for an image of boosting a resident in bed with a lift sheet.

Figure 8.2 Boosting a Resident in Bed With a Lift Sheet

The steps for boosting a client up in bed include the following components[4]:

- Explain to the patient what will happen and how the patient can help.
- Perform hand hygiene.
- Raise the bed to a safe working height and ensure that the brakes are applied.
- Position the patient in the supine position with the bed flat. Place a pillow at the head of the bed and against the headboard to prevent accidentally bumping the patient's head on the headboard.
- Stand with your feet shoulder width apart at the bedside between the client's shoulders and hips with a second assistant in a similar position on the other side of the bed. This position keeps the heaviest part of the

3. "Book-pictures-2015-572.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-5-positioning-a-patient-on-the-side-of-a-bed/
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client closest to the center of gravity of the assistants.

- Fan-fold the lift sheet toward the patient with your palms facing upwards. This provides a strong grip to move the client up with the lift sheet.
- Ask the patient to tilt their head toward their chest, fold their arms across their chest, and bend their knees to assist with the movement. Let the patient know the move will happen on the count of three. This step prevents injury from occurring to the patient and prepares them for the move.
- Tighten your gluteal and abdominal muscles, bend your knees, and keep your back straight and neutral. Face toward the direction of movement. Using proper body mechanics can help prevent back injury when used appropriately in patient-care situations.
- On the count of three by the lead person, gently slide (not lift) the patient toward the head of the bed, shifting your weight from the foot closest to the end of the bed to the foot closest to the head of the bed, while keeping your back straight and knees slightly bent.
- Replace the pillow under the patient's head, move them into a different position as indicated, and cover them with a sheet or blanket per their preference.
- Check the patent's comfort and for proper alignment.
- Ensure the patient remains in the middle of the bed.
- Lower the bed, check that the brakes are locked, and ensure the call light is within reach. Perform hand hygiene.
- Document or report any skin issues or other observed changes with the patient.

Review the "Body Mechanics and Safe Equipment Use" section in Chapter 3 to prevent yourself from injury during repositioning.

Pressure injuries are preventable by repositioning clients at least every two hours and reporting any skin redness or other changes to the nurse for additional interventions. There are several positions that can be used to relieve pressure points and keep residents safe from pressure injuries.

Repositioning also promotes improved circulation through movement. Positions are described in the various "Positions" subsections below.

When a resident has an existing pressure injury or a susceptible area, an hourly repositioning schedule is typically implemented (rather than the standard two-hour repositioning schedule considered routine care for all residents requiring assistance with their mobility). Repositioning a client every hour should be documented, indicating the time and the positions the resident was moved from and placed into. An example of documentation is, "At 1400, the resident was repositioned from a right side-lying position to a supine position."

Body Alignment for Positioning Residents

Similar to how nursing assistants use good **body alignment** (i.e., good posture) to prevent musculoskeletal injuries to themselves, the same principle should also be applied to residents. Good body alignment not only prevents injury, but also promotes comfort for residents. After repositioning a resident, the NA should stand at the foot of the bed and verify that the resident's spinal column is straight and parallel to the sides of the bed, as well as ensuring the resident is lying in the middle of the bed (to reduce the risk of accidentally rolling out of bed). See Figure 8.3[5] of an image of a properly aligned mannequin in the lateral position.

5. "Lateral Position.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 8.3 Properly Aligned Lateral Position

Pressure Relieving Devices

In addition to being caused by friction and shear, pressure injuries can occur in high-risk areas such as bony prominences or where a bone is lying directly on top of another bone. **Bony prominences** are the areas of the body where a bone lies close to the skin's surface, such as the back of the head, shoulders, elbows, heels, ankles, tops of the toes, hips, and **coccyx** (i.e., tailbone). These areas are most susceptible to developing pressure injuries because they have the least amount of cushioning. Placing pillows or other specialized equipment reduces the pressure in these areas and also helps to prevent the resident from rolling out of position.

There are different sizes of pillows and equipment available in facilities to

relieve pressure, prevent rolling, and increase client comfort. For example, foam wedges are placed behind a patient's back to prevent them from returning to the supine position or rolling close to the edge of the bed. See Figure 8.4[6] for images of a wedge cushion and a client positioned using a wedge cushion.

Figure 8.4 Wedge Cushion Used for Positioning. Used under Fair Use.

Positions

Common positions used for repositioning patients are supine, Fowler's, lateral, Sims', and prone positions.

Supine Position

The most common sleeping position is the **supine position**, where the client is lying flat on their back as demonstrated in Figure 8.5.[7] Pillows or wedges

6. "6105kmeOsGL._AC_SL1000_.jpg" by unknown author is used on the basis of Fair Use.
7. "supine.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-4-positioning-a-patient-in-bed/

can be placed on each side of the resident to promote comfort or to support a limb that is immobile or has impaired function. A pillow should also be placed underneath their calves to keep their heels off the bed and prevent pressure that can cause pressure injuries. (This pillow placement under the calves is often referred to as "floating the heels.") After repositioning the client, the NA should be able to place their hand underneath the client's heels to verify there is no contact by the heels on the mattress.

Figure 8.5 Supine Position

If a resident is highly susceptible to pressure injuries of the heels, they may have specialized soft **foam boots**, as illustrated in Figure 8.6,[8] that support the ankles and keep the heels floated off the bed. A **foot cradle** may also be used to keep sheets and blankets off the tops of the toes if the resident has a history of skin injury in that area.

8. "Foam Boot" and "Foam Boot Supporting a Heel" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

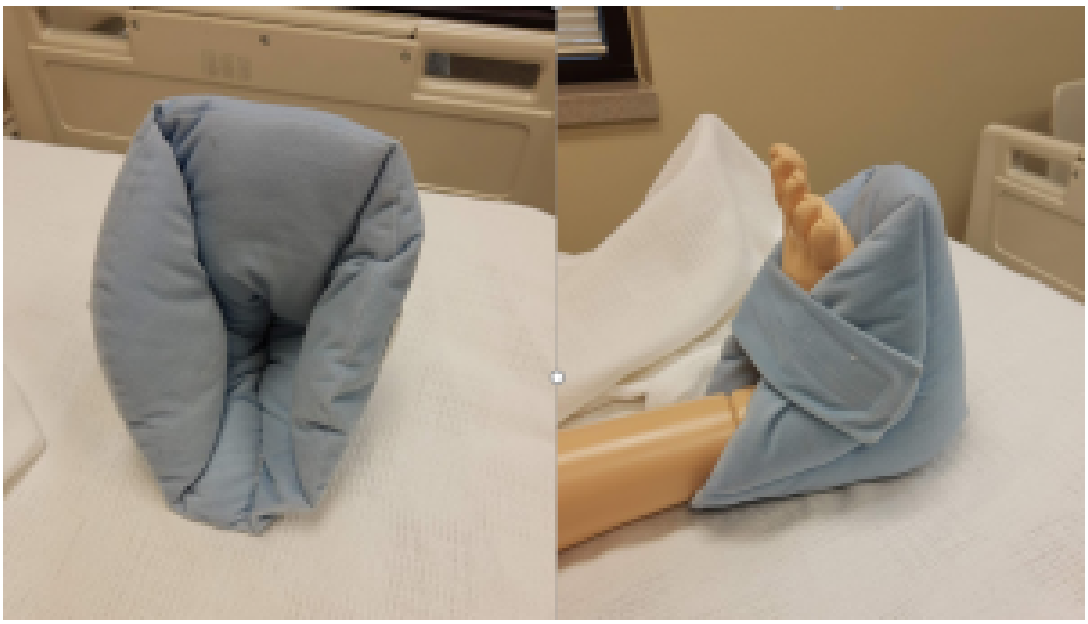

Figure 8.6 Inside of Foam Boot (left) and a Foam Boot Supporting a Heel

Fowler's Position

In **Fowler's position**, the client is lying on their back with their head elevated between 30 and 90 degrees, as illustrated in Figure 8.7.[9] Residents should be placed in Fowler's position any time they are eating or drinking or when oral care is provided. Fowler's position is also used to increase lung expansion for those with breathing difficulties, such as those that occur with heart failure. It may also be used for comfort during leisure activities such as watching television or reading. Additionally, residents receiving tube feeding should never have their head placed below a 30-degree angle because this can cause aspiration of the fluids.

However, Fowler's position increases the risk of friction and shear on the coccyx and gluteal muscles as the client slides down in bed. This risk can be reduced by concurrently raising the lower portion of the bed or by putting multiple pillows below the lower legs. These actions bend the knees and reduce the pull of gravity that causes the resident to slide down in bed. A pillow can also be placed below the feet to prevent them from contacting the foot of the bed.

9. "degreeLow.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-4-positioning-a-patient-in-bed/

Figure 8.7 Fowler's Position

Lateral or Side-Lying Position

Lateral (side-lying) position places the resident on their left or right side as shown in Figure 8.8.[10] This position relieves pressure on the coccyx and can increase blood flow to the fetus in pregnant women. The top arm and leg can be placed in a flexed position in any range that is comfortable to the resident. Supports should be placed behind the back to keep the resident from rolling to the supine position. Additionally, supports should be placed between the top knee and the bed or other knee and between the top elbow and rib cage or the bed, depending on the location of the elbow joint. These supports will alleviate pressure between the bony prominences in these areas. The pillow underneath the resident's head should also be adjusted for comfort and alignment checked from the foot of the bed.

The most common rotation of positions for repositioning residents is to rotate them from supine position to lateral position, to supine position, to lateral position on the opposite side. See the "Positioning Supine to Lateral (Side-

10. "lateral.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-4-positioning-a-patient-in-bed/

Lying) Skills Checklist" for the steps to move a resident from the supine to lateral (side-lying) position.

Figure 8.8 Lateral (Side-Lying) Position

Sims' Position

Sims' position is very similar to the lateral position, but the client is always placed on their left side and their left arm is placed behind the body (rather than in front of the body). Sims' position is commonly used for administration of a suppository or an enema. Depending on your state's scope of practice, you may be delegated to give an enema, or the nurse may ask you to prepare the patient for an enema by placing them in the Sims' position as pictured in Figure 8.9.[11]

11. "sims.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-4-positioning-a-patient-in-bed/

Figure 8.9 Sim's Position

Prone Position

In the **prone position**, the client is placed on their stomach with their head turned to one side, as seen in Figure 8.10.[12] Pillows should be placed underneath the shins to relieve pressure. Pillows (or wedges) can also be placed on both sides of the patient, and the head pillow should be readjusted for comfort.

Prone is the least commonly used position, especially in older adults due to their neck immobility. This position may be used for a client with a surgical wound on the back side of their body or to improve respiratory status in clients with respiratory conditions like COVID-19.

12. "prone.jpg" by unknown author is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-4-positioning-a-patient-in-bed/

Figure 8.10 Prone Position

8.3 Promoting Joint Mobility and Activity

Actions for maintaining the musculoskeletal system and preventing complications will be discussed in Chapter 11. These actions can be summarized by the phrase, “Use it or lose it,” meaning the functioning of the musculoskeletal system declines quickly when it is not being used. Small, everyday activities help maintain flexibility in joints, muscle strength, and healthy bone density. The NA can help residents maintain their musculoskeletal health by encouraging them to do as many activities for themselves as possible.

While it may be faster to perform ADLs for a resident, allowing them to provide care for themselves not only maintains musculoskeletal function but also gives them a sense of control that can enhance their self-esteem and quality of life. Here are ways NAs can encourage residents to participate in their self-cares:

- Allow residents to dress themselves to maintain flexibility in their shoulders, wrists, hips, and knee joints. Using buttons and zippers helps to maintain flexibility in the fingers, as well as promoting hand-eye coordination.
- When toileting a resident, encourage them to walk into the bathroom rather than bringing them in their wheelchair to the toilet or commode.
- Encourage residents to walk to meals (with assistance as needed) rather than being transported by wheelchair.
- Play board games or card games to promote upper body mobility, as well as to stimulate their cognitive status.
- Encourage residents to feed themselves. If they require extensive assistance, offer finger foods they can hold and eat more easily.
- Ask residents to wash their face, brush their teeth, or shave. Prepare the soap and washcloth, toothbrush and toothpaste, or razor, and assist in completing the task as needed.
- If a resident can’t walk, take off the foot pedals from their wheelchair (if it is safe to do so). Encourage them to move their feet while sitting to propel themselves around the facility independently.

- Inform residents of scheduled daily activities and promote movement and social interaction.

8.4 Assisting Clients to Transfer

It is important to note that most injuries that happen to clients and staff occur when clients are being transferred. Safety is an integral component of moving clients and should receive the highest priority. Special consideration should be given to these items to prevent injury from occurring:

- Gait belt fit and placement
- Brakes on the bed
- Brakes on the wheelchair
- Brakes released on the lift
- Placement of nonskid footwear
- Resident's proximity to the lift
- Objects in the room that may be a hazard during the movement

Nursing assistants should always review a client's care plan for their current transfer status before moving them. **Transfer status** refers to how a resident moves from one place to the other, such as from a bed to wheelchair or wheelchair to toilet. **Physical therapists** (i.e., health specialists who evaluate and treat movement disorders) assess clients and make recommendations for how clients should be safely transferred. Transfer status orders are determined by how much body weight a client can independently bear and how much weight an assistant is required to support. Transfer status orders include these types of orders:

- **Independent:** The client requires no assistance to move from one place to another.
- **Contact-Guard-Assist (CGA):** One assistant must have their hand on the client at all times to steady their balance.
- **1 assist (1A):** One assistant is required to help the resident transfer (with a gait belt in place).
- **2 assist (2A):** Two assistants are required to help the resident transfer (with a gait belt in place).
- **Sit-to-Stand:** A sit-to-stand mechanical lift is required to help a resident transfer. A sit-to-stand mechanical lift provides support as the client

stands while allowing them to bear some body weight and maintain joint mobility and leg strength. (Using a gait belt would require extensive assistance and could cause injury to the client or the staff.) Sit-to-stands may be completed with one or two assistants, as determined by the physical therapist and agency policy.

- **Full-Body Mechanical Lift:** A full-body mechanical lift is required when the resident cannot bear any of their weight when transferred from bed to chair and back. ("Full-body mechanical lift" is a generic term. The facility or organization may refer to this type of lift by the manufacturer of the lift, such as a "Hoyer lift" or "PAL lift.") Full-body mechanical lifts may be portable or attached to the ceiling. Two assistants are always required for transfer with full-body mechanical lifts for safety purposes. Due to federal liability laws, the health care professional moving the lift must be 18 years of age or older.

Assisting to Seated Position or Dangling

When transferring a client using a 1A, 2A, or sit-to-stand transfer method, first assist the resident to move to a seated position on the side of their bed. Residents who can transfer with one of these methods are able to bear some or most of their weight and should be able to move partially on their own. Use your hands on the person's limbs to direct the movement, and use the lift sheet (similar to when boosting a client up in bed).

Due to heart and circulation changes that occur with age, orthostatic hypotension can occur when a person moves suddenly from a lying to sitting position or from a sitting to standing position. **Orthostatic hypotension** is a sudden drop in blood pressure that can cause clients to feel dizzy and increase their risk for falls with position changes. Some clients may experience **vertigo**, a sensation that the room is spinning. To prevent orthostatic hypotension and these symptoms, tell the person to **dangle** (i.e., sit up on the edge of the bed) for a few moments before continuing with the transfer. Dangling gives the cardiovascular system time to regulate blood pressure and blood flow to the brain, thus preventing dizziness and falls. Ask the client if they are feeling dizzy before you proceed with transferring. See

Figure 8.11[1] for illustration of the steps to safely assist a client to a seated position[2]:

- Lock the brakes on the bed.
- Raise the bed to a working height.
- Stand facing the head of the bed at a 45-degree angle with your feet apart, with one foot in front of the other. Stand next to the waist of the resident.
- Ask the resident to turn onto their side, facing you, as they move closer to the edge of the bed. Use the lift sheet to assist the resident if needed.
- Place one hand behind the resident's shoulders, supporting their neck and vertebrae.
- Place the other hand around the resident's knees.
- On the count of three, instruct the resident to use their elbows to push up against the bed and then grasp the side rail. Support their shoulders as they move to a seated position. Shift your weight from the front foot to the back foot as you assist them to sit. Do not allow the resident to place their arms around your shoulders because this can cause serious back injuries.
- As you shift your weight, gently grasp the resident's outer thighs with your other hand and help them slide their feet off the bed to dangle or touch the floor. This step helps the resident sit and move their legs off the bed at the same time. As you perform this action, bend your knees and keep your back straight and neutral. Move the resident as one entire unit (rather than the upper body followed by the lower body).
- Lower the bed so the resident's feet touch the floor.
- Observe the resident for symptoms of orthostatic hypotension or vertigo. Ask if they are feeling dizzy before attempting any further movement.
- Check that the resident is wearing nonskid footwear before transferring.

1. "Book-pictures-2015-5851.jpg," "Book-pictures-2015-587.jpg," and "Book-pictures-2015-588.jpg" by unknown authors are licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-5-positioning-a-patient-on-the-side-of-a-bed/
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Figure 8.11 Assisting a Resident to a Seated Position

If the resident is having difficulty moving during this procedure, use the lift sheet to pull them closer to you or to assist them from a lying to a seated position. The head of the bed can be raised before they turn on their side to support their core strength and to reduce the weight the assistant must bear. During this entire process, do not use the resident's limbs to move them but rather move them with the trunk of their body to prevent shear and injury to their limbs and skin.

After the person is sitting upright and states they are not experiencing dizziness, apply a gait belt for a 1A or 2A transfer. The gait belt should be placed around their waist while considering the location of their breasts and abdominal folds. See Figure 8.12[3] for an image of applying a gait belt. The fit of the gait belt should be snug, but you should be able to put your fingers underneath the gait belt for support. As the resident stands and their core muscles contract, the gait belt can loosen and tend to slide up, so it is important for it to be snug. If the belt is too long, it can get caught in the patient's legs during transfer, so tuck the excess length back into the belt. Gait belts should not be used for clients with abdominal wounds or some types of heart conditions; a different transfer method should be in the care

3. "Sept-22-2015-119.jpg" and "Sept-22-2015-121-001.jpg" by unknown authors are licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-5-positioning-a-patient-on-the-side-of-a-bed/

plan. Contact the nurse if you have concerns about using a gait belt based on the client's condition.

Place nonskid footwear on the resident before transferring them from the bed to the chair. These preparations should be done before the wheelchair or sit-to-stand is brought closer to the bed to reduce the risk of injury from the resident inadvertently hitting the lift or chair while moving.

The steps to complete a one person assist (1A) are listed in the "Transfer From Bed to Chair With a Gait Belt" Skills Checklist. If a two-person assist (2A) is required, the same steps are used, but the assistants stand on each side of the resident to provide additional support during the transfer.

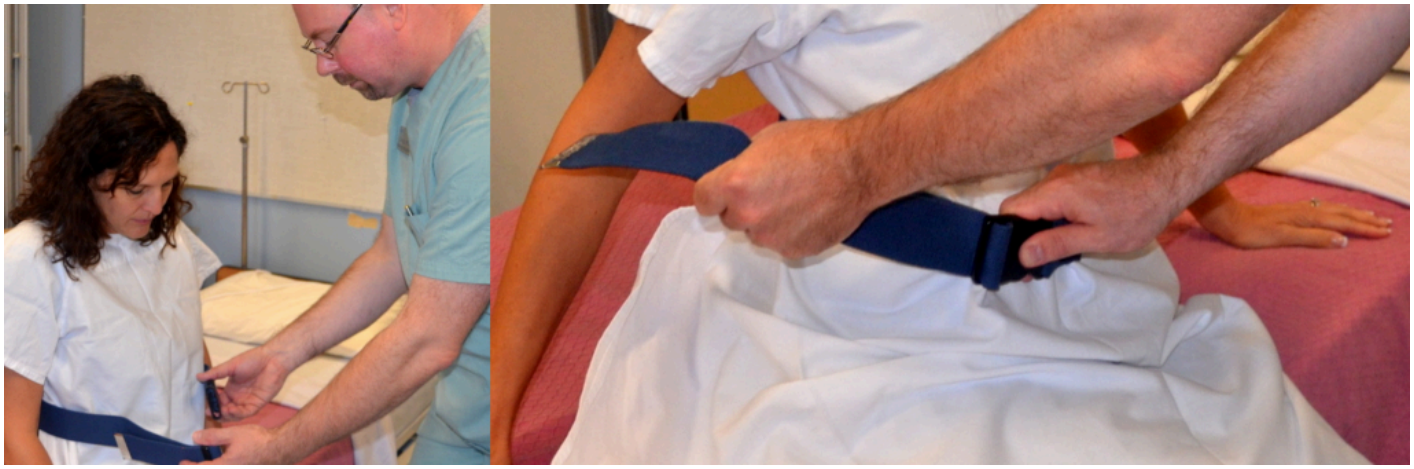

Figure 8.12 Applying a Gait Belt

View the following video showing a transfer of a patient from a bed to a regular chair[4]: Assisting From Bed to Chair With a Gait Belt or Transfer Belt.

4. Thompson Rivers University Open Learning. (n.d.). *Assisting from bed to chair with a gait belt or transfer belt* [Video]. Thompson Rivers University Open Learning. All rights reserved. https://barabus.tru.ca/nursing/assisting_from_bed.html

Transferring with Mechanical Lifts

Mechanical lifts include sit-to-stand lifts and full-body lifts. Some facilities have full-body mechanical lifts that are attached to the ceiling of the room. See Figure 8.13[5] of an image of a sit-to-stand lift and Figure 8.14[6] of an image of a full-body mechanical lift and mechanical swing. NAs should be aware of agency policy regarding transferring clients using mechanical lifts; for safety purposes, most agencies require two NAs or a nurse and an NA to transfer clients using a mechanical lift.

Figure 8.13 Sit-to-Stand Lift

5. "Transferring Client Using a Sit to Stand" by Landon Cerny is licensed under CC BY 4.0
6. "Transferring a Client Using a Mechanical Lift and a Full Body Sling", "Transferring a Client Using a Mechanical Lift and a Split Leg Sling", and "Transferring a Client Using a Mechanical Lift and Split Leg Sling in a Basket Approach" by Landon Cerny are licensed under CC BY 4.0

Figure 8.14 Full-Body Mechanical Lift and Mechanical Sling

The legs of portable full-body mechanical lifts can be placed in a closed or open position. The open position provides the greatest stability due to a wide base of support. See Figure 8.15[7] for an image comparing the legs of a portable full-body mechanical lift in a closed and open position.

Figure 8.15 Portable Full-Body Mechanical Lift With Legs in a.) Closed Position and b.) Open Position

When transferring a client from their bed to wheelchair using a sit-to-stand or portable full-body mechanical lift, the wheelchair should be positioned

7. "Portable Full-Body Mechanical Lift With Legs in Closed Position" and "Portable Full-Body Mechanical Lift With Legs in Open Position" by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0

near the bed while also allowing enough room for the lift to rotate towards the chair. Because the lift will have to slide underneath the bed, check for any cords or equipment under the bed that can cause the lift to get tangled. Raising the bed height just before placing the lift under the bed should also alleviate potential problems.

The lift has greatest stability when its legs are open with a wide base of support, but some beds do not have enough space underneath to allow the legs to be open. If this is the case, open the legs as soon as possible when moving the lift from under the bed to provide a stable base.

Sit-to-stand and full-body lifts have brakes, but brakes should not be applied when the resident is standing in the sit-to-stand or raised off the bed in a full-body lift. (If the client's weight shifts while the brakes are on, it can cause the lift to tip and endanger the resident, as well as the assistants.)

Before initiating a transfer, verify that the lift will support the weight of the resident. Most mechanical lifts have a weight capacity of 400 pounds. **Bariatric lifts** are used to support a client weighing 600 or more pounds. See Figure 8.16[8] for locating the weight capacity on a lift.

8. "Weight Capacity of a Mechanical Lift" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 8.16 Weight Capacity of a Mechanical Lift

Full-body mechanical lifts have different types of slings used to lift the client. Slings may be full-body or split-leg (butterfly). The type of sling used is determined by the physical therapist, based on the client's strength and mobility, and should be noted in the resident's care plan. A sling has various loops to connect it to the lift and are often color-coded to ensure the resident's body is in proper position for transferring. See Figure 8.17[9] for images of a full-body sling and Figure 8.18[10] for images of a split-leg (butterfly) sling.

9. "Front of Full-Body Sling," "Back of Full-Body Sling," and "Loops" by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0
10. "Front of Full-Body Sling," "Back of Full-Body Sling," and "Loops" by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0

Figure 8.17 a.) Front of Full-Body Sling; b.) Back of Full-Body Sling; c.) Loops (right)

Figure 8.18 a.) Front of Split-Leg (Butterfly) Sling and b.) Back of Split-Leg (Butterly) Sling

The top of a full-body sling should be placed above the resident's head and should end just above the knee joint to avoid hyperextending the knees when they are suspended in the lift. The top of a split-leg (butterfly) sling should be placed at shoulder height, and the bottom of the sling should be around the buttocks. Depending on hip mobility, the split-leg sling may be crossed between the client's legs or placed around their legs (often referred to as a "basket"). See Figure 8.19[11] for an image of a mannequin prepared to transfer

11. "Preparing to Transfer With Crossed Sling" and "Suspended in a Crossed Sling" by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0

using a crossed sling and Figure 8.20[12] for an image of transferring a mannequin with the sling wrapped around their legs (i.e., a “basket” approach).

Figure 8.19 a.) Preparing to Transfer With Crossed Sling and b.) Suspended in a Crossed Sling

Figure 8.20 a.) Preparing to Transfer With a “Basket” Approach b.) Suspended in a Sling With a “Basket” Approach

12. “Preparing to Transfer With a ‘Basket’ Approach” and “Suspended in a Sling With a ‘Basket’ Approach” by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0

The handles of the sling should face away from the client, allowing the assistants to position the client in their chair or bed. (Do not move clients by directly contacting their limbs because this can cause injury.)

After transferring a client from a bed to a chair using a full-body sling, the sling should remain under the resident while they are seated in a wheelchair or other chair. When placing the resident back in bed, the sling is then removed. However, when transferring a client using a split-leg (butterfly) sling, it can be removed from underneath the client in the chair and replaced before they are transferred again.

See the Skills Checklists "Transfer From Bed to Chair With Sit-to-Stand" and "Transfer From Bed to Chair With Mechanical Lift" for steps for providing safe transfers with both types of lifts. Each brand of sit-to-stand and mechanical lift has some variances; the facility where you work will provide specific training on their lifts.

- Watch the following YouTube video for a demonstration of moving a resident with a sit-to-stand[13]: Aidacare Training Video – Manual Handling – Sit To Stand.
- Explore the following YouTube video[14] on a mechanical lift completed with a butterfly or split-leg sling: Aidacare Training Video – Manual Handling – Lie To Sit

13. Aidacare. (2017, July 5). *Aidacare training video - Manual handling - Sit To stand* [Video]. YouTube. All rights reserved. https://youtu.be/L914lkoub6E
14. Aidacare. (2017, July 5). *Aidacare training video – Manual handling – Lie to sit* [Video]. YouTube. All rights reserved. https://youtu.be/3GOgp_HX4JQ

8.5 Assisting With Ambulation

Ambulation is the medical term used for walking. Ambulation provides weight-bearing activity that promotes bone health and joint mobility. A physical therapist will determine if a person can safely walk independently, with the assistance of one or two people, or if they require an assistive device such as a cane or walker. This information is documented in their nursing care plan. Similar to when assisting a client to transfer with a gait belt, the nursing assistant should place nonskid footwear on the person and allow them to dangle on the edge of the bed before standing to ambulate. For specific steps, see the "Ambulation From Wheelchair" Skills Checklist.

If a resident requires assistance with a cane, the cane should be placed on the resident's stronger side. The resident should step forward with the strong leg and then use the cane and the weaker leg for the next step.

There are three types of walkers: a standard walker, a two-wheeled walker (2WW), and a four-wheeled walker (4WW). The type of walker a resident should use is recommended by the physical therapist. A 2WW or standard walker allows for more support and a slower gait, whereas a 4WW is used by clients with better balance and mobility.

View a YouTube video[1] of an instructor demonstrating helping clients with ambulatory assistive devices:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1045#oembed-1

Regardless of the assistive device used for ambulation, the NA should remind

1. Chippewa Valley Technical College. (2022, December 3). Ambulatory Assistive Devices. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/ATn7OOP4Jko

the resident to stand up straight and look forward when walking. The resident should be encouraged to take purposeful steps and to not shuffle their feet. The NA should stand to one side of the resident and slightly behind them, with one hand on their gait belt. If the resident has a weaker side, the NA should stand on that side. The NA's fingertips should be facing upwards underneath the gait belt for proper support. If the resident loses their balance while in this position, the NA's arm will allow them to use their bicep muscle, rather than their forearm, to steady the client. The bicep is larger and stronger than the forearm and can provide better support.

A second staff member can follow a resident who is ambulating with assistance with their wheelchair in case they experience weakness or dizziness. If the client needs to sit while ambulating, the wheelchair brakes should be applied before they sit, or in an emergent situation, the NA should block the back of the wheelchair with their body to ensure stability when the resident sits.

If a resident starts to fall while standing or ambulating, do not attempt to stop their fall or catch the resident because this can cause you to injure your back. Instead, move behind the patient and take one step back with one leg so you have a wide base of support. Support the patient around their waist or hip area or grab the gait belt. Bend one of your legs and place it between the patient's legs from behind. Slowly slide the patient down your bent leg, lowering yourself to the floor at the same time. Always protect the resident's head to prevent head injury. After the resident is on the floor, do not move them. For witnessed or unwitnessed falls, notify the nurse immediately for assessment. After the nurse has completed the assessment and met the resident's immediate needs, use a mechanical lift to transfer the resident back to a wheelchair or bed. An incident report will be completed by the nurse, and the NA will be asked to give a statement on what occurred and

their actions in response to the situation.[2] See Figure 8.21[3] for an image of lowering a resident who is falling to the floor.

Figure 8.21 Lowering a Client Who is Falling to the Floor

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3. "Sept-22-2015-132-001.jpg" and "Sept-22-2015-133.jpg" by unknown authors are licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/3-7-fall-prevention/

8.6 Applying Prosthetics and Orthotics

Prosthetics are an addition or attachment to the body that replicates the function of a lost or dysfunctional limb.[1] An **orthotic** is a support, brace, or splint used to support, align, prevent, or correct the function of movable parts of the body. Shoe inserts are the most common orthotics and are intended to correct an abnormal or irregular walking pattern. Other orthotics include neck braces, back supports, knee braces, and wrist supports.[2] NAs apply prosthetics and orthotics to residents following the therapist's instructions. Incorrectly applying these devices can cause harm or injury to the resident, so you must understand the correct placement of these supports. If you are unsure, seek guidance from your supervising nurse before placing any prosthetics or orthotics.

One of the main concerns with prosthetic or orthotic devices is skin irritation. Prosthetics typically have a protective sleeve that goes over the limb prior to placing the device. The sleeve gives the prosthetic some security to prevent displacement while also protecting the skin. After the prosthetic is attached, always ask the resident if it is comfortable or if they feel any areas of pressure that may damage the skin. Most orthotics, splints, or braces are padded, but some can be applied over thin clothing. Be sure to review the resident's nursing care plan regarding how long and at what times any supportive devices should be worn and removed. See Figure 8.22[3] for a device that prevents foot drop.

1. Vinjamuri, R. (Ed.). (2020). *Prosthesis.* IntechOpen. https://doi.org/10.5772/intechopen.73978
2. Stoppler, M. C. (Ed.). (2021, March 29). *Medical definition of orthotic*. MedicineNet. https://www.medicinenet.com/orthotic/definition.htm
3. "AFO_Ankle_Foot_Orthosis_Orthotic_Brace.JPG" by Pagemaker787 is licensed under CC BY-SA 4.0

Figure 8.22 Supportive Brace to Prevent Foot Drop

8.7 Restraints and Restraint Alternatives

Restraints are devices used in health care settings to prevent patients from causing harm to themselves or others when alternative interventions have not been effective. A **restraint** is a device, method, or process that is used for the specific purpose of restricting a patient's freedom of movement. While restraints are typically used in acute care settings, they may be used in some circumstances in long-term care settings for safety purposes. However, restraints restrict mobility and can affect a client's dignity, self-esteem, and quality of life; every possible measure to ensure safety should be considered before a restraint is implemented. An order from a health care provider is required to implement a restraint, and agency policy must be strictly followed.[1]

Restraints include physical devices (such as a tie wrist device), chemical restraints, or seclusion. The Joint Commission defines a **chemical restraint** as a drug used to manage a patient's behavior, restrict the patient's freedom of movement, or impair the patient's ability to appropriately interact with their surroundings that is not standard treatment or dosage for the patient's condition. It is important to note that the definition states the medication "is not standard treatment or dosage for the patient's condition." **Seclusion** is defined as the confinement of a patient in a locked room from which they cannot exit on their own. It is generally used as a method of discipline, convenience, or coercion. Seclusion limits freedom of movement because, although the patient is not mechanically or chemically restrained, they cannot leave the area.[2]

Although restraints are used with the intention to keep a patient safe, they impact a patient's psychological safety and dignity and can cause additional safety issues and, in some cases, death. A restrained person has a natural tendency to struggle and try to remove the restraint and can fall or become

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fatally entangled in the restraint. Furthermore, immobility that results from the use of restraints can cause pressure injuries, contractures, and muscle loss. Restraints take a large emotional toll on the patient's self-esteem and may cause humiliation, fear, and anger.[3]

Restraint Guidelines

The American Nurses Association (ANA) has established evidence-based guidelines that a restraint-free environment is considered the standard of care. The ANA encourages the reduction of patient restraints and seclusion in all health care settings. Restraining or secluding patients is viewed as contrary to the goals and ethical traditions of nursing because it violates the fundamental patient rights of autonomy and dignity. However, the ANA also recognizes there are times when there is no viable option other than restraints to keep a patient safe, such as during an acute psychotic episode when patient and staff safety are in jeopardy due to aggression or assault. The ANA also states that restraints may be justified in some patients with severe dementia or delirium when they are at risk for serious injuries such as a hip fracture due to falling.[4]

The ANA provides the following guidelines: When restraint is necessary, documentation of application of the restraint should be done by more than one witness. Once restrained, the patient should be treated with humane care that preserves human dignity. In those instances where restraint, seclusion, or therapeutic holding is determined to be clinically appropriate and adequately justified, registered nurses who possess the necessary knowledge and skills to effectively manage the situation must be actively involved in the assessment, implementation, and evaluation of the selected emergency measure, adhering to federal regulations and the standards of The Joint Commission regarding appropriate use of restraints and seclusion.[5]

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Nursing documentation is vital when restraints are applied and includes information such as patient behavior necessitating the restraint, alternatives to restraints that were attempted, the type of restraint used, the time it was applied, the location of the restraint, and patient education regarding the restraint. Frequent monitoring according to agency guidelines and provision of basic needs (food, fluids, and toileting) must also be documented.[6]

Any health care facility that accepts Medicare and Medicaid reimbursement must follow federal guidelines for the use of restraints. These guidelines include the following[7]:

- When a restraint is the only viable option, it must be discontinued at the earliest possible time.
- Orders for the use of seclusion or restraint can never be written as a standing order or PRN (as needed).
- The treating physician must be consulted as soon as possible if the restraint or seclusion is not ordered by the patient's treating physician.
- A physician or licensed independent practitioner must see and evaluate the need for the restraint or seclusion within one hour after the initiation.
- The patient in seclusion or restraints must be routinely monitored according to agency policy. Generally, the best practice for physical restraints is continuous visual monitoring or visual checks at least every 15 minutes. Some agencies require a 1:1 patient sitter when restraints are applied. Physical restraints should be removed every 1 to 2 hours for range of motion exercise and skin checks.
- Each written order for a physical restraint or seclusion is limited to 4 hours for adults, 2 hours for children and adolescents ages 9 to 17, or 1 hour for patients under 9. The original order may only be renewed in accordance with these limits for up to a total of 24 hours. After the original order expires, a physician or licensed independent practitioner (if allowed under state law) must see and assess the patient before issuing a new order.

