

Colorectal Cancer Screening in Average-Risk Women

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Colorectal cancer is the third most common cancer in the US and the second most common cause of cancer-related death overall. Although men have a higher incidence of colorectal cancer, women are significantly affected, with 71,560 cases estimated in 2008.¹ In women, colorectal cancer deaths rank behind only lung and breast cancer. Women have a 5% lifetime risk of developing colorectal cancer.²

Since the early 1980s the mortality rate from colorectal cancer has been decreasing; from 20.3 deaths from colorectal cancers/100,000 women in 1991 to 15.25 deaths/100,000 women in 2004.¹ While screening has been shown to decrease colorectal cancer incidence and mortality,³⁻⁷ screening numbers still lag behind those for breast and cervical cancer. Furthermore, because the incidence of colorectal cancer increases with age—with more than 90% of colorectal cancers diagnosed in people over age 50⁸—clinicians who care for women through menopause and beyond need to be especially cognizant of the epidemiology, risk factors and preventive issues related to this disease and those it affects.

To that end, this article reviews the incidence and prevalence of clinically important colorectal neoplasia, risk factors and protective factors, as well as screening guidelines and barriers to screening that women face.

Incidence and Prevalence

Women have a lower age-specific incidence of colorectal cancer than do men. In 2004 colorectal cancer occurred in 56.7/100,000 men compared to 41.7/100,000 women (Figure, p. 16).⁸ It is, however, well known that colorectal neoplasia exists on a spectrum; some adenomas eventually evolve to cancer, and there are certain adenoma charac-

teristics that are believed to predispose polyps to a higher risk of malignant transformation. The term “advanced adenoma” has evolved to include an adenomatous polyp >1 cm in greatest dimension, a polyp with villous histology or a polyp with high-grade dysplasia (formerly known as “carcinoma-in-situ”). The term “advanced neoplasia” refers to advanced adenomas and adeno-

carcinoma. Both terms have become accepted as clinically relevant endpoints in screening studies.

Several studies have attempted to clarify the prevalence of advanced neoplasia in women.⁹⁻¹² In 2003 Imperiale and colleagues reported colorectal findings in asymptomatic adults age 50 years or older who had a first-time screening colonoscopy.¹⁰ Women had a 3.4% prevalence of advanced neoplasia. In 2005 Schoenfeld and colleagues looked at 1,463 women, ages 50-79, undergoing screening colonoscopy and found advanced neoplasia in 72 women (4.9%), only one of whom had adenocarcinoma.⁹ A third study, in which Regula and colleagues described colonoscopy results in more than 50,000 individuals, found a 4.9% prevalence of advanced neoplasia in women 50-66 years of age with no family history of colorectal cancer.¹² Both Imperiale’s group and Schoenfeld’s group demonstrated that the risk of advanced neoplasia increases with age; women ages 50-59 have a risk of approximately 3% while women between 70 and 79 years of age have a risk of >11%.^{9,10} Similarly, the number needed to screen to detect one advanced neoplasm varies from 31 (95% CI: 28-35) in women ages 50-54 to 19 (95% CI: 17-21) in women ages 60-66 years old.¹²

