Gathering “pearls” of knowledge for Assessing

Learning to expect the unexpected is one principle that can help you accurately differentiate between normal changes of aging and signs of disease. For more tips and guidelines, read on.

By Peg Gray-Vickrey, DNS, RN

MARGARET HUTCHINSON, 74, is admitted with a diagnosis of stress incontinence. She’s scheduled for retropubic suspension surgery later in the afternoon.

During your preoperative assessment, you note that she seems slightly confused. Her temperature is 98.8 °F (37.1 °C); respiratory rate, 28; heart rate, 92; and BP, 142/82. Her cardiac rhythm is regular and you don’t note any extra heart sounds or murmurs. Her respirations are shallow, and breath sounds in the bases are diminished. She complains of nausea and says she’s “just not feeling good.”

Could the patient’s nonspecific signs and symptoms signal an infection? Or, given that her temperature is normal, is she just experiencing preoperative anxiety?

Sensing that something isn’t right, you contact the urologist.

Good call. Based on your assessment findings, the urologist postpones the procedure and orders additional tests, which reveal that Ms. Hutchinson has bacterial pneumonia. She’s treated for the infection and her procedure is rescheduled for the following month.

If you attended nursing school more than 10 years ago, you may have received limited education about gerontological nursing. But as baby boomers age, this is becoming an increasingly important area of nursing practice. This article explains how to identify age-related changes and distinguish between normal and abnormal assessment findings in patients like Ms. Hutchinson. Combining your acute care nursing skills with assessment tips discussed here prepares you to expect the unexpected when you care for an older adult.

Assessment pearls for an aging population

Currently, 13% of people in the United States are age 65 and older. By 2050, this figure will increase to 20%¹ (see America is graying.)

Assessing older adults requires an understanding of normal age-related physical changes so you can identify atypical presentations of illness. This will help you avoid dismissing certain...
older adults
assessment findings as simply signs of old age or mistaking normal age-related changes as pathological. See Recognizing age-related changes for an overview of common assessment findings.

The first thing to remember about aging is that it doesn’t follow a predictable course. Older adults are a diverse population, so be prepared to see varying rates and degrees of aging between patients of the same age and same gender.

Keep the following “pearls”—tips, principles, and guidelines—in mind whenever you assess an older adult patient.

• **Always expect the unexpected.** In a patient like Ms. Hutchinson, familiar warning signs and symptoms of disease may be absent. For example, an older patient may have a urinary tract infection without fever or dysuria; incontinence may be the only sign of trouble. Similarly, a patient with acute myocardial infarction may experience dyspnea, anxiety, and confusion without the classic signs and symptoms of crushing chest pain and diaphoresis.²,³

Another example, as in Ms. Hutchinson’s case, is the presentation of bacterial pneumonia. A younger patient would typically experience a predictable constellation of signs and symptoms: productive cough, chills, fever, chest pain (especially while coughing), and leukocytosis. Older patients may not present with this pattern, however. In them, coughing is variable—often nonproductive or even absent. Instead of fever, chills, and leukocytosis, they may experience tachypnea, confusion, nausea, and anorexia. Failure to identify these atypical presentations in older patients is associated with increased morbidity and mortality.²

• **Differentiating age-related changes from true pathology may be challenging.** For example, seborrheic keratosis, a common skin lesion in older adults, can resemble early-stage malignant melanoma. Both lesions can present with an irregular border and color variations. (See Common assessment findings: Age-related or not? for more examples.)

• **Most older patients have multiple chronic conditions.** As a result, a cluster of health problems may complicate your assessment. Keep in mind that the most frequently occurring conditions reported in older adults are hypertension, arthritis, heart disease, cancer, diabetes, and sinusitis.³

• **Older adults may mistake a health problem for a normal part of aging.** Consequently, patients may not report symptoms that they believe to be normal. For example, an older man may assume that frequent nighttime voiding is a normal part of aging when it could indicate benign prostatic hyperplasia (BPH) or another medical condition. Frequent nighttime voiding can also be linked to use of certain medications, such as diuretics.