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In addition to continually monitoring the site of a physical restraint for skin issues, a physical restraint should only be secured to the bed with a quick-release knot in case of emergency.

View a YouTube video[8] of an instructor demonstration of a tying a quick release knot:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1054#oembed-1

Side Rails

Side rails and enclosed beds may also be considered a restraint, depending on the purpose of the device. Recall the definition of a restraint as "a device, method, or process that is used for the specific purpose of restricting a patient's freedom of movement or access to movement." If the purpose of raising the side rails is to prevent a patient from voluntarily getting out of bed or attempting to exit the bed, then use of the side rails would be considered a restraint. On the other hand, if the purpose of raising the side rails is to prevent the patient from inadvertently falling out of bed, then it is not considered a restraint. If a patient does not have the physical capacity to get out of bed, regardless if side rails are raised or not, then the use of side rails is not considered a restraint.[9]

Full side rails are generally only found on beds in acute care. In long-term care, beds usually have a transfer loop that is a much smaller side rail. The transfer loop allows the resident to support themselves while repositioning in

8. Chippewa Valley Technical College. (2022, December 3). Quick Release Knot. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/S7LbOclRQcw
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bed and standing up from the bed. The smaller size of this type of side rail reduces the risk of the resident becoming entrapped and injured from the device. Full side rails may be ordered by the physician if they allow the resident to reposition independently. If a resident's bed in a long-term care setting has full side rails and they are not used for repositioning, they should always be lowered when care is complete, and a staff member is no longer present in the room. Acute care settings have different regulations regarding full side rails; review specific agency policy.[10]

Hand Mitts

A **hand mitt** is a large, soft glove that covers a confused patient's hand to prevent them from inadvertently dislodging medical equipment such as a catheter, feeding tube, or intravenous (IV) catheter. See Figure 8.23[11] for an image of a hand mitt. Hand mitts are considered a restraint by The Joint Commission if they are used under these circumstances:

- Pinned or otherwise attached to the bed or bedding
- Applied so tightly that the patient's hands or finger are immobilized
- Are so bulky that the patient's ability to use their hands is significantly reduced
- Cannot be easily removed by the patient in the same manner it was applied by staff, considering the patient's physical condition and ability to accomplish this objective

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11. "Hand Mitt" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 8.23 Hand Mitt

View the following YouTube video for applying hand mitts[12]: Hand Control Mittens With Tie Closure.

Vests

A vest restraint is worn on the upper body and has ties that secure it to a chair or bed frame, allowing the restrained person to sit or lie in bed.

View the following YouTube video on properly using a vest restraint[13]: Criss Cross Vest.

12. DeRoyal. (2015, May 31). *Hand control mittens with tie closure* [Video]. YouTube. All rights reserved. https://youtu.be/7gCp40b9Bcs
13. DeRoyal. (2015, March 31). *Criss cross ves*t [Video]. YouTube. All rights reserved. https://youtu.be/tJ7k8hWzFLI

Other Restraints

Common items can be considered restraints when used improperly. A general rule is if any device limits the mobility, freedom of movement, or access to one's body, it is considered a restraint. The resident must be able to independently remove any device that is utilized when directed to do so. This action shows that the resident can cognitively and physically control their environment. Here are some examples of how common devices can be considered a restraint:

- Wheelchair brakes that are left on with a resident who cannot independently release them are considered a restraint because it prevents the resident from moving freely throughout their environment.
- Lap trays (used for meals or supporting an immobile limb) are considered a restraint if it impairs the resident's ability to move.
- Self-release seat belts can be used to keep a resident positioned properly in their wheelchair, but the resident must be able to remove the seat belt if asked to do so.
- Gait belts must be removed after residents have completed a transfer. They should not be left on during meals or activities for convenience because they can cause discomfort.

Restraint Alternatives

There are many interventions available to keep residents safe without applying restraints. When a potentially unsafe behavior is occurring, the health care team should look at all the factors surrounding the behavior to determine the root cause. After the root cause is determined, the staff can implement appropriate redirection. Common risks and appropriate interventions include the following:

If a resident continues to attempt to self-transfer without assistance:

- Offer toileting every hour
- Offer the opportunity to lie down after meals
- Assist in ambulation (if their condition permits) throughout the day

- Place a motion alarm in the doorway or near the foot of the bed
- Use a pressure or tab alarm in the wheelchair

If a resident is agitated or aggressive towards other residents:

- Offer an individual activity such as board games, crafts, or movies
- Ambulate or take them for a walk in their wheelchair
- Give them something to hold such as a stuffed animal
- Offer a blanket
- Ask about pain, hunger, or toileting needs

If a resident wanders or wants to leave the facility:

- Allow them to self-propel in wheelchair in a safe area
- Offer an individual activity such as board games, crafts, or movies
- Ambulate or take them for a walk in their wheelchair
- Apply a wanderguard to the wheelchair or their wrist or ankle

Motion sensors, pressure or tab alarms, and wanderguards are all alarms. There are many facilities that choose not to use alarms because they can be disruptive to the environment due to the noise and can reduce the dignity of the resident. If implemented incorrectly, they may not deter the unsafe behavior but merely notify staff the behavior is occurring or has occurred. If an alarm is indicated in the care plan, the NA is responsible for making sure the alarm is functioning and properly placed as indicated in the care plan. Behavioral and environmental interventions, as previously discussed, should be considered before alarms are put in place.

For more information on alarms, view the following YouTube videos:

Wanderguard[14]: Prevent Wandering With Smart Caregiver Fall Prevention and Anti-Wandering Products

Pressure alarm[15]: TL-2020 With Corded Bed Pad

14. Smart Caregiver. (2017, May 26). *Prevent wandering with Smart Caregiver fall prevention and anti-wandering products* [Video]. YouTube. All rights reserved. https://youtu.be/TTMPmg-atPM
15. Smart Caregiver. (2021, June 24). *TL-2020 with corded bed pad* [Video]. YouTube. All rights reserved. https://youtu.be/JtsCLkEmQ6A

8.8 Skills Checklist: Positioning Supine to Lateral (Side-Lying)

1. Gather Supplies: Four pillows

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Position the bed flat.
- Raise the bed height.
- Raise the side rail on the side of the bed the resident will be facing after repositioning for safety.
- Move to the working side of the bed, which is opposite the side rail that was raised.
- Explain to the resident that you will move them closer to you before turning on the count of three.
- From the working side of the bed using the lift sheet, count to three and move the resident towards you.
- Instruct the resident to move their arm closest to the raised side rail away from their body. If able, the resident should grasp the side rail with the hand closest to you, reaching across their own body.
- Raise the resident's knee that is closest to you to assist in turning.
- Explain that you will turn the resident towards the side rail on the count of three.
- Count to three and use the lift sheet to turn the resident towards the raised side rail.
- Ensure that the resident's face never comes close to the side rail or

becomes covered by the pillow.
- Check that the resident is not lying on their bottom arm.
- Place a pillow behind the resident's back, ensuring they will not roll back to the supine position.
- Move to the end of the bed and check that the resident is in correct body alignment.
- Verify that the resident is in the middle of the bed.
- Place a pillow between the resident's top arm and their rib cage or the bed, ensuring the elbow is not directly on their ribs.
- Place a pillow under the top knee, ensuring the knee is not resting directly on the other knee or the ankle is not on top of the other ankle.
- Adjust the pillow under the resident's head for comfort.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document repositioning and report any abnormal skin findings to the nurse.

View a YouTube video[1] of an instructor demonstration of positioning from the supine to lateral side-lying position:

1. Chippewa Valley Technical College. (2022, December 3). Positioning a Client from the Supine to the Lateral (Side-Lying) Position. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/kIw9IhPhsBA

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8.9 Skills Checklist: Transfer From Bed to Chair With a Gait Belt

1. Gather Supplies: Gait belt, wheelchair, and nonskid footwear

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times. Provide for privacy.
- Provide for privacy. Explain the procedure to the client.
- Explain the procedure to the client.

3. Procedure Steps:

- Check the brakes on the bed to ensure they are locked.
- Remove the foot pedals from the wheelchair if needed.
- Assist the resident to a seated position on the side of the bed with their feet on the floor; allow them to dangle their feet for a few minutes.
- Assist the resident in putting on nonskid footwear.
- Place the gait belt on the resident.
- Position the wheelchair at the head or foot of the bed so the resident will move towards the wheelchair with the stronger side of their body. The wheelchair should touch the side of the bed.
- Lock the brakes on the wheelchair.
- Ask the resident if they feel dizzy or light-headed.
- Face the resident and place each of your feet in front of the resident's feet to prevent them from slipping.
- Instruct the resident to push up on the bed to aid in standing on the count of three.
- Grasp the gait belt with both hands, with your palms and fingertips pointing up.
- Count to three and assist the resident to stand.

- Assist the resident to pivot.
- Instruct the resident to grasp the arms of the wheelchair when they can feel the back of their knees are in contact with the wheelchair seat.
- Assist the resident to a seated position in the wheelchair.
- Remove the gait belt gently to avoid skin injury.
- Release the wheelchair brakes.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report any skin issues, pain with movement, or any other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of transfer from bed to chair with a gait belt:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1067#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Transfer From Bed to Chair With a Gait Belt. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/pyoHSHef90c

8.10 Skills Checklist: Transfer From Bed to Chair With Sit-to-Stand

1. Gather Supplies: Wheelchair, lift, and nonskid footwear. Check agency policy for assistance requirements and the client's care plan for current transfer status.

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedural Steps:

- Position the wheelchair appropriately, remove the foot pedals, and lock the brakes. Provide ample room to rotate the lift from the bed to the wheelchair without hitting other objects.
- Place the transfer sling under the resident's armpits with the handles facing away from the resident.
- Secure the transfer sling with the seat belt or by crossing the sling straps following manufacturer's recommendations.
- Raise the bed to allow the legs of the lift to go underneath the bed.
- Open the legs of the lift if the bed allows room to do so.
- Ask the resident to put their feet onto the base of the lift. When bringing the lift closer to the resident, ensure that the arms of the lift do not hit the resident's head or arms.
- Secure the strap at the base of the lift around the calves of the resident if available.
- Check that the resident's feet are completely on the base.
- Place the sling behind the resident's back and under their armpits on both sides. Secure the sling clasp in front of the patient around their

chest/waist.
- Connect the transfer sling to the lift ensuring equal length is attached on each side of the sling.
- Instruct the resident to place their hands on the handles of the lift arms.
- Check that the sling remains under both of the resident's armpits and their arms are outside of the lift arms.
- Ensure the resident is not experiencing any dizziness before they stand.
- Instruct the resident that you will begin raising the lift. Ask them to pull up with their arms and straighten their legs. (If the resident is not currently able to perform these actions, a sit-to-stand should not be used.)
- Use the lift to raise the resident to a standing position.
- Slowly move the lift away from the bed. Open the legs of the lift if they are closed underneath the bed.
- Slowly move the lift towards the wheelchair.
- After the back of the resident's knees touch the wheelchair seat, explain that you will lower them to the chair. Do not apply the brakes on the lift because they can cause the resident's legs to be compressed by the lift as they are lowered to the chair.
- While lowering the resident into the wheelchair, assist them to sit all the way back in the wheelchair by guiding the handle on the sling towards the back of the wheelchair seat.
- After the resident is seated in the chair, remove the leg strap and sling from the lift. Instruct the resident to release their hands from the lift.
- Slowly move the lift away from the resident, ensuring the lift does not hit the resident's head or arms.
- Ask the resident to lean slightly forward and remove the sling.
- Release the wheelchair brakes.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.

- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report any skin issues, pain with movement, or any other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of transfer from bed to chair with a sit to stand:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1069#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Transfer from Bed to Chair with a Sit to Stand. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/zs_CIYylxtU

8.11 Skills Checklist: Transfer From Bed to Chair With Mechanical Lift

1. Gather Supplies: Mechanical lift, lift sling, second person to assist, and a wheelchair. Review agency policy for mechanical lifts. NOTE: The driver of the lift must be at least 18 years old.

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Raise the bed to a working height.
- Instruct the resident to cross their arms over their chest to avoid rolling on top of their arm.
- Using the lift sheet, roll the resident to one side. Coordinate movement with the resident and the second assistant to avoid injury.
- Position the lift sling underneath the resident from the shoulders to the buttocks. Fan-fold the sling in the middle to allow the second assistant to pull it through on the other side. The handles should be facing away from the resident.
- Ensure the lift sling is on top of the lift sheet.
- Inform the resident they will be rolling over the gathered fabric of the sling.
- (Second assistant) Using the lift sheet, initiate rolling the resident towards the first assistant with the resident's arms still crossed, coordinating movement with the resident and first assistant.
- (Second assistant) Pull the lift sling from underneath the resident,

smoothing out any wrinkles.
- Using the lift sheet, gently roll the resident back to the supine position.
- Check that the resident is positioned in the center of the lift sling and their head and knees will be properly supported when lifted.
- Check the body alignment of the resident.
- Move the full-body mechanical lift into position over the resident, ensuring the lift does not come into contact with any part of the resident.
- Raise the head of the bed to avoid pulling on the sling when connecting it to the lift.
- Hook the top loops of the sling to the lift per manufacturer's guidelines, ensuring the loops are the same lengths on each side.
- Hook the bottom loops of the sling to lift per manufacturer's guidelines, ensuring the loops are the same lengths on each side.
- Position the wheelchair appropriately and lock the brakes. Provide ample room to rotate the lift from the bed to the wheelchair without hitting other objects.
- Recline the wheelchair slightly if able.
- Instruct the resident to cross their arms over their chest.
- Prepare to support the resident's feet by having the second assistant move to the same side of the bed as the driver and the lift.
- Inform the resident you will be raising the lift and moving them to the wheelchair.
- Raise the lift until the resident is no longer in contact with the bed while the second assistant guides the resident's feet.
- Position the resident over the wheelchair with the main support of the lift to one side, thus avoiding the resident's feet coming into contact with the lift support.
- After the driver of the lift moves behind the wheelchair, have the resident grasp the handles on the lift sling.
- Instruct the resident you will be lowering the lift sling.
- (Second assistant) Lower the lift while the driver gently pulls up on the sling to get the resident's back positioned upright and against

the back of the wheelchair.
- (Second assistant) Guide the resident's feet to keep their body aligned and avoid coming in contact with the left.
- Remove the sling from the lift after the resident is properly seated.
- Carefully move the lift away from the resident, avoiding the resident's head and limbs from coming into contact with the lift.
- Tuck the lift sling into the wheelchair, keeping the fabric smooth to avoid skin issues and keeping loops away from any moving parts of the wheelchair.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report any skin issues, pain with movement, or any other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of transfer from bed to chair with a mechanical lift:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1071#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Transfer from Bed to Chair with a Mechanical Lift. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/sqkE7MNndyE

8.12 Skills Checklist: Ambulation From Wheelchair

1. Gather Supplies: Gait belt, wheelchair, nonskid footwear, and assistive devices if needed (walker or cane)

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times. Provide for privacy.
- Provide for privacy. Explain the procedure to the client.
- Explain the procedure to the client.

3. Procedure Steps:

- Check the brakes on the wheelchair to ensure they are locked.
- Verify the resident is wearing nonskid footwear.
- Properly place the gait belt around the resident's waist.
- Check the gait belt for tightness by slipping your fingers between the gait belt and the resident.
- Ask the resident if they feel dizzy or light-headed.
- Face the resident and place each of your feet in front of the resident's feet to prevent them from slipping.
- Instruct the resident to push up on the wheelchair arms on the count of three to assist with standing.
- Count to three and assist the resident to a standing position.
- Provide the resident's assistive device, as needed.
- Move to the weak side of the resident, slightly behind them. Hold the gait belt with your palms and fingertips pointing upwards.
- Stabilize the resident as they ambulate for the desired duration.
- Assist the resident to pivot/turn in front of the wheelchair.
- Ensure the wheelchair brakes are locked.
- Instruct the resident to grasp the arms of the wheelchair when the

back of their knees touch the wheelchair seat.
- Assist the resident to a seated position in the wheelchair.
- Remove the gait belt.
- Release the wheelchair brakes.

4. Post-Procedure Steps:

- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report any skin issues, pain with movement, or any other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of ambulation from a wheelchair:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1074#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Ambulation From a Wheelchair. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/jtj95sPrc_k

8.13 Learning Activities

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1077#h5p-53

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1077#h5p-54

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1077#h5p-56

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1077#h5p-73

VIII Glossary

Ambulation: A medical term used for walking.

Bariatric lifts: Mechanical lifts that support a client weighing 600 or more pounds.

Body alignment: Good posture principles that prevent musculoskeletal injuries.

Bony prominences: Areas of the body where a bone lies close to the skin's surface, such as the back of the head, shoulders, elbows, heels, ankles, tops of the toes, hips, and coccyx.

Chemical restraint: A drug used to manage a patient's behavior, restrict the patient's freedom of movement, or impair the patient's ability to appropriately interact with their surroundings, that is not standard treatment or dosage for the patient's condition.

Coccyx: Tailbone.

Dangle: Sitting up on the edge of bed for a few minutes before standing to prevent orthostatic hypotension and dizziness.

Foam boots: Specialized soft boots used to support the ankles and keep the heels floated off the bed.

Foot cradle: A device used to keep the sheets and blankets off the tops of a client's toes.

Fowler's position: A position where the client is lying on their back with their head elevated between 30 and 90 degrees.

Friction: Injury caused to skin when it is rubbed by clothing, linens, or another body part.

Hand mitt: A large, soft glove that covers a confused patient's hand to prevent

them from inadvertently dislodging medical equipment such as a catheter, feeding tube, or intravenous (IV) catheter.

Immobility: The loss of independent control of one's body to change positions and function safety within the environment.

Lateral (side-lying) position: A position that places the client on their left or right side to relieve pressure on the coccyx or increase blood flow to the fetus in pregnant women.

Mobility: The ability to move one's body parts, change positions, and function safely within the environment. It is one of the most important factors for remaining independent.

Orthostatic hypotension: A sudden drop in blood pressure that can cause clients to feel dizzy and increase their risk for falls.

Orthotic: A support, brace, or splint used to support, align, prevent, or correct the function of movable parts of the body.

Physical therapists: Health specialists who evaluate and treat movement disorders.

Pressure injuries: Localized damage to the skin or underlying soft tissue, usually over a bony prominence, as a result of intense and prolonged pressure and/or shear.

Prone position: A position where the client is placed on their stomach with their head turned to one side.

Prosthetics: An addition or attachment to the body that replicates the function of a lost or dysfunctional limb.

Restraints: Devices used in health care settings to prevent patients from causing harm to themselves or others when alternative interventions are not effective.

Seclusion: The confinement of a patient in a locked room from which they

cannot exit on their own. It is generally used as a method of discipline, convenience, or coercion.

Shear: Injury to skin that occurs when skin moves one way, but the underlying bone and muscle stay fixed or move the opposite direction.

Sims' position: A position similar to the lateral position, but the client is always placed on their left side and their left arm is placed behind their body.

Skin tear: A separation of skin layers caused by shear, friction, and/or blunt force.

Supine position: A position where the client is lying flat on their back.

Transfer status: How a resident moves from one place to the other, such as from a bed to wheelchair or a wheelchair to toilet.

Transfer status orders: Orders that establish how much assistance is required for moving a client based on how much body weight they can independently bear and how much weight an assistant is required to support. Transfer status orders include independent, contact-guard-assist (CGA), 1 assist (1A), 2 assist (2A), sit-to-stand lift, or full-body mechanical lift.

Vertigo: A sensation that the room is spinning.

PART IX

CHAPTER 9: PROMOTE INDEPENDENCE THROUGH REHABILITATION/ RESTORATIVE CARE

9.1 Introduction to Promote Independence Through Rehabilitation/Restorative Care

Learning Objectives

- Assist client with range of motion exercises
- Promote client independence during activities of daily living (ADL)
- Assist clients with hearing or vision impairment with activities of daily living
- Assist clients with speech impairment with activities of daily living
- Assist with restorative therapies

Chapter 8 discussed how nursing assistants help clients with mobility with actions ranging from repositioning them in bed, transferring them out of bed to a chair, or ambulating them in the hallway. This chapter will focus on how the nursing assistant promotes client functioning and independence through rehabilitation and restorative care.

Acute health events and chronic illnesses can reduce a client's level of functioning and independence. For example, clients who experience a stroke or hip fracture or live with chronic disease like heart failure or chronic obstructive pulmonary disorder (COPD) often require assistance in completing their activities of daily living (ADLs). Any condition that requires bed rest can cause muscle atrophy, decreased lung function, and other complications. Clients recovering from illnesses or injury may require therapy performed by the licensed therapy team to return lost levels of function. As their functioning is restored, the nursing assistant can help clients retain the

highest possible level of functioning and independence and promote their physical and mental well-being.

9.2 The Rehabilitation Process

After an individual experiences an acute illness, injury, or significant change in health status, there is always a period of recovery. During recovery, some individuals participate in rehabilitation. **Rehabilitation** helps people regain body functions they lost due to medical conditions or injury. Rehabilitation can help improve many body functions, including bowel and bladder problems, chewing and swallowing, problems thinking or reasoning, movement or mobility, speech, and language.[1]

The goal of the rehabilitation is to return the person to their prior level of function before the health event. The length of time for recovery varies for each individual, and there are several factors that can influence its progression. A list of factors that can affect an individual's recovery process include the following:

- **Comorbidities:** Comorbidities are coexisting health conditions. Having another chronic diagnosis or other acute condition may slow the progression of healing. Here are some examples of how comorbidities affect healing and recovery:
    - If a person has diabetes, their healing process is slower, and their risk of infection is higher.
    - If a person has chronic respiratory or cardiac conditions such as asthma, chronic obstructive pulmonary disease (COPD), or heart failure, their endurance to complete rehabilitation exercises may be decreased.
    - If a person has dementia, they may not remember they are injured and may try to move without assistance, resulting in a fall or further injury to the affected area.
- **Age:** As people age, healing slows down, and the functioning of various body systems declines. Older adults are more likely to have comorbidities and complications related to these coexisting conditions that can slow or

1. A.D.A.M. Medical Encyclopedia [Internet]. Atlanta (GA): A.D.A.M., Inc.; c1997-2022. Physical medicine and rehabilitation; [updated 2022, April 1]. https://medlineplus.gov/ency/article/007448.htm

even halt the rehabilitation process.

- **Motivation:** If a person lives with severe chronic illness or experienced health events that previously required rehabilitation, they may feel like giving up or not putting in the effort to return to their prior level of functioning. Some people prefer someone assisting them with their ADLs for a variety of reasons, such as experiencing increased pain with movement, severe fatigue, or feeling lonely and desiring increased interaction with others.
- **Resources:** Resources include support from family members or friends who offer encouragement, nearby health care providers in the community, and transportation available to get to appointments. Insurance also plays a role in recovery because the amount of reimbursement for rehabilitation services is determined by insurance coverage.

The types of therapy provided are determined by the individual's illness or injury. The roles and responsibilities of different disciplines will be further discussed in the "Members of the Therapy Team" section of this chapter. Rehabilitation may begin in an acute care setting when intensive interventions are required several times throughout the day and then transfer to a short-term stay or rehabilitation unit in a long-term care facility for further rehabilitation. In the long-term care facility, they typically see therapists once or twice a day until they are independent enough to return to their previous home environment. Both of these situations are referred to as **in-patient therapy** because the rehabilitation treatment occurs in a facility where the client is staying. However, in some cases, the individual can return home and visit a therapist once or twice a week, which is referred to as out-patient therapy. **Out-patient therapy** is commonly prescribed for post-operative rehabilitation, such as that required for a hip, knee, or shoulder replacement.

Therapists determine the types of interventions needed and the frequency of treatments based on each individual's situation. Therapists provide rehabilitation treatment for as long as the client continues to improve, but it will conclude when their progress plateaus (i.e., their level of function remains

the same and no longer improves). Sometimes an individual is unable to achieve their prior level of functioning and must remain in a long-term care facility for assistance and supportive care for the remainder of their life. When this occurs, the individual will have a restorative care plan that is further discussed in the "Rehabilitation Versus Restorative Care" section of this chapter.

9.3 Members of the Therapy Team

In a short-term stay unit of a long-term care facility, there is typically a therapy gym where rehabilitation interventions are performed. Therapists may be employees of the facility or may work for another health care organization that contracts with the long-term care facility to provide therapy to its residents.

The therapy team is part of the interprofessional health care team as previously discussed in Chapter 2.3, "Members of the Health Care Team and Nursing Home Structure." It is helpful to understand the roles and responsibilities of each type of therapy discipline, especially if you work on a short-term stay or rehabilitation unit. Occupational therapists, speech therapists, and physical therapists are the most common types of therapists. Respiratory therapists may be present in long-term care settings that have specialized ventilator units.

Occupational Therapists (OT): Occupational therapists assess, plan, implement, and evaluate interventions to help clients achieve their highest possible level of independence in completing their activities of daily living (ADLs) such as bathing, grooming, eating, and dressing. OTs also teach clients how to use adaptive devices to complete their ADLs. Adaptive devices include long shoehorns (to assist clients with putting shoes on), sock pulls (to independently pull on socks), adaptive silverware (to facilitate independent eating), grabbers (to pick items up from the floor), and special devices to manipulate buttoning so the client can dress and button their clothing independently. These devices are further discussed in the "Promoting Independence During ADLs" section. OTs may also assess the client's home for safety and their need for assistive devices when they return home (if they are able to do so). For example, OTs may recommend home environment modifications such as ramps, grab rails, and handrails to ensure client safety and independence.[1]

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Physical Therapists (PT): Physical therapists are licensed health care professionals who assess, plan, implement, and evaluate interventions related to clients' functional abilities in terms of their strength, mobility, balance, gait, coordination, and joint range of motion. They supervise exercises tailored for a client's condition and teach them how to use assistive devices like walkers and canes.[2]

Speech Therapists (ST): Speech therapists assess, diagnose, and treat communication and swallowing disorders. For example, clients with **expressive aphasia** understand what other people say but struggle to get words out, speak in very short sentences, and omit words. They may say, "Want food," or "Bathroom go." Speech therapists teach these clients how to use word boards and other electronic devices to facilitate communication. STs also assess clients with swallowing disorders (i.e., **dysphagia**) and determine if they require thickened liquids or a modified diet to prevent aspiration of substances into their lungs. STs collaborate with other members of the health care team, including nurses, dieticians, and health care providers.[3]

Respiratory Therapists (RT): Respiratory therapists treat respiratory-related conditions in patients. Their specialized respiratory care includes managing oxygen therapy; drawing arterial blood gasses; managing patients on specialized oxygenation devices such as mechanical ventilators, CPAP, and Bi-PAP machines; administering respiratory medications like inhalers and nebulizers; intubating patients; assisting with bronchoscopy and other respiratory-related diagnostic tests; performing pulmonary hygiene measures like chest physiotherapy; and serving an integral role in maintaining a client's airway during cardiac and respiratory arrests.[4]

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9.4 Complications of Immobility

Movement, activity, and mobility positively affect one's overall health. When someone is recovering from a severe illness or injury, their mobility is often reduced, and they may be unable to perform ADLs. Health care team members play a vital role in preventing the physical and mental decline in functioning that can occur from immobility by proactively implementing interventions.

Risks of immobility are well-known, and complications are viewed as avoidable. In fact, many insurance companies do not reimburse health care agencies for complications resulting from immobility, like pressure injuries, because they are viewed as avoidable with the proper care. Therefore, nursing assistants must be diligent in their actions and observations to maintain their client's health and prevent complications.

See Table 9.4 for potential complications of immobility by body system and additional preventative measures that will keep clients as healthy as possible. Promoting clients' independence in completing their ADLs and encouraging activity as tolerated can help prevent all these complications of immobility. "Encouraging activity as tolerated" means involving the resident in movement while also adhering to mobility restrictions noted in the care plan and observing for respiratory changes that indicate the resident may be lacking endurance to maintain the activity. Sometimes a client's lack of endurance in completing activities requires the nursing assistant to segment their ADLs. **Segmenting ADLs** refers to breaking up tasks to accommodate the client's activity intolerance. An example of segmenting ADLs would be assisting a person to bathe in bed as independently as possible, letting them rest after bathing, and then returning later to assist them with dressing and grooming to get them ready for the day.

Table 9.4 Potential Complications of Immobility and Preventative Measures

Body System	Potential Complication(s)	Preventative Measures
Integumentary (Skin)	Pressure Injuries	• Repositioning every 1-2 hours • Ensuring proper hygiene • Providing incontinence care as needed • Providing skin care • Encouraging good nutrition
Musculoskeletal	Muscle atrophy Contracture	• Assisting with active or passive range of motion (ROM) exercises • Applying splints or positioning devices as prescribed
Digestive	Constipation Incontinence	• Encouraging fluids (if not contraindicated) • Encouraging fiber intake • Encouraging activity as tolerated • Providing frequent toileting • Providing bowel and bladder retraining if needed
Respiratory	Decreased lung function	• Encouraging incentive spirometry or coughing and deep breathing • Encouraging activity as tolerated

Circulatory	Deep vein thrombosis (DVT) Decreased cardiac function Increased fluid retention	• Ambulating • Applying compression stockings or other compression devices as ordered • Encouraging low sodium intake (as prescribed) • Obtaining accurate daily weights • Elevating extremities
Psychological	Depression	• Involving clients in social activities • Offering pleasurable individual activities if not interested in group activities • Encouraging visits by family, friends, or volunteers for 1:1 interaction

Devices to Prevent Contracture

The "Applying Prosthetics and Orthotics" section in Chapter 8 describes devices such as a foot split to prevent musculoskeletal contracture. There are additional devices that can prevent a client's hand contracture, as well as prevent their fingernails from creating open skin areas in their palm. The first type of hand device is a cone that slides into the palm of the hand and is kept in place with a soft elastic band. The cone should not be forced into the fingers but placed gently. A second type of device is a palm protector that is softer than the cone and separates the fingers from one another. If neither of these devices is available, a washcloth can be rolled and placed underneath the fingers. See Figure 9.1[1] for an image of a cone and palm protector, and Figure 9.2[2] for images showing application of these devices.

1. "Cone to Prevent Hand Contracture (left) and a Palm Protector (right)" by Myra Reuter for Chippewa Valley Technical College are licensed under CC BY 4.0
2. "Cone and Palm Protectors on Client" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 9.1 Cone to Prevent Hand Contracture (left) and a Palm Protector (right)

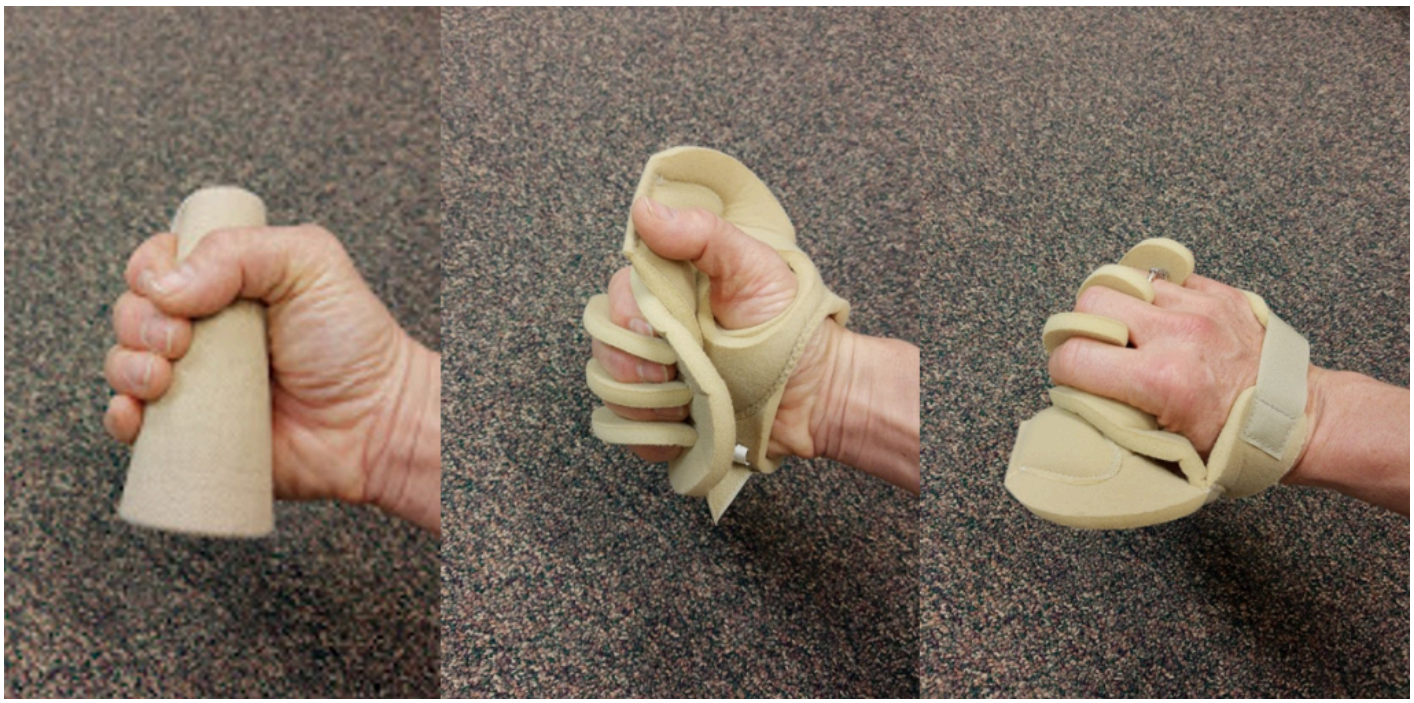

Figure 9.2 a.) Cone on Client's Hand, b.) Palm Protector Viewed on the Palm of a Client's Hand, and c.) Palm Protector Viewed on the Dorsal Side of Client's Hand

Range of Motion (ROM)

Active and passive range of motion (ROM) exercises prevent complications of immobility in the musculoskeletal system. ROM exercises facilitate movement of specific joints and promote mobility of the extremities. Because changes in joints can occur after just three days of immobility, ROM exercises should be

started by the nursing assistant as soon as they are directed by the nurse as safe to do so.

