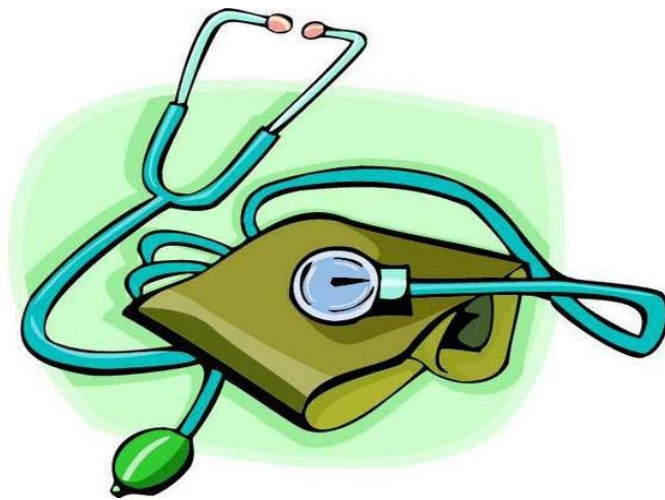




PATIENT ASSESSMENT



SELF-ASSESSMENT TOOL

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Prepared for CLPNBC by:
Darlene Ellchuk BSN MSN
emerson192@shaw.ca

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Web: www.clpnbc.org Email: info@clpn.bc.ca

1.888.440.6900; 604.660.5750

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INTRODUCTION

Assessment is an integral component of the nurse's role and responsibility while providing safe and competent care to assigned patients. It is therefore the nurse's professional responsibility to ensure the required competencies. All licensed practical nurses (LPNs) receive instruction in this area during their formal education and many have ongoing reinforcement through in-service programs or continuing education offerings. Others have gained significant on the job experiential knowledge and skill, while yet others have advanced their skill through independent learning or sought out a variety of resources as a commitment to their life long learning. Expertise in patient assessment comes from using a systematic approach, regular practice and receiving feedback on completing assessments.

A number of factors may impact competency in patient assessment. Therefore regular review of this competency enhances and strengthens safe and competent nursing practice. This self-assessment resource is intended to be a tool for the participant to self-appraise her/his related level of competency and respond accordingly.

Practice expectations for nurses are articulated in the document prepared jointly by the College of Registered Nurses of British Columbia (CRNBC) and the College of Licensed Practical Nurses of British Columbia (CLPNBC). That document offers guiding principles for practice expectations and the related contributions of each set of practitioners. In order to reacquaint yourself with the document and set the context of practice for carrying out competencies related to assessment, refer to the following link:

<http://www.clpnbc.org/public.php?section=Publications&subsection=PracticeExpectations>

FORMAT

This Self-Assessment Tool is divided into three sections. Section I (Pre-Review Exercise) allows participants to determine their competency related to patient assessment prior to completing Section II. Section II (Overview: Patient Assessment, Body Systems and System Assessment) offers an overview of body systems and related assessment using a holistic generalist approach. It is not intended to address in depth assessment skill requirements of practitioners in specialized settings such as cardiac, neurology, or pediatrics. Section III (Post-Review Exercise) offers the participant an opportunity to determine her/his competency following completion of the review section. Section I and III are accompanied with an expected set of responses (KEY).

This resource focuses on the competency of assessment. Patient assessment is highly interdependent with the nurse's knowledge of commonly occurring health challenges. If assessment proves to be challenging it is important to analyze whether the source of the difficulty rests with assessment or application of theory related to commonly occurring health challenges.

APPROACH

STEP 1:

- › Complete SECTION I: PATIENT ASSESSMENT: PRE-REVIEW EXERCISE.
- › Assess the ease with which you completed the pre-review exercise.
- › If you have difficulty providing appropriate responses to the questions in Section I analyze the reasons for the difficulty.

STEP 2:

- › Complete SECTION I: PATIENT ASSESSMENT: OVERVIEW.
- › Depending on your Self-Assessment of Section I, you may find the material is a quick review or you may find that you have to study the material in detail.

STEP 3:

- › Complete SECTION III: PATIENT ASSESSMENT: POST-REVIEW EXERCISE. When you have completed your independent study of the material in Section II, complete this section to validate your knowledge of patient assessment.

STEP 4:

- › File your study materials and answers at home. Should your name be drawn for auditing purposes, you can readily demonstrate your continuing learning and competency on patient assessment.

SECTION I

PATIENT ASSESSMENT

SELF-ASSESSMENT

PRE-REVIEW EXERCISE

KEY

SECTION I
PRE-REVIEW EXERCISE

1. Describe a patient assessment including its purpose.
2. When and by whom is an assessment carried out?
3. Identify the major components of an assessment.
4. What possible sources of information does the nurse use to complete an assessment?
5. Differentiate among a comprehensive, quick priority and a focused assessment.
6. What is the difference between subjective and objective data? Provide three examples of each.

Subjective data:

Objective data:

<i>Subjective</i>	<i>Objective</i>
1.	1.
2.	2.
3.	3.

7. What approach does the nurse use to complete an assessment?
8. What skills and abilities does the nurse require to carry out an effective assessment?

9. What factors impact the quality and thoroughness of an assessment?

10. The nurse is caring for a patient receiving Penicillin. During the assessment the nurse notes a rash on the inner aspect of the forearm. Discuss how the nurse completes a competent assessment based on the given data.

11. From your nursing practice, provide an example of an inference you made. Describe how you acted on this inference.

12. Complete the following exercise.

A family expresses concern that their father does not appear to be eating well of late. The patient's health record indicates he has gained 1.5 kg in the past week. He is oriented, however slow to respond to questions. This is your second shift assigned to this patient. What assessments would the nurse carry out to gather data related to the family's concern? Provide the rationale for each of the nursing actions.

<i>Assessment activity</i>	<i>Rationale</i>

SECTION I
PRE-REVIEW EXERCISE
KEY

1. Describe a patient assessment including its purpose.

Patient assessment is described as an indicator in Standard 3: Application of knowledge in the [CLPNBC Standards of Practice and Competencies](#). In summary, it is a process used to collect information that forms an individualized database about a patient. The data is collected systematically from multiple sources using a variety of techniques. The information is compared to norms and standards, organized according to a predetermined structure and subsequently interpreted yielding individualized strengths and limitations from which a problem list is created. Further to the identification of problems, appropriate interventions are formulated, implemented and perpetually evaluated, and revised to assist the patient achieve and or maintain optimal health.

2. When and by whom is an assessment carried out?

An assessment is carried out whenever a patient enters a facility, which provides a service to assist the patient achieve or maintain optimal health, and continues while the patient resides in that facility. Assessments are carried out upon admission, emergence of episodic health problems, changes in health status or upon the request of paraprofessionals, etc. Various members of the healthcare team such as nurses, doctors, physiotherapists, nutritionists, social workers, etc. carry out assessments. Their findings complement each other. The LPN's collaborative role in assessment is articulated in the [practice expectations](#) document.

3. Identify the major components of an assessment.

Health history/interview and physical examination using a holistic approach attending to physiologic/functional/psychosocial/cultural domains.

4. What possible sources of information does the nurse use to complete an assessment?

Patient, family, friends, patient record, results of diagnostic tests, and relevant literature.

5. Differentiate among a comprehensive, a quick priority, and a focused assessment.

A comprehensive assessment includes a general survey, vital signs, height and weight and evaluation of all organs and body systems including psychosocial domains.

A quick priority assessment, completed within 5 minutes, is one that is carried out to gain an abbreviated overall assessment of the patient. Data gathered at this time may demand more in-depth assessment of select body systems. The mnemonic “ABC, I/O, P&S” within the context of the patient’s health challenge will guide the nurse to efficiently assess the following areas.

<i>A: Airway</i>	<i>I: Intake</i>	<i>P: Pain and Comfort</i>
<i>B: Breathing</i>	<i>O: Output</i>	<i>S: Safety</i>
<i>C: Circulation</i>		

A focused or selective assessment is a modified assessment using knowledge of the patient’s history and presenting problem (chief complaint) such as chest pain. The PQRSTA approach for data collection for a focused assessment will yield information that may require assessment of other systems related to the major complaint.

6. What is the difference between subjective and objective data? Provide three examples of each.

*Subjective data: what the patient tells the assessor, it is the patient’s perception.
Objective data: the assessor’s observations that are measurable and verifiable.*

<i>Subjective</i>	<i>Objective</i>
<i>1. “I feel dizzy.”</i>	<i>1. Blood pressure: 90/60, Pulse 110.</i>
<i>2. “My bladder never seems empty.”</i>	<i>2. Voids 100-150mls/void q 1-2 h.</i>
<i>3. “I am too fat.”</i>	<i>3. 14 yr. old ♀ 150 cm (5’2”) 36 Kg (80 lbs).</i>

7. What approach does the nurse use to complete an assessment?

A systematic organized approach that attends to all aspects of health status. These include the physiological, functional and psychosocial domains of the patient.

8. What skills and abilities does the nurse require to carry out an effective assessment?

- Communication skills, empathy and nonjudgmental approach.*
- Ability to make inferences, prioritize and decision-make.*
- Psychomotor skills of inspection, palpation, percussion, and auscultation (IPPA).*

9. What factors impact the quality and thoroughness of an assessment?

- *Nurse's knowledge and competency.*
- *Presenting health problem, concurrent health problems and stability of the patient.*
- *Communication barriers: Inability to communicate with patient due to patient's cognitive limitations from past, current or concurrent health challenge, developmental delays, language preference differences, presence of appliances i.e. ventilator, tracheostomy, positional factors.*
- *Physical limitations related to environment.*
- *Growth and development variation.*
- *Cultural implications.*
- *Effects of medication or lack thereof such as sedation from an analgesic, inadequate analgesia, absence of medications.*
- *Presence/absence of family/support.*
- *Insufficient time and resources to carry out the assessment.*
- *Patient discomfort, anxiety, fears.*

10. The nurse is caring for a patient receiving Penicillin. During the assessment the nurse notes a rash on the inner aspect of the forearm. Discuss how the nurse completes a competent assessment based on the given data.

The nurse makes inferences about the possible relationship of Penicillin and the rash. Consequently the nurse is guided to gather more focused data related to this finding. The nurse gathers further data about the rash i.e. was the rash present prior to the first dose of Penicillin; has the patient received Penicillin in the past and if so did the patient have any reactions; is the rash bilateral and present elsewhere; does the patient have any known allergies, etc.

11. From your nursing practice, provide an example of an inference you made. Describe how you acted on this inference.

Example of an Inference:

A previously alert patient becomes drowsy and has an unsteady gait. The nurse infers that the patient is at risk for falls.

Actions:

Based on this inference the nurse ensures the patient's bed is in a low position, side rails are raised, call bell is within easy reach and instructs the patient to call the nurse for assistance with ambulation. The nurse informs the primary nurse or other appropriate healthcare provider of the assessment, inference and actions; communicates the information through documentation in the patient's chart, Kardex, and ADLs posted at the bedside. Further, the nurse checks the patient frequently and plans to gather additional data.

12. Complete the following exercise.

A family expresses concern that their father does not appear to be eating well of late. The patient's health record indicates he has gained 1.5 kg in the past week. He is oriented, however slow to respond to questions. This is your second shift assigned to this patient. What assessments would the nurse carry out to gather data related to the family's concern? Provide the rationale for each of the nursing actions.

Based on the primary concern the nurse would initially carry out a focused assessment that would provide data related to the patient's nutritional status. A significant portion of the data is incidentally collected during morning care, observation of the patient at mealtime, interactions with the patient throughout the shift and professional exchanges with other members of the multidisciplinary healthcare team. Resultant data may warrant a comprehensive assessment.

<i>Assessment activity</i>	<i>Rationale</i>
<i>Review patient record</i>	<i>As this is a non-emergent situation, the nurse gathers contextual information about the patient related to his health status from a focused chart review. This review includes recently documented objective and subjective data, recent changes in interventions e.g. medication, and recent or last lab results such as complete blood count (CBC), electrolytes, etc.</i>
<i>General survey</i>	<i>Assess patient's overall condition. Critically compare your findings in the chart (baseline) with the findings of your general survey. Make particular note of color, activity, interactions, position of the patient, general signs of discomfort or distress (i.e. dyspnea).</i>
<i>Vital signs</i>	<i>Obtain baseline information from the chart to compare with current findings to help guide the assessment and determine change in health status. An elevated temperature, pulse and respirations could indicate an underlying inflammatory response triggered by an infection such as URI, UTI, influenza, etc., or other undiagnosed health problems like hyperthyroidism, etc. Changes in blood pressure could reflect other stressors requiring further assessment.</i>
<i>Assess patient's hydration status i.e. skin turgor, intake and output, mucous membranes</i>	<i>Oral mucosa may be dry, hypersensitive and uncomfortable. Warm and dry skin may be congruent with an elevated temperature. Decreased output with an unchanged fluid intake may reflect renal dysfunction resulting in appetite suppression from circulating wastes.</i>

<i>Assess for edema</i>	<i>Despite reported concern re poor appetite the patient has gained weight. Could the increase be attributable to fluid retention due to congestive heart failure, renal failure, liver failure or hypoalbuminemia due to poor dietary intake?</i>
<i>Assess condition of hair, nails, skin</i>	<i>Changes often correspond to various vitamin, mineral and protein deficiencies.</i>
<i>Assess condition of oral cavity and patient's ability to chew and swallow; sensory abilities related to taste and smell; pain</i>	<i>Lesions and/or plaque may be present and painful deterring food consumption. Change in dentition e.g. ill fitting dentures, missing teeth impact ability to chew. Inability to taste and smell food decreases salivation and mastication of food. Halitosis may act as an appetite suppressant. Difficulty swallowing will deter consumption of food plus add to fear and anxiety related to risk of aspiration. Enlarged neck glands (lymph nodes), or enlarged tonsils may be painful affecting swallowing.</i>
<i>Assess abdomen with inspection, auscultation, percussion, and palpation. Note date and character of last bowel movement, use of laxatives, etc.</i>	<i>Hypomotility of gastrointestinal tract from inactivity, increasing age, inadequate dietary fiber intake, medication reactions may result in changes in bowel elimination patterns i.e. constipation. Determine presence of pain, gas entrapment, distention, etc.</i>
<i>Assess presence of nausea, vomiting</i>	<i>May indicate the need to carry out a more comprehensive assessment, administer anti-emetic or request physician reassessment.</i>
<i>Assess changes in appetite and activity patterns</i>	<i>Appetite may be suppressed or be normal. The patient may have previously preceded meals with an appetite stimulant, alcoholic beverage, etc. If appetite remains normal the patient may not be eating due to other limitations that need to be explored further. Changes in activity pattern may have correspondingly decreased the need for caloric intake.</i>
<i>Assess patient's energy level</i>	<i>The patient may be too exhausted from anemia, fever, etc. to eat; analgesia or other medications may depress the central nervous system causing sedation and drowsiness thus limiting ability to feed oneself.</i>
<i>Assess whether patient needs related to feeding have changed</i>	<i>The patient may need stabilization of dishes, feeding utensils with good grip handles; food may be out of reach. Eyeglasses may be lost or broken and the patient is unable to see the food.</i>

<i>Assess congruence with food preferences and provision of food</i>	<i>Cultural: dietary restrictions, food preferences, spices, presentation, tradition, etc.; texture and type of foods may be other than usual.</i>
<i>Assess usual patterns of dietary intake</i>	<i>Timing may have changed and patient has not adapted to change.</i>
<i>Assess recent changes in patient's life e.g. loss of a significant other, pet, meal companion</i>	<i>Appetite is closely linked to psychosocial domain. Individual behaviours, including appetite change with changes in mental status.</i>
<i>Assess for environmental changes</i>	<i>Odors, poor ventilation, extremes of temperature impact the dining experience.</i>

SECTION II

OVERVIEW:

PATIENT ASSESSMENT,
BODY SYSTEMS,
AND
SYSTEM ASSESSMENT

SECTION II

OVERVIEW: PATIENT ASSESSMENT, BODY SYSTEMS AND SYSTEM ASSESSMENT

PREAMBLE

Patient assessment is an activity that the nurse engages in deliberately and/or incidentally. The CRNBC and CLPNBC jointly issued statement

<http://www.clpnbc.org/public.php?section=Publications&subsection=PracticeExpectations>

provides a synopsis of practice expectations of registered nurses (RNs) and licensed practical nurses (LPNs). It is within this context that patient assessment is carried out by licensed practical nurses and is the intent of this resource (Patient Assessment Self-Assessment Tool) to be considered within those parameters. Licensed practical nurses engage in the decision making process in collaboration with registered nurses in the context of nursing practice.