• **Older patients are more likely to develop cognitive problems when experiencing acute and chronic illnesses.** For example, confusion and cognitive impairment frequently occur with infection and polypharmacy. Never interpret confusion as a normal sign of aging. Any sudden change in cognition (occurring over hours or a few days) may signal an acute, reversible condition.

**Bring down barriers to communication**

Assessing an older patient takes some extra thought and preparation to ensure effective communication. First, gain the patient’s attention. Eliminate distractions, face the patient, maintain eye contact, and use the patient’s proper name. Don’t use the patient’s first name unless invited to do so. Your demeanor should convey respect, patience, courtesy, and cultural awareness.

Take into account age-related physiologic changes, such as hearing loss, that can be barriers to communication. Of the estimated

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**America is graying**

In the last 35 years, the average life expectancy for men has risen from 67 years to 75 years; for women in the same period, life expectancy rose from 74.7 years to 80 years. By 2020, the average person may live for nearly 80 years. As people live longer due to treatment advances, socioeconomic improvement, and healthier lifestyles, you can expect to care for more patients age 65 and older, and many over age 85.¹
31 million Americans with some degree of hearing loss, 80% are older adults. Older patients may have difficulty hearing high-pitched sounds and distinguishing consonants such as s, z, t, f, and q. This is related to presbycusis, a sensorineural loss associated with aging.

Older patients may report that they can hear but can’t distinguish words or fully understand what you’re saying. To communicate effectively, lower the pitch of your voice, speak more slowly, and pronounce words clearly. Don’t shout because that raises the pitch of your voice. If the patient uses a hearing aid, make sure it’s in place and is working properly.

When speaking to an older patient with a hearing impairment, always face the patient and avoid covering your mouth with your hands. Make sure the room is both quiet and well lit so the patient can watch your lips move (but avoid moving your lips in an exaggerated fashion). Minimize background sounds by turning off the TV and closing the door.

Speak at a slower pace in a clear, lower-pitched tone. Visual cues, such as hand gestures and facial expressions, may help the patient grasp your meaning. If the patient doesn’t understand a question, rephrase rather than repeat it.

A decline in vision often accompanies aging. Some of this vision loss is a natural result of aging, and some results from pathology. By age 80, people need three times more light to see clearly than they needed at age 20; because the pupil gets smaller with age, less light reaches the retina. For other age-related causes of vision loss, recognizing age-related changes:

### Cardiovascular system
- orthostatic hypotension
- increased arterial resistance
- decreased cardiac output (loss of 30% to 40%)
- increased time for heart rate to return to resting rate after exercise or activity
- occasional ectopic beats
- increased heart size and weight
- decreased myocardial perfusion (up to 35%)

### Respiratory system
- increased time for respiratory rate to return to resting rate after activity
- shallow breathing
- diminished breath sounds in the lung bases
- decreased tidal volume
- increased rigidity of thorax and vertebrae

### Genitourinary system
- decreased bladder capacity
- detrusor muscle instability
- decreased renal blood flow
- decreased glomerular filtration rate

### Gastrointestinal system
- decreased olfactory and gustatory function (sweet and salty tastes diminished first)
- diminished saliva production
- delayed gastric emptying
- increased incidence of indigestion, abdominal distension, and flatus
- decreased anal tone and sensation

### Musculoskeletal system
- decreased bone mass and density
- decreased joint mobility
- decreased height (loss of 1 to 3 inches)
- kyphosis
- decreasing muscle mass
- decreasing endurance and agility

### Nervous system
- loss of nerve cells in the brain and spinal cord
- diminished perceptions of deep pain and temperature
- decreased speed of fine motor movements
- diminished deep tendon reflexes
- decreased ability to respond to multiple stimuli
- decreased righting reflexes
- decreased pupil size
- decreased stage 4 sleep
- modest decline in ability to learn new things

