1151 – Health and Chronic Health Conditions

Lecture 1

Health and Wellness

- Health is a state of complete physical, mental, and social well-being, and not merely the absences of disease and infection.

Historical Approaches to Health Care Delivery in Canada

- Medical Approach
  - ⇨ Diagnose treat and cure
- Behavioural Approach
  - ⇨ Teach healthy decision making, change behaviour
- Socio-environmental
  - ⇨ Start to affect and change social beliefs and issues specific to the region to help promote health and prevent disease

- You have to choose the approach that best fits the situation and trends

Pro's and Con's

- Medical – Narrow scope
- Behavioural – Has a lot to do with financial wellbeing and social class
- Socio-environmental – Can take a lot of work and effort to affect health care in this way.

Canadian Determinants of Health

- Income and social status
- Education
- Employment and working conditions
- Physical environment
- Social support networks
- Personal health practices and coping skills
- Healthy child development
- Health services
- Gender
- Culture
- Social environment

- ❖ Should make notes on each of these

Health Promotion

- The process of enabling people to increase control over, and improve, their health

- Increase level of well-being and self-actualization
- Using activities to get people to their maximum health potential
    - What: Determinants of health start
    - How: The 5 health promotion strategies outlined for Canada
    - Why: Evidence-informed decision making, acknowledging values and assumptions
    - Who: Who we'll work with-levels within society where action can be taken

Disease Prevention

⇨ Is focused on reducing the probability of experiencing a disease

- Three levels of Prevention:
    1. Primary - Flue shot
    2. Secondary – Purchasing a medical test
    3. Tertiary – Going to a rehab center

Canada's Health Promotion Strategies:

1. Build healthy public policy
2. Create supportive environments
3. Strengthen community action
4. Develop personal skills
5. Reorient health services

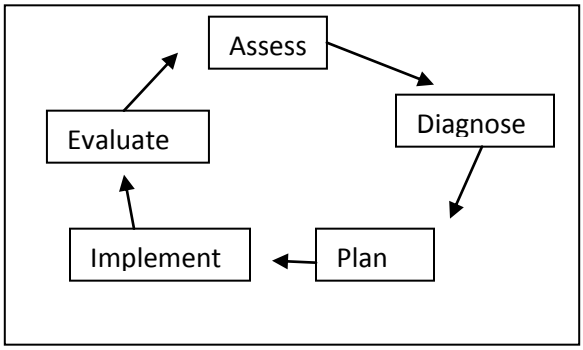
Critical Thinking

- Look at my definition of health
- What approach to health care delivery did my definition fall under
- What factors do i need to take into considerations when assessing people

Lecture 2

Critical thinking – skilful, responsible thinking, exploring issues from all ages

Nursing Process



1. Assessment
    ⇨ Gather data
    ⇨ Organize it
    ⇨ Validate (if needed)
    ⇨ Record it

- Types of Data
    - Subjective – Can't be measured or observed or tested. Usually what the patient tells us about what's going on.
    - Objective – What you observe, what you test, what you measure, text book referances
- Methods of Data collection
    - Nursing Health history
    - Physical examination
    - Other methods
- General Assessment/Survey
    - Physical
    - Body structure
    - Mobility
    - Behaviour
    - Height and weight
    - Vitals
- Focused assessment
    - Dig deeper into area's identified in the general assessment
- Four Methods of acquiring data
    - Interview
    - General observations
    - Physical assessment
    - Literature review
- Nursing Health History
    - Biographical data – date of birth, name, address
    - Reason for seeking care
    - History of presenting problem
    - Past health history
    - Family history
    - System review
    - Functional assessment (activities of daily living) ADL
    - Perception of health
- Physical Exam
    - Prepare the client, self, and environment
        - ⇨ Inform them of procedure
        - ⇨ Obtain concent
        - ⇨ Give them gown
        - ⇨ Wash your hands
    - Age appropriate assessment
    - Planned approach
- ► Techniques
    - Inspection
    - Palpation
    - Percussion
    - Auscultation

2. Nursing Diagnosis
    - ⇨ Using information that is relevant in order to find out what is occurring

- Third Clause (aeb) = as evidenced by
    - The signs and symptoms
- Second Clause (r/t) = related to
    - The cause of the problem or issue, evidence-based
- First Clause
    - What to name the problem or issue, deciding what to treat. The effect of what's wrong in their daily life
    - Putting data together.

❖ The Nursing diagnosis provides the basis for selected nursing interventions

3. Planning Nursing Care
    - ⇨ Use clinical judgments
    - ⇨ Establish priorities
    - ⇨ Establish goals
    - ⇨ Includes documentation

- Priorities
    1. ABC's/vital signs
    2. Mental changes, acute presentations, serious risks
    3. Everything else, knowledge deficits, activity problems, coping, self-esteem
- Maslow's Hierarchy

3. A. Develop Care Plan (Nursing Actions)

4. Implement the Plan

5. Evaluate the Plan

Lecture 3

Family

- ⇨ "a central instition in Canadian Society"
  - The family is important in supporting the patient

Forms – The family today has so many different forms and all look different
Roles – The traditional roles of members of the family are much different now than what they were before
Economics – With the very different family forms there are numerous families that can't afford certain things. Affects the level of care.

Families help with Health Promotion

- ⇨ By teaching things in the home
- ⇨ By distributing information faster than might happen individually

1. Structural Assessment
   A. Internal
   B. External
   C. Contextual – the way families interact with internal and external

2. Developmental Assessment
   A. Decide what stage they are in
      - ⇨ Between families
      - ⇨ Joining families
      - ⇨ Family with children
      - ⇨ Family late in life

3. Functional Assessment of Family
   A. Instrumental functioning
      - ⇨ Who plays what role
   B. Expressive functioning
      - ⇨ Focuses on how members communicate
      - ⇨ Expressive is made of many sub-categories

Expressive functioning Sub-categories

1. Emotional communication
2. Non-verbal communication
3. Circular Communication
4. Influence
5. Beliefs
6. Alliances

Attributes of Healthy Families

- ⇨ Needs stability but also needs to be able to deal with growth and change
  - Has a flexible structure
  - Can accept help from "outside"
  - Is a cohesive unit along with all this flexibility

