

# Community-based Preferences for Stool Cards versus Colonoscopy in Colorectal Cancer Screening

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**BACKGROUND:** In the United States, compliance with colorectal cancer (CRC) screening recommendations remains suboptimal. Professional organizations advocate use of shared decision making in screening test discussions, but strategies to facilitate informed choice in CRC screening have not been well elucidated.

**OBJECTIVE:** The objectives of the study were to determine screening test preference among colonoscopy-naïve adults after considering a detailed, written presentation of fecal occult blood testing (FOBT) and colonoscopy and to assess whether their preferences are associated with demographic characteristics, attitudes, and knowledge.

**DESIGN:** The design of the study was a cross-sectional survey.

**PARTICIPANTS:** Colonoscopy-naïve supermarket shoppers age 40–79 in low- and middle-income, multiethnic neighborhoods in Denver, CO, reviewed a detailed, side-by-side description of FOBT and colonoscopy and answered questions about test preference, strength of preference, influence of physician recommendation, basic knowledge of CRC, and demographic characteristics.

**MEASUREMENTS AND MAIN RESULTS:** Descriptive statistics characterized the sample, and bivariate and multivariable logistic regression analyses identified correlates of screening test preference. In a diverse sample of 323 colonoscopy-naïve adults, 53% preferred FOBT, and 47% preferred colonoscopy for CRC screening. Individuals of Latino ethnicity and those with lower educational attainment were more likely to prefer FOBT than non-Latino whites and those with at least some college. Almost half of the respondents felt “very strongly” about their preferences, and one third said they would adhere to their choice regardless of physician recommendation.

**CONCLUSION:** After considering a detailed, side-by-side comparison of the FOBT and colonoscopy, a large proportion of community-dwelling, colonoscopy-naïve adults prefer FOBT over colonoscopy for CRC screening.

In light of professional guidelines and time-limited primary care visits, it is important to develop improved ways of facilitating informed patient decision making for CRC screening.

**KEY WORDS:** colorectal cancer screening; colonoscopy; fecal occult blood testing; patient preferences; informed decision-making.

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## BACKGROUND

In the United States, colorectal cancer (CRC) is the second leading cause of cancer-related death and the third most commonly diagnosed cancer in men and women. In 2007, an estimated 153,760 new cases will be diagnosed, and 52,180 will die from CRC.<sup>1</sup> This disease is highly preventable through the detection and removal of colonic polyps from which the majority of cancers arise.<sup>2</sup>

The American Cancer Society (ACS), the U.S. Preventive Services Task Force (USPSTF), and the American Gastroenterological Association (AGA) recommend CRC screening for average-risk individuals starting at age 50 by means of annual fecal occult blood testing (FOBT), flexible sigmoidoscopy once every 5 years, annual FOBT and flexible sigmoidoscopy once every 5 years, colonoscopy once every 10 years, or double contrast barium enema once every 5 years.<sup>3</sup> These organizations report insufficient evidence to recommend 1 screening test over another. Based on indirect evidence, the American College of Gastroenterology (ACG) and the American Society for Gastrointestinal Endoscopy (ASGE) endorse colonoscopy as the preferred screening strategy but advocate an alternative when resources for screening colonoscopy are unavailable.<sup>4,5</sup>

The AGA asserts that patients “should be offered options for screening, with information about the advantages and disadvantages associated with each approach, and should be given an opportunity to apply their own preferences in selecting how they should be screened.”<sup>6</sup> Similar statements included in the recommendations of the ACS, USPSTF, ACG, and ASGE are supported by literature suggesting that involving patients in decisions regarding their care may increase their compliance with screening.<sup>7,8</sup> Despite this endorsement of patient choice, however, it is noteworthy that rates of screening colonoscopy have increased dramatically in recent years, whereas those of flexible sigmoidoscopy and barium enema have declined precip-

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itously<sup>9–11</sup>, and rates of screening with FOBT have remained low and stable.<sup>12</sup> In 2004, the Centers for Disease Control and Prevention (CDC) reported that 51% of adults 50 and older underwent an endoscopic screening procedure compared with only 19% who completed FOBT.<sup>13</sup>

The growing dominance of colonoscopic screening raises potential concerns, especially because it is doubtful that many patients are able to carefully consider alternatives during time-limited office visits with primary care providers (PCPs).<sup>14,15</sup> It is possible that by utilizing informed or shared decision making in a more effective manner, we may facilitate improved screening test completion. This is all the more relevant because the CDC estimated in 2004 that 45% of eligible adults age 50 years or older had not been screened, which likely accounts for the high mortality rate still observed for a largely preventable cancer.<sup>2,16</sup> Thus, it is important to determine whether patients prefer an alternative to colonoscopy when given a choice.