Risk Factors and Preventive Factors

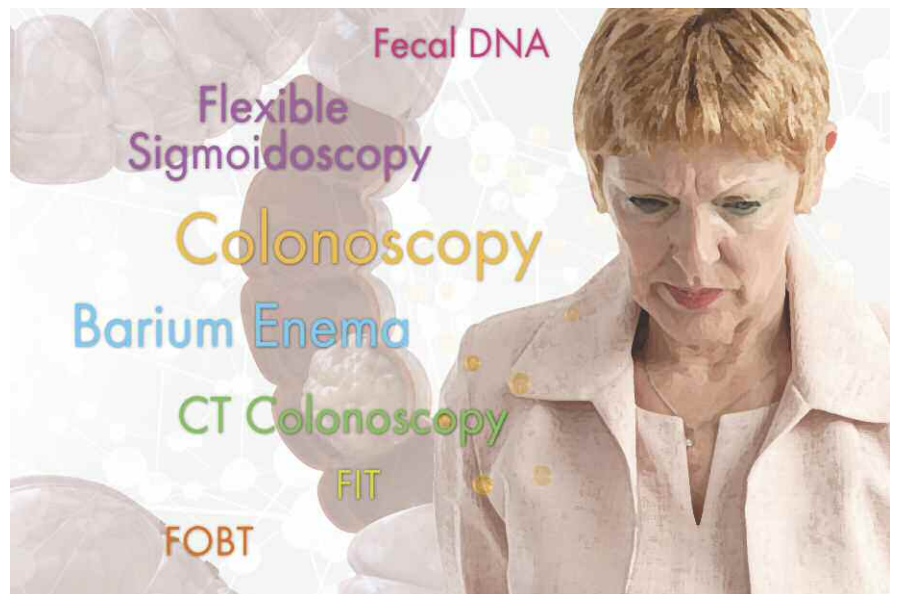
Several studies have been conducted to

determine factors that affect the risk for colorectal cancer. Increasing age and one or more first-degree relatives with the disease are well-established risk factors, and, of course, **are not** modifiable.

Metabolic syndrome. While studies have shown that the metabolic syndrome is associated with a 50% overall increased risk of adenoma and cancer,¹³⁻¹⁶ the risk conferred by metabolic syndrome in women is less certain, as studies are inconsistent.^{13,17} Ahmed et al showed an overall increased risk (RR, 1.49; 95% CI: 1.0-2.4) of colorectal cancer in patients with metabolic syndrome but did not demonstrate an increased risk in women on subgroup analysis (RR, 1.16; 95% CI: 0.6-2.2).¹³

Physical features. Similarly, a study of the European Prospective Investigation into Cancer and Nutrition found a relationship between higher body mass index (BMI) and colon cancer in men, but not in women.¹⁸ However, further analysis revealed an association between waist-to-hip ratio and risk of colon cancer in women. Another study confirmed these findings, showing that while BMI was not associated with increased risk of colorectal cancer in women, a higher waist-to-hip ratio was associated with increased risk (OR, 1.6; 95% CI: 1.2-2.1).¹⁹ Interestingly, Anderson and colleagues found that an increased BMI was associated with advanced neoplasia in women but not in men.²⁰ There was a trend toward significance in women with a BMI > 30, but only those with a BMI of ≥ 40 had a statistically significant increased risk (OR, 4.26; 95% CI: 2.00-9.11). While further studies are needed, the published literature suggests that the presence of the metabolic syndrome or abdominal adiposity increases the risk for colorectal cancer in women.

Smoking. Cigarette smoke, a known carcinogen, has been associated with



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an increased risk of colorectal cancer.²¹⁻²⁴ Lieberman and colleagues found that smoking afforded the same risk for advanced neoplasia as having a first-degree relative with colon cancer.²¹ This finding was confirmed in a study by Anderson et al.²² Two studies have looked specifically at the risk of colorectal cancer in female smokers. The Women's Health Initiative (WHI) trial found an association between cigarette smoking and the risk of rectal cancer (HR, 1.95, 95% CI: 1.10-3.47) but not colon cancer (HR, 1.03, 95% CI: 0.77-1.38).²⁵ Limitations of the study include self-reporting of and single assessment of smoking history, which may have resulted in the purported lack of effect on colon cancer. A more recent analysis evaluated more than 100,000 women in the Nurses' Health Study and found a hazard ratio for colorectal cancer in smokers of 1.63 (95% CI: 1.29-2.05); it must be noted, however, that cancers of the colon and rectum were combined.²⁶

Insulin resistance. Although some studies show that diabetes mellitus and insulin resistance increase the risk for colorectal cancer,²⁷⁻²⁹ results of studies on this topic have been mixed, which may be secondary to the association with the metabolic syndrome. One study compared the incidence of colorectal cancer in 1,975 men and women with type 2 diabetes to the expected incidence in the general population and found an increased risk in those patients with diabetes (standardized incidence ratio [SIR], 1.39; 95% CI: 1.03-1.82).²⁹ **Diabetic women in this study did not, however,** have an increased risk of colorectal cancer (SIR, 1.03; 95% CI: 0.60-1.66). Additionally, diabetics who were current or former smokers had a higher risk of colorectal cancer (SIR, 1.77; 95% CI: 1.24-2.47) than those who had never smoked (SIR, 0.99; 95% CI: 0.57-1.61). Another study compared 100 women with type 2 diabetes to 500 non-diabetic controls.²⁸ Diabetics had higher rates of ad-