Understanding the Assessment Process

1. Assessment:

It is the dynamic and continuous process of collecting, verifying, and organizing information about a person within a particular context. The process starts with the first nurse-patient encounter and continues throughout the nurse-patient relationship. Emphasis is on health status, environment, strengths and limitations as well as on the person's cultural beliefs and practices. Assessment yields an individualized patient database from which the nurse identifies the status of actual or potential limitations and strengths; collaborates and contributes to the plan of care and reviews and interprets the plan of care; makes decisions regarding the selection and implementation of appropriate nursing interventions based on the plan of care; intervenes; evaluates by monitoring and recognizing changes in patient status in response to interventions; reports and records with a view to assist the patient to achieve or to maintain optimal health. Assessment is a deliberate and/or incidental activity.

An example of the process described would occur when the LPN determines a patient's blood pressure is low prior to the next scheduled dose of antihypertensive medication. The licensed practical nurse knows that administering an antihypertensive at this time may compromise the patient and decides to withhold the medication. The nurse documents the findings and informs and consults with the registered nurse or other appropriate healthcare provider.

2. Sources of data:

- a. Background nursing knowledge obtained from multiple and varied sources. Knowledge helps the nurse
 - i. determine the information to seek in a given situation
 - ii. differentiate relevant and irrelevant data

- iii. prioritize data
 - iv. recognize data needing to be verified and/or clarified
 - v. facilitate systematic organization of data
 - vi. analyze data based on a set of norms
- b. Clinical record: medical history, current medical problems and interventions, laboratory values and results of other diagnostic tests, previous assessments, and information from other healthcare providers.
- c. General observation of the patient, environment and interpersonal interactions.
- d. A health history/interview accompanies the physical assessment. Typically health history includes biographic data, current health problems, past health history, family history of health challenges, current medication and treatments, allergies, personal social history (role and relationship patterns), cultural beliefs and practices related to health (health promotion with attention to exercise, diet; protection patterns such as avoiding unintentional injuries; and prevention evident with immunization compliance), review of systems and in particular noting activities of daily living and advanced directives.

The information from the interview facilitates

- i. a focus for the assessment and helps identify patient expectations and concerns, and offers the patient's perspective and meaning of the data
 - ii. identification of strengths and limitations to guide the planning of nursing care.
- e. Physical assessment includes 4 basic techniques: inspection (look), palpation (touch), percussion (tap) and auscultation (listen) (IPPA). To enhance proficiency of assessment use the order of IPPA **except** when carrying out an [abdominal assessment](#)
 - i. the patient may be asked to demonstrate certain activities such as walking, bending, detection of noises, speaking, smells and reading a visual acuity chart
- f. Assessment further includes the use of diagnostic tests such as laboratory tests, pathology reports, radiographs, electrocardiograms, etc.
- g. Consultations: family and friends provide data about the patient's usual behaviour patterns and coping mechanisms, recent changes in health status including cognitive and psychosocial changes, available resources, support system, and additional concerns the patient may not have expressed. Other sources include paraprofessionals who may have interacted with the patient.

3. Domains to be assessed:

The domains are interdependent and contribute to the development of a holistic picture. The domains include

- a. Physiologic: biological, physical, and functional characteristics.
- b. Psychologic: emotional and cognitive features.
- c. Social: dynamics of interpersonal relationships with individuals and groups.

- d. Cultural: primary language, shared beliefs, perceptions and practices based on common heritage or ethnic and/or racial background.
- e. Spiritual: beliefs and values that provide strength, hope and meaning to life; religious tenets and practices.
- f. Developmental: evolutionary process over time from maturation, experience or learning.

4. Types of data:

Data is classified as subjective and objective.

- a. Subjective: what the person tells the assessor (i.e. description of pain, perceptions, feelings or experiences).
- b. Objective: evident, measurable, and verifiable observations such as vital signs, odours, redness of a wound, hostile behaviour, and laboratory and medical imaging findings.
- c. Correlation of subjective and objective data: e.g. is shortness of breath supported by decreased breath sounds on auscultation or dullness to percussion?

5. Purpose of assessment:

The purpose is to plan care by identifying health care needs. Such identification may include

- a. Health promotion needs: enhance well being, preventative interventions.
- b. Health risk factors
 - Nonmodifiable risk factors i.e. biological, congenital, hereditary.
 - Modifiable risk factors i.e. diet, smoking, and sedentary lifestyle.
- c. Potential/risk health problems e.g. person with traumatic wound is at risk for infection.
- d. Actual health problems to direct action aimed at regaining or facilitating optimal health.

6. Types of assessments:

For the purpose of this resource, assessments are classified as:

- comprehensive/full,
- quick priority, and
- focused
- a. Comprehensive assessment occurs when an individual is admitted to a health care/residential setting and at individually determined intervals during a continuing patient-health care provider relationship (i.e. anytime a baseline or re-assessment is indicated). Specific responsibilities are outlined in the [practice expectations](#) document.
- b. Quick priority assessment is one that is carried out efficiently when a rapid assessment is in order to familiarize oneself with the assigned patient such as at shift change, with a change of patient assignment or temporarily assuming care of a patient, and or a validation of patient status. A mnemonic *ABC I/O PS* is a useful trigger to recall the technique.

A: AIRWAY:

- Ensure airway is patent and protected, for example, not compromised by position, supports, etc.
- Can the patient speak?

B: BREATHING:

- Determine the ease/effort and rate.

C: CIRCULATION:

- Assess tissue perfusion by checking pulses, skin temperature and color of the extremities.
- Is edema present?
- Determine the level of consciousness and orientation.

I: IN:

- What is going in? Verify the identity of every substance entering the patient and the operation/function of the device used for substance delivery. Such checks include power source, electronic settings controlling flow rates and pressure settings.
- What is the condition of tissue surrounding the ports of substance entry?
- Ensure tubing/delivery devices are free of twists, kinks, obstructions, and tension. Follow the source of substance delivery to its point of entry.

O: OUT:

- What is coming out? What is the character and amount of drainage from wounds, tubes, and body orifices?
- Check dressings, drainage tubes, and devices, condition of ports of exit.
- Do they need reinforcement, repositioning, emptying?

P: PAIN and overall comfort level:

- Have the patient identify and describe pain using a pain scale.
- What factors relieve/aggravate the pain?
- Consider pain in the context of last analgesic/intervention.
- Verify patient comfort such as related to position, temperature, anxiety, and stress.

S: SAFETY:

Assess the environment. ▪ Are suction and oxygen delivery systems functional and ready for use? ▪ Is the bed in a low position? ▪ Are bed/wheelchair brakes engaged? ▪ Are restraints used according to protocol and policy? ▪ Is the call bell accessible? ▪ Are personal items within reach?

Conclude the quick priority assessment with a focused assessment related to the patient's health challenge. For example, for a patient with total hip replacement, complete the following: check position of abductor pillows, are dressings intact, determine character and amount of drainage on dressing/bedding, is drainage device functioning and amount and character of drainage in the receptacle, neurovascular check, pain level assessment, nausea, etc.

- c. Focused assessment addresses a particular problem or issue and may be done in response to
 - i. changing health status that precludes a full assessment e.g. acute pain or respiratory distress
 - ii. presentation of an episodic problem such as a sore throat
 - iii. the need to determine progress of a specific potential or actual health problem
 - iv. the need to determine the effectiveness of an intervention e.g. relief of pain by position change and/or medication
 - v. the assumption of care by a new care provider e.g. at the beginning of a shift

Quick priority and/or focused assessments are used more often than a comprehensive assessment. The findings of the more abbreviated assessment(s) may determine the need for a comprehensive assessment.

7. Process of data collection:

Data is systematically gathered and organized. The process is guided by a structure based on a variety of approaches. Some recognized approaches include

- a. Physiologic: body systems approach that is sometimes referred to as a medical model or a head-to-toe assessment.
- b. Functional health patterns: identification of behavioural health patterns over time which facilitates recognition of functional and dysfunctional patterns.
- c. Needs models based on Maslow's hierarchy of needs. For a review of Maslow's hierarchy click on the link below.
 - <http://web.utk.edu/~gwynne/maslow.HTM>
- d. Prescribed agency driven formats which are generally an adaptation or hybrid of various models.

8. Context of data collection:

Ensure that you consider individual variations that may impact data collection and subsequently influence interpretation of that data. Such variations include

- growth and development
- concurrent health challenges
- culture and race
- medications

9. What to do with the data:

The assessor should record data throughout the assessment followed by formal documentation in an organized framework using correct terminology. Organizing data may reveal a fit of data in more than one body system. Select the most appropriate system/category and place it there. For example, getting up to the bathroom four times a night may be relevant to renal system (urinary pattern) or musculoskeletal system (sleep-rest activity pattern). Ensure that documentation clearly identifies objective and subjective data. The process continues with

- a. Comparative analysis of data
 - i. compare data with standards and norms. A standard or norm is a generally accepted value, model or pattern. Examples include normal lab data, growth and developmental stages, normal vital sign parameters, cultural norms for behaviour, and usual symptom patterns for a specific health problem
 - ii. identify which data match the norm and which vary
 - iii. compare data to what is normal for the patient
 - iv. begin to determine which data are relevant and which are irrelevant
- b. Making and validating inferences
 - Inferences are the process of assigning meaning to data.
 - As soon as possible, inferences need to be validated with the person e.g. are you feeling anxious?
- c. Developing clusters of related data.
 - The goal is to identify patterns.
 - The inductive approach (reasoning from specific observations to general statements) within a category and from different categories to form patterns.
 - The ability to recognize patterns is directly related to the nurse's theoretical knowledge base, clinical experience and general life experience.
 - Identify and obtain missing data that may become known while trying to identify patterns.
 - Identify inconsistent data as they relate to patterns formulated.
 - Determine a list of health care strengths and limitations.

Based on the cluster of data, formulate a list of identified actual and potential problems with associated etiology. For example, impaired skin integrity related to immobility. Identification of the problem forms the basis for planning individualized patient care aimed at maintaining/optimizing health.

LPN Approach to Patient Assessment

Adequate preparation is essential to enhance patient and nurse comfort facilitating execution of a thorough and competent assessment. The assessment includes the interview; therefore the nurse must use effective communication strategies throughout the procedure. An assessment may elicit a variety of patient responses. These could include fear, anxiety, and/or discomfort. Some patients may consider the process an invasion of their privacy. Thus the nurse's competency impacts the process and outcome. Proficiency and expertise are gained with a systematic approach and practice.

Preparation:

- Ensure a well-lit environment that is conducive to carrying out a safe and competent assessment that includes the health history/interview.
- Allow sufficient time to carry out the assessment.
- Organize self with necessary equipment, as appropriate
 - Watch with a second hand
 - Thermometer
 - Stethoscope
 - Sphygmomanometer
 - Pulse oximeter
 - Penlight/flashlight
 - Measuring tape
 - Pocket ruler
 - Marking pencil
 - Scale
 - Tongue depressor
 - Safety pin – sharp/dull assessment
 - Cotton ball – fine/light touch
 - Specialized equipment based on context of practice
- Attend to patient's basic needs for safety, comfort such as pain management, elimination needs, warmth, etc.; privacy and dignity. Maintain patient comfort throughout the assessment.
- Introduce self, explain the process, and make general observations about appearance, body features, state of consciousness and arousal, speech, body movements, obvious physical signs, nutritional status, and behaviour.
- Determine patient's ability to communicate since a family member, interpreter or aids may be necessary to competently carry out the assessment.
- Assess whether variables such as the effect of a recently administered medication may interfere with the accuracy and validity of the assessment.
- Be sensitive, unhurried and reassuring. Verify patient's comfort with proceeding e.g. a brief rest period may be necessary.
- Avoid negative and judgmental reactions in response to unexpected findings. The use of empathy and acceptance are vital to forming a therapeutic nurse-patient relationship that starts with the initial interaction.
- Wash hands prior to commencing the assessment.
- Always use the same systematic approach to facilitate a comprehensive assessment with minimal repositioning of the patient.

- **PQRSTA** is an acronym describing one framework that is useful in gathering data about any complaint/problem/symptom the patient may reveal or that the nurse observes. Examples of such concerns include pain, shortness of breath, fatigue, etc.

PQRSTA represents the following

- ✓ **Provocative or Palliative** – What causes the symptom? What makes it better or worse? What have you done to get relief?
- ✓ **Quality or Quantity** – What is the character of the symptom i.e. pain: is it crushing, piercing, dull, sharp? How much of it are you experiencing now?
- ✓ **Region or Radiation** – Where is the symptom? Does it spread?
- ✓ **Severity** – How does the symptom rate on a severity scale of 1 to 10 with 10 being the most intense?
- ✓ **Timing** – When did the symptom begin? How long does it last? How often does it occur? Is it sudden or gradual?
- ✓ **Associated signs and symptoms of the chief complaint** – Does the primary problem result in any other clinical manifestations, e.g. the pain accompanied by diaphoresis, nausea, vomiting?

OVERVIEW OF A PATIENT ASSESSMENT

As identified, a comprehensive assessment includes multiple components. This includes gathering information from a health history, carrying out a general survey, measuring vital signs, and assessing the body systems and psychosocial domain. The quality and thoroughness of the assessment is strongly linked to the nurse's competency in assessment and knowledge of the patient's present and past health challenges. Knowledge of normal body function (physiological and psychological) is fundamental to carrying out a comprehensive assessment. Therefore a body system overview is presented prior to the corresponding detailed assessments for each of the domains. As indicated previously, the practitioner's comfort level assessing the systems will vary based on context of practice, range of competencies, frequency of completing assessments, and type of assessments regularly completed.

GENERAL SURVEY

This is the first impression of the patient that provides vital information about the patient's behaviour and health status. First observation must include airway, breathing and circulation (ABC) assessment. Further initial impressions are made at this time that include apparent age, gender, ethnicity, race, height, weight, nutritional status, development, body type, posture, movements, aids, prosthetics, speech, dress, grooming, personal hygiene, and signs of distress, facial characteristics, presence of family or significant other(s) and psychological state.

Ask about the patient's perception of their health.

Description of their health (usual, current), preventative measures, previous hospitalizations & expectations of current experience, description of illness (onset, cause), prior treatment (including compliance, anticipated self-care problems).

Proceed with an organized systematic data collection to ensure all the elements of assessment that follow are explored with the patient and/or family/friends, as appropriate. Over time a nurse develops her/his own systematic approach to assessment. Consistency in a systematic approach can be gained with the use of a head-to-toe framework and [IPPA](#). IPPA is the conventional approach with the exception of the [abdominal assessment](#). Make certain confidentiality is always maintained and that you have the patient's permission to gather data from a designate.

Note that in several sections, repetition and overlap of data collection occurs. This ensures particular elements are considered in the event a focused assessment precludes a comprehensive assessment. A detailed assessment does not follow the endocrine system since this system is highly integrated with other body systems. Relevant data is gathered while carrying out other interdependent systems.

VITAL SIGNS

- Temperature
- Pulse (rate, rhythm, strength-quality)
- Respirations (rate, rhythm, depth)
- Blood pressure – supine, sitting, standing, right and left arms
- Pulse oximeter

OVERVIEW: BODY SYSTEMS AND SYSTEM ASSESSMENT

THE NERVOUS SYSTEM

Nervous System Overview

NERVOUS SYSTEM

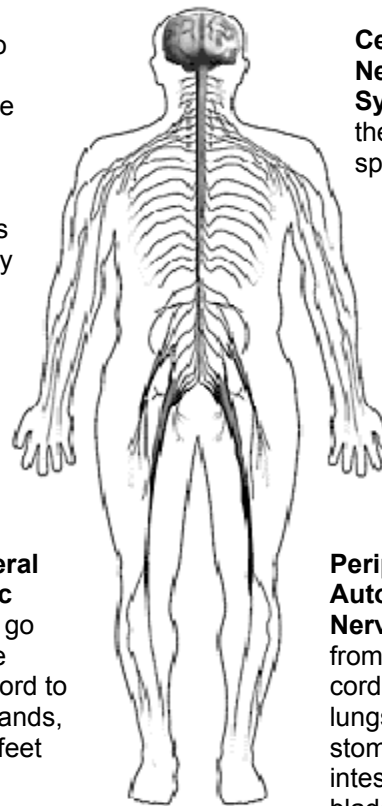
The nervous system integrates all the functions of the body. It efficiently organizes and controls the smallest action, thought, or feeling; monitors communication and the instinct for survival; and allows introspection, wonder, abstract thought and self-awareness. For the ease of comprehension, the neurological system is divided into two main divisions:

- Central Nervous System
- Peripheral Nervous System

The Peripheral Nervous system is further subdivided into:

- Autonomic Nervous System
- Somatic Nervous System.

