

Preoperative Management of Older Adult Patients Undergoing Plastic Surgical Procedures

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Plastic and Aesthetic Nursing (PAN), the official journal of the International Society of Plastic and Aesthetic Nurses (ISPAN) publishes this column to provide accurate, evidence-based information about fundamental best practices for plastic and aesthetic nurses.

According to the United States Census Bureau, “America is graying” (Vespa et al., 2020, p. 2). In the coming decades, the number of individuals 65 years of age and older is projected to nearly double in size, from 49 million in 2016 to 95 million in 2060. As a result, the proportion of people 65 years of age and older will grow from about 15% in 2016 to nearly 25% in 2060. The number of people 85 years of age and older is expected to nearly double by 2035 (from 6.5 million to 11.8 million) and nearly triple by 2060 (to 19 million people; Vespa et al., 2020). Ongoing improvements in medical care and healthier lifestyles are expected to increase the number of *centenarians* (i.e., those 100 years of age and older) from 92,000 in 2020 to 589,000 in 2060 (Statistica, 2018).

The aging process can be described in physiological, chronological, and functional terms. *Physiologically* (i.e., the processes that occur within the human body), an individual ages neither more quickly nor more slowly than in the past. *Chronologically* (i.e., the number of years a person has lived), older adults are individuals 65 years of age or older. Based on their chronological age, the older adult population can be divided into the following three groups:

- 60–74 years: *young-old*
- 75–84 years: *middle-old*
- 85 years and older: *old-old*

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Functionally (i.e., an individual's ability to perform tasks as they age), many older adults remain physiologically and functionally young, whereas others are chronologically young but physiologically and functionally old. A fundamental principle related to aging is that individuals age at different rates that are influenced by the individual's lifestyle choices and socioeconomic status (Allen, 2023).

The most recent data from the Centers for Disease Control and Prevention (CDC, 2010) show that of the 51.4 million surgical procedures performed in the United States in 2010, 19.2 million (38%) involved patients 65 years of age and older. Therefore, it is likely that most plastic surgical nurses will care for an older adult patient undergoing a plastic surgical procedure at some point during their career.

This column addresses preoperative management of older adult patients undergoing plastic surgical procedures. A future column will address intraoperative and postoperative management of older adult patients undergoing plastic surgical procedures. To provide optimal care, plastic surgical nurses must have a basic understanding of the physical changes associated with the aging process and the unique needs of the older adult patient.

AGE-RELATED PHYSIOLOGICAL CHANGES

Being knowledgeable about the numerous physiological changes that occur as the body ages can help plastic surgical nurses establish appropriate nursing diagnoses and develop an effective plan of care for the older adult patient undergoing plastic surgery. Table 1 provides a comprehensive overview of the changes associated with the aging process and associated perioperative nursing considerations. Note how many organ systems have limited physiological reserves resulting from the aging process.

PREOPERATIVE MANAGEMENT

The American College of Surgeons (ACS, 2019) has issued standards for preoperative evaluation of patients at least 65 years of age who are undergoing surgery. The primary objective of the ACS Standards is to help perioperative team members improve the quality of care delivered to older adult patients.

