Practical Functional Assessment of Elderly Persons: A Primary-Care Approach

Abstract

Objective: To describe simple, practical measures of physical and psychosocial function to detect problems and enhance the care of elderly patients.

Design: We reviewed pertinent articles and current standard textbooks of geriatrics; the most useful findings are summarized, and tools that can be used for functional assessment of the geriatric population are presented.

Results: Care of elderly patients necessitates a comprehensive review of key areas of function. Using only clinical judgment, physicians may overlook important clinical deficits common in older patients. Because of their length and complexity, many of the standard geriatric assessment tools are impractical for use by primary-care physicians. Certain simplified or condensed versions—such as the Functional Reach Test and the "Get Up and Go" Test—are efficient substitutes. In this article, we describe methods for practical identification of functional impairments, assessment of cognition and mood, evaluation of hearing and vision, and detection of problems with continence, nutrition, and social needs. Instruments for assessment of caregiver burden are also outlined.

Conclusion: Use of the assessment tools presented herein can assist primary-care physicians in comprehensive evaluation of function in older patients.
ADLs equals activities of daily living; MMSE equals Mini-Mental State Examination; ROM equals range of motion; UI equals urinary incontinence.

As persons grow older, the goals of maintaining social independence, functional mobility, and cognitive abilities become increasingly important and challenging. Functional impairments frequently accompany the aging process and can lead to an inability to meet the demands of daily life. Medical illnesses can cause a similar decline in physical function. Indeed, functional decline is often the initial symptom of medical illness in older persons—and in some instances may be the only symptom. [1] Such impairments may considerably affect the quality of life and will have a major influence on all future care.

Essential to the care of older patients is the need to determine whether cognitive or functional loss has occurred. [2] Because the degree to which aging or disease may result in disability varies substantially among elderly persons, evaluations must be highly individualized. In this article, we present an approach to the functional assessment of elderly patients and review several instruments designed to assist in that effort. The functional assessment of older persons includes evaluation of daily activities, cognition, continence, special senses, mobility, and specific psychosocial issues. [3]

FUNCTIONAL ASSESSMENT TOOLS

Studies have shown that use of formalized comprehensive geriatric assessments can result in improved survival, reduced hospital and nursing home stays, decreased medical costs, and improved functional status. [4-6] In addition, geriatric assessment can help in determining patient placement, assistance needed for daily activities, selection of medications, and prognosis. This paradigm shift of care—from disease-oriented to function-oriented assistance—entails knowledge of social, cognitive, and mobility factors that are seldom considered within the scope of traditional medical practice. Older persons can benefit from this change in focus; small improvements in functional, psychologic, or cognitive abilities may provide substantial benefits in the patient's quality of life. [7]

Numerous assessment scales have been developed and validated for evaluation of key areas of function in older adults. [8] [9] [a] Nevertheless, because many of these scales were designed for research purposes, they are often impractical for use in routine patient care. [10] In a primary-care practice, thorough assessment of elderly patients is further hampered by lack of time, competing problems, and poor reimbursement. As substitutes for the lengthier research instruments, a few simple assessment tools can be added to the "review of systems." This review of functions [11] can be part of the general physical examination of older patients, or selected portions can be used as adjuncts in the assessment of patients with specific complaints.

Many of these scales are questionnaires that can be completed by the patient or with the help of office staff. Performance of all these evaluative measures in one sitting may be difficult; administering portions of the examination throughout a 1-year period will meet the objective of comprehensive assessment. If an older person's abilities decline rapidly, however, an immediate, thorough evaluation for a reversible cause is imperative in order to minimize functional losses. [12] [13] [a]

ACTIVITIES OF DAILY LIVING

One measure of independence is the capacity to perform functional tasks necessary for daily living. These activities of daily living (ADLs) include basic self-care functions—such as dressing, using the toilet, and walking [14]—and also higher-level activities or Instrumental ADLs (those necessary for function in the community)—for example, driving, shopping, and paying bills. [15] A specific evaluation of functional status is essential because functional impairment
cannot be predicted on the basis of the number or the severity of medical diagnoses in an individual patient. [9](b)
[16] In addition, identifying functional impairments provides an opportunity for modifying those factors that may contribute to disability or affect other treatment decisions. [2] Impairments in ability to perform ADLs have been identified as risk factors for falls [17] and institutionalization.

Several evaluative scales exist, most of which are lengthy and have scoring systems with uncertain clinical utility. [11] For convenient use, a mnemonic arrangement of items from several validated instruments [13](b) is shown in Table 1. Functional impairments are identified by review of the history and observation, and no score is calculated. Questions about functional ability should be posed in reference to recent activities—for example, “Did you drive here today?” or “When did you last drive?” (rather than “Do you drive?”). Similarly, asking “Did you dress yourself this morning?” rather than “Do you dress yourself?” may elicit a more useful answer. If the patient is cognitively impaired, the responses should be confirmed by a caregiver.

**Basic (self-care)**
(mnemonic “DEATH”)
- Dressing
- Eating
- Ambulating
- Toileting
- Hygiene

**Instrumental (community interactions)**
(mnemonic “SHAFT”)
- Shopping
- Housework
- Accounting
- Food preparation
- Transportation

Table 1. Activities of Daily Living That Should Be Assessed in Elderly Patients

Additional information can be obtained at the time of an examination by simply observing the patient’s ability to enter the room, sit and stand, undress and dress again, and leave the office area. Was assistance required? Were clothes donned correctly? Did the patient become short of breath by dressing? This direct observation of physical performance provides an accurate estimate of function [18] and may disclose particular deficits. Other useful information will be gained by noting whether the subject does these tasks slowly, with difficulty, partially, or unsafely.

If impairments in ADLs are identified, ascertaining the reason for and the timing of the loss of function can help determine the underlying cause and the potential for reversibility. Acute or subacute impairments are often symptoms of illnesses, [19](a) and treatment will help restore function. Chronic disabilities are more challenging, but awareness of these deficits can help in management decisions.
MOBILITY

The ability of older persons to perform ADLs depends on their capacity to maneuver safely and effectively. Early detection of impairments in function can identify those persons with reduced mobility, deconditioning, and risks for injury. Standard neuromuscular examination is insufficient for evaluating mobility. Direct assessment is necessary for identifying problems in gait, balance, ability to transfer, and joint function. Exercise and rehabilitation assist in restoration of function, maintenance of current abilities, and reduction of the risk of falls. Modifications to accommodate other impairments can be achieved through appropriate training and equipment.

Gait.

For normal gait, a person must have unrestricted joint mobility, appropriate timing and intensity of muscle action, and normal proprioceptive, vestibular, and visual sensory input. With impairments in any of these factors, older adults commonly show changes in gait that result in imbalance, increased energy expenditure, muscular weakness, and falls. One in five elderly adults has a disorder in gait or in transferring ability. Among persons older than 75 years of age, 30% report difficulty with stairs, 40% cannot walk half a mile, and 7% need assistance to walk at all. (b) Approximately 30% of noninstitutionalized older adults fall each year. Costs associated with fall-related fractures approach $10 billion annually. Elderly persons who are confined to bed or a chair may become deconditioned, and edema, contractures, incontinence, or pressure sores may develop. Such patients are often at risk for falls and nursing home placement. The physician should inquire about any recent falls and should test gait performance in all older patients.

Several formal gait assessment instruments are available, such as the Tinetti Balance and Gait Evaluation. This 28-point assessment tool is performed by trained evaluators and requires up to 20 minutes to complete. A highly condensed version is available—the "Get Up and Go" Test. We recommend this practical approach for assessment of gait in elderly patients Table 2.

