Overcoming Barriers to Colorectal Cancer Screening Tests

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Abstract

Background: The frequency of colorectal cancer screening tests in Israel is poor, and is much lower than in the United States. This low rate has been attributed to health system failures as well as to barriers on the part of both physicians and patients.

Objectives: To further identify particular health system failures, physician and patient-based barriers, and the effectiveness of public lectures in improving the frequency of performance of CRC screening tests.

Methods: Public lectures on colorectal cancer prevention were held. A gastroenterologist presented the lectures, which were followed immediately by a questionnaire and 4 months later by a telephone call.

Results: Of the 80% of attendees who had never undergone any CRC screening test, only 18% reported family physician recommendations for such tests. Eighty-four percent reported willingness to undergo fecal occult blood testing and 52% to undergo colonoscopy; 62% replied that they should undergo some CRC screening test and 90% believed that these tests save lives. Of the women, 47% expressed preference for a female gastroenterologist. Follow-up showed that 34% proceeded to undergo some CRC screening test: 60% chose colonoscopy and 40% FOBT.

Conclusions: Public lectures are effective in improving compliance with the CRC screening test. Physicians should recommend these tests to appropriate individuals. Same-gender gastroenterologists should be considered for individuals uneasy about someone from the opposite gender performing the test. Assessing the various health-promotion efforts can direct us in implementing finite resources to greatest effect. Local cancer institutes and societies may be supportive in disseminating screening information in this way.

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After lung cancer, colorectal cancer is the second most common cause of cancer-related death in the United States [1]. The prevalence and mortality of this cancer has decreased slightly over the past 20 years [2]. More than 90% of people with CRC are identified after age 50, with most cases developing from an adenomatous polyp. In 1995, CRC was found in 24:100,000 of Jewish women and in 35:100,000 of Jewish men in Israel [3]. Adenomatous polyps have been found in more than 30% of post-mortem studies. Statistically, roughly 1% would have developed into cancer [4]. Diet, lifestyle and genetics all affect the risk for developing CRC [5]. Identifying a tumor in the early stages greatly increases the prevalence of recovery (over 90% in 5 years) since removal of adenomatous polyps prevents cancer from forming. The detection of colon cancer in later stages, which is far more common, means a much grimmer prognosis.

Why are screening tests not being conducted? The responsibility for colorectal cancer screening is shared by the medical system and the patient. A family physician's recommendation to a patient is a strong prediction variable in the patient's consent to undergo screening tests [3,5-7]. When physicians and patients were questioned regarding non-compliance, there was agreement on a lack of awareness on the patient's behalf and a lack of recommendation on the physician's behalf [8,9]. Zbidi et al. [10] concluded in 2007 that the knowledge of primary care physicians and also of gastroenterologists in Israel regarding current guidelines for colonoscopy screening and surveillance is suboptimal and in need of major improvement. Crucial factors that physicians should consider regarding CRC screening tests are personal history, family history, and inflammatory bowel disease [11].

In Israel, only 10–17% of the population over age 50 undergoes any CRC screening tests (G Rennert, personal communication). In comparison, the compliance percentage in the USA is 40% [9]. Reasons for this non-compliance were a lack of medical guidance by the family physician and/or lack of persistence by the patient [12]. Greisinger and colleagues [13] examined 42 patients who had no prior knowledge of CRC screening tests and found that fears of pain and embarrassment/humiliation were the primary reasons for feelings of uncertainty, leading to inaction with regard to the screening tests. Patients with a first-degree relative who have or had colorectal cancer are twice as compliant as patients without an affected relative [14,15].

The goals of the present study were to identify the factors that prevent the healthy population from undergoing CRC screening tests that are offered free of charge or at minimal cost, and to assess group meetings as a way to induce people to undergo these tests.

By understanding what hinders people from performing CRC screening tests the medical community can focus their efforts on the factors that improve patient compliance. New ways are needed to reach more people and to convince them of the importance of screening. Screening tests are an essential component of the screening→diagnosis→treatment→follow-up paradigm of preventive and proactive medicine, which requires high quality methodology, a high rate of participation, and state-of-the-art treatment for the disease detected [16].