TABLE 1 Age-Related Physiological Changes by Body System

Body system	Age-related changes	Perioperative nursing considerations
General	<ul style="list-style-type: none"> Decline in function of cells, tissues, and organ systems Deregulation of homeostasis Reduced physiological reserve 	<ul style="list-style-type: none"> Observe for subtle changes in vital signs that may require corrective interventions Note that older adults often present with atypical signs and symptoms of disease Note that older adults often have alterations in pharmacokinetics (i.e., absorption, distribution, metabolism, excretion of medications)
<ul style="list-style-type: none"> Cardiovascular system 	<ul style="list-style-type: none"> Decreased tissue oxygenation and venous return Chest pain or shortness of breath on exertion Decreased cardiac output Decreased circulation to extremities Increased dysrhythmias Increased hypertension Slow recovery from tachycardia Increased systolic murmurs Increased risk for postural hypotension Increased systolic blood pressure 	<ul style="list-style-type: none"> Note that the older adult heart is less sensitive to atropine and more sensitive to carotid sinus stimulation Evaluate the patient for shortness of breath and chest pain Monitor the patient for dysrhythmias Monitor the patient for hypovolemia
<ul style="list-style-type: none"> Endocrine system 	<ul style="list-style-type: none"> Decreased pituitary secretions Decreased production of thyroid stimulating hormone Decreased production of parathyroid hormone Decreased insulin efficiency 	<ul style="list-style-type: none"> Monitor blood glucose levels if indicated Note that older adults have a decreased ability to respond to stress
<ul style="list-style-type: none"> Gastrointestinal system 	<ul style="list-style-type: none"> Edentulous or impaired dentition Decreased saliva production Increased difficulty swallowing Increased alkalinity of saliva Reduced esophageal tone Decreased gastric secretions Reduced peristalsis 	<ul style="list-style-type: none"> Note that the older adult may have functional complaints related to poor eating and bowel habits Note that older adult patients have an increased risk for developing gallstones, pancreatitis, acute gangrenous cholecystitis, gallbladder perforation, choledocholithiasis, peptic ulcer disease, <i>Helicobacter pylori</i> infection, gastrointestinal bleeding, and perforated diverticulitis
<ul style="list-style-type: none"> Hematopoietic and lymphatic systems 	<ul style="list-style-type: none"> Decreased red blood cells, fibroblasts, macrophages, and mast cells Decreased efficiency of immune system Increased plasma viscosity Increased production of immature T cells 	<ul style="list-style-type: none"> Note that older adults have a decreased ability to recognize and fight infection
<ul style="list-style-type: none"> Integumentary system 	<ul style="list-style-type: none"> Decreased subcutaneous fat and epidermal thickness Decreased vascularity of dermal and peripheral circulation Decreased sebaceous and sweat gland function Decreased interstitial fluid Decreased number of dermatomes Reduced efficiency in vasoconstriction and vasodilation Increased capillary fragility Graying and thinning of hair Decreased hair and nail growth 	<ul style="list-style-type: none"> Monitor intravenous fluid intake Avoid pressure, shearing, and friction when positioning for surgery Implement interventions to maintain normothermia Observe skin for signs of allergic reactions Note that older adults are predisposed to bruising and tissue damage Handle the skin of the older adult patient gently Protect bony prominences during patient positioning Note that tissue healing is slower and the risk for infection is greater in older adults
<ul style="list-style-type: none"> Musculoskeletal system 	<ul style="list-style-type: none"> Decreased muscle mass Progressive loss of muscle strength Decreased fluid and lubrication of intervertebral discs Postural changes (e.g., kyphosis) Decreased bone building Increased osteoporosis Decreased elasticity and flexibility of muscles 	<ul style="list-style-type: none"> Monitor electrolyte balance Note that hyperkalemia and/or hypokalemia affects the skeletal, cardiac, and genitourinary muscles
<ul style="list-style-type: none"> Nervous system 	<ul style="list-style-type: none"> Slowed reflexes and reaction time Decreased sensation Decreased rapid eye movement sleep and deep sleep 	<ul style="list-style-type: none"> Note that the older adult patient has decreased strength, coordination, and fine motor control Evaluate the patient for vertigo, mental confusion, and unexpected mental changes

(continued)

TABLE 1 Age-Related Physiological Changes by Body System (*Continued*)

Body system	Age-related changes	Perioperative nursing considerations
<ul style="list-style-type: none"> Renal and urinary system 	<ul style="list-style-type: none"> No replacement of dead glomeruli Reduced kidney size Reduced bladder capacity Decreased renal blood flow Dystonia of bladder muscles with postvoid residual Detrusor instability <p><i>Men</i></p> <ul style="list-style-type: none"> Enlarged prostate <p><i>Women</i></p> <ul style="list-style-type: none"> Decreased pelvic muscle strength and flexibility 	<ul style="list-style-type: none"> Accurately measure and record fluid intake and output Do not use serum creatinine values alone to assess renal function in the older adult Monitor the older adult closely for metabolic acidosis, hypovolemia, hyperosmolar states, and electrolyte disorders, especially hyponatremia Note that the older adult patient has an increased predisposition for acute medication reactions Administer short-acting or shorter half-life medications if possible Note that urinary calcium stone formation occurs more frequently in older adults Note that catheter insertions predispose older adults to bladder infections Use meticulous procedures when inserting and removing catheters
<ul style="list-style-type: none"> Reproductive system 	<p><i>Men</i></p> <ul style="list-style-type: none"> Decreased testosterone levels <p><i>Women</i></p> <ul style="list-style-type: none"> Decreased estrogen levels Reduced tissue elasticity Increased vaginal alkalinity 	
<ul style="list-style-type: none"> Respiratory system 	<ul style="list-style-type: none"> Decreased pulmonary elasticity Pooling of secretions in lower lungs Increased cartilage calcification Reduced cough efficiency Reduced ciliary activity Reduced number of capillaries Decreased gas exchange Increased mucous drying Decreased response to hypoxia and hypercarbia Decreased partial pressure of oxygen and oxygen saturation Compromised maintenance of acid–base balance 	<ul style="list-style-type: none"> Closely monitor the position and airway of the older adults as they are predisposed to aspiration Note that airway obstruction occurs quickly and can lead to respiratory failure Note that signs of dyspnea and cyanosis may not be evident until the patient is severely decompensated Note that in the older adult patient, underventilation of the alveoli of the lower lungs occurs even during normal breathing Note that older adults are more sensitive to anesthetics, sedatives, and hypnotics Observe for hypoxemia
<ul style="list-style-type: none"> Sensory changes 	<ul style="list-style-type: none"> Discoloration of ocular lens Decreased tear production Decreased muscle tone in eye Reduced pupil diameter Reduced night vision Increased refractive errors Increased sensitivity to glare Decreased accommodation Increased balance problems Decreased mobility and stiffening of ossicular bones Loss of hair cells in inner ear Decreased tongue papillae Decreased taste and smell 	<ul style="list-style-type: none"> Note that removal of eyeglasses and hearing aids can cause sensory deprivation in the older adult Allow use of assistive devices (e.g., hearing aids, eyeglasses) until they must be removed Replace assistive devices as soon as possible postoperatively When addressing the older patient, face the patient and speak clearly Monitor the temperature of applied devices and fluids Implement interventions to maintain normothermia

