



## CHAPTER 16

### AGE SPECIFIC COMPETENCIES

#### A. PEDIATRICS

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As perianesthesia nurses, we offer our care and experience to people at all stages of life, from infants to aged adults. At each stage in life, there are certain qualities and needs and by understanding and incorporating age-specific considerations into our interventions for each patient, we can provide better, more appropriate care to that particular patient at that time.

Age-specific competencies have also become a major focus of the Joint Commission (TJC). There are special health considerations to be aware of at each stage of life and nursing staff should understand and apply these age-specific considerations as appropriate. Healthcare staff should be aware of how the age of each patient can influence assessment, delivery of care and health education needs for the patient.

Age specific competency spans the unique physiologic, anatomic, motor, sensory, cognitive and psychosocial aspects of the life cycle from the young neonate to the older adult. This competency will review general age specific growth and development milestones and behavioral markers across the life span.

The growth and development markers and milestones are displayed in Table A and the vital sign norms in Table B for the following age groupings:

- Neonates Birth to 28 days
- Infant 1 month to 1 year
- Toddler 1-3 years
- Pre-school 3-5 years
- School-aged 6-12 years
- Adolescent 13-18 years
- Young Adultt 19-39 years
- Middle Adults 40-64 years
- Older Adults 65-79 years
- Aged Adults 80+ years

For each stage of development, there are nursing assessments and interventions that are specific to these age groups. Physiologic and anatomic changes focused on specific perianesthesia cases are more generally limited to differences between children and adults and will be addressed separately.

**Table A: Growth and Development Markers and Milestones**

Developmental Stage/Age	Developmental Tasks	Physical	Motor/Sensory	Cognitive	Psychosocial/Communication	Nursing Considerations
Neonate Birth-28 days	Development of trust	Obligate nose breather; fontanelles soft; feeding at frequent intervals; temperature, digestion and sleeping begin to form established patterns	Reflexes (Moro, rooting, palmar, extrusion) present; vision best at 8-14 inches	Can focus on faces; bright color contrast (e.g., black and white) provides stimulation	Communicate by crying, facial expressions and startle response; turn to source of sound	Handle in comforting manner; avoid over stimulation

Developmental Stage/Age	Developmental Tasks	Physical	Motor/Sensory	Cognitive	Psychosocial/Communication	Nursing Considerations
Infant 1 month to 1 year	Continued development of trust	Learns to walk; eat solid food; begins to talk; develops stable sleep and wake patterns; gains weight (doubles at 6 months and triples at 12 months); primitive reflexes diminish; teething; fontanels begin to close (completed by 18 months); obligate nose breathing diminishes after 4 months	Brings hand to mouth; crawling progresses towards walking; repeats actions; intentional motor actions	Recognizes familiar faces/items; obeys simple commands; learns by imitation	May speak two words and mimic sounds; understands several words; fear of strangers; separation anxiety	Use distraction (pacifier, bottle); limit the number of strangers; maintain routine if possible
Toddler 1-3 years	Autonomy; self-control and willpower	Learns bladder and bowel control; growth slows; 20 teeth present by 3 years	Responds better to visual versus verbal cues; walk progresses to running, jumping, climbing; feeds self	Sees things only from own point of view; able to group similar items; short attention span; ties words to actions	Develops use of language, 3-4 word sentences; understands ownership ("mine"); asserts independence; attached to security objects; knows gender; plays simple games	Does not understand concept of time; may continue fear of strangers and unfamiliar surroundings and objects; keep parents at bedside as able; allow playtime
Preschool 3-5 years	Initiative; confidence	Gains weight and height; becomes thinner and taller	Skips and hops; dresses and undresses independently; prints first name; draws "people" with parts; throw/catches ball	Understands concept of number of objects; classifies objects; questions things; ritualistic; magical thinking	Has conversations; masters new skills and tasks; can modify behavior with rewards and punishments; plays cooperatively; may be aggressive; learns appropriate social manners	Use dolls or puppets to help explain procedures; reassure child; allow child to make reasonable choices; offer rewards (stickers); praise appropriate behavior; provide privacy