### Integumentary system
- decreased skin elasticity
- decreased secretions of sweat and sebaceous glands
- thinning skin
- increased areas of skin pigmentation
- increased growth of benign skin lesions (such as actinic lentigines and seborrheic keratosis)
- increased fragility of blood vessels in the dermis, leading to bruising and purpura
- diminished wound healing
- increased variation in hair growth
- male pattern baldness (seen in two thirds of all men)
- thinning head hair
- coarsening of hair in ears, eyebrows, and nose in men
- coarsening of hair on chin and upper lips in women
- slower growing, thicker nails
- longitudinal nail ridges
- graying hair (often begins in the 30s)

### Vision
- decreased ability to adjust to night vision
- decreased ability to detect moving objects
- decreased color perception (especially with blues and greens)
- decreased depth perception
- decreased pupillary response to light
- limited upward gaze when assessing extraocular movements
- arcus senilis (arcus corneus)
- decreased eye lubrication
- presbyopia (difficulty focusing)

### Hearing
- presbycusis (decreased ability to hear high-frequency tones)
- cerumen buildup

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Four common causes of vision loss in older adults.

When interacting with an older patient who has impaired vision, always introduce yourself when entering the room and inform the patient when you’re leaving. When you increase the amount of light in the room, angle lights away from the patient’s face to prevent glare. If the patient wears glasses, make sure the lenses are clean. Provide other adaptive devices, such as magnifiers, if appropriate.

Assessing functional status
When you take the patient’s history, pay particular attention to family, social, and community support systems, cognitive impairments, safety issues, such as fall risk, and functional status, which is a strong predictor of patient outcomes and mortality. Assessment of activities of daily living (ADLs) and instrumental ADLs can also provide an important baseline and help guide discharge planning. (Instrumental ADLs are activities that enable a person to live independently in the community, such as preparing meals, doing housework, and managing money.) The Katz Index of Independence in Activities of Daily Living scale and the Lawton

Common assessment findings: Age-related or not?

Review the following images and determine whether they’re examples of age-related changes or pathology.

**Arcus senilis:** age-related change. This is a gray or white arc or circle visible around the outer part of the cornea seen in many (but not all) older adults. In a younger person, it may be a sign of dyslipidemia.

![Arcus senilis](image)

**Seborrheic keratosis:** age-related change. Typically a brown, black, or tan lesion on the face, chest, shoulders, or back, this is one of the most common benign skin growths in older adults. The lesion has a “stuck-on” appearance because the lesion doesn’t extend below the top skin layer (epidermis) and the edges of the lesion are detached from underlying skin. On palpation, the lesion feels waxy, scaly, and slightly bumpy.

![Seborrheic keratosis](image)

**Malignant melanoma:** pathology. In an early stage, it can be confused with seborrheic keratosis or be easily overlooked in an area with multiple seborrheic keratoses. To identify malignant melanoma, look for asymmetry, irregular borders, variations in color, and a diameter greater than 6 mm (the size of a pencil eraser).^3^

![Malignant melanoma](image)

An S₃: pathology. When assessing an older adult’s heart sounds, always consider an S₃ abnormal. However, an S₄ is very common in older adults and doesn’t generally indicate pathology.² S₃ and S₄ are low-pitched heart sounds heard best with the bell of the stethoscope over the apex of the heart. The S₃ sound occurs just before S₁ and sounds like “Tennessee.” The S₄ sound occurs in early diastole right after S₂. It sounds like “Kentucky.”

![Heart sounds](image)

Curving and compression of the spinal column: age-related change. Mineral loss in the bones causes aging vertebrae to become thinner. This, combined with fluid loss in the intervertebral disks, leads to shortening and curvature of the spinal column. A curvature that exceeds 40 to 45 degrees is called kyphosis.