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Goals and Preferences

The ACS (2019) recommends that before any surgical procedure, the surgeon and the patient collaborate to

determine the patient's goals and preferences and evaluate whether the risks and benefits of the proposed surgical procedure align with the patient's goals and preferences.

The Standards recommend that surgeons provide their older adult patients with an opportunity to discuss

- their overall health goals (not limited to the current condition or treatment options);
- their treatment goals (specific to the current condition); and
- the anticipated impact of both surgical and non-surgical treatments on their symptoms, function, burden of care, living situation, and survival (ACS, 2019).

Notably, shared decision making with patients hinges upon health care providers using high-quality communication and empowering patients to reflect upon and identify their personal health goals (Hanson & Winzelger, 2013). After having this discussion with the patient, the surgeon should document the treatment plan and describe how the plan has been informed by the shared discussion of the patient's goals (ACS, 2019).

Risks and Benefits

Perioperative team members must consider the older adults' right to self-determination and their ability to make health care decisions. The patient's goals and preferences for surgery are influenced by their cultural and human values of life; however, the risks associated with surgery and anesthesia increase in proportion to the nature of the patient's condition (Allen, 2023). During the informed consent process, the surgeon must fully disclose the risks and benefits of the procedure to be performed. According to Kumar et al. (2018),

If a patient elects to proceed with surgery, the risks should be communicated to surgical teams to allow for inpatient interventions that lower the risk of postoperative complications and functional decline, such as early mobilization and limiting medications that can cause delirium (p. 214).

Compared with younger adult patients, older adult patients experience disproportionate levels of postoperative morbidity and mortality (Kumar et al., 2018). For this reason, some surgical interventions may not be appropriate for patients with a poor prognosis. (Allen, 2023).

Preoperative Evaluation

To identify potential areas of vulnerability, the ACS Standards (2019) strongly recommend screening all older adult patients undergoing surgery for the following characteristics:

- Age 85 years and older
- Impaired cognition
- Delirium risk

- Functional status
- Mobility status
- Nutritional status
- Dysphagia
- Need for palliative care assessment (ACS, 2019)

Note that a positive screen in any category designates the patient as *high risk* (i.e., a predicted mortality of $\geq 5\%$).

All screenings should be conducted before the operation to allow time for the appropriate health care professionals to address identified positive screens. However, this may not be possible in nonelective settings, as the clinical situation may not allow for some or all of the preoperative screening to be completed (e.g., the patient is immobilized because of a hip fracture and cannot complete a mobility screen; ACS, 2019).

Age 85 Years and Older

Patients 85 years and older are at an increased risk for adverse outcomes after surgery. Hamel et al. (2005) used data from the Veterans Affairs National Surgical Quality Improvement Program to compare surgical outcomes for patients younger than 80 years and those 80 years and older. The researchers found that mortality rates were significantly higher in patients 80 years and older than in those younger than 80 years (8% vs. 3%; $p < .001$). In addition, the researchers found that patients who experienced one or more complications had significantly higher 30-day mortality rates than patients who did not experience complications (26% vs. 4%; $p < .001$).

Impaired Cognition

Cognitive impairment is common in older adults and often goes unrecognized (ACS, 2019). In the United States, the estimated prevalence of cognitive impairment among individuals 71 years and older is 13.9%. Among individuals 80 years and older, the prevalence is 24.2% (Plassman et al., 2007).

Older adult patients experiencing cognitive decline may not be able to fully understand informed consents or correctly identify the surgical site (Allen, 2023). Early recognition of cognitive problems is important because it allows clinicians and patients the opportunity to discuss any new or ongoing concerns related to cognition, address possible reversible causes, or undergo further evaluation.

There are a variety of brief cognitive screens that nurses can use to evaluate an individual's cognitive ability and capacity. The Mini-Cog test is frequently used for rapid assessment of an older adult patient's level of cognitive impairment (Scott & Mayo, 2018). The Mini-Cog test is highly sensitive and specific for detecting cognitive impairment. It consists of a clock-drawing test and a three-item recall test.