Developmental Stage/Age	Developmental Tasks	Physical	Motor/Sensory	Cognitive	Psychosocial/Communication	Nursing Considerations
School-aged 5-12 years	Industry; self-confidence; competency	Baby teeth replaced with permanent teeth; begin puberty; appetite variable; "growing pains" due to muscle stretching and growth of long bones	Motor control improves (uses tools and utensils); independent self cares; plays games as well as activities	Understands cause and effect; comprehends time; proud of accomplishments; understands perspectives; increased attention span; understands rules	Prefers friends to family; wants to be successful; desires approval of peer group; understands intention when judging behavior; concern for body awareness and possible mutilation	Explain procedures in advance; allow appropriate control; provide privacy; promote independence; define and reinforce behavior limits; major fear is loss of control
Adolescent 13-18 years	Identity formation; sense of self	Rapid growth; maturation of the reproductive system; vital signs approximate those of the adult	May be awkward due to rapid growth; easily fatigued; needs additional rest/sleep	Increased ability to use abstract thought; introspective; develops morals, attitudes and values needed to function in society	Interested and confused by development; critical of own features; "belonging" is very important; interested in female/male social role; concerned about body changes and appearance	Supplement explanation with rationale; provide privacy; involve in planning and decision-making; allow appropriate control; talk directly to adolescent, not through parents; encourage questions
Young Adult 19-39 years	Intimacy; affiliation; love	Skeletal system growth continues until age 30; muscular efficiency peaks; nutrition is for maintenance, not growth	Visual changes in accommodation and convergence	Mental abilities peak	Initiates finding career, place in society, mate, family; achievement oriented; increases responsibility; cares for children	Involve significant other (SO) in plan of care; allow for decision making; assess for stress related to multiple roles; provide information on aspects of care.
Middle Adult 40-64 years	Generativity; production; concern about others	Bone mass decreases; loss of height; loss of muscle mass, loss of skin elasticity; decreased renal function, metabolic rate, heat/cold tolerance	Reflexes slowing; visual changes; loss of hearing/taste; muscles and joints respond more slowly; decreased balance and coordination; more response to stress	Mood swings; decreased memory/recall; decreased mental performance and speed	New information processed more slowly; future oriented; recognition of limitations; adjustments made to lifestyle and employment modifications; adopts new roles, e.g., grandparents, caring for aging parents	Encourage self control, decision making and choices; provide essential teaching and information; show respect for personal values; accommodate for physical needs

Developmental Stage/Age	Developmental Tasks	Physical	Motor/Sensory	Cognitive	Psychosocial/Communication	Nursing Considerations
Older Adult 65-79 years	Ego integrity; wisdom	Chronic conditions common (arthritis, hypertension, heart disease, reflux, bladder and bowel problems, diabetes); skin has decreased oil and perspiration	Hearing impairments; cataracts; dental changes; mobility and activities of daily living (ADLs) may be impaired	Multiple medication (polypharmacy) may affect physical and/or cognitive abilities	Needs activities to keep engaged; sense of giving back is important	Don't assume physical or cognitive impairments; encourage patient to share life experience; address by preferred name; allow enough time
Aged Adult 80+ years	Copes with death; prepares for death	Skin fragile; skeletal changes; atrophy of organs (diminished organ reserves); thermal regulation diminishes	Continued decline in motor and sensory abilities; decreased tolerance to pain	Decreased memory; slowed mental functions; learning speed declines	Retirement; adapting to changing social circle (deaths, relocations, health)	Explore individual's support system; involve family; assess functional capacity; offer assistive devices; avoid treating patient as a child; monitor skin integrity, nutrition and pain; be aware of multiple medications; support end-of-life decisions

**Table B: Vital Sign Norms<sup>1-3</sup>**

AGE	RESPIRATIONS	HEART RATE		TEMPERATURE	SYSTOLIC BP	DIASTOLIC BP
		AWAKE	SLEEPING			
Neonate Birth – 28 days	45-60	85-205	80-160	96-99 F	60-91	31-56
Infant 1 month – 1 year	30-60	100-190	75-160	96.8-99.5 F	78-105	36-65
1 – 3 years	24-40	60-140	60-90	97.5-98.6* F	68-106	20-63
3 – 5 years	22-34	60-140	60-90	98.5-99.5 F	71-106	25-63
6 – 12 years	18-30	60-100	60-90	97.5-98.6 F	79-115	38-78
13 – 18 years	12-16	50-90	50-90	97.5-98.6 F	93-131	45-85

\*Axillary

## A. OVERVIEW FOR PERIANESTHESIA PEDIATRIC ASSESSMENT

**Purpose:** The perianesthesia nurse will demonstrate a pediatric assessment: compare and contrast anatomic, physiologic and developmental differences between the pediatric and adult patient; identify appropriate perianesthesia nursing interventions related to the pediatric patient.