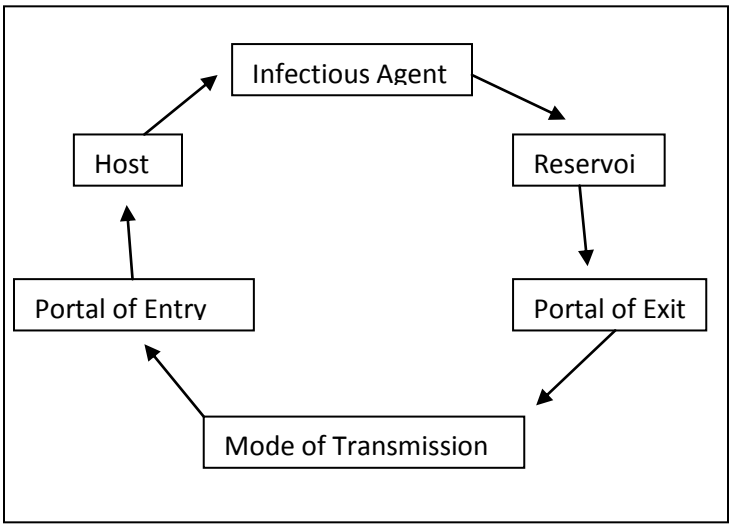
Features of families dealing with developmental milestones:

- Family have milestones like having kids, getting married, divorced, kids going to school excreta
- Family need to deal with these and cope if not they need help
- The stress of milestones gets compounded if there is a health problem.

How do Nurses Influence Family:

1. Family make up
2. Family perceptions of events
3. Family structure
4. Environmental conditions
5. Family strengths and weaknesses

Chain of Infection



Lecture 4

Respiratory System Assessment

Normal Respiration Rates

- Elderly = 16-25/min
- Adult = 12-20/min
- 10-17 years = 16-19/min
- 3-10 years = 20-30/min
- Toddler = 25-32/min
- Infant = 30-50/min
- Newborn = 30-60/min

Auscultation

- Bronchial sounds – heard over thrachea
- Bronchovesicular sounds – heard over middle of lung
- Vesicular sounds – heard over bottom of lungs

Loudest ↓ Quietest

Respiratory Assessment

- Breathing ⇨ rate, rhythm, volume, depth, effort
- Diffusion and perfusion ⇨ assess SpO_2, ABG's, CBC's

- Atelectasis – Abnormal condition characterized by the collapse of alveoli, preventing the respiratory exchange of carbon dioxide and oxygen in a part of the lungs.

- Anoxia – An abnormal condition characterized by a local or systemic lack of oxygen in body tissues. Can have a number of causes

- Hypoxemia – An abnormal deficiency in concentration of oxygen in arterial blood. Causes a body wide reaction to low oxygen levels
- Hypoxia – Low oxygen levels at the level of the cell

- Eupnea – Normal, quiet breathing at a rate of 12-20 breaths per minute in an adult

Rhythm Patterns

- Cheynes Stokes = Abnormal pattern of respiration characterized by alternating periods of apnea and increasingly deep, rapid breathing
- Kussmaul's Respiration = Abnormal deep, very rapid sighing respirations characteristic of diabetic ketoacidosis
- Biot's Respiration = Abnormal respiratory pattern, characterized by short episodes of rapid, uniformly deep inspiration followed by apnea (meningitis/rising ICP)

Examination

- Inspection
  - ⇨ Note pt. Appearance
  - ⇨ Note breathing difficulty/appearance
- Palpation
  - ⇨ Look for CLAPP STIC
- Percussion
  - ⇨ Resonant percussion over all thoracic regions with air in it
  - ⇨ Dull percussion over bone
- Auscultation

Lecture 5

Vital Signs

Assessing Pulse and Blood Pressure

- Pulse rate – each ventricular contraction pushes ~60 mL (stroke volume) and a wave travels from the aorta to the distal ends of the arteries
- Nurses assess rate, rhythm, strength, and equality
- Ranges for pulse
  - Infant = 120-160
  - Toddler = 90-140

- Pre-school = 80-110
- School age = 75-100
- Adolescent = 60-90
- Adult = 60-100

- Pulse is affected by: age, gender, exercise, fever, medications, hemorrhage, stress and emotions, position changes, pain, respiratory conditions, heart conditions.
- Pulse deficit – difference between apical and radial pulse. Find it with irregular rates.

Assessing Temperature

- Expected range for temperature 36-38^{0}C
- Average Temperature:
    - 37^{o}C – Oral
    - 37.5^{o}C – Rectal
    - 36.5^{o}C – Axillary
    - 37^{o}C – Tympanic
- Can take temperature at esophageal, pulmonary artery, urinary bladder, skin (can have a strip that uses chemicals to tell temperature when put on the forehead)
- Body temperature = heat production – heat loss
- Neurological and cardiovascular regulation is done with hypothalamus. Anterior = heat loss, posterior = heat production
- Body temperature is affected by: age, exercise, hormone levels, circadian rhythm, stress, environment
- Pyrogen is an agent causing increased temperature
- Abnormal temperature responses
    - ⇨ Hyperthermia – disease, trauma, problems with hypothalamus
    - ⇨ Melignant hyperthermia – caused by anesthetic can be very serious
    - ⇨ Heatstroke
    - ⇨ Heat exhaustion
    - ⇨ Hypothermia

Blood Pressure

- Blood pressure – force exerted on the walls of an artery under pressure from heart
- Systolic – peak of maximum pressure
- Diastolic – minimum pressure exerted when heart relaxes
- Blood Pressure Ranges:
    - 6 years = 105/65
    - 10-13 years = 110/65
    - 14-17 years = 120/75
    - Adult:

	Systolic	Diastolic
Optimal	<120	<80
Normal	<130	<85
High Normal	130-139	85-89
Gr. 1 hypertension	140-159	90-99
Gr. 2 hypertension	160-179	100-109
Gr. 3 hypertension	>= 180	>=110

- Factors affecting BP – age, stress, ethnicity, smoking, blood volume, gender, diurinal variations, and medications

- Mortality – death
- Morbidity – suffering on the way out
- S1 = beginning of systole “lub”
- S2 = beginning of diastole “dub”

- Colour
- Sensation
- Movement
- Temperature

Peripheral vascular assessment

❖ Look at slide on arterial vs. venous leg ulcers

Lecture 6

Pain assessment

1. Location
2. Onset
3. Quality
4. Aggravation/ alleviation
5. Appearance
6. Radiation

Subjective data

O – Onset
P – Provokes
Q – Quality
R – Radiates
S – Severity (1-10)
T – Time

- Assess the patients ADL (activities of daily living), what they have to do; IADL (instrumental activities of daily living), what they want to do.