There are three types of ROM exercises: passive, active, and active assist. **Passive range of motion** is movement applied to an individual's joint by another person or by a passive motion machine. When passive range of motion is applied, the joint of an individual receiving the exercise is completely relaxed while the outside force moves the body part. For example, clients who undergo knee replacement surgery may be prescribed a passive range of motion machine that continuously flexes and extends the patient's knee while they are lying in bed. See Figure 9.3[3] for an image of a passive motion machine.

Active range of motion is movement of a joint by the individual with no outside force aiding in the movement. A staff member may provide verbal cues to complete the action, but the movement is done independently by the client.

Active assist range of motion is joint movement by an individual with partial assistance from an outside force. For example, during the recovery period after shoulder surgery, a client attends physical therapy and receives 50% assistance in moving their arm with the help of a physical therapy assistant.

Figure 9.3 Passive Motion Machine

3. "Continuous_Passive_Motion_Machine.jpg" by User:Ravedave is licensed under CC BY-SA 3.0

Several terms are used to refer to certain body movements during range of motion exercises, such as abduction, adduction, flexion, and extension. **Abduction** refers to the movement of a limb away from the body's midline. For example, hip abduction is the movement of the leg away from the midline of the body. We use this action every day when we step to the side, get out of bed, and get out of the car. **Adduction** refers to moving a limb towards the midline. For example, if a person has their fingers spread wide apart, bringing them back together is adduction. **Flexion** is movement that decreases the angle between two bones and **extension** is movement that increases the angle between two bones. For example, a bicep curl during weight lifting demonstrates both flexion and extension. Flexion occurs when the bicep muscle contracts and the elbow joint bends, lifting the weight. Extension occurs when the arm is straightened back to starting position, increasing the angle between the elbow joint.

When assisting a client with ROM activities, the nursing assistant must follow the plan of care established by the licensed therapist. The plan is tailored to the needs of the individual and will include the specific joints to move. Typically, larger joints such as shoulders, elbows, hips, knees, and ankles are included in ROM exercises, but ROM can be also applied to smaller joints such as the fingers and wrists.

When assisting with ROM exercises, the nursing assistant must support any joints below the joint being exercised to prevent injury. For instance, if the shoulder is being exercised, the nursing assistant places their hands underneath the elbow and wrist to support them. The joint should be moved gently and only to the point to where there is slight resistance. A joint should never be forced to achieve full ROM if there is resistance. For example, a client who has had limited mobility for several years may have a joint that can only be moved a few inches, but it is important to maintain that mobility, no matter how small.

While providing ROM, the nursing assistant must observe for objective and subjective signs of pain. The resident should be asked if they are experiencing any pain during the movement, and the assistant should watch for nonverbal

signs of pain like grimacing, clenching the teeth, groaning, or labored breathing. Refer to the "Objective and Subjective Signs of Pain" subsection in Chapter 6.3 to review observations to make and report. See the steps for providing ROM for the shoulder and hip joints in the "ROM Exercises for the Shoulder" and "ROM Exercises for the Hip and Knee" Skills Checklists later in this chapter.

Incentive Spirometry

When a client experiences immobility, normally healthy alveoli can collapse and cause decreased lung function. Decreased lung function can reduce a person's stamina and their ability to perform activities, referred to as **activity intolerance**. To prevent a decrease in lung function, reduce the build-up of fluids in the airways, and prevent pneumonia, clients are often prescribed incentive spirometry to keep their bronchioles open. The incentive spirometer encourages a client to complete slow, deep breathing to keep their bronchioles open. See Figure 9.4[4] for an image of a client using an incentive spirometer. Nursing assistants are often expected to encourage clients to use their incentive spirometer hourly.

4. "Incentive Spirometer.png" by BruceBlaus is licensed under CC BY-SA 4.0

Figure 9.4 Using an Incentive Spirometer

The nurse or respiratory therapist initially teaches the client how to use the incentive spirometer but encouraging and observing clients complete this action every hour is commonly delegated to a nursing assistant. The client should sit upright (if possible), place the mouthpiece in their mouth, and create a tight seal with their lips around it. They should breathe in slowly and as deeply as possible through the tubing, with the goal of raising the piston to their prescribed level. The resistance indicator on the right side should be monitored to ensure they are not breathing in too quickly. The client should attempt to hold their breath for as long as possible (at least five seconds) and then exhale and rest for a few seconds. Coughing is expected, and clients should be encouraged to expel any mucus (not swallow it). This technique should be repeated by the client ten times every hour while they are awake. Report completion of the activity to the nurse who documents frequency and effectiveness of this intervention.[5]

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Compression Stockings

Deep-vein thrombosis (DVT) is a common complication for clients experiencing immobility. When blood is not moving much due to client inactivity, it can **coagulate** (i.e, form a clot). This blockage reduces blood flow to the affected area. A **deep-vein thrombosis (DVT)** is a blood clot that forms within the deep veins, usually of the lower leg, but can occur anywhere within the cardiovascular system. If the clot breaks free, it can travel to the lungs and become fatal.

The best way for nursing assistants to prevent DVT is to assist clients to ambulate or otherwise complete as much activity as they can tolerate. Some clients are prescribed **compression stockings**, also referred to as thrombo-embolic-deterrent hose (TED hose). Compression stockings promote the return of fluid back into circulation by gently providing pressure on veins. They are commonly used for clients with swelling of their extremities (**edema**) caused by cardiac conditions that cause fluid retention.

Compression stockings require a physician's order and should be applied in the morning and taken off at night. They should be applied upon awakening because edema is usually at its lowest point after lying in bed overnight. However, as the client sits or stands upright during the day, blood tends to pool in the lower legs. The pressure from compression stockings helps return fluid into the cardiovascular system and may reduce the risk for DVT.

When removed at night, the compression stockings should be washed by hand in the sink with soap and water and then hung to air dry. Do not send them to the laundry or put them on a heater to dry because this can cause shrinking and ruin the hose. Clients often have two or more pairs of compression stockings to ensure they dry completely before wearing them again in the morning.

Compression stockings may be knee length or hip length. See Figure 9.5[6] for an image comparing both lengths. The amount of pressure the hose applies

6. "TED Hose Lengths.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

to the legs is prescribed. For example, some compression stockings may seem like slightly tight socks, whereas other stockings for clients with severe edema are custom-made to fit very tightly and may have a zipper for ease of application.

Figure 9.5 Thigh-high TED Hose (left) and Knee-high TED Hose (right)

When applying stockings, proper placement on the heel is important. The stockings have a square marker around the heel to guide correct placement on the heel. It can be difficult to see this square but stretching the fabric around the heel area should make it more visible. See Figure 9.6[7] for an image of locating the heel marker. If there is writing on the stocking, it should be on the outside and facing away from the skin when worn.

7. “TED Hose Heel Marker.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 9.6 Locating the Heel Marker on TED Hose

When applying TED hose, find the heel marker first. You can gather or roll the sides of the hose down to the heel or choose to turn the stocking inside out to the heel marker. If turned inside out, put your hand inside the hose, hold at the top of the heel marker with your thumb and forefinger, and then pull the top of the stocking down to the heel marker. See Figure 9.7[8] for a demonstration of these techniques. Use any of these techniques to place the stocking on the heel, and then check for proper placement of the heel marker before applying the rest of the stocking. See Figure 9.8[9] for heel placement.

8. “TED Hose Application Methods.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0
9. “Heel Marker on TED Hose.jpg” by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 9.7 TED Hose Gathered (left), Rolled (center), and Turned Inside Out (right) to Place on Client's Heel

Figure 9.8 Ensure Proper Placement of Heel Marker on Heel

After the heel of the stocking is placed properly on the client's heel, check that the hose is not twisted. Make any adjustments before proceeding because the hose will be very difficult to adjust after it is pulled up the leg. When you have the hose positioned correctly, pull the remainder of the stocking up to the knee or hip, depending upon the length of the hose. Check that there are no wrinkles in the hose and that the client has no discomfort.

The toe of the stocking is typically open to allow for easy assessment of the

client's circulation. The fabric should be completely over the toes, or completely at the base of the toes, to prevent skin breakdown or blockage of circulation to the toes. See Figure 9.9[10] for images of both types of applications of the toe opening of the stocking.

Figure 9.9 a.) and b.) TED Hose Covering Toes and c.) TED Hose at the Base of the Toes

Regular socks or slippers can be placed over the TEDs for warmth if desired. For specific steps in applying TED hose, see the "Application of Compression Stockings (TED Hose)" Skills Checklist at the end of the chapter.

10. "Toes of TED Hose.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

9.5 Rehabilitation Versus Restorative Care

As previously explained in “The Rehabilitation Process” section, speech therapists, occupational therapists, and physical therapists create the client’s rehabilitation plan with the goal of returning them to their level of function prior to the injury or illness. When an individual has progressed to their highest level of functioning, a restorative care plan is established to ensure this level of function is maintained. Although therapists provide rehabilitation therapy, nursing assistants are responsible for providing restorative care planned by the therapy team.

Common restorative plans include assisting with ambulation (Chapter 8.5); performing passive or active range-of-motion (ROM) exercises (Chapter 9.6); assisting with activities of daily living (ADLs) (Chapter 5.2); and applying prosthetics, splints, and orthotics (Chapter 8.6). Providing restorative care should be documented because it is an integral part of keeping residents as independent as possible and maintaining their overall health and quality of life. If the client resides in a facility that receives Medicare reimbursement, restorative care is reported as part of the person’s quarterly minimum data set (MDS) assessment. (To review aspects of MDS, see Chapter 1.5, “Documenting and Reporting.”) If it is found that a resident experienced a decline in mobility because their restorative care plan was not being followed appropriately, the facility must provide therapy at no charge to restore their prior level of function.

Restorative care can occur individually or within a group. An individual activity means the nursing assistant is working with one resident at a time on that resident’s specific restorative needs. Restorative care can also occur in a group setting, such as an exercise group where residents follow the lead of an aide and participate as they are able. As discussed in the Chapter 8.6, “Applying Prosthetics and Orthotics” section, it is the nursing assistant’s responsibility to know how to properly perform restorative care, as well as keep residents safe from injury during restorative activities. If you are unsure about any aspect of restorative care, seek instruction from your supervising nurse.

Although clients benefit from restorative care and are encouraged to participate, they do have the right to refuse to participate in restorative care, just as they do in any other aspect of their health care. Certain situations, such as those described below, can make it difficult to motivate residents to participate in restorative care[1]:

- The resident has cognitive deficits that make the benefits of restorative care difficult to understand or impair their ability to participate.
- The resident has been dependent on others for their daily care for a long time.
- The resident experiences pain associated with the activity.
- The resident (or their caregiver) is fearful of falling or becoming injured when performing the activity.
- There is unfamiliarity or the lack of a trusting relationship between the caregiver and resident.

If these circumstances occur, the nursing assistant should continue to encourage the resident to participate in the restorative care in a respectful manner. It may be helpful to delay the care and reapproach the resident at a different time of day. If the resident displays any subjective or objective signs of pain, it should be reported to the nurse for assessment and treatment. Involving loved ones in explaining the importance of restorative care can also enhance a resident's participation, along with reassurance from a nurse or therapist who oversees the restorative plan. If the resident continues to decline participation despite these attempted approaches, the nursing assistant should report the situation to the nurse, as well as document it was the resident's choice to not participate in restorative care activities despite the approaches attempted.

1. Talley, K. M., Wyman, J. F., Savik, K., Kane, R. L., Mueller, C., & Zhao, H. (2015). Restorative care's effect on activities of daily living dependency in long-stay nursing home residents. *The Gerontologist, 55*(Supplement 1), S88–S98. https://doi.org/10.1093/geront/gnv011

For more information on restorative care, see Restorative Care's Effect on Activities of Daily Living Dependency in Long-stay Nursing Home Residents.

9.6 Promoting Independence During ADLs

As a health care professional, it is your responsibility to maintain residents' optimal levels of functioning by encouraging their participation and independence in completing activities of daily living (ADLs). While it may be quicker and more efficient to wheel someone to the dining room rather than assisting them to walk there, it is detrimental to their health to do so. As previously discussed in the "Complications of Immobility" section of this chapter, many interventions prevent decline in residents' functioning, including encouraging activity as tolerated, and promote independence in completing ADLs with segmenting as needed. Independence in completing ADLs not only prevents complications of immobility but also enhances their quality of life by promoting mental wellness through enhancement of their autonomy and self-esteem.

However, some clients may prefer others to completely care for them because the movements are painful or involve more effort than they are willing to exert. As you gain more experience as a nursing assistant, you will learn to find the delicate balance between promoting health and following client preferences.

Always encourage clients to complete as many ADLs as they can, segmenting them if needed. When you notice a client is becoming fatigued or irritable when performing a task, it is often a good time to begin assisting the client. It does not matter how little a person is able to do for themselves; they should be given the time and opportunity to do so. For nonverbal clients, consider using a white board, communication book, or other device to assist in their communication. These actions demonstrate respect for the person's dignity, as well as promote their physical health and cognitive involvement in their own care. Refer to the Chapter 8.3, "Promoting Joint Mobility and Activity" section for other ways to encourage mobility and independence.

The therapy team will assess the client and recommend aids that can promote independence to complete daily tasks. Common aids for ADLs may include a reacher, sock aid, bath sponge, and an elongated shoehorn. All these tools allow a person to reach objects or complete hygiene needs with

less bending or stretching. They may be used temporarily during the rehabilitation process until full ROM is achieved, especially after joint replacement surgeries. See Figure 9.10[1] for an image of these assistive devices.

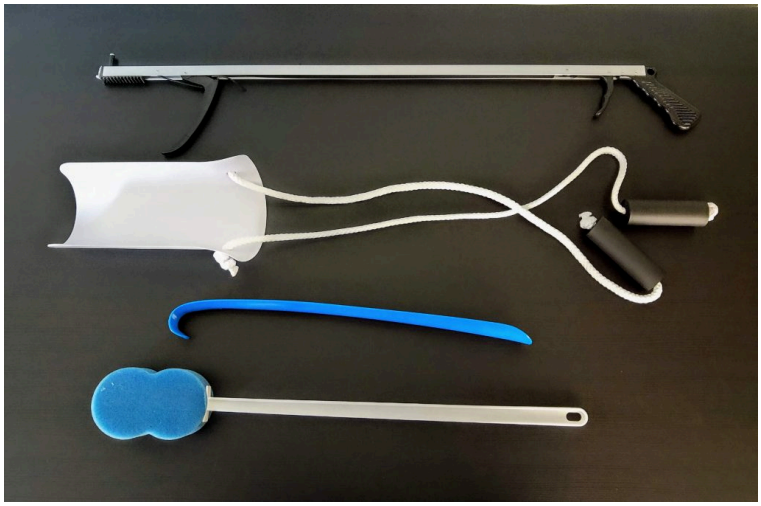

Figure 9.10 Reacher, Sock Aid, Elongated Shoehorn, and Elongated Bath Sponge (top to bottom).

Sock Aid

To utilize the sock aid, the sock is placed around the plastic mold. The person holds the rope handles and then puts their foot into the sock. They pull on the ropes to get the sock completely on the foot without bending over to the floor. See Figure 9.11[2] for an image of the placement of a sock on a sock aid and Figure 9.12[3] for an image of getting the sock on the foot.

1. “ADL Aids” by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0
2. “Sock Aid.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0
3. “Applying Sock Aid.png” by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

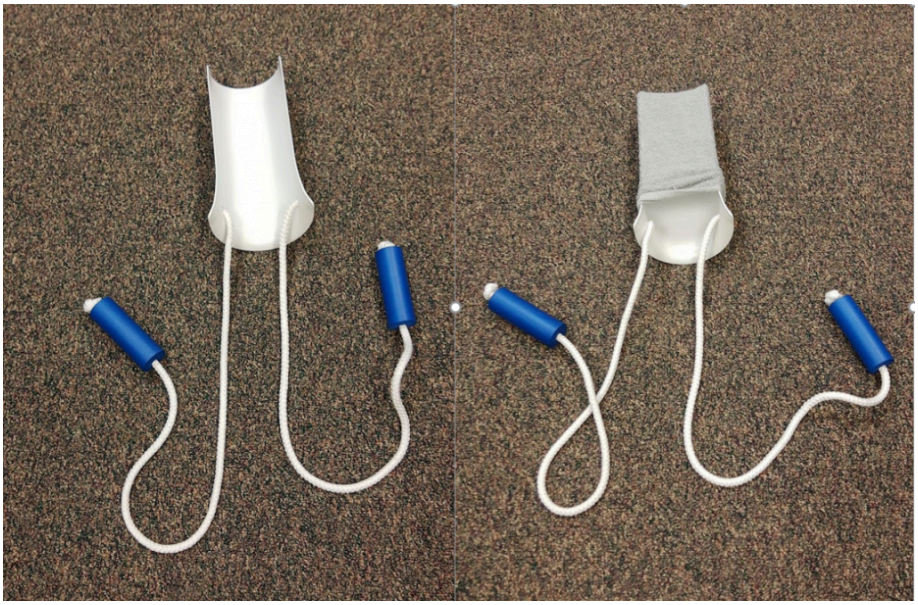

Figure 9.11 Placing a Sock on the Sock Aid

Figure 9.12 Putting a Sock on the Foot Using a Sock Aid

Please also review assistive devices to promote independence with feeding in "Assistance With Nutrition and Fluid Needs."

9.7 Assisting With Sensory Deficits

An impairment of one or more senses can occur in clients of any age, in addition to the aging process causing a decline in all sensory functioning. Sensory impairments, especially vision and hearing impairments, can impact the way a person navigates through the environment and thus increases their risk for falls. Refer to Chapter 11.8, "Neurological System" for additional information about sensory impairments. Information regarding communicating with individuals affected by sensory deficits can be found in the Chapter 1.3, "Strategies for Communicating With Patients With Impaired Hearing, Vision, and Speech" subsection. Interventions that can be performed by nursing assistants to reduce safety risks are described below.

Visual Impairment

The human eye changes around age 40 and decreases an individual's ability to see close-up objects clearly and makes reading more difficult, although distance vision remains intact. **Depth perception** also becomes distorted, meaning the person cannot accurately determine the distance between themselves and another object.

Other eye conditions may occur with age that impair vision. Some people develop **cataracts**, a clouding of the clear lens of the eye. Cataracts can be observed in a person's eye by the appearance of a cloudiness in their pupil. See Figure 9.13[1] for a simulated image of a person with cataracts.

1. "Cataract in human eye.png" by Rakesh Ajuja, MD is licensed under CC BY-SA 3

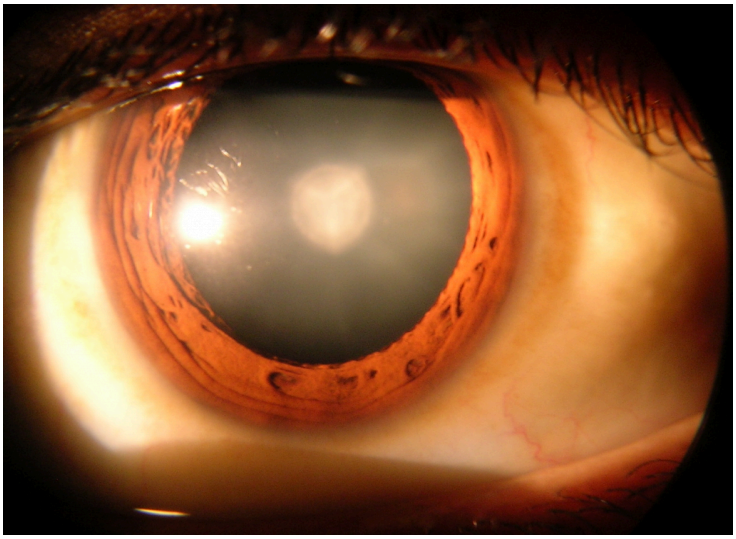

Figure 9.13 Simulated Image of a Cataract

Glaucoma is a visual condition caused by elevated pressure on the optic nerve, resulting in loss of peripheral vision, blind spots, or even blindness across the entire visual field.

Macular degeneration is another visual condition that results in a blind spot in an individual's center field of vision. It is the leading cause of vision loss in people over 50. See Figure 9.14[2] for a simulated image of what a person with macular degeneration may experience.

Figure 9.14 Simulated Vision of a Person With Macular Degeneration

2. National Eye Institute. (2020, August 17). *Age-related macular degeneration*. https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/age-related-macular-degeneration

The **Snellen chart** is a common tool for assessing distant vision.[3] See Figure 9.15[4] for a simulated image of how a person with 20/20 vision sees the Snellen chart compared to simulated visual experiences of those with levels of low vision and blindness.

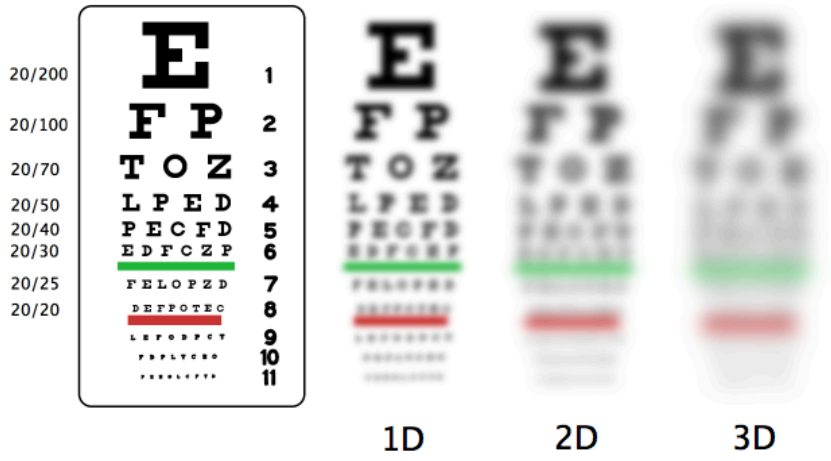

Figure 9.15 Simulated Views of the Snellen Chart With 20/20 Vision Compared to Levels of Impaired Vision

- To learn more about cataracts, visit the MedlinePlus webpage on cataracts.

To experience what someone with cataracts may see, watch the following YouTube video[5]: See What I See: Cataracts.

- To learn more about glaucoma, visit the National Eye Institute web page on glaucoma.

To experience what someone with glaucoma may see,

3. This work is a derivative of Nursing Skills by Chippewa Valley Technical College and is licensed under CC BY 4.0
4. "Snellen-myopia.png" by Daniel P. B. Smith (talk) (Uploads) is licensed under CC BY-SA 3.0
5. National Eye Institute, NIH. (2018, November 7). *See what I see: Cataracts* [Video]. YouTube. All rights reserved. https://youtu.be/nGV3PD5sBgM

- watch the following YouTube video[6]: Glaucoma Simulation – Busy Road.
- To learn more about macular degeneration, visit the American Academy of Ophthalmology's What is Macular Degeneration? web page.
- To experience what someone with macular degeneration may see, watch the following YouTube video[7]: See What I See: AMD.

The simplest interventions for maintaining safety for clients with visual impairment include ensuring they are wearing their prescribed eyeglasses, the glasses are clean, and their living areas are well-lit. There should be no clutter, area rugs, or other small objects on the floor or in a direct path to the bathroom, closet, or exit door of the room to prevent tripping. Keeping the room and personal belongings arranged in a consistent manner allows residents to remain aware of the room set-up, making it easier for them to navigate despite impaired vision. If their visual impairment is severe, tell them where personal items are located before leaving the room, especially the call light and frequently used things like facial tissue, beverages, television remotes, or phones. When ambulating a resident with poor vision, tell them when they are getting close to an object that could pose a fall risk.

Hearing Loss

The most common form of hearing loss occurs as a natural part of aging and is called **presbycusis**. This type of hearing loss is typically worse at higher frequency sounds, so it interferes with speech recognition and music appreciation. Men tend to experience greater hearing loss than females,

6. Pugini, A. (2016, May 21). *Glaucoma simulation - Busy road* [Video]. YouTube. All rights reserved. https://youtu.be/jkYeC_JDEPs
7. National Eye Institute, NIH. (2018, November 7). *See what I see: AMD* [Video]. YouTube. All rights reserved. https://youtu.be/lu5ToTfUOok

perhaps because they have historically worked in louder environments, but it is unknown how much the differences in hearing between genders are caused by biological or social factors.[8]

Hearing can impact an individual's safety risks. For example, the sense of hearing allows a person to locate objects around them making noise without much conscious thought. For example, sounds like fire alarms or ambulance sirens warn people of emergencies. To understand how sound affects safety, try wearing noise-canceling headphones or earplugs while seated in a populated, busy area. Notice how the lack of hearing changes your perception of movement and the location of objects in your environment.

To assist individuals with hearing loss, use other senses, such as vision and touch, to aid in communication. Stand directly in front of the person when you are speaking, use appropriate gestures to guide actions, and use a light touch to gain their attention or assist in movement. People with hearing loss may become frustrated if they are unable to communicate effectively and may withdraw from interaction with others if hearing loss is profound. Be sure to utilize communication techniques described in the Chapter 1.3 subsection "Impaired Hearing" to prevent isolation.

Hearing aids make sounds louder but do not help in every environment. Even with hearing aids, it can be difficult for individuals to hear a conversation in a large open space or if there is other background noise such as music, television, or other conversations.

If a resident has hearing aids, be sure they are cleaned regularly, and change the batteries once a week. Wax can be removed with a monofilament tool provided with the hearing aids. Some hearing aids have rechargeable batteries that should be charged each night while the resident sleeps. See Figure 9.16[9] for a hearing aid in a case with a battery and a cleaning tool.

8. Introduction to Sensation and Perception by Students of PSY 3031 and edited by Dr. Cheryl Olman is licensed under CC BY 4.0
9. "Hearing Aid in Case.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 9.16 Hearing Aid in a Case With a Battery and Cleaning Tool

Hearing aids are expensive for residents to purchase, so it is important to always handle them with care and store them in an appropriate place, so they are not lost. If you are unsure of how to fit a hearing aid into a resident's ear, ask for assistance from the nurse. Hearing aids can fit completely inside the ear or over the top of the ear. See Figure 9.17[10] for an example of a hearing aid that is placed over the top of the ear and Figure 9.18[11] for a simulated hearing aid placed inside a mannequin ear.

Figure 9.17 Hearing Aid on Top of the Ear

10. "mark-paton-QpOxts03rps-unsplash" by Mark Paton on Unsplash is licensed under CC BY 4.0
11. "Hearing Aid in Mannequin.jpg" by Myra Reuter for Chippewa Valley Technical College is licensed under CC BY 4.0

Figure 9.18 Simulated Hearing Aid Placed Inside a Mannequin Ear

To experience what someone with hearing loss may hear, watch the following YouTube video[12]: Hearing Loss Simulator – Hear What Hearing Loss Sounds Like.

Speech Impairment

Speech impairment is common for individuals who have had a stroke or who have experienced injuries to certain parts of their brain. These injuries can make forming words and understanding conversations difficult. The medical terms for these conditions are **expressive aphasia** and **receptive aphasia**.

People with aphasia can become very frustrated. Everyone has experienced a time when they were trying to think of a word but couldn't remember it. Imagine how it would feel if this was your experience every time you were trying to communicate with someone. Just as can happen with people with

12. Ear Science Institute Australia. (2017, May 1). *Hearing loss simulator - Hear what hearing loss sounds like* [Video]. YouTube. All rights reserved. https://youtu.be/_jpe0_v2nAc

hearing loss, clients with aphasia may isolate themselves, avoid interaction, or become agitated and even aggressive if not approached appropriately.

Interventions when working with a client with a speech impairment include allowing the person extra time to form words or to process what was spoken to them. The feeling of being rushed can make aphasia worse, so providing ample time to process and respond is key. Writing conversations on a whiteboard may also be helpful, depending upon the cognition of the person.

A speech therapist plays an integral role in assessing a resident with aphasia and creating a communication plan. A communication book may be created so the person can point to images of common phrases or requests instead of trying to remember or say the words. See Figure 9.19[13] for an example of a communication board. Refer to the Chapter 1.2, "Overcoming Communication Barriers" subsection for additional information on overcoming barriers.

13. "I Need Help" and "Places I Want to Go" by Meredith Pomietlo for Chippewa Valley Technical College are licensed under CC BY 4.0

Figure 9.19 Communication Board

To learn more about speech impairment, view the following YouTube video[14]: Aphasia: The Disorder That Makes You Lose Your Words – Susan Wortman-Jutt.

14. TED-Ed. (2016, September 15). *Aphasia: The disorder that makes you lose your words - Susan Wortman-Jutt* [Video]. YouTube. All rights reserved. https://youtu.be/-GsVhbmecJA

9.8 Fall Prevention

“Prevent residents from falling” is one of the National Patient Safety Goals for long-term care centers. Client falls in long-term care centers, hospitals, or homes are very common and can cause serious injury and death. Older adults have the highest risk of falling. Each year, three million older people are treated in emergency departments for fall injuries, and over 800,000 are hospitalized because of a head injury or hip fracture resulting from a fall. Many older adults who fall, even if they’re not injured, become afraid of falling. This fear may cause them to limit their everyday activities. When a person is less active, they become weaker, which further increases their chances of falling.[1]

Many conditions increase an individual’s risk for falls, including the following[2]:

- Lower body weakness
- Vitamin D deficiency
- Difficulties with walking and balance
- Medications, such as tranquilizers, sedatives, antihypertensives, or antidepressants
- Vision problems
- Foot pain or poor footwear
- Environmental hazards, such as throw rugs or clutter that can cause tripping

Most falls are caused by a combination of risk factors. The more risk factors a person has, the greater their chances of falling. Many risk factors can be changed or modified to help prevent falls.[3] The best way to prevent falls is to follow these guidelines:

- Keep residents as strong and mobile as possible
- Utilize the interventions described in the "Assisting With Sensory Deficits" section of this chapter to address any sensory impairments
- Use proper transfer techniques as outlined in Chapter 8.4
- Report any weakness, confusion, or change in condition
- Encourage fluid and nutritional intake to prevent dizziness and promote strength

Residents are assessed for their potential fall risk by the nursing staff or therapists when they are admitted to a facility, at regular intervals during their stay, and any time there is a change in their condition or when certain medications are ordered. Nursing assistants do not perform this assessment but should be aware of factors that can increase fall risk.

View a PDF sample of a fall risk assessment: Johns Hopkins Fall Risk Assessment Tool.

9.9 Skills Checklist: Range of Motion (ROM) Exercises for the Shoulder

Note: Includes Shoulder Flexion/Extension and Abduction/Adduction Movements

1. Gather Supplies: None

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Raise the bed height if needed.
- Position the resident in supine position (with the bed flat).
- Place one of your hands under the resident's elbow with your palm facing up.
- Place your other hand under the resident's wrist with your palm facing up.
- Watch the resident for objective signs of pain during movement.
- Move their arm gently and stop if there is any resistance.
- While keeping the resident's arm straight, raise their arm up and over their head (i.e., flexion).
- Ask the resident if they are experiencing any pain during movement.
- Stop the ROM exercise if the resident reports pain or displays objective signs of pain.
- Bring the resident's arm back down to their side (i.e., extension).
- Complete flexion and extension movements of the shoulder

according to the order in the restorative care plan.
- Continue to support the elbow and wrist of the resident.
- Keeping the resident's arm straight, move their entire arm out away from the body (i.e., abduction).
- Move their arm gently and stop if there is any resistance.
- Ask the resident if they are experiencing any pain during movement.
- Return the resident's arm to their side (adduction).
- Complete abduction and adduction movements of the shoulder according to the order in the restorative care plan.

4. Post-Procedure Steps:

- Perform hand hygiene.
- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report ROM performed and any skin issues, pain with movement, or other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of range of motion exercises for the shoulder:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1133#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Range of Motion Exercises for the Shoulder. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/9MNw0bO5g0I/

9.10 Skills Checklist: Range of Motion (ROM) for the Hip and Knee

Note: Includes abduction/adduction of the hip and flexion/extension of the hip and knee movements.

1. Gather Supplies: None

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Raise the bed height if needed.
- Position the resident in the supine position (with the bed flat).
- Place one of your hands under the resident's knee with your palm facing up.
- Place your other hand under the resident's ankle with your palm facing up.
- Watch for any objective signs of pain during movement.

Abduction/Adduction for Hip:

- Keeping the resident's leg straight, gently move their entire leg away from their body (i.e., abduction).
- Move their leg gently and stop if there is any resistance.
- Ask the resident if they are experiencing any pain during movement.
- Stop the ROM movement if the resident reports pain or displays objective signs of pain.

- Keeping the resident's leg straight, move their entire leg toward their body (i.e., adduction).
- Complete abduction and adduction movements of the hip according to the order in their restorative care plan.
- Continue to correctly support joints by keeping one of your hands under the resident's knee and the other hand under the resident's ankle.

Flexion/Extension of Knee and Hip:

- Bend the resident's knee and hip up toward the resident's trunk (i.e., flexion of hip and knee at the same time).
- Move the resident's leg gently and stop if there is any resistance.
- Ask the resident if they are experiencing any pain during movement.
- Stop the ROM movement if the resident reports pain or displays objective signs of pain.
- Straighten their knee and hip (i.e., extension of knee and hip at the same time).
- Complete flexion and extension movements of the knee and hip according to the order in the restorative care plan.

