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A Personalized Exit Algorithm for Surveillance Colonoscopy in Older Adults

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Perspective

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Abstract

Background: Current colorectal cancer (CRC) screening and surveillance guidelines recommend individualized decisions for adults aged ≥75 years but provide limited practical guidance on when colonoscopy should be discontinued. As life expectancy decreases and frailty increases, the balance between procedural benefit and harm becomes increasingly uncertain.

Methods: We reviewed contemporary evidence on the diagnostic yield, complications, and clinical utility of screening and surveillance colonoscopy in older adults, including recent studies evaluating colorectal cancer outcomes, life expectancy, frailty, and colonoscopy-related adverse events. Existing international guidelines were compared, and validated prognostic tools were examined.

Results: Although the prevalence of advanced neoplasia increases with age, colorectal cancer detection remains low, while competing non-CRC mortality and colonoscopy-related adverse events increase substantially in adults aged ≥75 years. Current guidelines consistently recommend patient choice, life expectancy, but none provide a practical decision framework. We propose a Personalized Surveillance Exit Algorithm integrating the Schonberg Index (10-year mortality prediction) and the Clinical Frailty Scale to support individualized decisions regarding continuation or cessation of screening and surveillance colonoscopy.

Conclusions: Chronological age alone is an inadequate determinant of colonoscopy benefit in older adults. Incorporating life expectancy and frailty into shared decision-making may better identify patients unlikely to benefit from continued surveillance while minimizing procedure-related harm. Prospective validation of this proposed framework is warranted.

Abbreviations: BSG: British Society of Gastroenterology; ACPGBI: Association of Coloproctology of Great Britain and Ireland; PHE: Public Health England; ESGE: European Society of Gastrointestinal Endoscopy; FIT: fecal immunochemical test; HGD: high-grade dysplasia; LGD: low-grade dysplasia; TV: tubulovillous; USPSTF: U.S. Preventative Service Task Force on Colorectal Cancer

Introduction

Colonoscopy is a limited resource, and in recent years the age threshold to offer screening colonoscopy has been reduced from 50 to 45 years due to shifting trends of colorectal cancer (CRC) to younger years. Health campaigns, patient awareness, provider education and availability

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of alternative CRC screening tools including stool-based tests (e.g. fecal immunochemical test, Cologard™, Cologard Plus™, or Colosense™) and blood-based tests (e.g. Shield™, ColoHealth™) have helped improve community screening CRC uptake from 55-54% in 2010-2015 to 65% in 2023-2025 in the US. Given limited endoscopic capacity, expansion of CRC screening including colonoscopy creates a perfect dilemma of resource allocation, competing risk, procedural burden and its implementation across diverse health care units.

Conversely, surveillance for CRC in the aging population presents a unique clinical paradox: while the incidence of advanced neoplasia increases with age, the clinical benefit of colonoscopy surveillance diminishes due to competing risks of mortality and an estimated 10-year lead time for malignant progression. As the global population over age 65 is projected to nearly double by 2050, the gastroenterology community faces an urgent need for an "exit strategy" from asymptomatic surveillance. Having a framework and decision tool that helps shared decision making and a personalised exit strategy from continuing surveillance colonoscopies where benefit is unlikely, may allow resources to be allocated to individuals where benefit is greater while minimizing harms of screening continuation.

Current guidelines from the U.S. Preventive Services Task Force (USPSTF)2 and the American Cancer Society recommend selective screening between ages 76- 85 years based on patient preferences, life expectancy, overall health and prior screening history, yet clinical practice often defaults to continued screening and surveillance regardless of a patient's age. Recent data suggests that for octogenarians, the absolute risk reduction in CRC mortality is marginal, while the rate of serious adverse events related to colonoscopy—including perforation, gastrointestinal bleeding, and cardiovascular stressors—is significantly higher compared to younger cohorts. The guidelines conclude that screening and surveillance for CRC in age 76-85 years should be an individual decision, and ideally this decision would include a risk-benefit analysis incorporating future incidence of CRC and procedure-related risks. The European Society of Gastrointestinal Endoscopy (ESGE) and the British Society of Gastroenterology/Association of Coloproctology of Great Britain and Ireland (BSG/ACPGBI) guidelines also show divergence in recommendation in clinical practice between the USPSTF and differ meaningfully in how they stratify risk and define surveillance intervals, but all guidelines converge on the recommendation that surveillance should stop in older patients with limited life expectancy Table 1 summarizes and compares these guidelines [1].