Components of MSK Assessment

1. Inspection
2. Palpation
3. ROM
   ⇨ Passive range of motion is done to assess an injury and for a patient in a coma to keep joints from locking up.
4. Function

Assessing the skeleton:

- Gait
- Alignment
- Stride

- Stance
- Stability
- Posture
- Crepitus

Assessing Muscle:
- Strength
- Tone
- Size
- Symmetry
- Fasciculation – tremor of one muscle group
- Tremors

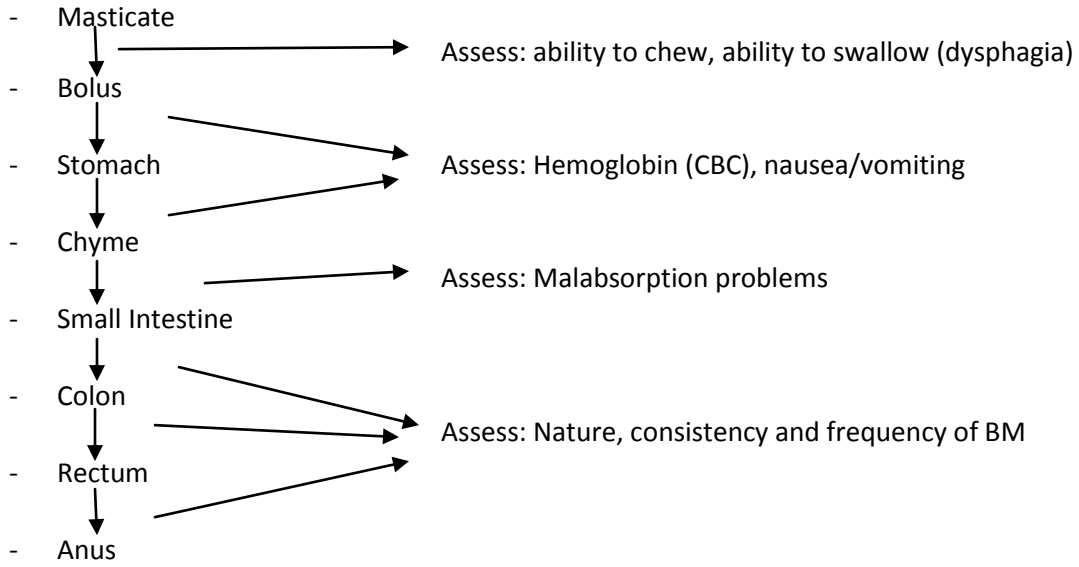
Assess each individual appendage/area of the body

Assessing Spine = Cervical should be concave, thoracic should be convex, lumbar should be concave, and sacral should be convex

Lecture 7

Gastrointestinal

Process of Digestion



Factors affecting Elimination
- Diet
- Fluid intake
- Physical activity
- Psychological influences
- Medications
- Position

- Pain
- Anesthesia
- Labour
- Age

Constipation

- Signs and Symptoms
  - Infrequent BM
  - Difficult evacuation
  - Straining during defecation
  - Abdominal pain or discomfort

Fecal Impaction – Occurs most in stagnant people

- Signs and Symptoms
  - Fecal oozing
  - Inability despite urge
  - Anorexia
  - Nausea and/or vomiting
  - Abnormal distension and cramping
  - Rectal pain

Diarrhea

- R/t – disorders affecting digestion, absorption and secretion, enteral nutrition, food allergies/intolerance, communicable food-bourne pathogens
- Signs and Symptoms
  - Frequent liquid stools

Diverticulosis – Pouch-like herniations through muscular layer of colon, especially sigmoid colon. Can led to Diverticulitis – inflammation of one or more diverticula.

GI Assessment

- Nursing History – subjective data
- IAPP – don't always have to do percussion
- Lab values and lab test results

1. History
   - Find out things like: habits, fluids, diet, pan/discomfort, nausea and vomitin
2. Physical Exam
   - Use light palpation only
   - Always go in order of inspection, auscultation, palpation, and percussion
   - Use the four quadrants to identify location of problem
   - When auscultating listen for 5-20 seconds for a soft gurgle or clicking (these are bowel sounds)
   - When percussing you should hear dullness in RUQ, and tympany in LUQ, LLQ, RLQ.

Bruit – an abnormal blowing or swishing sound or murmur heard while auscultating a body part. Occurs because of blood flowing through a narrow or partially occluded artery. Heard best with bell of stethoscope.

Extra notes

- Trouble swallowing = dysphagia
- Cynacoblamin = name for manufactured Vitamin B12
- Low hematocrit tells you pt. Is dehydrated
- Borborygmi = Really loud bowel sounds

Lecture 9

Neurologic

General Description for LOC

- Alert
- Drowsy
- Stuporous
- Comatose

Neurological Assessment

1. Vital signs
2. Pupils (cranial nerve 3)
3. GCS
4. Limb movement
    - ⇨ Lift arms/legs off bed, hold for 5 seconds and able to resist testers attempt to push them down

Myoclonus = A spasm of a muscle or a group of muscles

Athetosis – Slow, writhing, continuous, and involuntary movement of the extremities, as seen in some forms of cerebral palsy and in motor disorders resulting from lesions in the basal ganglia

Dysarthria – Impaired ability to make sounds of speech clearly

Lecture 10

Urinary and Reproductive Health Assessment

Implications of problems with this system can have an effect on:

- Physical
- Emotional
- Self-worth and self-esteem of a pt.

Terms

Micturition – The process of producing urine
Polyuria – Excessive urine output
Polydipsia – Excessive thirst
Diuresis – Increased urine formation and secretion

Nocturia – Excessive urination at night
Hematuria – Blood in urine

Factors that Influence Micturition

1. Disease or disability
    - Change in volume or quality of urine produced
    - Possible decreased secretions, filtrations, or reabsorption
    - Can be caused by renal tube obstruction
2. Fluid balance
    - Check pt.'s weight
3. Medication
    - Medications can have diuretic effects or retention effects based on different mechanisms
    - Ensure that side effects of medications are well known
4. Pelvic floor muscle tone
    - Both the involuntary and voluntary PFMs help control urination. Weak muscle tone contributes to increased urination problems
5. Diagnostic examination
    - Ask pt. to increase or decrease fluid intake
    - Visually inspect urine and measure it
6. Surgery
    - Anesthetics, trauma, and analgesia can all effect urination
7. Psychological factors
    - Embarrassment: increased urgency, frequency, or retention

The urinary system is affected by facts like age, menopause, pregnancy

8 Types of Incontinence

1. Urge
2. Stress
3. Functional
4. Overflow
5. Total

Urinary Retention possible causes

- Acontractile detrusor urinae muscle
- Urethral obstruction
- Sexual or childbirth trauma
- Side effects or some Medications
- Fecal Impaction