Delirium Risk

Delirium is defined as “a disturbance in an individual’s mental abilities that results in confused thinking and reduced awareness of the environment” (Allen, 2023, p. 1075). The risk for delirium is high in older adult patients and especially in older adult patients undergoing surgery (Doerflinger, 2009). Delirium occurs in up to 50% of hospitalized older patients and is associated with increased length of stay, increased morbidity and mortality, poor functional outcomes, increased discharge to higher levels of care or nursing homes, and increased patient care costs (Allen, 2023; Doerflinger, 2009).

Predisposing factors (i.e., elements that put an individual at risk) for postoperative delirium in older adults include

- age 75 years or older;
- men younger than 65 years;
- women 85 years and older;
- malnutrition or dehydration;
- cognitive, functional, or sensory impairment;
- American Society of Anesthesiologists (ASA) Physical Status Classification (ASA, 2020) greater than 2;
- comorbidities and health problems; and
- drug interactions (when taking more than three prescribed medications).

Precipitating factors (i.e., specific events or triggers) for postoperative delirium in older adults include

- uncontrolled pain;
- depression;
- laboratory abnormalities (e.g., anemia, hyponatremia, hypernatremia);
- drugs (e.g., opioids, anticholinergics);
- emergent or urgent surgical procedures;
- vascular or thoracic procedures;
- extended procedures;
- procedures with excessive blood loss;
- nonvalvular cardiac surgery; and
- elective orthopedic surgery (Allen, 2023; Kang et al., 2020; Peden et al., 2021).

When predisposing or precipitating factors are present, nurses should be vigilant about maintaining fluid and electrolyte homeostasis, correcting existing or developing electrolyte and metabolic abnormalities, and optimizing blood replacement (Doerflinger, 2009).

There are several standardized tools that nurses can use to screen older patients for delirium. The Confusion Assessment Method (CAM) is an evidence-based tool that is widely used because of its strong validity and reliability (Mulkey et al., 2018). The CAM assesses the presence, severity, and fluctuation of nine features of delirium (i.e., acute onset, inattention, disorganized thinking, altered level of consciousness, disorientation, memory

impairment, perceptual disturbances, psychomotor agitation or retardation, and altered sleep–wake cycle).

Functional Status

When an older adult patient is admitted to a health care facility for surgery, nurses and other health care providers need to know what activities the individual is capable of performing independently and interdependently and for which activities they will need assistance (Quinn & Ryan, 1979).

Activities of daily living (ADLs) is a term used to collectively describe the fundamental skills required to independently care for oneself. ADLs are an indicator of an individual’s functional status. ADLs can be divided into *Basic ADLs* (BADLs), which include the skills required to manage one’s basic physical needs (e.g., grooming, dressing, eating, toileting) and *Instrumental ADLs* (IADLs), which include more complex activities required to live independently in the community (e.g., managing finances, housekeeping, food preparation).

To help ensure that older patients who require assistance are identified, nurses can use the Katz Index of Independence in Activities of Daily Living (Katz et al., 1970) that assesses the patient’s ability to perform BADLs, and the Lawton Instrumental Activities of Daily Living (Lawton & Brody, 1969) that assesses the patient’s ability to perform IADLs (Edemekong et al., 2022).

Mobility Status

Early postoperative ambulation is key to a functional recovery; therefore, an older adult with mobility impairment presents implications for postoperative care and outcomes (Basse et al., 2002). The need to use a mobility aid has been associated with poor surgical outcomes, including 30-day occurrence of serious morbidity (i.e., pneumonia, progressive renal insufficiency, acute renal failure, venous thromboembolism, return to surgery, deep incisional or organ space surgical site infection, systemic sepsis, unplanned intubation, urinary tract infection, wound disruption) and mortality (Berian et al., 2017).

Nurses can use the Timed Up and Go test to assess a patient’s mobility (Robinson et al., 2013). The test requires a patient to stand up from a chair, walk 3 m (10 ft), turn, walk back to the chair, and sit down. Patients may use any walking aid they typically use when ambulating. Any patient who requires 12 or more seconds to complete a Timed Up and Go test is at an increased risk for experiencing a fall.

Preoperative assessment and documentation of mobility provide information about the patient’s baseline level of mobility and identify high-risk patients. Mobility assessment also provides information that is useful for

postoperative care, fall risk precautions, and discharge planning (ACS, 2019).

Nutritional Status

Malnutrition is a common finding in older adults that may lead to poor surgical outcomes. There are a number of reasons for malnutrition in older adults. For example, disorders of the oral cavity can affect the patient's nutritional status. Some older patients may not be ingesting sufficient numbers of calories because of ill-fitting dentures or poor oral health. Notably, the presence of loose teeth can interfere with the induction of anesthesia (Allen, 2023).

Poor nutritional status can be exacerbated in older adults by factors related to the aging process, including

- reduced salivary gland activity;
- receding gums;
- thin tooth enamel;
- brittle teeth;
- reduced esophageal motility and emptying; and
- slowed peristalsis.