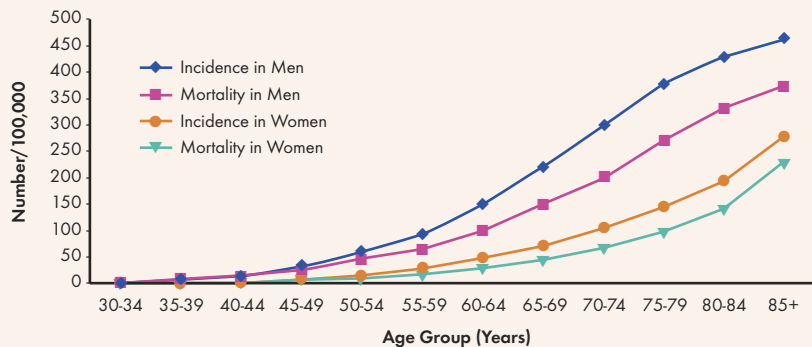


Figure. Average annual age- and sex-specific US incidence and mortality of colorectal cancer between 2000 and 2004.

vanced adenomas (14% vs 6%, $P = 0.009$), and the presence of diabetes was shown to be an independent predictor for advanced adenomas.

Coronary artery disease. Many of the previously discussed risk factors for colorectal cancer are also risk factors for coronary artery disease (CAD). Early studies looking at a possible association between colorectal cancer and CAD were mixed; overall, however, the studies appeared to suggest an association.³⁰⁻³³ A more recent study evaluated patients who underwent coronary angiography for suspected CAD. Patients were divided into those with and without CAD, matched to a control group for age and sex and followed prospectively. Those with CAD had higher rates of colorectal cancer and advanced neoplasia (OR, 1.88; 95% CI: 1.25-2.7; and OR, 2.51; 95% CI: 1.43-4.35, respectively).³⁴ This study also found that smoking and the metabolic syndrome independently increased the risk for developing both advanced neoplasia and CAD. Thus, it appears that both CAD and the metabolic syndrome are markers for an increased risk for colorectal cancer, which may, in part, be explained by the risk factors they share.

Aspirin and NSAIDs. Many studies show that aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) have a protective effect on colorectal cancer risk.^{35,36} The Nurses' Health Study looked at aspirin use and incidence of colorectal cancer in a prospective cohort of women followed for 20 years.³⁷ After 10 years aspirin was found to decrease the risk of developing colorectal cancer in a dose-related fashion, with the lowest relative risk found in those who took more than 14 aspirin per week [RR, 0.68 (95% CI: 0.49-0.95)]. In contrast, the WHI did not find a protective effect of aspirin; however, only low doses (100 mg every other day) were considered.³⁸ The U.S. Preventive Services Task Force evaluated the published evidence and found that NSAIDs are associated with a reduced risk for colorectal cancer.³⁹ Importantly, however, the risks of gastrointestinal bleeding (and cardiovascular complications with COX-2 inhibitors) are thought to outweigh the potential benefits in asymptomatic, average-risk persons.³⁹

Folic acid. Low-folate diets are associated with an increased risk of colorectal cancer.⁴⁰⁻⁴² This knowledge has

led to studies examining whether folate supplementation is associated with risk reduction. The Nurse's Health Study found a lower risk of colorectal cancer and adenomas in women consuming >400 mcg/day of folic acid compared to those consuming <200 mcg/day.⁴³ However, the Aspirin-Folate Prevention study of 1,021 subjects with a history of colorectal adenomas found that folate supplementation with 1 mg/day increased the risk of advanced adenoma (RR, 1.67; 95% CI: 1.00-2.80).⁴⁴ The authors noted that patients in the placebo group had increasing folate levels over time, likely secondary to the routine folate fortification of food in the US that began during the study. In a similar study from the United Kingdom, 939 patients were randomized to receive 0.5 mg folate per day or placebo.³⁶ Folate was found to have no effect on colorectal cancer risk (RR, 1.07; 95% CI: 0.85-1.34).