![Curving and compression of the spinal column](image)

Fine skin wrinkles: age-related change. Wrinkles are caused by a thinning dermis, loss of elasticity, and a decrease of sebaceous (oil-producing) glands, resulting in small lines and creases in the skin. Deep furrows or severe atrophy indicate photoaging caused by the cumulative effects of ultraviolet light exposure.

![Fine skin wrinkles](image)
Instrumental Activities of Daily Living scale are two commonly used functional assessment instruments.

Asking your patient's history of falls is an important part of your assessment. Besides causing fractures and other injuries, falls can indicate an underlying health problem and declining function. Common causes of falls include environmental hazards, gait disturbance, balance disorders, weakness, vertigo, polypharmacy, adverse reactions to medications or drug interactions, alcohol use, acute illness, cognitive impairment, postural hypotension, and central nervous system disorders.

Perform medication reconciliation and carefully review all prescription and over-the-counter products the patient uses. Medications that lower BP or that cause hypoxia, hypoglycemia, or confusion are often implicated in falls.

Be sure to identify patients at high risk for falls and implement precautions according to facility policy and procedures. A fall risk assessment should be conducted at admission, following a fall, and whenever the patient’s status changes. A comprehensive fall prevention program should include screening and frequent assessment for risk factors, implementation of an individual fall prevention protocol, and continuous monitoring of fall rates.

**Conducting a physical assessment**

During the physical exam, pay particular attention to the following variations.

**Vital signs.** Assess for cardiac rhythm changes, such as atrial or ventricular ectopy. Although often

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**Four common causes of vision loss in older adults**

Although vision loss isn’t considered a normal part of aging, many older adults experience impaired vision or blindness from the following conditions. Urge all your patients to have regular examinations by an eye care professional and to seek professional help if they experience any of the signs and symptoms listed below. New or excessive floaters and flashes of light may indicate a retinal detachment, a medical emergency.

**Age-related macular degeneration (AMD),** a painless condition, damages light-sensitive cells in the macula (the center of the retina), destroying central vision. *Dry AMD* typically progresses slowly, causing subtle and gradual vision changes. In about 10% of cases, *dry AMD* evolves into *wet AMD,* which causes rapid vision loss from subretinal hemorrhage (leaking retinal blood vessels) and scarring.

**Signs and symptoms:** blurred vision, difficulty reading or recognizing faces, need for more light to see, blind spot in the center of vision (as shown above). A classic early sign of *wet AMD* is when straight lines look crooked, caused when fluid from leaking blood vessels lifts and distorts the macula.

**Glaucoma** develops when excessive intraocular pressure causes progressive damage to the optic nerve. Vision changes are subtle at first, so patients may not be aware of the problem until it’s advanced. Tell patients that early detection is crucial for preserving vision and explain that their eye care professional can check for glaucoma with tonometry, a simple, painless test.

**Signs and symptoms:** loss of contrast vision, difficulty seeing at night, blurry and fluctuating vision, loss of peripheral vision (late stage).

**Cataracts** are a clouding and hardening of the lens that distorts vision and color perception. Tell patients that an ocular surgeon can remove the natural lens and replace it with an artificial lens; this common procedure results in remarkable vision improvement for many patients.

**Signs and symptoms:** loss of visual acuity, hazy vision, sensitivity to glare, difficulty distinguishing certain colors.

**Diabetic retinopathy,** a complication of advanced or long-term diabetes, is a leading cause of blindness in older adults. Fragile, abnormal blood vessels leak blood into the eye or the macula, causing macular edema and hard exudates. Laser treatment to seal off leaking vessels may help preserve vision. Tell patients with diabetes that the best way to prevent this condition is by controlling their blood glucose levels, BP, and cholesterol levels, and having frequent checkups with their eye care professional.