4. Post-Procedure Steps:

- Perform hand hygiene.
- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.
- Perform hand hygiene.
- Document and report ROM performed and any skin issues, pain with movement, or other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of range of motion exercises for the hip and knee:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1135#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Range of Motion Exercises for the Hip and Knee. [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/ynmFa68Rv7w

9.11 Skills Checklist: Application of Compression Stockings (TED Hose)

1. Gather Supplies: Compression stockings

2. Routine Pre-Procedure Steps:

- Knock on the client's door.
- Perform hand hygiene.
- Introduce yourself and identify the resident.
- Maintain respectful, courteous, and professional communication at all times.
- Provide for privacy.
- Explain the procedure to the client.

3. Procedure Steps:

- Raise the bed height if needed.
- Position the resident in the supine position (bed flat).
- Expose only the leg you will be placing the stocking on.
- Roll, gather, or turn the stocking inside out to the heel.
- Place the stocking over the resident's toes, foot, and heel.
- Check the placement of heel marking.
- Roll or gently pull the stocking up their leg.
- Check the resident's toes for possible pressure from stocking.
- Adjust stocking as needed; stocking should be wrinkle-free to the knee or hip, depending on length of stocking.

4. Post-Procedure Steps:

- Perform hand hygiene.
- Check on resident comfort and ask if anything else is needed.
- Ensure the bed is low and locked. Check the brakes.
- Place the call light or signaling device within reach of the resident.
- Open the door and privacy curtain.

- Perform hand hygiene.
- Document and report application of TED hose and any skin issues, pain with movement, or other changes noted with the resident.

View a YouTube video[1] of an instructor demonstration of application of compression stockings (TED hose):

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wtcs.pressbooks.pub/nurseassist/?p=1137#oembed-1

1. Chippewa Valley Technical College. (2022, December 3). Application of Compression Stockings (TED hose). [Video]. YouTube. Video licensed under CC BY 4.0. https://youtu.be/MeV0Kitfy0I

9.12 Learning Activities

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1139#h5p-57

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1139#h5p-58

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1139#h5p-59

IX Glossary

Abduction: The movement of a limb away from the body's midline. For example, hip abduction is the movement of the leg away from the midline of the body when getting out of bed.

Active assist range of motion: Movement of a joint by an individual with partial assistance from an outside force.

Active range of motion: Movement of a joint by the individual with no outside force aiding in the movement.

Activity intolerance: The reduction of a person's stamina and their ability to perform activities.

Adduction: The movement of a limb towards the midline. For example, if a person has their fingers spread wide apart, bringing them back together is adduction.

Built-up handles: Specialized silverware that allows the use of utensils by individuals with limited functional ability of their fingers (such as severe arthritis) to hold a smaller handle.

Cataracts: A vision condition causing clouding of the clear lens of the eye.

Coagulate: Form a clot.

Comorbidities: Coexisting health conditions.

Compression stockings: Stockings that apply gentle pressure to a limb to reduce edema; also referred to as thrombo-embolic-deterrent (TED) hose.

Deep-vein thrombosis (DVT): A blood clot that forms within the deep veins, usually of the lower leg, but can occur anywhere within the cardiovascular system.

Depth perception: The ability to determine distance between oneself and another object.

Dysphagia: A swallowing disorder.

Edema: Fluid retention causing swelling in the extremities.

Expressive aphasia: A speech disorder where a person understands what other people say but struggles to form words.

Extension: Movement that increases the angle between two bones. For example, extension occurs when doing a bicep curl and the arm is straightened back to starting position, increasing the angle between the elbow joint.

Flexion: Movement that decreases the angle between two bones. For example, contracting the bicep to lift a weight upwards is flexion.

Glaucoma: A visual condition that occurs due to high pressure on the optic nerve that results in loss of peripheral vision, blind spots, or even blindness across the entire visual field.

In-patient therapy: Rehabilitation treatment that occurs in a facility where the client is staying.

Macular degeneration: A visual condition that causes a blind spot in the center field of vision and is the leading cause of vision loss in people over 50.

Occupational therapists: Therapists who assess, plan, implement, and evaluate interventions to help clients achieve their highest possible level of independence in completing their activities of daily living (ADLs), such as bathing, grooming, eating, and dressing.

Out-patient therapy: Rehabilitation treatment that occurs when an individual is staying at home and visits a therapist once or twice a week.

Passive range of motion: When passive range of motion is applied, the joint of an individual receiving the exercise is completely relaxed while the outside force moves the body part.

Physical therapists: Licensed health care professionals who assess, plan,

implement, and evaluate interventions related to clients' functional abilities in terms of strength, mobility, balance, gait, coordination, and joint range of motion.

Presbycusis: Hearing loss that occurs due to the aging process.

Receptive aphasia: A speech condition that causes difficulty in understanding conversations.

Rehabilitation: Therapy to help people regain body functions they lost due to medical conditions or injury.

Respiratory therapists: Therapists who treat respiratory-related conditions in patients.

Segmenting ADLs: Breaking up activities of daily living (ADLs) to accommodate a client's activity intolerance.

Snellen chart: A common tool used for assessing distant vision.

Speech therapists: Therapists who assess, diagnose, and treat communication and swallowing disorders.

Weighted silverware: Specialized silverware with a weighted handle for individuals with tremors or unsteady hands.

PART X

CHAPTER 10: PROVIDE CARE FOR CLIENTS EXPERIENCING ACUTE AND CHRONIC HEALTH CONDITIONS

10.1 Introduction to Provide Care for Clients Experiencing Acute and Chronic Conditions

Learning Objectives

- Care for clients with developmental disabilities
- Care for clients with long-term, disabling conditions, including dementia
- Manage stressful situations involving clients with dementia
- Provide food and fluid intake monitoring and interventions for clients with dementia
- Manage behavioral challenges of clients with dementia
- Demonstrate sensitivity to emotional needs, social diversity, and mental health of clients
- Respond to psychosocial needs of clients

Many nursing assistants work in long-term care settings where residents live for assistance with chronic medical conditions. Chronic health conditions are health issues lasting more than six months and often require specialized interventions to maintain the individual's highest possible level of health and functioning. Acute health conditions in long-term care settings are typically related to the resident's rehabilitation process, an infection, or an injury.

Nursing assistants also work in hospital settings where patients with acute health conditions can experience rapid changes in their condition. These changes must be promptly communicated to the nurse so they can be addressed quickly. In this chapter you will learn how to meet the needs of residents with chronic conditions related to developmental disabilities, mental health disorders, and dementia. You will also be introduced to

providing care for patients with acute conditions that require additional safety or behavioral interventions.

10.2 History of Care for Individuals With Mental Health Disorders and Developmental Disorders

In the past, individuals living with mental health disorders or developmental disorders were viewed as unable to be a part of general society and were often placed in large institutions with little to no access to the outside environment or the community. This unfortunate stigma was due to a vast misunderstanding of these diagnoses. We now know this misconception is detrimental to individuals, and legislative and societal changes have been made to better meet the needs of these individuals. As a health care professional, it is important to understand how you can continue to improve the quality of life in individuals with these diagnoses through your communication, awareness, and approach.

Historically, facilities for institutionalized individuals looked like the Willowbrook State School pictured in Figure 10.1.[1] Residents were typically cared for in large spaces and group settings and eating at long tables with little space for comfort. Often, residents slept in large rooms with several beds in close proximity to each other with no accommodations for privacy or noise reduction. This care environment often caused overstimulation, resulting in sleep disturbances and client behaviors that were difficult to manage. In contrast to current health care practices, individual preferences were not prioritized.

1. "Willowbrook_State_School_(NYPL_b15279351-105038)_-_cropped.jpg" by unknown author is in the Public Domain

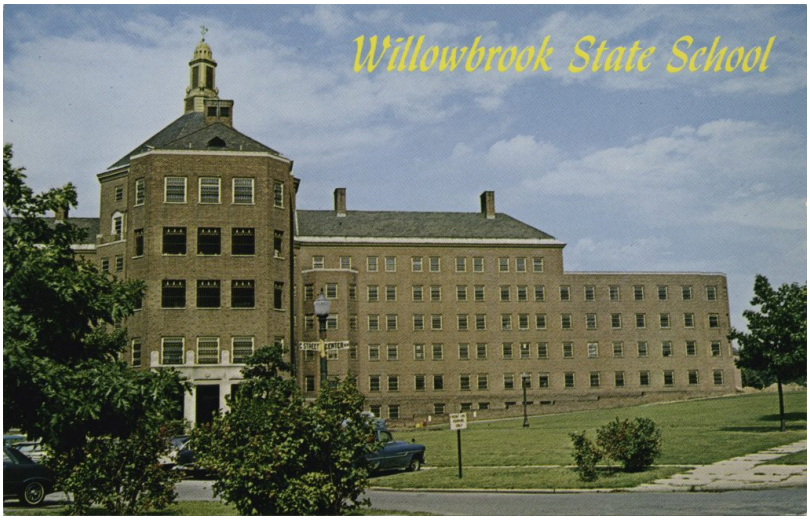

Figure 10.1 Willowbrook State School

These institutions lacked funding, professional caregivers, and basic knowledge of what residents needed to successfully function to the best of their ability. Because of these conditions, individuals with developmental or behavioral health disorders were often looked down upon, shunned, stigmatized, vilified, criminalized, and, in some cases, imprisoned or tortured. This type of inhumane treatment has been documented as far back as the Middle Ages in Europe and up until the mid-1900s in the United States.[2]

In the United States, this type of care environment continued until 1963 when President John F. Kennedy signed the Community Mental Health Act (as seen in Figure 10.2[3]). President Kennedy described this act as "a bold new approach" and provided federal grants to states to construct community mental health centers (CMHC). This act aimed to improve the diagnosis, treatment, and delivery of mental health services to individuals and prevent acute episodes that could impact their safety. In 1965 federal funding was allocated by the Medicaid Act to statewide institutions to improve conditions, staff education, and treatment of residents.[4]

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3. "John_F._Kennedy_Signs_the_Community_Mental_Health_Act_-_ST-C376-2-63.jpg" by Cecil W. Stoughton (1920–2008) is in the Public Domain
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Figure 10.2 President John F. Kennedy Signing the Community Mental Health Act

The Community Mental Health Act resulted in a mass "deinstitutionalization" across the country, and by 1980 the population of psychiatric hospitals had decreased by nearly 75%. Deinstitutionalization meant that individuals with behavioral and developmental disorders were cared for in group home settings that allowed for community involvement rather than being isolated in a facility with little or no interaction with general society. By 2009 less than 2% of individuals with mental health disorders lived in a large institution, thus greatly increasing their quality of life, attention to their individualized needs and preferences, and their ability to be active in the community.[5]

Additional consideration has also been given to school-aged children and adolescents with developmental disorders and disabilities to be educated in a mainstream environment. In 1975 the Education of Handicapped Children Act was passed to support special education and related service programming

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for children and youth with disabilities in public schools. This act mandated that everyone with an intellectual disability was granted equal access to a free education. It was renamed the Individuals with Disabilities Education Act (IDEA) in 1990. In 2010 President Barack Obama signed "Rosa's Law," which eliminated the term "mental retardation" and replaced it with "intellectual disability." Deleting this term from legislation helped to change the negative stigma associated with disabilities.

> Read the following PDF about Rosa's Law.

The remaining sections of this chapter will describe common developmental disorders, mental health disorders, and dementias you may encounter as a caregiver.[6]

6. What is the Individuals With Disabilities Education Act? by University of Washington is licensed under CC BY-NC-SA 3.0

10.3 Caring for Clients With Developmental Disorders

Developmental disorders, also referred to as "intellectual disabilities," are caused by impairments in the brain or central nervous system. These impairments result from problems that occurred during fetal development or injuries sustained during birth or early infancy, such as cerebral palsy and autism. Other disorders, such as Down syndrome, have a genetic cause.[1]

These impairments can impact mobility, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience. Individuals with developmental disorders often function at a lower developmental stage than the average person of the same chronological age.[2]

> Refer to the Chapter 1.4, "Human Needs and Developmental Stages" section to review "Erikson's Stages of Development" and what is expected at each stage.

Intellectual disabilities are diagnosed by health care providers based on two major criteria[3]:

- The ability to learn, think, solve problems, and make sense of the world, referred to as intellectual functioning or Intelligence Quotient (IQ).
- The skills and abilities to live independently, referred to as **adaptive behavior** or adaptive functioning.

Intellectual functioning is typically measured by a standardized IQ test. The average score of an IQ test is 100. People scoring below 70 to 75 are thought to have an intellectual disability.

To measure adaptive behavior, professionals look at what an individual can do

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in comparison to other individuals their age. Skills important for adaptive behavior include the following[4]:

- Daily living skills, such as getting dressed, going to the bathroom, and feeding oneself
- Communication skills, such as understanding what is said and being able to answer
- Social skills with peers, family members, adults, and others

Adaptive behavior is much more about how a person manages in daily life and their ability to do the things that are expected of their age within their culture. Without ongoing support, deficits in adaptive behavior limit an individual's functioning in many areas such as communication, social participation, and independent living at home, school, work, or in the community. A person without adequate adaptive behaviors requires caregivers and other types of resources depending on their level of impairment. As a nursing assistant, you may be providing most of their needed support.

Levels of severity of intellectual disability and associated care needs can be categorized into mild, moderate, severe, and profound. It is important for nursing assistants to know what can be expected and how to care for individuals with these levels of disabilities[5]:

- **Mild Intellectual Disabilities:** In very young children with mild intellectual disabilities, there may be no obvious problems, but as they enter school, they often demonstrate difficulties in academic skills. As they become adults, abstract thinking and short-term memory are reduced, and communication is more immature than expected for their age. They may have difficulties regulating their emotions or have impaired social judgment, which puts them at risk of being manipulated by others. The

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individual may be independent with their activities of daily living (ADLs) and personal hygiene needs but requires support with shopping, cooking, housekeeping, and managing money. They may require assistance in finding appropriate leisure activities, as well as making health care decisions and legal decisions. Individuals with mild disabilities may be employed in jobs that don't require much decision-making.[6]

- **Moderate Intellectual Disabilities:** The conceptual skills of individuals with moderate intellectual disability can be observed because they are behind in development compared to their peers. For school-aged children, their academic achievement is limited, and their learning progress is slow in all areas compared to their peers. As they become adults, their academic skills typically remain at a primary school level. They rely on spoken words for communication and are often unable to understand written instructions. They develop personal relationships, although they may not perceive or interpret social cues accurately. Social judgment and decision-making abilities are limited, and appointed caregivers must assist them with important life decisions. An individual with moderate intellectual disabilities can achieve most of their ADLs if given appropriate time, verbal cues, and supervision to ensure they complete all personal hygiene needs. Similar guidance is needed for other household and life skills. Employment requires considerable support from coworkers and supervisors. Disruptive behaviors may be present that cause socialization problems.[7]
- **Severe Intellectual Disabilities:** Individuals with severe intellectual disabilities typically have little understanding of written language or concepts involving numbers, quantities, time, and money. Caregivers must plan extensive support for problem-solving throughout the individual's life because they are unable to make decisions regarding their well-being. Spoken language is limited in vocabulary and may be single words or phrases possibly supplemented by gestures, signs, or pictures.

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Communication tends to be focused on the here and now within everyday events. Relationships with family members, friends, and familiar others (like caregivers) are a great source of pleasure and help. Individuals require support for all ADLs and supervision at all times. Some individuals may demonstrate disruptive behaviors that are challenging for family members to manage.[8]

- **Profound Intellectual Disabilities:** Individuals with profound intellectual disabilities have very limited conceptual skills and at best can understand concrete objects but not symbols such as pictures or words. They can learn skills such as matching and sorting based on physical characteristics and may use objects for specific purposes such as self-care and recreation. They may understand some simple instructions with gestures and often express their desires and emotions through nonverbal, nonsymbolic communication. They enjoy relationships with well-known family members, caregivers, and familiar others and can initiate and respond to social interactions through gestural and emotional cues. However, sensory and physical impairments limit the amount and quality of social interaction, so extensive support may be required to ensure that social interaction occurs. They are dependent on others for all aspects of their care, health, and safety. If there are no physical impairments, they can assist with simple chores around the home such as putting dishes away. With support, it is possible to engage them in vocational tasks that depend on simple actions with objects. Recreational activities may involve listening to music, watching movies, going for walks, or water activities, all with the support of others. Without support, they often spend a lot of time just watching others. They may demonstrate disruptive behaviors.[9]

Individuals with developmental disabilities generally have few physical limitations. The majority of their care needs are based on supervised decision-

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making and ensuring safety needs are met. Because these impairments begin at a young age, caregivers must provide opportunities for individuals with developmental disabilities to be as independent as possible and integrated into everyday life. This philosophy is reflected in the legislative acts previously discussed in the "History of Care for Individuals With Mental Health Disorders and Developmental Disorders" section, with individuals having developmental disorders placed in small, community-based group homes if their care is unable to be managed by family members in their homes.

Down Syndrome

Nursing assistants may help support individuals with a common developmental disorder called Down syndrome. People with Down syndrome typically experience mild to moderate severity levels of intellectual disability with associated adaptive behaviors regarding daily life activities as previously described. Individuals with Down syndrome also have common physical characteristics based on its genetic cause related to an excess 21st chromosome.

Chromosomes can be thought of as small packages of genes in the body that determine how a baby forms as it develops during pregnancy and functions after birth. Typically, a baby is born with 46 chromosomes. However, babies with Down syndrome have an extra copy of Chromosome 21. The medical term for having an extra copy of a chromosome is **trisomy**, so Down syndrome is also referred to as "Trisomy 21." This extra 21st chromosome causes common physical features for individuals with Down syndrome as seen in Figures 10.3[10] and 10.4.[11]

10. "down-syndrome-full-medium.jpg" by National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention is in the Public Domain. Access for free at https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html#:~:text=Some%20common%20physical%20features%20of,A%20short%20neck
11. "Boy_with_Down_Syndrome.JPG" by Vanellus Foto is in the Public Domain

Figure 10.3 Infant With Down Syndrome

Figure 10.4 School-Aged Child With Down Syndrome

Common physical features of individuals with Down syndrome include the following[12]:

- A flattened face, especially the bridge of the nose
- Almond-shaped eyes that slant up
- A short neck
- Small ears
- A tongue that tends to stick out of the mouth
- Tiny white spots on the iris (colored part) of the eye
- Small hands and feet
- A single line across the palm of the hand (palmar crease)
- Small fifth fingers that sometimes curve toward the thumb
- Poor muscle tone or loose joints
- Shorter height as children and adults

Most people with Down syndrome have common facial features but no other major birth defects. However, some people with Down syndrome have other major birth defects and an increased risk of medical problems such as heart

12. Centers for Disease Control and Prevention (2021, April 6). *Facts about Down syndrome*. https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html#:~:text=Some%20common%20physical%20features%20of,A%20short%20neck

or thyroid disease. Common health problems associated with Down syndrome are as follows[13]:

- Hearing loss
- **Obstructive sleep apnea** (breathing temporarily stops while asleep)
- Ear infections
- Eye diseases
- Heart defects present at birth

Individuals with Down syndrome typically enjoy socialization and being part of a group, and finding ways to give them recognition for their achievements is important. For example, during school years, activities like helping with athletic teams are often enjoyable. After high school, employment provides feelings of self-esteem and achievement. Because these individuals thrive on encouragement, allowing them the opportunity to be as independent as possible and achieve their personal goals greatly increases their quality of life. Independence can range from completing ADLs independently, completing school coursework, or gaining skills from a job.

Autism Spectrum Disorders (ASD)

Nursing assistants may help care for individuals with an autism spectrum disorder (ASD). As the word spectrum infers, there is a wide range of potential behavioral patterns associated with autism. In contrast with other developmental disorders, individuals with autism can be extremely intelligent. Autism causes individuals to process environmental stimuli and social interactions in a different way. Sensory stimulation such as lights, sounds, odors, or crowds can cause individuals with ASD to fidget, call out, or repeat movements that can be perceived by others as outside the social norm. The media often portrays individuals with autism as having altered social awareness or the inability to show emotion or empathy. Actual behaviors associated with ASD are outlined in the following subsections.

13. Centers for Disease Control and Prevention (2021, April 6). *Facts about Down syndrome*. https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html#:~:text=Some%20common%20physical%20features%20of,A%20short%20neck

Social Communication

Individuals with autism often have altered social communication with others that becomes apparent early in childhood. Infants with ASD show less attention to social stimuli, smile and look at others less frequently, and have a decreased response to their name. Toddlers with ASD may demonstrate less eye contact and taking turns with others and may not have the ability to use simple movements to express themselves. Individuals with severe forms of ASD do not develop enough speech ability to meet their daily communication needs with others.[14]

Restricted and Repetitive Behaviors

Children with ASD may exhibit repetitive or restricted behaviors, including the following[15]:

- **Stereotypic:** Repetitive movements, such as hand flapping, head rolling, or body rocking.
- **Compulsive behavior:** Repetitive acts characterized by the feeling that one "has to" perform them, such as arranging objects in stacks or parallel lines.
- **Resistance to change:** Preference for an unvarying pattern of daily activities, such as insisting that the furniture not be moved.
- **Restricted behavior:** Limited focus, interest, or activities, such as preoccupation with a single television program, toy, or game.
- **Self-injury:** Movements that can cause the person to hurt themselves, such as eye poking, skin picking, hand biting, and head banging.

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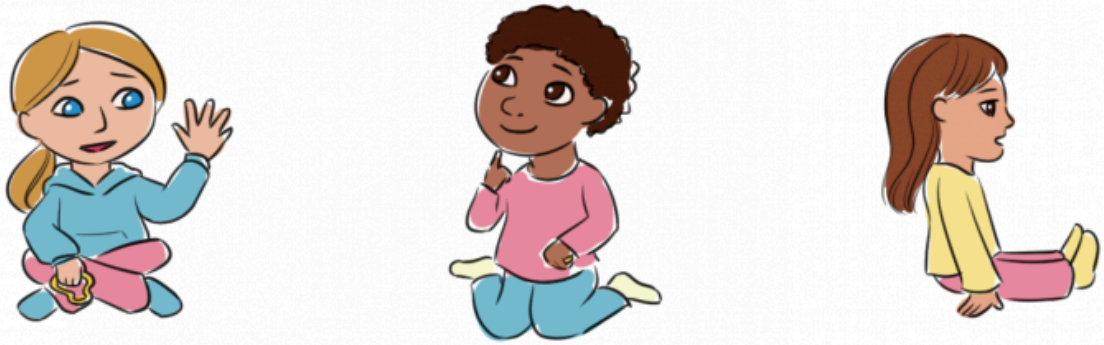
Figure 10.5[16] further explains three functional levels of ASD from the perspective of someone with autism.

16. "Three_Levels_of_Autism_1.png" by MissLunaRose12 is licensed under CC BY-SA 4.0

Three Functional Levels of Autism

written from an autistic perspective



Level 1

Requiring Support

I need help navigating a non-autistic world.

Average traits

People may see me as awkward, not disabled.

I can befriend or date non-disabled people, but it's hard and I'm often lonely.

I can handle change, but I prefer routine.

My fidgeting is seen as quirky or "annoying."

People may think my developmental delays are signs of laziness or insecurity.

Please know that

Social interactions are challenging. Please be understanding and offer help.

I struggle more than I let on.

Meeting others' expectations is exhausting. Please be patient.

I deserve respect and support.

Level 2

Requiring Substantial Support

I need help handling everyday challenges.

Average traits

People can usually tell that I have a disability.

My social life is very limited or nonexistent.

Coping with change is very challenging.

My repetitive behaviors are noticeably unusual.

I have significant developmental delays and will meet milestones late.

Please know that

I may seem inattentive, but I hear and understand you.

Routines and repetitive behavior help me feel safe.

I need a lot of help coping with stress.

I deserve respect and support.

Level 3

Requiring Very Substantial Support

I often need one-on-one support.

Average traits

My disability is very obvious.

I usually only communicate to express needs or answer questions.

Change and transitions can be unbearably difficult.

My intense repetitive behavior is calming and important to me.

I have large developmental delays and may not meet every milestone.

Please know that

I may seem unresponsive, but I hear and understand you.

Routines and repetitive behaviors help me feel safe.

I need help with communication skills.

I deserve respect and support.

These levels aren't clear-cut or permanent. Someone's skills may change.
Stress, environment, and support will impact someone's ability to function.

MissLunaRose

Figure 10.5 Three Functional Levels of Autism

View the following YouTube video to learn more about how individuals with autism experience daily life:[17] : What It's Really Like to Have Autism | Ethan Lisi.

17. TED. (2020, April 29). *What it's really like to have autism | Ethan Lisi* [Video]. YouTube. All rights reserved. https://youtu.be/y4vurv9usYA

10.4 Caring for Clients With Mental Health or Substance Use Disorders

Nursing assistants provide care for individuals with mental health disorders in many settings. According to the National Alliance on Mental Illness (NAMI), approximately 1 in 5 adults in the United States experiences some type of mental health disorder. In the United States, this means that over 43 million people experience a mental health disorder within any given year. Among individuals who experience a mental health disorder, 9.8 million experience a severe mental health disorder, meaning it dramatically interferes or limits their ability to function in everyday life. However, of all the adults in the United States with a mental health disorder, research shows that only 41% received mental health services in the past year, and for those diagnosed with a severe mental health disorder, only 63% received treatment or services. These numbers demonstrate the need to identify and provide effective treatment to individuals living with these disorders.[1]

Just as there are various physical illnesses with varying degrees of severity, there are also various mental health illnesses with varying degrees of severity. Symptoms of mental health disorders can often be managed with medications, in a similar way that physical illnesses like diabetes are managed with insulin and other medications. By helping individuals with mental health disorders manage their medications and attend psychotherapy and/or counseling sessions, caregivers can help individuals with mental health disorders stabilize their emotions and behaviors and reach their greatest potential in their life.

Being aware of common mental health disorders will allow you, as a caregiver, to understand what the person is experiencing and how to help them meet their needs in the best possible way. While every case is different, it is important to be aware of how individuals with mental health disorders may

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present themselves and start thinking about how you will help manage related symptoms and behaviors.[2]

There are several categories of mental health disorders diagnosed by mental health providers such as a psychiatrist, psychologist, or advanced practice nurse practitioner. This section will further describe these common mental health disorders:

- Anxiety Disorders
- Psychotic Disorders
- Bipolar Disorder
- Depressive Disorders
- Trauma Disorders
- Personality Disorders
- Substance Use Disorder

Anxiety Disorders

Anxiety is a universal human experience that includes feelings of apprehension, uneasiness, uncertainty, or dread resulting from a real or perceived threat. Fear is a reaction to a specific danger, whereas anxiety is a vague sense of dread to specific or unknown danger.[3] Everyone experiences feelings of mild anxiety due to situations that occur in their daily lives, such as an upcoming exam, job interview, sports competition, or other type of performance. However, individuals with anxiety disorders experience more than temporary worry or fear. The anxiety can worsen over time, and symptoms interfere with their daily functioning. People experiencing moderate to severe anxiety may also have objective symptoms such as an elevated heart rate, respiratory rate, or blood pressure.

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There are several types of anxiety disorders, including generalized anxiety disorder, panic disorder, and phobia-related disorders[4,5]:

- **Generalized Anxiety Disorder (GAD):** People with GAD have excessive anxiety and worry about numerous events or activities (such as work or school performance). The individual finds it difficult to control their anxiety and worry, and it is associated with symptoms such as restlessness, becoming easily fatigued, difficulty concentrating, irritability, muscle tension, and sleep disturbances. These symptoms impact daily functioning.
- **Panic Disorder:** People with panic disorder have recurrent panic attacks. **Panic attacks** are sudden periods of intense fear that come on quickly and reach their peak within minutes. Attacks can occur unexpectedly or can be brought on by a trigger, such as a feared object or situation. People experiencing a panic attack may exhibit symptoms such as sweating, trembling, shortness of breath, chest pain, nausea, increased heart rate, or feelings of losing control.
- **Phobia:** A **phobia** is an intense fear of specific objects or situations (such as flying, heights, or spiders).
    - Arachnophobia (fear of spiders) is a common phobia.
    - Agoraphobia is an intense fear of being in open spaces, a crowd, or outside of one's home alone. People with agoraphobia often avoid these situations because they fear having a panic attack and, as a result, may become homebound.
    - Social anxiety disorder is a type of phobia that includes fear or anxiety about social situations where there is possible scrutiny by others.

Psychotic Disorders

The term **psychosis** describes conditions when a person experiences a loss of contact with reality and has difficulty understanding what is real and what is

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5. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.

not real. Symptoms of psychosis include hallucinations and delusions. **Hallucinations** are false sensory perceptions not associated with real external stimuli and can include any of the five senses (seeing, hearing, feeling, tasting, or smelling). For example, individuals may experience hallucinations of seeing someone in the room when no one is there, hearing voices when alone, or smelling something cooking when nothing is being prepared. Some people are aware that their hallucinations are not real while others cannot separate their hallucinations from reality. **Delusions** are fixed, false beliefs held by a person even though there is concrete evidence they are not true. Examples of delusions may include believing that spies can hear your thoughts, people are poisoning your food, or a celebrity is in love with you. Symptoms of a psychotic episode include delusions, hallucinations, incoherent speech, and purposeless excessive movement.[6,7]

Psychosis is a symptom of several mental illnesses, including schizophrenia, bipolar disorder, severe depression, or severe anxiety, but there are also potential medical causes. Sleep deprivation, medical conditions like hyperglycemia, side effects of certain prescription medications, and use of alcohol or other drugs can cause psychotic symptoms. Psychosis caused by medical conditions or substance use is referred to as delirium. It starts suddenly and can cause hallucinations, but it is reversible by treating the cause of the **delirium**.

Nursing assistants can help manage patients' symptoms of psychosis with the following interventions[8,9]:

- Making sure the room is quiet and well-lit
- Having clocks and calendars within view
- Inviting family members to spend time in the room

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7. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.
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9. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.

- Ensuring hearing aids and glasses are worn
- Promoting undisrupted sleep when possible
- Getting patients up and out of bed when possible

Schizophrenia is a type of mental illness with symptoms of psychosis that last for at least six months. In addition to symptoms of psychosis, it also affects how a person feels, with reduced motivation, difficulty concentrating, disinterest or lack of enjoyment in daily activities, social withdrawal, difficulty showing emotion, and difficulty functioning in daily life activities. It is typically diagnosed in the late teen years to early thirties.[10,11]

Depressive Disorders

Depression is a common illness worldwide affecting an estimated 5% of adults. Depression is different from mood fluctuations or short-lived emotional responses to everyday life stressors or events, such as the loss of a loved one or the end of a relationship. Depression can become so severe that it affects the individual's ability to function at work, at school, and in their family roles. It can cause self-neglect, such as the failure to meet one's hygiene needs or obtain sufficient nutritional intake. At its worst, depression can lead to suicide.[12,13]

During a **depressive episode**, the person experiences a depressed mood (feeling sad, irritable, or empty) or a loss of pleasure or interest in activities they normally enjoy. Other symptoms may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness about the future, thoughts about dying or suicide, disrupted sleep, changes in appetite or weight, and feeling fatigued.

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11. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.
12. This work is a derivative of Nursing: Mental Health and Community Concepts by Chippewa Valley Technical College and is licensed under CC BY 4.0
13. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.

Bipolar Disorders

Bipolar disorders include shifts in mood from abnormal highs (called manic episodes) to abnormal lows (i.e., depressive episodes). These shifts cause significant impairment in the person's functioning socially or at work. A manic episode is an elevated or irritable mood with abnormally increased energy that lasts at least one week. As the manic episode worsens, the individual may become psychotic with hallucinations. During a manic episode, the person often experiences a reduced need to sleep or eat and can exhibit risky behaviors like excessive buying sprees, unrestrained gambling, or sexual indiscretions. Depressive episodes have opposite symptoms of manic episodes and are exhibited by low energy, low motivation, and loss of interest in daily activities.[14,15]

Trauma Disorders

Trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life-threatening and can have lasting adverse effects on their functioning and mental, physical, social, emotional, or spiritual well-being. For example, a person may experience trauma from an event like a mass shooting, physical assault, rape, violent accident, or after natural disasters such as hurricanes or tornadoes. Trauma is also associated with experiences by military personnel/veterans or victims of war.

Types of trauma disorders include the following[16,17]:

- Post-traumatic stress disorder (PTSD) is a disorder that can be caused by experiencing, witnessing, or hearing about a traumatic event. After a month of being removed from the event, a person may continue to

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15. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.
16. This work is a derivative of Nursing: Mental Health and Community Concepts by Chippewa Valley Technical College and is licensed under CC BY 4.0
17. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.

experience sleeplessness, increased heart rate, mood shifts, physically lashing out, or any combination of responses. These responses may be brought on by any environmental stimuli that reminds the person of the terrifying event or by recurring thoughts about the event.

- Acute stress disorder is a disorder that has similar symptoms as post-traumatic stress disorder, but the symptoms only last for three days to one month. If symptoms last for longer than one month, it meets the criteria for PTSD. This disorder is experienced by individuals who have been exposed to actual or threatened death, serious injury, or sexual violence. It can be caused by directly experiencing the event, witnessing the event, learning the event occurred to a close family member or friend, or experiencing repeated exposure to details of traumatic events.[18]

Personality Disorders

A person's personality is a relatively stable pattern of thinking, feeling, and behaving that evolves over their lifetime. A **personality disorder** is a pattern of inner experiences and behaviors that deviates from the expectations of the individual's culture. It can be traced back to adolescence or early adulthood and leads to impaired functioning the remainder of the person's life.

There are ten types of personality disorders that can include distrust of others, isolation, habitual lying, and aggressive or violent acts with little remorse. Three common personality disorders are as follows[19,20,21]:

- **Obsessive-compulsive personality disorder (OCD):** OCD includes a pattern of preoccupation with orderliness, perfectionism, and control. This preoccupation may impair one's social life, health, or ability to function in the outside environment. This is the most common personality disorder in the United States.

18. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.
19. This work is a derivative of Introduction to Social Work at Ferris State University by Department of Social Work and is licensed under CC BY 4.0
20. This work is a derivative of Nursing: Mental Health and Community Concepts by Chippewa Valley Technical College and is licensed under CC BY 4.0
21. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.