Life changes experienced by an older adult can also lead to poor nutritional status. For example, the loss of spouse, family, and/or friends due to death or relocation; a reduced standard of living due to retirement or disability; and loss of physical or mental well-being may affect an older adult such that he or she either cannot afford to buy healthy foods or lose the ability or interest in purchasing and/or preparing healthy food (Allen, 2023).

Nurses can assess the patient's level of nutrition by measuring body mass index, assessing for unintentional weight loss, reviewing preoperative serum albumin levels, and/or calculating a Mini Nutritional Assessment (MNA) score (Allen, 2023). The MNA is a validated nutrition screening and assessment tool that can identify patients 65 years and older who are malnourished or at risk for malnutrition. The MNA assesses whether the patient has declined food, experienced involuntary weight loss, or experienced any psychological stress during the previous 3 months, and also evaluates the patient's level of mobility, identifies the presence of any neuropsychological problems, and calculates the patient's body mass index or calf circumference (Vellas et al., 2006).

If possible, health care providers should correct nutritional deficits in older adult patients before surgery because the success of the operative procedure, rate of wound healing, and length of hospital stay are all directly related to a patient's nutritional status (Allen, 2023).

Dysphagia

Dysphagia (i.e., difficulty swallowing) is common in older adults. Azer et al. (2023) found that 40% of adults older than 60 years experienced dysphagia. *Oropharyngeal dysphagia*

(i.e., difficulty initiating a swallow) is also associated with negative outcomes, including malnutrition, dehydration, aspiration pneumonia, and even death (Lembo, 2023).

Given the known impact of abnormal swallowing on the risk for aspiration pneumonia during the postoperative period, the ACS (2019) recommends screening older adults for abnormal swallowing before elective surgery.

The initial test may be a clinical swallow evaluation performed by a speech pathologist; however, this testing method may fail to identify more than 50% of patients with significant aspiration (Splaingard et al., 1988). The preferred test is a modified barium swallow, which assesses the degree of dysphagia and the risk for aspiration (Azer et al., 2023).

If a dysphagia screen is positive, the patient should be evaluated by a speech therapist before surgery and the health care team should develop a plan for resuming oral intake postoperatively. In addition, the potential aspiration risk should be communicated to the anesthesia professional before surgery and to the post-anesthesia care team following surgery. In the nonelective setting, older adult patients should be evaluated for swallowing dysfunction before resuming oral intake. If the screen is positive, the patient should be evaluated by speech therapist and a plan for resumption of oral intake should be developed (ACS, 2019).

Need for Palliative Care Assessment

The goal of a preoperative palliative care assessment is to identify older adult patients who could benefit from *palliative care* (i.e., care aimed at optimizing quality of life) before surgery (ACS, 2019). Rodriguez et al. (2015) evaluated the utilization of palliative care consultations by service at a single hospital over a 4-year time period and found that only 15% of consultations came from the surgical service. In addition, surgical patients were older, more likely to be in the intensive care unit at the time of consultation, and more likely to die in the hospital than patients referred from the medical service. These data suggest that there is significant room for improvement by implementing palliative care in surgical patients before they become critically ill.

Ernst et al. (2014) evaluated the frequency of palliative care consultation before and after implementation of a system-wide frailty screening program and found that surgical mortality decreased for patients who received palliative care, perhaps due to a decrease in nonbeneficial surgery.

A simple but highly sensitive screening test that nurses and physicians can use for assessing a patient's need for palliative care is to ask, "Would I be surprised if the patient in question were to die in the next 12 months, even

if surgery is performed?" If the answer is "no," then the patient should be referred for palliative care assessment (Lilley et al., 2017).

Additional Assessments

Other key factors that should be included in the preoperative nursing assessment of older adult surgical patients include determining whether the patient is depressed, screening for substance use disorders, screening for elder abuse, evaluating the patient's fall risk, computing a baseline frailty score, reviewing the patient's medication history, reviewing the results of prescribed laboratory and diagnostic testing, and discharge planning (Kumar et al., 2018).

Depression

Depression has been linked to adverse outcomes in older patients undergoing surgery. Depression is a major risk factor for suicide in older men, with suicide rates in this population increasing with age (Maurer et al., 2018). Curtin et al. (2016) found that men older than 75 years have the highest annual incidence of suicide at 39 deaths per 100,000 men, compared with four deaths per 100,000 women older than 75 years.

Perioperative nurses can use the Patient Health Questionnaire (PHQ)-2, PHQ-9, Cornell Scale for Depression in Dementia, or Geriatric Depression Scale to screen older adult patients for depression (Maurer et al., 2018). These instruments for measuring depression are based on the diagnostic criteria for major depressive disorder as presented in the *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (American Psychiatric Association [APA], 2022). These criteria include

- depressed mood;
- loss of interest or pleasure;
- weight loss or gain;
- insomnia or hypersomnia;
- psychomotor agitation or retardation;
- fatigue;
- feeling worthless or excessive/inappropriate guilt;
- decreased concentration; and/or
- thoughts of death or suicide (APA, 2022).