With advancing age, older individuals often develop multiple comorbid conditions, leading to increasing frailty, frequent healthcare utilisation, hospitalisations, and polypharmacy. Whilst most guidelines for cancer preventative care and screening are well documented in aged <75 years, there is no robust data to confirm outcome benefit with ongoing screening and surveillance in aged 75+ years. There is time lag to benefit in breast and colorectal cancer such that screening and surveillance for both these cancers are most appropriate in individuals with a life expectancy of more than 10 years. Currently, few data are available on the initiation or continuation of CRC screening or ongoing surveillance in older individuals. In a recent study by Gupta et al at 10 years follow up, the cumulative incidence of CRC was higher in patients with adenoma than those without adenoma (1.1% vs 0.7%; Grays test P<0.001) as was CRC specific mortality (0.5% vs 0.4%; Grays test P=0.005) [2]. These numbers were modest when compared with risk of death unrelated to CRC, which remained 46-48% at 10 years regardless of frailty amongst individuals with prior adenoma. Simply put in other words, older patients are exposed to immediate higher risk of adverse events from colonoscopy, with little chance that they would live long enough to benefit from it.

Whilst most guidelines hinge towards individual decision making for elderly CRC surveillance, the guidelines fall short on recommending a framework that individuals can use to assess their risk and life expectancy, and most frequently clinician input is needed to assist in decision making. However, clinicians themselves may not have experience in estimating prognosis and life expectancy for these shared decision-making conversations, and an evidence-based framework is needed to support these discussions.

This review examines the latest evidence on the yield and risks of surveillance colonoscopy in older adults and advocates for a transition from chronological age-based cutoffs to a personalized approach to help individual decision making. We propose a framework integrating the Schonberg Index25 for life expectancy and the Clinical Frailty Scale (CFS)19 for procedural risk to help clinicians identify the "tipping point" where the harms of the procedure outweigh the potential for life-years gained. This would help informed decision making, personalised to individual patients.

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Guideline	Year	Low-risk adenoma (1–2 tubular <10mm, LGD)	Intermediate-risk (3–4 tubular <10mm or TV histology)	High-risk adenoma (≥10mm, HGD, ≥5 adenomas)	Cessation recommendation	Alternative after cessation
USPSTF 2020	2020	7–10 years	3–5 years	3 years	No firm age cut-off; individualize for patients unlikely to benefit. Life expectancy <10 years generally favors cessation.	Patient preference, clinical judgement
ESGE 2020	2020	Return to routine CRC screening (FIT); no dedicated colonoscopy surveillance	Return to routine screening; colonoscopy only if prior inadequate examination	3 years (≥1 adenoma ≥10mm, HGD, or ≥5 adenomas of any size)	Stop at age 80, or earlier if life expectancy significantly limited by comorbidities.	clinical judgement, not enough evidence
BSG/ ACPGBI/ PHE 2020	2020	Return to routine bowel screening; no dedicated surveillance	5-year surveillance if patient is >10 years younger than national lower screening age limit	3 years (≥2 premalignant polyps with ≥1 ≥10mm or HGD)	Stop routine surveillance in patients >75 years or life expectancy <10 years.	Return to FIT-based bowel screening program if eligible, clinical judgement
Key difference		USPSTF recommends 7–10-year colonoscopy; ESGE and BSG recommend no dedicated surveillance — return to FIT instead	USPSTF recommends 3–5-year colonoscopy; ESGE/BSG recommend return to FIT or extended interval	All three guidelines agree: 3-year colonoscopy surveillance for high-risk adenoma findings	ESGE: stop at 80. BSG: stop at 75 or <10-yr life expectancy. USPSTF: individualize without firm threshold.	

Table 1: Comparison of Major Post-Polypectomy Surveillance Guidelines (2020 Updates).

Comparison of Colonic Polyp Prevalence and Colonoscopy Complications by Decadal Cohort

We reviewed studies that reflect colonoscopy outcomes and neoplasia yield over various age range in individuals aged 75 + years. There are few studies that address this issue. A large community-based study with 9740 surveillance colonoscopies in patients aged 70-85 years with prior advanced neoplasia (defined as conventional adenoma 10 mm or above, with or without high grade dysplasia, villous or tubulovillous or sessile serrated lesion of any size), identified a yield of 11.7% for advanced neoplasia and 0.3% for colorectal adenocarcinoma. These did not increase on subset analysis amongst those aged 70-74, 75-79 and 80-85 years. Williams et al reviewed 588 studies (569 full text review and 19 abstracts) and included 19 in their systematic review, finding that colonoscopy yield in older individuals with prior colonic polyps showed detection of CRC and advanced polyps during surveillance colonoscopy was greater in older individuals than in younger controls; however, the absolute risk increase for both was small [3].