- **Borderline personality disorder:** Borderline personality disorder includes a pattern of instability in interpersonal relationships, altered self-image and emotions, and significant impulsivity. People with borderline personality disorder may experience chronic feelings of emptiness and exhibit frantic efforts to avoid real or imagined abandonment. They may have difficulty controlling their anger or experience dissociative symptoms where they feel detached from their body with a loss of memory of the experience.
- **Narcissistic personality disorder:** Narcissistic personality disorder includes a pattern of grandiosity, need for admiration, and lack of empathy for others.

Substance Use Disorders

Prolonged, repeated misuse of substances can produce changes to the brain that can lead to **substance use disorder**. Substances may include alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, stimulants, or misuse of other prescription or over-the-counter medications. All these substances taken in excess have a common effect of intensely activating the reward system in the brain so much that normal life activities may be neglected. Substance use disorder (SUD) is an illness caused by repeated misuse of these substances.[22]

Over 40 million Americans are diagnosed with SUD (14.5% of the population). Severe substance use disorders are commonly referred to as addiction. Addiction is associated with compulsive or uncontrolled use of one or more substances. Addiction is a chronic illness that has the potential for relapse or recovery. Relapse refers to the return to substance use after a significant period of abstinence. Recovery is a process of change when individuals improve their health and wellness and strive to reach their full potential. Individuals with severe SUD can overcome their disorder with effective treatment and regain health and social functioning, referred to as remission.[23]

22. American Psychiatric Association. (2013). *Desk reference to the diagnostic criteria from DSM-5*.
23. Substance Abuse and Mental Health Services Administration, & Office of the Surgeon General. (2016). *Facing*

Care Considerations

Treatment for mental health and SUDs often involves a variety of approaches such as medication, individual or group therapy, and peer support groups. These interventions may happen in an outpatient or inpatient setting. While you will not be involved in providing these treatments as a nursing assistant, it is important to understand what someone with any of these diagnoses is experiencing. Your support and the manner in which you provide assistance can make a large impact on the quality of life for those in recovery.

When providing ADLs and other assistance for those with mental health disorders, substance use disorders, or developmental disorders, the same considerations apply as when providing care to any individual with respect to promoting their dignity, privacy, and preferences. It is also important to be aware of exposure to potential situations or environments that may feel overwhelming to the individual and/or trigger their symptoms or behaviors.

Major themes of care to implement for individuals with developmental, mental health, or substance use disorders include the following:

- **Communication:** As with all caregiving relationships, work to build a trusting relationship through good communication. Allow time for the client to talk about any concerns and report any changes in outlook to the nurse for additional support. When providing care, explain the procedure and look for body language, as well as verbal cues, to determine the client's level of comfort.
- **Routine:** Keep things as predictable as possible. The daily schedule should remain as consistent as possible by waking, providing meals, engaging in activities, and going to bed around the same times each day. Staff involved in personal care and other support should remain consistent whenever feasible. Change and unexpected situations can provoke anxiety in anyone but can be especially upsetting for people with

addiction in America: The surgeon general's report on alcohol, drugs, and health. United States Department of Health and Human Services. https://www.ncbi.nlm.nih.gov/books/NBK424857/

mental health, substance use, or developmental disorders.

- **Empathy:** Remember that interactions with the environment, family, friends, and caregivers are often processed differently by those with mental health or development disorders and may result in disruptive behaviors. Do not take their behaviors personally or assume they are trying to be difficult, but instead be aware their ability to respond calmly or cope with excessive stimuli or interactions may be diminished.
- **Redirect or Reapproach:** If a client with a developmental or mental health disorder displays disruptive behaviors, focus on their safety and determine what is absolutely necessary to accomplish at this point in time. Do not focus on completing a task now if doing it at a later time when the client is calmer will have the same outcome. Attempt to redirect their attention by carefully encouraging engagement in another activity that may be more appealing or by tactfully changing the subject of a conversation that may be upsetting. For example, if a resident becomes agitated because they don't want to get dressed right away in the morning, will it matter if they wear their pajamas until they need to go outside of their room? You can reapproach them at a later time when they may be calmer. This is no different than accommodating preferences for any resident.

There are specific care considerations based on the individual's diagnosis and things the caregiver should be aware of when trying to meet their personal needs. See Table 10.4 for care considerations for individuals with mental health and developmental disorders.

Table 10.4 Care Considerations for Individuals With Mental Health and Developmental Disorders

Diagnosis	Strategies to Approach Care
Anxiety Disorder	Allow time to talk about the situation causing feelings of fear or anxiety (if they are willing to talk about it). If change causes anxiety, determine if being aware of change in advance will cause less anxiety based on the individual's preferences.
Depressive Disorder	Listen to the patient's expression of their feelings when providing care. Encourage them to be independent and participate in activities, even if this means 1:1 socialization. Recognize and reinforce their efforts at participating in their cares or socializing with others. Encourage effective coping strategies like physical activity, meditation, journaling, art, and music.
Bipolar Disorder	During manic episodes, encourage rest and nutrition. Allow time to discuss overwhelming feelings or situations. Use approaches for depressive disorders during low periods.
Schizophrenia	Empathize and provide safety if they are experiencing hallucinations. Do not contradict what they may be visualizing. Validate their experiences with statements such as, "That must be scary for you; how can I help?" Check for lighting or sounds that may be triggering hallucinations and move to a different room or area as needed.
Post-Traumatic Stress Disorder (PTSD)	Maintain a consistent environment and routine. Be aware of things that may overstimulate them or trigger stressful feelings.
Substance Use Disorder	Support healthy decisions, encourage recovery, and promote self-esteem.
Down Syndrome	Provide ample time when explaining tasks and give choices to encourage independence. Establish routines and rewards.
Autism	Be aware of situations or experiences that may cause overstimulation and make them feel overwhelmed. Provide time for alone time or independent activities.

10.5 Caring for Clients With Dementia

Dementia is a general term for loss of memory, language, problem-solving, and other thinking abilities that are severe enough to interfere with daily life. Disorders grouped under the general term “dementia” are caused by abnormal brain changes. These changes in brain cells affect their communication with each other, affecting a person’s thinking (i.e., cognitive abilities), behaviors, and feelings. There are many types of dementia. Alzheimer’s disease is the most common type of dementia. Vascular dementia is the second most common cause of dementia, followed by frontal-temporal dementia and Lewy body disease. While there are various causes of dementia, the observable characteristics are similar.[1]

Signs and symptoms of dementia include forgetfulness, impaired decision-making, and decreased thinking abilities that interfere with daily living. It is gradual and progressive, meaning the signs of dementia start out slowly and gradually get worse over time. Some examples of decreased thinking include changes in the ability to perform the following actions[2]:

- Recalling things from short-term memory
- Keeping track of a purse or wallet
- Paying bills
- Planning and preparing meals
- Remembering appointments
- Traveling out of the neighborhood

Dementia typically starts later in life, but it can begin as early as the mid-40s. It is not an expected part of aging. There is no cure for dementia, and the

1. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB
2. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

effects are irreversible. However, appropriate care improves the safety and the quality of life for individuals affected by dementia and their loved ones.[3]

Types of Dementia

Various types of dementia are further described in the following subsections.

Alzheimer's Disease

About 10% of people older than 65 are affected by Alzheimer's disease (AD). AD is the most common type of dementia and accounts for 60-80% of cases. Changes in the brain may begin a decade or more before impaired short-term memory and other cognitive problems appear, and the brain's functioning continues to decline over time.

Scientists continue to unravel the complex brain changes involved in the onset and progression of AD. Abnormal deposits of proteins occur throughout the brain and form structures called amyloid plaques and tau tangles, causing previously healthy nerve cells (neurons) to stop functioning, lose connections with other neurons, and die. The damage initially appears to take place in the hippocampus and the cortex, the parts of the brain that are essential for forming memories. As additional neurons die, more parts of the brain are affected and begin to shrink. By the final stage of AD, damage is widespread, and brain tissue has shrunk significantly.[4] See Figure 10.6[5] for images comparing a healthy brain to the changes that occur during AD.

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4. This work is a derivative of Nursing Fundamentals by Chippewa Valley Technical College and is licensed under CC BY 4.0
5. "Alzheimers_Disease.jpg" by BruceBlaus is licensed under CC BY-SA 4.0 and "24239522109_6b061a9d69_o.jpg" by NIH Image Gallery is licensed under CC0

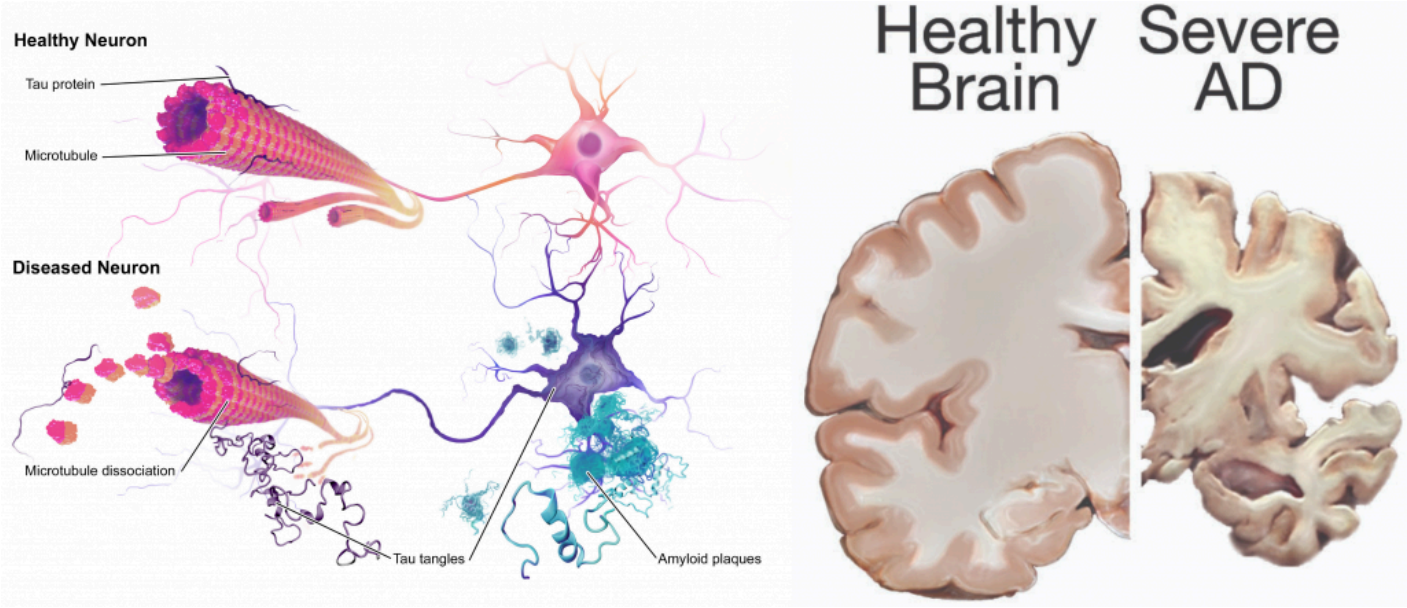

Figure 10.6 Changes in Neurons and the Brain Caused by Alzheimer's Disease

There is no single diagnostic test that can determine if a person has AD. Health care providers use a patient's medical history, mental status tests, physical and neurological exams, and diagnostic tests to diagnose AD and other types of dementia. During the neurological exam, reflexes, coordination, muscle tone and strength, eye movement, speech, and sensation are tested. While there is no cure for AD, there are medications to reduce progression of the symptoms of memory loss and confusion, as well as interventions to manage common symptomatic behaviors.[6]

Vascular Dementia

Vascular dementia occurs at a younger age than Alzheimer's disease with most symptoms starting around age 60. Vascular dementia is the second most common type of dementia worldwide and affects about 10-20% of patients with dementia. It is caused by microscopic bleeding and blood vessel blockage in the brain and is also called multi-infarct dementia. High blood pressure and strokes are common causes of vascular dementia.

The onset of vascular dementia is typically abrupt and followed by a rapid

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decline in functioning, in comparison to the slow progression of Alzheimer's disease. Common symptoms in vascular dementia include apraxia and agnosia. **Apraxia** is the impaired ability to carry out motor activities despite intact motor function. This means the person can understand instructions and has the ability to complete an action but cannot process the cue to actually perform the task. **Agnosia** is the failure to recognize or identify objects despite intact sensory function.[7]

Lewy Body Dementia

Lewy body dementia (LBD) affects approximately 10 to 20% of patients with dementia. Like Alzheimer's disease, LBD causes a progressive decline in cognition, leading to a functional impairment in daily activities. This type of dementia typically appears around age 70, and Parkinson's disease and sleep disorders are often precursors to being diagnosed with LBD.

Significant features of LBD are fluctuating cognition, visual hallucinations, and sleep disturbances that affect motor and psychiatric functioning. These factors increase the risk of falls, infection, and malnutrition. Individuals with LBD frequently have aggressive behaviors. Medications used for treating dementia are less effective for LBD and often result in more adverse side effects than with other types of dementia.[8]

Frontotemporal Dementia

Frontotemporal dementia (FTD) is caused by degeneration of neurons in the frontal and anterior temporal lobes of the brain. In patients older than 65 years, it is the third most common cause of dementia. For individuals younger than 65 years, it is the second most common cause of early-onset dementia and commonly affects patients ranging from 45 to 65 years of age.

7. Abnormal Psychology by Lumen Learning is licensed under CC BY 4.0
8. This work is a derivative of A Long Goodbye: Ed and Mary's Journey With Lewy Body Dementia by James Cook University and is licensed under CC BY-NC-ND 4.0

Genetics plays a key role in the development of FTD with approximately 40% of cases familial in origin. Head trauma and thyroid disease have also been linked to the development of FTD. Individuals who have experienced head trauma are three times more likely to develop FTD, and individuals with thyroid disease are over twice as likely to develop this type of dementia.

FTD targets brain areas that are responsible for personality, behavior, language learning, motivation, abstract thinking, and executive function. Behavior changes and/or language difficulties are common symptoms, followed by loss of cognitive abilities and executive functioning like planning, organizing, and self-control.[9]

Stages of Dementia

Stages of dementia are often classified as early, moderate, or advanced.

Early Dementia

There are ten symptoms of early dementia[10]:

- **Memory loss that disrupts daily life.** This type of memory loss refers to forgetting recently learned information that disrupts daily life, such as forgetting important dates or events, asking the same questions over and over, and increasingly needing to rely on memory aids (e.g., reminder notes or electronic devices). They often rely on family members for things they used to handle on their own. These impairments are different from typical age-related changes, like sometimes forgetting names or appointments but remembering them later.
- **Challenges in planning or solving problems.** This includes changes in an individual's ability to develop and follow a plan or work with numbers. For

9. This work is a derivative of StatPearls by Khan and De Jesus and is licensed under CC BY 4.0
10. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

example, they may have trouble following a familiar recipe or keeping track of monthly bills. They may have difficulty concentrating and take much longer to do things than they did before. This is more severe and frequent than typical age-related changes of making occasional errors when managing finances or household bills.

- **Difficulty completing familiar tasks.** This includes trouble driving to a familiar location, organizing a grocery list, or remembering the rules of a favorite game. This symptom is different from a typical age-related change of occasionally needing help to use microwave settings or to record a TV show.
- **Confusion with time or place.** This includes losing track of dates, seasons, and the passage of time. Individuals may have trouble understanding something if it is not happening immediately. Sometimes they may forget where they are or how they got there. This symptom is different from a typical age-related change of forgetting the date or day of the week but figuring it out later.
- **Trouble understanding visual images and spatial relationships.** Vision problems that include difficulty judging distance, determining color or contrast, or causing issues with balance or driving can be symptoms of Alzheimer's disease. This is different from typical age-related visual changes. (See the Chapter 9.7, "Visual Impairment" subsection for more information on common vision problems.)
- **New problems with words in speaking or writing.** Individuals with Alzheimer's disease may have trouble following or joining a conversation. They may stop in the middle of a conversation and have no idea how to continue or they may repeat themselves. They may struggle with vocabulary, have trouble naming a familiar object, or use the wrong name (e.g., calling a "watch" a "hand-clock"). This is different from a typical age-related change of having trouble finding the right word.
- **Misplacing things and losing the ability to retrace steps.** A person with Alzheimer's disease may put things in unusual places. They may lose things and be unable to go back over their steps to find them again. They may accuse others of stealing, especially as the disease progresses. This is different from a typical age-related change of misplacing things from

time to time and retracing steps to find them.

- **Decreased or poor judgment.** Individuals with Alzheimer's disease may experience changes in judgment or decision-making. For example, they may use poor judgment when dealing with money or pay less attention to grooming or keeping themselves clean. This is different from a typical age-related change of making a bad decision or mistake once in a while, like neglecting to change the oil in the car.
- **Withdrawal from work or social activities.** A person living with Alzheimer's disease may experience changes in the ability to hold or follow a conversation. As a result, they may withdraw from hobbies, social activities, or other engagements. They may have trouble keeping up with a favorite team or activity. This is different from a typical age-related change of sometimes feeling uninterested in family or social obligations.
- **Changes in mood and personality.** Individuals living with Alzheimer's disease may experience mood and personality changes. They can become confused, suspicious, depressed, fearful, or anxious. They may be easily upset at home, with friends, or when out of their comfort zone. This is different from a typical age-related change of developing very specific ways of doing things and becoming irritable when a routine is disrupted.

Moderate Dementia

In moderate stages of dementia, people may experience the following symptoms[11]:

- Needing additional assistance with reminders to eat, wash, and use the restroom.
- Needing help in recognizing family and friends. Sometimes showing a photo of the person at a younger age will trigger their remaining long-term memory of that person.
- Wandering, getting lost, hallucinations, delusions, and repetitive behavior.

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- **Perseverating** on a task, meaning they repeat something over and over. The person feels compelled to do something, such as call a family member, get groceries, or pick up their children. It often is linked to a responsibility they had as a younger person before memory impairment occurred.
- Hoarding of everyday objects. In a facility, this could be things like sugar or ketchup packets, straws, or salt and pepper shakers.
- Rummaging through items in drawers. This can be upsetting to others in a facility as the person may likely go into other residents' rooms, not realizing it is inappropriate.
- Engaging in risky behavior, such as leaving the house in clothing inappropriate for weather conditions or leaving the stove burners on. If living in a facility, individuals may try to leave when it is not safe to do so (referred to as eloping).
- Demonstrating restlessness, agitation, irritability, or confusion that can begin or worsen as daylight begins to fade. This is referred to as sundowning. (Sundowning will be covered in more detail in the "Managing Sundowning" discussion later this section.)

In the moderate stage of dementia, people who pace or wander may not feel comfortable sitting down for a meal. Finger foods, frequent healthy snacks, and nutritionally enriched beverages can be offered to help maintain their nutritional intake.

Advanced Dementia

Those with advanced dementia may experience the following symptoms[12]:

- Urinary and/or bowel incontinence.
- Increasing need for assistance in washing, dressing, eating, and toileting.
- Unsteady gait or shuffling while walking, progressing to the inability to

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walk.
- Increased aggressive behavior, disinhibition (inappropriately acting on sexual desires), or inappropriate laughing.
- Difficulty eating, swallowing, and speaking.
- Increased time for processing conversations and following directions, progressing to unresponsiveness.
- Modified diet such as thickened fluids and a soft or pureed diet.
- Seizures may develop in advanced stages.

To learn more about how Alzheimer's changes the brain, view the following YouTube video[13]: How Alzheimer's Changes the Brain.

Caring for Individuals With Dementia

As dementia progresses and cognition continues to deteriorate, care must be individualized to meet the needs of the patient and family. Providing patient safety and maintaining quality of life while meeting physical and psychosocial needs are important aspects of nursing care. Unsafe behaviors put individuals with dementia at increased risk for injury.[14]

Similar to those with intellectual disabilities, individuals with dementia can be very physically mobile. Their decreased awareness of safety paired with good physical mobility means they require constant oversight as the disease progresses. Disruptive behaviors often occur due to the patient having a need or emotion without the ability to express it due to the changes in their brain.

13. National Institute on Aging. (2017, August 23). *How Alzheimer's changes the brain* [Video]. YouTube. All rights reserved. https://youtu.be/0GXv3mHs9AU
14. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

These needs may be untreated pain, hunger, anxiety, or the need to use the bathroom. Without the ability to communicate these needs, the individual may display agitation, aggression, shouting, combativeness, and many other behaviors that can be distressing for all involved. The patient's family members and caregivers require education and support to recognize that behaviors are a symptom of dementia and/or a communication of their needs rather than being upset with the caregiver. As a nursing assistant, the more familiar you are with a client, the easier it becomes to understand their behaviors and provide activities to keep their emotions stable while proactively meeting their care needs.[15]

Providing Validation Therapy

Caring for individuals with dementia can be difficult, especially for family members who have trouble understanding what is happening to their loved one. They may try to reorient the person to the present time and situation, which can be frustrating for a person with dementia because they are unable to process these cues.

One of the most effective methods used to assist people with dementia is called **validation therapy,** meaning you support the reality the person with dementia is experiencing and do not attempt to reorient them. Begin by determining what the person is perseverating on and figure out a way to satisfy their need or respond to their emotion. For example, if a person with dementia is perseverating on the need to catch an imagined bus, you can sit with them by a window and tell them you will have a conversation until the bus arrives. If they are looking for a child they recall from their past experiences, allow them to hold a doll or call the "child" they are looking for on the phone. After they feel their concerns are validated, it will be easier to redirect them to another activity and reduce their emotional response.

15. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

Remember that individuals with dementia still retain long-term memories, and these memories often provide comfort and ease anxiety. It is helpful to provide activities similar to those they formerly enjoyed or simulate situations that resemble their prior work or home environment. For example, if a person was a homemaker, allow them to fold laundry or towels. If they enjoyed working with their hands, provide nuts and bolts to put together and take apart. If they worked in an office, folding letters and placing them in envelopes may be helpful. Activities like sorting cards, doing simple crafts, or baking may also be enjoyable. In the early to moderate stages of dementia, ambulation, chair exercises, or range of motion exercises can help to utilize pent-up energy that can otherwise lead to agitation.

Keeping the environment similar to their previous home can also be a calming factor by helping them recognize where their room is and reducing wandering or the risk of entering a room that does not belong to them. Some care facilities paint the doorframe like the resident's home, use plates and utensils from the resident's kitchen, and bring furniture from their home as well.

The "Dementia Village" is an entire neighborhood in Holland, complete with movie theater, restaurants, and stores and all staffed with specialized dementia caregivers. The neighborhood is enclosed, allowing residents to walk on their own without the risk of wandering and getting lost or risking safety. View the following YouTube video about how this community is set up[16]: CNN's World's Untold Stories: Dementia Village.

16. CNN. (2013, July 10). *CNN's world's untold stories: Dementia village* [Video]. YouTube. All rights reserved. https://youtu.be/jwt4uGYGGUA

Managing Sundowning

Sundowning refers to restlessness, agitation, irritability, or confusion that typically begins or worsens as daylight begins to fade and can continue into the night, making it difficult for patients with dementia to sleep. Being overtired can increase late-afternoon and early-evening restlessness. Tips to manage sundowning are as follows[17]:

- Take the resident outside or expose them to bright light in the morning to reset their circadian rhythm.
- Do not plan too many activities during the day. A full schedule can be overtiring.
- Make early evening a quiet time of day. Play soothing music or ask a family member or friend to call during this time.
- Close the curtains or blinds at dusk to minimize shadows and the confusion they may cause.
- Reduce noise, clutter, or the number of people in the room.
- Do not serve coffee, cola, or other drinks with caffeine late in the day.

Managing Aggressive Behaviors

Aggressive behaviors may be verbal or physical. They can occur suddenly, with no apparent reason, or result from a frustrating situation. While aggression can be hard to cope with, understanding this is a symptom of dementia and the person with dementia is not acting this way on purpose can help caregivers respond.[18] See Figure 10.7[19] for an image of a resident with dementia demonstrating aggressive verbal behavior.

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18. This work is a derivative of Nursing Fundamentals by Chippewa Valley Technical College and is licensed under CC BY 4.0
19. "5012292106_507e008c7a_o.jpg" by borosjuli is licensed under CC BY 2.0

Figure 10.7 A Resident Displaying Aggressive Verbal Behavior

There are many therapeutic methods for a nurse or caregiver to initially respond to aggressive behaviors displayed by a person with dementia as previously described in the "Caring for Clients With Mental Health or Substance Use Disorders" section:

- Communication
- Routine
- Empathy
- Redirect or reapproach

Aggression can be caused by many factors including physical discomfort, environmental factors, and poor communication. If a person with dementia becomes aggressive, consider what might be contributing to the change in behavior and address it.[20]

PHYSICAL DISCOMFORT

- Is the person able to let you know that they are experiencing physical pain? It is not uncommon for people with dementia to have urinary tract or other infections. Due to their loss of cognitive function, they are unable to articulate or identify the cause of physical discomfort and, therefore,

20. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

may express it through physical aggression.
- Is the person tired because of inadequate rest or sleep?
- Is the person hungry or thirsty?
- Are medications causing side effects? Side effects are especially likely to occur when individuals are taking multiple medications for several health conditions.[21]

ENVIRONMENTAL FACTORS

- Is the person overstimulated by loud noises, an overactive environment, or physical clutter? Large crowds or being surrounded by unfamiliar people – even within one's own home – can be overstimulating for a person with dementia.
- Does the person feel lost?
- What time of day is the person most alert? Most people function better during a certain time of day; typically, mornings are best. Consider the time of day when making appointments or scheduling activities. Choose a time when you know the person is most alert and best able to process new information or surroundings.[22]

POOR COMMUNICATION

- Are your instructions simple and easy to understand?
    - Use simple language.
    - Limit choices to one or two options. (Example: "Do you want to wear the blue shirt or the black shirt?")
    - Be sure communication techniques take sensory deficits into

21. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB
22. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

consideration.
    - Try physically demonstrating instead of verbally instructing; use pictures or gestures.
- Are you asking too many questions or making too many statements at once? Give ample time to process and respond.
- Is the person picking up on your own stress or irritability? Take a moment for deep breathing or ask another caregiver to assist if available.[23]

OTHER TECHNIQUES

The following techniques are additional strategies that can be used with aggressive behavior[24]:

- Begin by trying to identify the immediate cause of the behavior. Think about what happened right before the reaction that may have triggered the behavior. Rule out pain as the cause of the behavior. Pain can trigger aggressive behavior for a person with dementia.
- Focus on the person's feelings, not the facts. Look for the feelings behind the specific words or actions.
- Try not to get upset. Be positive and reassuring and speak slowly in a soft tone and seek help from another caregiver if needed.
- Limit distractions. Examine the person's surroundings and adapt them to avoid future triggers.
- Implement a relaxing activity. Try music, massage, or exercise to help soothe the person.
- Shift the focus to another activity (redirect). The immediate situation or activity may have unintentionally caused the aggressive response, so try a different approach.
- Take a break if needed. If the person is in a safe environment and you are

23. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB
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able, walk away and take a moment for emotions to cool.
- Ensure safety! Make sure you and the patient are safe. Be aware of movement of the patient's hands and feet and protect yourself from being hit or kicked. Avoid potential strangulation hazards like retractable lanyards. If interventions do not successfully calm down an aggressive patient, seek assistance from other staff members. If it is an emergency situation, call 911 and be sure to tell the responders the person has dementia that is causing them to act aggressively.

Responding to a Person Having Hallucinations

When responding to a person experiencing hallucinations, be cautious. First, assess the situation and determine whether the hallucination is a problem for the person or for you. Is the hallucination upsetting? Is it leading the person to do something dangerous? Is the sight of an unfamiliar face causing the person to become frightened? If so, react calmly and quickly with reassuring words and a comforting touch. Do not argue with the person about what they see or hear. If the behavior is not dangerous, there may not be a need to intervene. Utilize aspects of validation therapy by doing the following[25]:

- Offer reassurance. Respond in a calm, supportive manner. You may want to respond with, "Don't worry. I'm here. I'll protect you. I'll take care of you." Gentle patting may turn the person's attention toward you and reduce the hallucination.
- Acknowledge the feelings behind the hallucination and try to find out what the hallucination means to the individual. You might want to say, "It sounds as if you're worried," or "This must be frightening for you."
- Use distractions. Suggest a walk or move to another room. Frightening hallucinations often subside in well-lit areas where other people are present. Try to turn the person's attention to music, conversation, or

25. Alzheimer's Association. (n.d.). *What is dementia?* https://www.alz.org/alzheimers-dementia/what-is-dementia?utm_source=google&utm_medium=paidsearch&utm_campaign=google_grants&utm_content=dementia&gclid=Cj0KCQjwvqeUBhCBARIsAOdt45Z-WN2Wk5Tw07mB7PRGJ3axLWBDxeaooRqavb7_E7n3wQacrGvghdwaAqoXEALw_wcB

activities they enjoy.

- Respond honestly. If the person asks you about a hallucination or delusion, be honest. For example, if they ask, “Do you see the spider on the wall?,” you can respond, “I know you see something, but I don’t see it.” This way you’re not denying what the person sees or hears and avoiding escalating their agitation.
- Modify the environment. Check for sounds that might be misinterpreted, such as noise from a television or an air conditioner. Look for lighting that casts shadows, reflections, or distortions on the surfaces of floors, walls, and furniture. Turn on lights to reduce shadows. Cover mirrors with a cloth or remove them if the person thinks they are looking at a stranger.

Managing Wandering

Wandering is the simple act of a person walking around with no purpose due to confusion regarding their location or environment. It can occur in any stage of dementia. Wandering can be unsafe if the person should not be ambulating independently or if they are attempting to leave home or a facility resulting in them becoming lost without supervision. It is especially risky during cold winter months when there is the potential for hypothermia because the person won’t realize their need for warm clothing or to return indoors.

Offering opportunities for exercise or other physical movement (like range of motion exercises) several times throughout the day can reduce the urgency for people to move about unsafely. If the person does not want to participate in physical movement, any engaging experiences such as sorting items, arts and crafts, baking, or folding clothes can help to keep residents safe.

A possible intervention for wandering is a device called a **wanderguard**. This device is a bracelet that has a tracking device. The wanderguard can be worn on the wrist or ankle. Some facilities place the wanderguard on a resident’s walker or wheelchair; however, by choosing either of these locations, the wanderguard is only effective when the resident is using that particular device. The wanderguard allows the location of the person wearing it to be

monitored via an app on a phone or other device such as a tablet or laptop. Multiple wanderguards can be activated and monitored at the same time on one device. The wanderguard sounds an alarm when the wearer comes into close proximity with any exits such as elevators, doors, and windows. It may also initiate locking of doors and disabling of elevator buttons to assist in keeping residents safe. See Figure 10.8[26] for an image of a wanderguard placed on a resident's wrist.

Figure 10.8 Wanderguard Bracelet. This image is included on the basis of Fair Use.

26. "wanderguard-blue-tag-2.jpg" by unknown author is included on the basis of Fair Use. Access original image at https://www.stanleyhealthcare.com/products/wanderguard-blue-bracelet.

10.6 Promoting Nutritional Intake

When a client is unable to accurately process information, this can lead to problems with food and fluid intake. They may not understand the process any longer, or they may not be able to follow the commands of opening their mouth, chewing, or swallowing. General considerations for promoting food and fluid intake are discussed in the Chapter 5.7, "Assisting With Nutrition and Fluid Needs" section, and the Chapter 6.2, "Nutrition and Fluid Needs" section also discusses assisting individuals with dementia, developmental disorders, or mental health disorders. The therapeutic techniques of using good communication, displaying empathy, keeping a routine, and reapproaching can also be utilized.

Aspiration risk also increases as dementia worsens, so individuals with advanced dementia may require thickened liquids and mechanical soft or pureed texture diet orders to prevent aspiration risk. Tube feeding may be initiated according to the client's preferences or at the discretion of their appointed power of attorney for health care.

There are several actions a nursing assistant can take to promote food intake. If the patient has difficulty with the motor skills of eating or drinking, determine if sensory deficits may be the issue. If the dining area is noisy, try moving them to a quieter area where it may be easier to hear prompts. Bringing the person near the area where food is prepared can increase their appetite by smelling the aromas of the meal. After the food is served, position the food in the client's direct line of vision. Put a small amount of food on a spoon and hold it gently to the lips, allowing ample time for them to process the feeling and open their mouth. Multitextured foods like cereal in milk can contribute to confusion over whether to chew or swallow. It may take a long time for the person to swallow, or they may have difficulty swallowing. Remind the person to tuck their chin towards their chest to reduce aspiration risk and aid in swallowing. If the person is holding the food in their mouth, gently rub their neck over their throat because this often prompts them to swallow. People with dementia and some with developmental disabilities may "**pocket**" their food, meaning they keep it in their cheeks and don't

swallow it. You may have to use an oral swab after meals to be certain that there is no food left in their mouth.

It can be difficult to tell when a person is full if they have dementia or other communication deficits. When they stop taking in food during a meal and seem full, a good practice is to hold each type of food to their lips one more time to be sure they have had all they want to eat of each food choice. Do the same with fluids.

Documenting food and fluid intake is the same as is required for any resident, but if intake is very minimal, report this to the nurse. When a person exhibits changes in their appetite, is coughing or clearing their throat more frequently, or has trouble managing utensils, report these changes to the nurse so that a speech or occupational therapist can assess the resident. Check the dietary card or care plan so any assistive feeding devices can be utilized to keep the resident as independent as possible and interested in meals.

10.7 Caregiver Role Strain

Eighty-three percent of the assistance provided to people living with dementia in their homes in the United States comes from family members, friends, or other unpaid caregivers. Approximately one quarter of dementia caregivers are also “sandwich generation” caregivers, meaning that they are not only caring for an aging parent, but also providing care for children under age 18. Because of the 24/7 care required, caring for a loved one with dementia can take a devastating toll on caregivers. Compared with other caregivers for people without dementia, twice as many caregivers for people with dementia indicate substantial emotional, financial, and physical difficulties.[1] See Figure 10.9[2] of an image of a caregiver daughter caring for her mother with dementia.