Utilizing an informed decision-making strategy for 2 CRC screening tests (colonoscopy and FOBT), the objective of this descriptive study was to (1) determine the screening test preferences of colonoscopy-naïve adults in a diverse community-based sample; (2) describe concerns and values that influence their screening test preferences; (3) assess the strength of these preferences and the degree to which they might be influenced by physician recommendation; and (4) determine whether test preferences are associated with respondents' knowledge, attitudes, and sociodemographic characteristics.

## METHODS

### Population and Inclusion Criteria

The study was performed over a 4-month period (March to June 2007) using a community-based sample of supermarket shoppers in Denver, CO (almost all prior studies related to CRC screening preferences have used clinic-based samples<sup>17–21</sup>). Eligibility criteria included adults 40 to 79 years of age without a history of colonoscopy. Adults unable to speak English or with obvious cognitive deficits were excluded. Although CRC screening is not recommended for average-risk adults under the age of 50, we included 40–49-year-olds because they will become eligible for screening within the next several years, and about 10–15% of the general population have a close relative with CRC and these individuals are advised to start CRC screening at age 40.

### Instrument

Two Internists (DeBourcy and Denberg) and a gastroenterologist (Lichtenberger) designed a survey whose purpose was to characterize CRC screening test preferences as well as sociodemographic, knowledge, and attitudinal correlates of these preferences among colonoscopy-naïve adults. Three rounds of pilot testing were carried out to refine survey content and organization. The first round made use of 30 predominately nonmedical colleagues and acquaintances. Two additional rounds took place among 40 patients in the waiting room of a university-based ambulatory general Internal Medicine practice and included debriefing questions among 10 patients to assess comprehension.<sup>22</sup> The goal was to develop a survey that was

short, engaging, and easy to read. The final survey had a Flesch-Kincaid reading grade level of 7.7 and consisted of 4 parts.

Part 1 included a brief textual and pictorial description of colonic polyps and their importance for CRC prevention. FOBT and colonoscopy were identified as “two common ways to screen for colon cancer” and were accompanied by a very brief description of each.

Part 2 contrasted FOBT and colonoscopy in a side-by-side format in terms of their nature, safety, frequency, convenience, accuracy, cost, and need for follow-up testing. Respondents were instructed to read and consider this section carefully and then to select a preference under the assumption that they must undergo CRC screening. We utilized a forced choice response because our primary purpose was not to characterize actual preferences among a full range of possible options but to determine whether respondents prefer an alternative to colonoscopy when given a choice. We chose FOBT because it has the most pronounced differences compared with colonoscopy. We excluded other screening modalities to avoid confusing and overloading respondents with information. We did not include the option of forgoing screening altogether because more than 95% of respondents in pilot testing indicated that screening was personally important. We believed this reflected an underlying social desirability bias and were not confident that we could accurately gauge lack of screening interest with this type of instrument. After selecting a preference, respondents were asked to indicate their reasons for it in an open-item format that avoided the imposition of researcher-defined categories. Participants were then asked how strongly they felt about their preference (not at all strong, a little strong, moderately strong, or very strong). Finally, they were asked whether they would accept a doctor's recommendation for a screening test if it differed from their personal preference.

Part 3 collected standard demographic data without personal health information. Part 4 assessed basic knowledge about CRC and screening and consisted of 3 true/false items that recapitulated information presented in earlier parts of the survey.

### Study Setting, Sample Selection, and Recruitment Procedures

We used a maximum variation, nonproportional quota sampling strategy to carry out this descriptive study.<sup>23</sup> To capture a broad cross section of the local population, recruitment took place at 5 supermarkets in low- and middle-income, multiethnic neighborhoods. Data collection was concluded when the prespecified objective to collect at least 20 surveys within each strata of sex, age (40–49, 51–64, 65–79), race/ethnicity (White-non Latino, Latino, and African American), and education (high school or less, college or some college, and graduate or professional school) had been accomplished.