<table>
<thead>
<tr>
<th>Have the patient sit in a straight-backed high-seat chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructions for patient</td>
</tr>
<tr>
<td>Get up (without use of armrests, if possible)</td>
</tr>
<tr>
<td>Stand still momentarily</td>
</tr>
<tr>
<td>Walk forward 10 ft (3 m)</td>
</tr>
<tr>
<td>Turn around and walk back to chair</td>
</tr>
<tr>
<td>Turn and be seated</td>
</tr>
<tr>
<td>Factors to note</td>
</tr>
<tr>
<td>Sitting balance</td>
</tr>
<tr>
<td>Transfers from sitting to standing</td>
</tr>
<tr>
<td>Pace and stability of walking</td>
</tr>
<tr>
<td>Ability to turn without staggering</td>
</tr>
</tbody>
</table>

Table 2. The "Get Up and Go" Test for Gait Assessment in Elderly Patients

Certain abnormalities of gait and balance identified in walking tests have been shown to be good predictors of
recurrent falls: [27,29,30] unsafe or incomplete transfers (poor sitting balance and difficulty with rising or sitting down), instability immediately after standing, staggering on turns, and short, discontinuous steps. For the Get Up and Go Test, no score is tallied; results are considered normal if none of the aforementioned gait abnormalities is present. Undue slowness, hesitancy, unsafe maneuvers, excessive truncal sway, grabbing for support, and stumbling are additional abnormalities that indicate gait and balance problems. [20,25] Severe abnormalities are considered present if the subject appears at risk for a fall at any time during the test. Although no norms have been established, timing the Get Up and Go Test facilitates serial comparisons. Indeed, self-selected gait speed is the single greatest predictor of self-perceived function and overall physical performance in a wide range of abilities. [31]

Balance.

A complete gait analysis should include an assessment of balance. In addition to the Get Up and Go Test, disorders of standing balance can be detected by using a modified Romberg test, in which the standing patient performs tasks of increasing difficulty, first with the eyes open and then with the eyes closed [32] Figure 1, while the clinician observes the response to positional stress, loss of visual input, and displacement. With each successive maneuver, stability is observed and the patient is asked, "Do you feel steady?" Thus, balance can be roughly estimated, and the maneuvers may help identify causative factors (for example, osteoarthritis, peripheral neuropathy, foot problems, atherosclerosis, weakness, stroke, pain, or contractures [24]). For patients who are nonambulatory or who demonstrate gait impairments, ability to transfer from one surface or level to another should be assessed. Direct observation of sitting balance, transfers, and pivoting maneuvers can yield added information on strength, safety, and level of independence.

![Figure 1](http://ovidsp.tx.ovid.com.libproxy.uthscsa.edu/spa/ovidweb.cgi)

Figure 1. Diagram of maneuvers to assess balance in elderly persons with use of modified Romberg test: (1) patient standing, feet comfortably apart (eyes open and then eyes closed); (2) feet together (eyes open and then closed); (3) feet placed heel to instep (eyes open and then closed); and (4) feet placed heel to toe (eyes open and then closed). Patient is asked, "Do you feel steady?" with successive stress changes. Testing is discontinued when instability is first noted.

The Functional Reach Test is another simple tool for assessing balance Figure 2. A patient standing with one shoulder close to a wall is asked to extend the fist along the wall directly forward. With the fist extended, the subject then leans forward as far as possible without taking a step or losing stability. The patient should be able to move the fist forward at least 6 in (15 cm); shorter distances indicate a substantial risk for falling. [33]
Shoulder Function.

Age-related changes in the shoulder joint can result in impaired range of motion (ROM). Thoracic kyphosis, degenerative arthritis, occupational trauma, disuse, and cellular collagen and elastin changes in combination reduce shoulder strength, integrity, and mobility. Clinical syndromes include rotator cuff tears or tendinitis, impingement, acromioclavicular arthritis, and the frozen shoulder (adhesive capsulitis). At least one of every four older persons has shoulder pain. [34] Nevertheless, almost half of the shoulder-related complaints are unreported, despite the fact that more than 70% are due to soft tissue lesions responsive to nonsurgical treatments. [35]

Older patients may be unaware of shoulder limitations because dysfunction can arise insidiously and without pain. Reduced shoulder ROM can impair an older person’s ability to drive, don clothing independently, close a brassiere, or retrieve items from overhead cabinets. Long-term limitations in shoulder mobility due to pain or dysfunction may result in muscle weakness, decreased endurance, chronic pain, sleep disturbance, and severely reduced ROM. [24] In addition, the presence of shoulder joint (or other upper extremity joint) dysfunction can diminish grip strength and cause disability in performance of ADLs, [36] which are risk factors for institutionalization.
A simple screening measure of shoulder function includes inquiring about the presence of pain and observing ROM of the shoulder. The patient is asked to put both hands together in back of the waist and then behind the head Figure 3. Any pain or limitations in shoulder mobility should prompt a more complete examination.

**Figure 3. Diagram of simple test of shoulder range of motion in elderly persons. Left, Subject is asked to put both hands together in back at waist level. Right, Subject is asked to put both hands together behind neck.**

Hand Function.

Attendance to personal care demands sufficient hand strength, endurance, sensation, and dexterity to perform required tasks. Arthritis, neurologic deficits, vascular disease, and trauma may impair normal hand function in older adults. Grasp and pinch hand functions are needed to maintain independence in dressing, grooming, toileting, and eating. Older adults with impaired hand function often must rely on health resources and are at risk for institutionalization. [37]

As a simple measure of grasp strength, the patient can be asked to squeeze two of the examiner's fingers with each hand. Pinch strength can be assessed by having the patient firmly hold a piece of paper between the thumb and index finger while the examiner tries to pull the paper out. [38] For a more direct test of dexterity and performance, the patient can be asked to pick up a penny, spoon, or toothbrush from a table (or, while seated, from the floor). [11] Observation of the patient's attempt to write a sentence as part of the Folstein Mini-Mental State Examination (MMSE--discussed in the next section) provides similar information.

**COGNITIVE FUNCTION**

Dementia becomes increasingly common with advancing age. The prevalence of dementia has been reported to range from 5 to 15% in patients older than 65 years of age and to approach 20 to 50% after age 85 years. [9](c) [19](c) [39] Cognitive decline affects virtually every aspect of a patient's life. The ability to live independently, management of financial affairs, driving skills, and medical compliance may all be impaired. Patients with dementia are at increased risk for delirium [9](d) and for further functional losses from illnesses, medications, or operative procedures. Dementia is associated with increased use of health services and increased mortality. [40] Care of cognitively impaired elderly persons imposes a major psychosocial and economic burden on caregivers. Knowledge of a patient's baseline cognitive function and determination of any impairment are essential for appropriate care of all older persons. [41]
Patients with dementia may retain sufficient social skills to participate in simple conversational interviews with no evidence of impairment; use of learned phrases or vague responses may mask knowledge deficits. Without use of a screening tool, early or mild dementia can remain undetected, and patients with undocumented cognitive impairment are less likely to be assessed for reversible causes than are those with such documentation. The common practice of assessing orientation in three spheres (person, place, and date) is ineffective as a screening tool.