Figure 10.9 Daughter Caregiver

1. This work is a derivative of Nursing Fundamentals by Chippewa Valley Technical College and is licensed under CC BY 4.0
2. “My_mum_ill_with_dementia_with_me.png” by MariaMagdalens is licensed under CC BY-SA 4.0

Signs of caregiver role strain for family caregivers may include these behaviors or thoughts[3]:

- Denial about the disease and its effect on the person who has been diagnosed. For example, the caregiver might say, “I know Mom is going to get better.”
- Anxiety about the future and facing another day. For example, the caregiver might say, “What happens when he needs more care than I can provide?”
- Sleeplessness caused by concerns. For example, the caregiver might say, “What if she wanders out of the house or falls and hurts herself?”
- Difficulties at work especially if the need for time off impact their job duties or the stress and fatigue from caregiving compromise their performance.
- Changes in relationships and roles. Some people find it challenging to assume responsibility for a family member’s needs as a caregiver while still in the role of a spouse or a daughter/son. These feelings can cause additional feelings of stress and grief.

Signs of caregiver role strain for family or paid caregivers may include the following[4]:

- Anger at the person with dementia or frustration that they can’t do the things they used to be able to do. For example, the caregiver might say, “He knows how to get dressed; he’s just being stubborn.”
- Social withdrawal from friends and activities. For example, the caregiver may say, “I don’t care about visiting with my friends anymore.”
- Depression or decreased ability to cope. For example, the caregiver might say, “I just don’t care anymore.”
- Exhaustion that makes it difficult for them to complete necessary daily

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tasks. For example, the caregiver might say, “I’m too tired to prepare meals.”
- Irritability, moodiness, or negative responses.
- Lack of concentration that makes it difficult to perform familiar tasks. For example, the caregiver might say, “I was so busy; I forgot my appointment.”
- Health problems that begin to take a mental and physical toll. For example, the caregiver might say, “I can’t remember the last time I felt good.”

There are resources available to assist home caregivers with dependent family members such as adult day care, respite care, or hospice care. Adult day centers offer people with dementia, developmental disorders, and other chronic mental health illnesses the opportunity to be social and to participate in activities in a safe environment, while also giving their caregivers the opportunity to work, run errands, or take a break. Respite care can be provided at home (by a volunteer or paid service) or in a care setting, such as adult day care or residential facility, to provide the caregiver a much-needed break. If the person with Alzheimer’s or other dementia prefers a communal living environment or requires more care than can be safely provided at home, a residential facility such as assisted living or long-term care may be the best option for meeting the individual’s needs. Different types of facilities provide different levels of care, depending on the person’s needs.[5] These varying levels were presented in the Chapter 2.6, “Health Care Settings” section.

Caregiver role strain can also occur when health care providers feel overwhelmed or unable to appropriately provide the care needed to manage the complex holistic needs of patients dependent upon them for their care. It can also be caused by working extended shifts, working several days in a row without time off, or from the daily repetition of managing clients with high care needs.

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It may be difficult for you as a caregiver to recognize when you are feeling overwhelmed by the responsibility for providing care to many dependent people with high care needs. Although this is the foundation of being a competent and dependable caregiver, providing care when you are not at your best can be unsafe for both you and those you care for. Feelings of stress overload related to client care should be communicated with your supervisor. Working while experiencing these feelings can result in poor decision-making and possibly result in negligence in your care. Here are some things to do to help manage your work responsibilities and stay healthy:

- Get adequate sleep
- Eat a nutritious diet
- Get regular physical activity
- Rotate shifts, units, or clients as able
- Talk with a trusted support person or professional while following HIPAA guidelines
- Take time off as able
- Practice mindfulness, meditation, or yoga
- Get a massage
- Engage in enjoyable leisure activities

Just as you would report a change in behavior for a resident, you should treat yourself in the same manner. Knowing when you need a break or additional assistance is a responsible and professional action. As a coworker, recognize when other staff are experiencing caregiver role strain and offer assistance so they can take a break.

10.8 Learning Activities

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https://wtcs.pressbooks.pub/nurseassist/?p=1185#h5p-60

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1185#h5p-62

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1185#h5p-63

X Glossary

Adaptive behavior: The skills and abilities to live independently.

Agnosia: The failure to recognize or identify objects despite intact sensory function.

Anxiety: A universal human experience that includes feelings of apprehension, uneasiness, uncertainty, or dread resulting from a real or perceived threat.

Anxiety disorder: A condition diagnosed when an individual experiences more than temporary worry or fear that interferes with their daily functioning.

Apraxia: The impaired ability to carry out motor activities despite intact motor function. This means the person can understand instructions and has the ability to complete an action but cannot process the cue to actually perform the task.

Bipolar disorder: A condition that includes shifts in mood from abnormal highs (called manic episodes) to abnormal lows (i.e., depressive episodes) that cause significant impairment on the person's functioning socially or at work.

Delirium: Psychosis caused by medical conditions or substance use that starts suddenly and is reversible by treating the cause of the delirium.

Delusions: Fixed, false beliefs held by a person even though there is concrete evidence they are not true.

Dementia: A general term for loss of memory, language, problem-solving, and other thinking abilities that are severe enough to interfere with daily life. There are several types of dementia, including Alzheimer's disease, vascular dementia, Lewy body dementia, and frontotemporal dementia.

Depressive episode: A condition where the person experiences a depressed mood (feeling sad, irritable, or empty) or a loss of pleasure or interest in activities they normally enjoy. Other symptoms may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness

about the future, thoughts about dying or suicide, disrupted sleep, changes in appetite or weight, and feeling especially tired.

Developmental disorders: Disorders caused by impairments in the brain or central nervous system due to problems that occurred during fetal development.

Hallucinations: A symptom of psychosis when someone perceives seeing, hearing, feeling, tasting, or smelling something that is not actually present. Some people are aware that their hallucinations are not real while others cannot separate their hallucinations from reality.

Manic episode: An elevated or irritable mood with abnormally increased energy that lasts at least one week.

Obstructive sleep apnea: A condition where one's breathing temporarily stops while sleeping.

Panic attacks: Sudden periods of intense fear that come on quickly and reach their peak within minutes. Attacks can occur unexpectedly or can be brought on by a trigger, such as a feared object or situation. People experiencing a panic attack may exhibit symptoms such as sweating, trembling, shortness of breath, chest pain, nausea, increased heart rate, or feelings of losing control.

Perseverating: The act of repeating a task or thought over and over.

Personality disorder: A pattern of inner experiences and behaviors that deviates from the expectations of the individual's culture.

Phobia: An intense fear of specific objects or situations (such as flying, heights, spiders, or social events).

Pocketing: The act of keeping food or medications in one's cheeks and not swallowing it.

Psychosis: Conditions when a person experiences a loss of contact with reality and has difficulty understanding what is real and what is not real. Symptoms of psychosis include hallucinations and delusions.

Substance use disorder (SUD): An illness caused by the repeated misuse of substances such as alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, stimulants, or misuse of other prescription or over-the-counter medications. All these substances taken in excess have a common effect of intensely activating the reward system in the brain so much that normal life activities may be neglected.

Sundowning: Restlessness, agitation, irritability, or confusion that typically begins or worsens as daylight begins to fade and can continue into the night, making it difficult for patients with dementia to sleep.

Trauma: An event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life-threatening and can have lasting adverse effects on their functioning and mental, physical, social, emotional, or spiritual well-being.

Trisomy: A condition of having an extra copy of a chromosome.

Validation therapy: A technique used when caring with individuals with dementia that involves supporting the reality the person is experiencing.

Wandering: The simple act of a person walking around with no purpose due to their confusion regarding their location or environment.

PART XI

CHAPTER 11: APPLY KNOWLEDGE OF BODY SYSTEMS TO CLIENT CARE

11.1 Introduction to Apply Knowledge of Body Systems to Client Care

Learning Objectives

- Apply basic knowledge of body systems to specialize care for chronic conditions
- Promote healthy outcomes for individuals with compromised bodily functions
- Identify signs and symptoms that should be reported to the supervising nurse
- Provide interventions for chronic conditions within the scope of practice for nursing assistants

In this chapter you will learn the basic structure and functions of body systems and apply this knowledge to the individuals for whom you provide care. Age-related changes and common chronic conditions in each body system are outlined with related nursing assistant interventions to promote optimal patient outcomes. Observations related to each condition are discussed, as well as what should be immediately reported to the nurse.

11.2 Cardiovascular System

The cardiovascular system consists of the heart, blood, and blood vessels. (See Figure 11.1.[1]) The heart pumps the blood through the blood vessels. Blood can be viewed as the transportation fluid that transports nutrients to cells and carries wastes away from cells.[2]

1. "Circulatory_System_no_tags.png" by LadyofHats is in the Public Domain
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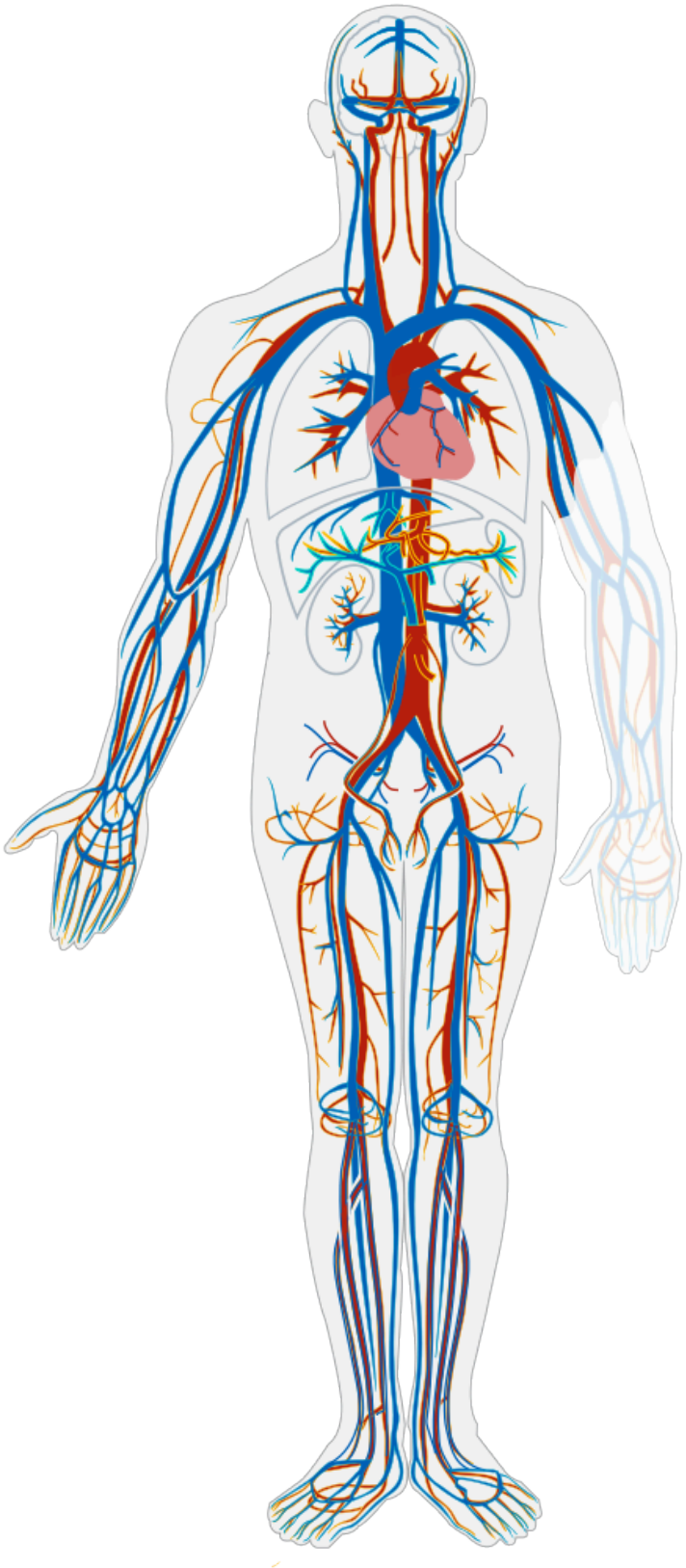

Figure 11.1 The Cardiovascular System

The transportation route to all tissues is an intricate blood vessel network

composed of arteries, veins, and capillaries. See Figure 11.2[3] for an illustration of the blood vessel network. The transportation of nutrients begins in the small intestine where they are absorbed and then transported to the liver through the hepatic portal vein. From the liver, nutrients travel in the blood up to the inferior vena cava blood vessel to the heart. The heart pumps the nutrient-rich blood to the lungs to pick up oxygen. The oxygenated blood returns to the heart, where it is pumped out to tissues in the body through the aorta and the arteries. Arteries become smaller and smaller on their way to cells, so that by the time blood reaches a cell, the vessel's diameter is extremely small, and it is now called a capillary. This reduced diameter of capillaries slows the speed of blood flow and gives cells time to harvest the nutrients and oxygen in the blood and return metabolic wastes to the capillary to be eliminated. Deoxygenated blood containing metabolic wastes is transported back to the heart via veins, and wastes are filtered out by the kidneys and liver.[4]

3. "2101_Blood_Flow_Through_the_Heart.jpg" by OpenStax College is licensed under CC BY 3.0
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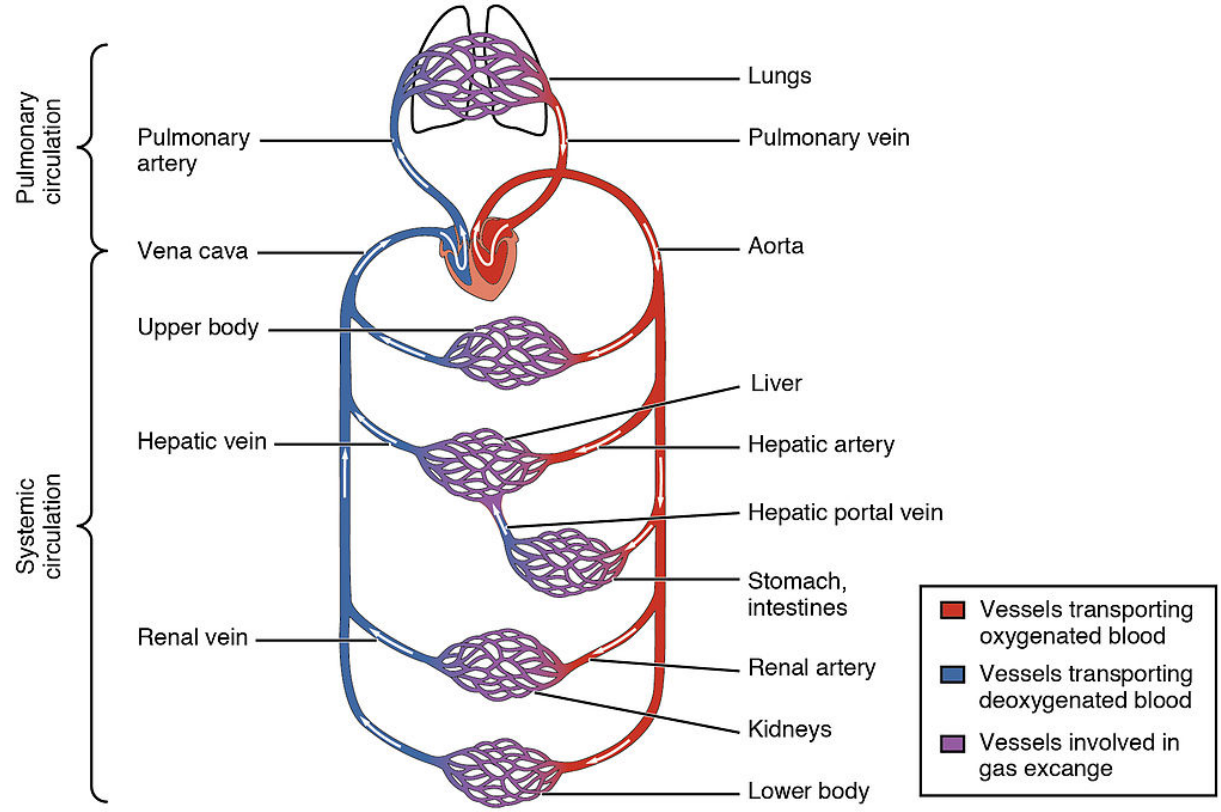

Figure 11.2 Transportation of Nutrients and Elimination of Wastes

As the body ages, the strength and elasticity of the heart and blood vessels decrease, resulting in a decreased ability to regulate blood pressure, distribute oxygen, and remove wastes from the body. These changes can lead to dizziness (and a higher fall risk), fluid retention, edema, fatigue, and decreased stamina to complete daily functions.

In addition to these age-related changes, a diet high in saturated fats causes plaque to be deposited on the walls of the blood vessels, causing further narrowing and decreased blood flow. This decrease in circulation increases the risk for blood clots, heart attacks, and strokes.

Because the cardiovascular system is vital for health, any symptoms related to chest pain, shortness of breath, or lack of oxygenation should be immediately reported to the nurse. **Cyanosis** is a common cardiovascular symptom that refers to bluish discoloration around the mouth and in the extremities (i.e., feet and hands). It occurs when there is decreased oxygenated blood flow to the tissues and should be immediately reported to the nurse. Common nursing assistant interventions for all cardiovascular conditions include

encouraging activity as tolerated; promoting a low fat, low cholesterol diet; motivating individuals to quit smoking; and helping individuals make healthy food choices to maintain a healthy weight. Table 11.2 describes symptoms of common cardiovascular diagnoses and related nursing assistant interventions.

Table 11.2 Common Chronic Cardiovascular Diagnoses and Related Nursing Assistant Interventions[5,6,7,8,9]

5. Mayo Clinic Staff. (2021, October 19). *Atrial fibrillation*. https://www.mayoclinic.org/diseases-conditions/atrial-fibrillation/diagnosis-treatment/drc-20350630
6. Mayo Clinic Staff. (2021, December 10). *Heart failure*. https://www.mayoclinic.org/diseases-conditions/heart-failure/symptoms-causes/syc-20373142
7. Mayo Clinic Staff. (2021, July 1). *High blood pressure (hypertension)*. https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410
8. Mayo Clinic Staff. (2022, May 25). *Coronary artery disease*. https://www.mayoclinic.org/diseases-conditions/coronary-artery-disease/symptoms-causes/syc-20350613
9. Mayo Clinic Staff. (2022, June 11). *Deep vein thrombosis (DVT)*. https://www.mayoclinic.org/diseases-conditions/deep-vein-thrombosis/symptoms-causes/syc-20352557/.

Diagnosis	Definition	Symptoms to Report	Specific Interventions
Heart Failure (HF)	Heart muscle becomes weakened and is unable to adequately pump oxygenated, nutrient-rich blood to the tissues.	Increasing edema, shortness of breath, cyanosis, or rapid weight gain (i.e., more than 2 -3 pounds in 24 hours).	• Obtain daily or weekly weights as prescribed. • Apply TED hose as prescribed. • Apply oxygen as ordered. • Elevate edematous extremities. • Monitor fluid intake and output. • Implement fluid restrictions as prescribed. • Seek emergency assistance from the nurse or in outpatient settings call 911 for individuals with sudden chest pain; severe shortness of breath; or coughing up white or pink, foamy mucus.

Hypertension (HTN) or High Blood Pressure	Increased pressure of blood flow against the arteries. HTN is often called the "silent killer" because there are few recognizable symptoms.	Dizziness and/or headache.	• Promote a low sodium diet. • Promote stress management activities. • Encourage regular appointments with health care provider to monitor blood pressure.
Atrial Fibrillation	Irregular heart rhythm that can cause decreased blood pressure, blood clots, and strokes.	Fatigue, dizziness, chest pain, shortness of breath, and/or palpitations.	• Limit alcohol. • Promote follow-up appointments with health care provider to monitor heart rhythm.

Coronary Artery Disease (CAD)	Cholesterol deposits (plaque) in the heart and arteries cause decreased oxygenated blood flow.	Signs and symptoms occur when the heart muscle doesn't get enough oxygen-rich blood, causing chest pain and shortness of breath. A complete blockage can cause a heart attack.	• Smoking, high blood pressure, high cholesterol, diabetes, obesity, or a strong family history of heart disease increases the risk for coronary artery disease. Encourage individuals with these conditions to seek care from a health care provider to prevent a heart attack. • If an individual is experiencing sudden chest pain or shortness of breath, obtain emergency assistance from the nurse or call 911 in outpatient settings.

Deep Vein Thrombosis (DVT)	A DVT is a blood clot in a deep vein, typically occurring in the legs. DVT can be serious because blood clots in the veins can break loose and travel through the bloodstream and get stuck in the lungs, called a pulmonary embolism (PE). PEs block oxygenated blood flow and are life-threatening.	Unilateral leg swelling, redness, warmth, and/or tenderness or calf cramping.	• Bed rest, lack of movement, and surgery can cause blood clots to form. Encourage movement as tolerated or perform range of motion exercises. • Apply sequential compression devices (SCDs) to post-op patients as prescribed to prevent DVT. Do not apply SCDs if signs of a DVT are present. • Immediately notify the nurse of symptoms of a suspected DVT. Seek emergency assistance or call 911 in outpatient settings for signs of a PE such as sudden shortness of breath, chest pain, or coughing up blood.

11.3 Digestive System

There are four steps in the digestive process. The first step is ingestion, the intake of food into the digestive tract. Ingestion may seem a simple process, but it includes smelling food as it is prepared and served, thinking about food and making food choices, and the involuntary release of saliva in the mouth to prepare for food entry. After food enters the mouth, the next steps of mechanical and chemical digestion of food begin. **Mechanical digestion** starts with chewing when teeth crush and grind large food particles into smaller pieces that are easy to swallow. **Chemical digestion** of food involves enzymes found in saliva that break down particles into smaller components.[1]

In the mouth, saliva provides lubrication and enables food to move downward through the **esophagus** (a muscular tube that goes from the mouth to the stomach). This slippery mass of partially broken-down food is called a **bolus** that moves down the digestive tract after it is swallowed. Swallowing is initially voluntary because it requires conscious effort to push the food with the tongue back towards the throat, but then it proceeds involuntarily through the gastrointestinal tract, meaning it proceeds without conscious control.

As the bolus is swallowed, it is pushed from the mouth through the **pharynx** (i.e., throat) and into the esophagus. As the bolus travels through the pharynx, a small flap called the **epiglottis** closes to keep food from going into the **trachea** and down into the lungs. Peristaltic contractions in the esophagus (referred to as **peristalsis**) propel the bolus down to the stomach. At the junction between the esophagus and stomach, there is a sphincter that remains closed until the food bolus approaches. The pressure of the food bolus stimulates the lower esophageal sphincter to relax and open, causing the food to move from the esophagus into the stomach. The mechanical digestion of food continues by the muscular contractions of the stomach and

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small intestine that mash, mix, and continue to propel the bolus down the digestive tract.[2]

In the **small intestine**, nutrients are absorbed from the bolus and then transported throughout the body by the cardiovascular system. The small intestine is typically 25 to 30 feet in length with a smaller diameter than the large intestine. After passing through the small intestine, the bolus enters the large intestine. The **large intestine** is about 8 to 10 feet in length with a larger diameter than the small intestine. Water is absorbed from the bolus in the large intestine, making it solid and formed. It eventually reaches the anus and is expelled as feces.[3] See Figure 11.3[4] for an illustration of digestion.

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3. This work is a derivative of Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program and is licensed under CC BY NC SA 4.0
4. "Digestive-system-overview.jpg" by Allison Calabrese is licensed under CC BY 4.0. Access for free at https://pressbooks.oer.hawaii.edu/humannutrition/chapter/the-digestive-system-2/

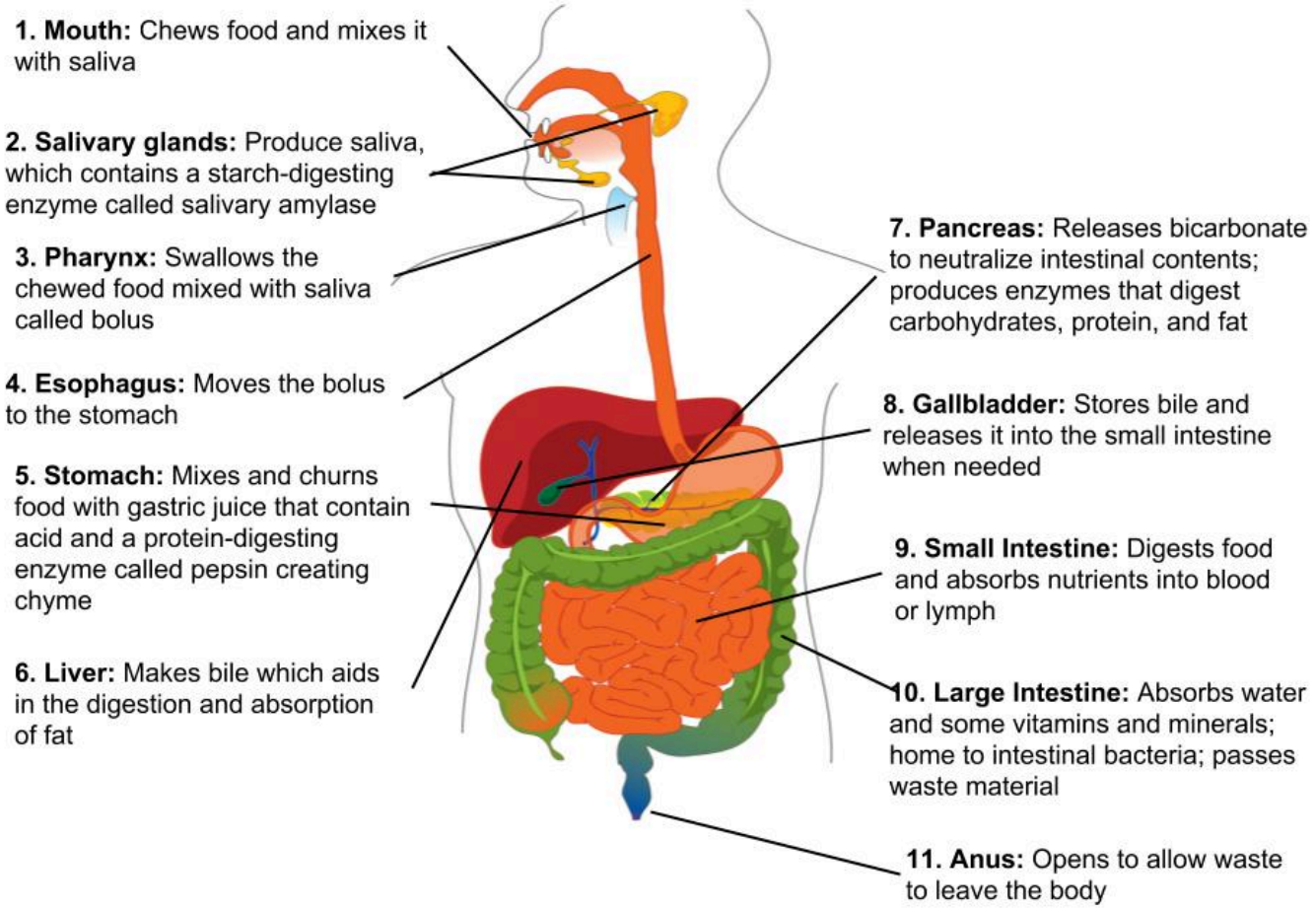

Figure 11.3 The Digestive System

View the following Khan Academy video for an overview of the digestive process[5]: The Digestive System.

As people age, many age-related changes occur in the digestive system. The condition of one's teeth (referred to as **dentition**) often declines during the aging process, resulting in the decreased ability to chew foods with a dense or tough consistency (such as meat and fibrous vegetables). Production of saliva also decreases, increasing the risk for choking. Additionally, many

5. Khan Academy. (n.d.). *The digestive system* [Video]. Khan Academy. All rights reserved. https://www.khanacademy.org/science/biology/crash-course-bio-ecology/crash-course-biology-science/v/crash-course-biology-127

medications cause a side effect of dry mouth that further contributes to the risk of choking. The epiglottis may weaken and allow food or fluids to enter the lungs that can cause aspiration pneumonia. Absorption of nutrients in the small intestine is less efficient, which can cause malnutrition even though food intake may be sufficient. Lastly, the slowing of peristalsis allows the bolus to remain in the large intestine for longer periods of time. As water continues to be absorbed, the fecal matter becomes drier and more difficult to expel, resulting in constipation and possible bowel obstruction.

A bowel obstruction stops the bolus and other digestive contents from reaching the part of the intestine beyond the blockage. The lack of peristalsis that occurs during a bowel obstruction can cause the large intestine to twist upon itself, cutting off circulation and causing tissue death. The area of the intestine experiencing tissue death may require surgical removal. Sometimes the remaining parts of the healthy intestine can be reattached to regain normal bowel function. However, if reattachment is not possible, an opening (called a **stoma**) is surgically created in the abdominal wall where the healthy part of the intestine is attached. (This type of surgery to create a stoma in the colon is referred to as a **colostomy**.) Fecal matter is collected in a drainage bag that attaches to the stoma via a device commonly called a wafer. In this manner, elimination occurs through the stoma into a pouch rather than through the rectum. Bowel obstructions, as well as other gastrointestinal conditions such as colon cancer, severe infection, fistulas, or colon injuries, can lead to the placement of a stoma. See Figure 11.4 for an image of a stoma, Figure 11.5[6] for an image of the wafer to which the drainage bag attaches, and Figure 11.6[7] for an image of an attached drainage bag.

6. "Ostomy_wafer_being_worn_by_an_ileostomy_patient.jpg" by Eric Polsinelli (VeganOstomy) is licensed under CC BY 4.0
7. "Ileostomy_2016-09-09_4158.jpg" by Salicyna is licensed under CC BY-SA 4.0

Figure 11.4 Stoma

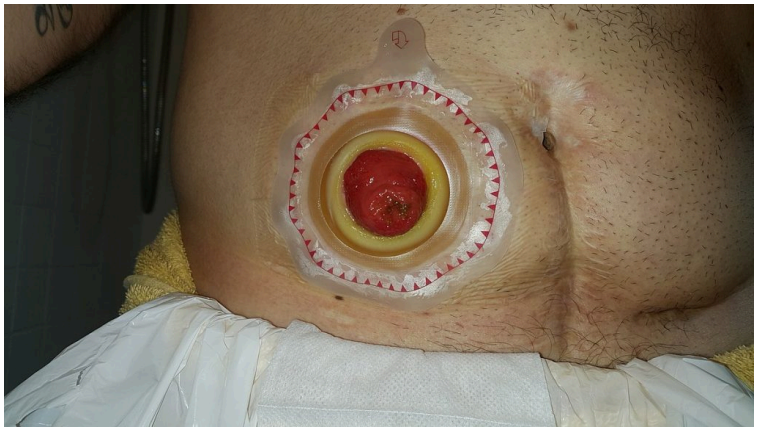

Figure 11.5 Stoma With a Wafer Placed to Attach the Drainage Bag

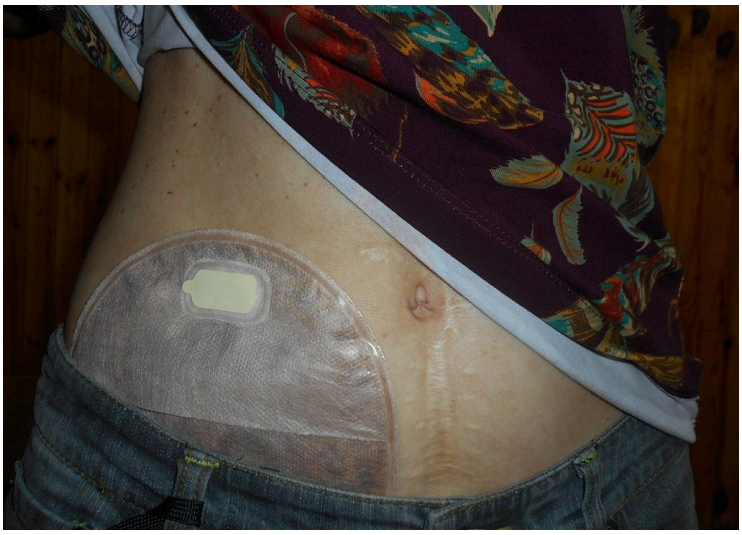

Figure 11.6 Drainage Bag Attached to a Wafer

The most effective interventions for improving digestive function are to encourage intake of fiber, water, and other fluids, as well as promoting activity as tolerated. Fiber adds bulk to the bolus to keep it moving through the large intestine. Fiber is found in plants, so any food that originates from growing in the ground contains fiber. Examples of high-fiber foods include grains in bread and cereal, rice, barley, quinoa, fruits, and vegetables. Whole grains are preferred because they contain more fiber than processed grains. Water and other fluids aid in peristaltic movement, and activity increases circulation to improve digestive function. See Table 11.3 for common digestive system diagnoses, associated symptoms to report to the nurse, and specific interventions the nursing assistant can implement to promote digestive function. Refer to section Chapter 5.7, "Assisting With Nutrition and Fluid Needs" for additional review of digestive interventions.

Table 11.3 Common Digestive System Diagnoses and Specific Nursing Assistant Interventions[8,9,10,11,12]

8. Mayo Clinic Staff. (2021, May 12). *Hemorrhoids*. https://www.mayoclinic.org/diseases-conditions/hemorrhoids/symptoms-causes/syc-20360268
9. Mayo Clinic Staff. (2021, December 1). *Irritable bowel syndrome*. https://www.mayoclinic.org/diseases-conditions/irritable-bowel-syndrome/symptoms-causes/syc-20360016
10. Mayo Clinic Staff. (2020, May 22). *Gastroesophageal reflux disease (GERD*). https://www.mayoclinic.org/diseases-conditions/gerd/symptoms-causes/syc-20361940
11. Mayo Clinic Staff. (2022, March 5). *Lactose intolerance*. https://www.mayoclinic.org/diseases-conditions/lactose-intolerance/symptoms-causes/syc-20374232
12. Mayo Clinic Staff. (2022, June 16). *Milk allergy*. https://www.mayoclinic.org/diseases-conditions/milk-allergy/symptoms-causes/syc-20375101

Diagnosis	Definition	Symptoms to Report	Nursing Assistant Interventions
Hemorrhoids	Swollen vein(s) in the rectum and anus caused by straining from constipation, during childbirth, or from regular heavy lifting. Risk increases with aging.	Bleeding during bowel movements should be reported to the nurse for follow-up. If a hemorrhoid becomes strangulated or a clot forms in a hemorrhoid, it can cause severe pain, swelling, inflammation, or a hard lump near the anus and should be immediately reported.	• Apply topical hemorrhoid cream to reduce pain as ordered. • Gently cleanse anal area. • Discourage sitting for long periods of time, especially on the toilet. • Encourage use of the bathroom as soon as the urge is felt to have a bowel movement. • Seek emergency assistance for large amounts of rectal bleeding or associated light-headedness, dizziness, or faintness.