Survey participants included regular grocery shoppers, lunchtime customers from nearby businesses, and supermarket employees. Surveys were collected during a variety of times throughout the day, including weekdays and weekends. Two research assistants were positioned at a store's front entrance where a placard announced that the University of Colorado was conducting a brief cancer-screening study. Many participants approached a research assistant voluntarily; others were invited to participate as they walked by. Willing adults ages 40–79 were invited to participate, without regard for race, sex, ethnicity, or other demographic criteria. After eligibility

was verified, respondents completed the survey in a quiet and comfortable location away from the flow of traffic. A research assistant was present at all times to address any questions and to read the text aloud if a respondent asked for assistance. If this was required, the content was presented in a neutral tone. The mean duration for survey completion was 10 minutes. Participants received a \$5.00 supermarket gift card for their assistance.

**Statistical Analysis**

All survey responses were transcribed into an Excel spreadsheet, then imported and analyzed using Stata version 9 (STATA, College Station, TX). Descriptive statistics defined the characteristics of the final sample, screening test preferences, and responses to attitudinal and knowledge items. Categorical  $\chi^2$  tests and tests for trends were used to assess the strength of association between test preferences, on one hand, and personal, attitudinal, and knowledge items, on the other. Multivariable logistic regression was used to explore the potential confounding of educational level and race/ethnicity on screening test preferences.

**Institutional Review Board**

The study protocol was approved by the Colorado Multiple Institutional Review Board. The face page of the questionnaire explained that individual responses would be kept private, respondent names are not recorded, and answers are not required for any items that make the respondent uncomfortable.

**RESULTS**

A diverse sample of 323 colonoscopy-naïve adults completed the survey (Table 1). Approximately 23% had previously completed screening by means of FOBT or flexible sigmoidoscopy. Almost 43% had Medicaid or no health insurance (typically, negligible to no coverage for screening colonoscopy), whereas 54% had commercial insurance or Medicare (usually a modest or no copay for this procedure). In the overall sample, 53% preferred FOBT, and 47% preferred colonoscopy for CRC screening. The proportion who preferred FOBT was at least 40% in most demographic categories. In bivariate analysis, a family history of colon cancer and previous experience with flexible sigmoidoscopy were strongly associated with a colonoscopy preference, whereas minority race/ethnicity and lower educational attainment (high school or less) were associated with an FOBT preference. In multivariable modeling that included both race/ethnicity and level of education, a preference for FOBT remained greater among Latinos than non-Latino whites (odds ratio [OR]=2.3, 95% confidence interval [CI] 1.2–4.4) as well as among those with lower educational attainment compared with at least some college (high school or less OR=1.7, 95% CI 1.1–2.5). Among respondents age 50 and over only, 48% preferred FOBT. In this older group, FOBT preference was associated with not being married ( $P<.01$ ) and lower educational attainment ( $P<.01$ ) but not with race/ethnicity.

When asked to indicate the most important reason for their preference, and 253 respondents did so (Table 2). Overwhelmingly, the most commonly cited reasons were test accuracy (colonoscopy) and test ease and convenience (FOBT), accounting