The most useful cognitive assessment scales test orientation, attention, calculation, language, and constructional abilities. Because of its ease of administration and widespread use, the Folstein MMSE is considered by many clinicians to be the standard screening instrument for assessment of cognitive function. This 30-point measure is adequate for detecting cognitive impairment, establishing a baseline, and measuring decline over time.
# Mini-Mental State Examination

<table>
<thead>
<tr>
<th></th>
<th>Maximal score</th>
<th>Patient's score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the year? season? date? day? month?</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name 3 objects [apple, table, penny] (take 1 second to say each). Then ask the patient to name all 3 after you have said them. Give 1 point for each correct answer.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Repeat them until the patient learns all 3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of trials:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attention and calculation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract serial 7s: 100, 93, 86, 79, 72, 65. Give 1 point for each correct number; stop after 5 answers.</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Recall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask for the names of the 3 previously mentioned objects. Give 1 point for each correct answer.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point to a pencil and a watch. Ask the patient to name them.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Have the patient repeat the following phrase:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;No ifs, ands, or buts.&quot;</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ask the patient to follow this command: &quot;Take a paper in your right hand, fold it in half, and put it on the floor.&quot;</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ask the patient to read and obey the following: &quot;CLOSE YOUR EYES.&quot;</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ask the patient to write a sentence here:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Have the patient copy this design:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="" alt="Design" /></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

**Physician’s comments:**
Table 9. Appendix I, Mini-Mental State Examination

Scores of less than 24 (of a maximal potential of 30 points) on the MMSE are abnormal and indicate severe cognitive impairment. In the interpretation of the MMSE performance, the subject's educational level should be considered because dementia can still be present with a "normal" score. A patient with a higher educational background who has demonstrated personality coarsening, social dysfunction, or ADL impairments typical of dementia warrants further investigation, even if MMSE results are normal. In patients with less than a high school education, the minimal acceptable MMSE score is reduced to 20 (of 30); nevertheless, such scores indicate an increased risk of dementia. The reasons for this influence of education are unclear, but a "disuse phenomenon" has been suggested.

The clinician must remain neutral while administering the MMSE. Correcting the patient (for example, saying "no, the date is May 22" or "the answer is 65") may invalidate the responses because test performance may be inhibited by resultant anxiety. Simple, noncommital phrases such as "that's fine" and "OK" after patient responses interfere the least.

Patients with visual impairments may be unable to complete the portions of the Folstein MMSE that require normal vision (that is, reading, copying, and writing). In such patients, the total and minimal scores must be decreased accordingly. Although the presence of hearing impairment may increase the likelihood of cognitive impairment, loss of hearing can considerably interfere with verbal performance and cause a false-positive test result. Use of a portable headphone amplifier will decrease the effect of hearing loss on the patient's ability to respond accurately to questions. Slower responses and increased time needed to complete the MMSE are further clues to the presence of dementia inasmuch as speed of performance is an additional measure of cognitive status. These findings are merely supportive, however, because slowed MMSE responses may also be due to inattention (from delirium or depression) or speech apraxia (in patients with such conditions as parkinsonism or stroke).

Clock-drawing is another useful tool for assessing cognition, especially visuospatial and construction deficits common in patients with dementia. The patient is given a sheet of paper with a large circle on it and is asked to draw the face of a clock. After completing the task, the patient is further instructed to draw the hands of the clock to read "11:20." As few additional instructions as possible should be provided. Cumbersome scoring systems exist, but the presence of disorganization, perseveration (of numbers or hands), incompleteness, or a tendency to remain in one portion of the field indicates cognitive or visuospatial impairment. This test has poor predictive value when used in isolation; it is best used in combination with other cognitive assessment instruments.

Because delirium may cause deficits in mental status similar to those of dementia, the patient's level of consciousness must be determined at the initiation of the examination. In delirium, the respondent is drowsy, nonalert, or inattentive (needing repeated prompting or even awakening to continue the examination). Attention may be specifically assessed by asking the patient to repeat a series of numbers immediately after presentation (normal persons 80 to 90 years old can repeat up to eight digits without error). Unlike dementia, delirium typically manifests with abrupt or subacute onset of cognitive impairment and profound sleepwake cycle disturbances.

When cognitive impairment is detected by screening tests, a history of the duration and progression of cognitive decline should be obtained from the patient and caregivers. Although no standardized assessment is available, determination of basic and instrumental ADL functional losses as well as questions about memory problems, personality changes, and dysfunction at work provide the most information. Isolated memory defects of aging (for example, misplacing objects or minor word-finding difficulties) do not indicate dementia.

If dementia is suspected because of family or job concerns, language difficulties, or results of mental status testing, further evaluation can be helpful. Neurologic consultation and psychometric testing can clarify these cognitive issues through a more formalized, intensive evaluation. These additional assessments are indicated in patients...
with cognitive impairment of recent onset (less than 12 months), atypical manifestations (for example, strokes, seizures, or focal neurologic findings), normal or equivocal results of MMSE, clinically suspected dementia, or superimposed depression.

After traumatic brain injuries and stroke, these evaluations are useful for documenting the presence and severity of cognitive impairment and the likelihood of rehabilitation in cognitive and speech skills. Additional issues for which neuropsychologic evaluation can be of assistance are assessment of patient safety in an unsupervised setting and driving capability. Psychiatric evaluation can be helpful for patients with evidence of depression or other mental illness.

Studies do not support cognitive screening of the general geriatric population because the overall yield is low and the false-positive rate is relatively high. Targeting mental status testing to selected high-risk groups, however, appreciably improves the yield. Cognitive screening is recommended for hospitalized patients, subjects older than 80 years of age, persons moving into new living situations (such as assisted-living units or long-term-care facilities), and older adults with a history of delirium, depression, diabetes, Parkinson’s disease, or recent unexplained functional losses. Mental status testing may also be useful as part of preoperative assessment for elderly patients. The results will establish a baseline for comparison in event of changes in mental status and may disclose those with dementia, who are at increased risk for postoperative delirium.

VISION

Normal aging is associated with diminished visual acuity because of physiologic lens changes, field deficits, and retinal diseases. More than 90% of older adults need eyeglasses. Sixteen percent of those 75 to 84 years old and 27% of those older than 85 years are blind in both eyes or are unable to read newsprint even with eyeglasses. Visual impairment has a major effect on older persons; the daily activities of driving, reading, shopping, and even walking can become increasingly difficult. Indeed, poor visual acuity and combined visual and hearing impairment are associated with a substantially increased risk for falling.

Age-related macular degeneration, cataracts, glaucoma, and diabetic retinopathy can result in progressive visual loss. In contrast, visual loss from stroke or giant cell arteritis is acute and usually nonprogressive. Many older adults are unaware of impaired vision, including losses in peripheral and central acuity. Cataracts, the second leading cause of blindness in the United States, are present in more than 60% of patients older than 75 years of age. In 1991 alone, $3.4 billion was spent by Medicare for surgical removal of cataracts—12% of the entire Medicare budget. To address these concerns, the US Department of Health and Human Services recently published guidelines for the evaluation and management of cataracts. Ophthalmologic referrals are recommended only for patients who have visual impairments detected by patient history or examination and not for routine screening of cataracts.

Visual acuity charts (such as the Snellen and Jaeger tests) are a simple method for assessing visual function. A visual acuity minimum of 20/50 is found in many state driving laws; however, studies have found that Snellen test results are poorly correlated with daily visual function. Visual function can be tested simply by having the patient read a headline and a sentence from a newspaper. Visual acuity is normal if both headline and sentence can be read, moderate impairment is present if only the headline can be read, and impairment is severe if neither can be read. Significant central visual loss due to cataracts, macular degeneration, or glaucoma should also be apparent with use of this test. Observation of ambulation (for example, bumping into furniture), handshake (meeting the target), and ability to complete forms are useful for assessing visual problems. Neglect of portions of the visual field as a result of stroke can be confirmed by simple confrontational testing.