Irritable Bowel Syndrome (IBS)	A chronic disorder causing cramping, abdominal pain, bloating, gas, diarrhea, and constipation. Symptoms may be triggered by stress or specific foods.	Increased symptoms.	• Avoid foods that trigger an individual's symptoms. • Avoid gas-producing foods like broccoli and cauliflower. • Report a change in bowel habits or rectal bleeding to the nurse.

Gastroesophageal Reflux Disease (GERD)	Stomach acid flows back into the esophagus, causing symptoms often referred to as “heartburn.”	Burning sensation in chest, regurgitation of food or sour liquid, or chronic cough.	• Avoid eating large meals or eating late at night. • Avoid foods that trigger symptoms, such as fatty or fried foods, tomato sauce, alcohol, chocolate, mint, garlic, onion, and caffeine. • Avoid beverages that trigger symptoms, such as alcohol or coffee. • Encourage quitting smoking. • Discourage lying down after a meal. • Elevate the head of the bed 6 to 9 inches. • Avoid wearing tight-fitting clothing that puts pressure on the abdomen.

Food Intolerance	An inability to digest specific foods. Common food intolerances are lactose intolerance (dairy) or gluten intolerance (wheat).	Increased gas, bloating, diarrhea, and abdominal cramping.	• Avoid trigger foods. • For lactose intolerance, lactose-reduced dairy products may be eaten, or a lactase enzyme may be added to milk to break down the lactose. • For gluten intolerance, oat, rice, or corn products may be substituted for wheat.

Food Allergies	An immune system reaction to a specific food that can range from mild to life-threatening.	Immediately report hives (a new rash); swelling of the lips, tongue, or throat; or problems breathing.	• Check the client's dietary orders before serving meal trays and ensure correct foods are provided. Common food allergies include shellfish, peanuts, and eggs. • Severe food allergies can cause anaphylaxis, a life-threatening reaction that blocks breathing and requires emergency assistance.

11.4 Endocrine System

Endocrine glands secrete hormones that affect the functioning of other organs throughout the body and are transported by the circulatory system. The glands in the endocrine system are the pituitary, thyroid, parathyroid, adrenals, thymus, pineal, pancreas, ovaries, and testes, as seen in Figure 11.7.[1]

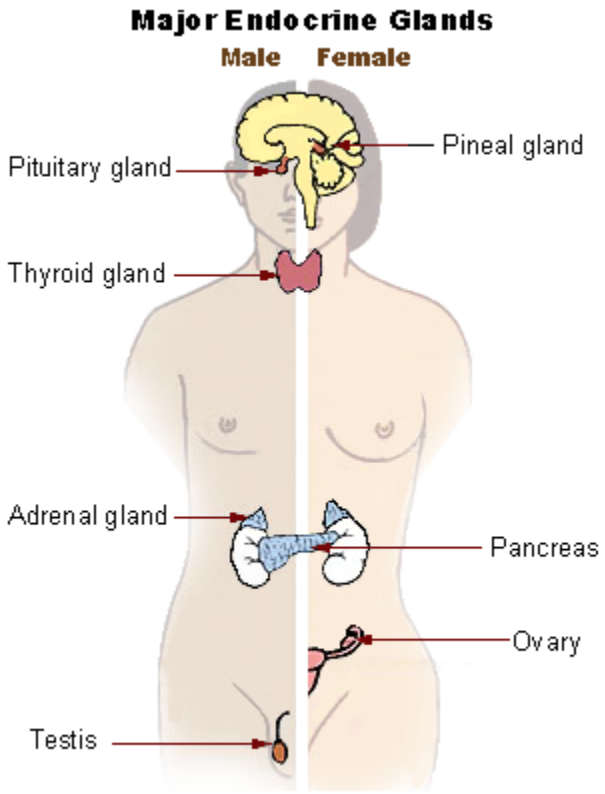

Figure 11.7 The Endocrine System

The functions of the endocrine system are connected to an individual's nutrition. The endocrine system is responsible for regulating appetite, nutrient absorption, nutrient storage, and nutrient usage, as well as contributing to other body functions such as reproduction. The most notable connection between nutrition and the functions of the endocrine system is

1. "Illu_endocrine_system_New.png" by US Government is in the Public Domain

how unhealthy dietary patterns are linked to obesity and the development of diabetes.[2]

The pancreas is an endocrine gland that makes insulin, the hormone that allows cells to use glucose for energy. Insulin is released after an individual eats a meal based on the amount of calories they consumed. The function of the pancreas is affected by a medical condition called diabetes. The Centers for Disease Control and Prevention (CDC) estimates that 11 percent of the U.S. population has diabetes, and 49 percent of adults over age 65 have prediabetes.[3]

> See maps of diabetes and obesity by county at CDC's Diabetes and Obesity Maps web page.

In type 1 diabetes, the pancreas becomes unable to make insulin. In type 2 diabetes, obesity causes changes in muscle, fat, and liver cells that leads to their diminished response to insulin, referred to as "insulin-resistance." When cells are resistant to insulin, they do not take in enough glucose to make energy, resulting in high levels of glucose in the blood. Chronically elevated blood glucose damages other tissues over time, increasing the individual's risk for cardiovascular disease, kidney disease, nerve damage, and eye disease. The nerve damage causes pain and numbness in the feet and lower legs that can increase risk for falls.[4]

Individuals with diabetes must frequently measure their blood glucose level to keep it in normal range with medications prescribed by their health care provider. Blood glucose levels are typically checked in individuals with

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3. Centers for Disease Control and Prevention. (2022, March 9). *Diabetes data and statistics.* https://www.cdc.gov/diabetes/data/index.html
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diabetes from one to four times per day. This measurement is typically performed by the nurse, but some states allow nursing assistants to receive additional training to complete this procedure.

People with diabetes are typically prescribed oral medications or injectable insulin to keep their blood glucose in a healthy range. Too much or not enough insulin can cause life-threatening reactions so it must be administered cautiously. In hospitals and long-term care centers, insulin is administered by a nurse.

Too much insulin or not enough carbohydrate intake results in very low blood sugar (referred to as **hypoglycemia**) that can cause a coma if it is not quickly addressed. Nursing assistants must observe for signs of low blood sugar in clients with diabetes and immediately report them to the nurse for follow-up. Signs of low blood sugar include confusion, irritability, shakiness, cold and clammy skin, sweating, hunger, and anxiety.[5]

When not enough insulin or other diabetic medications are administered for the amount of carbohydrates an individual consumes, blood glucose levels become elevated (i.e., **hyperglycemia**). Symptoms of elevated blood glucose include increased urination; increased thirst and hunger; a fruity breath odor; warm, dry skin; and fast, deep breathing. These symptoms should be immediately reported to the nurse.[6]

Because nutritional intake affects an individual's blood glucose, nursing assistants play a helpful role in encouraging healthy diet choices for individuals with diabetes. Encourage clients to avoid eating refined sugar and highly processed foods and increase their intake of whole grains and non-starchy vegetables such as broccoli, spinach, and green beans. Encouraging residents to be as active as possible can also help manage their blood glucose levels.[7]

If neuropathy occurs, the individual's skin should be diligently inspected daily,

5. Centers for Disease Control and Prevention. (2022, June 1). *Diabetes*. https://www.cdc.gov/diabetes/index.html
6. Centers for Disease Control and Prevention. (2022, June 1). *Diabetes*. https://www.cdc.gov/diabetes/index.html
7. Centers for Disease Control and Prevention. (2022, June 1). *Diabetes*. https://www.cdc.gov/diabetes/index.html

especially on the bottoms of their feet and in between their toes. Well-fitted shoes should be worn, and socks should be carefully placed so the seams do not cause irritation. Individuals with neuropathy do not feel skin irritations or open areas, and they can become infected quickly. If left untreated, severe infection can lead to amputation. Due to these risks, nursing assistants should not trim the nails of diabetic patients.

11.5 Integumentary System

Review information about the integumentary system in Chapter 5.5, "Skin Care" and Chapter 8.2, "Moving and Positioning Clients." These sections can be reviewed for age-related changes and interventions to promote skin integrity.

11.6 Musculoskeletal System

The musculoskeletal system includes muscles, bones, and connective tissues. The human skeleton consists of 206 bones and other connective tissues called ligaments, tendons, and cartilage. See Figure 11.8[1] for an illustration of the major bones of the body. Ligaments connect bones to other bones, tendons connect bones to muscles, and cartilage provides bones with flexibility and acts as a cushion in the joints between bones.

1. "701 Axial Skeleton-01.jpg" by OpenStax is licensed under CC BY 3.0

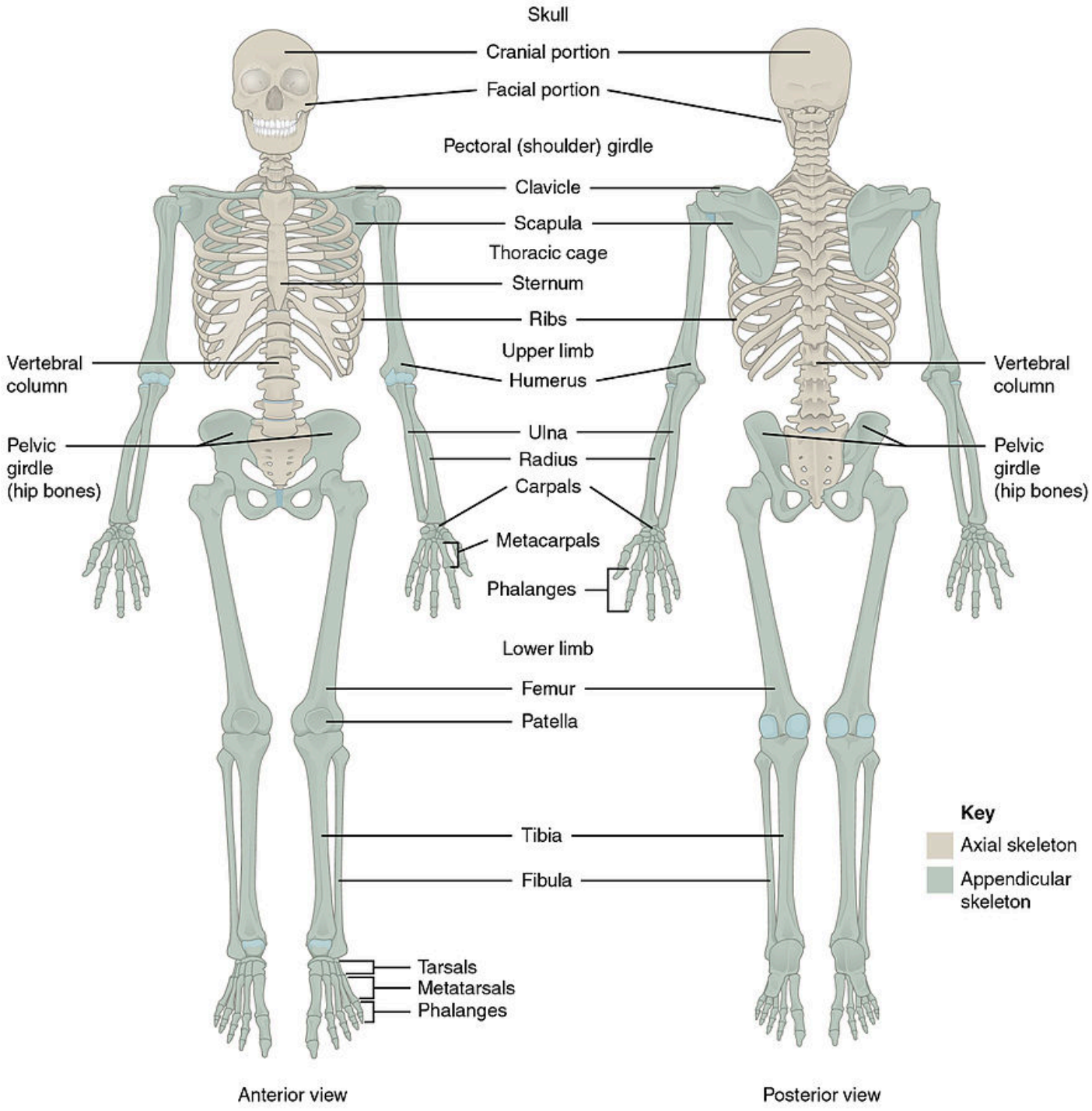

Figure 11.8 Major Bones of the Body

The skeleton's bones and connective tissues work together with muscles to provide a variety of functions and multiple types of movements. **Gross motor skills** are large movements controlled by the legs and trunk of the body. **Fine motor skills** are small movements such as those by the wrists and hands. The skeleton also provides structural support and protection for all the other organ systems in the body. The skull, or cranium, is like a helmet and protects

the eyes, ears, and brain. The ribs form a cage that surrounds and protects the lungs and heart.[2]

In addition to producing movement, protecting organs, and providing structural support, the bones have several other functions. Bone marrow synthesizes red blood cells, white blood cells, and platelets, and bones store minerals such as calcium, phosphorus, and magnesium. Although bone tissue may look inactive at first glance, bones are continuously breaking down and reforming at the microscopic level. Bones also contain a complex network of canals, blood vessels, and nerves that allow for nutrient transport and communication with other organ systems.[3]

There are three types of muscle tissue, including skeletal muscle, cardiac muscle, and smooth muscle. **Skeletal muscle** produces movement, assists in maintaining posture, protects internal organs, and generates body heat. Skeletal muscles are voluntary, meaning a person is able to consciously control them, but they also depend on signals from the nervous system to work properly. See Figure 11.9[4] for an illustration of skeletal muscle. To move the skeleton, the tension created by the contraction of the skeletal muscles is transferred to the **tendons**, strong bands of dense, regular connective tissue that connect muscles to bones.[5]

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3. This work is a derivative of Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program and is licensed under CC BY NC SA 4.0
4. "1105 Anterior and Posterior Views of Muscles.jpg" by OpenStax is licensed under CC BY-SA 4.0
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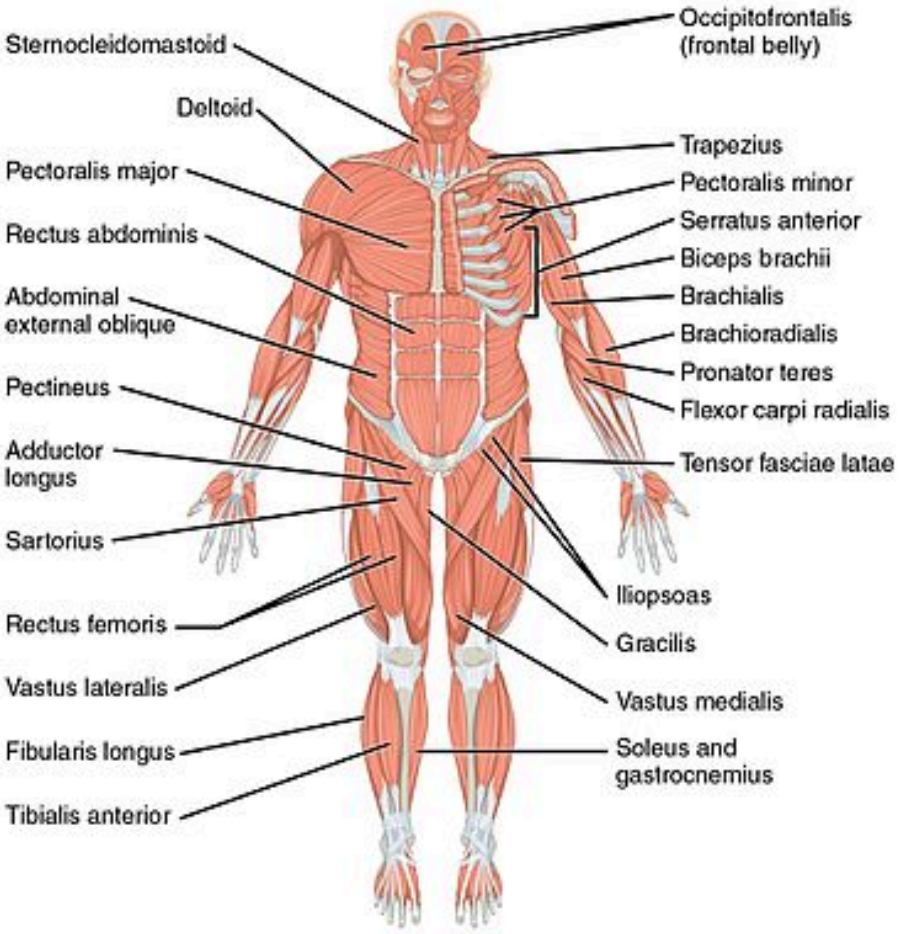

Major muscles of the body. Right side: superficial; left side: deep (anterior view)

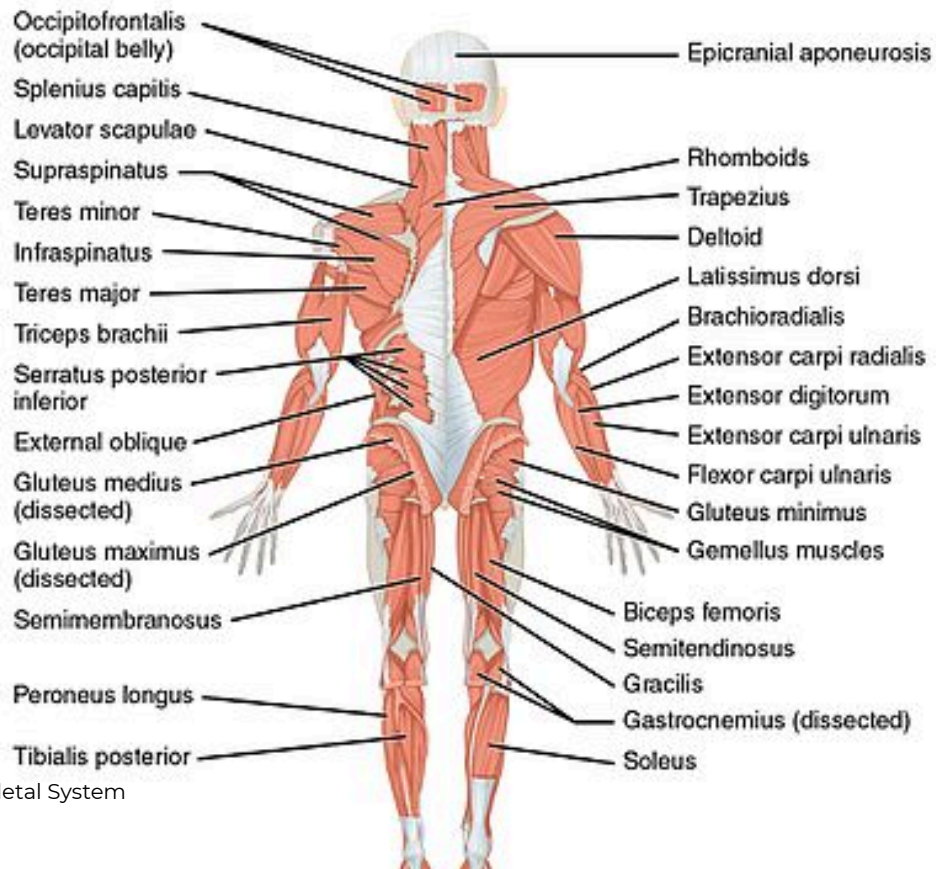

Figure 11.9 Major Muscles of the Body

Other types of muscles are involuntary and are controlled by the autonomic nervous system. **Involuntary muscle** includes the **smooth muscle** within the digestive system and respiratory system, as well as **cardiac muscle** in the heart that pumps blood throughout the body.[6]

Review sections Chapter 8.3, "Promoting Joint Mobility and Activity," Chapter 9.4, "Complications of Immobility," and Chapter 9.6, "Promoting Independence During ADLs" regarding problems that may occur in the musculoskeletal system, as well as how to assist clients in keeping the musculoskeletal system healthy. Remember that clients maintain range of motion, flexibility, and bone health by being as active as possible, especially with weight-bearing activity. Nursing assistants should promote ambulation as tolerated and encourage clients to move about independently as much as possible. Nursing assistants can also encourage protein diet choices to assist with tissue growth and repair and calcium to assist with bone health. Lean protein, such as low-fat meats and dairy products, are examples of healthy protein choices. Dairy products, soy milk, almond milk, and coconut milk are good sources of calcium, as well as green leafy vegetables like spinach, kale, and romaine.[7]

A common condition in the musculoskeletal system is **osteoarthritis**, a medical diagnosis that refers to inflammation of joints due to wear and tear throughout one's life. Interventions that nursing assistants can perform to help alleviate discomfort associated with osteoarthritis are discussed in section Chapter 6.4, "Comfort Measures" and include measures such as ice, heat, topical medications, repositioning, and massage. Effectiveness of measures will vary by individual, so it is important to allow each individual to choose what is most helpful to alleviate their arthritis.

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11.7 Urinary System

The urinary system includes the kidneys, ureters, bladder, and urethra. It has many functions including filtering the blood and eliminating wastes, regulating blood and urine pH levels, and working in collaboration with the cardiovascular system to regulate blood pressure. The urinary system also provides reproductive functions in the prostate for males. The kidneys also release a hormone that stimulates red blood cell production and synthesizes vitamin D to assist in bone health. Each of these functions is vital to well-being and survival.[1] See Figure 11.10[2] for an illustration of the structures of the urinary system.

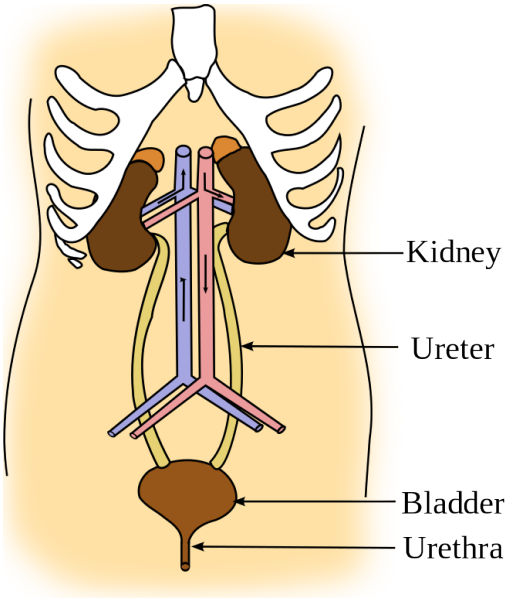

Figure 11.10 The Urinary System

Blood is filtered through the kidneys, and the filtrate is transformed into urine at a relatively constant rate throughout the day. The urine travels from the kidneys through the ureters to the bladder. The bladder stores urine and signals the brain when full (around 300 mL). It stores urine until a convenient time for elimination or voiding, and then the brain allows the urethra to release the urine.[3]

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2. "Illu_urinary_system.svg" by Thstehle is in the Public Domain
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Urine is a fluid of variable composition. Urine characteristics change depending on influences such as water intake, exercise, environmental temperature, nutrient intake, and other factors. Characteristics such as color and odor provide a rough estimate of a person's state of hydration. For example, after exercising or working outside on a hot day and sweating heavily, urine will become darker with a slight odor.[4] See Figure 11.11[5] for ranges of urinary color related to hydration status. Review the subsection "Observation and Documentation of Urinary Output" in Chapter 5.8 for other characteristics that nursing assistants should document when assisting clients to void.

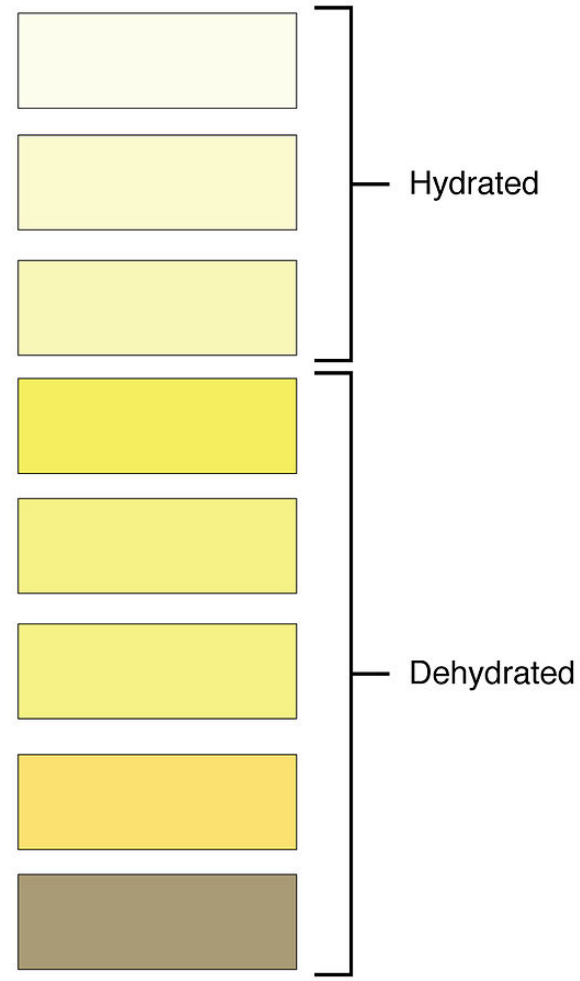

Figure 11.11 Urine Color Related to Hydration Status

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5. "2601_Urine_Color_Chart.jpg" by OpenStax College is licensed under CC BY 3.0

Urine volume varies considerably. The normal range of urine output for an adult is one to two liters per day. The kidneys must produce a minimum urine volume of about 500 mL/day to adequately eliminate wastes from the body. Output below this level can be caused by severe dehydration or kidney disease.[6]

The effects of failure of various parts of the urinary system can range from incontinence to kidney disease with a life-threatening loss of the ability to eliminate wastes. When the kidneys begin to fail, several symptoms may occur such as weakness, shortness of breath, widespread edema (swelling), rising potassium levels, and heart arrhythmias.[7]

Failure of voluntary control of urination is called **incontinence**. Incontinence may occur if the connection between the brain and the urethra is disrupted or there is loss of muscle tone in the urinary system. There are several types of incontinence. Incontinence in small amounts (i.e., leaking or dribbling) can occur from coughing, laughing, or moving when the bladder is full. Some people feel an urge to void and then must go immediately or incontinence may occur if they are not near a restroom. Some people have total loss of control of urination, resulting in the entire contents of their bladder being released involuntarily.[8] Refer to section Chapter 5.8, "Assisting With Toileting" to review appropriate interventions to help prevent incontinence.

The prostate gland encompasses the urethra in males. As males age, the prostate gland grows, known as benign prostate enlargement (BPE). Because prostate enlargement puts pressure on the urethra, the urine may become blocked. Older men may experience difficulty starting the stream of urine or become unable to completely empty their bladder. If the blockage becomes significant, it can cause infection when urine remains in the bladder for long periods of time. In these cases, a urinary catheter may be placed to reduce

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the retention of urine, or a surgical procedure may be completed to reopen the urethra.

See Table 11.7 for common chronic conditions, symptoms to report, and interventions nursing assistants can provide to promote urinary health.

Table 11.7 Common Chronic Conditions of the Urinary System and Related Interventions[9,10,11,12]

9. Mayo Clinic Staff. (2021, December 17). *Urinary incontinence*. https://www.mayoclinic.org/diseases-conditions/urinary-incontinence/symptoms-causes/syc-20352808
10. Mayo Clinic Staff. (2021, April 23). *Urinary tract infection (UTI).* https://www.mayoclinic.org/diseases-conditions/urinary-tract-infection/symptoms-causes/syc-20353447
11. Mayo Clinic Staff. (2022, June 3). *Kidney stones.* https://www.mayoclinic.org/diseases-conditions/kidney-stones/symptoms-causes/syc-20355755
12. Mayo Clinic Staff. (2021, September 3). *Chronic kidney disease.* https://www.mayoclinic.org/diseases-conditions/chronic-kidney-disease/symptoms-causes/syc-20354521

Diagnosis	Definition	Symptoms to Report	Nursing Assistant Interventions
Urinary Incontinence	Inability to control the elimination of urine.	Change in the frequency or amount of incontinence.	• Implement a toileting schedule. • Prompt residents to void before they feel the urge to do so. • If the client is unable to communicate the need to void, check their incontinence product at least every two hours to keep the skin dry and free of breakdown.

Urinary Tract Infection (UTI)	Infection of any part of the urinary system.	Increased frequency of voiding; pain, itching, or burning with voiding; voiding in small amounts; strong odor; dark or cloudy urine; and/or sediment or blood in the urine. A sudden increase in confusion can also indicate infection.	• Provide good perineal hygiene. • Implement a toileting schedule. • Encourage fluids for good hydration as appropriate. • Assist with activity as tolerated. • Wipe from front to back.
Kidney Stones	Deposits of minerals from concentrated urine that form a mass in the kidneys.	Increased pain in the abdomen or pain with voiding.	• Encourage fluids as appropriate. • Promote activity as tolerated. • Encourage prescribed diet to prevent formation of stones.

Chronic Kidney Failure	Kidneys are unable to adequately filter and remove wastes and fluids from the body.	Puffiness around the eyes, frequent urge to urinate, urination in increasingly smaller amounts, dry and itchy skin, and/or fatigue.	• Encourage prescribed renal diet (decreased amounts of sodium, potassium, protein, and phosphorus). • Follow prescribed fluid restrictions and provide comfort measures for associated dry mouth such as hard candy, ice chips, or breath spray. • Encourage quitting smoking. • Assist in maintaining healthy blood glucose levels in people with diabetes. • Encourage physical activity as tolerated.

11.8 Neurological System

The central nervous system consists of the brain, spinal cord, and other nerves in the body as seen in Figure 11.12.[1] The main function of the central nervous system is to utilize the senses of sight, touch, hearing, taste, and smell to detect changes in the external environment and create a reaction to them. For instance, if your finger comes into contact with a thorn on a rose bush, a sensory neuron transmits a signal from your finger up through the spinal cord and into the brain. Another neuron in the brain sends a signal that travels back to the muscles in your hand and stimulates muscles to contract so that you jerk your finger away. All this happens within a tenth of a second. Nerves communicate with each other via chemicals built from amino acids called **neurotransmitters**. Eating adequate protein from a variety of sources will ensure the body gets all the different amino acids that are important for central nervous system function.[2]

1. "Nervous system diagram.png " by unknown is licensed under CC BY-NC-SA 3.0. Access for free at https://med.libretexts.org/Bookshelves/Nursing/Book%3A_Clinical_Procedures_for_Safer_Patient_Care_(Doyle_and_McCutcheon)/02%3A_Patient_Assessment/2.07%3A_Focused_Assessments
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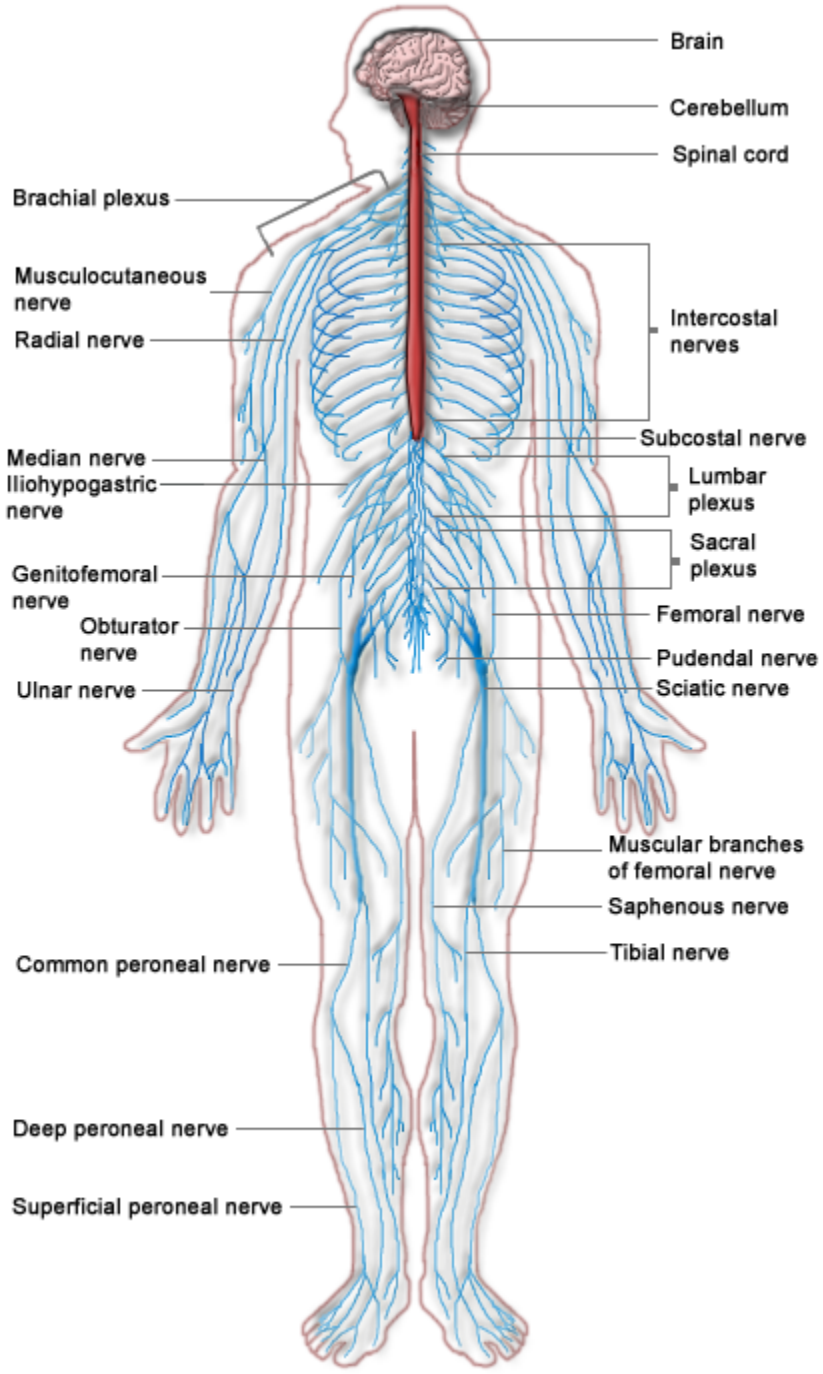

Figure 11.12 The Central Nervous System

The brain's cognitive functions include language processing, learning, perceiving, and thinking. The brain's main fuel for these functions is glucose. Too high or too low levels of blood glucose can cause sudden changes in cognitive functioning, and chronically elevated blood-glucose levels can damage brain cells as previously discussed in the "Endocrine System" section of this chapter.