**Table 1. Characteristics of Colonoscopy-naïve Study Participants**

Characteristic	Number (%)	Test preference		P*
		Colonoscopy (row %)	FOBT (row %)	
Total	323	153 (47.4)	170 (52.6)	
Sex				
Male	179 (55.6)	82 (45.8)	97 (54.2)	0.58
Female	143 (44.4)	70 (49.0)	73 (51.1)	
Age				
40–49	205 (63.5)	92 (44.9)	113 (55.1)	0.12
50–64	96 (29.7)	47 (49.0)	49 (51.0)	
65–79	22 (6.8)	14 (63.6)	8 (36.4)	
Race/ethnicity				
White, non-Latino	168 (52.2)	95 (56.6)	73 (43.5)	<0.01
African American	60 (18.6)	27 (45.0)	33 (55.0)	
Latino	62 (19.3)	20 (32.3)	42 (67.7)	
Native American	18 (5.6)	3 (16.7)	15 (83.3)	
Other	14 (4.4)	8 (57.1)	6 (42.9)	
Marital status				
Married	91 (28.2)	49 (53.9)	42 (46.2)	0.31
Not married	140 (43.3)	64 (45.7)	76 (54.3)	
Separated/divorced	72 (22.3)	29 (40.3)	43 (59.7)	
Widowed	20 (6.2)	11 (55.0)	9 (45.0)	
Employment				
Employed	180 (55.9)	89 (49.4)	91 (50.6)	0.48
Unemployed	88 (27.3)	37 (42.1)	51 (58.0)	
Retired	54 (16.8)	27 (50.0)	27 (50.0)	
Education				
High school or less	118 (36.8)	43 (36.4)	75 (63.6)	<0.01
College or some college	157 (48.9)	81 (51.6)	76 (48.4)	
Graduate or professional	46 (14.3)	27 (58.7)	19 (41.3)	
Health insurance				
Medicare	63 (20.0)	30 (47.6)	33 (52.4)	0.26
Commercial	107 (34.0)	55 (51.4)	52 (48.6)	
Tricare	7 (2.2)	5 (71.4)	2 (28.6)	
Veterans Administration	4 (1.3)	1 (25.0)	3 (75.0)	
Medicaid/CICP†	68 (21.6)	34 (50.0)	34 (50.0)	
No health insurance	66 (21.0)	24 (36.4)	42 (63.6)	
FHx colorectal cancer				
Yes	42 (13.2)	28 (66.7)	14 (33.3)	0.02
No	225 (70.5)	98 (43.6)	127 (56.4)	
Do not know	52 (16.3)	27 (51.9)	25 (48.1)	
FHx colon polyps				
Yes	38 (12.2)	22 (57.9)	16 (42.1)	0.07
No	179 (57.4)	74 (41.3)	105 (58.7)	
Do not know	95 (30.5)	50 (52.6)	45 (47.4)	
Prior stool card use				
Yes	64 (19.8)	35 (54.7)	29 (45.3)	0.19
No	259 (80.2)	118 (45.6)	141 (54.4)	
Previous flexible sigmoidoscopy				
Yes	24 (7.4)	18 (75.0)	6 (25.0)	<0.01
No	299 (92.6)	135 (45.2)	164 (54.9)	

\* $\chi^2$  for categorical variables and test for trends (Age and Education)  
 †CICP indicates Colorado Indigent Care Program

for almost three fourths of all responses. Without difference by test preference, approximately one third of the respondents indicated that they would adhere to their choice even if a physician recommended an alternative. In addition, whereas 44% of all respondents felt “very strongly” about their preference, those choosing FOBT were less likely than those choosing colonoscopy to feel “very strongly” about their choice (Table 3).

Although the survey included an informational summary, only 65% of respondents answered all 3 basic knowledge items correctly (Table 3). Ten percent did not know that removing

**Table 2. Reported Reasons for Screening Test Preference**

Reasons for test preference	Number (%)	Test preference	
		Colonoscopy Number (column %)	FOBT Number (column %)
Accuracy	108 (42.9)	100 (81.3)	8 (6.0)
Ease, convenience, time	76 (30.2)	5 (4.1)	71 (53.4)
Comfort/invasiveness	40 (15.8)	1 (1.0)	21 (15.8)
Cost	18 (7.1)	0 (0.0)	18 (13.5)
Frequency	17 (6.8)	17 (13.8)	0 (0.0)
Privacy	15 (6.0)	0 (0.0)	15 (11.3)

polyps from the colon can reduce the risk of colon cancer. Lack of knowledge of this fact was highly correlated with a preference for FOBT. Fourteen percent did not know that colon cancer is usually asymptomatic when it first develops, and 19% did not understand that colonoscopy is both a diagnostic and therapeutic procedure. Respondents with educational attainment at the high school level or less were almost 15% less likely to answer all 3 items correctly than those with more education ( $P=.04$ ).

## CONCLUSIONS

When given time to consider detailed, written information about 2 CRC screening tests, more than half of all colonoscopy-naïve respondents in a large and diverse community-based sample preferred FOBT over colonoscopy. Furthermore, in almost every demographic subgroup based on age, race/ethnicity, marital status, employment, educational attainment, and type of health insurance, at least 40% preferred FOBT over colonoscopy. Nearly a third of respondents indicated they would not change their test preference even if a medical provider recommended an alternative. Finally, 38% of those favoring FOBT said they felt “very strongly” about their choice. Thus, it appears that among colonoscopy-naïve adults who did not receive a recommendation for a specific test, a substantial proportion felt definite about FOBT or reticent about colonoscopy after reviewing a written description of each.