**Signs and symptoms:** floaters, blurred vision, vision loss, difficulty reading.

benign, they can cause syncope in an older person, creating a serious fall risk. In addition, many older patients are susceptible to orthostatic (postural) hypotension, so be sure to assess BP and heart rate while the patient is both supine and sitting or standing.

**Skin, hair, and nails.** The skin tends to become very thin, fragile, nonelastic, and transparent with advancing age, so older patients are prone to skin tears. Use tape sparingly and remove any tape with great care.

Advancing age also increases the risk of pressure ulcers, especially if the patient is sedentary or bedridden. Carefully examine all pressure points, especially at the elbows, heels, hips, ankles, shoulders, back, and occiput.

Expect to see more skin lesions, such as seborrheic keratoses, acrochorda (skin tags), and actinic lentigines. Older patients’ skin will be comparatively drier (xerosis) than skin in younger people because of decreased sweat and sebaceous gland secretions.

Actinic purpura is a common benign skin lesion caused by sun damage to the connective tissue of the dermis. These lesions typically occur on sun-exposed areas of the body, such as the hands and the forearm. Skin surrounding the lesions tends to be atrophic and leathery. Atrophy of dermal tissue makes the skin and blood vessels susceptible to minor trauma and shearing forces. You can differentiate these lesions from ecchymotic lesions (bruising), which can be found anywhere on the body, by their location and the condition of surrounding skin.

Fragile capillaries make older adults susceptible to bruising. Most ecchymoses are caused by trauma or injury severe enough to break small blood vessels near the injured area. Ecchymoses are also likely in patients taking anticoagulants or corticosteroids and in those with a coagulation disorder.

Although ecchymoses are common, always assess any unusual or suspicious bruising, which may indicate frequent falls or physical abuse. An estimated 1 to 2 million older adults are victims of domestic abuse. If you observe suspicious bruising and patterned lesions that may indicate physical abuse, notify your nurse manager and report suspected abuse according to facility policy and state law.

**Head and neck.** Although older adults’ pupils should be equally reactive to light, fundoscopic examination can be more challenging because the pupils tend to become smaller with age and the lenses are more likely to become cloudy (opaque). The lenses also lose elasticity, causing presbyopia. Because they have difficulty focusing on nearby objects, your patients may need reading glasses or even a magnifying glass to read.

An estimated 90% of older adults have a treatable oral disease, so examine your patient’s mouth closely. Look for lesions, dentition, condition of the teeth and mucous membranes, and color and condition of the gums. In patients who wear dentures, assess for denture fit and look for signs of irritation or lesions under the dentures.

**Cardiovascular.** With advancing age, arterial walls tend to thicken and stiffen. Older adults may develop left ventricular and atrial hypertrophy and sclerosis of the aortic and mitral valves. Extra heart sounds are a common assessment finding in older adults, so you may hear an $S_4$ and systolic aortic murmurs.

Cardiac assessment pearl: Extra heart sounds are common in older adults, so you may hear an $S_4$ and systolic aortic murmurs.

Changes associated with aging of the pulmonary system typically don’t affect normal ADL. However, an older adult may find exercising or breathing at high altitudes challenging.

**Thorax and lungs.** Assess breath sounds in all fields. In older patients, breath sounds tend to be diminished in the lung bases due to decreased respiratory muscle strength, a stiffer chest wall, and less elastic lung tissue. Pay particular attention to any asymmetrical variations in breath sounds. Although a barrel chest sometimes indicates chronic obstructive pulmonary disease, in older adults it may also signal vertebral collapse due to osteoporosis.

Gastrointestinal. With aging comes a decrease in gastric motility
and impaired sensation to defecate; older adults often complain of constipation. The abdomen tends to be softer on palpation and more protuberant, which may be mistaken for ascites or other pathology.