**Competency Statement:** Perform a nursing assessment of the pediatric patient.

### Criteria:

#### 1. Discuss the differences in pediatric anatomy, physiology and development needs specific to the perianesthesia setting.

Growth and developmental characteristics in the pediatric patient can be the source of potential complications if not understood. Significant differences in pediatric anatomy and physiology may cause compromise including:

**Table C: Pediatric Growth and Development Characteristics Significant to Perianesthesia<sup>2</sup>**

POTENTIAL CONCERNS	COMPROMISE	INTERVENTIONS
Birth – 4 months, obligate (compulsory) nose breather	Airway compromise or obstruction	Keep airway clear of blankets, drapes, etc., suction nares if not contraindicated, humidified air
Tongue larger proportionally to mouth	Airway compromise or obstruction	If not contraindicated by procedure and/or existing medical or developmental condition, place child in side-lying
Shorter neck	Airway compromise, difficult intubation	Carefully monitor extubation readiness criteria. Avoid hyperextending the child's neck as it can itself potentially obstruct an airway. Assess frequently after extubation and/or face/head/neck procedures
Smaller, higher larynx, less cartilaginous support	Even a small amount of swelling can cause airway obstruction or laryngospasm	Same as above
Epiglottis is short, stiff, U-shaped Tracheal length short	Difficult intubation. Swelling narrows and is confined and causes obstruction	Same as above
Higher metabolism	Increased oxygen demands	Monitor oxygen (O <sub>2</sub> ) saturation immediately on arrival and ensure delivery devices are readily available
Immature temperature regulating mechanism	Hyper/hypothermia can alter medication metabolism	Monitor temperature using appropriate method, considering surgical site and length of exposure in the OR. Monitor frequently as over-correcting can occur rapidly in the small or neurologically impaired
Fever	Increased O <sub>2</sub> demands	Same as above
Age specific social and developmental needs	Lack of communication skill; separation anxiety; body image concerns and/or fears, especially with teenagers as noted in Table A	Reassure and give information as appropriate to age and development. Anticipate potential or common needs and concerns

**2. Identify normal respirations, hypoventilation, stridor/croup, laryngospasm, obstruction and appropriate nursing interventions for each of the assessment findings.**

**Table D: Respiratory Patterns**

DIAGNOSIS	CAUSE	SIGNS/SYMPTOMS	INTERVENTIONS
Normal	N/A	Infants (0-4 months) are obligatory nose breathers, children are belly breathers, rates 16-65	Supplemental O <sub>2</sub>
Hypoventilation <sup>4</sup>	Residual anesthesia, inadequate reversal, opioids	Shallow, slow or absent respirations, increased end-tidal CO <sub>2</sub> , decreased PaCO <sub>2</sub>	Verbal and tactile stimulation (stir-up regime), reposition to open airway, O <sub>2</sub> , chin lift, oral airway if necessary, suction, identify and treat cause
Post-Extubation Stridor/Croup <sup>3</sup>	Traumatic prolonged intubation, tight fitting endotracheal tube (ETT), subglottic injury and edema	Bark-like cough, crowing respirations, high pitched sound produced by turbulent airflow, inspiratory stridor, hoarseness, thoracic retraction	Cool humidified O <sub>2</sub> , elevate head of bed (HOB), notify MD, racemic epinephrine nebulizer, calm reassurance
Laryngospasm <sup>4</sup>	Irritation of laryngeal reflexes, secretions	Wheezing, reduced compliance, stridor, use of accessory muscles, partial to complete obstruction, poor or no air exchange	Airway reposition, HOB elevated to maximize respiratory efforts, positive pressure ventilations at 100% O <sub>2</sub> , notify MD, neuromuscular blocking agents
Obstruction <sup>4</sup>	Tongue relaxation, soft tissue edema, some physical conditions and facial abnormalities increase potential	Use of accessory muscles, nasal flaring, vigorous abdominal/diaphragmatic contractions, decreased air entry	Verbal tactile stimulation (stir-up regime), repositioning airway, chin lift, jaw thrust airway adjunct, application of positive pressure ventilations O <sub>2</sub> , suction, notify MD

**3. Recognize indications and/or rate pain in the pediatric patient and initiate appropriate pain management techniques for age and weight.**

Pain may be indicated in the neonate by crying, irritability, restlessness and, in older children, by increased heart rate, respiratory rate and increased BP, guarding of the surgical site, body rigidity and verbal reports. Children age three and above may be able to use self-reporting scales such as FACES or Numeric Pain Intensity Scale.<sup>3</sup> Various non-verbal pain rating scales (Non-communicating Children's Pain Checklist, FLACC (face, legs, activity, crying and consolability)) are available for use to assist in assessing the effectiveness of pain relief measures in the pediatric population.