These findings are important for at least 2 reasons. First, if patients feel reticent about colonoscopy, it is possible they may forgo screening altogether if they are not offered an alternative, thus limiting the ability to increase rates of any type of CRC screening within the general population. Second, when patients are offered an informed choice—something advocated for ethical reasons by many professional societies<sup>3-6</sup>—a large number of patients are likely to prefer an alternative to colonoscopy. However, there is reason to be concerned that clinicians do not adequately present (or patients have little time to carefully consider) alternatives to colonoscopy during time-limited primary care visits. Although we did not identify any studies that confirm or refute this possibility, the common absence of informed decision making for prostate cancer screening—another complicated preventive service—has been well documented.<sup>24</sup>

Unsurprisingly, a personal history of flexible sigmoidoscopy and a family history of CRC were both associated with a preference for colonoscopy over FOBT. Although individuals of

Latino ethnicity are less likely to be up to date with CRC screening than Non-Latino whites,<sup>25</sup> we identified only 2 studies that have examined Latino attitudes toward specific screening tests.<sup>26,27</sup> Our study is the first to identify a specific association between Latino ethnicity and a preference for FOBT over colonoscopy. Reasons for this preference may involve social and cultural factors that are more prevalent within these populations, including concerns about modesty, fear of pain, and lack of perceived risk for a condition that would warrant an invasive procedure.<sup>28</sup>

We are unaware of earlier studies that report an association between educational attainment and screening test preferences, although others have found that adults with lower educational attainment are more likely to prefer no screening at all.<sup>18,21,26</sup> We did not include a “no screening” option in our survey, but like Guerra et al., we did identify an association between lower educational attainment and poorer knowledge of key facts pertaining to CRC screening.<sup>29</sup> It is possible that patients may be more amenable to CRC screening in general

**Table 3. Decision Preferences and Knowledge Regarding CRC Screening**

Decision preferences/knowledge items	Number (%)	Test preference		P*
		Colonoscopy Number (column %)	FOBT Number (column %)	
Decision-making locus <sup>†</sup>				
My preference	97 (31.8)	41 (27.7)	56 (35.7)	0.14
Doctor's preference	208 (68.2)	107 (72.3)	101 (64.3)	
Strength of preference				
Very strong	138 (43.7)	75 (50.3)	63 (37.7)	<0.01
Moderately strong	125 (39.6)	57 (38.3)	68 (40.7)	
A little or not at all strong	53 (16.8)	17 (11.4)	36 (21.6)	
Knowledge items				
(1) By removing polyps from your colon, you can reduce your chances of developing colon cancer				
True (correct)	268 (89.9)	129 (95.6)	139 (85.3)	<0.01
False (incorrect)	30 (10.1)	6 (4.4)	24 (14.7)	
(2) When people first develop colon cancer, they often do not have any signs or symptoms				
True (correct)	273 (85.6)	132 (86.8)	141 (84.4)	0.54
False (incorrect)	46 (14.4)	20 (13.2)	26 (15.6)	
(3) During colonoscopy, polyps can be both seen and removed				
True (correct)	257 (80.8)	126 (82.9)	131 (78.9)	0.37
False (incorrect)	61 (19.2)	26 (17.1)	35 (21.1)	
(4) Total knowledge score				
0-1	26 (8.7)	6 (4.4)	20 (12.3)	0.03
2	77 (25.8)	34 (25.2)	43 (26.4)	
3	195 (65.4)	95 (70.4)	100 (61.3)	

\* $\chi^2$  for categorical variables and test for trends (strength of preference and total knowledge score)

<sup>†</sup>Participants were asked whether they would accept a doctor's recommendation for a screening test if it differed from their personal preference.

and more interested in colonoscopy specifically, if they can be helped to understand that removing precancerous polyps reduces the risk of developing CRC and that most people with polyps and early-stage cancer do not have symptoms.

Consistent with prior studies,<sup>18,20</sup> respondents who selected colonoscopy volunteered test accuracy as the most important reason for their choice. Among those who preferred FOBT, most mentioned their desire for a test that is easy and convenient.<sup>21</sup> Because test accuracy and ease/convenience comprised almost 75% of the explanations given for screening test preferences, it may be particularly important to emphasize these when discussing screening alternatives with patients. Otherwise, the most common explanations for choosing FOBT seemed to imply, at least on some level, a negative evaluation of colonoscopy—for example, that it is too costly, invasive, uncomfortable, time consuming, or indiscreet. Therefore, after describing colonoscopy either by itself or in conjunction with FOBT, decision making might be streamlined and enhanced by explicitly probing patients' feelings about colonoscopy in terms of each of these domains.

Individuals with minimal or no health insurance typically have very high out-of-pocket costs for screening colonoscopy. Moreover, resources are frequently unavailable to offer this procedure in settings where these individuals receive health care. In the survey, we were unable to provide detailed information about the cost of colonoscopy for specific patient groups. As a probable consequence, whereas more than 40% of respondents had a Medicaid-type health plan or no insurance, only 7% cited cost as a key influence on their test preference. Thus, even if cost information were provided, it is likely that a majority of these respondents would prefer FOBT for reasons in addition to cost.