A study with 698 surveillance colonoscopies in an asymptomatic 75-91 years age group with prior adenomas, showed an incidence of CRC 1.6% and advanced adenoma of 37.9%. A history of prior CRC and smoking as independent association for CRC diagnosis, and prior advanced adenoma and polypharmacy were associated with finding advanced adenomas. Thus, more than one third of patients with prior history of adenoma were found to have advanced adenoma on surveillance.

The interpretation of data for colonoscopy yield showed increased advanced adenoma and CRC especially in patients with prior CRC or adenoma, but pooling data has limitations as various studies used different age-categories and definitions of neoplasia.

The evidence on colonoscopy risks in elderly patients is mostly from meta-analysis, retrospective studies and

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administrative databases. A retrospective study of patients by Cha et al. found patients aged 90 years or more have increased risk of incomplete procedure, inadequate bowel preparation and adverse events although there were a higher proportion of patients found to have advanced neoplasia or cancer.

A meta-analysis from Lu et al showed although adverse events (AE) related to screening colonoscopies in elderly patients are uncommon, there were increased prevalence of perforation (65-80 years vs >80 years; 0.015% vs. 0.004%) and bleeding (0.071% vs. 0.005%), which were significantly higher in therapeutic colonoscopies (endoscopic mucosal resection, endoscopic mucosal dissection) compared to non-therapeutic colonoscopies [4]. In the "65–80 years" group, the pooled rate of perforation was estimated at 6.7 per 10 000 colonoscopies and among the " > 80 years" group, the pooled rate for perforation was significantly higher at 23.8 per 10 000 colonoscopies. This meta-analysis also confirmed higher prevalence of cardiopulmonary AEs in the elderly population, although the definition used varied across different studies.

El Halabi in a cross-sectional study of screening colonoscopy outcomes in 7067 patients 75 years and older with an estimated life expectancy of <10 years according to the co-morbidity adjusted life expectancy tool, reported a CRC yield of 0.2% [5]. The cumulative risk of adverse events within 10 days of colonoscopy was 13.58 per 1000 colonoscopies where adverse events were defined as unexpected hospitalisation, intensive care unit admission, gastrointestinal bleeding or surgery and death. Severe events (defined as hospitalization of ≥10 days, ICU admission or surgery) increased with age and were highest in patients aged 85 or more. The most common adverse events were gastrointestinal bleeding and arrhythmias. At 10 days, the rate of perforations was 0.52 for patients aged 76 to 80 years (95% CI, 0.18-1.52), 1.95 for patients aged 81 to 85 years (95% CI, 0.53-7.11), and 3.69 (95% CI, 0.65-20.06) for patients older than 85 years per 1000 patients. Adverse event rates at 30 days were slightly higher although no deaths were reported at 30 days following screening colonoscopy.

Another cohort study showed an increased short-term risk of death or hospitalization at ages 76 to 85 years undergoing screening colonoscopy, although the increased risk was attributable primarily to subsequent colorectal procedures rather than the colonoscopy itself. To our knowledge, there are no studies to document life expectancy after CRC screening in the general U.S. population. In a study by Lin estimating gain in life expectancy after screening colonoscopy, calculated as life expectancy − (life expectancy during polyp lag time + life expectancy after colorectal cancer diagnosis), adults aged 80 years or older had a mean extension of life expectancy of only 0.13 years, compared with 0.85 years for the 50- to 54-year-old group, a 6.5-fold difference [6,7]. Thus, even though adenoma detection at surveillance colonoscopy is more common in 75 years and older, surveillance is likely associated with minimal gains in life expectancy.

In general, evidence suggests higher yield of advanced neoplasia with increasing age. Detection of CRC in age 70-75 years was not statistically different from > 85 years in low-risk community-based cohort data (0.3% vs 0.2% respectively) [8-11]. However, serious adverse events increased with age in all studies. Thus, comparative metrics across age cohorts suggests increased procedural risk but diminishing marginal benefit with advancing age due to competing adverse events related to procedure and non-CRC related mortality. The benefits of detecting neoplasia are negated by competing non-CRC mortality risks and procedure complications in adults age 75 or greater.