Substance Use Disorders

Unhealthy substance use is typically defined as the heavy use of alcohol, or the use of tobacco products, illicit or illegal drugs, or the nonmedical use of prescription drugs (Han & Moore, 2018). The diagnosis of a substance use disorder is established by a pattern of use that causes clinically significant functional impairment (APA, 2022). Substance abuse has important health impacts among older adults who are at higher risk for developing chronic

diseases and who often take more medications than younger adults. Screening for and preventing substance use disorders are critical to address the potential public health impact of increasing substance use by older adults (Han & Moore, 2018). Alcohol abuse and smoking are associated with increased rates of postoperative complications, and physicians should discuss cessation with patients before surgery (Kumar et al., 2018, p. 214).

Alcohol

The *heavy use* of alcohol is defined as consuming more than four drinks on any day or more than 14 drinks per week (men) or consuming more than three drinks on any day or more than seven drinks per week (women), or *binge drinking* (i.e., a pattern of drinking alcohol that brings blood-alcohol concentration to 0.08% or higher) on 5 or more days during the previous month (National Institute on Alcohol Abuse and Alcoholism, 2016).

Although there is evidence that *moderate* alcohol use (i.e., usually one drink daily and less) may be associated with decreased morbidity and mortality among older adults, there are physiological changes that occur with aging that place older adults at higher risk for adverse outcomes including diminished liver function, decreases in total body water, and neuronal sensitivity to alcohol, which increases sensitivity and decreases tolerance (Kennedy et al., 1999). Furthermore, alcohol can cause or exacerbate medical conditions in older adults such as hypertension, arrhythmias, hemorrhagic stroke, cirrhosis, gastrointestinal bleeding, and certain cancers (Substance Abuse and Mental Health Services Administration, 2020). This makes older adults particularly vulnerable to the negative effects of alcohol, particularly when drinking in excess of recommended drinking limits (Moore et al., 2006). In addition, prescribed medications have the potential to interact with alcohol, which can lead to adverse effects (Moore et al., 2007). Specifically, binge drinking may be particularly harmful for older adults and may increase the risk for unintentional injuries (i.e., falls) and negatively impact existing chronic diseases (CDC, 2022).

Tobacco Use

An estimated 8.4% of adults 65 years of age and older are current smokers (Ahmed et al., 2016). Unlike alcohol, there are no health benefits associated with smoking. For older adults, smoking has been associated with cognitive decline (Sabia et al., 2012), functional limitations (Rapuri et al., 2007), and placing older adults at a higher risk for comorbid conditions (Nicita-Mauro et al., 2008). Many studies have confirmed that quitting smoking, even after 65 years of age, results in significantly reduced mortality compared with those who continue to smoke (Taylor et al., 2002).

Controlled and Illegal Drugs

In the United States, most illegal drugs are also controlled substances, but not all controlled substances are considered illegal. Even legal drugs have the potential for abuse and dependence, so it is necessary for a person to understand that all drugs, both legal and illegal, can be dangerous if misused.

Marijuana: Because of widespread changes in personal and societal attitudes toward marijuana, its legalization for recreational use in several states, and its increasing use for medicinal purposes, marijuana use is more prevalent among older adults than other illicit drugs (Han et al., 2017; Pew Research Center, 2013). Some evidence suggests that marijuana's effect on increasing the heart rate may increase the risk for cardiovascular disease, lung disease, and infections (National Institute on Drug Abuse, 2019). Marijuana use in older adults has been linked with an increased risk of cerebrovascular events (Hackam, 2015), significant drug-drug interactions (National Institute on Drug Abuse, 2019), and effects on short-term and long-term cognitive functioning (Grant et al., 2003).

Illegal drugs: Admissions for heroin, cocaine, opioids, and methamphetamine abuse treatment have increased in older populations, with one researcher reporting illicit drug abuse in up to 61% of all older adult admissions (Lofwall et al., 2008).

Screening Tools

There are several screening instruments for substance use available for a range of substances (alcohol, tobacco, illicit drugs, prescription drugs) but only a few have been designed specifically for and validated in older adults. One example is the Substance Use Brief Screen, which is a self-administered tool for evaluating tobacco, alcohol, and drug use (illegal, prescription) that has been validated in the primary care setting (McNeely et al., 2015). A negative screen allows the provider to provide reinforcement of healthy use patterns related to substance use. A positive screening would lead to further screening with longer but more reliable screening instruments.

Elder Abuse

The National Academy of Sciences (National Research Council, 2003, p. 1) defines *elder abuse* as

- a. intentional actions that cause harm or create a serious risk of harm (whether or not harm is intended) to a vulnerable elder by a caregiver or other person who stands in a trusted relationship to the elder, or
- b. failure by a caregiver to satisfy the elder's basic needs or to protect the elder from harm.

Elder abuse can take the form of physical, sexual, psychological, or financial abuse and neglect. Approximately

10% of community-dwelling adults 60 years of age and older have experienced some form of elder abuse (Acierno et al., 2010; Rosay & Mulford, 2017).