For the primary-care physician, sparse literature is available on the appropriate questions for screening for functional visual impairments. Useful factors for assessment are summarized in Table 3. Overall, the degree of visual impairment seems best assessed by its influence on the patient’s functional abilities, such as the ADLs. Any vision-
related complaint suggests the need for formal ophthalmologic evaluation. A brief globe and fundus examination and simple standard confrontative visual field assessment can help identify specific ophthalmologic problems. These studies, however, can be difficult in the elderly population and are of unproven clinical utility as screening tools in patients who do not complain of visual problems.

**Diplopia, scotoma, eye pain**
**Difficulty driving (glare, night vision problems)**
**Inability to read, watch television, or do close handiwork**
**Sudden or recent visual loss (central, partial, or complete)**
**Occupational or lifestyle restrictions**

Table 3. Assessment of Functional Impairment of Vision in Elderly Patients

The Activities of Daily Vision Scale is a lengthy self-administered questionnaire developed for use by ophthalmologists in assessment and follow-up of patients being considered for surgical removal of cataracts. [66] It identifies 20 visual activities to assess near and distant vision, glare problems, and driving impairment. Because it has not been studied in patients with other visual problems, we do not recommend it for routine screening.

**HEARING**

Hearing loss is the third most common chronic disorder among elderly persons: it affects one-third of subjects who are 65 years old, two-thirds of those older than 70 years of age, and three-fourths of those 80 years of age or older. [69] In the geriatric population, presbycusis is the most common type of hearing loss. Typically, patients have difficulty hearing sounds in the higher frequencies (the consonants of speech), whereas hearing at lower frequencies (the vowel range) is spared.

Initially, persons with presbycusis note they can "hear" but not "understand" speech. The presence of vowel sounds is detected, but the inability to hear as many as a third of the consonant sounds often renders the message unrecognizable. As hearing loss slowly progresses and affects the lower frequencies, hearing and understanding are both lost. While the threshold of sensitivity for detection of sound increases, the threshold of tolerance to loudness remains stable; thus, a narrower dynamic range exists. Because of a recruitment phenomenon, understanding becomes more difficult in loud or crowded rooms or in a setting with more than one person speaking.

Screening for hearing loss in elderly patients is important because they may not complain of or even recognize that they have a hearing impairment. The physician should ask patients and family members whether any changes in hearing or the onset and progression of impairments have been noted, whether the symptoms are unilateral or bilateral, and what prior treatment has been attempted. [67][b] Further information can be gathered by inquiring about difficulty understanding the voices of women and children (that is, higher frequencies), telephone conversations, television, or voices when more than one person is speaking. The effect of hearing loss can be further assessed by asking about alterations in social activities. Avoidance of family functions, theaters, movies, and religious services because of changes in hearing is an indication of the severity of the disease and reflects important functional losses. [67][c]

Otoscopic examination for cerumen or serous otitis is essential [70] and should be done before any testing for hearing loss. Cerumen obstruction commonly contributes to hearing loss, and its removal can dramatically improve acuity. Hearing acuity can be tested by simple methods such as asking the patient to identify the sound of a ticking watch or the presence of two fingers rubbing together by the ear. Difficulties with speech comprehension can be evaluated by whispering 10 words while standing 6 in (15 cm) behind the patient (the "whisper test"). An inability to
repeat 50% of the words can identify those patients who may have poor results with a hearing aid because of dysfunctional auditory processing. [71, 72] Tuning forks are of limited utility in assessing auditory acuity.

Bone and air conduction can be assessed in patients with hearing loss by first placing a 256-Hz tuning fork base on the mastoid process (bone conduction) and then positioning the tines close to the ear (air conduction) and asking the patient which is louder. Waiting for the sound to fade is of doubtful added significance, as is assessing for lateralization. Normally, air conduction is louder than bone conduction. If hearing acuity is poor and sound conduction is normal, the patient most likely has presbycusis. The patient should then be referred for audiometry for further quantification of hearing loss.

The cost of audiometry and hearing aids is not reimbursed by Medicare. These charges can exceed $1,000 for a single hearing aid. Many patients who buy these expensive devices either do not wear them regularly or use them improperly. Patients may decline to wear hearing aids because of embarrassment or vanity, because they are disappointed in the performance of the devices, or because they cannot adjust to the resultant amplified altered tones. [73]

Patients with impaired hand function from arthritis, weakness, or sensory loss may have inadequate dexterity to operate the tiny controls. Patients with dementia may be unable to learn to use these complex devices or may have difficulty understanding the new auditory signal. Inquiring about a patient’s willingness, capability, and desire to use a hearing aid may obviate further testing. Less expensive alternatives, such as headphones with a small handheld amplifier, may be preferred by some patients.

CONTINENCE

From 15 to 30% of community-dwelling older adults suffer from urinary incontinence (UI), and almost 50% of older nursing home residents are affected. [74] Of those with incontinence, 25 to 35% have daily or weekly episodes. The prevalence of UI in elderly women is twice that in elderly men; this preponderance is related to pelvic floor and perineal injuries resulting from childbirth, episiotomies, disuse-related muscle weakness, atrophic urethritis or vaginitis, and hypoestrogenemnic pelvic floor and bladder dysfunction. [75](a) [76]

Incontinence in older men tends to be related to prostatic enlargement, postprostatectomy sphincter impairment, urethral stricture, catheter-induced bladder dysfunction, and diabetes. [73](a) Additional factors that can contribute to UI include urinary infections, confusional states, medications, immobility, hyperglycemia, alcohol abuse, congestive heart failure, and stool impaction. [76]

Because of embarrassment and worry about appearance and odor, or perhaps because of a perception that the condition is untreatable or is a normal accompaniment of aging, patients may not report incontinence unless directly asked by the physician. [77, 78] Some simple questions can easily introduce the subject Table 4. Judgmental questions should be avoided—for example, “Do you ever wet yourself?” or “Do you wear a diaper?” Clinicians may find that repeated inquiries may be necessary before a patient will identify UI as a problem.
• Do you ever leak urine?
• Do you have trouble holding your urine?
• Do you ever lose urine when you don’t want to?
• Does urine come out by itself—such as when you cough, laugh, or have the urge to urinate?

Table 4. Urinary Incontinence: Simple Questions to Ask Elderly Patients

Patients need to be aware that most UI problems can be evaluated with minimal testing and that most initial treatment options are nonsurgical. These interventions are highly effective, [74,79] even among nursing home residents. The detailed evaluation and management of UI will be addressed in a forthcoming article in this Symposium on Geriatrics. A complete incontinence history and postvoid residual should be analyzed in most patients. Kegel exercises, timed voids, management of intake of fluids, biofeedback, and medications are available therapeutic options. An excellent guideline to the complete evaluation and treatment of UI in adult patients is available from the US Department of Health and Human Services. [75]

NUTRITION

Maintaining adequate nutrition is essential for prevention of disease and functional decline. Malnutrition has been found to occur in 15% of older outpatients, almost half of all hospitalized elderly persons, and many institutionalized elderly residents. [80] The National Health and Nutrition Examination Survey found that 17% of older adults in the United States consume fewer than 1,000 calories daily. [81] Undernutrition is clearly linked to increased morbidity, including prolonged hospital stays, more frequent readmissions, susceptibility to pressure ulcers, and increased mortality. [82] Several studies have demonstrated reduced complications, enhanced functional status, and decreased incidence of death among older medical patients who receive nutritional supplements, [83] especially those who gain at least 5% of body weight. [84]

Almost any systemic illness or recent surgical procedure can result in poor food intake and weight loss. Poverty, social isolation, depression, dementia, pain, immobility, gastrointestinal reflux, constipation, alcoholism, polypharmacy, dental problems, xerostomia, alterations in recognition of hunger or thirst, [85] and impaired taste may all have roles in the development of anorexia and malnutrition. Dysphagia due to strokes, parkinsonism, medications, xerostomia, [86] or dementia has been estimated to affect almost 50% of the institutionalized elderly population [87] and can be episodic.