Quantifying Colonoscopy Risk

Quantifying risk to an individual patient from a procedure is a complex process, and most available data comes from the surgical literature. Frailty is the most powerful predictor of major post-operative complications and mortality. There are now various tools and scoring systems that have been validated for frailty assessment. These include Risk Analysis Index, Clinical Frailty Scale (CFS), Modified Frailty Index-11 (mFI-11), and FRAIL scale24. Studies have shown CFS as one of the most predictive scoring systems with a CFS score ≥5 predictive of increased adverse events, increased hospital stay, complications and mortality after surgical procedures.

The CFS is the most widely used tool in UK and Canadian practice and has been explicitly referenced in gastroenterology position papers on endoscopy in older adults. While life expectancy calculators predict 10-year mortality, the CFS assesses the vulnerability of the patient to adverse health events for the procedure itself. Since its first introduction in 2005, it has been modified twice with last updated in 2020 of its 9-point predictive validity. A CFS score of 5 indicates mild frailty, while scores of 6 and above indicate moderate to severe frailty. While the relationship between frailty and endoscopic complications has not been extensively studied, it is reasonable to hypothesize that frailty is a risk factor for complications with colonoscopy. It is important to note that frailty is used as a risk signal, not a judgment: frailty assessment identifies increased procedural vulnerability.

Life expectancy calculators are also available as tools to analyse, understand mortality and predict individualised life expectancy. Two scoring systems that have been validated

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and available are the Lee Risk Point score25, a 12-point item index for use in community dwelling adults age 50 and over that predicts 4 year and 10 year mortality and cardiac risk25, and the Schonberg Index, an 11 point item index predicting mortality for 5, 10 and 14 years in community dwelling older individuals of 65 years and older [7,8]. These tools are validated for clinical decision making and can be used in estimating life expectancy to assess the potential benefits of preventive screening interventions.

Amongst these scoring systems, Schonberg Index has been validated for use and simplified for a 10-year mortality threshold in ages 65+ years (Table 2). This index allocates points for demographics, co-morbidities and functional status to predict life expectancy. A total score of 11+ for men and 14+ for women correlates to a >50% mortality risk at 10 years. Schonberg Index is validated for adults 65+ years and hence relevant for inclusion as a preferred prognosis index.

Category	Factor	Points
Demographics	Age 80–84 (vs. 65)	+5
	Male Gender	+2
Comorbidities	History of Malignancy (Non-skin)	+2
	Chronic Lung Disease (COPD/Oxygen)	+2
	Congestive Heart Failure	+2
	Diabetes Mellitus	+1
Functional Status	Difficulty walking 1/2 mile	+2
	Difficulty pushing/pulling heavy objects	+1
	Difficulty managing finances (Cognitive)	+2

Score: 14+ women and 11+ men >50 % mortality at 10 years.
Table 2: Schonberg Index.

Proposed Framework

We propose a framework to integrate the Schonberg Index of life expectancy and CFS for frailty, generating a two-dimensional safety net, an algorithm that clinicians can follow to provide evidence-based rationale for continuation or cessation of CRC surveillance in asymptomatic adults (Figure 1, Table 3). In this proposed framework, a clinician can weigh competing procedural risk to potential benefit in patients with prior high-quality screening colonoscopy at 75 years.

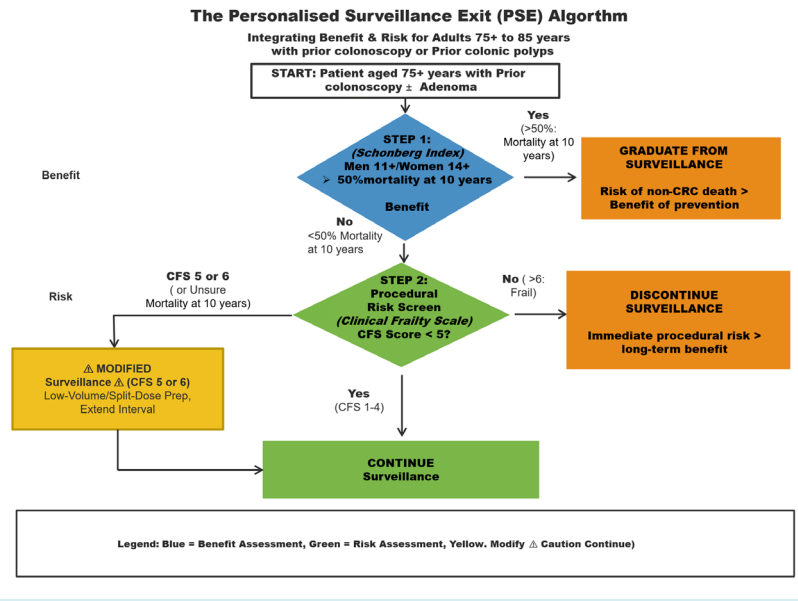


Figure 1: The personalised surveillance exit Algorithm.