Calcium. In some studies, calcium has prevented the recurrence of colonic adenomas. The Calcium Polyp prevention study randomized 930 individuals with a recent history of colorectal adenomas to either 1,200 mg of calcium per day or placebo. The relative risk for adenoma recurrence was 0.81 (95% CI: 0.67-0.99) in the calcium group versus the placebo group.⁴⁵ The WHI also looked at the effect of calcium supplementation on the risk of colorectal cancer in postmenopausal women, and found no effect;⁴⁶ this study did, however, have many confounding factors, including looking at overlapping components consisting of calcium and vitamin D, diet modifications and hormone therapy (HT), and looking at healthy women with a lower overall colorectal cancer risk, which may have resulted in the lack of effect. While the data are not conclusive regarding the protective effect of folate

and calcium, a deficiency of either should be corrected.

Vitamin D. Multiple studies have examined the relationship between vitamin D and incidence of colorectal cancer.⁴⁶⁻⁴⁹ One meta-analysis found that individuals with a daily vitamin D intake of $\geq 1,000$ IU ($P < 0.0001$) or with serum 25-hydroxyvitamin D [25(OH)D] levels > 33 ng/mL ($P < 0.01$) had a 50% lower incidence of colorectal cancer compared to reference values.⁴⁷ A second meta-analysis examined the ability of vitamin D to prevent the occurrence of colorectal adenomas.⁴⁸ Higher serum levels of 25(OH)D (as defined by each individual study) were associated with decreased risk for adenomas (OR, 0.70; 95% CI: 0.56-0.87) when compared to lower serum levels. Four studies within this meta-analysis found an overall decreased risk of advanced adenomas with higher circulating 25(OH)D (OR, 0.64; 95% CI: 0.45-0.90) and for higher vitamin D intake (OR, 0.77; 95% CI: 0.63-0.95). Some studies, however, have not shown a protective effect of vitamin D. The WHI randomized women to receive 400 IU of vitamin D and 1,000 mg of calcium or placebo and followed study subjects for an average of 7 years.⁴⁶ There was no difference in colorectal cancer occurrence between the groups (HR, 1.08; 95% CI: 0.86-1.34, $P = 0.51$). This study was limited by both the low dose of vitamin D and the duration of intervention, which may not have been long enough to detect a difference. Vitamin D does appear to have a protective effect on the incidence of colorectal cancer, but adequate serum levels and doses of vitamin D supplementation have not yet been determined.

Hormone therapy. HT has also been found to protect against colorectal cancer. The WHI found that the combined effect of estrogen and prog-

esterone reduced the risk of the disease (HR, 0.63; 95% CI: 0.43-0.92) compared to placebo.⁵⁰ This may help to explain the increased risk women face as they age. But considering all of the data on adverse effects of HT

- fecal immunochemical testing (FIT, which specifically detects human globin), and
- fecal DNA tests (which use a polymerase chain reaction to detect mutated DNA that is continuously

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(breast cancer and cardiovascular diseases), it cannot be recommended for colorectal cancer prevention alone.

Statins. While an initial study suggested that statins reduced the incidence of colorectal cancer,⁵¹ two subsequent studies have not confirmed this effect.^{52,53} A meta-analysis published in 2007 included 18 studies and more than 1,500,000 patients and found no difference in colorectal cancer incidence with statin use.⁵⁴

Screening Recommendations

Currently, there are no protective factors that can be definitively recommended for chemoprevention of colorectal cancer. Either the data are equivocal, or associated side effects preclude their safe use. There are, however, a number of substantiated risk factors for the disease. While not incorporated into screening guidelines, providers may be able to use them to stratify those patients at higher risk and counsel them accordingly.

In its advanced stages, colorectal cancer is associated with poor survival rates, compared to early-stage disease.⁸ Screening for colorectal cancer has been shown to decrease mortality,³⁻⁷ and there are a number of screening strategies from which to choose.

Screening tests that are considered to be useful for early detection include:

- guaiac-based fecal occult blood tests (FOBTs),

shed from colon cancers and from some adenomas).

Screening tests that are considered preventive include:

- colonoscopy,
- flexible sigmoidoscopy,
- double-contrast barium enema, and
- computed tomographic (CT) colonography.

All of these (preventive) tests provide a visual evaluation of the colon and rectum. Importantly, there are no data supporting the superiority of preventive tests over early detection tests with regard to mortality due to colorectal cancer.