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CRC = colorectal cancer
FOBT = fecal occult blood testing

Subjects and Methods

A total of 600 people attended one of two meetings conducted by Rambam Medical Center at movie theaters in two malls in Haifa. They came to these meetings because of advertisements in local newspapers and on local billboards, paid for by the Rambam Health Care Campus as part of its outreach program to the regional communities that it serves. At the meeting a one hour lecture on CRC screening was given by a gastroenterologist (J.L.) who presented consensus guidelines from the Cancer Society in addition to information on various CRC screening tests. At the end of the meetings questionnaires and pencils were distributed, and the attendees were asked to fill out the questionnaires and to place them in boxes near the exits of the auditorium. At the first conference, crowding and the late delivery of the questionnaires led to such minimal returns that the methodology was improved for the second lecture. At the second lecture, a medical student ensured that every attendee had a questionnaire before the question and answer session that followed the lecture. The participants were energetically encouraged to complete the questionnaires during the 20 minutes of questions and answers, and were told that it would provide feedback and contribute to completion of the MD thesis of the medical student involved (co-author T.L.). Four months later, all attendees who had written their phone numbers on their questionnaire forms were contacted by phone and asked whether they had undergone a test or planned to do so in the future

Although the questionnaire focused on questions regarding compliance or adherence to screening guidelines, it was distributed to every participant at the meetings regardless of age or previous screening status. Altogether, 165 people agreed to fill out the questionnaire that was distributed after the lecture [Appendix 1]. Of these, 65 had already been screened and were therefore excluded from the study since the aim of the study was to understand non-compliance. The final sample included 100 subjects (46 men and 54 women).

The demographic variables in this work included gender, age, origin, family status, whether they had a life-partner, the number of children, and education level. Qualitative variables were evaluated by open questions on the reasons for non-compliance. Other open questions were directed to suggest solutions in overcoming non-compliance.

Reasons for non-compliance were assessed by a quantitative and qualitative questionnaire [Appendix 1]. A pilot group included five randomly chosen subjects aged 50 and older in order to confirm the meaning of the questions. Subjects' answers were divided into two categories: free discussion and multiple choice, both of which were analyzed statistically. This research study was approved in advance by the Helsinki Committee of Rambam Medical Center.

Attendees completed questionnaires immediately following a one hour lecture on CRC screening at which a gastroenterologist (J.L.) presented consensus guidelines from the Cancer Society in addition to information on various CRC screening tests. Four months later, all attendees who had written their phone numbers on their questionnaire forms were contacted by phone and asked whether they had undergone a test or planned to do so in the future.

Statistical analysis

Data were analyzed using SPSS.11.5. Descriptive statistics tests were used to calculate mean values, frequencies and percentiles. Cronbach-alpha test was used to establish internal reliability. Wilcoxon rank sum test and the *t*-test were used to find differences between groups. The reasons the subjects gave were taken into consideration if they appeared in more than 10% of the free conversations and open questions.

Results

Of the 600 people who attended the lectures 165 completed the post-lecture questionnaire – 25 from the first lecture and 140 from the second. Sixty-five had already been screened for CRC and were therefore excluded. Altogether, 54 women and 46 men had not undergone any CRC screening. The mean age was 64 (range 20–84 years) and the median age 64 (SD 10). Of those who completed the questionnaire, 93% were older than 50, 86% described themselves as Ashkenazi Jews*, 84% were married, and 12% lived alone.

Regarding the question "Why did you never undergo a CRC screening test?" the most prevalent answers were: "no need for screening tests" (20%), "lack of awareness" (14%), "I was not summoned" (12%), and "fear" (10%). Five people answered that they neglected to undergo the CRC screening test because they were too lazy and four answered that they did not want to.

When asked about colorectal cancer in relatives, 7% had at least one relative who became ill with CRC. Only 5% thought that they were in a risk group for CRC, while 45% thought they were not at risk. Ninety percent of those under the age of 65 did not get a referral to CRC testing. For those over age 65, 75% noted that they did not receive a referral from their family physician.

