Screening for Cancer: When to Stop?

A Practical Guide and Review of the Evidence

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KEYWORDS

• Cancer screening • Elderly • Life expectancy • Breast cancer • Colorectal cancer • Lung cancer • Prostate cancer • Cervical cancer

KEY POINTS

- Decisions about when to stop cancer screening should consider life expectancy, risks and benefits (which vary with age and comorbidity), and individual values.
- A practical method starts by categorizing individuals into general categories of health (eg, below average, average, above average).
- These estimations should be based on easily accessible measures such as gait speed, comorbidity, and functional status. Validated prognostic indices can also be helpful.
- For women of below average, average, and above average health, consider stopping breast and colorectal cancer screening around ages 70, 80, and 85 years; stop a few years earlier in men.

INTRODUCTION

Cancer screening is a cornerstone of preventive health care. For screening to be effective, it must detect cancer in a preclinical phase, before the cancer becomes clinically apparent, during which treatment is more beneficial.[1] In order to achieve a mortality benefit from screening, a person must have sufficient life expectancy and be healthy enough to tolerate the treatments associated with a cancer diagnosis. Although there is reasonable consensus as to the appropriate age to start screening for various cancers, there is considerably less clarity as to when screening is no longer likely to be beneficial. The decision to stop screening should be based on multiple factors, including age, health status, patient preferences, and the risks and benefits associated with screening.

This review examines current cancer screening practices, as well as the risks and benefits of cancer screening, with a focus on health status and older age. It also

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proposes a practical framework to guide discussions on when the harms of screening likely outweigh the benefits.

CURRENT SCREENING PRACTICES

Current cancer screening guidelines (**Table 1**) provide little or conflicting advice on when to discontinue screening. Cervical cancer screening is the exception; there is good consensus that this can be stopped at age 65 years, or after a woman has undergone a total hysterectomy for benign purposes. For other cancers, the guidelines vary, with some providing cutoffs based on either age or life expectancy, or no specific cutoff.

There is good consensus that the benefits of cancer screening are delayed. Effective screening generally detects cancers or precancers years before they would have been lethal. Screening people who would have died of another cause exposes them to the harms of the screening process and subsequent treatment without extending their lives. For breast cancer, benefits of screening seem to be delayed at least 3 to 10 years.[18–20] For cervical[19] and colorectal cancer,[2,20–22] estimates range from at least 4 to 10 years, and for prostate cancer the time period seems to be at least 7 to 10 years.[1,23,24] Lung cancer screening may have a shorter lag time to benefit.[25]

Recent data suggest that a substantial portion of cancer screening is being done in patients who are unlikely to benefit. One cross-sectional population-based study of Papanicolaou (Pap) smears found that that nearly two-thirds of women aged 65 years or older reported recent Pap screening, including 45% of the women in that age group who had previously undergone a hysterectomy.[26] Another study of mammography and Pap smears showed that more than half of women aged 80 years or older in the worst health quartile had undergone recent screening.[27] Screening rates decreased with age but not with worsening health status. A Veterans Affairs study of colorectal cancer screening in veterans aged 70 years or older showed that those with severe comorbidities had a screening rate of 41%, despite a 5-year mortality of 55%.[28] This finding compared with a screening rate of 47% in veterans with no comorbidity, whose 5-year mortality was just 19%. Screening rates for colorectal cancer decreased with age but varied little with worsening health status. In addition, a cross-sectional study of prostate-specific antigen (PSA) screening found that more than 30% of older men with life expectancies of 5 years or less had recent PSA screening.[29]

Why so much screening? One public survey found that 87% of respondents thought that routine cancer screening is almost always a good idea and that 30% to 40% thought it would be irresponsible for an 80-year-old to decline cancer screening.[30] An interview study of older adults being seen at a senior health center reflected this view that undergoing screening was morally obligatory.[31] Physician interviews suggest that discussions about stopping screening can be uncomfortable and time consuming and it would useful to have more data to guide these discussions.[32]

EVIDENCE FOR CANCER SCREENING IN THE ELDERLY

Colorectal Cancer Screening

Randomized controlled trials (RCTs) of fecal occult blood testing have included more than 40,000 people aged 70 to 80 years. Colorectal cancer mortality is reduced by 15% to 20%, and this effect is independent of age.[19] Among RCTs of flexible sigmoidoscopy,[33–36] only 1 has included adults older than age 64 years. More than 50,000 participants aged 65 to 74 years had a 35% reduction in colorectal cancer mortality (vs 16% in younger adults).[36] The remaining evidence for lower endoscopy in older