Assessment

- History – review normal urination patterns, assess symptoms, identify possible contributing factors, and review lab tests
- Inspection – Inspect skin, mucous membranes, perineum, bladder area, shape of abdomen
- Percussion – Normal sounds should be slightly dull
- Palpation – Bladder can only be palpated if distended; done below symphysis pubis may extend to just below umbilicus

- Urine assessment – Monitor Intake and Output a pone RN judgement. Observe urine for colour, clarity, odour, and volume

Breast Self Examination Recommendations

- Teach proper massage techniques
- 20 y/o on monthly basis
- 20-39 – HCP exam q3yr
- 40-59 – HCP q2yr
- Family History – q1yr
- Baseline mammography

Testicular Exam

- Perform testicular self examination
- Start examination around age 25

Lecture 11

Integumentary Health Assessment

Terms
Pruritus
Petechiae
Presure Ulcer – Localized area of tissue necrosis
Extravasation – Fluid filled blister

Arterial Vs. Venous Leg Ulcers

Arterial	Venous
- Decreased or absent pulse - Capillary refill >3 sec. - No edema - May or may not cause pain - Skin colour changes based on position - Skin texture is thin, shinny, friable, dry	- Pulses preset/difficult to palpate - Capillary refill <3 second - Lower leg edema - Dull ache or heaviness in calf or thigh; ulcers often painful - Bronze-brown pigmentation - Skin is thick and indurated

Edema

- Document area, size, colour, temperature, pitting or not
- Influenced by age, pigmentation, dryness, heart strength

Wounds

- Increased risk for acute and chronic wounds in the presents of moisture
- r/t decreased arterial blood flow or decreased blood return

Factors contributing to skin breakdown

1. Pressure
2. Friction
3. Shearing
4. Stripping
5. Moisture
6. Immobility
7. Nutritional deficits

8. Chronic illness
9. Aging
10. Chemicals and enzymes
11. Circulatory and neurologic problems
12. Bacteria
13. Exravasation

Classification of Pressure Wounds

- ⇨ Stage I – Non-blanchable erythema
- ⇨ Stage II – Partial thickness skin loss (abrasion, blister)
- ⇨ Stage III – Full thickness skin loss involving subcutaneous tissue and NOT through fascia
- ⇨ Stage IV – Full thickness skin loss, extensive necrosis or damage to muscle, bone or supporting structures
- ⇨ Stage X – Necrotic tissue covering wound – cannot be staged

Wound Healing Process

- 1) Inflammation – Day 0-3: removal of bacteria and debris. 2) Proliferation – Day 3-24: new tissue growth. 3) Maturation – Day 24-2yrs: scar formation, strengthening
- Healed tissue strength is only about 80% of original

Assessment

- History – Assess medical, family, social, medication, nutrition status, use of support/positioning devices
- Inspection – Observe: colour, pigmentation, appearance, integrity, dryness/moisture
- Palpation – Assess moisture/lubrication, texture, temperature, thickness, edema, mobility, turgor &/or lesions. Also check capillary refill

Term 2

Lecture 1

Fluids and Electrolytes

- Fluid in the body is distributed between Intracellular fluid (fluid within cells, 42% of total body weight) and extracellular fluid (fluid outside of cells, broken down into interstitial [10-15%] and intravascular [5%], it makes up 15-20% of total body weight)
- Electrolytes in the body are in the form of ions: Cations (K+, Ca++, Na+, Mg++) are positively charged; Anions (Cl-, So_4-, HCO_2-) are negatively charged.
- Fluid intake is 2200 to 2700 mL/day fluid output is done through 1200-1500 (sensible loss); and 500-600 through skin, 400 through lungs, and 100-200 through GI tract (insensible loss).

Fluid Volume Deficit

- Signs and Symptoms
  - ⇨ Decreased urine output

        - ⇨ Thirst
        - ⇨ Tachycardia
        - ⇨ Hypotension
        - ⇨ Dry skin and mucous membranes, decreased skin turgor
        - ⇨ Weight loss
    - Causes
        - ⇨ Nausea
        - ⇨ Vomiting
        - ⇨ Diarrhea
        - ⇨ High temperature
        - ⇨ Reduced intake PO
        - ⇨ Some diuretics
    - Treatment
        - ⇨ Fluid replacement, either IV or PO
        - ⇨ Monitor Vital signs
        - ⇨ Monitor intake/output

Fluid Volume Excess

- Signs and Symptoms
    - ⇨ SOB, dyspnea, tachypnea
    - ⇨ Acute weight gain
    - ⇨ Bounding pulse
    - ⇨ Crackles, possible wheezes
    - ⇨ Ascites
    - ⇨ Edema
- Causes
    - ⇨ CHF
    - ⇨ Liver failure
    - ⇨ Kidney failure
    - ⇨ Etc.
- Treatment
    - ⇨ Determine and treat underlying cause
    - ⇨ Reduce excess volume using diuretics
    - ⇨ Possible need to restrict fluids and Na+
    - ⇨ Blood work
    - ⇨ Daily weight
    - ⇨ Monitor intake and output
    - ⇨ Monitor vital signs

Fluid and Electrolyte Disturbances

<table>
<tr><td colspan="2">Sodium Imbalances: Most commonly the result of excess water loss or excess sodium intake – Normal value = 135 – 145 mmol/L</td></tr>
<tr><td><u>Hyponatremia</u> = <135 mmol/L
Signs and Symptoms
Apprehension
Personality changes
Postural Hypotension
Dizziness
Cramping, N&V
Tachycardia
Dry mucous membranes
Convulsions and coma</td><td><u>Hypernatremia</u> = >145 mmol/L
Signs and Symptoms
Extreme thirst
Dry flushed skin
Dry and sticky tongue and mucous membranes
Postural hypotension
Fever
Agitation
Restlessness
Convulsions</td></tr>
<tr><td colspan="2">Potassium Imbalances: Most commonly caused by pharmacological means or trauma – Normal value = 3.5 – 5 mmol/L</td></tr>
<tr><td><u>Hypokalemia</u> = <3.5 mmol/L
Signs and Symptoms
Flattened T wave, ST segment depression
Weakness and fatigue
Muscle weakness
N&V
Intestinal distension
Decreased bowel sounds
Ventricular dysrhythmias
Paresthesias
Weak irregular pulse</td><td><u>Hyperkalemia</u> = >5.0mmol/L
Signs and Symptoms
Peaked T waves and widened QRS
Anxiety
Dysrhythmias
Paresthesia
Weakness
Cramping
Diarrhea</td></tr>
<tr><td colspan="2">Calcium Imbalances: Most commonly caused by severe illness or disease, also renal failure. – Normal value = 1.0 – 1.2 mmol/L (serum calcium) and 2.25 – 2.74 mmol/L (total calcium)</td></tr>
<tr><td><u>Hypocalcemia</u> = <1.05 (for serum) & <2.25 (for total) mmol/L
Signs and Symptoms
Numbness and tingling (paresthesia)
Hyperactive reflexes
Positive Trousseau’s sign (carpopedal spasm with hypoxia)
Positive Chvostek’s sign (contraction of facial muscles when facial muscle is tapped)
Tetany
Muscle cramps
Fractures
V-Tach</td><td><u>Hypercalcemia</u> = >1.30 mmol/L (serum) and >2.75 mmol/L (total)
Signs and Symptoms
Anorexia
N&V
Weakness
Hypoactive reflexes
Lethargy
Flank pain
Decreased LOC
Cardiac Arrest
Heart blocks</td></tr>
</table>