As shown in Table 1, 84% of the participants reported willingness to undergo FOBT; about 51% stated they would undergo colonoscopy, 41% would undergo double contrast enema and 39% agreed to sigmoidoscopy.

Regarding barriers to undergoing the test, it was found that "fear of pain" received the highest mark of 3 (SD 2), "lack of time" received an average score of 2 (SD 2), "disgust" obtained an average score of 3 (SD 2), and "anxiety" received an average mark of 2.8 (SD 2). When participants were asked: "If the gastroenterologist were the same gender as yourself would it be easier for you to undergo the test?", 89 people answered (45% of the men). More of the women expressed preference for a same-gender gastroenterologist ($P = 0.086$) compared to 23% of the men who did not have any preference. Regarding test reliability, 76% of the participants gave high marks of 4 or 5 out of a maximum of 5. Regarding the question "Can screening tests save lives?" 91% gave a mark of 4 or 5 with the resulting average of 5 (SD 1).

Results demonstrated that 33% of the subjects had discussed

* Of East European origin

Table 1. Question 8 – Which of the following tests would you agree to perform in the near future?

		FOBT		Colonoscopy		Sigmoidoscopy		Double contrast enema	
		Prevalence	Percentage	Prevalence	Percentage	Prevalence	Percentage	Prevalence	Percentage
Do the test	Yes	79	84	43	52	30	39	32	41
	No	15	16	40	48	47	61	46	59
	Total	94	100	83	100	77	100	78	100
Missing data		6		17		23		22	
Total		100		100		100		100	

FOBT = fecal occult blood testing

CRC testing with their families; the family was supportive in 82% of the cases, and only 17% claimed that their family did not support their undergoing screening tests.

The participants were asked two open questions. The first question: "Why don't people come for CRC screening?" was answered by 92 of 100 attendees. Their replies often included more than one answer and the most prevalent reasons given were: fear (of the test/results) – 33%, lack of awareness – 25%, discomfort – 11%, and additional reasons like neglect or playing the ostrich.

To the question "What will draw more people to come and get tested?" 89 of 100 replied. Advertising was suggested (television, newspaper, radio) by 34%, explanation of the subject – 16%, recommendation by the family physician – 11%, and easier test preparation – 8%.

The reliability of the questionnaire was confirmed by the Cronbach-alpha test. Questions 10 through 17 (with the exception of question 11 that had negative polarity) received an Alpha Index equal to 0.8, indicating a high reliability of the questionnaire. With the Wilcoxon signed rank test, each two questions were compared between questions 10 through 17. This test allowed us to identify the key questions from which to establish our recommendations. Statistical clarity was found in the majority of the question comparisons. However, the lack of clarity between certain questions should be emphasized. Question 12 (fear of pain) that resulted in the highest mark only statistically resembles question 13 (disgust). Questions 14 (anxiety) and 17 (complications during the test) both resulted in the second highest scores and statistically resemble each other. It can be concluded that these questions are significant for the physician-patient conversation.

Approximately 4 months after the lecture, the 100 participants were contacted by phone and asked whether they had undergone any screening tests or if they had plans to undergo a CRC test in the near future. By this time, 26% had undergone CRC screening: 60% had a colonoscopy, 40% completed a FOBT, and 8% indicated that they had an appointment for a CRC test. Including those who had appointments, this study will have led to a 34% increase in CRC tests in this population.

Discussion

The outcome of the present study may be blurred by some epidemiological pitfalls. Of note, only 165 of 600 subjects agreed to complete the questionnaire. Of these, only 100 were ultimately included in the study group. The data from 100 subjects out of an initial 600 may not represent the general population or the true compliance rate for CRC testing. One reason for the low response rate was the initial timing and distribution methods, which were improved for the second lecture, leading to much better return of forms (improved from about 10% to 50%).