Methods of pain relief in the pediatric patient incorporate a multimodal approach whenever possible.

Pharmacologic measures include: intravenous (IV) medications titrated in small amounts to obtain relief, oral medications such as opioids, NSAIDS, acetaminophen oral or rectal in combination with IV administration.



Medications should be given per order, as indicated by child's behavior or pain score and calculated based on the child's weight in kilograms. Appropriate methods for medication delivery, such as oral medication syringes should be used. Various generic and/or specific tables are available for this calculation.<sup>5</sup> Acknowledge that some children will be inconsolable until familiar surroundings and faces are nearby.

Non-pharmacologic means such as holding, rocking, warm blankets and burping may be as effective as medications. Comfort and soothing measures such as pacifiers and offering clear liquids (if ordered). Early reuniting with parent may help calm the pediatric patient.

#### 4. Monitor temperature on arrival and at intervals.

Pediatric patients are at greater risk from hypothermia because their ability to control their body temperature is poorly developed and because they have increased surface area per kilogram. This is compounded by cold IV fluids, vasodilating anesthetic agents and wound exposure.<sup>2</sup>

Hypothermia in the pediatric patient increases O<sub>2</sub> consumption due to high metabolic rates. This in turn can result in hypoxemia, hypoglycemia, metabolic acidosis, depleting metabolic energy stores and electrolyte imbalance. Nursing interventions include maintenance of normothermia by warm room temperature, wrapping the head and application of available warming devices as needed.<sup>2,3</sup>

Hyperthermia, unless from malignant hyperthermia, is usually the result of over vigorous warming techniques. Small children have immature thermo-regulatory mechanisms and are unable to accommodate the excess heat. Interventions include judicious removal of some wraps and linens, with care not to over cool the patient.

#### 5. Monitor and regulate fluid loss with replacement and maintenance..

The total body water content of a term newborn is 75-80%. By one year of age, total body water slowly decreases to the adult levels of 60%.<sup>3</sup>

Pediatric patients have a higher metabolic rate and some limitations in renal function due to immaturity. Fluid replacement and maintenance should be based on calculated needs. Information received during report from the OR staff, physicians, orders and current output/drainage will be essential to those calculations. Use regulatory devices (pumps, restrictive apparatus) as determined by institutional policy.

A basic guide for perioperative fluid requirements follows. Be aware that individual institutions, specific case circumstances and individual practitioners will have their own guidelines. Follow regulations as appropriate. (See chapter on Fluid Management and Resuscitation.)

- Maintenance fluid:<sup>4</sup>

For the first 10 kg of weight give 4 ml/kg/hr

For the second 10 kg, add 2 ml/kg/hr

For the remaining kg, add 1 ml/kg /hr

Example: A 35 kg child requires  $40+20+15 = 75$  ml/kg/hr

A 5 kg child requires only  $5 \times 4 = 20$  ml/kg/hr

- Preoperative deficit:

This is simply maintenance fluid x hours NPO. Half is replaced in the first hour of surgery, one quarter in the second hour and the remaining quarter in the third hour.

- Third space losses:

Superficial procedures 2-4 ml/kg/hr

Moderate procedures 4-6 ml/kg/hr

Major procedures 6-8 ml/kg /hr

This is given in addition to maintenance and deficit fluids to account for loss of fluid to the environment from open wounds.

- Blood replacement:

Replace each ml of blood lost with 3 ml of crystalloid or 1 ml of colloid or packed red blood cells (PRBC).

**Table E: Estimated Blood Volume (EBV)<sup>2</sup>**

AGE	ESTIMATED BLOOD VOLUME
Premature	90-100 ml/kg
Newborn	80-90 ml/kg
3mo-1yr	75-80 ml/kg
greater than 6 yr (approximate that of an adult)	65-70 ml/kg

**6. Identify the growth and development stage of the individual and adapt the nursing interventions to meet the unique needs of the child. (Refer to Table A)**

Children progress through identifiable stages of growth and development. Recognition of the appropriate stage of development will assist the nurse in delivering optimal care.