Cranial Nerves go from the brain to the eyes, mouth, ears, & other parts of the body



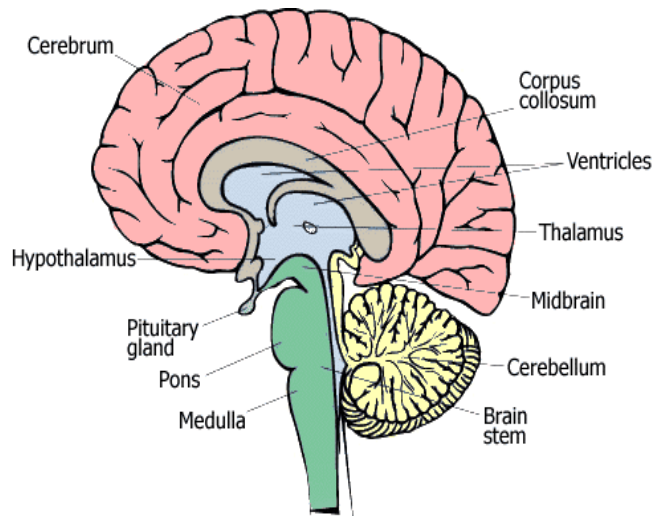
Central Nervous System is the brain & spinal cord

Peripheral Somatic Nerves go from the spinal cord to arms, hands, legs, & feet

Peripheral Autonomic Nerves go from the spinal cord to the lungs, heart, stomach, intestines, bladder, & sex organs

CENTRAL NERVOUS SYSTEM

CENTRAL NERVOUS SYSTEM (CNS) – the brain and the spinal cord. This is the primary pathway for messages between peripheral areas of the body and the brain. The CNS receives, processes and responds to input from within and outside the body. It also mediates reflexes.



The following is one way to organize the parts of the central nervous system:

- **Cerebrum** – The largest portion of the brain consists of the right and left cerebral hemispheres that are joined by the corpus callosum, a mass of nerve fibers permitting communication between corresponding centers in each hemisphere. The right hemisphere excels in spatial, artistic, and musical functions and the left in language and analytical tasks. Each hemisphere is divided into four lobes according to location and function. They are:
 - *Frontal lobe* – influences personality, judgment, abstract reasoning, social behaviour, language expression, and movement.
 - *Temporal lobe* – controls hearing, motivation, language comprehension, and storage and recall of memories.
 - *Parietal lobe* – interprets and integrates sensations, including pain, temperature and touch; also interprets size, shape, distance and texture.
 - *Occipital lobe* – functions primarily in interpreting visual stimuli.

The cerebral cortex, the thin surface layer of the cerebrum, is composed of gray matter (unmyelinated cell bodies). The surface of the cerebrum has convolutions (gyri) and creases or fissures (sulci).

- **Cerebellum** – The second largest portion of the brain, is located below the occipital lobes of the cerebrum. Three paired bundles of myelinated nerve fibers form communication pathways between the cerebellum and other parts of the central nervous system. It also has two hemispheres and integrates information from the vestibular system that indicates position and movement and uses this information to coordinate limb movements.

- **Brainstem** - The brainstem consists of the **midbrain, pons** and **medulla oblongata**. The brainstem relays messages between upper and lower levels of the nervous system. The cranial nerves originate from the brainstem.
 - *Midbrain* – mediates the auditory and visual reflexes.
 - *Pons* – connects the cerebellum with the cerebrum and the midbrain to the medulla and houses one of the respiratory centers.
 - *Medulla oblongata* – regulates respiratory, vasomotor and cardiac function.

- **Primitive structure** - Includes the **diencephalon, limbic system, and the reticular activating system (RAS)**.
 - *Diencephalon* – is located beneath the cerebral hemispheres and contains the
 - *Thalamus* - relays all sensory stimuli (except olfactory) as they ascend to the cerebral cortex. Functions include primitive awareness of pain, screening of incoming stimuli and focusing of attention.
 - *Hypothalamus* – controls or affects body temperature, appetite, water balance, pituitary secretions, emotions and autonomic functions, including the sleep/wake cycle.
 - *Limbic system* – rests deep within the temporal lobe. It initiates primitive drives such as hunger, aggression, and sexual and emotional arousal. It also screens all sensory messages traveling to the cerebral cortex.
 - *RAS* – a diffuse network of hyperexcitable neurons fanning out from the brain stem through the cerebral cortex, detects and directs all incoming sensory information to appropriate areas of the brain for interpretation. In addition, it is responsible for wakefulness.

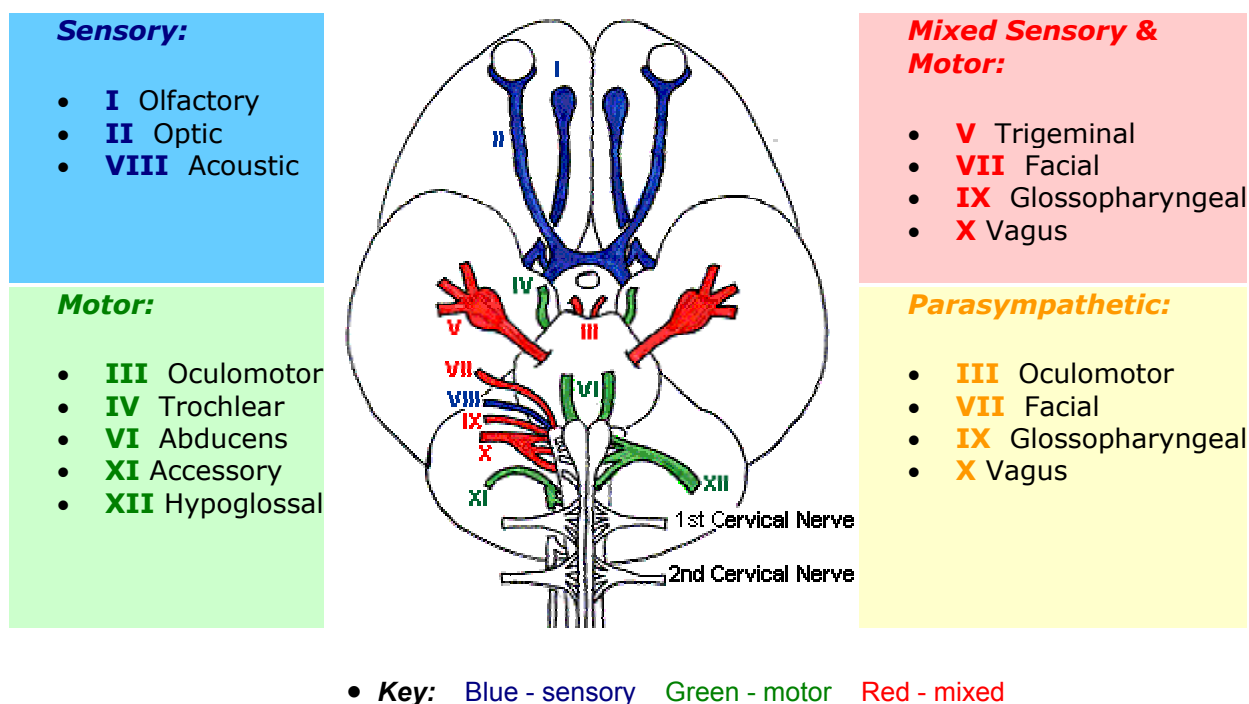
- **Spinal Cord** – It joins the brainstem at the foramen magnum and terminates near the second lumbar vertebra. It is housed in the bony structure of the vertebral column. The cord is continuous with the medulla. The spinal cord is divided into 31 segments with each segment giving rise to a pair of spinal nerves. The spinal cord has two main functions:
 - Conduction pathway for impulses going to and from the brain.
 - A reflex center. Many reflexes are mediated in the spinal cord without going to the higher brain centers.

PERIPHERAL NERVOUS SYSTEM – The organs of the peripheral nervous system are the nerves and ganglia. Nerves are bundles of nerve fibers. Cranial nerves and spinal nerves extend from the CNS to peripheral organs such as muscles and glands. Ganglia are collections of nerve cell bodies outside the CNS. The peripheral nervous system is further divided into sensory (afferent) and motor (efferent) divisions. The sensory division transmits impulses from peripheral organs to the CNS. The motor division transmits impulses from the CNS out to the peripheral organs to cause an effect or action. Further, the motor division is subdivided into the somatic nervous system and autonomic nervous system. The somatic nervous system supplies motor impulses to the skeletal muscles. Because these nerves permit conscious control of the skeletal muscles, it is also called the voluntary nervous system. The autonomic nervous system supplies motor impulses to cardiac and smooth muscle and to glandular epithelium. It is further subdivided into sympathetic, parasympathetic, and enteric divisions. As the autonomic nervous system regulates involuntary or automatic functions it is also called the involuntary nervous system.

The peripheral nervous system is made up of:

- cranial nerves (12 pairs) and
- spinal (31 pairs)

Cranial Nerves



Each of the cranial nerves is responsible for the innervation of one or more structures. Cranial nerves transmit motor and/or sensory messages.

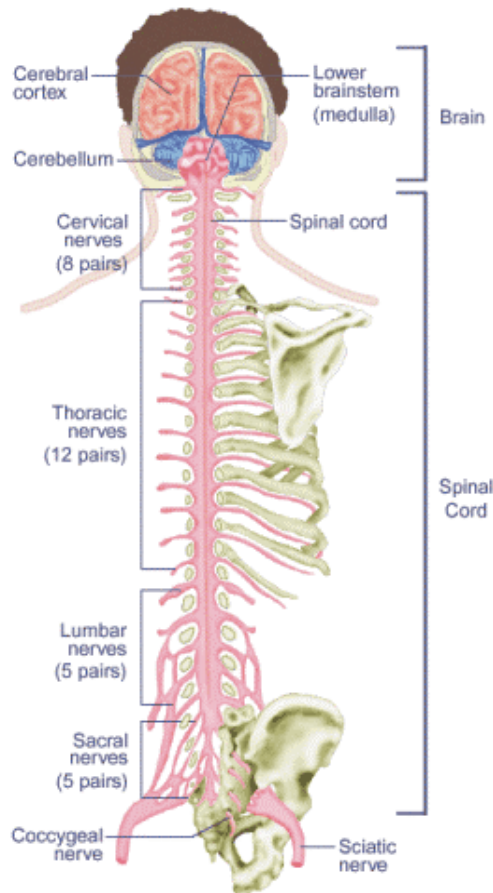
NERVE	NAME	FUNCTION
• I	• Olfactory	• <i>Sensory</i> : smell
• II	• Optic	• <i>Sensory</i> : vision
• III	• Oculomotor	• <i>Motor</i> : extraocular eye movement (superior, medial & inferior lateral), pupil constriction & eyelid elevation
• IV	• Trochlear	• <i>Motor</i> : extraocular movement (inferior medial)
• V	• Trigeminal	• <i>Sensory</i> : transmitting stimuli from face & head, corneal reflex; • <i>Motor</i> : chewing, biting & lateral jaw movements
• VI	• Abducens	• <i>Motor</i> : extraocular eye movement (lateral)
• VII	• Facial	• <i>Sensory</i> : taste receptors, (anterior 2/3 ^{rds} of the tongue); • <i>Motor</i> : facial muscle movement, including muscles of expression
• VIII	• Acoustic	• <i>Sensory</i> : hearing, sense of balance
• IX	• Glosso-pharyngeal	• <i>Motor</i> : swallowing movements; • <i>Sensory</i> : sensations of the throat, taste receptors (posterior 1/3 rd of the tongue)
• X	• Vagus	• <i>Sensory</i> : sensations of throat, larynx, and thoracic and abdominal viscera (heart, lungs, bronchi & GI tract) • <i>Motor</i> : movement of palate, swallowing, gag reflex, activity of thoracic and abdominal viscera, such as heart rate & peristalsis
• XI	• Spinal accessory	• <i>Motor</i> : shoulder movement, head rotation
• XII	• Hypoglossal	• <i>Motor</i> : tongue movement

Spinal Nerves

GROUPS OF SPINAL NERVES

The 31 pairs are named according to the corresponding vertebral bodies. Each spinal nerve consists of sensory and motor neurons that carry messages to and from particular body regions called dermatomes (sensory) and myotomes (motor). The thirty-one pairs, are grouped as follows:

- Cervical, 8
- Thoracic, 12
- Lumbar, 5
- Sacral, 5
- Coccygeal, 1.



AUTONOMIC NERVOUS SYSTEM (ANS) – is subdivided into the sympathetic, parasympathetic, and enteric nervous systems. It is the regulation of these systems that homeostasis is maintained in an unconscious state.

The sympathetic nervous system (SNS) is associated with the “fight or flight” response resulting in vasoconstriction, elevated blood pressure, improved blood flow to skeletal muscles, reduction in gastric secretions and dilation of bronchioles.

The parasympathetic response (PNS) is associated with conservation, restoration, and maintenance of normal body functions such as reducing the heart rate and increasing gastrointestinal motility, vasodilatation, and bronchial constriction. A balance of the SNS and PNS is vital to survival, as the hemodynamics of prolonged innervation of either system could not support life.

The enteric nervous system is a meshwork of nerve fibers that innervate the viscera (gastrointestinal tract, pancreas, gall bladder).

Collectively, the CNS and peripheral nervous system keep a person alert, awake, oriented, and able to move about freely without discomfort and with all body systems working to support homeostasis. Thus, any disorder affecting the nervous system can cause changes in any and all body systems. Typically disorders of the nervous system involve some alteration in arousal, cognition, movement, muscle tone, homeostasis and pain. Most health challenges result in one or more alteration, and the intimate intercommunication between the CNS and peripheral nervous system means that one alteration can lead to another.

Although the nervous system is very complex, there are only two main types of cells in nerve tissue. The fundamental unit that participates in all nervous system activity is the neuron, a highly specialized cell that receives and transmits electrochemical nerve impulses. The other type of cells are glial cells. These are nonconductive and provide a support system for the neurons (a type of connective tissue for the nervous system). Neurons are highly specialized and are called amitotic. Amitotic means that if a neuron is destroyed, it cannot be replaced because neurons do not go through mitosis. Each neuron has three basic parts:

- cell body,
- one or more dendrites and
- a single axon. Many axons are surrounded by a segmented, white, fatty substance called myelin. Myelinated fibers make up the white matter in the CNS, while cell bodies and unmyelinated fibers make up the gray matter. Myelin serves to speed the transmission of nerve impulses. Varying thickness of myelin surround different axons.

The brain and spinal cord are covered with several protective layers: the meninges (pia mater, arachnoid, and dura mater) and are suspended in cerebrospinal fluid within the cranial vault and the spinal canal, respectively. A delicate balance of maintaining intracranial pressure occurs with the aid of autoregulation whereby CSF production and blood volume are adjusted in response to variables impacting intracranial pressure.

Nervous System Assessment

- » Head, face and neck
 - Size, contour, movement, expression, symmetry, color, lesions, edema, masses, scars
 - pain, tenderness, stiffness
- » Level of Consciousness and Cognition
 - Awake, alert (lethargic, restless, irritable, stuporous, comatose), fainting
 - Orientation to person, place, time
 - Communication: verbal (preferred language, response to verbal/nonverbal stimuli, clarity, comprehension, coherence), ability to read and write, other forms of communication (sign language, blackboard)
 - Memory (remote past, recent past, immediate past, general recall)

cont'd

Nervous System Assessment cont'd

» Movement

- Motor strength: right side/left side; upper/lower extremities; weakness, parasthesia, paralysis, coordination, depth perception, gait, spasms
- Voluntary control, tremors, seizure activity
- Vertigo

» Reflexes – deep tendon reflexes, Babinski's sign, posturing

» Protection and Regulation

- Temperature - core (body), skin
- Pain - **PORSTA**
- Safety - history of falls, bed rails, protective equipment, position of bed (high/low), type of chair, brakes as appropriate, assistive devices
- Immunologic defenses – lymph nodes: size, shape, mobility tenderness, enlargement; allergies; immunizations; exposure to infectious/communicable diseases, travel history
- Sensory - ability to interpret sensory stimulation: touch, smell, taste, differentiate sharp, dull, soft, hard, pressure, hot, cold
 - Eyes
 - Appearance, position, response and movement:
 - eyelid opening (spontaneous/to noise or command), ptosis, edema, styes, exophthalmos
 - extraocular movement, position and alignment, strabismus, nystagmus
 - conjunctiva (color, moisture, lesions), discharge, vascular changes
 - corneal reflex; sclera: color, vascularity, jaundice
 - pupils: size, shape, equality, reaction to light, accommodation
 - Perception:
 - Acuity: visual loss, corrective lenses (date and results of last eye examination): glasses, contacts, prosthesis, glaucoma, diplopia, photophobia, color vision
 - Pain, burning, itching, dryness, drainage
 - Ears
 - Appearance: position of ears, cerumen, drainage, tinnitus, pain
 - Perception: acuity: response to sounds (normal voice versus whisper sound), aids
 - Nose
 - Patency, sense of smell, secretions, sneezing

THE MUSCULOSKELETAL SYSTEM

Musculoskeletal System Overview

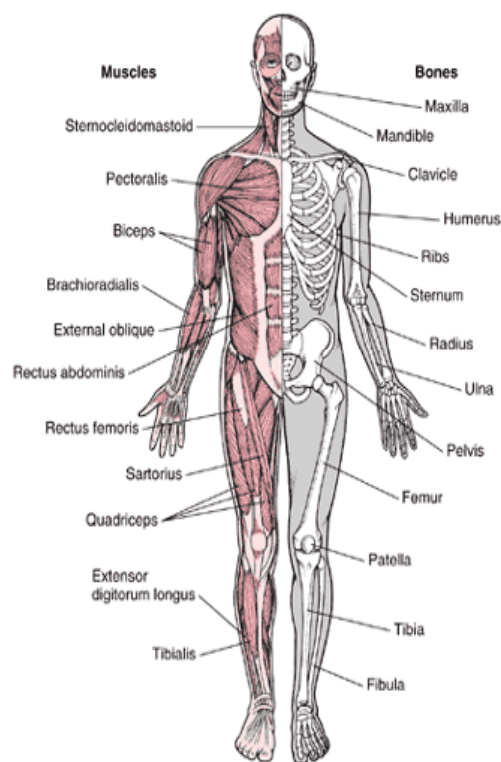
The CNS coordinates the function of the musculoskeletal system. The musculoskeletal system gives the body form and shape and consists of a complex system of bones, joints, skeletal muscles, ligaments, tendons and other tissues. It also protects vital organs such as the skull encasing the brain; sternum and ribs protecting the heart and lungs; makes movement possible; houses the marrow contributing to blood cell production; and stores calcium and other minerals.