An important fact to remember is that older adults may have less-pronounced signs of an acute abdomen. And even when patients present with classic signs and symptoms of appendicitis, such as leukocytosis and right lower-quadrant pain, clinicians may not suspect appendicitis in older patients and may miss the diagnosis. For these reasons, mortality and morbidity from acute appendicitis are as high as 70% in older adults, compared to just 1% in younger adults.14

**Genitourinary.** Advancing age is associated with decreased kidney mass, renal blood flow, and glomerular filtration rate. These changes result in slower drug clearance and a greater risk of drug reactions. Older patients also face a greater risk for nephrotoxicity with some medications and diagnostic tests.13

With advancing age, bladder capacity decreases and bladder muscles weaken, so the bladder may not empty completely. Although incontinence isn't a normal change of aging, many older patients experience urinary urgency and more frequent nighttime voiding. When assessing older patients, ask how often they urinate and how many times they get up during the night to urinate. Also ask if they ever notice leakage or wetness, feel the sudden need to urinate, or have pain with urination. Note any medications, such as diuretics, that affect urination patterns.

More than half of your older male patients will have some degree of BPH,15 causing obstruction of the urethra and a gradual loss of bladder function. Ask male patients about changes in voiding patterns that may indicate BPH, such as a hesitant or weak urine stream, urgency, dribbling, and frequent urination.

When taking a sexual history, ask questions about sexual activity, concerns about sexual performance, sexual dysfunction, and body image. Many older adults, especially women, will be more comfortable discussing sexual concerns if you initiate the conversation and normalize it as a routine assessment topic. For example, you might say, “Many women, as they get older, experience a decrease in vaginal lubrication. Has this happened to you?” This approach invites the patient to ask questions about the impact of aging on sexual functioning.

**Musculoskeletal.** You’ll find great variations in musculoskeletal assessments of older patients depending on their level of activity. Those who engage in regular exercise and strength training will have an overall increase in muscle strength compared with less-active patients, although range of motion may be limited in those who have osteoarthritis.

Older patients have less dense vertebrae and the disks between the vertebrae become thinner, causing a decrease in height and a slight curvature of the spine.2 A decrease in tendon and ligament strength and elasticity leads to joint instability.

**Neurologic.** When assessing the nervous system in an older adult, be sure to assess for changes in cognition, behavior, and mood. Although delirium, dementia, and depression are very common in older adults, they aren’t normal. Many excellent tools are available for assessing cognitive changes in older adults, including the Mini-Mental Status Exam, Clock Drawing Test, NEECHAM Confusion Scale, and the Confusion Assessment Method Instrument. To assess for depression, you can use the Cornell Scale for Depression or the Geriatric Depression Scale.

During a neurologic assessment, you can expect to see a decrease in reaction time, agility, and vibratory sense. These changes can impair balance and coordination. Older adults also have decreased temperature sensitivity (the ability to detect small changes in temperature). You may find that the gag reflex and deep tendon reflexes are diminished or absent without any associated muscle wasting or weakness. This is caused by age-related changes in the intraspinal and supraspinal pathways.3

Older adults face a greater risk of sleep disorders and experience diminished stage 3 and stage 4 sleep (deep sleep) because of alterations in growth hormone and melatonin, lifestyle habits, and illness.13,14

Another important change associated with aging is compromised thermoregulation. This is related to alterations in sympathetic and parasympathetic responsiveness and changes to the skin and blood vessels, leading to inadequate heat production, increased heat loss, and reduced heat tolerance. Older adults typically have lower basal metabolic rates, which lowers baseline body temperature and causes a blunted febrile response to infection.
**Being better prepared**

When you can distinguish normal changes of aging from pathology, you're better prepared to adapt your assessment of older patients like Ms. Hutchinson and obtain the information you need to plan care. By identifying atypical presentations of illness, you can help your patient get earlier and more effective treatment, avoid complications, and resume normal activities more quickly.

REFERENCES


Peg Gray-Vickrey is a professor of nursing, associate provost and associate vice president for academic affairs, and interim dean at the College of Health Professions, Florida Gulf Coast University, Fort Myers, Fla.

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