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In this framework, for asymptomatic adults age 75+ years without high-risk features (as mentioned below) and high predicted 10-year mortality (Schonberg-Positive 11+ for men/14+ for women, >50% 10-year mortality), ongoing surveillance lacks 'utility' as the individual is unlikely to live long enough to have the benefits of reduced CRC incidence and mortality. If a patient is CFS-High (CFS= 5 or more, at least mild frailty), the procedure lacks 'safety', and the individual is at higher risk of adverse events related to the surveillance procedures, increasing morbidity. For a patient with a CFS score of 5-6 (mild-moderate frailty), the 3-year mortality risk from non-GI causes often exceeds the 10-year risk of that polyp progressing to an adenocarcinoma. The "benefit" of preventing a future cancer is negated if the patient is unlikely to survive the intervening years due to non-CRC death, while procedural burden in the frail elderly, the morbidity of the bowel preparation, incomplete procedure and cardiopulmonary events are often more dangerous than the procedure itself as it exposes individual to immediate risk. There is risk of dehydration, orthostatic hypotension, and electrolyte shifts (hyponatremia/hypokalemia) that can trigger falls or delirium. These could be further compounded when patients receive opioids (fentanyl), midazolam or propofol for procedure sedation. Frail patients have co-morbidities where sedation can lead to prolonged cognitive impairment or aspiration pneumonia.

Only when a patient has estimated mortality <50% at 10 years and low or moderate levels of frailty should ongoing surveillance be considered standard of care in individuals aged 75 years or more. This framework is a hypothesis, and a cutoff of >50% mortality at 10 years would need further studies for acceptability to both patients and physicians and validation by further studies.

This framework would presume that the individual is asymptomatic and does not have high risk features (e.g. high-grade dysplasia in previous polyp), various genetic syndromes (e.g. polyposis, Lynch syndrome), family history of colorectal cancer, inflammatory bowel disease or other high-risk conditions (e.g. primary sclerosing cholangitis). It would also exclude symptomatic patients who would otherwise need the procedure for diagnostic purposes (e.g. patients with hematochezia or iron deficiency anemia). This framework also does not dissolve the risk vs benefit discussion with the patient.

It is important to note that the proposed algorithm assumes patient had high-quality screening colonoscopy and the algorithm is exploratory and would benefit from future validation.

<table>
<tr><th>Predicted mortality <50% at 10 years</th><th>Clinical Frailty Score 1-4</th><th>Clinical Frailty Score 5</th><th>Clinical Frailty Score 6</th><th>Clinical Frailty Score 7-8</th><th>Clinical Frailty Score 9</th></tr>
<tr><td>Reduction in CRC incidence and mortality with screening or surveillance colonoscopy</td><td>Possible</td><td>Potential</td><td>Potential</td><td>Unlikely</td><td>None</td></tr>
<tr><td>Risk of colonoscopy-related adverse events or mortality</td><td>Very low risk of serious adverse events</td><td>Increasing risk of serious adverse events</td><td>Higher risk of serious adverse events</td><td>High risk of serious adverse events</td><td>Very high risk of serious adverse events</td></tr>
<tr><td rowspan="3">Actions</td><td rowspan="3">• Continue CRC screening and surveillance</td><td>• Shared decision making about continuation of screening and surveillance</td><td>• Shared decision making</td><td>• Discontinue screening and surveillance colonoscopy</td><td rowspan="3">• Discontinue screening and surveillance colonoscopy</td></tr>
<tr><td>• Use caution with prep – consider modified prep</td><td>• Consider discontinuing screening and surveillance colonoscopy or transition to diagnostic colonoscopy only</td><td>• Diagnostic colonoscopy only</td></tr>
<tr><td></td><td>• Use caution with prep – consider modified prep</td><td></td></tr>
</table>

Table 3: Risks and implications for surveillance colonoscopy for individuals age 75+ with predicted mortality <50% at 10 years.