Magnesium Imbalances: Most commonly caused by malnutrition or excess nutrient loss. – Normal value = **1.4 – 2.1 mmol/L**	
<u>*Hypomagnesmia*</u> = <0.65 mmol/L Signs and Symptoms ▪ Muscular tremors ▪ Hyperactive deep tendon reflexes ▪ Confusion and disorientation ▪ Tachycardia ▪ Hypertension ▪ Dysrhythmias ▪ Positive Chvostek's and Trousseau's signs	<u>*Hypermagnesemia*</u> = >1.05 mmol/L Signs and Symptoms ▪ AV Block ▪ Prolonged QT interval ▪ Hypoactive deep tendon reflexes ▪ Decreased rate and depth of respirations ▪ Hypotension ▪ Flushing

<u>Acid-Base Imbalances</u>

<u>*Normal Values*</u>

- pH = 7.35 – 7.45
- PaO_2 = 80 – 100 mmHg
- $PaCO_2$ = 35 – 45 mmHg
- Oxygen Saturation = 95 – 99%
- Bicarbonate = 22 – 26 mmol/L

Respiratory Acidosis – This is marked by an increased concentration of CO_2 in the arteries, excess carbonic acid, and an increased hydrogen ion concentration (decreased pH). This occurs when respirations are not effective at excreting carbon dioxide.	
Hypoventilation resulting from inside Respiratory system • Atelectasis • Pneumonia • Cystic fibrosis • Respiratory failure • Airway obstruction • Chest wall injury	<u>*Signs and Symptoms*</u> • Confusion • Dizziness • Lethargy • Headache • Ventricular dysrhythmias • Warm flushed skin • Convulsions and Coma • PaO_2 = <80 mmHg • $PaCO_2$ = >45 mmHg • pH = <7.35
Hypoventilation resulting from outside Respiratory system: • Drug overdose • Paralysis • Head Injury • Obesity	<u>*Signs and Symptoms*</u> • Confusion • Dizziness • Lethargy • Headache • Ventricular dysrhythmias • Warm flushed skin • Convulsions and Coma • PaO_2 = <80 mmHg • $PaCO_2$ = >45 mmHg • pH = < 7.35

<table>
<tr><td colspan="2">Respiratory Alkalosis – Is marked by a decrease in concentration of CO_2 in the arteries and an increase in pH. Usually caused by some stressor outside the respiratory system causing an anxious reaction</td></tr>
<tr><td>Hyperventilation resulting from inside Respiratory system
Asthma
Pneumonia
Inappropriate mechanical ventilation</td><td><u>Signs and Symptoms</u>
Dizziness
Confusion
Dysrhythmias
Tachypnea
Numbness and tingling or extremities
Convulsions and Coma
$PaCO_2$ = <35 mmHg
pH = >7.35</td></tr>
<tr><td>Hyperventilation resulting from outside Respiratory system
Anxiety
Hypermetabolic states
Disorders of CNS
Salicylate OD</td><td><u>Signs and Symptoms</u>
Dizziness
Confusion
Dysrhythmias
Tachypnea
Numbness and tingling of extremities
$PaCO_2$ = <35 mmHg
pH = >7.35</td></tr>
<tr><td colspan="2">Metabolic Acidosis – Results from a decrease in serum bicarbonate or the production of acids. To compensate for this condition the body will increase rate and depth or respirations followed by renal mechanisms to increase pH.</td></tr>
<tr><td>High Anion Gap
Starvation
Diabetic Ketoacidosis
Renal Failure
Lactic acidosis
Use of drugs</td><td><u>Signs and Symptoms</u>
Headache
Lethargy
Confusion
Dysrhythmias
Tachypnea with increased depth
Abdominal cramps
Flushed skin
pH = <7.35
Bicarbonate level = <22 mmol/L</td></tr>
<tr><td>Normal Anion Gap
Renal tubular acidosis
Diarrhea</td><td><u>Signs and Symptoms</u>
Headache
Lethargy
Confusion
Dysrhythmias
Tachypnea with increased depth
Abdominal cramps
Flushed skin
pH = <7.35
Anion gap of > 12 mmol/L</td></tr>
</table>

Metabolic Alkalosis – Is marked by heavy loss of acid from the body or increased levels of bicarbonate. The most common causes of this are vomiting and gastric suction, as well as potassium deficiencies, disturbances in the aldosterone system, and diuretic therapy. The body will try and compensate by increasing the sectretion of bicarbonate and decreasing the rate and depth or respirations.	
Causes • Excessive vomiting • Prolonged gastric suctioning • Hypokalemia or hypercalcemia • Excessive aldosterone • Drug usage	*Signs and Symptoms* • Dizziness • Dysrhythmias • Numbness and tingling of fingers, toes, and around mouth • Muscle cramps • Tetany • pH = > 7.45 • Bicarbonate level = > 26 mmol/L

Lecture 2 Chronic Health Challenges

- One of the leading killers of Canadians
- The Impacts of chronic illness can be:
    - ⇨ Physical – dependence/ loss of independence, limitations, psychological impacts of physical limitations
    - ⇨ Self-concept – phenomenological approach, cultural influences
    - ⇨ Role function and clarity – locus of control
    - ⇨ Relationships – Non-biological determinants of health, focus of care shift

Eustress = A positive form of stress. A balance between selfishness and altruism through which an individual develops the drive and energy to care for others.