Determining whether an elderly patient is malnourished is surprisingly difficult. Measures used to assess nutritional status in younger patients, which typically rely on such factors as height, weight, age, and lean body mass, have not been validated in elderly persons. Skeletal height decreases with aging. The proportion of lean body mass decreases, whereas the proportion of adipose tissue increases. Therefore, the standard height and weight tables and the body mass index nomograms may be unreliable in older adults and are of unproven utility in screening for malnutrition. [88]

No reliable laboratory tests have been validated as effective screening tools for detection of malnutrition in elderly persons. The anemia, hypoalbuminemia, [89] and lymphocytopenia known to accompany malnourished states may indicate acute or chronic illnesses and are unreliable screening markers of undernutrition in older adults. Hypcholesterolemia (total cholesterol level of 160 mg/dL or less) in the elderly population is associated with increased morbidity and may be a marker of malnutrition, [90] but this finding is nonspecific. Therefore, screening cholesterol testing is not recommended for this purpose.

Perhaps the most useful indicators of nutritional status in elderly patients are a loss of weight from baseline or the
development of anorexia. [91] Weight loss of more than 5% of total body weight (or 5 lb [2.3 kg]) in 1 month or more than 10% (or 10 lb [4.5 kg]) in 6 months is significant. [11, 92] Because self-reported weights can be inaccurate, the weights of elderly patients should be regularly recorded (on each visit or every 6 to 12 months) to document any weight loss.

Patients unaware of declining weight may acknowledge clothes fitting more loosely or belts notched more tightly. Diet diaries, rather than diet interviews, may reveal useful historical data about food intake. Physical examination for signs of malnourishment (jaundice, cheilosis, glossitis, loss of subcutaneous fat, muscle wasting, or edema) can sometimes provide additional clues. Combining historical data about changes in weight, appetite, and clothing with serial weight measurements may be the most useful method of assessing the nutritional status in elderly patients.

DEPRESSION

The psychosocial and functional losses that accompany aging can often result in depression. Although its exact incidence is unclear, depression is one of the most common psychiatric disorders in elderly patients. The National Institute of Mental Health Epidemiologic Catchment Area survey estimated a 1-year prevalence rate for major depression of 0.9% in older adults, a finding that is supported by recent data. [93] In community-dwelling older adults, however, the incidence of depressive symptoms reportedly ranges from 10 to 27%, [94] and some older patients with clinically significant depression underreport their symptoms. [95] Major depression has been found in 12% of hospitalized patients and institutionalized elderly persons. [96] Among patients with Alzheimer's disease, an estimated 20 to 40% have major depression. [19] Significantly, the risk for suicide is higher among older white men than for any other age, sex, or racial group. [97]

Some studies have suggested that the prevalence of depression does not increase with advancing age when controlled for physical illness, functional disabilities, and cognitive impairment. Some geriatricians include symptoms that accompany medical illness (fatigue, disturbed sleep, and dysphoria) in the diagnosis of depression in order to offer therapy to as many patients as may benefit [19](e) (although the utility of this strategy has been disputed [98]). Because elderly patients tend to underuse psychiatric services, primary-care physicians need to consider depression in older patients with physical illnesses (for example, recent stroke, coronary artery bypass grafting, or myocardial infarct), cognitive impairment, [39] somatization, and psychosocial losses. [99] The possibility of elder abuse should be considered as well.

To screen for depression, we recommend an initial question such as, "Do you often feel sad or depressed?" [11] or "With your recent problems, might you be depressed?" An affirmative answer to such a question warrants further inquiry. Two simple standardized questionnaires are useful in screening for and evaluating depression. The self-administered 13-item Beck Depression Inventory (short form) can be completed in 5 minutes and closely correlates with the diagnosis of depression in older persons. [100] The Yesavage Geriatric Depression Scale is a valid and reliable 15-item questionnaire that, unlike the Beck Depression Inventory, was designed to evaluate and screen for depression and allows independent patient completion [101] Table 10. These questionnaires can assist the physician in detecting the presence of depression. If depression is suspected, the "gold standard" diagnostic approach remains the clinical interview (criteria for depression as established in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, will be reviewed in a subsequent symposium contribution). In light of underreporting of affective symptoms by some older patients, however, clinicians should be aware of somatic depressive symptoms when considering the diagnosis.
Yesavage Geriatric Depression Scale (Short Form)

Answer yes or no to the following questions to indicate how you felt during the past week.

1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you in good spirits most of the time?
6. Are you afraid that something bad is going to happen to you?
7. Do you feel happy most of the time?
8. Do you often feel helpless?
9. Do you prefer to stay at home, rather than going out and doing new things?
10. Do you feel you have more problems with memory than most?
11. Do you think it is wonderful to be alive now?
12. Do you feel pretty worthless the way you are now?
13. Do you feel full of energy?
14. Do you feel that your situation is hopeless?
15. Do you think that most people are better off than you are?

For scoring, grant 1 point for each of the following answers (a score of more than 5 suggests depression):

1. No
2. Yes
3. Yes
4. Yes
5. No
6. Yes
7. No
8. Yes
9. Yes
10. Yes
11. No
12. Yes
Table 10. Appendix II, Yesavage Geriatric Depression Scale (Short Form)

ALCOHOLISM

The prevalence of alcohol abuse is 1 to 5% among community-dwelling elderly persons and 10 to 15% among those who seek medical care. More than half of all older adults report abstinence from alcohol, but for those elderly persons who begin or maintain abuse patterns, risks of alcohol use are increased. Because of pharmacokinetic changes, elderly persons retain higher circulating levels of alcohol and thus have more severe and more prolonged toxic effects. Alcohol abuse is a major or contributing factor in 10 to 20% of psychiatric, nursing home, and hospital admissions. [103]

Alcoholism in the geriatric population is associated with anxiety and depressive disorders, confusional states, sleep problems, falls, incontinence, malnutrition, gastrointestinal diseases, and dementia. [19][f] Levels of alcohol consumption that are acceptable in younger patients may produce deleterious physical effects in older adults. Impaired balance, diuresis, left ventricular dysfunction, arrhythmias, and temperature dysregulation can occur, even with infrequent use of alcohol. [105] The unpredictable effects of alcohol interacting with medications must also be considered. Use of alcohol may be especially dangerous in patients with dementia, those with a history of falls or gastrointestinal bleeding, or those taking warfarin.

Screening for alcoholism is facilitated by introducing the subject of use of alcohol through an open-ended inquiry--for example, "Please tell me about your drinking." This simple introduction can be followed by the four-item "CAGE" screening tool Table 5. Use of the CAGE questionnaire will yield more information if the introductory questions do not involve quantification of alcohol consumption (for example, avoid asking "How much or how often do you drink?"). Interviews that focus on drinking patterns are uncomfortable and inhibit further disclosure by the patient. [106]

Cut down
Have you tried to cut down on your drinking?

Annoyed or angered
Have others annoyed or angered you by criticizing your drinking?

Guilty
Have you ever felt guilty about your drinking?