Bones serve as levers that transmit muscular forces. Skeletal muscles are attached to bones by bands of connective tissue called tendons. Vessels and nerves pass into muscles through fascia. When muscles contract in response to neural stimulation, they pull on bones, thereby moving parts of the body. Bones are held together at joints by bands of connective tissue called ligaments. Ligaments support and strengthen joints. Joints occur at the point of contact between two bones. Joints hold bones together and many permit flexibility and movement. Joints are classified according to the degree of movement permitted: none, slight/limited and high.

The 206 bones that comprise the human skeleton are classified according to:

1. Location
 - 80 form the axial skeleton (the vertical axis) which consists of skull, vertebral column, ribs and sternum and
 - 126 form the appendicular skeleton (the free appendages and their attachments to the axial skeleton) that consists of the upper and lower extremities, the shoulders and the pelvis.
2. Shape
 - long, short, flat and irregular.
3. Structure
 - cortical or cancellous.

MUSCULOSKELETAL SYSTEM



Bone growth is ongoing and influenced by hormones, diet and amount of stress on the bone. It occurs by continual action of osteoblasts – bone forming cells – and osteoclasts – bone-resorbing cells. Vitamin D supports bone calcification. Calcium absorption, an inverse reciprocal relationship with phosphorus, is also influenced by the parathyroid hormone and renal function.

Assessment of Musculoskeletal System

- » Extremities
 - Size, length, shape, symmetry, color, fracture, swelling, temperature, numbness, paresis, prosthesis
- » Joints
 - Symmetry, active and passive mobility, deformities, stiffness, fixation, masses, swelling, fluid, boggiess, crepitations, pain, tenderness
- » Muscles
 - Symmetry, size, shape, tone, rigidity, twitching, spasms, tremors, weakness, cramps, pain
- » Back
 - Scars, sacral edema, spinal abnormalities, kyphosis, scoliosis, tenderness, pain
- » Pain
 - At rest, movement, exercise, PQRSTA
- » Rest and Activity level and pattern
 - Prescribed, actual, range of motion, gait, aids (splint, brace, prosthetics, cast, crutches, walker, cane, wheelchair), stamina, tolerance, condition and fit of socks, shoes
 - Usual daily or weekly activities, occupation, leisure-exercise patterns, limitations in ambulation, bathing, dressing, toileting
 - Usual sleep pattern – bedtime, hours, sleep aids; problems falling asleep, staying asleep, feeling rested, naps
 - Environmental maintenance - size and arrangement of home, stairs, and bathroom; safety needs, home responsibilities

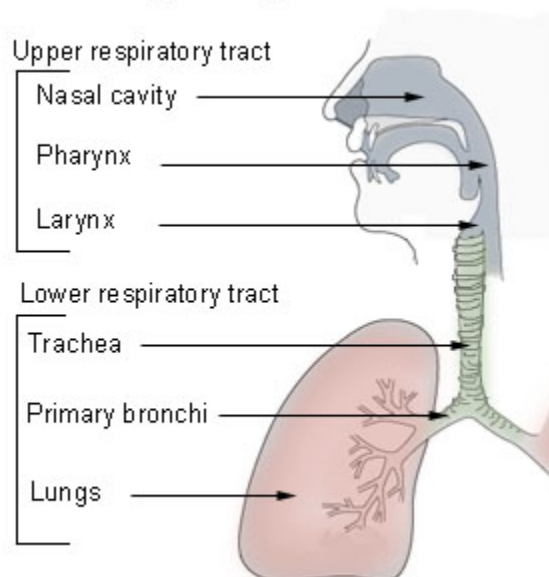
THE RESPIRATORY SYSTEM

Respiratory System Overview

The respiratory system's primary function is gas exchange. Air enters with inhalation (inspiration); travels through the respiratory passages, exchanging oxygen (O_2) for carbon dioxide (CO_2) at the tissue level; and eliminates carbon dioxide on exhalation (expiration). Acid-base balance is also a function of the respiratory system.

RESPIRATORY TRACT

The respiratory system is composed of the upper and lower airways and the thoracic cage. The upper airway – consisting of the nose, mouth, pharynx, and larynx – warms, humidifies and filters air enroute to the lungs. The lungs are comprised of 5 lobes: 3 on the right and 2 on the left. The cough reflex and mucociliary clearance are protective mechanisms of the upper airway.



The trachea, bronchi, bronchioles and alveoli compose the lower airways. These structures are mostly anatomic dead space and serve to allow the movement of air in and out of the lungs where gas exchange occurs at the alveolar level. Gas exchange occurs by diffusion (O_2 passes to the blood and CO_2 , a by-product of cellular metabolism, passes out of the blood and is channeled away). Transport of oxygen to tissues depends on red blood cells and the concentration of hemoglobin, regional blood flow, the arterial oxygen content, and the cardiac output. As circulation is continuous, cellular CO_2 diffuses into the blood and is eliminated via the pulmonary circulation.

For effective gas exchange, ventilation and perfusion at the alveolar level must match closely. Effective respiration depends on the ratio of ventilation to perfusion, lung volume and capacity, compliance and resistance to airflow, neurological integrity (lateral medulla oblongata of the brain stem) and respiratory drive in response to pH, P_aCO_2 and P_aO_2 .

Contraction and relaxation of the respiratory muscles moves air into and out of the lungs. Normally, inhalation is an active process whereas exhalation is passive.

Auscultation is used to determine breath sounds and air entry. A systematic approach and visualization of each lobe enhance the effectiveness of auscultation; the right upper and middle and left upper lobe are best heard anteriorly, whereas lateral and posterior auscultation facilitates findings in the lower lobes. Normal breath sounds are classified according to sound (pitch and loudness) based on the airflow (present, diminished, absent) through various sized diameters of the bronchial tree. Normal breath sounds are:

1. *Tracheal* – these are loud, tubular, high-pitched sounds heard as air passes through the trachea.
2. *Bronchial* – these have a tubular quality that is less pronounced than tracheal sounds.
3. *Bronchovesicular* – these are medium pitched and comparatively softer than bronchial sounds. They are heard near the mainstem bronchi in first and second intercostal spaces anteriorly and between the scapulae posteriorly. These sounds occur as air travels through the upper airways – bronchial tree and branches.
4. *Vesicular* – these are comparatively the softest and lowest pitched breath sounds. They are best heard in the periphery and are inaudible over scapulae. These sounds occur as air travels through alveolar ducts and alveoli. Heard mainly on inspiration and little on exhalation.

Extra or abnormal breath sounds are referred to as *adventitious* and include crackles, wheezes, stridor and pleural friction rubs. Past identification of sounds also included rales and rhonchi. Currently these are described as coarse sounds. If adventitious sounds are heard on initial auscultation, have the patient cough and re-listen. Adventitious sounds are classified by location, timing (inspiratory or expiratory) and pitch.

Refer to any one of the following websites for a review of various lung sounds.

<http://www.rale.ca/>

<http://www.med.ucla.edu/wilkes/intro.html>

<http://www.vh.org/adult/provider/internalmedicine/LungSounds/LungSounds.html>

Respiratory System Assessment

- » Nose
 - Nasal size, patency, symmetry, flaring, mucosal color, edema, bleeding, furuncles, deformities, alignment, exudates, bleeding
 - Pain, tenderness, sinus pain
 - Discrimination of odours, sneezing
- » Trachea
 - Deviation, scars, stridor
- » Chest
 - Size, shape (oval, pigeon, funnel, barrel, kyphosis), symmetry, deformities, pain, tenderness, expansion, crepitation, tactile fremitus
- » Lungs
 - Breathing patterns: rate, regularity, depth, effort, retractions, use of accessory muscles, abdominal, diaphragmatic, preferred position
 - Auscultation - bilateral air entry; sounds: normal (bronchial, bronchovesicular, vesicular), adventitious (crackles, wheezes, rub), intensity, pitch, quality, duration, equality, stridor; vocal resonance
 - Oxygenation of tissues: cyanosis, clubbing, mental alertness, activity tolerance, use of aids (oxygen, tracheostomy, ventilator, suction requirements)
- » Cough
 - Productive (color, amount, consistency), nonproductive, weak, harsh, dry, moist, history of smoking, exposure to second hand smoke

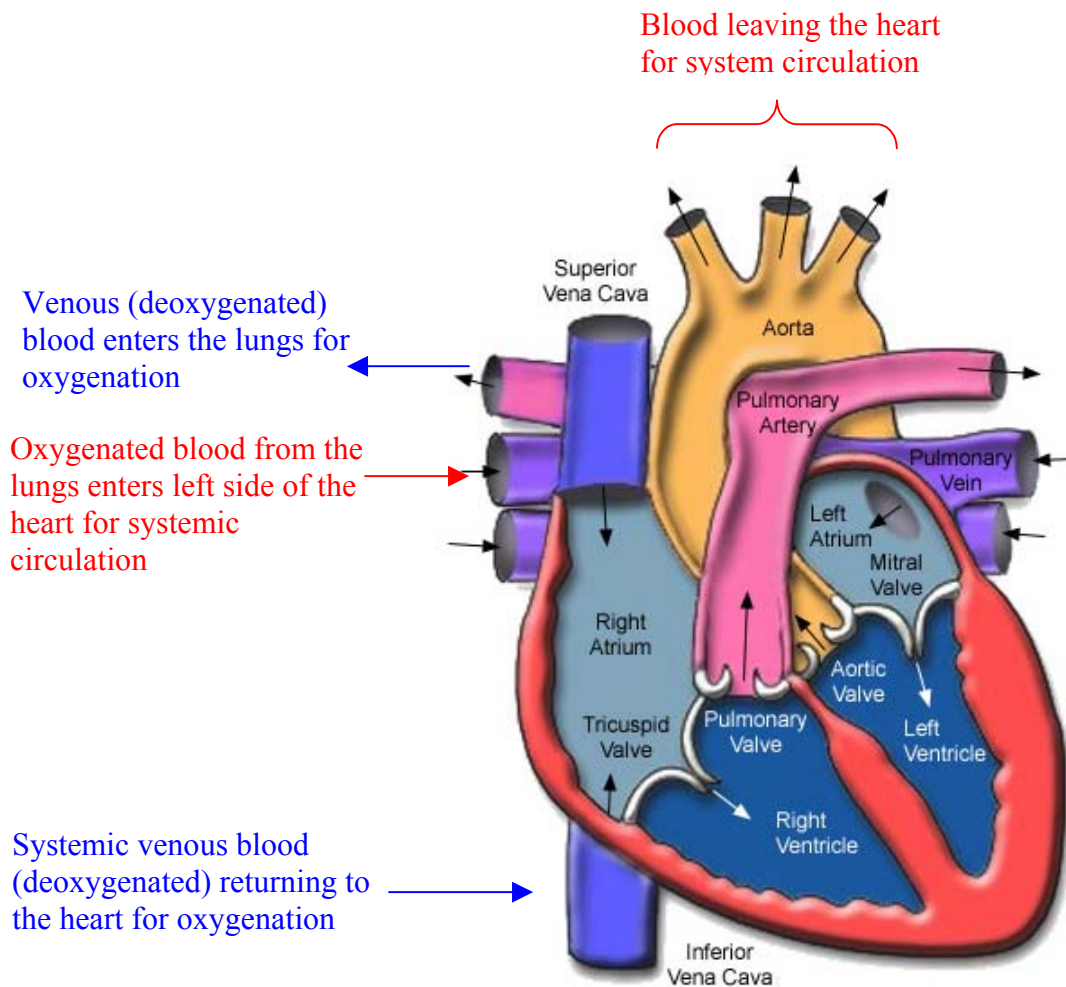
THE CARDIOVASCULAR SYSTEM

Cardiovascular System Overview

The cardiovascular system delivers oxygen, nutrient, hormone, and metabolite rich blood to the body's cells. In turn the blood collects waste products from the cells and delivers them to target organs for detoxification and elimination. The cardiovascular system starts its activity when the fetus is four weeks old and is the last system to cease activity at the end of life. It is the cardiovascular system that defines the presence of life. The cardiovascular system includes the heart, blood vessels and lymphatic vessels and serves as the body's transport system. The heart is a strong four-chambered pump that lies in a pericardial sac and is situated in the left mediastinum above the diaphragm.

The cardiovascular system, frequently referred to as the circulatory system, is divided into pulmonary and systematic (including coronary) circulations. The right side of the heart receives systemic deoxygenated blood and delivers it to the pulmonary circulation via the pulmonary artery for oxygenation. The left atrium receives oxygenated blood from the four pulmonary veins for systemic distribution. The blood exits the left ventricle via the aorta and is distributed by aortic branches. The valves control the direction of blood flow. The network of blood vessels transporting the blood includes arteries, arterioles, capillaries, venules, and veins. The veins return the deoxygenated blood to the right side of the heart.

Review the blood flow through the right and left sides of the heart with the assistance of the diagram that follows.



Effective circulation relies on electrical conduction yielding strong rhythmic contractions of the cardiac muscle. The specialized cells of the heart's conduction system control the rhythmic contraction and relaxation of the heart. The heart's pacemaker, the sinoatrial (SA) node generates impulses that travel through the atria to the atrioventricular node (AV) and then to the Bundle of His and the ventricular Purkinje fibers.

Each cardiac cycle consists of electrical (depolarization and repolarization) and mechanical processes (contraction and relaxation). Depolarization leads to contraction, also known as *systole*, ejecting the blood from the heart, which is followed by repolarization; relaxation or *diastole* that permits filling of the heart.

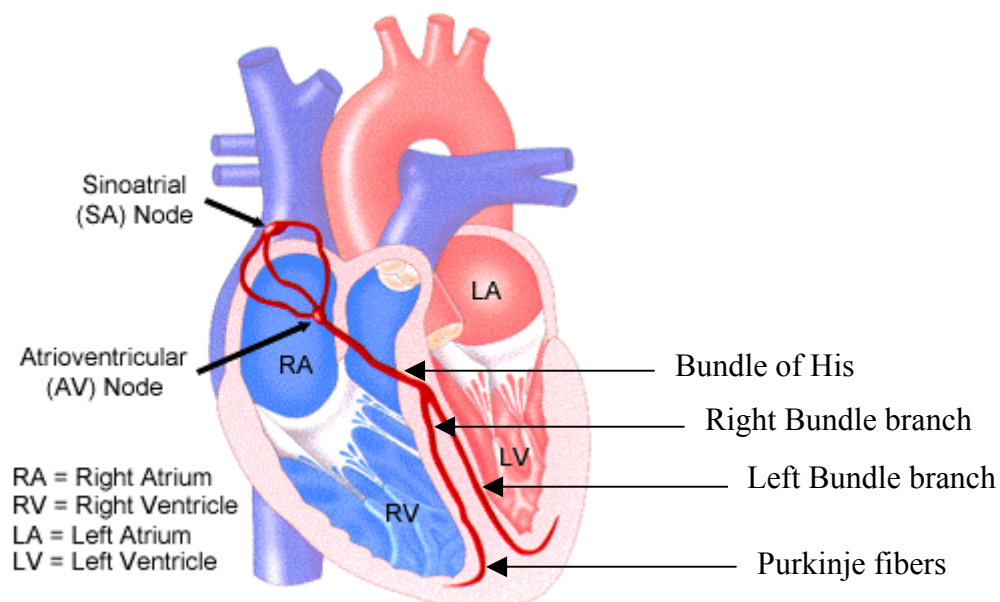
Neural control of circulation occurs with the ANS (PNS and SNS). Sympathetic stimulation increases the heart rate, cardiac contractility and vessel tone, whereas parasympathetic stimulation has the opposite effect.