Distress = An emotional or physical state of pain, sorrow, misery, suffering, or discomfort

- General Adaptation Syndrome = 3 stage response to stress: Alarm, Adaptation, Recovery/Exhaustion.
- Miller's 6 Coping tasks: 1) Striving to feel normal; 2) Modifying routine; 3) Obtain knowledge/skill; 4) Maintain positive self-concept; 5) Adjusting to changed relationships; 6) Grieving losses; 7) Managing pain/discomfort; 8) Managing the stigma; 9) Maintaining hope despite uncertainty
- Factors affecting adaptation/coping: Intensity, duration of exacerbations, individual's goals and expectations, pile up, predictability, level of personal control, support, feelings of competence, cognitive appraisal
- Impact on the Family: Time constraints, role overload, emotional strain
- Factors affecting adaptation of a family: Context; environment; family stage of development; culture, values, beliefs; family meaning or interpretation

Lecture 3

Coping with Pain and Suffering

- Types of Pain:
  - ⇨ Acute/transient pain – protective, identifiable, short duration
  - ⇨ Persistent/Chronic – Is not productive and has no purpose or may not have identifiable cause
  - ⇨ Chronic Episodic – Occurs sporadically over an extended duration
  - ⇨ Cancer – Can be acute or chronic
  - ⇨ Inferred physiological – Musculoskeletal, visceral, or neuropathic
  - ⇨ Idiopathic – Chronic pain without an identifiable physical or psychological cause
- Factors Affecting Pain:
  - ⇨ Physiological – Age, fatigue, genetics, neurological function
  - ⇨ Social Factors – Attention, previous experiences, supports, spirituality
  - ⇨ Psychological – Anxiety, coping style, personal meaning, cultural influences
- Source of pain: visceral, deep somatic, cutaneous, referred, cancer-related
- When treating pain the best course of action is to identify the cause of pain and treat that.
- Always do a thorough assessment of pain: O – onset of pain; P – point to pain; Q – quality of pain; R – radiation of pain; S – scale of pain; T – time of pain/duration... also what makes it better what makes it worse
- Non-pharmacological interventions for pain:
  - ⇨ Relaxation and guided imagery
  - ⇨ Distraction
  - ⇨ Music
  - ⇨ Cutaneous stimulation – Massage, TENS, heat, cold, acupressure
  - ⇨ Herbals
  - ⇨ Heat and Cold
  - ⇨ Manage client's environment
  - ⇨ Changing wet clothes
  - ⇨ Monitor equipment
  - ⇨ Prevent urinary retention and constipation
- Pharmacological Pain Relief:
  - ⇨ Analgesics
    - Non-opioids
    - Opioids
    - Adjuvant/coanalgesics
    - PCA
    - Local/regional anesthesia
    - Topical agents
- Nurses will evaluate patients responce to pain management 15-30 minutes after administration

Lecture 4

Grief and Loss

- Loss – Actual or potential situation where something valued is changed, no longer available or gone
- Grief – Refers to the physical and emotional response to the loss
- Mourning – Refers to integrating the loss into one's life, it is the actions and manners of expressing grief. It also refers to the culturally conditioned manner in which we express our grief.
- Social Support – Is the overall rubric of providing the client or the griever with the supports needed to meet their needs. These supports include: emotional appraisal, informational and instrumental support.
- Grief Counselling – Is the facilitation with uncomplicated or 'normal' grief to a healthy completion of the tasks of grieving within a reasonable time frame.
- Grief Therapy – Are specialized techniques which are used to help people with abnormal or complicated grief reactions. This generally involves long-term work with the client having a high degree of trust for the professional.
- Grief Work – Refers to the cognitive re-appraisal of the loss, a review of the life events involving what is lost, the events of the loss and anticipating life without what is lost
- Chronic Sorrow – Pervasive grief-related feelings that occur periodically throughout the lives of individuals who have experienced loss. A variety of situations (anniversary dates, holidays, birthdays, etc.) can cause these grief-related feelings to re-surface

Types of Loss

- Actual loss: An object or person can no longer be seen, felt, heard, known or experienced
- Perceived loss: A loss that is uniquely defined by the individual and cannot be verified by others.
- Anticipatory loss: Loss experienced before the actual loss occurs

What to do as the nurse?

- Gain an understanding of the loss and its meaning to the patient

Types of Grief Responses

- Expected grief responses
    - ⇨ Abbreviated grief reaction
    - ⇨ Anticipatory grief reaction
    - ⇨ Disenfranchised grief reaction
- Complicated/dysfunctional grief:
    - ⇨ Unresolved grief
    - ⇨ Inhibited grief

Factors affecting grief: Age; significance of the loss; culture; spirituality; gender; socioeconomic status; social support; and disenfranchised death. Factors affecting complicated grief: person feels they need to be brave; multiple loss experiences; uncertain loss

Children

- Grief in children – Children experience grief in much the way adults do, however they tend to link vivid memories of events with the grief. Watch for changes in eating, sleeping, and even their behaviour as signs that a child might be experiencing grief.
- Below age 2 – Children just think of death in terms of losing their mother.... they don't fully understand it
- Age 2-6 – Death is perceived as temporary or reversible, show little emotion as a result. They often think that the dead will be alive somewhere else. Often think that if they say something like "I wish you were dead" is the reason a person died.
- Age 6-8 – Exhibit feelings of sadness, and anxiety for short periods of time. Fixated on the ceremonies associated with death
- Age 9-12 – Start to accept death as a universal thing and that we all die, understand the dying process. See death as really being just an issue with the elderly
- Teenagers – Question facts about death, all advanced or unique death events/measures create uncertainty. Fear that pain is associated with death. Associate death with loneliness, sadness, and uncertainty. May contemplate suicide, may act out, withdraw from life or turn to drugs or alcohol.

