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Enough is Enough: when to stop screening in the elderly

“Decisions on screening in older adults must be individualized and this is more important than age-based standardization of care decisions.”

AGING
HEALTH

With the shifting in demographics around the world, physicians will need to implement effective screening interventions in older populations. Useful evidence on the efficacy of screening in older adults and, perhaps as important, information on when to stop screening, is needed to provide rational recommendations to patients and develop appropriate protocols for clinical practice. In this editorial, I will review the current common screening recommendations for older adults and discuss how clinicians can make judgments about the appropriateness of continuing screening tests in their older patients.

National organizations, particularly the US Preventive Services Task Force (USPSTF), the American Academy of Family Physicians, and the American College of Physicians, have published screening recommendations based on careful consideration of the evidence that screening will lead to improved patient outcomes [1]. The USPSTF performs a critical review of the efficacy and effectiveness of screening and subsequently provides their recommendations graded by the strength of the evidence. Several of the USPSTF's recommendations are targeted to older adults and include blood pressure and lipid measurement for cardiovascular disease, vision and hearing screening for sensory disorders, dementia and depression screening for mental health disorders, as well as breast, colorectal and prostate cancer screening. While these organizations have done an excellent job of elucidating when and how to perform screening, less attention has been given to determining when screening should be stopped or not performed, a decision particularly salient for clinicians caring for older adults. And unfortunately, very little evidence is available on which to base decisions for screening tests in older adults, particularly for those over 70 years of age.

A discussion of when to stop screening needs to first delineate the overall principles of health screening. Screening is one of the cornerstones of providing good patient care. Screening allows

clinicians to recognize disease in its early stages, which translates into better outcomes. However, screening does have certain limits that need to be accounted for when recommending a particular test for a patient. These limits relate to the prevalence of a disease, the accuracy of the screening test itself, and the potential benefits of implementing treatment based on these screening results [101].

These limits also apply to discontinuing a screening test. If the prevalence of a particular disease drops below a target threshold as an individual ages, consideration should be given to discontinue screening for that disease. If the benefits of treating a disease in its preclinical state are questioned, stopping a future screening should be considered. Obviously, if a particular test no longer has adequate sensitivity and specificity in older adults, this test should not be performed.

In addition to these factors, other issues need to be considered when deciding to initiate screening (or, conversely, deciding to stop screening): the disease must be serious; providing treatment before symptoms appear is more beneficial than waiting for symptoms to manifest; if there is a high prevalence of preclinical disease; and the consequences of failing to diagnose a disease early are severe. Each of these factors has applicability when determining the need for screening in elderly patients.

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In older adults, decisions to continue screening and when to stop screening have to take into consideration the attributes of this population. Providing care for the growing number of older adults requires that clinicians understand their unique health needs and screen for health

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problems. Older adults make up 12.1% of the US population and have a life expectancy (LE) of 77.5 years [102]. They account for over 106,000 office visits to physicians; the majority of which are to primary care clinicians. Owing to the high proportion of chronic disease and frailty in older adults, the focus of outpatient treatment shifts from ‘curing’ disease to maintaining maximum independence, functioning and quality of life [2]. Maintaining function necessitates that clinicians screen for diseases that lead to disability. Proper screening protocols require screening interventions that lead to disease prevention, decrease mortality, improve patient management and provide modest health gains.

Another factor that has a major impact on screening decisions in older adults is LE [3]. Individuals age at different rates, which leads to considerable variability in survival, even at advanced age. Individuals who are healthier than the average person of their age may experience a benefit from screening that would not be present for the average person that age. Thus, estimated LE has great implications for the success of screening. If an elderly patient is anticipated to die before the benefits of treatment for a condition detected by screening materializes, then the benefit of that screening is limited. Older adults who are screened need to live long enough to receive the desired benefit from screening, that is the condition detected would have resulted in increased morbidity or mortality if not detected and treated early.

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Life expectancy is shortened by a number of medical conditions that occur more commonly in older patients than in younger patients, and that make it unlikely that the patient will live

long enough to experience the benefit of the screening. Late-stage congestive heart failure, advanced dementia and severe functional impairment are a few of the conditions that can shorten life expectancy. Also, the average life expectancy of a nursing home resident is less than 3 years. Thus, screening and prevention in nursing home patients needs to be critically evaluated and in many instances is not warranted. Screening in nursing home patients should be decided on a case-by-case basis.