**7. Recognize signs and symptoms of child abuse.**

The nurse should be highly suspicious of abuse if the child presents with burns, bruises, bites, scratches, welts or unusual marks, especially if the bruises are in various stages of healing. Other signs may include if the child seems frightened of the parents, protests or cries when it is time to go home and/or shrinks at the approach of adults.

Abuse may be in the form of emotional abuse or neglect. In these situations, the child may display signs of malnutrition or dehydration. These children may respond adversely to attention and demonstrate a flat affect, may be consistently dirty and have severe body odor, show extremes in behavior, such as overly compliant or demanding behavior, extreme passivity or aggression. They may either be inappropriately adult-like (e.g., parenting other children) or inappropriately infantile (e.g., frequently rocking or head-banging). They may demonstrate delays in physical or emotional development.

If there are any indications of child abuse, it must be reported. Follow state and/or facility requirements as directed.

**8. Complete and maintain PALS.**

The perianesthesia registered nurse working in Phase I PACU will maintain a current PALS provider status when pediatric patients are part of the population served.<sup>6</sup>

**9. Communicate and document all pertinent information per institution/unit specific policy/protocol.**

**References**

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**B. OVERVIEW FOR PERIANESTHESIA GERIATRIC ASSESSMENT**

**Purpose:** The perianesthesia nurse will demonstrate a geriatric assessment, identify specific changes common to the aging process and identify appropriate nursing interventions related to perianesthesia needs of the geriatric patient.

**Competency Statement:** Perform a nursing assessment of the geriatric patient.

**Criteria:****1. Discuss the changes that can occur in the aging adult anatomy, physiology and metabolism specific to the perianesthesia setting.**

Aging characteristics in the geriatric patient can be the source of potential complications if not understood.

Significant differences in geriatric anatomy and physiology may cause compromise including:<sup>1-6</sup>

**Table A: Physiologic Changes of Aging**

AFFECTED ORGAN OR SYSTEM	PHYSIOLOGIC CHANGE	CLINICAL MANIFESTATIONS
Heart	<ul style="list-style-type: none"> <li>↓ Intrinsic heart rate and maximal heart rate</li> <li>Blunted baroreflex (less increase in heart rate in response to decrease in BP)</li> <li>↓ Diastolic relaxation</li> <li>↑ Atrioventricular conduction time</li> <li>↑ Atrial and ventricular ectopy</li> </ul>	<ul style="list-style-type: none"> <li>Tendency toward syncope</li> <li>↓ Ejection fraction</li> <li>↑ Rates of atrial fibrillation</li> <li>↑ Rates of diastolic dysfunction and diastolic heart failure</li> </ul>
Vasculature	<ul style="list-style-type: none"> <li>↑ Peripheral resistance</li> </ul>	Tendency toward hypertension
Pulmonary system	<ul style="list-style-type: none"> <li>↓ Vital capacity</li> <li>↓ Lung elasticity (compliance)</li> <li>↑ Residual volume</li> <li>↓ Forced expiratory volume (FEV)<sup>1</sup></li> <li>↑ Ventilation/perfusion (V/Q) mismatch</li> </ul>	<ul style="list-style-type: none"> <li>↑ Likelihood of shortness of breath during vigorous exercise</li> <li>↑ Risk of death due to pneumonia</li> <li>↑ Risk of serious complications for patients with a pulmonary disorder</li> </ul>
Body composition	<ul style="list-style-type: none"> <li>↓ Lean body mass</li> <li>↓ Muscular mass</li> <li>↓ Creatinine production</li> <li>↓ Skeletal mass</li> <li>↓ Total body water</li> <li>↑ Percentage adipose tissue (until age 60, then ↓ until death)</li> </ul>	<ul style="list-style-type: none"> <li>↓ Strength</li> <li>Tendency toward dehydration</li> <li>↓ Modulation of drug doses</li> </ul>
Peripheral nervous system	<ul style="list-style-type: none"> <li>↓ Baroreflex responses</li> <li>↓ β-Adrenergic responsiveness and number of receptors</li> </ul>	<ul style="list-style-type: none"> <li>Tendency toward syncope</li> <li>↓ Response to β-blockers</li> </ul>
Thermoregulation	<ul style="list-style-type: none"> <li>↓ Subcutaneous fat</li> <li>↓ Ability to sweat</li> <li>↓ Ability to produce fever during infection</li> <li>↓ Peripheral vasoconstriction</li> </ul>	Thermoregulation more difficult