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Patient-specific Factors for Screening and Surveillance Cessation Decisions

Use of this algorithm depends on adequacy of prior screening and surveillance, and patients with inadequate or absent prior screening may have different considerations. In addition, the reassurance provided by a prior colonoscopy with no or only low-risk findings is contingent on the quality of the examination. The quality of colonoscopy metrics should include withdrawal time of ≥ 8 mins. Organisations and/or procedure suites should measure adenoma detection rate for endoscopist as part of quality assurance. Colonoscopies with poor bowel preparation, incomplete caecal intubation, or withdrawal time below the recommended 8-minute threshold provide less reliable reassurance. When prior examinations were technically suboptimal, the accumulated 'negative surveillance history' may overestimate true CRC risk reduction, and this should factor into cessation decisions [9]. In addition, the decision to stop surveillance should take into account the cumulative adenoma history across all prior colonoscopies, not only the most recent examination. A patient with a single high-risk adenoma 10 years ago whose subsequent surveillance colonoscopies have been negative is in a functionally different risk position from a patient who had advanced adenomas at their most recent examination. Sustained negative surveillance history reduces near-term metachronous adenoma risk and strengthens the case for cessation.

Patient preferences are a legitimate and guideline-endorsed component of the cessation decision and should be elicited explicitly. Many older patients have been in surveillance programs for years and perceive continued colonoscopy as essential to their cancer safety net; abrupt cessation without explanation may provoke anxiety. Others, particularly those who have found preparation burdensome, may welcome the opportunity to stop. Shared decision-making tools that frame cessation as individualized appropriate care rather than withdrawal of surveillance are essential to this conversation.

The Clinical Conflict of High-Risk Lesions in Frail Patients

Decisions to discontinue surveillance in patients age 75+years with a history of only low-risk adenomas are more straightforward, as the risk of CRC is quite low in these patients. We acknowledge that a significant challenge arises when a patient has a history of advanced adenomas (e.g., a previously resected 2cm sessile polyp) but has since progressed to a state of physical frailty (CFS 5 or more) and/or limited life expectancy. In these scenarios, the clinician must balance standard surveillance approach without much clarity from guidelines. The recent paper by Gupta et al.8 suggests that adults 75 years of age or older with adenoma at prior colonoscopy are more likely to experience subsequent CRC and CRC death compared with those without adenoma, with higher risk for patients with a history of advanced neoplasia compared to non-advanced neoplasia [2, 12-18]. Nevertheless, in all subgroups, the cumulative risks of CRC were low and far exceeded by competing risks for non-CRC death. Further studies to guide decision making in adults with different polyp biology are needed to refine this framework.

When surveillance colonoscopy is technically indicated by prior findings but contra-indicated by frailty, there are a few options that can be discussed with individuals. These could include 'watchful waiting', electing diagnostic colonoscopy to when the patient becomes symptomatic (e.g., iron deficiency anemia, weight loss or hematochezia). This shifts the goal from 'screening/surveillance' to 'palliative diagnostics' [19,20].

The "Graduation" Approach

Clinicians should frame the cessation of surveillance as a success of prior colonoscopy rather than a withdrawal of care. This creates positive reinforcement rather than an impression of withdrawal of services to favour young people [21-26]. To put in a decision aid using an algorithmic approach such as the one proposed here, for example, an individual could be 85 years with life expectancy of less than 10 years and fairly robust and would not benefit from ongoing screening or surveillance but would be at increased risk of harm. Thus, frailty assessment identifies increased procedural vulnerability, is not a comment on the patient's worth or capability and is not the same as life expectancy.

Shared decision-making conversations should include affirmation of prior screening and surveillance, that patient's compliance with screening and surveillance has contributed to their cancer safety, an explanation that the adenoma-carcinoma sequence progresses over 10 years; and decreasing benefit of continued screening and surveillance as life expectancy decreases. In addition, these conversations should include reassurance that the diagnostic colonoscopy is still available should the patient experience concerning symptoms or signs regardless of the surveillance cessation decision [27-29].

Conclusion

The decision to discontinue surveillance colonoscopy should not be viewed as a withdrawal of care, but as a transition to high-value, patient-centred medicine. Recent longitudinal studies, underscore that biological frailty, rather than birth year, is the most potent predictor of both surgical complications and limited long-term survival. We hypothesize that this concept should also apply to

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surveillance colonoscopy and thus predicted mortality and frailty can be used together to frame decisions about continuing these procedures.