Individuals who choose to attend lectures on CRC screening may well differ from the general population with regard to compliance, health awareness, education level and socioeconomic status. Additional studies like the present one, with special attention to limiting possible confounders, are needed to clarify these points. The fact that 65 of the 165 attendees had undergone previous CRC tests showed that they were screened more often than the general Israeli population, of whom 10–17% undergo screening. Yet, there is also an advantage in surveying this particular group of individuals who are interested in attending health-promotion lectures. One advantage of using this particular population in our study is their high level of interest, as shown by their coming to lectures, that they may be recruited to serve as opinion leaders on preventive medicine in the general population. A critical percentage of the general public who can speak knowledgably at their social gatherings about getting screened may be necessary to get the subject of CRC screening onto the agendas of the relevant population groups. Thus, the internal bias of this group serves a useful purpose, despite being a variable limiting the generalizability of our results.

This surveyed group contributed valuable information to our understanding of non-compliance with cancer screening in the general population. Clearly, family physicians and health management organizations are lax about referring the Israeli public for CRC screening; hence the large number of attendees who replied that screening had not been offered to them. Future research could use control groups, including a "no lecture" group, as well as group results of screening frequency as measured by HMOs, to provide additional information and limit the above mentioned potential bias.

One could argue that asymptomatic individuals of average risk under age 50 should not be included in the main study group. According to the current American Cancer Society guidelines for the early detection of colorectal cancer, average-risk individuals should be screened from age 50, while some high risk individuals may begin screening as early as puberty. Only 7 of 100 were under age 50, and 4 of these had family relatives with CRC, mandating earlier CRC screening for them; thus 3 young people were appropriately never screened. These three could be removed from the study population. Likewise, official consensus-based guidelines do not recommend screening for those aged 75, and those persons older than 75 could be exempted from analysis in the current study. However, some elderly persons who have never been screened and are in excellent health might benefit

HMO = health management organization

from screening. The very young who attended and filled questionnaires were too few to analyze as a group. However, to transform CRC screening into a common civil responsibility, educating all people, even when much younger than the screening age, may be a wise and farsighted tactic.

Our primary finding was that this group had never received a satisfactory explanation about colorectal cancer and the advantages of early discovery. Only 18% reported receiving a recommendation from their family physician to undergo CRC screening. The perceptions of physicians that they are fulfilling their roles as providers of CRC screening information and referrals is not supported by the patients, 82% of whom report that screening was never offered to them [3]. There appears to be a need to refresh the family physicians' knowledge on preventive medicine for CRC, with an emphasis on how this information is transmitted to patients. In addition, the HMOs should remind their physicians about the CRC tests that are provided to members. When a major HMO in Israel began to summon insured clients for FOBT, the compliance rate increased from 1% to 18% although it later stabilized at around 10%.

In the current study, a large percentage of subjects reported willingness to undergo screening tests in the near future: 84% for FOBT and 52% for colonoscopy. These rates are much higher than the actual number of people tested by the HMOs in Israel. It is possible that the lecture had an instantaneous effect on the attendees before they filled out the questionnaire. Furthermore, most of the subjects were insured by an HMO that advertised CRC screening. This may have raised their awareness about CRC and screening, encouraged them to complete the questionnaire, and influenced their willingness to undergo screening. It can be concluded that the presentation of information and verbal encouragement in a face-to-face manner by the medical system can influence the decision of a patient to undergo a screening test [17]. In our study this factor may have been missing before the lecture.

Raza et al. [18] conducted a survey among physicians on whether they had undergone CRC screening and which test they chose or would choose [18]. Only about half of the physicians had undergone screening tests: most of them chose colonoscopy (56%).

After hearing the lecture, two-thirds of the subjects in our study who had not yet been tested were convinced that they were at average risk at least (those replying no, including the three young people), and should undergo screening. Yet, one-third had still not internalized the desirable level of awareness. Providing this subset with additional information about CRC and CRC screening in addition to stronger encouragement may be helpful.

The answers provided by the subjects highlight the main reasons for the non-compliance [Figure 1]. Wilcoxon signed ranks test revealed that "fear of pain" and "disgust" received the highest scores as reasons for non-compliance. These feelings can be resolved by providing the patient with more information. The family physician should describe the screening process and emphasize that the tests are done under anesthesia and that there is no pain or discomfort. Feelings such as lack of time or embarrassment received low scores and therefore should be addressed by the family physician during his/her conversation with the patient. No statistical significance was found regarding the examiner's gender (P = 0.086). Yet, almost half of the women (46%) answered that they would feel more comfortable if the examiner was a woman [Figure 2]. Among men, only 22% preferred a same-gender endoscopist.