Lecture 5

Cognitive Impairment

Delirium

- Acute confusion, acute brain failure
- It is the body's response to an underlying medical condition
- Possible causes – disease, electrical/electrolyte imbalance, iatrogenic
- Prevalence
    - ⇨ 10-40% of elderly on admission to acute care
    - ⇨ 10-15% will develop delirium during hospitalization
    - ⇨ 51% of patients who fracture a hip will develop delirium
- Defining Factors
    - ⇨ Onset – Rapid-hours to days
    - ⇨ Course – Fluctuates sharply
    - ⇨ Duration – Short
    - ⇨ Memory – Impaired for recent events
    - ⇨ Alertness/Mood – Fluctuates
    - ⇨ Perception – Illusions, hallucinations
    - ⇨ Thinking – Disordered, possibility of delusions
    - ⇨ Speech – Rambling, incoherent
    - ⇨ Behaviour – Agitated, restless
    - ⇨ Prognosis – FULL if treated
- Contributing Factors
    - ⇨ Predisposing – advanced age, dementia, brain damage
    - ⇨ Facilitating – Sensory over/under-load, immobilization, psychosocial stress, ETOH withdrawal
    - ⇨ Precipitating – Medications, infections, fluid and electrolyte imbalances, metabolic disturbances

- Assessment
    - ⇨ History
    - ⇨ Lab – CBC, BS, ABG's, BUN, Cr, electrolytes, Ca++, TSH, LFT, albumin, urine C&S
    - ⇨ Radiology – CXR and other to r/o other causes
    - ⇨ Cognitive testing – MMSE, Clock test, delirium screening tools
    - ⇨ Miscellaneous – ECG
- Treatment
    - ⇨ Provide respectful, supportive care to individual and family
    - ⇨ Early assessment
    - ⇨ Treatment of underlying causes
    - ⇨ Normalization of sleep patterns and behaviours
    - ⇨ Pharmacologic intervention
    - ⇨ Safety in the environment
    - ⇨ Health teaching

Dementia

- Slow, subtle process resulting in progressive loss of cognitive function
- Types: Alzheimer's, Frontotemporal dementia
- Features: Intellectual deterioration; functional decline; and personality changes
- Risk factors: Family history; previous head injury; lower educational level; female; age >80 y/o
- Alzheimer's Disease:
    - ⇨ Onset – Insidious
    - ⇨ Course – Slow with steady decline
    - ⇨ Symptoms – Memory impairment, language deficits, attention deficits, visuo-preceptual deficits, decreased ADL/IADL, behaviour/personality changes
- Assessment
    - ⇨ Assess motor memory
    - ⇨ Assess sensory recognition
- Approach clients with calm demeanour, soft tone of voice
- Provide reassurance while explaining who you are and why you're there
- Therapeutic touch
- Build and maintain a therapeutic relationship, ensure your own values and beliefs do not interfere with this

Depression

- A chemical imbalance which is exacerbated by psychosocial factors that affect functioning
- Risk factors: major life changes such as a loss of a spouse or child; management of other medical condtions
- Assessment
    - ⇨ Use a structured assessment method to help differentiate and objectively assess for dementia, delirium, and depression
    - ⇨ Observe appearance, behaviours, posture, eye contact, motor behaviours, dressing, grooming, facial expressions
    - ⇨ Focus on a therapeutic relationship
- Medical conditions related to depression
    - ⇨ Dehydration
    - ⇨ Hypoxia

    - ⇨ Thyroid problems
    - ⇨ Diabetes
    - ⇨ COPD
    - ⇨ CVA
    - ⇨ Malnutrition
- Treatment
    - ⇨ Access resources: individual therapist, environmental supports, supportive communications, family/caregiver supports
    - ⇨ Pharmacological interventions

Lecture 6

Hope and Sources of Support

Hope

- Hope is a multi-dimensional concept that provides comfort while enduring life threats and personal challenges
- Seven concepts of hope:
    - ⇨ Initially assessing threat
    - ⇨ Envisioning of opinions and setting goals
    - ⇨ Preparing for negative outcomes
    - ⇨ Assessing of resources
    - ⇨ Seeking out supportive relationships
    - ⇨ Evaluating signs that reinforce goals
    - ⇨ Determining to endure
- Hope is the anticipation of a continued good or of an improvement in, or lessening of, something unpleasant.
- Characteristics of hope:
    - ⇨ Belief in self
    - ⇨ Anticipation
    - ⇨ Sense of competence
    - ⇨ Sense of purpose/meaning
    - ⇨ Coping ability
- Hope Power Resources
    - ⇨ Psychological stamina and social support
    - ⇨ Positive self-concept
    - ⇨ Energy
    - ⇨ Knowledge
    - ⇨ Motivation
    - ⇨ Belief system
    - ⇨ Physical strength

Hopelessness

- Dont be a winy bitch

Lecture 7

Growth and Development

Stages of Development

- Stage 1: Sensorimotor 0-2 yrs
- Stage 2: Preoperational 2-7 yrs
  - ⇨ Ask child about how they think things work
  - ⇨ Use play to encourage expression of feelings
  - ⇨ Use accurate names for body parts
  - ⇨ Ask child what they think caused the incident then correct where they are in error
  - ⇨ Deal with each of the child's concerns in the order they tell them to you
- Stage 3: Concrete operation 7-11 yrs
  - ⇨ Validate comprehension as focus is on 1 thing at a time
  - ⇨ Encourage parents to add responsibilities and reward expected behaviours
  - ⇨ Help the child develop healthy habits
- Stage 4: Formal Operations 11-15 yrs
  - ⇨ Abstract thinking developing therefore can use reasoning, logic, deduction etc with health teaching/motivating
  - ⇨ Overall, in presence of illness, children will tend to regress in their developmental stage

Stage	Age	Characteristics	Nursing Implications
Oral	0-1 yr	Positive reward received from oral gratification If fixated at this stage, potential ↓ trust aeb nail biting, drug abuse, smoking, overeating, ETOH, etc, etc.	
Anal	2-3 yr	Anus/rectum centres of pleasure. Toilet training in this stage. Fixation can result in OC personality traits like obstinacy, stinginess, cruelty, and temper tantrums.	
Phallic	4-5 yr	Genitals are centres of pleasure. Sexual/aggressive feelings r/t genitals come into focus. Masturbation occurs. Oedipus/Electra complex. Fixation can result in difficulties with sexual identity and problems with authority.	
Latency	6-12 yr	Focus is on physical/intellectual activities. Repressed sexual impulses. Unresolved conflicts at this stage can result in obsessiveness and lack of self-motivation.	
Genital	13 +	Goal is attain a mature sexual relationship. Reactivation or pre-genital impulses, usually displaced once resolution occurs. Inability to resolve conflicts can result in sexual problems, such as frigidity, impotence, and inability to have a satisfying sexual relationship.	

Source: Adapted from Kozier, et. al. (2004). *Fundamentals of nursing: The nature of nursing in Canada*. New Jersey, NY, Prentice-Hall, Inc.