Future directions in geriatric gastroenterology must prioritize the "graduation" of asymptomatic low-risk individuals from CRC surveillance, using validated tools to facilitate shared decision-making. By shifting the focus from "finding polyps" to "preserving quality of life," we can protect vulnerable patients from unnecessary interventions and harm while focusing resources on those most likely to benefit.

The use of 50% mortality risk at 10 years is empiric, and further studies are required to validate the proposed framework. Further studies are also needed to establish if frailty is a cause for increased complications seen in older years and to validate the benefit of surveillance related to predicted 10-year mortality risk. More data is needed to confirm incidence of adverse events related to endoscopic procedures in various age groups. Nevertheless, we propose a framework to help patients and clinical care providers engage in informed decision-making regarding continuing colonoscopy screening and surveillance.

Key Points

1. Post polypectomy colonoscopy surveillance guidelines vary across the USPSTF, ESGE, and BSG. Recommendation on stopping routine surveillance at age 75–80 or when life expectancy falls below 10 years seems to be common, but the approach to the individualized decision is underspecified.
2. Colonoscopy complication rates — particularly perforation and cardiovascular/pulmonary events — rise significantly in patients over 80 years.
3. Frailty, more than age alone, predicts adverse colonoscopy outcomes and should be incorporated into pre-procedure risk stratification.
4. A decision framework or Personalised Surveillance Exit Algorithm, integrating prior adenoma risk, frailty status, and estimated life expectancy can support shared-decisions making for cessation of surveillance colonoscopy.

References

1. Rutter MD, East J, Rees CJ, Cripps N, Docherty J, et al. (2020) British Society of Gastroenterology/Association of Coloproctology of Great Britain and Ireland/Public Health England post-polypectomy and post-colorectal cancer resection surveillance guidelines. Gut 69(2): 201–223.
2. Gupta S, Liu L, Demb J, Qin J, Earles A, et al. (2026) Colorectal Cancer and Mortality Risk Among Older Adults With vs Without Adenoma on Prior Colonoscopy. JAMA 335(17): 1499-1506.
3. Williams GJ, Hellerstedt ST, Scudder PN, Calderwood AH (2022) Yield of surveillance colonoscopy in older adults with a history of polyps: a systematic review and meta-analysis. Dig Dis Sci 67(8): 4059-4069.
4. Lu Q, Lv X-H, Tang L, Yan H-L, Xia B-H, et al. (2025) Prevalence of colonoscopy-related adverse events in older adults aged over 65 years: a systematic review and meta-analysis. Int J Surg 111(4): 3051-3060.
5. El Halabi J, Burke CA, Hariri E, Rizk M, Macaron C, et al. (2023) Frequency of Use and Outcomes of Colonoscopy in Individuals Older Than 75 Years. JAMA Intern Med 183(6): 513-519.
6. Lin OS, Kozarek RA, Schembre DB, Ayub K, Gluck M, et al. (2006) Screening Colonoscopy in Very Elderly Patients: Prevalence of Neoplasia and Estimated Impact on Life Expectancy. JAMA 295(20): 2357–2365.
7. Lee SJ, Boscardin WJ, Stijacic-Cenzer I, Conell-Price J, O'Brien S, et al. (2013) Time lag to benefit after screening for breast and colorectal cancer: meta-analysis of survival data from the United States, Sweden, United Kingdom, and Denmark. BMJ 346: e8441.
8. Rex DK, Anderson JC, Butterly LF, Day LW, Dominitz JA, et al. (2024) Quality Indicators for Colonoscopy. American Journal of Gastroenterology 119(9): 1754–1780.
9. Barclay RL, Vicari JJ, Doughty AS, Johanson JF, Greenlaw RL (2006) Colonoscopic withdrawal times and adenoma detection during screening colonoscopy. N Engl J Med 355(24): 2533–2541.
10. Greene M, Gohil S, Stieber B, Ozbay AB, Le AQ, et al. (2025) Current Medical Research and Opinion 41(9): 1619–1628.
11. US Preventive Services Task Force, Karina W Davidson, Michael J Barry, Carol M Mangione, Michael Cabana, et al. (2021) Screening for Colorectal Cancer: US Preventive Services Task Force (USPSTF): Recommendation Statement. JAMA 325(19): 1965-1977.
12. Lin JS, Perdue LA, Henrikson NB, Bean SI, Blasi PR (2021) Screening for Colorectal Cancer: An Evidence Update for the US Preventive Services Task Force. AHRQ publication 20-05271-EF-1.
13. Lin JS, Perdue LA, Henrikson NB, Bean SI, Blasi PR (2021) Screening for colorectal cancer: updated evidence report

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and systematic review for the US Preventive Services Task Force. JAMA 325(19): 1978-1998.