The subject's family is a strong influential factor. Since about 82% reported that their families supported screening tests, we recommend that the patient be encouraged to discuss the matter with their family.

Most subjects (75%) reported that they trust the reliability of the tests. Over 90% stated that they believe early screening saves lives. These facts are in contradiction to the percentage of people who actually undergo CRC testing. Hence, the subjects were asked an open question: "Why do you suppose people do not come for screening tests?" The most common reasons were

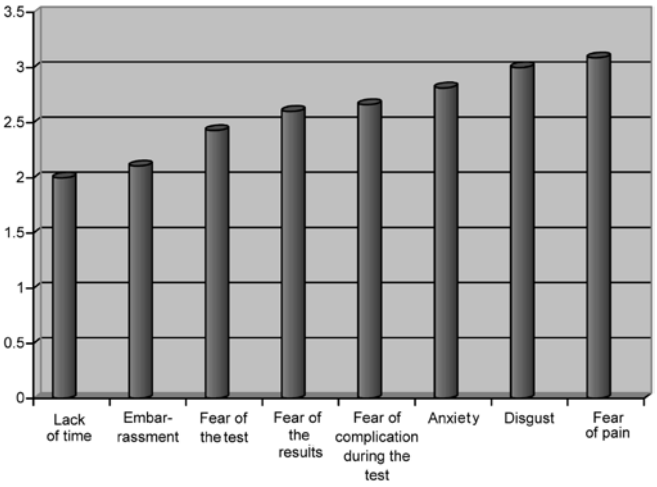

Figure 1. Reasons for lack of compliance with CRC screening (average score for questions 10 through 17).*1–5 scale: 1 represents complete lack of agreement with the assertion, and 5 represents total agreement with the assertion.

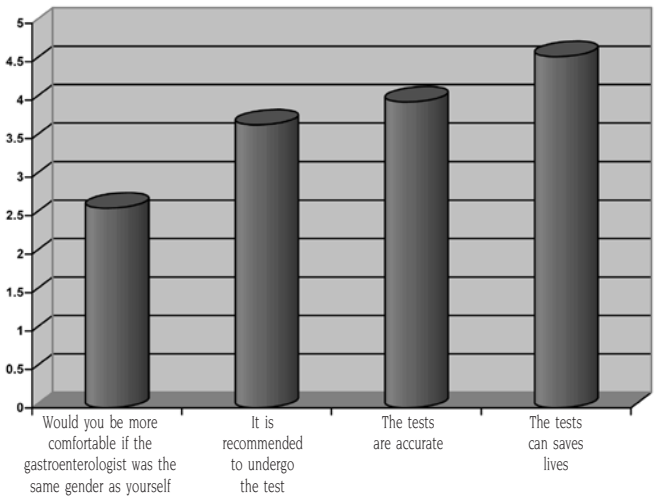

Figure 2. The way CRC screening is comprehended by the public (average score for questions 9 and 18 through 20). 1–5 scale: 1 represents complete lack of agreement with the assertion and 5 represents total agreement with the assertion.

fear of the test or the results (33%), unawareness (25%), and discomfort during the examination (11%) [Figure 2].

The subjects suggested mechanisms that might promote compliance and included advertisements (TV, newspapers, radio) – 34%, further explanation on the subject – 16%, and family physician recommendations – 11%. The Israeli health system dedicates one month every year to advertisements about colorectal cancer. Even though the advertisements are presented through the media, there seems to be a lack of information. They tend to encourage through intimidation and instilling fear.

Reaching 100% compliance is a feat that will likely never be accomplished primarily because of the patient's freedom of choice. This is a perfectly legitimate choice that the patient can make only after he or she has been informed/educated appropriately on the subject [19]. Each patient should be provided with high quality, relevant and unbiased information regarding the advantages, disadvantages and potential consequences of their final decision.