Eye-opener
Have you used alcohol to steady your nerves or to reduce the effects of a hangover?

Table 5. Screening for Alcoholism in Elderly Patients: Use of the "CAGE" Mnemonic

The CAGE questionnaire is portable, effective, and nonthreatening, especially when coupled with a nonjudgmental, open-ended introduction. The positive predictive value with two or more affirmative answers exceeds 75% in elderly patients, although even one positive reply may warrant further inquiry. [103] The Michigan Alcoholism Screening Test, a 25-item questionnaire that examines the social and behavioral effects of alcohol, has also been validated in screening for alcoholism among older adults [107] * Table 11. The briefer 13-item version is less useful in the elderly population. [108]
<table>
<thead>
<tr>
<th>Question</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you feel you are a normal drinker?</td>
<td>2</td>
</tr>
<tr>
<td>2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before?</td>
<td>2</td>
</tr>
<tr>
<td>3. Does your spouse ever worry or complain about your drinking?</td>
<td>1</td>
</tr>
<tr>
<td>4. Can you stop drinking without a struggle after one or two drinks?</td>
<td>2</td>
</tr>
<tr>
<td>5. Do you ever feel bad about your drinking?</td>
<td>1</td>
</tr>
<tr>
<td>6. Do friends or relatives think you are a normal drinker?</td>
<td>2</td>
</tr>
<tr>
<td>7. Do you ever try to limit your drinking to certain times of the day or to certain places?</td>
<td>0</td>
</tr>
<tr>
<td>8. Are you always able to stop drinking when you want to?</td>
<td>2</td>
</tr>
<tr>
<td>9. Have you ever attended a meeting of Alcoholics Anonymous (AA)?</td>
<td>5</td>
</tr>
<tr>
<td>10. Have you gotten into fights when drinking?</td>
<td>1</td>
</tr>
<tr>
<td>11. Has drinking ever created problems with you and your spouse?</td>
<td>2</td>
</tr>
<tr>
<td>12. Has your spouse (or other family member) ever gone to anyone for help about your drinking?</td>
<td>2</td>
</tr>
<tr>
<td>13. Have you ever lost friends because of drinking?</td>
<td>2</td>
</tr>
<tr>
<td>14. Have you ever gotten into trouble at work because of drinking?</td>
<td>2</td>
</tr>
<tr>
<td>15. Have you ever lost a job because of drinking?</td>
<td>2</td>
</tr>
<tr>
<td>16. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?</td>
<td>2</td>
</tr>
<tr>
<td>17. Do you ever drink before noon?</td>
<td>1</td>
</tr>
<tr>
<td>18. Have you ever been told you have liver trouble? Cirrhosis?</td>
<td>2</td>
</tr>
<tr>
<td>19. Have you ever had delirium tremens (DT’s), had severe shaking, heard voices, or seen things that were not there after heavy drinking?</td>
<td>2</td>
</tr>
<tr>
<td>20. Have you ever gone to anyone for help about your drinking?</td>
<td>5</td>
</tr>
<tr>
<td>21. Have you ever been in a hospital because of drinking?</td>
<td>5</td>
</tr>
<tr>
<td>22. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem?</td>
<td>2</td>
</tr>
<tr>
<td>23. Have you ever been seen at a psychiatric or mental health clinic or gone to a doctor, social worker, or clergyman for help with an emotional problem in which drinking played a part?</td>
<td>2</td>
</tr>
<tr>
<td>24. Have you ever been arrested, even for a few hours, because of drunk behavior?</td>
<td>2</td>
</tr>
<tr>
<td>25. Have you ever been arrested for drunk driving or driving after drinking?</td>
<td>2</td>
</tr>
</tbody>
</table>

Score points for negative answers to questions 1, 4, 6, and 8 and positive answers to all other questions. A score of 5 or more points is indicative of alcoholism.

Table 11. Appendix III, Michigan Alcoholism Screening Test Questionnaire

Although questionnaires to screen for alcohol abuse are useful, they can be less sensitive in the elderly than in the younger population. Screening tests address symptoms of dependence, associated social and legal difficulties, specific drinking patterns, and self-recognition. These aspects of alcohol use are less likely to be pertinent in older adults and may overlook the aforementioned associated clinical clues. [103] A physician should consider whether alcohol use may be contributing to a patient's medical, functional, or psychosocial problems, even if apparent use is minimal or responses to screening questions are negative. [105]

NEEDS ASSESSMENT

Whether or not a vulnerable elderly person is able to remain in a home setting depends more on available caregiver support and the degree of functional limitations than on the actual medical conditions that a patient may have. [109,110] Needs assessment refers to the evaluation of the functional, medical, and social status of a patient in an attempt to identify continuing care needs. Increased numbers of frail elderly persons, reimbursement pressures, briefer hospitalizations, and more complex outpatient management issues make such assessments essential.

The literature, however, provides little practical information on efficient and comprehensive instruments for needs assessment. Traditionally, nurses, social workers, and discharge planners have performed these evaluations and coordinated continuing care. The physician responsible for the care plan can help direct the assessment by identifying risk factors and unmet needs. The goal of the needs assessment is to maximize the ability of the elderly patient to remain as independent as possible. Intensive evaluation is unnecessary for all elderly patients. Some risk factors suggestive of the need for home-care services or long-term-care placement for older patients are outlined in Table 6. [111,112]
Dependence in activities of daily living (especially eating and dressing)
Bladder or bowel incontinence
Dementia or delirium
Caregiver burden
Age >85 years
Unmarried, living alone, or recent change in living arrangement
Prior need for home health services or nursing home placement
New or complex drug regimens
Noncompliance
Need for rehabilitative services
Terminal illness
Intravenous therapy or nutritional support
Wounds or pressure sores
Care of ventilators, stomas, tubes, or appliances

Table 6. Risk Factors for Need for Continuing Care in Elderly Patients

Because of the complex, fragile, and evolving nature of the social support networks used by older patients, evaluation of their adequacy can be difficult. Such networks often involve family members, friends, and neighbors in providing social and financial support as well as closing gaps in a patient's capacity to perform ADLS. Determination of a patient's inability to perform ADLS can provide useful details about what may be required of caregivers, which caregivers are already involved, and the extent of unmet needs.

Patient identification of potential caregivers in cases of illness is of doubtful reliability and may not reflect reality. [113] Almost three-fourths of primary caregivers are women, often the patient's wife, daughter, or daughter-in-law. Additionally, a fourth of all caregivers are older than 65 years of age themselves, often caring for a parent who is older than 85 years of age. [114] A primary caregiver who responds to considerable demands may become overburdened and unable to continue in that role. An important preliminary step is to determine the availability (that is, competing responsibilities), willingness, and physical and cognitive abilities of a current or potential primary caregiver to provide the necessary degree of care. [115]

Caregiving can entail frequent telephone calls, help with shopping or housekeeping, financial oversight, and attendance to personal care needs. The patient with dementia will also have an increased need for supervision, associated behavior problems, and progressive functional losses. In addition, superimposed acute illnesses, planned diagnostic tests, and therapeutic trials can impose considerable demands and stress on both the primary caregiver and the patient. The potential for abuse of the elderly patient (or the caregiver) should be considered in these situations,
and the possibility should be addressed periodically.