Furthermore, clinicians must recognize that LE is not solely a function of chronological age. Physiologic age factors in the disease burden that accumulates in older adults over their lifetime. It is this physiologic age that most closely parallels the expected survival for an older adult. Several strategies have been proposed to calculate an estimated LE by converting a chronological age to a physiological age. One method adjusts chronological age by using a patient’s rating of their global health status. Another uses an individual’s disease comorbidities. Both methods provide an adjustment to a patient’s chronological age that can be used to predict LE from actuarial tables. Thus, the concept of physiological age can serve as a useful guide in determining the potential benefit for screening in older adults. Beyond the issue of LE, other considerations are detailed in Table 1.

Competing mortality risks

As mentioned, screening is based on the assumption that early detection and treatment of the targeted disease will improve survival beyond what it would have been had the disease not been detected and treated early. In the best-case scenario, the most that can be expected is to restore the patient to a normal life expectancy in the absence of the disease detected by the screening. A patient who has a serious illness that shortens life expectancy substantially may not survive long enough to experience the

Table 1. Issues in older adults and their influence on screening decisions.	
Issues	Considerations
Shortened life expectancy	Must live long enough for the detected condition to be prevented or treated
Disease comorbidity	Common diseases that can shorten life expectancy: dementia, congestive heart failure, multiple strokes, severe chronic obstructive pulmonary disease, etc.
Cognitive impairment	Unable to tolerate the discomfort of some screening tests
Physical functional impairment	Unable to tolerate discomfort associated with positioning, and unable to perform functions necessary to complete the screening test
Patient preference	Should have access to screening tests if they so desire or to decline tests

Table 2. Recommendations for stopping in selected US Preventive Services Task Force screening recommendations in older adults.

Test	Frequency	Age to consider stopping (if previous screenings are normal; years)	Modifying factors for decision making
Blood pressure	Every 1–2 years	None	If LE is less than 1 year, consider stopping
Lipids	Annually to every 5 years	After age 65	If LE is more than 5 years and treatment is likely to benefit patient, continue screening
Hearing	Annually	None	
Vision	Every 1–2 years	None	
Dementia	Varies	None	Screen if there is a clinical suspicion
Depression	Varies	None	Consider annual screening unless there is a clinical suspicion
Osteoporosis screening	Once?	After age 80	
Colorectal cancer screening	Every 10 years	After age 80	If LE is more than 5 years and patient can tolerate treatment, continue screening
Breast cancer screening	Annually to 33 months	After age 75	If LE more than 5 years and patient can tolerate treatment, continue screening
Cervical cancer screening	Annually	After age 65	If cervix present and sexually active with multiple partner, continue screening
Prostate cancer screening	Every 1–4 years	After age 75	If LE more than 10 years, continue screening
Diabetes	Annually	Varies	Continue screening in patients with hypertension

LE: Life expectancy.

benefit of screening tests. Common comorbid diseases such as congestive heart failure and chronic obstructive pulmonary disease, particularly in their later stages, shorten LE in older adults to such a degree that most screening tests offer no benefit. Furthermore, as individuals age, these competing mortality risks become increasingly common.

Screening burden

Another consideration for determining the use of screening is the burden associated with performing the test. Some screening tests represent a considerable challenge for older adults with functional limitations. For example, DEXA testing may be difficult for older adults with mobility impairments or the inability to lie flat. Patients with dementia may not comprehend the reason for doing a test and be less willing to tolerate the discomfort associated with some screening tests, such as mammography.

Postscreening factors

Another criterion for performing a medical test is whether or not the result of the test will make a difference in the medical management. If a screening test detects a disease for which

management presents an unacceptable burden to the patient, the screening test may not be warranted. For instance, an older patient who is not an acceptable operative risk should not undergo colonoscopy or fecal occult blood testing for colorectal cancer screening. Patient discussions about implementing a screening test should include a discussion of the possible cascade of events that follow these screening decisions.

Patient preferences

An essential part of any decision for screening needs to include a discussion of an individual's preferences. Older patients should have access to screening tests for prognostic information and planning, if that is their wish, even if they do not plan to pursue active treatment of a condition if it is found. Information from screening tests may be important to patients even if they do not plan on changing their medical management on the basis of the test results. Patients may incorporate the test results into their personal planning for their remaining life course. In addition, patients should not be denied access to testing solely on the basis that the test will not change medical management.

Specific recommendations

Accounting for the various factors related to screening, TABLE 2 details considerations for specific screening tests. Most screening tests use a greater than 5-year LE as a guide. Screening variations to this general rule include cervical cancer screening in women who have had successive negative screening in the past before the age of 65 years and cholesterol screening.

Conclusion

Screening decisions in older adults can present several challenges for patients and clinicians. These challenges necessitate individualization of care decisions, reflecting the primacy of individual factors. Decisions on screening in older

adults must be individualized and this is more important than age-based standardization of care decisions. In addition, stopping screening if indicated is appropriate and provides higher quality of care for older adults.

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