Based on this study, family physicians are encouraged to team up with, initiate, or otherwise support group meetings or lectures on CRC and the advantages of performing CRC testing. With experienced endoscopists presenting the facts, large audiences can be addressed in order to reduce fears and remove barriers to screening.

Summary

This study suggests the need for family physicians to be more persuasive in educating their patients about CRC and CRC screening. Family physicians must be updated with current information on CRC and urged to initiate focused physician-patient conversations about CRC and the screening tests that are available. Emphasis should be placed on the advantages of early identification of tumors. The physician-patient conversations should also include information that will lower the level of anxiety about the procedures. Physicians may consider the issue of same-gender gastroenterologists. Patients should be encouraged to consult with their families. This study revealed that meeting a large audience can be an efficient method of raising awareness. Physicians can initiate public lectures in the communities that they serve in order to demonstrate the advantage of preventive medicine.

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References

1. Janz NK, Wren PA, Schottenfeld D, Guire KE. Colorectal cancer screening attitudes and behavior: a population-based study. *Prev Med* 2003;37:627–34.
2. Holmes-Rovner M, Williams GA, Hoppough S, Quillan L, Butler R, Given CW. Colorectal cancer screening barriers in persons with low income. *Cancer Pract* 2002;10:240–7.
3. Lachter J, Toledano O, Khazan N, Kuten A, Epelboim R, Eidelman S. Barriers to screening for colon cancer. *Gastrointest Oncol* 2002;4:127–33.
4. Mayer RJ. Gastrointestinal tract cancer. In: Braunwald E, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, eds. Harrison's Principles of Internal Medicine. 15th edn. New York: McGraw-Hill Inc., 2001:578–88.
5. Farraye FA, Wong M, Hurwitz S, et al. Barriers to endoscopic colorectal cancer screening: are women different from men? *Am J Gastroenterol* 2004;99:341–9.
6. McGregor SE, Hilsden RJ, Murray A, Bryant HE. Colorectal cancer screening: practices and opinions of primary care physicians. *Prev Med* 2004;39:279–85.
7. James AS, Campbell MK, Hudson MA. Perceived barriers and benefits to colon cancer screening among African Americans in North Carolina: how does perception relate to screening behavior? *Cancer Epidemiol Biomarkers Prev* 2002;11:529–34.
8. Klabunde CN, Vernon SW, Nadel MR, Breen N, Seeff LC, Brown ML. Barriers to colorectal cancer screening: a comparison of reports from primary care physicians and average-risk adults. *Med Care* 2005;43:939–44.
9. Ore L, Hagoel L, Levi I, Rennert G. Screening with faecal occult blood test (FOBT) for colorectal cancer: assessment of two methods that attempt to improve compliance. *Eur J Cancer Prev* 2001;10:251–6.
10. Zbidi I, Hazazi R, Niv Y, Birkenfeld S. Colonoscopy screening and surveillance of colorectal cancer and polyps: physicians' knowledge. *IMAJ* 2007;9:862–5.
11. Saidel-Odes L, Odes HS. Strategy for colorectal cancer screening. *IMAJ* 2005;7:248–51.
12. Fisher DA, Jeffreys A, Coffman CJ, Fasanella K. Barriers to full colon evaluation for a positive fecal occult blood test. *Cancer Epidemiol Biomarkers Prev* 2006;15:1232–5.
13. Greisinger A, Hawley ST, Bettencourt JL, Perz CA, Vernon SW. Primary care patients' understanding of colorectal cancer screening. *Cancer Detect Prev* 2006;30:67–74.
14. Madlensky L, Esplen MJ, Goel V. Reasons given by relatives of colorectal cancer patients for not undergoing screening. *Prev Med* 2004;39:643–8.
15. Madlensky L, Esplen MJ, Gallinger S, McLaughlin JR, Goel V. Relatives of colorectal cancer patients: factors associated with screening behavior. *Am J Prev Med* 2003;25:187–94.
16. Dekel R. Screening, the everlasting quest for the needle in the haystack. *IMAJ* 2005;7:700–3.
17. Klabunde CN, Schenck AP, Davis WW. Barriers to colorectal cancer screening among Medicare consumers. *Am J Prev Med* 2006;30:313–19.
18. Raza M, Bernstein CN, Ilnyckyj A. Canadian physicians' choices for their own colon cancer screening. *Can J Gastroenterol* 2006;20:281–4.
19. Jepson RG, Hewison J, Thompson AGH, Weller D. How should we measure informed choice? The case of cancer screening. *Med Ethics* 2005;31:192–6.
20. Dulai GS, Farmer MM, Ganz PA, et al. Primary care provider perceptions of barriers to and facilitators of colorectal cancer screening in a managed care setting. *Cancer* 2004;100:1843–52.
21. Greiner KA, Engelman KK, Hall MA, Ellerbeck EF. Barriers to colorectal cancer screening in rural primary care. *Prev Med* 2004;38:269–75.
22. Meissner HI, Breen N, Klabunde CN, Vernon SW. Patterns of colorectal cancer screening uptake among men and women in the United States. *Cancer Epidemiol Biomarkers Prev* 2006;15:389–94.
23. Denberg TD, Melhado TV, Coombes JM, et al. Predictors of nonadherence to screening colonoscopy. *J Gen Intern Med* 2005;20:989–95.
24. Weitzman ER, Zapka J, Estabrook B, Goins KV. Risk and reluctance: understanding impediments to colorectal cancer screening. *Prev Med* 2001;32:502–13.