Periodic needs assessment of the vulnerable older patient is incomplete without some evaluation of the well-being of the primary caregiver. Optimally, this assessment should be done when the patient is not present. A caregiver with personal health problems may be unable to meet major demands and may become depressed or overwhelmed by rigorous tasks. Caregiver burden has been found to be the most important factor in determining the need for home services or nursing home placement. [115] An initial question such as "What are you most worried or concerned about in caring for your loved one?" can be revealing. Financial worries may be prominent but unspoken, and addressing these concerns may be helpful--if only to avoid contributing to this burden by the choice of tests or therapeutic interventions. If a more formal or extensive assessment of the level of caregiver burden is desired, some available instruments can supplement the physician interview. The Zarit Burden Interview Table 12 [9](e) and the Caregiver Strain Index Table 13 [116] are useful for these purposes.
<table>
<thead>
<tr>
<th>The Zarit Burden Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you feel that your relative asks for more help than he/she needs?</td>
</tr>
<tr>
<td>2. Do you feel that because of the time you spend with your relative you don't have enough time for yourself?</td>
</tr>
<tr>
<td>3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?</td>
</tr>
<tr>
<td>4. Do you feel embarrassed over your relative's behavior?</td>
</tr>
<tr>
<td>5. Do you feel angry when you are around your relative?</td>
</tr>
<tr>
<td>6. Do you feel that your relative currently affects your relationship with other family members or friends in a negative way?</td>
</tr>
<tr>
<td>7. Are you afraid of what the future holds for your relative?</td>
</tr>
<tr>
<td>8. Do you feel your relative is dependent on you?</td>
</tr>
<tr>
<td>9. Do you feel strained when you are around your relative?</td>
</tr>
<tr>
<td>10. Do you feel your health has suffered because of your involvement with your relative?</td>
</tr>
<tr>
<td>11. Do you feel that you don't have as much privacy as you would like because of your relative?</td>
</tr>
<tr>
<td>12. Do you feel that your social life has suffered because you are caring for your relative?</td>
</tr>
<tr>
<td>13. Do you feel uncomfortable about having friends over because of your relative?</td>
</tr>
<tr>
<td>14. Do you feel that your relative seems to expect you to take care of him/her as if you were the only one he/she could depend on?</td>
</tr>
<tr>
<td>15. Do you feel that you don't have enough money to care for your relative in addition to the rest of your expenses?</td>
</tr>
<tr>
<td>16. Do you feel that you will be unable to take care of your relative much longer?</td>
</tr>
<tr>
<td>17. Do you feel you have lost control of your life since your relative's illness?</td>
</tr>
<tr>
<td>18. Do you wish you could leave the care of your relative to someone else?</td>
</tr>
<tr>
<td>19. Do you feel uncertain about what to do about your relative?</td>
</tr>
<tr>
<td>20. Do you feel you should be doing more for your relative?</td>
</tr>
<tr>
<td>21. Do you feel you could do a better job in caring for your relative?</td>
</tr>
<tr>
<td>22. Overall, how burdened do you feel in caring for your relative?</td>
</tr>
</tbody>
</table>

Table 12. Appendix IV, The Zarit Burden Interview

<table>
<thead>
<tr>
<th>The Caregiver Strain Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructions given to the caregiver: I am going to read a list of things that other persons have found to be difficult in helping out after somebody comes home from the hospital. Would you tell me whether any of the following examples apply to you? [Score 1 for “yes” answers and 0 for “no.”]</td>
</tr>
<tr>
<td>Sleep is disturbed (e.g., because ______ is in and out of bed or wanders around at night).</td>
</tr>
<tr>
<td>It is inconvenient (e.g., because helping takes so much time or it’s a long drive over to help).</td>
</tr>
<tr>
<td>It is a physical strain (e.g., because of lifting in and out of a chair; effort or concentration is required).</td>
</tr>
<tr>
<td>It is confining (e.g., helping restricts free time or cannot go visiting).</td>
</tr>
<tr>
<td>There have been family adjustments (e.g., because helping has disrupted routine; there has been no privacy).</td>
</tr>
<tr>
<td>There have been changes in personal plans (e.g., had to turn down a job; could not go on vacation).</td>
</tr>
<tr>
<td>There have been other demands on my time (e.g., from other family members).</td>
</tr>
<tr>
<td>There have been emotional adjustments (e.g., because of severe arguments).</td>
</tr>
<tr>
<td>Some behavior is upsetting (e.g., because of incontinence: ______ has trouble remembering things; or ______ accuses others of taking things).</td>
</tr>
<tr>
<td>It is upsetting to find ______ has changed so much from his/her former self (e.g., he/she is a different person than he/she used to be).</td>
</tr>
<tr>
<td>There have been work adjustments (e.g., because of having to take time off).</td>
</tr>
<tr>
<td>It is a financial strain.</td>
</tr>
<tr>
<td>Feeling completely overwhelmed (e.g., because of worry about ______; concerns about how you will manage).</td>
</tr>
<tr>
<td>Total score (count “yes” responses): ______</td>
</tr>
</tbody>
</table>


Table 13. Appendix V, The Caregiver Strain Index

At-risk elderly patients and those who demonstrate severe functional or cognitive impairments would benefit from more in-depth interviewing, often through a nurse or social worker, to determine what services are being provided and what additional services may be needed. [117] The financial status of the patient and the caregiver should be considered, to ascertain the ability to afford food, medications, medical equipment, and housing. If needs are appropriately assessed, formal and informal assistance can be recommended, including community resources such as home health care, adult day care, meal programs, respite care, and instructional or counseling services for the caregiver.

CONCLUSION

The ability of older persons to remain independent has a profound influence on the perceived quality of life and the costs incurred for assistance. In addition, older adults who are able to maintain vigorous activity have increased longevity and reduced incidences of diabetes, heart disease, hypertension, and colonic cancer. [118] Although the aging process is associated with a gradual deterioration, similar functional losses may occur as evidence of diseases processes
and may, in fact, be the principal manifestation of illness. On the basis of only clinical judgment, physicians may identify severe functional impairment in older patients but tend to overlook the more moderate (but more common) deficits. [1,119] A recent study supports multifactorial causes of certain geriatric syndromes (incontinence, falling, and functional dependence) and suggests a combination of predisposing risk factors. [62] The presence of vision and hearing impairments, lower and upper extremity impairments, and depression or anxiety significantly increased the risk for occurrence of these syndromes—and the risk further increased as the number of predisposing factors increased.