The largest proportion of respondents were between the ages of 40 and 49, coming due but not yet eligible for average-risk CRC screening. Whereas younger individuals may be less amenable to invasive tests, it is unclear when a shift in attitude might take place. We found, for example, that a slight majority of 50- to 64-year respondents also preferred FOBT over colonoscopy. Meanwhile, although two thirds of those more than age 65 preferred colonoscopy over FOBT, the total number of respondents in this category was relatively small.

Based on the above, future work should focus in at least 3 areas. First, better ways of presenting patients with CRC screening information are needed. We agree with the recommendation of Klabunde et al. that nonphysician members of the health care team should play a greater role in promoting CRC screening.<sup>30</sup> Medical assistants, for example, are likely to have more time to discuss screening alternatives with patients. Such discussions can also take place after patients have had a chance to consider written educational materials or decision aids. In this light, it is important to develop tailored strategies for unique populations as well as recognize which elements of knowledge make the greatest difference in encouraging screening.

Second, providers who wish to advocate for colonoscopy over other tests should know how to more effectively educate patients about its advantages, focusing in particular on its therapeutic effect and low required frequency. Nonetheless, they should recognize that many patients are unlikely to complete colonoscopy regardless of attempts at persuasion. For this group of patients, choices are especially important. In addition, offering an alternative to patients only if they refuse colonoscopy does not constitute genuine informed decision

making because patients who do accept colonoscopy might have selected an alternative if a choice was made explicit from the beginning.

Finally, whereas it seems reasonable to assume that facilitating choice improves overall rates of CRC screening, this has yet to be established. Two randomized controlled trials have failed to show such an effect.<sup>31,32</sup> However, these were carried out in Italy and Australia where public attitudes toward CRC screening may be different than in the United States, and overall participation in screening was low because patients were recruited through mailed invitations rather than through discussions with PCPs. A cross-sectional study in a VA setting also failed to show that incorporating patient preferences was associated with greater receipt of preventive services.<sup>7</sup> In fact, 1 study found that offering choices might result in lower rates of screening.<sup>33</sup> Giving patients too many options (and there are at least 5 in CRC screening) may be counterproductive because it produces decisional overload. Clearly, facilitating informed decision making and demonstrating that this increases overall rates of screening represent daunting challenges.

This study has important limitations. Survey items designed to assess screening test preferences and attitudes may not predict patients' actual preferences and behavior when PCPs present them with choices or recommend a specific test.<sup>21</sup> Similarly, decisions informed by a review of written information are not necessarily the same as those that would emerge during face-to-face conversations with PCPs. In fact, physician recommendation is consistently identified as 1 of the most important determinants of screening completion and the type of test employed.<sup>27,29,34</sup> Furthermore, because there was a forced choice for a screening test, those who would have preferred no screening or an option that is less invasive than colonoscopy are most likely to have been included in the FOBT group. Conversely, survey respondents—including younger ones who, in most cases, have not yet made real decisions about CRC screening—were able to consider more information and had more time to do so than is typically feasible during primary care visits, meaning their understanding of the 2 options was likely to have been closer to the ideal recommended by the USPSTF and other professional societies. In other words, they are more likely to have made an informed choice than is customary during primary care visits. Second, although we made every effort to present the characteristics of FOBT and colonoscopy in an accurate and objective manner, some may not agree that we adequately achieved this goal. Finally, like earlier studies focused on patients,<sup>17-21</sup> our study was not population based. Nonetheless, it is the first to demonstrate that respondents in a large and diverse community sample prefer an alternative to colonoscopy when given detailed information and a choice. Because we observed a consistently high rate of preference for FOBT over colonoscopy in all demographic subgroups, this increases the likelihood that our findings have broad applicability.

There are well-documented downsides to FOBT, including relatively low sensitivity for CRC, a high false-positive rate, poor adherence with test instructions, missed yearly exams, and inadequate follow-up of positive results.<sup>35</sup> Conversely, we found that a large proportion of colonoscopy-naïve, community-dwelling adults preferred FOBT over colonoscopy after considering the characteristics of both. This, in conjunction with the challenges related to educating patients about

multiple test alternatives and low rates of CRC screening in the general population, highlights the importance of more effective informed decision-making strategies for this preventive service.

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