The work and efficiency of the heart is determined by the volume of blood the heart receives (preload), the pressure that it must generate to pump the blood out of the heart (afterload), and the rate at which it performs (heart rate). It is also important to note that the health of the heart is a product of the oxygen delivered to the myocardium (via the coronary arteries).

Normal heart sounds occur with the closure of cardiac valves. Normally, two heart sounds occur during each cardiac cycle. S₁ (sounds like “lub”) is the closure of the tricuspid and mitral valves that occurs at the beginning of systole (contraction). S₂ (sounds like “dub”) occurs when the pulmonic and aortic valves close marking the end of systole.

Follow the electrical and mechanical processes using the diagram that follows.

Normal Cardiac Conduction



Listen to a variety of heart sounds available at the following websites sponsored by 3M Littman Stethoscope.

http://cms.3m.com/cms/GB/en/2-157/ccReeFU/view.jhtml? DARGS=%2F%2FWCMS_cache%2F%2F43%2F1%2FWCMS21990-1.jhtml.1 A& DAV=10

http://www.3m.com/us/healthcare/professionals/littmann/jhtml/littmann_heart_sounds.jhtml

Blood Vessels

An artery carries oxygen rich blood away from the heart with the exception of the pulmonary artery. Arteries are strong vessels designed to withstand high pressure. Arterioles are small arteries important in regulating blood pressure and in determining the amount of blood distributed to any tissue. Sympathetic nerves innervate the smooth muscle of the arterioles. Impulses from these nerves stimulate the smooth muscle to contract, reducing the diameter of the blood vessel. Changes in blood vessel diameter depend on the metabolic needs of the tissue served, as well as the demands of the body as a whole. For example, arterioles may dilate in response to increased CO₂ or decreased O₂ in the tissues. During exercise, when skeletal muscle tissue is rapidly metabolizing, the blood supply to the muscles increases. It is important to note that if all of the blood vessels in the body were dilated at the same time, there would not be enough blood to fill them completely. Blood is directed to various tissues according to need. Normally the liver, kidneys and brain receive the greatest percentage of the blood from the heart. In cases of sudden stress, the blood is rerouted in favor of the heart and skeletal muscles.

Capillary walls are so thin that oxygen and nutrients easily diffuse through them. Further capillaries are somewhat porous allowing plasma to leak into the interstitial spaces that bathes all cells of the body. Most of the plasma returns to the circulation at the venous end or through the lymphatic system.

Venules accept blood from the capillaries and then become veins. Veins are thinner walled than arteries and have valves to facilitate the return flow of blood to the heart.

Each time the left ventricle pumps blood into the aorta, the elastic wall of the aorta stretches resulting in an alternate expansion and recoil of an artery yielding an arterial pulse. Blood pressure is the force exerted by the blood against the inner walls of the blood vessels. Blood pressure is determined by the cardiac output and the resistance of the flow:

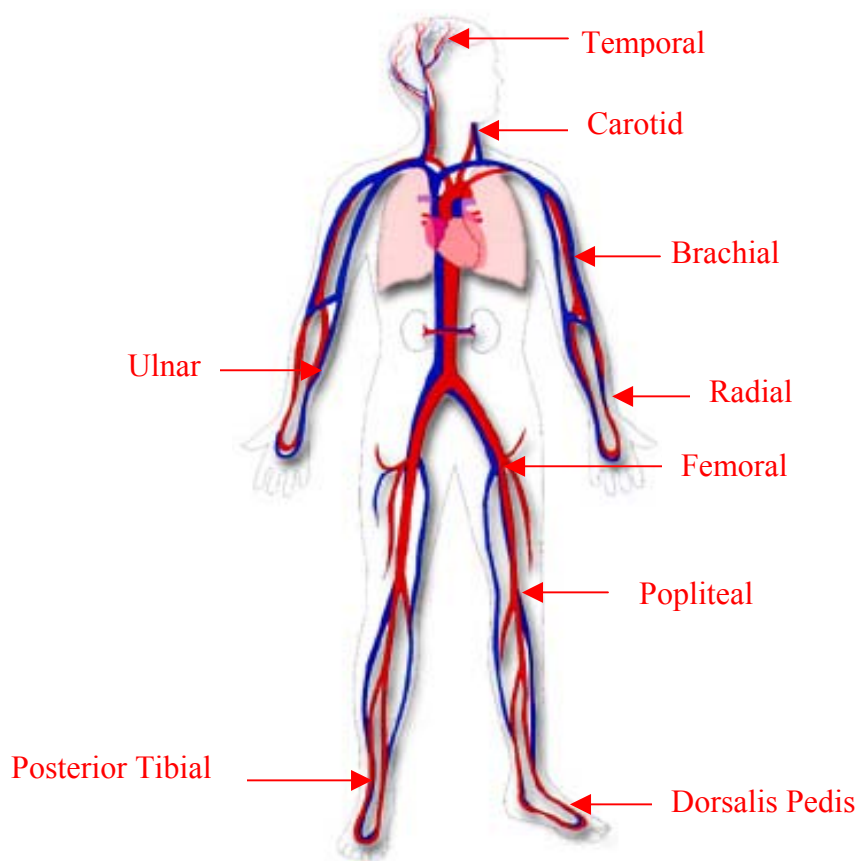
$$\text{Blood pressure} = \text{cardiac output} \times \text{resistance}$$

Additional factors that impact blood pressure include blood volume, peripheral resistance and blood viscosity. Multiple factors influence the preceding factors like vasoconstriction/vasodilation of blood vessels, fluid volume regulators (electrolytes, kidney function, etc), and composition of blood constituents.

Skin assessment findings such as temperature, color, mottling, evidence of trauma, and bruising, etc. correlate with cardiovascular function. Note nail beds for cyanosis, clubbing and capillary refill. Normal refill of 3 seconds or less fits with good arterial perfusion. Presence/absence of edema should be determined. Assess the depth (mm) of depression for pitting edema and the rapidity of skin recoil (seconds).

Common sites for peripheral pulse palpation are identified in the diagram below. Peripheral pulses are assessed for rate, rhythm, equality of corresponding pulses and amplitude. Palpate a regular pulse for at least 30 seconds and an irregular pulse for 60 seconds. Equality of pulses is determined by comparing counterpart sites i.e. right and left radial pulses. Amplitude is determined as: nonpalpable, faintly palpable, normal and not readily obliterated, and bounding (cannot be obliterated).

Peripheral Pulses



Diagrams adapted from Anatomy of Health Heart – Texas Heart Institute Heart Information Center

Cardiovascular System Assessment

» Cardiac patterns

- Heart sounds – apical and radial rate (pulse deficit), rhythm, intensity, regularity (regularly irregular, irregularly irregular), skipped or extra beats, point of maximal impulse, pacemaker, bruits, thrills, murmurs, rubs
- Blood pressure (sitting, supine, standing, right and left)
- Precordial movements, neck veins, right and left cardiac borders
- Peripheral pulses (absent, weak, moderate, strong, bounding), capillary refill, color of nail beds and lips, finger clubbing, appearance and temperature of extremities, lower limb hair distribution, ulcers
- Edema, location, severity, dependency

THE GASTROINTESTINAL SYSTEM

Gastrointestinal System Overview

The gastrointestinal system (GI) has the vital task of providing essential nutrients to fuel the body's physiologic activities. The function of the GI system profoundly impacts quality of life. The body's nutritional status – balance between nutrient intake and energy expenditure or need – reflects the degree to which the physiologic need for nutrients is being met. Proper nutrition promotes growth, maintains health, and helps the body resist infection and recover from health challenges.

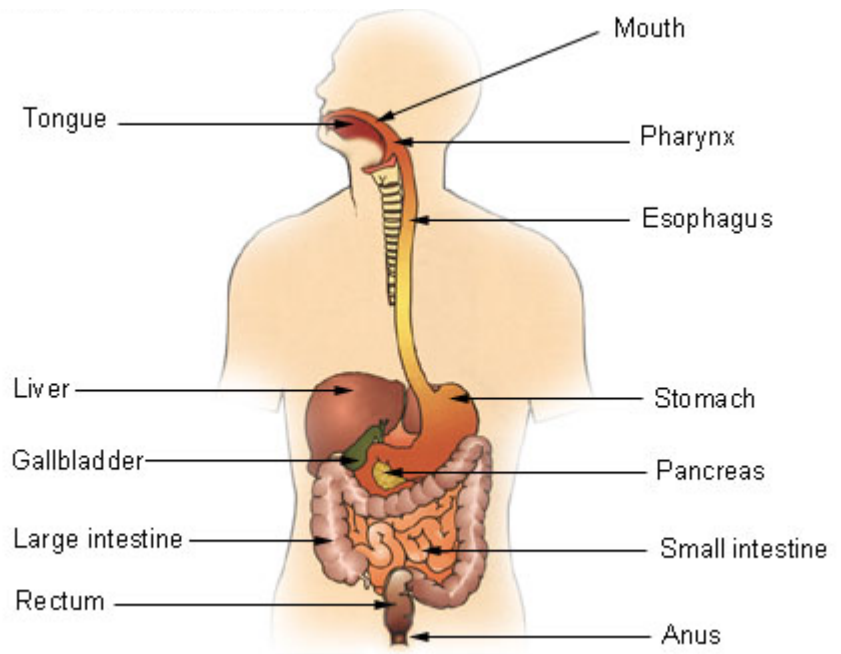
The major organs of the GI system are contained in the abdominal cavity that is protected by a serous membrane called the peritoneum. The peritoneum is divided into two layers: the parietal that lines the abdominal wall; and the visceral that covers the organs in the abdomen.

The GI system has two major components, the:

- alimentary canal (or gastrointestinal tract - GIT) and
- accessory organs

ORGANS OF GASTROINTESTINAL SYSTEM

The alimentary canal is a hollow muscular tube beginning at the mouth and extends to the anus. It includes the oral cavity, pharynx, esophagus, stomach, small intestine, and large intestine. Peristalsis propels the ingested material along the tract; sphincters prevent its reflux.



Accessory organs that assist GIT function include the salivary glands, liver, biliary duct system (gallbladder and bile ducts), and the pancreas.

The GI system serves two major functions:

1. digestion, the break down of food and fluid into simple chemicals for absorption into the blood stream that is distributed to a variety of destinations; and
2. elimination of waste products from the body through excretion of feces

The accessory organs contribute to digestion and perform other functions to enhance nutritional status as evident by the activities of the pancreas. The pancreas, for example, is both an exocrine and endocrine gland. Exocrine functions contribute to digestion with the secretion of digestive enzymes aiding absorption of proteins, fats and carbohydrates. Insulin and glucagon are two hormones secreted as an endocrine function of the pancreas and contribute to the regulation of blood glucose.

The liver, another accessory organ, is the largest solid organ and one of the most complex organs in the body. The multiple functions of the liver include

- metabolism of carbohydrates, proteins, and fats
- production of bile
- conversion of ammonia (protein breakdown by-product) to urea
- transformation and detoxification of chemicals (hormones, drugs, alcohol)
- synthesis of serum proteins, and multiple coagulation factors
- storage of vitamins and minerals

The gallbladder resting beneath the liver is a saclike reservoir for bile. Bile enters the duodenum within 30 minutes of eating and acts to emulsify fats aiding in their digestion. Bile undergoes further conversion to an excretable form and is eliminated in the urine and feces.

Gastrointestinal System Assessment

The usual sequence of IPPA assessment differs for the gastrointestinal system. For an abdominal assessment the order is as follows (IAPP):

- inspection
- auscultation
- percussion
- palpation

The GI system requires auscultation before percussion and palpation, because these two techniques can alter intestinal activity and bowel sounds. The abdomen is visualized as four quadrants or nine regions.

In the patient with *pain*, always inspect first, auscultate second, then percuss and palpate the painful region last. Auscultation of the abdomen provides information about bowel motility and vascular integrity. If nasogastric suction is in operation, turn it off during the auscultation.

Normally, air and fluid moving through the bowel by peristalsis yield soft, bubbling sounds without a regular pattern, often heard as soft clicks and gurgles interspersed every 5 to 15 seconds. Sounds occurring one every minute or longer are considered hypoactive and are consistent with postoperative ileus, a colon filled with feces, peritonitis, paralytic ileus and narcotics. Absent bowel sounds are rare. Ensure the patient has an empty bladder since sounds may be obscured with a full bladder. Gentle pressure on the abdomen may initiate peristalsis and audible bowel sounds, as will having the patient eat or drink fluids. *Note: Further auscultate the major abdominal arteries. Normally no sounds are detected. Should sounds be present they are suggestive of diseased or narrowed arteries.*

cont'd

Gastrointestinal System Assessment *cont'd*

» Mouth and throat

- Gums: color, edema, bleeding, hypertrophy, retraction, pain; lips, tongue: size, shape, protrusion, symmetry, color, hydration, markings, ulcers, burning, swelling, coating
- Teeth: number, caries, caps, appliances, dentures (fit and condition), bite, chew, swallow
- Sensitivity to heat or cold, taste; gag reflex, throat soreness, odour, cough, sputum, hemoptysis
- Ability to speak, pain

» Abdomen

- Inspection – size, color, contour, symmetry, fat, muscle, tone, turgor, hair distribution, scars, umbilicus, striae, rashes, distention, abnormal pulsations
- Auscultation – sounds absent, present: hypoactive, hyperactive
- Palpation – tenderness, rigidity, liver border, masses, bulges, protrusions
- Percussion – tympany: air bubble; dullness: solid organ/free fluid
- Muscle spasm, guarding, pain

» Anus

- Pigmentation, hemorrhoids, excoriation, rashes, abscess, pilonidal cyst, masses, lesions, tenderness, pain, itching, burning
- Elimination patterns: Route: rectal, ileostomy, colostomy; control: usual time, frequency; character: color, consistency, constipation, diarrhea
- Elimination aids: laxatives, suppositories, enemas

» Nutrition

- Height, weight, ideal body weight, recent weight change; usual daily food and fluid intake, appetite, food restrictions or preferences, food supplements, food preferences and intolerances, food allergies; swallowing, chewing, feeding problems; nausea and vomiting; alcohol use
- Method of intake: oral, tube feeds, TPN, intravenous
- Condition of skin, hair, nails, eyes

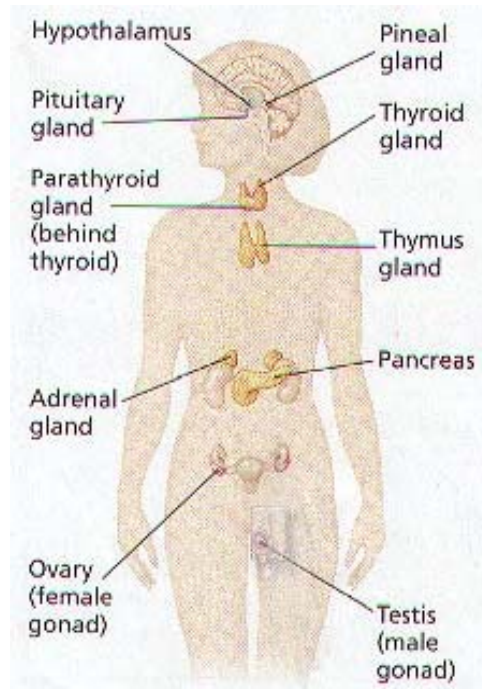
THE ENDOCRINE SYSTEM

Endocrine System Overview

The endocrine system along with the nervous system, regulate and integrate the body's metabolic activities and maintain homeostasis. The endocrine system consists of:

- Glands, specialized cell clusters;
- Hormones, chemical substances secreted directly into the blood stream by glands; and
- Receptors, protein macromolecules to which hormones bind, effecting target cell response.

ORGANS OF THE ENDOCRINE SYSTEM



Processes mediated by the endocrine system include:

- Growth and development of body tissue
- Reproduction and sexual differentiation
- Energy production
- Regulation of metabolism and nutrient supply and
- Stress response.

A single hormone may affect more than one of these processes and each process may be controlled by several hormones. For example, thyroid hormone is essential in development as well as many aspects of homeostasis and metabolism, while glucocorticoids, such as cortisol, are important both in growth and nutrient supply and are also modulators of immune function. The roles several hormones play in one function is evident by the regulation of blood glucose, which involves insulin (lowers blood glucose) and its counter regulatory hormone, glucagon (raises blood glucose), as well as cortisol (raises blood glucose), growth hormone (variable effect on blood glucose), and epinephrine (raises blood glucose).