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Appendix 1

Questionnaire for Clarifying Reasons for Colorectal Cancer Screening Non-Compliance

Date: ___/___/2005
Gender: m / f
Age: _____. Origin: Ashkenazi / Eastern / Mixed / other: _____
Family Status: _____. No. of children: _____.
With whom do you live? Alone / with spouse / relative that is not a spouse _____.
Education: elementary / high-school / Technical / B.A. / M.A. and more / other: _____.
In which health service are you insured? Clalit / Maccabi / Meuhedet / Leumit

1. Have you done a screening test for colorectal cancer? Yes / No
   If yes, please specify which examination:_____
2. Why haven't you done a screening test for colorectal cancer? _____
3. Do you have a first-degree relative who has or had colon cancer? Yes / No / don't know
4. Do you know about an existing polyp in the intestine? Yes / No / don't know
5. Do you know if you are in a risk group for colon cancer? Yes / No / don't know
6. Did your family physician recommend that you perform a colorectal cancer screening test? Yes / No.
   If yes, please specify which test your doctor recommended: _____
7. Do you know which tests exist for colorectal cancer? Yes / No.
   If yes, please specify: _____
8. Will you be willing to take any colorectal cancer screening tests in the near future? Yes / No
   If yes:
   Will you be willing to do a fecal occult blood test (FOBT)? Yes / No
   Will you be willing to do a colonoscopy? Yes / No
   Will you be willing to do a sigmoidoscopy? Yes / No
   Will you be willing to do a barium enema? Yes / No

Please rate the following questions on a scale of 1 to 5, 1 = I do not agree, 5 = I completely agree:

9	I am recommended to perform screening tests	1	2	3	4	5	Other:
10	I am afraid of the results	1	2	3	4	5	Other:
11	I don't have time to perform the examinations	1	2	3	4	5	Other:
12	I fear pain	1	2	3	4	5	Other:
13	I am disgusted by the examination	1	2	3	4	5	Other:
14	I am anxious about the examination	1	2	3	4	5	Other:
15	I am embarrassed to do the examination	1	2	3	4	5	Other:
16	I am afraid to do the examination	1	2	3	4	5	Other:
17	I am afraid about complications during the examination	1	2	3	4	5	Other:
18	Would you be more comfortable if the examiner was from your own gender?	1	2	3	4	5	Other:
19	Do you think the results are accurate?	1	2	3	4	5	Other:
20	This examination can save human lives	1	2	3	4	5	Other:

Have you discussed having screening tests with your family? Yes / No
Does your family support you having screening tests? Yes / No
Why do you suppose people do not come for screening tests? _____
What do you think will make more people come for screening tests? _____
Would you like to receive information about the tests or about colon cancer? Ask questions? Receive a guide book? _____
_____