AFFECTED ORGAN OR SYSTEM		PHYSIOLOGIC CHANGE	CLINICAL MANIFESTATIONS
Sensory	Ears	Loss of high-frequency hearing	↓ Ability to recognize speech
	Eyes	↓ Lens flexibility	Presbyopia
		↑ Time for pupillary reflexes (constriction, dilation) ↑ Incidence of cataracts	↑ Glare and difficulty adjusting to changes in lighting ↓ Visual acuity
	Nose	↓ Smell	↓ Taste and consequent ↓ appetite
Joints		Degeneration of cartilaginous tissues Fibrosis	Tightening of joints Tendency toward osteoarthritis Loss of tissue elasticity
Kidneys		↓ Renal blood flow ↓ Renal mass ↓ Glomerular filtration ↓ Renal tubular secretion and reabsorption ↓ Ability to excrete a free-water load	Changes in drug levels with risk of adverse drug effects Tendency toward dehydration
Liver		↓ Hepatic mass ↓ Hepatic blood flow	Changes in drug levels

**2. Obtain a baseline and interval blood pressure and pulse measurements.**

The cardiovascular changes of aging may include arteriosclerosis, left ventricular hypertrophy, myocardial irritability, decreased contractility and altered hemodynamics. These changes can result in decreased organ perfusion, increased systolic BP, dysrhythmias, valve incompetence and decreased cardiac output and reserves. The elderly respond to stress with less tachycardia than do younger adults, increasing stroke volume rather than rate.<sup>1-6</sup>

**Table B**

MEASUREMENT	RANGE	LIMITING FACTORS
Pulse	60-100	Tendency towards bradycardia (related to beta blocker use) and irregularity.
Blood Pressure	greater than 140/90	Blood vessels become less elastic. Average BP increases from 120/70 mm Hg to about 150/90 mm Hg BP may remain slightly high even if treated. Blood vessels respond more slowly to changes in body position (orthostatic hypotension)

The nurse should include a review of the patient's history. This will include surgical and anesthetic reports and all pertinent documented data including current medications.

**3. Obtain baseline and interval respiratory measurements, including rate, effort, rhythm and SpO<sub>2</sub>.**

**Table C**

MEASUREMENT	RANGE	LIMITING FACTORS
Respirations	16-25/min.	Related to increasing anterior-posterior (A-P) diameter, progressive flattening of the diaphragm, loss of diaphragmatic muscle tone/strength, increased chest wall rigidity, decrease in alveolar surface area, loss of skeletal muscle mass and loss of dentition

Respiratory changes can occur with the aging process. The potential effect of these changes is reduced pulmonary elasticity, decreased chest wall mobility, increased air trapping, a decrease in tidal volume (TV), functional residual capacity (FRC), vital capacity, increased airway resistance, potential for increased obstruction and decreased cough and gag reflexes. There is a progressive decrease in arterial oxygenation in the elderly as well as a diminished responsiveness to hypoxia and hypercapnia.<sup>1-5, 7-9</sup>

#### **4. Determine fluid volume status, fluid intake and blood/fluid loss.**

There is a progressive decrease in renal function with aging. This is a result of both diminished kidney mass and decreased blood flow to the kidneys. This has the potential to result in decreased clearance of medications and metabolites, fluid overload and the inability to conserve sodium.

The renal system's response time may be increased to correct the fluid and electrolyte imbalance. Accurate knowledge of the patient's fluid status preoperatively and intraoperatively is essential. This includes, but is not limited to blood, IV solutions, urine, ascitic fluids, bowel decompression, cell re-infusion devices, diuretics and colloids; all of which may affect the patient's volume status and first, second and third (1st, 2nd and 3rd) space shifts.<sup>1-5</sup>

#### **5. Perform an assessment of the integumentary system.**

Dermatologic changes of aging include loss of subcutaneous fat, increased fragility of skin, loss of sweat glands, decrease in skin pigmentation and loss of collagen.