14. Hassan C, Antonelli G, Dumonceau J-M, Regula J, Bretthauer M, et al. (2020) Post-polypectomy colonoscopy surveillance: European Society of Gastrointestinal Endoscopy (ESGE) Guideline-Update 2020. Endoscopy 52(8): 1-14.

15. Lee JK, Roy A, Jensen CD, Chan JT, Zhaoet WK, et al. (2024) Surveillance Colonoscopy Findings in Older Adults with a history of Colorectal Adenomas. JAMA Netw Open 7(4): e244611.

16. Agaciak M, Wassie MM, Simpson K, Cock C, Bampton P, et al. (2024) Surveillance colonoscopy findings in asymptomatic participants over 75 years of age. JGH Open 8(5): e13071.

17. Cha J, Kozarek R, La Selva D, Gluck M, Ross A, et al. (2016) Risks and Benefits of Colonoscopy in Patients 90 Years or Older, Compared With Younger Patients. Clinical Gastroenterology & Hepatology 14(1): 80-86e1.

18. Cho H, Klabunde CN, Yabroff KR, Wang Z, Meekins A, et al. (2013) Comorbidity-adjusted life expectancy: a new tool to inform recommendations for optimal screening strategies. Ann Intern Med 159(10): 667-676.

19. Chubak J, Ichikawa LE, Merchant SA, Dalmat RR, Ziebell RA, et al. (2025) Incidence of Serious Complications following Screening Colonoscopy in Adults Ages 76 to 85 Years. Cancer Epidemiol Biomarkers Prev 34(2): 281-289.

20. Zhang F, Yan Y, Li B, Ge C (2025) Frailty as a predictor of postoperative outcomes in older gastroesophageal cancer patients: a systematic review and meta-analysis. BMC Geriatr 26(1): 170.

21. Rockwood K, Song X, MacKnight C, Bergman H, Hogan DB, et al. (2005) A global clinical measure of fitness and frailty in elderly people. CMAJ 173(5): 489-495.

22. Xu Z, Hu Y, Yuan L, Chen G, Jiang S, et al. (2025) Modified Frailty Index-11-A New Predictor of Postoperative Complications in the Aging Thoracic Spinal Stenosis Patients. Orthop Surg 17(9): 2588-2595.

23. Taleban S, Toosizadeh N, Junna S, Golden T, Ghazala S, et al. (2018) Frailty Assessment Predicts Acute Outcomes in Patients Undergoing Screening Colonoscopy. Dig Dis Sci 63(12): 3272-3280.

24. Saetang M, Kunapaisal T, Chatmongkolchart S, Yongsata D, Sukitpaneenit K (2025) Assessing frailty to predict surgical risk: a comparative study of three tools in older non-cardiac surgery patients. BMC Geriatr 25(1): 941.

25. Machlab S, Francia E, Mascort J, García-Iglesias P, Mendive JM, et al. (2024) Risks, indications and technical aspects of colonoscopy in elderly or frail patients. Position paper of the Societat Catalana de Digestologia, the Societat Catalana de Geriatria i Gerontologia and the Societat Catalana de Medicina de Familia i Comunitaria. Gastroenterol Hepatol 47(1): 107-117.

26. Rockwood K, Song X, MacKnight C, Bergman H, Hogan DB, et al. (2005) A global clinical measure of fitness and frailty in elderly people. CMAJ 173(5): 489-495.

27. Schonberg MA, Davis RB, McCarthy EP, Marcantonio ER (2011) External validation of an index to predict up to 9-year mortality of community-dwelling adults aged 65 and older. J Am Geriatr Soc 59(8): 1444-1451.

28. Howard R, Machado-Aranda D (2018) Frailty as a Predictor of Colonoscopic Procedural Risk: Robust Associations from Fragile Patients. Dig Dis Sci 63(12): 3159-3160.

29. Niemeläinen S, Hyöty M, Ehrlich A, Jämsen E, Koskensalo S, et al. (2025) Clinical Frailty Scale predicts overall survival after colon cancer surgery in people aged 80 years and older: A prospective multicentre observational study. Colorectal Dis 27(8): e70190.

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