Much hormonal regulation depends on feedback loops. The hypothalamus, the main integrative center for the endocrine system, and the autonomic nervous system, help control some endocrine glands by neural and hormonal pathways. The hypothalamus also exerts hormonal control on the anterior pituitary gland by releasing stimulatory and inhibitory hormones into the portal system.

Although eight major endocrine glands are scattered throughout the body, they are still considered to be one system, as they share similar functions, similar mechanisms of influence, and are interrelated. Following is a list of the endocrine glands, hormones secreted, target organs and their primary functions.

GLAND	HORMONE	TARGET ORGAN	HORMONE FUNCTION
Thyroid	<ul style="list-style-type: none"> · Thyroxine (T₄) · Triiodothyronin (T₃) · Calcitonin 	<ul style="list-style-type: none"> · All tissues · Bone, renal tubules 	<ul style="list-style-type: none"> · Regulate metabolic processes · Lower ionized calcium level
Parathyroid	<ul style="list-style-type: none"> · Parathyroid hormone (PTH) 	<ul style="list-style-type: none"> · Gastrointestinal tract, bone, renal proximal tubules 	<ul style="list-style-type: none"> · Regulate calcium and phosphorus levels
Adrenal Medulla	<ul style="list-style-type: none"> · Epinephrine · Norepinephrine 	<ul style="list-style-type: none"> · Adrenergic receptors in all tissues 	<ul style="list-style-type: none"> · Control vasoconstriction
Adrenal Cortex	<ul style="list-style-type: none"> · Corticoids i.e. <ul style="list-style-type: none"> - glucocorticoids (cortisol) - mineralocorticoids (aldosterone) 	<ul style="list-style-type: none"> · Renal distal tubules 	<ul style="list-style-type: none"> · Metabolize carbohydrates, fats and proteins; anti-inflammatory effect · Sodium, potassium and water balance
Pancreas	<ul style="list-style-type: none"> · Glucagon · Insulin 	<ul style="list-style-type: none"> · Throughout the body · Liver, muscle, adipose tissue 	<ul style="list-style-type: none"> · Raise blood glucose · Lower blood glucose
Testes	<ul style="list-style-type: none"> · Testosterone 	<ul style="list-style-type: none"> · Reproductive tract and other organs 	<ul style="list-style-type: none"> · Maintain growth and development of reproductive organs; stimulates sperm production
Ovaries	<ul style="list-style-type: none"> · Estrogens (estrone & estradiol) · Progesterone 	<ul style="list-style-type: none"> · Reproductive tract and other organs 	<ul style="list-style-type: none"> · Maintain growth and development of reproductive organs; produce eggs in ovaries
Thymus	<ul style="list-style-type: none"> · Thymosin 	<ul style="list-style-type: none"> · Lymphatic system and spleen 	<ul style="list-style-type: none"> · Needed early in life to develop the lymphoid system.
Pineal	<ul style="list-style-type: none"> · Melatonin 	<ul style="list-style-type: none"> · Hypothalamus 	<ul style="list-style-type: none"> · Regulate sleep-wake cycle

GLAND	HORMONE	TARGET ORGAN	HORMONE FUNCTION
Anterior pituitary	· Growth hormone (GH)	· Bones, muscles, organs	· Stimulate growth by increasing protein synthesis
	· Thyroid stimulating hormone (TSH)	· Thyroid	· Stimulate thyroid to produce T ₃ and T ₄
	· Corticotropin (=ACTH)	· Adrenal cortex	· Stimulate secretion of all adrenocorticoids
	· Follicle-stimulating hormone (FSH)	· Ovaries and seminiferous ducts	· Promote development of ovaries, secretion of estrogen, and sperm maturation
	· Luteinizing hormone (LH)	· Ovaries	· Promote ovulation and secretion of progesterone
	· Prolactin	· Breast, corpus luteum	· Maintain corpus luteum & progesterone secretion, controls breast milk secretion
Posterior pituitary	· Oxytocin	· Uterus and breasts	· Stimulate uterine contractions and lactation
	· Antidiuretic hormone (ADH)	· Kidneys (collecting ducts & distal tubules)	· Promote water reabsorption

Endocrine System Assessment

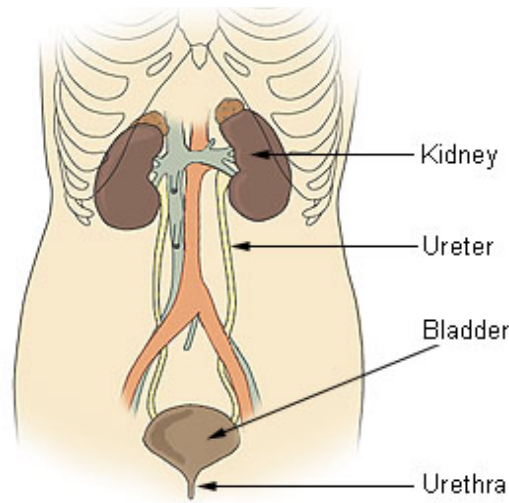
Review of the aforementioned target organs illustrates how the endocrine system is integral to all major body systems. As such, data relevant to the endocrine system is gathered during assessment of the major systems therefore a separate endocrine system assessment is not included. A detailed endocrine assessment rests with the specialized practitioner.

THE RENAL SYSTEM

Renal System Overview

RENAL SYSTEM

The renal system contributes to homeostasis through management of blood volume and waste excretion, balance of body pH, regulation of blood pressure and erythropoiesis. The renal system is made up of a pair of kidneys and ureters, the bladder and the urethra.



The kidneys are situated in the lumbar region of the abdomen outside the peritoneal cavity and

- regulate urine production, electrolyte concentration, and acid-base balance of body fluids
- detoxify the blood and eliminate wastes
- regulate blood pressure as part of the renin-angiotensin mechanism
- support red blood cell production by secreting erythropoietin; and
- facilitate absorption of calcium through the activation of Vitamin D

The ureters are muscular tubes that propel urine to the bladder from the kidneys. The bladder is a muscular organ that serves as a reservoir for urine prior to excretion through the urethra. The bladder has a maximum capacity of 1 – 2 liters. Moderate distention is felt when the bladder contains about 250 mls and discomfort is experienced with 400 mls. When distended, the bladder rises above the pubic bone.

Daily urine production varies from 700 to 2400 mls and is influenced by renal function, vascular integrity, blood volume, cardiac output, intake and temperature.

Renal System Assessment

- » Urinary elimination patterns
 - Route: urethra, assistive devices: catheter, ureterostomy; dialysis: peritoneal catheter, hemodialysis: arteriovenous fistula
 - Character - amount, color, dilute, concentrated, timing, odour, pH, frothy, sediment, hematuria, albuminuria, ketonuria
 - Voiding pattern: frequency, urgency, hesitancy, burning, pain, dribbling, nocturia, oliguria, change in stream, enuresis, flank pain, polyuria
 - Control – continence, retention, incontinence, stress incontinence, bladder distention
 - Fluid balance – positive/negative (intake/output) fluid balance, weight gain, edema

THE REPRODUCTIVE SYSTEM

Reproductive System Overview

The reproductive system is the key to survival of the species. The male reproductive system produces and delivers sperm to the female reproductive tract. Ovum is produced by the female reproductive system. If a sperm fertilizes an ovum, the female reproductive system also nurtures and protects the embryo and developing fetus until birth. A functional reproductive system is affected by complex hormonal, neurologic, vascular and psychogenic factors.

Reproductive System Assessment

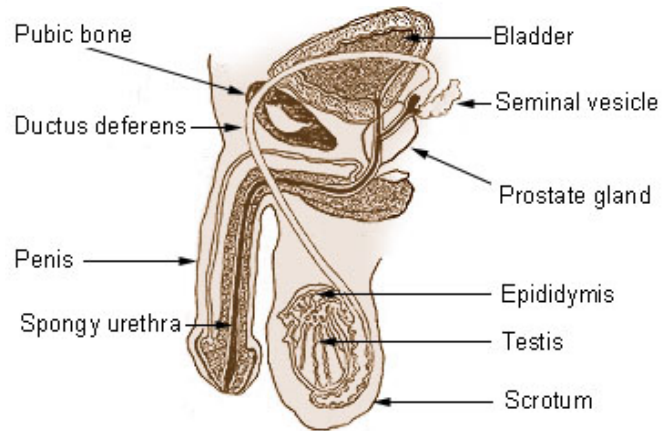
- » Hereditary and genetic factors
 - Major/minor birth defects, growth/skeletal deformities/abnormalities, sensory problems, metabolic disorders, reproductive abnormalities, hypersensitivities or immune deficiency, skin disorders, developmental/speech/cognitive delays, behavioural disorders, multiple births, chromosomal abnormalities
 - Breasts – contour, symmetry, color, shape, size, inflammation, dimpling, swelling, scars; masses: location, size, shape, mobility, tenderness, pain; nipples: color, discharge, ulceration, bleeding, inversion; axillae: nodes, enlargement, tenderness, rash, inflammation, self-examination practices, mammography, implants
 - Sexual activity patterns: sexually activity; recency, frequency, birth control methods, safe sex practice, sexually transmitted infections

Male Reproductive System Overview

The major functions of the male reproductive system includes: sexual reproduction (sexual function and spermatogenesis), male sex hormone secretion (testosterone) and urine elimination. It is made up of two major organs – the penis and the testes and associated structures that include the transport ducts, prostate gland and inguinal structures.

The function of the male reproductive system is under the negative feedback control of the hypothalamus and the anterior pituitary gonadotropic hormones.

MALE REPRODUCTIVE SYSTEM



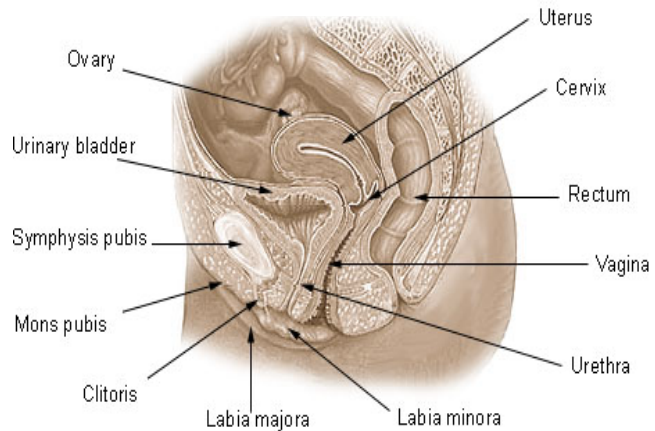
Assessment of Male Reproductive System

- Penis – discharge, ulceration, pain, size, prepuce; scrotum, size, color nodules, swelling, ulceration, tenderness, pain, erectile function
- Testes – size, shape, swelling, masses, absence; self-examination practices
- Prostate – date of last assessment (digital rectal exam – DRE, prostate specific antigen – PSA), results

Female Reproductive System Overview

FEMALE REPRODUCTIVE SYSTEM

The female reproductive system includes the mammary glands, external genitalia, and internal genitalia that has both sexual and reproductive functions. External genitalia include the mons pubis, clitoris, labia majora, labia minora and adjacent structures. Internal genitalia include the vagina, cervix, uterus, fallopian tubes and ovaries.



The hypothalamus, anterior pituitary gland, and ovaries secrete hormones cyclically that regulate menstruation. Ovulation is controlled by a network of positive and negative feedback loops from the hypothalamus to the pituitary gland to the ovaries and then back to the hypothalamus and pituitary gland. Hormonal influences determine the development of these structures and impact fertility, childbearing and the experience of sexual pleasure.

The mammary glands are located in the breasts and are specialized to secrete milk. Although present in both genders, they normally function only in females but should be assessed in both the male and female.

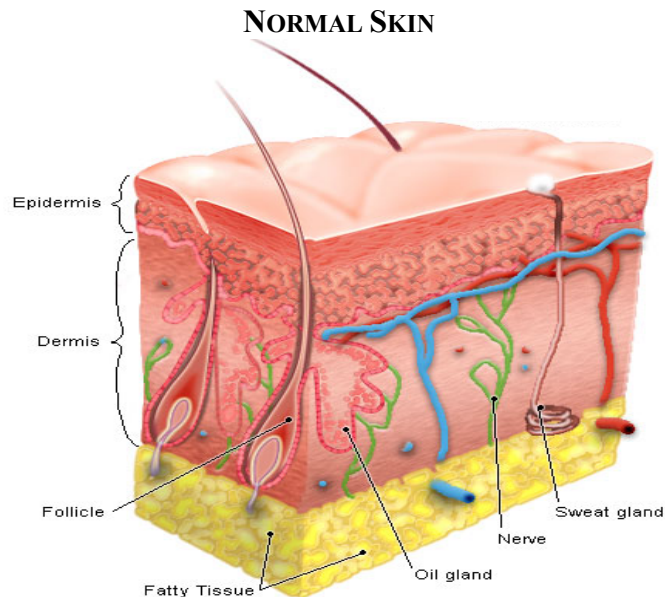
Assessment of Female Reproductive System

- Labia majora and minora, urethral and vaginal orifices: discharge, swelling, ulcerations, nodules, masses, tenderness, pain, pruritis, Pap smear, menstrual flow, menopause, para grvida, prolapse

THE INTEGUMENTARY SYSTEM

Integumentary System Overview

The skin and its appendages protect underlying structures, contribute to the regulation of body temperature, and serves as a sensory organ. Emotional well-being, including responses to the stresses of daily life, are reflected in the skin. The skin with its glands, hair, nails and other structures make up the integumentary system, the body's tough outer protective covering.



The integumentary system

- protects the body against injury and invasion of microorganisms, harmful substances, and radiation
- regulates body temperature
- serves as a reservoir for nutrients and water
- synthesizes vitamin D
- houses sensory receptors, contains immune system cells
- excretes small quantities of waste

The skin's two distinct layers, the epidermis and dermis, lie above a layer of subcutaneous fat. Epidermis, the outermost layer, contains sensory receptors for pain, temperature and touch. The dermal layer contains connective tissue and sebaceous glands. Subcutaneous tissue contains fat, sweat glands and hair follicles. Skin color depends on the following pigments: melanin, carotene, oxyhemoglobin and deoxyhemoglobin.

Integumentary System Assessment

» Skin

- Color - pink, pale, red, jaundice, mottled, blanched, cyanotic, pigmentation
- Remarkable features – intact, vascularity, temperature, dryness, texture, turgor, lesion (type, color, size, shape, distribution), hematoma, bruises, petichiae, bleeding, scars, striae, tattoos, piercings, edema (central, sacral, peripheral), masses (size, shape, location, mobility, tenderness), odors, pruritis, rash, ulcerations, drainage, necrosis
- Surgical incisions, artificial orifices, dressings, drainage tubes

» Hair and Nails

- Hair – presence, distribution, texture, luster, hairpieces, wigs, extensions
- Nails – intact (splitting, cracking, breaking), smooth (pitting, ridges), shape (round, shiny, spoon-like), color, natural/artificial

THE PSYCHOSOCIAL DIMENSION

Psychosocial Dimension Overview

The psychosocial dimension is often synonymous with mental health. Mental health is described as a state in which emotional, psychological and social wellness are evidenced by satisfaction with interpersonal relationships, effective behaviour and coping, emotional stability and a positive self-concept. Many factors can influence a person's mental health and can be grouped as individual, interpersonal, and social/cultural factors. Mental health can be inferred from an individual's behaviour. A person's behaviour is subject to interpretation differently by others, depending on values and beliefs; hence determination of the status of one's mental health may be difficult.

Various elements are considered in the psychosocial dimension. One element relates to self-perception and self-concept. Within this element is an individual's attitudes about oneself, perception of abilities (cognitive, affective or physical), body image, identity, general sense of worth and general emotional pattern. Another element relates to patterns of role engagement and relations. This is evidenced in one's perception of the major roles and responsibilities in current life situations. A further element relates to coping and the effectiveness of coping in response to stress. This includes the individual's capacity to resist challenge to self-integrity, modes of handling stress, and perceived ability to control and to manage situations. The final element describes values, goals or beliefs that govern choices or decisions. This encompasses what is perceived as important in life, quality of life and any perceived conflicts of those factors that are health related.

Psychosocial Dimension Assessment

- » General Impression
 - Overall presentation (appropriate dress), mood, affect, eye contact, attention span, ability to focus, gestures, activity (hyperactivity, restlessness, agitation), self-confidence, self-esteem, posture (erect, slouched), body image
 - Speech and language; appropriate word use, voice quality, articulation, comprehension, coherence, ability to communicate, speed of speech
 - Delusions, obsessions, compulsions, impulses, hallucinations
- » Psychosocial/spiritual component
 - Major concerns, health goals, self-description, effects of illness on self-perception; factors contributing to illness, recovery, health maintenance
 - Sources of strength, meaning, religion (importance, type, frequency of practice), cultural orientation, cultural practices, recent changes in values, beliefs, needs during hospitalization
 - Developmental level – stage, definition of family, relationships-living arrangements, available support system, family life, complaints (parenting, relatives, abuse, marital problems), health of significant other, financial support, occupation, job satisfaction and concerns, sexual relationships, physical difficulties or effects of illness on sexuality

cont'd

» Coping-Stress Tolerance

- Decision making/judgment (independent, assisted), major life changes (past, future, desired), willingness to learn, compliance with past and current health care regimens, willingness to comply with future health care regimen, stress management (eat, sleep, medication compliance, seek help), usual problem solving methods, comfort or security needs, expression of loss of control, hopelessness, and significant other's method of managing stress

Images used in this document have been retrieved from the World Wide Web.
Individual site addresses available on request.