The functional assessment of older persons includes evaluation of ADLs, mobility, cognition, special senses, and psychosocial issues. Several available assessment tools can increase the effectiveness of the clinical examination. With use of these evaluative measures, the goals are to identify impairments, prevent disabilities, and remove barriers to independence. These goals are accomplished through efforts to improve function, modify medical and social boundaries, or increase assistance when needed Table 7, Table 8. Identification of risk factors for these geriatric syndromes may promote restoration of compensatory ability and prevent the onset of functional dependence. [62] Attention paid to these functional goals may improve a patient’s quality of life and can assist in directing the management of associated chronic medical disorders. [7]
<table>
<thead>
<tr>
<th>Key area</th>
<th>Assessment</th>
<th>Target population</th>
<th>The next step</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADLs</td>
<td>Basic and instrumental ADLs (see Table 11)</td>
<td>All older adults, those with dementia, suspected functional decline, or possible need for home care or nursing home placement</td>
<td>With impairments, consider underlying cognitive, neurologic, or musculoskeletal disorders; assistance in adaptive equipment; and physical therapy</td>
</tr>
<tr>
<td></td>
<td>Timing and circumstances surrounding losses</td>
<td></td>
<td>Gait training</td>
</tr>
<tr>
<td>Mobility</td>
<td>Gait—ask about falls and fear of falling; observe transfers, “Get Up and Go” Test</td>
<td>All older adults; those with history of falls or indeterminate “spells”</td>
<td>Exercise, balance training (Tai Chi) Gait aids (cane or walker) Home safety assessment</td>
</tr>
<tr>
<td></td>
<td>Balance—modified Romberg maneuver; Get Up and Go Test</td>
<td></td>
<td>Consider physical consultation Tread underlining on contributory neurologic and musculoskeletal disorders</td>
</tr>
<tr>
<td></td>
<td>Shoulder testing—ask about pain or painful activities, have patient put hands together behind head and behind waist</td>
<td>Test hand function and upper extremity strength Consider x-ray studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hand function—have patient squeeze 2 fingers of examiner with each hand (tests grasp strength); squeeze paper between thumb and index finger while examiner tries to pull it out (tests pinch strength); pick up a penny, spoon, or toothbrush and write a sentence (tests dexterity)</td>
<td>Patients ≥80 yr of age; nursing home residents; hospitalized elders; those with depression, dementia, new living situations, or impairments of ADLs</td>
<td>Physical therapy (ROM, pain-relief modalities, and strengthening) Consider adaptive equipment, injections, or pain medications</td>
</tr>
<tr>
<td>Cognitive function</td>
<td>Mini-Mental Status Examination (MMSE) Clock-drawing ADLs Formal psychometrics</td>
<td></td>
<td>Test upper extremity strength Test underlying or contributory neurologic and musculoskeletal disorders</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Consider x-ray studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Physical therapy (ROM, pain-relief modalities, and strengthening) Assess ADLs</td>
</tr>
<tr>
<td>Vision</td>
<td>Read a new paragraph and sentence; test vision with Snellen or Jaeger acuity chart</td>
<td>All older adults</td>
<td>Perform evaluation for possible reversible causes Modify medications to remove or reduce exacerbating factors Discuss potential legal, financial, and psychosocial implications of the diagnosis</td>
</tr>
<tr>
<td>Hearing</td>
<td>Listen for rubbing fingers or ticking watch; the “whisper test”</td>
<td>All older adults</td>
<td>Refer to ophthalmology Low vision aid Adequate lighting Adaptive equipment Test gait and mobility</td>
</tr>
<tr>
<td>Continence</td>
<td>Ask about incontinence</td>
<td>All older adults (twice as frequent in women)</td>
<td>Request incontinence diary to improve hygiene Formal evaluation of incontinence Kegel exercises, fluid and voiding schedule, biofeedback, pessaries</td>
</tr>
</tbody>
</table>

Table 7. Summary of Practical Functional Assessment in Elderly Patients*
<table>
<thead>
<tr>
<th>Key area</th>
<th>Assessment</th>
<th>Target population</th>
<th>The next step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>Inquire about weight loss and loss of appetite; establish baseline weight to substantiate actual loss</td>
<td>All older adults</td>
<td>Measure weight serially; EMT, abdominal, rectal, neurologic, and CV examinations (in case); Add nutritional supplement (such as instant breakfast); Discontinue or reduce contributing drugs; Advise eating with friends or family to reduce isolation effect; Consider abuse or neglect</td>
</tr>
<tr>
<td>Depression</td>
<td>Ask about depression; Use Yeatman scale (see Appendix H)</td>
<td>Patients with bereavement, psychosocial losses, dementia, recent functional impairments, severe illness, or surgical procedures</td>
<td>DSM-IV criteria; Anticipate depressive symptoms in at-risk elderly patients; Increase awareness; Consider counseling (if cognitively intact or motivation); Consider psychiatric consultation (if diagnosis is difficult); depression is severe, or patient is refractory to therapy; Consider abuse or neglect</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>Ask ADLs, interview, CAGE (see Table 5) or MAST (see Appendix H)</td>
<td>Hospitalized patients, psychiatric inpatients, those with new functional impairments, dementia, delirium, new nursing home admission, or associated clinical clues</td>
<td>Keep a high index of suspicion; Advise complete abstinence; Offer to arrange formal dependency counseling or AA assistance; Add multivitamins with thiamine to dementia, use a substitute for example, non-alcoholic beer; Consider abuse or neglect</td>
</tr>
<tr>
<td>Needs assessment</td>
<td>Review risk factors, assess ADLs, interview family and caregivers, assess caregiver capacity and burden, Zarit Burden Interview (see Appendix IV) or Caregiver Strain Index (see Appendix V)</td>
<td>See Table 6</td>
<td>Arrange for home assistance, adaptive equipment, home meal delivery, home nursing care, adult day care or respite services, home care, or rehabilitative services; Seek social worker input; Simplify medicines; Advise firm plans for future care; Consider abuse or neglect; Discuss advance directives</td>
</tr>
</tbody>
</table>

Table 8. Table 7 Continued

REFERENCES


5. Liem PH, Chernoff R. Geriatric Rehabilitation Unit: a 3-year outcome evaluation. J Gerontol 1986; 41:44-50 FIND at


9. Gallo JJ, Reichel W, Andersen L. Handbook of Geriatric Assessment. Rockville (MD): Aspen Publishers, 1988: (a) 8-9; (b) 5-7, 65; (c) 11-24; (d) 11-12; (e) 103-105 [Context Link]


13. Sloan JP. Protocols in Primary Care Geriatrics. New York: Springer-Verlag, 1991: (a) 25; (b) 156 [Context Link]


18. Applegate WB, Miller ST, Elam JT, Freeman JM, Wood TO, Gettlefinger TC. Impact of cataract surgery with lens implantation on vision and physical function in elderly patients. JAMA 1987; 257:1064-1066 FIND at UTHSCSA | Library Holdings | [Context Link]


20. Tinetti ME, Ginter SF. Identifying mobility dysfunctions in elderly patients: standard neuromuscular examination or
direct assessment? JAMA 1986; 259:1190-1193 [Context Link]


32. Guccione AA. Cited by O'Brien. [Context Link]


35. O'Reilly D, Bernstein RM. Shoulder pain in the elderly [editorial]. BMJ 1990; 301:503-504 FIND at UTHSCSA | Library Holdings | [Context Link]


44. Folstein MF, Folstein SE, McHugh PR. 'Mini-Mental State': a practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res 1975; 12:189-198 [Context Link]


54. Auerbach SH, Ciccone KD, Levin HS, Tranel D. What you can learn from neuropsychologic testing. Patient Care 1994 Jul 15; 28:97-99; 104-106; 108; 110-112; 114; 116 [Context Link]


63. Stults BM. Preventive health care for the elderly. West J Med 1984; 141:832-845 FIND at UTHSCSA | Library Holdings | [Context Link]


67. Isaacs B. The Challenge of Geriatric Medicine. Oxford (England): Oxford University Press, 1992: (a) 212; (b) 224; (c) 225 [Context Link]


72. Swan IR, Browning GG. The whispered voice as a screening test for hearing impairment. J R Coll Gen Pract 1985; 35:197 FIND at UTHSCSA | Library Holdings [Context Link]


76. Resnick NM. Urinary incontinence in older adults. Hosp Pract 1992 Oct; 27:139-142; 147; 150; 157; 160; 164-166; 178; 180-181; 184 [Context Link]


78. Norton PA, MacDonald LD, Sedgwick PM, Stanton SL. Distress and delay associated with urinary incontinence, frequency, and urgency in women. BMJ 1988; 297:1187-1189 [Context Link]


89. Rudman D, Felter AG, Nagrak HS, Jackson DL, Rudman I, Mattson DE. Relation of serum albumin concentration to death rate in nursing home men. JPEN J Parenter Enteral Nutr 1987; 11:360-363 FIND at UTHSCSA| Library Holdings [Context Link]