In a recent review of the literature, Storey (2020) found that only one in 24 cases of elder abuse was reported to authorities. Older adults do not report abuse for a variety of reasons including shame, self-blame, fear of reprisal, fear of a loss of independence, concerns about retaliation, not knowing their rights, or not knowing where or how to get help (Beckman, n.d.).

Many cases of elder abuse are overlooked because the signs of abuse are mistaken for changes associated with the aging process or declining health (Beckman, n.d.). Likewise, some abused older adults are unable to provide accurate information about their injuries because of cognitive impairments, dementia, or depression.

Common signs and symptoms of elder abuse include depression, confusion, fearfulness, changes in behavior, and loss of sleep. Health care providers should suspect elder abuse if there are significant delays between the time an injury occurs and the time treatment is requested; if the patient's and caregiver's explanations are contradictory or vague; or if the patient repeatedly visits the emergency department, uses a variety of facilities, or changes health care professionals frequently (Stanford Medicine, 2023).

As mandatory reporters of abuse and neglect, health care providers have both an ethical and a legal responsibility to advocate for victims of abuse by screening, identifying, and reporting cases of abuse.

The Elder Assessment Instrument, which is appropriate for all clinical settings, reviews signs, symptoms, and subjective complaints of elder abuse and neglect. It includes general assessment items, such as clothing and skin integrity; possible abuse indicators, such as lacerations and fractures; possible neglect indicators, such as malnutrition and urine burns; possible exploitation indicators, such as inability to account for money/property; and possible abandonment indicators, such as evidence that the patient is left alone in an unsafe environment for extended periods of time without adequate support. The Elder Assessment Instrument has no score, but any positive evidence that cannot be supported by a clinical explanation, subjective complaints of abuse communicated by an older adult, or a health care provider's suspicions of abuse or neglect warrant reporting to the appropriate authority (Fulmer, 2003).

Fall Risk

All members of the health care team must be aware of patients who are at risk of falling. A *fall* is an event that results in a person coming to rest on the ground or other lower-level surface unintentionally that is not as the result of a major event (such as stroke) or overwhelming hazard (Tinetti et al., 1988). Falls account for one of the

most common and serious issues contributing to disability among older adults (Appeadu & Bordoni, 2023). Falls are the most common type of accidents and are the major cause of hospitalization in adults 65 years and older (Gale et al., 2016).

A fall most often occurs in older adults due to a combination of long-term age-related factors (e.g., change in gait, reduced vision) and short-term environmental factors (e.g., adverse drug reaction, acute illness, irregular surface; Appeadu & Bordoni, 2023). Risk factors for falls (in order of strength of evidence) include

- a history of falls;
- impaired balance;
- reduced muscle strength;
- visual problems;
- polypharmacy or psychoactive drugs;
- gait abnormalities;
- depression;
- orthostasis or dizziness;
- functional limitations;
- age greater than 80 years;
- female gender;
- incontinence;
- cognitive difficulties;
- arthritis;
- diabetes; and
- pain (Appeadu & Bordoni, 2023).

Environmental factors that contribute to falls in older adults include poor lighting, uneven surfaces, and slippery floors. Environmental factors account for 30%–50% of the falls in this population (Appeadu & Bordoni, 2023).

Currently, there are a variety of fall-screening tools available; however, none are able to accurately assess the risk in older adults. The CDC's (2019) Stopping Elderly Accidents, Deaths & Injuries (STEADI) initiative offers a coordinated approach to fall prevention. STEADI consists of three core elements:

- *Screen* (i.e., recommend effective prevention strategies)
- *Assess* (i.e., evaluate modifiable risk factors and fall history)
- *Intervene* (i.e., reduce identified risk factors using effective strategies; CDC, 2019).

Frailty

Frailty is an age-related syndrome of physiologic decline that is characterized by vulnerability to adverse health outcomes (Allen, 2023). Frailty is an extended process that predisposes the patient to functional decline and ultimately leads to death. During the frailty process, the patient's physiological reserves decrease at a time when increasing physiological resources are needed to maintain the functioning of an aging body (Lang et al., 2009). Frailty

scores have been used to predict how well a patient will recover from a surgical procedure (Allen, 2023).

Bouillon et al. (2013) conducted a systematic review of existing frailty scales. The researchers found that there were 27 different scales that could be used to assess frailty. The number and type of items included in the frailty instruments varied widely. They concluded that the most reliable and most frequently used assessment is the Phenotype of Frailty (Fried et al., 2001). This scale uses five frailty criteria that include weight loss, exhaustion, low physical activity, slowness, and weakness. Each criterion is valued at 1 point and the sum score of these criteria classifies people into one of three frailty stages:

- 0 = Not frail
- 1–2 = Prefrail
- 3–5 = Frail (Fried et al., 2001).