- Freud talked about three levels of consciousness: Id = basic unconscious instincts, largely sexual; Ego = meets social and physical needs, reality check-in; Superego = one's conscience hence regulating function and influenced by society and parents

- Principles of Growth and Development
  - ⇨ G and D occur in:
    - A cephalocaudal direction
    - A proximal to distal direction
    - Continuous, orderly, sequential processes
    - Development proceeds from simple to complex
    - G&D is influenced by maturational, environmental, and genetic factors

Growth Stages:

- Toddler 1-3
  - ⇨ Vitals
    - Heart Rate – 110/min
    - Respiratory – 25/min
    - B/P – 90/50 mmHg
    - Wt – 4 times birth weight by 2.5 yrs
    - Ht – 82 cm by 2 yr
- Preschooler 3-5 yrs
  - ⇨ Vitals
    - Heart Rate – 60-100/min
    - Respiratory – 23-25/min
    - B/P – 92/56 mmHg
    - Wt. – increase 2.3 kg/yr
    - Ht – increase 6-7.5 cm/yr
  - ⇨ Growth occurs primarily in long bones (becoming leaner0
  - ⇨ Fine motor skills develop (scissors, paste, circles, and triangles)
  - ⇨ Gross motor abilities including ball throwing, climbing, tricycle
  - ⇨ Sensory ability includes improvement to visual acuity
- School Age 6-12 years
  - ⇨ Vitals:
    - Heart rate – 75-100/min
    - Respiratory rate – 20-30/min
    - B/P – 110/66 mmHg
    - Wt – increase 1.8-3.2 kg/yr
    - Ht – increase 5 cm/yr
  - ⇨ Fine motor skills include cards, board games etc
  - ⇨ Gross motor skills include 2-wheeler
  - ⇨ Sensory ability includes reading and increased concentration
- Adolescents 12-19 yrs
  - ⇨ Vitals
    - Heart rate – 60-90/min
    - Respiratory – 16-20/min
    - B/P – 120/75
    - Wt – sex characteristics develop to mature status
    - Ht – Slows first in females

Moral Development

- Level 1 – Preconventional
  - ⇨ Stage 1: Punishent and obedience orientation
  - ⇨ Stage 2: Instrumental-relativist orientation
- Level 2 – Conventional
  - ⇨ Stage 3: Interpersonal concordance
  - ⇨ Stage 4: Law and order orientation
- Level 3 – Postconventional
  - ⇨ Stage 5: Social contract, legalistic orientation
  - ⇨ Stage 6: Universal ethical principle orientation

Freud's Five Stages of Development

Stage	Age	Characteristics	Nursing Implications
Oral	0-1 yr	Positive reward received from oral gratification If fixated at this stage, potential ↓ trust aeb nail biting, drug abuse, smoking, overeating, ETOH, etc, etc.	
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Erikson's 8 Stages of Development

	Age	Stage	+ve Resolution	-ve Resolution
Infancy	0-1 yr	Trust vs. mistrust	Learns to trust	Withdraws/estranged
Early Childhood	1-3yrs	Autonomy vs. shame & doubt	Self-control + self-esteem Cooperation, expression	↑restraint, compliance, willfulness, defiance
Late Childhood	3-6 yrs	Initiative vs. guilt	Influence ext. env., evaluates own beh.,	Fears wrongdoing, over-restricts activity
School Age	6-11 yrs	Industry vs. inferiority	Developing sense of competence [in all arenas], perseverance, will learn to view work +vely	Inadequacy, inferiority, hopelessness, mediocrity, withdrawal from peers & in school
Adolescence	12-18 yrs	Identity vs. role confusion	Trying on new roles/shaping own identity, PUBERTY, new social demands & opportunities, conflicts with "try ons"	Confused, indecisive, possible anti-social
Young Adult	18-35 yrs	Intimacy vs. isolation	Developing with another, committing to work & relationships	Relationships impersonal, avoids relationships, career or lifestyle commitments
Adult	35-65 yrs	Generativity vs. stagnation	Creativity, productivity, concern for others	Self-indulgence, self-concern, lack of interests & commitments
Maturity	65+	Integrity vs. despair	Accepts worth & uniqueness of own life, accepts death	Sense of loss, contempt for others

Piaget's Theory of Cognitive Development

Stage	Age	Behaviours
I: Sensorimotor	0-2 yrs	Learning actions to deal with environment. 2nd year begin to develop object memory
II: Preoperational	2-7 yrs	Egocentric accommodation of the environment, everything that happens is important and always relates to "me", explores the env't, rapid language development, learns words for objects and makes the association
III: Concrete Operations	7-11 yrs	Diminishing egocentrism, thinks of 1 idea at a time, includes others in the env't, uses words to express thoughts
		Solves concrete problems, begins to understand relationships e.g. size, understands right & left, aware of viewpoints
Formal operations	11-adulthood	Uses rational thinking, reasoning is deductive & futuristic

Erikson – 6th Stage of Development

- Young adult: 18-35 yrs -- Intimacy vs. Isolation
- Relationships – lovers, family, friends, work connections
- Issues – Intimacy, work and social life balance
- Ten indicators of emotional health
    1. A sense of meaning and direction
    2. Successfully moving through transitions
    3. No c/o feeling cheated or missing out on life
    4. Achievement of long term goals
    5. Happy with how self has developed

6. Feelings for others
7. Satisfied with friendships
8. Usually cheerful
9. Accepts and build on constructive criticism
10. Has no unrealistic fears

Erikson – 7th Stage

- Adult: 35-65 yrs --- Generativity vs. Stagnation
- Relationships – Children, community
- Issues – "giving back", helping, contributing

Erikson – 8th Stage

- Maturity: 65+ -- Integrity vs. Despair
- Relationships – Society, the world, "life"
- Issues – meaning and purposes, life achievements "reflection"
- Young-old 65-80
    - ⇨ More of this group living longer
    - ⇨ Potential increased physical and mental fitness
    - ⇨ Can still learn and develop emotionally
    - ⇨ Are achieving high levels of emotional and personal well-being
- Old-old 80+
    - ⇨ Losses in cognition and ability to learn
    - ⇨ Increased consequences of chronic stress
    - ⇨ Prevalence of dementia increases
    - ⇨ Problems with quality of life and dying with dignity
    - ⇨ Physical changes:
        - Dry and scaling skin
        - Thickened and brittle toenails
        - Misshaped or enlarged moles
        - Increased clumsiness
        - Increased fatigue
        - Increased stiffness
        - Have less "padding"
        - Poor drivers
        - Fluid and electrolytes are no longer within normal adult ranges
        - Increased risk of respiratory infection
        - Decreased arterial elasticity
        - Risk of orthostatic hypotension
        - Have changes in B/P
        - Can still have sex
        - Have reduced kidney filtration
        - Increased urgency/frequency of urination
        - Increased incidence of drug reactions