DOCUMENTATION

Following data gathering, the information is documented in the patient's permanent health care record. Multiple types of forms make up the record. The record is agency dependent and generally individualized to the context of practice. Therefore the nurse must be familiar with the record format as well as the policies and procedures to meet her/his professional obligations. Nurses are responsible and accountable for their own actions and since the patient record is a legal document, the nurse needs to adhere to the legal and ethical standards of documentation.

The patient care record is used to facilitate effective communication among health care professionals. The purpose of the record is to enhance the delivery of quality patient care. Documentation must be clear, concise, and accurate. A number of approaches to documentation are currently in use. They include focus charting, charting by exception, DAR (data, action, response), PIE (problem, intervention, evaluation). Each type of documentation originates with the patient assessment from which actual and/or potential patient problems, limitations, concerns are identified and serve as the focus for the documentation. Following identification of the problem, the selected intervention for the focus of concern, the client response and subsequent ongoing evaluation are recorded. Refer to nursing fundamentals resources to review a variety of current formats, some of which are identified above.

Most agencies use various forms of flow sheets. Flow sheets, often described as abbreviated progress notes, allow the nurse to record data quickly and concisely and provide an easy-to-read record of the patient's status over time. Flow sheets include the graphic clinical record, fluid balance (intake/output) record, the medication administration record and daily nursing care records. Further multiple specialized forms such as neurological (Glasgow Coma Scale), neurovascular (orthopedic status), patient controlled analgesic records, frequent clinical records are an adjunct to the basic chart. Their use is governed by the patient's health challenge and agency protocol and policies.

A sample of a Daily Nursing Assessment and Flow Sheet used in a medical setting that has been modified the purpose of this document follows. (Permission for use granted by Fraser Health). In the patient's health record, narrative nurse's notes or interdisciplinary progress notes follow this assessment and flow sheet.

Date: _____ Time of assessment: _____ hrs RN/LPN

	0800 VS: T _____	BP _____	P _____	R _____	O ₂ Sats _____	Focus/Concern	
NEUROLOGIC	LOC <input type="checkbox"/> Oriented <input type="checkbox"/> Disoriented <input type="checkbox"/> Unresponsive SPEECH <input type="checkbox"/> Normal <input type="checkbox"/> Dysphasia <input type="checkbox"/> Aphasia: Exp/Receptive/Global SWALLOWING <input type="checkbox"/> Normal <input type="checkbox"/> Dysphagia BEHAVIOURS <input type="checkbox"/> Calm <input type="checkbox"/> Restless <input type="checkbox"/> Agitated <input type="checkbox"/> Withdrawn <input type="checkbox"/> Tremors Other: _____ MOBILITY <input type="checkbox"/> Normal <input type="checkbox"/> Altered Balance/Gait JOINTS <input type="checkbox"/> ROM <input type="checkbox"/> Redness <input type="checkbox"/> Edema <input type="checkbox"/> Stiffness <input type="checkbox"/> Spasms Refer to Special Clinical Record: <input type="checkbox"/> Neuro (GCS) <input type="checkbox"/> Ortho					<input type="checkbox"/> Falls <input type="checkbox"/> Seizures <input type="checkbox"/> Delirium <input type="checkbox"/> Aspiration <input type="checkbox"/> Language <input type="checkbox"/> Depression <input type="checkbox"/> Decreased ADLs <input type="checkbox"/> Sensory <input type="checkbox"/> Other	
RESP	RHYTHM <input type="checkbox"/> Regular <input type="checkbox"/> Irregular <input type="checkbox"/> Paradoxical DEPTH <input type="checkbox"/> Normal <input type="checkbox"/> Shallow <input type="checkbox"/> Deep Quality <input type="checkbox"/> Normal <input type="checkbox"/> Labored <input type="checkbox"/> Stridor Dyspnea <input type="checkbox"/> No <input type="checkbox"/> At Rest <input type="checkbox"/> With Activity Cyanosis <input type="checkbox"/> No <input type="checkbox"/> Central <input type="checkbox"/> Peripheral Cough <input type="checkbox"/> No <input type="checkbox"/> Dry <input type="checkbox"/> Harsh <input type="checkbox"/> Productive Sputum _____ O₂ Therapy _____ <input type="checkbox"/> Chest Tubes: Refer to NN					Breath Sounds Anterior: R L _____ _____ Posterior: L R _____ _____ Breath Sounds Key: N: Normal D: Decreased A: Absent C: Crackles W: Wheeze B: Bronchial BV: Bronchial Vesicular	<input type="checkbox"/> Airway clearance <input type="checkbox"/> Gas exchange <input type="checkbox"/> Actual/Potential Infection <input type="checkbox"/> Decreased tissue perfusion <input type="checkbox"/> Other
CVS	Chest Pain <input type="checkbox"/> No <input type="checkbox"/> Yes Apical Pulse - Rhythm <input type="checkbox"/> Regular <input type="checkbox"/> Irregular <input type="checkbox"/> Deficit Y/N _____ <input type="checkbox"/> See NN Peripheral Pulses R Radial _____ L Radial _____ Amplitude* R PP/DP _____ L PP/DP _____ Capillary Refill <input type="checkbox"/> = <input type="checkbox"/> ≤ <input type="checkbox"/> ≥ 3seconds Edema <input type="checkbox"/> No <input type="checkbox"/> R/L Pedal <input type="checkbox"/> R/L Ankle <input type="checkbox"/> R/L Lower Leg <input type="checkbox"/> R/L Lower Arm <input type="checkbox"/> Sacral <input type="checkbox"/> See NN IV <input type="checkbox"/> Peripheral <input type="checkbox"/> PICC <input type="checkbox"/> Midline <input type="checkbox"/> Central <input type="checkbox"/> Capped Site _____ <input type="checkbox"/> Infusion ((I/O Flowsheet) <input type="checkbox"/> Locked Site Integrity Inflammation: No/Yes Pain: No/Yes Redness: No/Yes SC Butterfly Site _____ Site Integrity Inflammation: No/Yes Pain: No/Yes Redness: No/Yes					*Pulse Key D: Doppler 0: Absent + 1: Weak + 2: Moderate + 3: Strong + 4: Bounding	<input type="checkbox"/> Altered comfort <input type="checkbox"/> Activity intolerance <input type="checkbox"/> Decreased cardiac output <input type="checkbox"/> Decreased tissue perfusion <input type="checkbox"/> Altered skin integrity <input type="checkbox"/> Other
SKIN	Intact <input type="checkbox"/> Yes <input type="checkbox"/> No, Refer to Wound Care Flow Sheet <input type="checkbox"/> Rash, NN Colour <input type="checkbox"/> Normal <input type="checkbox"/> Pale <input type="checkbox"/> Flushed <input type="checkbox"/> Jaundiced <input type="checkbox"/> Mottled <input type="checkbox"/> Bruised <input type="checkbox"/> Cyanosis: Peripheral/Circumoral <input type="checkbox"/> NN Temperature <input type="checkbox"/> Warm <input type="checkbox"/> Hot <input type="checkbox"/> Cool <input type="checkbox"/> Dry <input type="checkbox"/> Diaphoresis <input type="checkbox"/> Other					<input type="checkbox"/> Impaired skin integrity <input type="checkbox"/> Altered body temperature	
PAIN	<div style="text-align: center;">PAIN SCALE</div> <div style="display: flex; justify-content: space-between; align-items: center;"> 0 1 2 3 4 5 6 7 8 9 10 → </div> <div style="display: flex; justify-content: space-between; align-items: center;"> Circle severity number <input type="checkbox"/> Pain Flow Sheet </div>					<input type="checkbox"/> Pain	

		Focus/Concern
G I & R E N A L	<p><u>NPO Since</u> Date/Time: _____ Mucous Membranes: <input type="checkbox"/> Moist Y/N</p> <p><u>Diet</u>: <input type="checkbox"/> Oral; _____ <input type="checkbox"/> TPN <input type="checkbox"/> Enteral: <input type="checkbox"/> Gastric <input type="checkbox"/> Postpyloric</p> <p><u>Enteral tube type</u>: <input type="checkbox"/> NG <input type="checkbox"/> Small Bore <input type="checkbox"/> G-tube <input type="checkbox"/> J-tube</p> <p><u>Tube insertion site</u>: <input type="checkbox"/> Nare: R/L <input type="checkbox"/> Securement Device</p> <p><u>NG suction</u>: <input type="checkbox"/> Intermittent <input type="checkbox"/> Low <input type="checkbox"/> Gravity</p> <p><input type="checkbox"/> Anorexia <input type="checkbox"/> Nausea <input type="checkbox"/> Emesis Describe: _____</p> <p><u>Abdomen</u>: <input type="checkbox"/> Soft <input type="checkbox"/> Tender <input type="checkbox"/> Firm <input type="checkbox"/> Distended <input type="checkbox"/> Rigid <input type="checkbox"/> Tympanic <input type="checkbox"/> Dull</p> <p><u>Bowel Sounds</u>: <input type="checkbox"/> Normal <input type="checkbox"/> Hypoactive <input type="checkbox"/> Hyperactive <input type="checkbox"/> Absent</p> <p><u>Bowel Movements</u>: <input type="checkbox"/> Normal <input type="checkbox"/> Constipation <input type="checkbox"/> Diarrhea <input type="checkbox"/> Melena</p> <p><u>LBM</u>: _____</p> <p><u>Voiding</u>: <input type="checkbox"/> Continent <input type="checkbox"/> Incontinent <input type="checkbox"/> Frequency <input type="checkbox"/> Hesitancy <input type="checkbox"/> Burning <input type="checkbox"/> Nocturia <input type="checkbox"/> Dialysis: Hemo/Peritoneal</p> <p><u>Catheter</u>: <input type="checkbox"/> Foley <input type="checkbox"/> Suprapubic <input type="checkbox"/> Condom <input type="checkbox"/> Peritoneal <input type="checkbox"/> A/V Fistula <input type="checkbox"/> Securement device <input type="checkbox"/> Closed Drainage System</p> <p><u>Urine</u>: Character: _____</p> <p><u>Other</u> Collection Devices: Colostomy, ureterostomy, _____</p>	<input type="checkbox"/> Anorexia <input type="checkbox"/> Risk for Aspiration <input type="checkbox"/> Altered Nutritional Body Requirements <input type="checkbox"/> Fluid Volume Deficit <input type="checkbox"/> Fluid Volume Excess <input type="checkbox"/> Constipation <input type="checkbox"/> Diarrhea <input type="checkbox"/> Continence <input type="checkbox"/> Altered skin integrity
S T A T U S	<p><u>Coping</u>: <input type="checkbox"/> With illness <input type="checkbox"/> With hospitalization <input type="checkbox"/> Compliance</p> <p><u>Mood</u>: <input type="checkbox"/> Normal <input type="checkbox"/> Anxious <input type="checkbox"/> Sad <input type="checkbox"/> Depressed</p> <p>Given client clinical course, assessment and multidisciplinary goals, client is:</p> <p><input type="checkbox"/> Stable <input type="checkbox"/> Improving <input type="checkbox"/> Deteriorating <input type="checkbox"/> Transferable to ALC</p> <p><input type="checkbox"/> Ready for discharge to pre-admission residence <input type="checkbox"/> Other _____</p>	<input type="checkbox"/> Ineffective coping <input type="checkbox"/> Impaired adjustment <input type="checkbox"/> Role conflict
FLOW SHEET		
Date: _____ Time: _____ hrs RN/LPN: _____		
NUTRITION		
ORAL		ENTERAL
BREAKFAST <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> 0% LUNCH <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> 0% DINNER <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> 0%		Type: _____ Rate: _____ Tolerating formula and rate: <input type="checkbox"/> Yes <input type="checkbox"/> No - NN Dietitian Consulted: <input type="checkbox"/> Yes <input type="checkbox"/> No
MOBILITY		
Transfers: <input type="checkbox"/> Independent <input type="checkbox"/> Minor assist <input type="checkbox"/> Major assist <input type="checkbox"/> Mechanical Lift/Assist Ambulation: <input type="checkbox"/> Independent <input type="checkbox"/> Minor assist <input type="checkbox"/> Major assist <input type="checkbox"/> Mechanical Lift/Assist Aids: <input type="checkbox"/> Walker <input type="checkbox"/> Cane <input type="checkbox"/> Other: _____ Physiotherapist consulted: <input type="checkbox"/> Yes <input type="checkbox"/> No		
ACTIVITY - TOLERANCE AND HYGIENE		
<input type="checkbox"/> Up on Unit <input type="checkbox"/> Up in Room <input type="checkbox"/> BRPs <input type="checkbox"/> Chair <input type="checkbox"/> Bedrest w. q2h turns <input type="checkbox"/> O ₂ req'd: Y/N <input type="checkbox"/> Self Care <input type="checkbox"/> Shower <input type="checkbox"/> Tub <input type="checkbox"/> Sink <input type="checkbox"/> Bed Bath w. minor/major assist Occupational Therapist Consulted: <input type="checkbox"/> Yes <input type="checkbox"/> No Respiratory Therapist Consulted: <input type="checkbox"/> Yes <input type="checkbox"/> No Sleep: <input type="checkbox"/> Slept most of the night <input type="checkbox"/> Awake intermittently <input type="checkbox"/> Awake most of the night <input type="checkbox"/> Other: _____		
SAFETY		
<input type="checkbox"/> Oxygen outlet <input type="checkbox"/> Suction Outlet <input type="checkbox"/> Call Bell <input type="checkbox"/> Side Rails (circle): 0 1 2 3 4 Restraints (type): _____ Time on: _____ hrs Time off: _____ hrs <input type="checkbox"/> Seizure Precautions: (circle) Level 1, 2, or 3 <input type="checkbox"/> Wandering Precautions <input type="checkbox"/> Other (detail): _____		

NN: Refer to Nurses' Notes

SECTION III

PATIENT ASSESSMENT SELF-ASSESSMENT

POST-REVIEW EXERCISE

KEY

SECTION III

POST-REVIEW EXERCISE

Match the assessment technique on the left with the description on the right

<i>Technique</i>	<i>Description</i>
1. ____ Inspection	A. Touching the body to feel pulsations and vibrations and to locate structures
2. ____ Palpation	B. Observing critically using all senses
3. ____ Percussion	C. Listening to body sounds
4. ____ Auscultation	D. Tapping against a body surface to produce sounds and elicit tenderness and reflexes
5. When percussing, where does the nurse normally expect to hear dullness, tympany, and resonance?	

True or False

- Normal body temperature varies throughout the day.
☐ True ☐ False
- Usually blood pressure in the left and right arm differs by more than 15 mm Hg.
☐ True ☐ False
- What are the four most common signs and symptoms of respiratory dysfunction?
- Provide an accurate definition of orthopnea.
- Ms Young, a 68-year-old COPD patient exhibits dyspnea with minimal exertion. Identify two questions the nurse should ask to assess how dyspnea might be affecting Ms Young's nutritional status.

11. Jack, a 15-year-old has had a fever with congested cough for the past 3 days and has been coughing up yellow sputum. During the quick priority assessment the nurse uncovers abdominal breathing, retraction at the intercostal spaces, and crackles in peripheral lung fields. Which of these findings should the nurse consider abnormal?
12. Adventitious breath sounds, such as wheezes and stridor are common in certain pulmonary conditions. Name at least one condition in which the identified adventitious sounds can be heard.

Match the normal breath sound on the left with the best location for auscultation on the right

- | <i>Normal Breath Sound</i> | <i>Best Location for Auscultation</i> |
|-----------------------------------|---|
| 13. ____ Bronchial | A. Over peripheral lung fields |
| 14. ____ Bronchovesicular | B. Over the trachea |
| 15. ____ Vesicular | C. Under the clavicles anteriorly, between the scapulae posteriorly |
16. Anna Bocci is a 78-year-old resident at the facility where you work. During a quick priority assessment at shift change, Anna reveals that she has the flu. You ask about vomiting and diarrhea and she denies having either. Anna is adamant that it is the flu because she has previously experienced this heartburn like sensation followed by profuse sweating. She further remarks the sweating must be due to a fever and that past episodes eventually subsided.

With this information what inference might the nurse make? Based on the inference, what focused assessment should the nurse complete?