As people age, the transmission of neurons slows, causing slower reactions to environmental stimuli. This longer reaction time can increase their risk for falls and other safety concerns. Functioning of the senses also declines, as previously discussed in section Chapter 9.7, "Assisting With Sensory Deficits." Nursing assistants can assist with this general decline and improve safety by ensuring residents have their glasses, hearing aids, and other adaptive aids in place. Healthy nutritional choices such as foods rich in omega-3 fatty acids and antioxidants can be encouraged to keep the neurosensory system healthy, and activity can be promoted. Having conversations with residents and promoting social interaction whenever possible is one of the easiest ways to encourage word recall and stimulate thinking. Assisting residents to attend activity department offerings, such as board, card, and word games, or looking at memorabilia can help clients maintain their neurological health.[3]

Common conditions related to the neurosensory system include strokes, seizures, and dementia. Refer to section Chapter 3.2, "Emergency Situations" to review the appropriate responses for individuals suspected of having a stroke or seizure. Refer to section Chapter 10.5, "Caring for Clients With Dementia" to review interventions for individuals with dementia. See Table 11.8 regarding two common chronic conditions of the neurosensory system and related nursing assistant interventions. Keep in mind that a difficult aspect of these neurological diagnoses is knowing that symptoms will continue to worsen, so individuals with these diagnoses and their loved ones should be supported emotionally and monitored for signs of depression.

Table 11.8 Common Chronic Conditions of the Neurosensory System and Related Interventions[4,5]

3. This work is a derivative of Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program and is licensed under CC BY NC SA 4.0
4. Mayo Clinic Staff. (2022, March 24). *Parkinson's disease*. https://www.mayoclinic.org/diseases-conditions/parkinsons-disease/symptoms-causes/syc-20376055
5. Mayo Clinic Staff. (2022, February 22). *Amyotrophic lateral sclerosis (ALS)*. https://www.mayoclinic.org/diseases-conditions/amyotrophic-lateral-sclerosis/symptoms-causes/syc-20354022

Diagnosis	Definition	Symptoms to Report	Nursing Assistant Interventions
Parkinson's Disease	Decreased production of dopamine that causes slowed movement, impaired coordination and balance, tremors, and speech difficulties.	Changes in strength, gait, mobility, or cognition.	• Monitor safety and fall risk. • Keep assistive devices within reach. • Allow more time to complete ADLs. • Encourage physical activity as tolerated.

Amyotrophic Lateral Sclerosis (ALS or Lou Gehrig's Disease)	Decline in nerve cell function results in progressive muscle weakness. Loss of movement begins in extremities with eventual death from loss of function of respiratory muscles.	Increased difficulty breathing, swallowing, or speaking.	• Encourage healthy diet choices that are easy to swallow. • Promote activity as tolerated. • Assist with prescribed stretching activities. • Assist with prescribed mobility equipment to remain as independent as possible. • Provide emotional support as needed.

11.9 Immune System

See Figure 11.13[1] to review the various structures of the immune system. The immune system provides specific and nonspecific defense mechanisms to protect the body from infection. Examples of a specific defense are white blood cells that circulate in the blood and lymph. The function of these cells is to identify and destroy pathogens such as bacteria and viruses. Examples of nonspecific defenses are the skin and mucous membranes. These parts of the system act as barriers to block entrance of pathogens. For more information, refer to the "Defenses Against Transmission of Infection" section in Chapter 4.

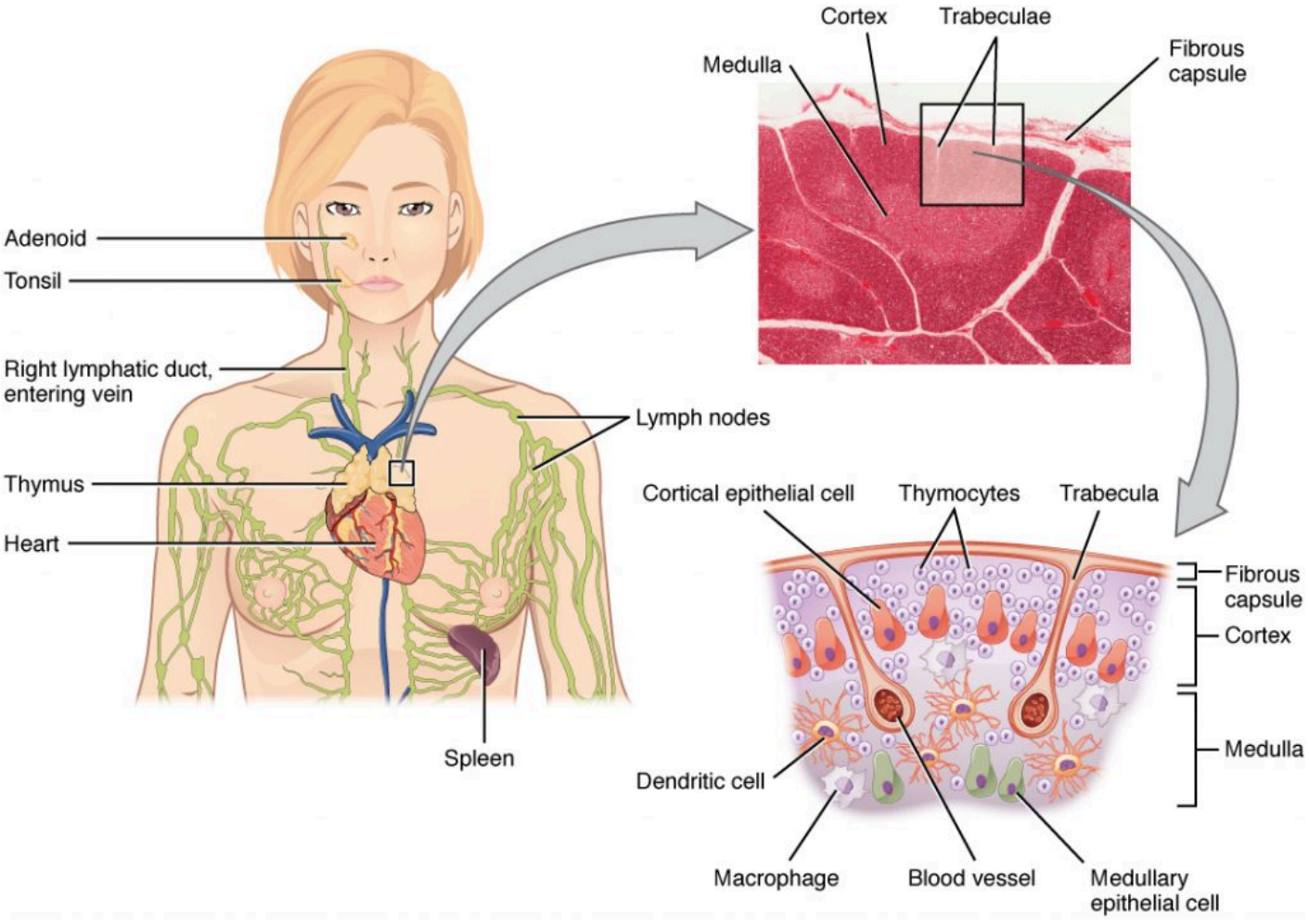

Figure 11.13 Structures of the Immune System

1. "2206_The_Location_Structure_and_Histology_of_the_Thymus.jpg" by OpenStax College is licensed under CC BY 3.0

Immune system function and decreasing the risk for infection depends on healthy nutrition. In fact, malnutrition is the leading cause of immune system deficiency worldwide. When immune system functions are inadequate, there is a marked increase in the chance of getting an infection. Children in many poor, developing countries who lack good sources of protein and carbohydrates often die from infections that their bodies would have normally fought off with proper nutritional intake. Because their protein and/or energy intake is so low, the immune system cannot perform its functions.[2]

Other nutrients, such as iron, zinc, selenium, copper, folate, and vitamins A, B6, C, D, and E, benefit immune system function. It is best to obtain minerals and vitamins from eating a variety of healthy foods. Deficiencies in these nutrients can cause an increased risk for infection and even death. Zinc deficiency results in suppression of the immune system's skin barrier functions and is also associated with a decrease in the number of circulating white blood cells. Taking zinc supplements has been found to be therapeutically beneficial for the treatment of leprosy, tuberculosis, pneumonia, and the common cold.[3]

Just as undernutrition compromises immune system health, so can overnutrition that causes obesity. People who are obese are at increased risk for developing diabetes, cardiovascular, and immune system disorders. High intake of saturated and trans fats negatively affects the immune system, whereas increasing intake of omega-3 fatty acids (found in salmon and other oily fish) reduces the risk of developing certain autoimmune disorders, such as rheumatoid arthritis. Rheumatoid arthritis affects the joints but is more severe in terms of pain and swelling than osteoarthritis. It can begin as early as age 18. Nursing assistant interventions for osteoarthritis also can be used to help manage the discomfort of rheumatoid arthritis.[4]

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Autoimmune disorders cause the body to view parts of itself as foreign, mistake those parts as pathogens, and launch an attack against those parts. It can affect certain parts of the body like skin, joints, or a specific organ, or it can affect the entire body. In the digestive system, it can cause food intolerances, celiac disease, or irritable bowel syndrome. Refer to the Chapter 6.2 subsection on "Modified Diets" for management. See Table 11.9 for common chronic conditions and the interventions nursing assistants can provide to assist with immune disorders. Review section Chapter 4.7, "Signs and Symptoms of Infection" for observations related to the immune system that should be reported to the nurse.

Table 11.9 Common Chronic Conditions of the Immune System and Related Interventions

Diagnosis	Definition	Symptoms to report	Nursing Assistant Interventions
Asthma	Airways become swollen and narrowed in response to an environmental trigger, making it difficult to breathe. Severe asthma attacks can be life-threatening.	Increased shortness of breath during activity or at rest.	• Avoid triggers specific to the affected person. • Encourage activity as tolerated between asthma attacks. • Obtain emergency assistance for severe asthma attacks.
Type 1 Diabetes	The immune system attacks the pancreas and reduces the production of insulin.	Excessive thirst, hunger, or urination; confusion; or hot/dry or cold/ clammy skin.	• Encourage low-carb and low-fat diet. • Promote activity as tolerated. • Monitor feet and skin condition daily and immediately report any skin breakdown or signs of infection.

Leukemia, Lymphoma, and Other Immune System Cancers	Ineffective white blood cells elevate the risk for life-threatening infection.	Fatigue, weakness, or signs and symptoms of infection.	• Diligent hand-hygiene and infection control practices. • Wear full PPE if indicated.
Human Immunodeficiency Virus (HIV)	The virus attacks white blood cells that identify pathogens in the body, and they are no longer able to fight infection.	Fatigue, weakness, or signs and symptoms of infection.	• Diligent hand-hygiene and infection control practices. • Wear full PPE if indicated.
Thyroid Disorders	As the thyroid is attacked by the immune system, the regulation of hormones that control metabolism, energy levels, body temperature, heart rate, and appetite are affected.	Increased fatigue or cold intolerance or changes in appetite or mood.	• Provide warm blankets and socks for clients with cold intolerance. • Manage room temperature and environmental stimulation for clients with heat intolerance.

Multiple Sclerosis (MS)	The immune system attacks the protective sheath around the spinal cord, causing disruption of signals from the brain to body parts. Functioning can vary from day-to-day.	Decreased mobility or cognition.	• Manage environmental temperature as appropriate because it can trigger symptoms. • Assist client with ADLs as needed. • Monitor mobility to reduce safety and fall risks.

11.10 Respiratory System

Most humans cannot survive without breathing for more than three minutes. If you experiment by trying to hold your breath longer, your autonomic nervous system will take over and resume a normal breathing pattern. This is because cells need to maintain a delicate balance of using oxygen for functioning and releasing carbon dioxide as a waste product.[1]

Although oxygen is critically needed for cell functioning, it is the accumulation of carbon dioxide that primarily drives the need to breathe. The major organs of the respiratory system function to provide oxygen to body tissues for cellular respiration, remove the waste product carbon dioxide, and help maintain an acid-base balance. Portions of the respiratory system are also used for nonvital functions, such as sensing odors, producing speech, and for straining, such as during childbirth or coughing. The respiratory system includes muscles that move air into and out of the lungs, the passageways through which air moves, and alveoli. Alveoli are microscopic gas exchange surfaces covered by capillaries. See Figure 11.14[2] for an image of the anatomy of the respiratory system.[3]

1. Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program is licensed under CC BY 4.0
2. "image1-2-1024x861.jpg" by unknown author is licensed under CC BY-NC-SA 4.0. Access for free at https://pressbooks.oer.hawaii.edu/humannutrition/chapter/the-respiratory-system/.
3. Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program is licensed under CC BY 4.0

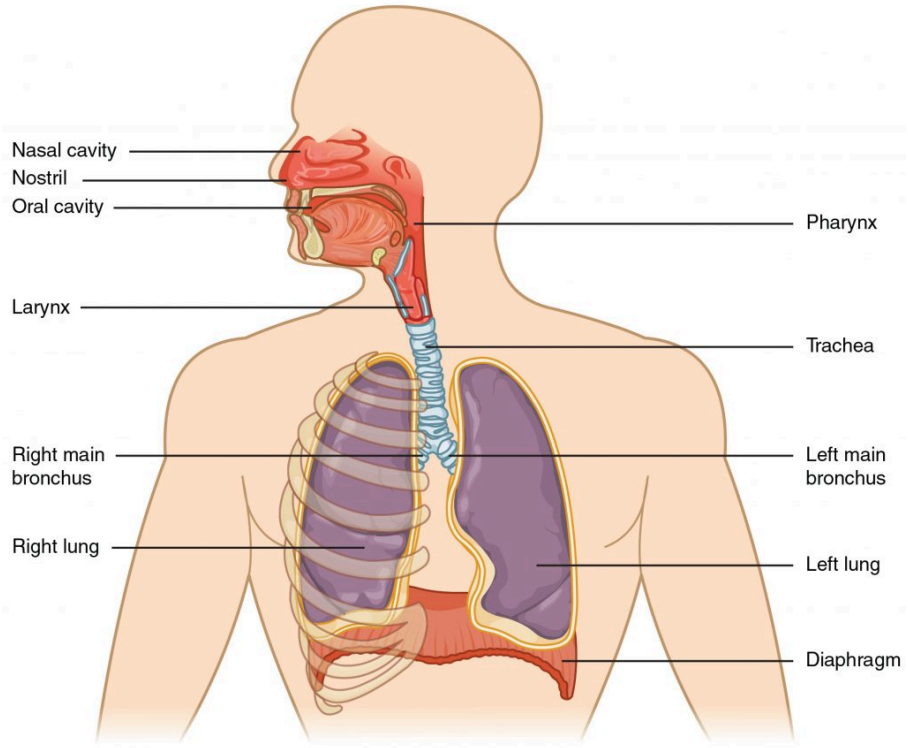

Figure 11.14 Anatomy of the Respiratory System

Capillaries carry deoxygenated blood to the alveoli, where carbon dioxide is released and oxygen is picked up by hemoglobin. The cardiovascular system transports oxygenated blood from the lungs to the tissues throughout the body where it picks up carbon dioxide and carries it back to the alveoli.[4]

A variety of diseases can affect the respiratory system, such as asthma, chronic obstructive pulmonary disorder (COPD), pneumonia, and lung cancer. These conditions affect the gas exchange process and can result in decreased oxygen saturation levels, increased respiratory rates, labored breathing, and other respiratory difficulties.[5]

Anatomy of the Lungs

The lungs are pyramid-shaped, paired organs that are connected to the trachea by the right and left bronchi. Below the lungs is the diaphragm, a flat,

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dome-shaped muscle located at the base of the lungs. Each lung is composed of smaller units called lobes. The right lung consists of three lobes and the left lung consists of two lobes to accommodate the positioning of the heart. As discussed previously, the respiratory system works in conjunction with the cardiovascular system to transport oxygen and nutrients to cells and remove waste from cells and out of the body during exhalation. See Figure 11.15[6] for an image of the anatomy of the lungs.[7]

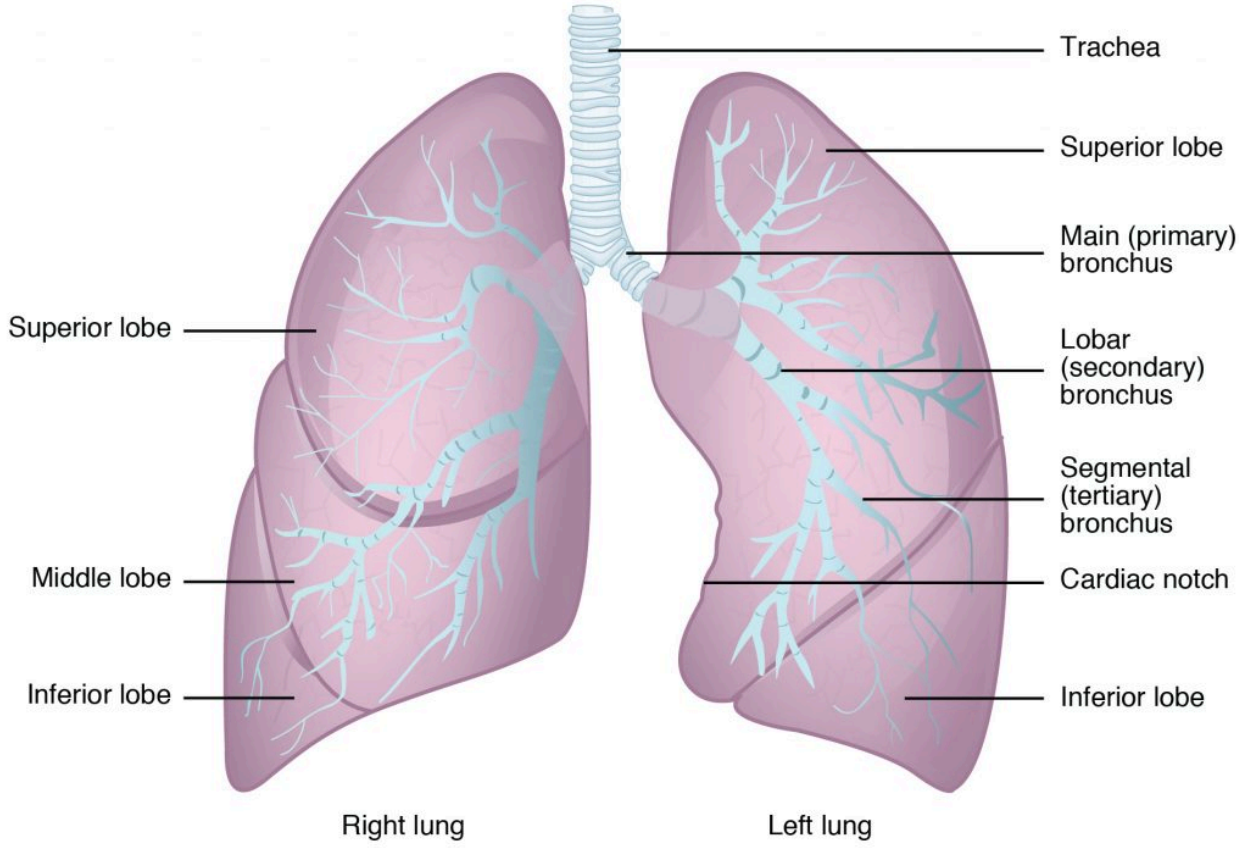

Figure 11.15 Anatomy of the Lungs

As the body ages, chest muscles lose their strength, and the smaller airways of the respiratory system, called the bronchioles, lose their elasticity and can collapse. These age-related changes decrease the ability of an older adult to inhale oxygen, resulting in fatigue and increased difficulty completing

6. "image22-1024x704.jpg" by unknown author is licensed under CC BY-NC-SA 4.0. Access for free at https://pressbooks.oer.hawaii.edu/humannutrition/chapter/the-respiratory-system/.
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activities of daily living. Although some respiratory function can be maintained or restored through exercise, the aging respiratory system leaves older adults more susceptible to acute respiratory illnesses such as influenza, pneumonia, and COVID-19.[8]

Because the respiratory system is necessary for life, if a nursing assistant notices any issues with breathing or a blocked airway, these concerns should be reported immediately to the nurse. See the section "Choking and Airway Clearance" in Chapter 3 for a review of interventions for a blocked airway.

Because the cardiovascular system transports oxygenated blood, some symptoms of respiratory distress are similar to cardiovascular complications such as cyanosis, fatigue, dizziness, and shortness of breath. Exercising and avoiding smoking are vital for maintaining or improving respiratory function. Table 11.10 outlines common respiratory diagnoses in the aging population, symptoms to report, and associated interventions provided by nursing assistants.

Table 11.10 Common Respiratory Conditions and Related Nursing Assistant Interventions[9]

8. Human Nutrition by University of Hawai'i at Mānoa Food Science and Human Nutrition Program is licensed under CC BY 4.0
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Condition	Definition	Symptoms to Report	Nursing Assistant Interventions
Bronchitis	Acute or chronic inflammation of the bronchioles (i.e., small airways)	Cough that produces mucus, fatigue, shortness of breath, and chest discomfort	Encourage fluids to thin the mucous, segment ADLs, and position the patient for breathing comfort.
Asthma	A chronic condition in which irritants cause inflammation and narrowing of the respiratory tract	Coughing, wheezing, chest tightness, difficulty breathing, and shortness of breath	Avoid exposure to known triggers (such as smoke, pet dander, pollen, mold, etc.). During an asthma attack, try to keep the patient calm and immediately report breathing difficulties.
Emphysema	A chronic condition in which alveoli hyperinflate, causing reduced air exchange and resulting in a lower amount of oxygenated blood in circulation	Shortness of breath that becomes increasingly more difficult as the disease progresses	Encourage healthy weight and activity as tolerated, segment ADLs, and encourage the use of supplemental oxygen if it is prescribed.
Chronic Obstructive Pulmonary Disease (COPD)	Chronic inflammation of the lungs, often caused by smoking, chronic bronchitis, asthma, or emphysema	Shortness of breath, labored breathing, dizziness, disorientation, and cyanosis	Encourage healthy weight, activity as tolerated, and smoking cessation.
Lung Cancer	Cancer in the lungs	Chronic cough, coughing up blood, shortness of breath, and chest pain	Encourage smoking cessation, healthy weight and activity as tolerated; segment ADLs; and position the patient for breathing comfort.
Bacterial Pneumonia	Bacterial infection of the lungs	Fever; chills; shortness of breath; productive cough with green, yellow, or bloody mucous; sharp chest pain; fatigue; and confusion or disorientation	Encourage healthy diet, activity as tolerated, rest, and taking antibiotics as prescribed.

View the following YouTube video[10] to learn more about the respiratory system: *Respiratory System, Part 1: Crash Course Anatomy & Physiology #31*.

10. CrashCourse. (2015, August 24). *Respiratory System, Part 1: Crash Course Anatomy & Physiology #31*. [Video]. YouTube. All rights reserved. https://youtu.be/bHZsvBdUC2I

11.11 Reproductive System

Reproduction is the process by which organisms make more organisms like themselves. Although the reproductive system is essential to keeping a species alive, unlike other body systems, it's not essential to keeping an individual alive. Because the endocrine system controls the hormone levels throughout the body, it has a large role in the functioning of the reproductive system. Hormone levels affect growth and development, appetite, mood, body temperature, and stress, along with sexual function and reproductive health. Both the male and female reproductive systems are necessary to reproduce. The organs that are part of both reproductive systems are referred to as genitals.[1]

Female Reproductive System

The external part of the female reproductive organs is called the vulva, which covers the opening to the vagina and other internal reproductive organs. Two pairs of skin flaps called the labia surround the vaginal opening. The clitoris, a small sensory organ, is located toward the front of the vulva where the folds of the labia join. Between the labia are openings to the urethra and vagina. When girls become sexually mature, called puberty, the outer labia and the mons pubis are covered by pubic hair. A female's internal reproductive organs are the vagina, uterus, Fallopian tubes, and ovaries. See Figure 11.16[2] for an illustration of the organs of the female reproductive system.

1. Hirsch, L. (2019, June). Female reproductive system. KidsHealth. https://kidshealth.org/en/teens/female-repro.html
2. "Blausen_0399_FemaleReproSystem_01.png" by Blausen.com staff (2014) at "Medical gallery of Blausen Medical 2014 is licensed under CC BY 3.0

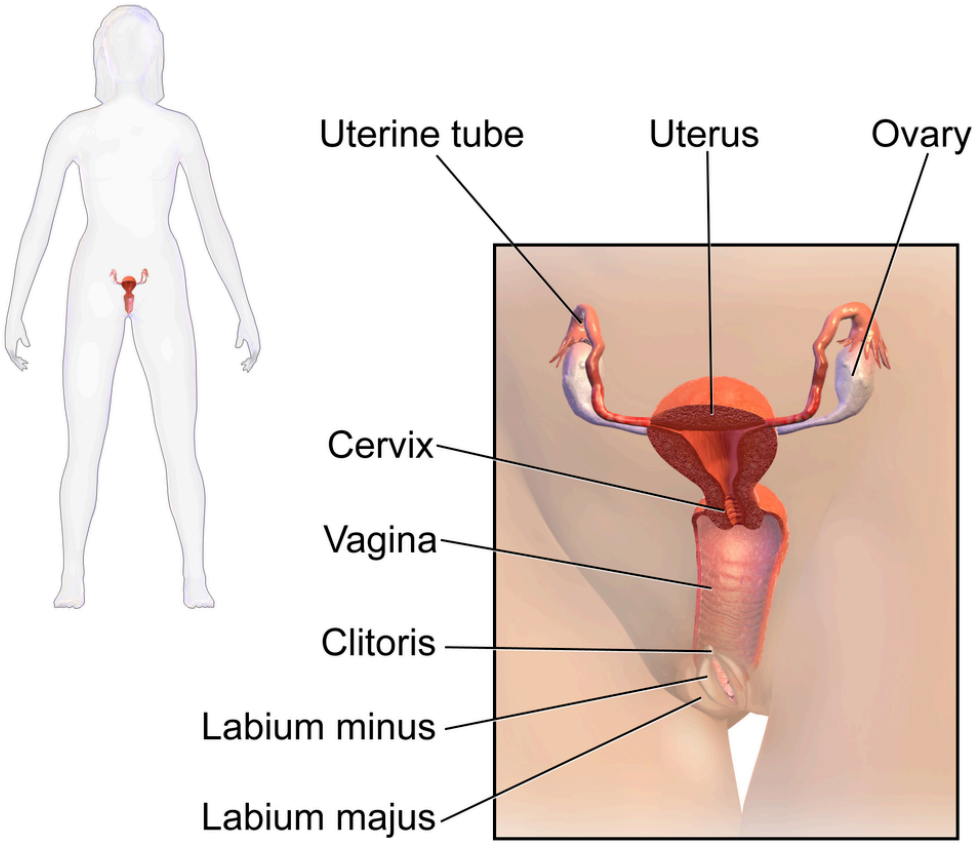

Figure 11.16 The Female Reproductive System

Toward the end of puberty, girls begin to release eggs as part of a monthly period called the **menstrual cycle**. About once a month, during ovulation, an ovary sends an egg into one of the Fallopian tubes. Unless the egg is fertilized by a male's sperm while in the Fallopian tube, the egg leaves the body about two weeks later through the uterus in a process called **menstruation**. During menstruation, blood and tissues from the inner lining of the uterus combine to form the menstrual flow, which in most women lasts from three to five days.[3]

The menstrual cycle continues until menopause, when levels of estrogen decline and the woman no longer releases eggs. This usually occurs

3. Hirsch, L. (2019, June). Female reproductive system. KidsHealth. https://kidshealth.org/en/teens/female-repro.html

sometime around the late forties to early fifties. As estrogen levels decrease, women may experience irregular periods, hot flashes, night sweats, mood swings, and changes in metabolism.[4]

Male Reproductive System

The external male genitals are the penis and scrotum. The urethra runs from the bladder through the penis to expel urine externally. Internally, the male reproductive system includes the testes, the duct system made up of the epididymis and the vas deferens, and the accessory glands that include the seminal vesicles and prostate gland. Testosterone is a hormone that increases during puberty and is produced in the testes. Testosterone is responsible for causing boys to develop deeper voices, larger muscles, and body and facial hair. It also stimulates the production of sperm that fertilizes the egg of a female.[5] See Figure 11.17[6] for an illustration of the male reproductive system.

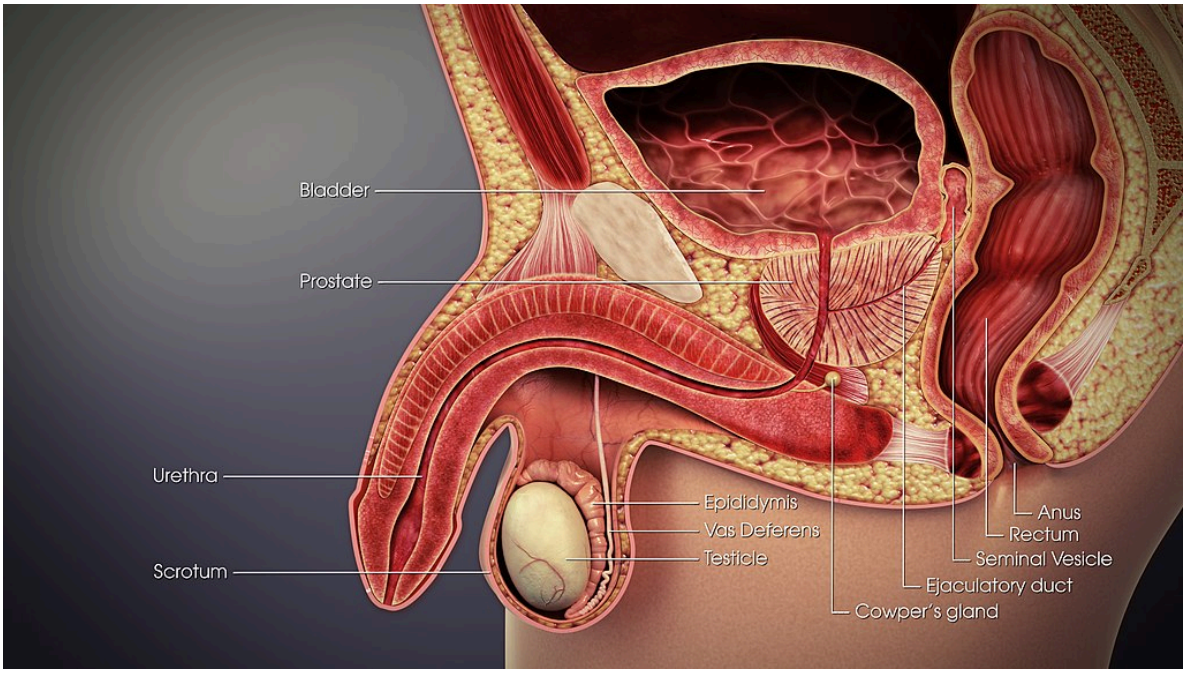

Figure 11.17 The Male Reproductive System

4. Hirsch, L. (2019, June). Female reproductive system. KidsHealth. https://kidshealth.org/en/teens/female-repro.html
5. Hirsch, L. (2019, June). *Male reproductive system.* KidsHealth. https://kidshealth.org/en/teens/male-repro.html
6. "3D_Medical_Animation_Vas_Deferens.jpg" by https://www.scientificanimations.com is licensed under CC BY-SA 4.0

All males are born with a foreskin, a fold of skin at the end of the penis. Some boys are circumcised, which means that a doctor or a clergy member cuts away the foreskin. Circumcision is typically performed during a baby's first few days of life based on parental religious beliefs, concerns about hygiene, or cultural or social reasons. There is no medical necessity for circumcision.

As men age, their prostate enlarges. Because the prostate surrounds the urethra, its enlargement often causes urinary issues such as the decreased ability to dispel urine, frequent urination, an intermittent stream of urine, and retention of urine in the bladder. Urinary retention and incomplete emptying of urine from the bladder increase the male resident's risk of urinary tract infections, so signs of infection should be monitored by nursing assistants.

11.12 Learning Activities

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https://wtcs.pressbooks.pub/nurseassist/?p=1421#h5p-64

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1421#h5p-65

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wtcs.pressbooks.pub/nurseassist/?p=1421#h5p-67

XI Glossary

Bolus: A slippery mass of partially broken-down food that moves down the digestive tract as you swallow.

Chemical digestion: Digestion of food by enzymes found in saliva that break down food particles into smaller components.

Colostomy: Surgery to create a stoma in the colon.

Cyanosis: Blue coloration around the mouth and in the extremities (i.e., feet and hands) that occurs when there is decreased oxygenated blood flow to the tissues.

Epiglottis: A small flap that closes over the trachea when swallowing to prevent food and fluids from going into the lungs.

Esophagus: The muscular tube from the mouth to the stomach.

Fine motor skills: Small movements such as those in the wrists and hands.

Gross motor skills: Large movements controlled by the legs and trunk of the body.

Incontinence: Failure of voluntary control of urination.

Involuntary muscle: Muscles controlled by the autonomic nervous system, including smooth muscle within the digestive system and respiratory system and the cardiac muscle in the heart that pumps blood throughout the body.

Large intestine: The long, tube-like organ that is connected to the small intestine at one end and the anus at the other.

Mechanical digestion: Digestion that begins with chewing when teeth crush and grind large food particles into smaller pieces that are easy to swallow.

Neurotransmitters: Chemicals in the body used for nerve communication.

Osteoarthritis: A medical diagnosis that refers to inflammation of joints due to wear and tear throughout one's life.

Peristalsis: Contractions that move the bolus through the esophagus, stomach, small intestine, and large intestine.

Pharynx: The hollow tube that starts behind the nose and ends at the trachea and esophagus.

Skeletal muscle: Muscle that produces movement, assists in maintaining posture, protects internal organs, and generates body heat.

Small intestine: A long tube-like organ that connects the stomach and the large intestine where nutrients are absorbed from a food bolus.

Stoma: A surgically created opening in the abdominal wall where a healthy part of the intestine is attached.

Tendons: Strong bands of dense, regular connective tissue that connect muscles to bones.

Trachea: The hollow tube, otherwise known as the windpipe, that leads to the lungs.

Voluntary muscle: Muscle that a person is able to consciously control.