Makary et al. (2010) prospectively studied 594 patients 65 years of age and older scheduled for a variety of surgical procedures. The researchers defined frailty using the five criteria of the Phenotype of Frailty. The researchers found that patients with a diagnosis of frailty experienced increased postoperative complications, longer length of stay, and increased likelihood of disposition to an institutional care facility. The authors concluded that assessing frailty levels in older adult patients undergoing surgery can help patients and their physicians make more informed decisions.

Medication History

A preoperative nursing assessment of older adults undergoing plastic surgical procedures should include a review of the patient's medication list, including prescriptions, over-the-counter medications, and herbal and recreational medications. The physiological changes associated with the aging process increase the individual's susceptibility to alterations in *pharmacokinetics* (i.e., the movement of drugs within the body) and vulnerability to adverse drug reactions. *Polypharmacy* (i.e., taking more than four medications) is a serious concern among older adults (Allen, 2023) that may also be associated with frailty. In a longitudinal, observational cohort study of 3,058 community-dwelling adults aged 57–84 years, the researchers found that 39.1% of participants ($n = 1,194$) reported using five or more drugs and 8.9% of participants ($n = 273$) reported using 10 or more drugs (Suam et al., 2017).

The plastic surgical nurse should partner with the surgeon and the anesthesia professional to ensure that the patient's drug therapy is individualized, based on the patient's baseline condition, actual physiological impairments, and severity of preexisting illness. Nonessential medications

should be discontinued, and the nurse should monitor the older adult patient carefully for potential adverse interactions (Allen, 2023).

Laboratory and Diagnostic Test Results

Physicians should order preoperative laboratory and diagnostic tests for the older adult patient based on a focused history and physical examination, perioperative risk assessment, and clinical judgment (Bierle et al., 2020).

The physiological changes of aging do not significantly alter the diagnostic values of a complete blood count, differential cell count, platelets, urinalysis, and blood chemistry results; therefore, any abnormalities should be evaluated. However, the nurse may note a slight increase in the levels of potassium, fasting blood glucose, postprandial blood glucose, oral glucose tolerance, total cholesterol, and thyroid-stimulating hormone, and a slight decrease in the amounts of vitamin B₁₂, folic acid, magnesium, vitamin D, albumin, and creatinine clearance (Allen, 2023).

An older adult's chest radiograph may reveal increased anteroposterior diameter, osteopenia, and degenerative joint disease. The heart size should appear normal. Cardiomegaly can contribute to postoperative complications and should be evaluated. The electrocardiogram may show P-wave notching, ST-segment depression or left ventricular hypertrophy, and T-wave flattening or inversion, which are associated with an increased risk for myocardial ischemia (Yeo et al., 2017). The nurse may also notice an increase in bundle branch block, hemiblock, and first-degree block, which occur largely as the result of degenerative disease of the conduction system (Allen, 2023).

Discharge Planning

Discharge planning begins during the preoperative assessment. To reduce the risk for rehospitalization and minimize stress for the patient and the caregivers, family members and other caregivers must make appropriate decisions about the patient's postdischarge care. The discharge needs of the patient should be evaluated as early as possible so that education, referrals, and home preparation can be completed before the patient leaves the facility. Postoperative care for an older adult patient may require transfer to special facilities (e.g., rehabilitation center, long-term care facility) for a period of time after the procedure (Allen, 2023).

Researchers have found an association between increased levels of social support and reduced risk for physical disease, mental illness, and mortality (Seeman, 2000; Stroebe, 2000). *Social support* includes real or perceived resources provided by others that enable an individual to feel cared for, valued, and included in a network of communication and mutual obligation

(Stroebe, 2000). Social support during the postoperative period can be critical for those older adults who rely on their family, friends, or organizations to assist them with daily activities, provide companionship, and care for their well-being. Successful postdischarge outcomes in older adults are influenced by the patient's family and social networks (Allen, 2023).

The type of surgery the patient is undergoing and the anticipated postoperative recovery period determine the resources and social systems the patient will require. These resources may include durable medical equipment, home healthcare and services, social and community services, and physical rehabilitation (Allen, 2023).

CONCLUSION

It is likely that most plastic surgical nurses will care for an older patient undergoing a plastic surgical procedure at some point during their career. Caring for older adult patients undergoing plastic surgical procedures can be challenging for nurses. To provide optimal care, plastic surgical nurses must have a basic understanding of the physical changes associated with aging and the needs of the older adult patient. When tasked with the preoperative management of older adults undergoing plastic surgical procedures, plastic surgical nurses must be competent and capable of caring for the unique and specific needs of older adult patients.

If you are a plastic or aesthetic nurse and would like to write about an issue of fundamental importance to plastic or aesthetic nurses, or if you would like to see your issue presented in a future Fundamentals of Plastic and Aesthetic Nursing Practice column of PAN, please contact Sharon Ann Van Wicklin, Editor-in-Chief at sharonvwrn@ispan.org.

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