17. Mr. Frank, age 70 and single, is hospitalized after surgery to treat an arterial ulcer caused by peripheral vascular disease. After discharge, he will have to limit his ambulation while the site heals; he will not be able to leave home or stand for more than a few minutes at a time. To assess his ability to carry out ADLs and to prepare him for discharge, the nurse should obtain which additional data from the patient?
18. What inference might the nurse make from the following data? Identify the course of action that should follow.

Patient has gained 2 kg in 48 hours without a change in intake.

19. The male patient you are caring for today is recovering from a hip replacement. His medical history is brief and reveals his hip fractured from an accidental fall from a small stepladder. When his wife visits you begin exploring the circumstances of his fall. The patient is lying in bed. During your bedside interaction the patient briefly becomes inattentive with his eyes rolling backward. His wife comments this is the reason she is very anxious about taking him home in case he should have one of those “spells” again. What further data should the nurse immediately collect related to this finding?
20. Mr. Hampton, an 86-year-old resident living with an inoperable aortic aneurysm is among your assigned patients. While carrying out hourly rounds on night shift you find Mr. Hampton profusely diaphoretic, shivering, confused and anxious. Upon further investigation it is noted Mr. Hampton was incontinent of a small amount of urine. This is atypical for the usually independent resident. Mr. Hampton expresses his frustration at not being able to get to the bathroom in time and indicates this is the fourth time this night he has had urgency.
- A. What further data will the nurse gather related to this recent development?
- B. The nurse is analyzing the data. What might the nurse be considering as potentially responsible for Mr. Hampton’s recently developed problem?

Complete the table that follows based on Mr. Smith’s case situation. Identify patient problems/limitations supported by the assessment data.

Mr. Smith is a 56-year-old widower under your care. He is admitted due to an acute episode of dyspnea. He states that he awakened suddenly with severe shortness of breath that did not respond to his inhalers. In fact his condition seemed to worsen. Mr. Smith said with a panicked, desperate expression, “It’s so hard to breathe...can’t catch my breath.” He reports he smoked one to two packs a day for 40 years but stopped three months ago after his sister died of lung cancer. His sister was also a smoker. Currently, Mr. Smith’s diagnosis is emphysema with possible heart failure. Examination and assessment revealed the following: nonproductive cough, decreased mental acuity; extreme shortness of breath with activity; fatigues easily; nonverbal expression of anxiety/fear, such as moderate sweating, trembling, irritability, and restlessness; extremities mildly cyanotic and cool to the touch; capillary refill sluggish (≥ 4 seconds); greatly concerned that what happened to his sisters might happen to him; worried about losing his job of 30 years due to too many sick days; and lives with a 19-yr-old

granddaughter; unable to complete usual household activities without periods of rest; concerned re limited coverage of health care. Vital signs: BP 178/96, weak pulse of 110, respirations 36/min (labored, irregular rhythm), O₂ Sats 87% and temperature 38°C.

Patient Problems/ Limitations	Assessment Data
<i>Ineffective breathing</i>	
	<i>Dyspnea, decreased mental acuity, O₂ Sats of 87%</i>
<i>Impaired tissue perfusion</i>	
	<i>Increased stress, apprehension, distress, jittery, tremors, fear of consequences</i>
<i>Fear</i>	
	<i>Awakening suddenly short of breath, restlessness</i>
<i>Activity intolerance</i>	
	<i>States need for rest periods with normal activities, normal routine not maintained, irritable, decreased performance (work related)</i>
<i>Altered health maintenance</i>	
	<i>Condition worsened, poor response to inhaler self-administration</i>
<i>At risk for infection</i>	
	<i>Temperature 38°C, increased respiratory rate (36), increased pulse rate (110)</i>

Identify a further focused assessment of Mr. Smith's psychosocial domain. What questions would the nurse ask?

SECTION III
POST REVIEW EXERCISE
KEY

Match the assessment technique on the left with the description on the right

- | <i>Technique</i> | <i>Description</i> |
|--|--|
| 1. <u> B </u> Inspection | A. Touching the body to feel pulsations and vibrations and to locate structures |
| 2. <u> A </u> Palpation | B. Observing critically using all senses |
| 3. <u> D </u> Percussion | C. Listening to body sounds |
| 4. <u> C </u> Auscultation | D. Tapping against a body surface to produce sounds and elicit tenderness and reflexes |
| 5. When percussing, where does the nurse normally expect to hear dullness, tympany, and resonance? | |

Normally, dullness is noted over solid organs such as the liver and heart; tympany is audible over a gastric air bubble or gas-filled bowel, and resonance is heard over healthy lung tissue.

True or False

6. Normal body temperature varies throughout the day.

☒ True ☐ False

True. Normally body temperature is lowest in the early morning and peaks at late afternoon. Other factors such as age, physical activity, and environment can influence the temperature.

7. Usually blood pressure in the left and right arm differs by more than 15 mm Hg.

☐ True ☒ False

False, a slight pressure difference of 5 to 10 mm Hg between arms is normal. The reading on the right arm is usually higher than the left. A pressure difference of more than 10 - 15 mm Hg suggests arterial obstruction on the side of the lower pressure. Subsequent pressures should be taken on the arm with the higher pressure.

8. What are the four most common signs and symptoms of respiratory dysfunction?

Four of the most common signs and symptoms of respiratory dysfunction are cough, dyspnea, sputum production, and chest pain or discomfort.

9. Provide an accurate definition of orthopnea.

Orthopnea is the need to sit or stand to breathe normally.

10. Ms Young, a 68-year-old COPD patient exhibits dyspnea with minimal exertion. Identify two questions the nurse should ask to assess how dyspnea might be affecting Ms Young's nutritional status.

The nurse should ask Ms Young the following:

- i. Do you have difficulty breathing while eating? (Nutritional needs may not be met due to the effort required to breathe and associated fatigue).*
- ii. Do you eat three meals a day or many small meals? (Ms Young may deliberately eat multiple small meals to cope with the dyspnea reflecting her effort to meet her nutritional needs).*

11. Jack, a 15-year-old has had a fever with congested cough for the past 3 days and has been coughing up yellow sputum. During the quick priority assessment the nurse uncovers abdominal breathing, retraction at the intercostal spaces, and crackles in peripheral lung fields. Which of these findings should the nurse consider abnormal?

Abdominal breathing is abnormal after the age of six. Retraction at the intercostal spaces indicates difficulty breathing – more effort is required for the process of respiration. Persistent crackles not cleared with coughing in peripheral lung fields are abnormal and indicate air movement through fluid filled airways.

12. Adventitious breath sounds, such as wheezes and stridor are common in certain pulmonary conditions. Name at least one condition in which the identified adventitious sounds can be heard.

Wheezes may be heard with asthma and COPD. Make note if the wheeze occurs with inspiration and/or exhalation. Stridor is heard with croup and epiglottitis. Other sounds previously described as rales, rhonchi or sonorous are generally referred to as coarse sounds.

Match the normal breath sound on the right with the best location for auscultation on the left

<i>Normal Breath Sound</i>	<i>Best Location for Auscultation</i>
13. __B__ Bronchial	A. Over peripheral lung fields
14. __C__ Bronchovesicular	B. Over the trachea
15. __A__ Vesicular	C. Under the clavicles anteriorly, between the scapulae posteriorly

16. Anna Bocci is a 78-year-old resident at the facility where you work. During a quick priority assessment at shift change, Anna reveals that she has the flu. You ask about vomiting and diarrhea and she denies having either. Anna is adamant that it is the flu because she has previously experienced this heartburn like sensation followed by profuse sweating. She further remarks the sweating must be due to a fever and that past episodes eventually subsided.

With this information what inference might the nurse make? Based on the inference, what focused assessment should the nurse complete?

Inference:

The nurse infers that the heartburn could be related to cardiac dysfunction.

Focused assessment:

Based on the inference, the nurse should enact the PQRSTA method to analyze the patient's chief complaint. Examples of questions the nurse might ask to investigate each major aspect of the complaint include

- *Provocative or palliative: What causes the heartburn? What makes it better? What makes it worse?*
- *Quantity or quality: How does the heartburn feel? How much heartburn are you presently experiencing?*
- *Region or radiation: Where is the heartburn located? Has it spread or moved?*
- *Severity: How would you rate the heartburn on a scale of 1 to 10, with 10 the most severe?*
- *Timing: When did the heartburn begin? How often does it occur? Did it occur gradually or suddenly? How long did it last?*
- *Associated manifestations: Besides the sweating, do you have any other symptoms?*

Additional data to be collected will include:

• vital signs, • rate and character of apical and radial pulses, • presence of a pulse deficit, • overall color of patient, • color of lips, earlobes and nailbeds, • check capillary refill, • temperature, attributes and appearance of skin centrally and peripherally and • presence of edema.

17. Mr. Frank, age 70 and single, is hospitalized after surgery to treat an arterial ulcer caused by peripheral vascular disease. After discharge, he will have to limit his ambulation while the site heals; he will not be able to leave home or stand for more than a few minutes at a time. To assess his ability to carry out ADLs and to prepare him for discharge, the nurse should obtain which additional data from the patient?

Because Mr. Frank will have restrictions on his ambulation, his ability to carry out normal ADLs will be significantly impaired. To develop his discharge plan, the nurse should determine the following:

- how well can Mr. Frank dress and undress himself*
- what is the physical layout of his home*
- will he be able to get to and from the bathroom by himself given his limits on activity*
- will someone be able to purchase groceries for him and assist with meal preparation*
- given the complexity of his needs, the nurse needs to collaborate re a follow up nursing visit in the community.*

18. What inference might the nurse make from the following data? Identify the course of action that should follow.

Patient has gained 2 kg in 48 hours without a change in intake.

Possible inferences could include an error in measurement, documentation and/or that the patient is experiencing a change in urinary elimination pattern.

The nurse knows that 1 kilogram of weight equals 1 liter of fluid therefore the nurse suspects all other things being equal that the weight gain is the equivalent gain of 2 liters of fluid.

The nurse would carry out a variety of actions to verify the data. These would include

- Checking the patient record for information about the patient's health challenge and baseline database.*
- Verify weight gain, i.e. same scale, same clothes, etc.*
- Assess urinary elimination pattern and patency of tubes (as appropriate). Determine relevant history of genitourinary problems such as enlarged prostate that could lead to obstruction.*

- *Assess vital signs – hypotension reduces blood flow to the kidneys decreasing urinary output, a weak and slow pulse has the same effect.*
- *Assess for edema – peripherally, centrally, sacral.*
- *Assess respiratory system; preferred position for breathing (? Orthopnea, dyspnea), auscultate lungs for air entry, unusual sounds that might be consistent with pulmonary edema.*
- *Assess level of consciousness (LOC) –cardiovascular dysfunction may be responsible for decreased urinary output, electrolytes may impact neurological status, side effects of medications could impact LOC and urinary output*
- *Check clinical record for documentation of progressive changes, results of diagnostic testing, new orders, recent medication administration changes (morphine may cause urinary retention), recent interventions such as radiographs using contrast media that may have negatively impacted kidney function, surgery, etc.*

19. The male patient you are caring for today is recovering from a hip replacement. His medical history is brief and reveals his hip fracture resulted from an accidental fall from a small stepladder. When his wife visits you begin exploring the circumstances of the fall. The patient is lying in bed. During your bedside interaction the patient briefly becomes inattentive with his eyes rolling backward. His wife comments this is the reason she is very anxious about taking him home in case he should have one of those “spells” again. What further data should the nurse immediately collect related to this finding?

The nurse should carry out a focused assessment of the noted concern using PQIRSTA as well as other related data pertaining to his neurological system. This includes assessing airway, breathing, circulation, neurological vital signs, (level of consciousness, orientation and cognitive abilities [including communication and memory of the event], pupil reaction, response to stimuli, movement, voluntary and involuntary.)

20. Mr. Hampton, an 86-year-old resident living with an inoperable aortic aneurysm is among your assigned patients. While carrying out hourly rounds on night shift you find Mr. Hampton profusely diaphoretic, shivering, confused and anxious. Upon further investigation it is noted Mr. Hampton was incontinent of a small amount of urine. This is atypical for the usually independent resident. Mr. Hampton expresses his frustration at not being able to get to the bathroom in time and indicates this is the fourth time this night he has had urgency.

- A. What further data will the nurse gather related to this recent development?

The nurse will

- *take vital signs*
- *assess patient's abdomen for bladder distention*
- *percuss the abdomen as appropriate*
- *validate post void bladder volume with a bladder scanner*
- *determine patient's current and usual pattern of urinary elimination*
- *assess the urine for color, quantity, odor*
- *assess frequency, urgency, hesitancy, burning sensation, dribbling, change in initiating and the force of the urinary stream, flank pain, skin temperature, edema, and skin turgor*

- B. The nurse is analyzing the data. What might the nurse be considering as potentially responsible for Mr. Hampton's recently developed problem

The patient could be having a urinary tract infection with or without an associated obstruction.

21. Complete the table that follows based on Mr. Smith's case situation. Identify patient problems/limitations supported by the assessment data.

Mr. Smith is a 56-year old widower under your care. He is admitted due to an acute episode of dyspnea. He states that he awakened suddenly with severe shortness of breath that did not respond to his inhalers. In fact his condition seemed to worsen. Mr. Smith said with a panicked, desperate expression, "It's so hard to breathe...can't catch my breath." He reports he smoked one to two packs a day for 40 years but stopped three months ago after a sister died of lung cancer. His sister was also a smoker. Currently, Mr. Smith's diagnosis is emphysema with possible heart failure. Examination and assessment revealed the following: nonproductive cough, decreased mental acuity; extreme shortness of breath with activity; fatigues easily; nonverbal expression of anxiety/fear, such as moderate sweating, trembling, irritability, and restlessness; extremities mildly cyanotic and cool to the touch; capillary refill sluggish (≥ 4 seconds); greatly concerned that what happened to his sisters might happen to him; worried about losing his job of 30 years due to too many sick days; lives with a 19-yr-old granddaughter; unable to complete usual household activities without periods of rest; concerned re limited coverage of health care. Vital signs: BP 178/96, weak pulse of 110, respirations 36/min (labored, irregular rhythm), O₂ Sats 87% and temperature 38°C.

Patient Problems/ Limitations	Assessment Data
<i>Ineffective breathing</i>	<i>Dyspnea, respirations 36 per minute, irregular breathing pattern, verbalization of “ I can ’t catch my breath”</i>
<i>Impaired gas exchange</i>	<i>Dyspnea, decreased mental acuity, O₂ Sats of 87%</i>
<i>Impaired tissue perfusion</i>	<i>Capillary refill \geq 4 secs., extremities mildly cyanotic & cool to touch, pulse weak (110), BP 178/96, confusion, irritability</i>
<i>Anxiety</i>	<i>Increased stress, apprehension, distress, jittery, tremors, fear of consequences</i>
<i>Fear</i>	<i>Fear of dying like his sister</i>
<i>Sleep pattern disturbance</i>	<i>Awakening suddenly short of breath, restlessness</i>
<i>Activity intolerance</i>	<i>Verbal reports of fatigue and weakness, dyspnea, increased blood pressure</i>
<i>Fatigue</i>	<i>States need for rest periods with normal activities, normal routine not maintained, irritable, decreased performance (work related)</i>
<i>Altered health maintenance</i>	<i>History of lack of health seeking and health promotion behaviours, concern re availability of coverage for health needs</i>
<i>Ineffective management of therapeutic regimen</i>	<i>Condition worsened, poor response to inhaler self-administration</i>
<i>At risk for infection</i>	<i>Decreased ciliary action, stasis of body fluids in non productive cough, chronic condition</i>
<i>Hyperthermia</i>	<i>Temperature 38⁰C, increased respiratory rate (36), increased pulse rate (110)</i>

The problems/limitations are expressed in a variety of ways depending on the framework that is used at your place of employment. Further, a different clustering of evidence could yield a hybrid of the problem identification. Be flexible in your problem list identification. The purpose of the exercise is to facilitate recognition of the interrelationships of the body systems.

Identify a further focused assessment of Mr. Smith's psychosocial domain. What questions would the nurse ask?

Gather data about his overall appearance. Is he well kempt, disheveled? Does he make eye contact; can he clearly articulate his thoughts? Can he follow your questions and respond appropriately? Does he have difficulty searching for the right words? Is he animated when he communicates; what is the tone of his voice, is his affect flat or exaggerated? Is he realistic about his situation, his health condition, and his ability to participate in his treatment plan?

What is the worst-case scenario for Mr. Smith in the context of his concern about employment security? Is he in a position to request lighter duties at his work, etc? What are his supports; religion, family, friends, community? What are his responsibilities to family, emotionally and financially?

How has he coped with crisis/stress in the past? What is his cognitive ability and readiness to participate in discharge teaching related to management of his health? Does he express a sense of hope?

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