These changes may lead to compromise in thermoregulation, loss of protection for bony prominences, pallor not associated with anemia, decreased skin elasticity and turgor, extended areas of hematoma or bruising and tendencies for tissue breakdown. Awareness of any of these conditions prepares the nurse to reduce the potential for injury.<sup>1,4</sup>

#### **6. Identify sensory norms for the geriatric patient.**

Visual, auditory and tactile changes are not uncommon in the aging patient. Knowledge of a patient's deficits will allow the nurse to individualize the nursing care plan to maximize the potential response level of the patient. All activities should include special prosthetics if available. These would include glasses, hearing aids, dentures, vibraphones or any other assistive device.<sup>2, 4, 10</sup>

#### **7. Identify cognition/communication norms for the aging patient.**

Changes in cognition are not usually due to age alone, but are due to disorders such as atherosclerotic vascular disease, cerebral vascular accidents (CVAs), Alzheimer's, Parkinson's or depression. Deficits that may be noted include language, attention, memory, visuospatial ability and reaction time.<sup>2, 5, 10</sup>

#### **8. Identify skeletal/neuromuscular status of the geriatric patient.**

Assessment and care of the elderly patient includes the knowledge that elastin and collagen composition change and nerve atrophy may be present as we age. This condition can result in delayed reactions and/or sensation. Skeletal changes include loss of bone mass resulting in fragility of the bones and degeneration of the bone matrix. This can result in injury, increased discomfort or pain. Muscle mass may atrophy.

Protection from nerve injury is a special consideration in the perianesthetic setting. Nerve compression can occur when the nerve is situated between a bony prominence and a hard surface without adequate cushioning, either from adipose and muscle mass or with artificial padding.

Joints should be supported, unless contraindicated by the surgical procedure and all movements should be assessed for strength and control. Safety precautions should include those that cushion all surfaces, prevent over extension or stretching of susceptible nerves (e.g., ulnar, peroneal) and prevent unintended pressure from the surgical cart/bed.<sup>1, 3-5</sup>

**9. Understand issues related to polypharmacy and the elderly.**

Nurses have a unique opportunity to help identify patients at risk for polypharmacy. Aging can affect how drugs are absorbed and metabolized. Multiple-medication use may require adjustments in preanesthetic, intraanesthetic and postanesthetic drug selection and amounts.

Taking a thorough drug history is especially important when caring for the elderly patient. Investigate and document all medications the patient is taking, including over-the-counter (OTC) and herbal products, which a patient may not list because he does not consider them to be drugs. Confirm that each drug's generic and brand name, drug class and clinical indication are correct as ordered for your patient. Find out what other healthcare providers the patient is seeing and if possible, which ones prescribed which medications.<sup>11</sup>

**10. Recognize signs and symptoms of elder abuse.**

The patient may present with poor hygiene, such as uncleanliness, body odor, soiled clothing or undergarments. The patient may be malnourished or dehydrated. The patient may have burns, pressure sores or bruises in various stages of healing. The patient may verbalize fear of the caregiver or the caregiver may be reluctant to allow the patient to be alone with the healthcare staff. If there are any indications of elder abuse, it must be reported per facility and/or state requirements.<sup>12</sup>

**11. Communicate and document all pertinent information per institution/unit specific policy/protocol.**

The transfer of essential information and the responsibility for care of the patient from one healthcare provider to another is an integral component of communication in the perianesthesia setting. An effective handoff supports the transition of critical information and continuity of care and treatment and reduces the potential for adverse events and patient safety risks.

**Resources on Aging:**

American Federation of Aging Research

<http://www.afar.org>

American Society of Anesthesiologists FAQs About Anesthetic Considerations for Elderly Patients <http://ecommerce.asahq.org/publicationsAndServices/FAQsAboutAnestheticConsiderationsforElderlyPatients.pdf>

Geriatrics and Aging

<http://geriatricsandaging.com>

Medical College of Wisconsin's Geriatric Fast Facts. Accessible, concise and clinically actionable 1-2 page reports on Geriatric topics applicable across medical specialties. (Authored by MCW Geriatric Education Teams.)

<http://www.mcw.edu/Geriatric-Fast-Facts-About.htm>

National Council on Aging

<http://www.ncoa.org/index.cfm>

National Institute on Aging (NIA)

<http://www.nia.nih.gov>

University of California at San Francisco Academic Geriatric Resource Center Online Curriculum

<http://www.ucsfagrc.org>

U.S. Administration on Aging

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