Costs of the tests vary widely, and reimbursement depends on the type of insurance. A recent review looked at the costs of colorectal cancer screening tests as found in the available literature ranging from the mid 1990s to 2007 and including private and public insurance.⁵⁵ FOBT is the least expensive (range, \$15-56), followed by FIT (\$22-95). At \$300-495, fecal DNA testing is more expensive. Colonoscopy is the most expensive at \$710-1350, which increases to \$990-2030 with biopsy. This study did not examine double-contrast barium enema, flexible sigmoidoscopy or CT colonography. A cost-effectiveness model published in 2007 for the Centers for Medicare and Medicaid Services reported reimbursement payments for flexible sigmoidoscopy of

\$161 and \$348 for flexible sigmoidoscopy with polypectomy.⁵⁶ In 2003 Medicare reimbursed approximately \$130 for a double-contrast barium enema. Since CT colonography is not yet reimbursed by Medicare, no average costs are available. It is believed, however, that the cost of CT colonography will be only slightly less than that of colonoscopy.⁵⁷

The American Cancer Society, American College of Radiology and US Multi-Society Task Force on Colorectal Cancer (which includes the American College of Gastroenterology, American Gastroenterological Association Institute and American Society for Gastrointestinal Endoscopy) published colorectal cancer screening guidelines in March 2008.⁵⁸

The joint panel recommended that asymptomatic, average-risk adults over the age of 50 receive one of the screening strategies listed in the Table. Changes from their previous recommendations are the inclusion of CT colonography at a 5-year interval and fecal DNA as a screening modality, but with an uncertain interval.⁵⁸ They also emphasized that colorectal cancer prevention (as opposed to early detection) should be the primary goal of screening, despite the lack of clinical evidence in support of this position.

In November 2007 the American College of Obstetrics and Gynecology (ACOG) issued a statement in which it emphasized colonoscopy as the preferred screening method.⁵⁹ ACOG noted that physicians should discuss

the benefits and limitations of other screening modalities with patients in the hope that those patients will follow through with the chosen screening test. Screening is recommended to begin at age 50 in average-risk adults and at age 45 in African-Americans. ACOG did not recommend either CT colonography nor fecal DNA testing either separately or in combination due to insufficient data with which to assess their benefits and risks.

The US Preventive Services Task Force published its updated guidelines on colorectal cancer screening in November 2008.^{60,61} The Task Force commissioned both a targeted systematic review of evidence regarding the benefits and harms of available tests and a discrete event-simulation

Table. Colorectal Cancer Screening Guidelines

Organization(s)	Screening Modality	Ages to Screen	Modifications from Prior Recommendations
American Cancer Society, American College of Radiology and U.S. Multi-Society Task Force on Colorectal Cancer*	FS every 5 yrs. Colonoscopy every 10 yrs. DCBE every 5 yrs. CT Colonography every 5 yrs. High-sensitivity Guaiac FOBT annually. Fecal immunochemical test annually. Stool DNA, interval uncertain.	Begin screening at age 50. Postponed specific recommendations on ethnicity, race, age.	Added CT colonography and stool DNA testing as recommended. Emphasized prevention screening.
American College of Obstetrics and Gynecology	Colonoscopy (preferred) every 10 years. FS every 5 yrs. FOBT or fecal immunochemical test annually. DCBE every 5 yrs. CT colonography and stool DNA are not recommended.	Begin screening at age 50. African-Americans begin screening at age 45.	Now emphasizes colonoscopy as the preferred screening method.
U.S. Preventive Services Task Force	Colonoscopy every 10 years. High-sensitivity FOBT annually. FS every 5 years with FOBT every 3 years. CT colonography and stool DNA are not recommended.	Begin screening at age 50. Stop routine screening at age 75** and all screening at age 85.	Added recommendations on when to stop screening.

Note: Patients and physicians are recommended to choose ONE of the listed screening modalities unless otherwise specified.

KEY: FS, flexible sigmoidoscopy; DCBE, double-contrast barium enema; FOBT, fecal occult blood test.

* Comprised a single recommendation panel.

** In those who have had negative screening results beginning at age 50.

model to evaluate the risks and benefits of several screening strategies over a 30-year period (from age 50 to 80).^{60,61} Based largely on the results of the systematic review and simulation model, the Task Force primarily recommended one of the following three screening strategies:

- colonoscopy every 10 years,
- high-sensitivity FOBT annually (either Hemoccult Sensa or one of the immunochemical FOBTs), or
- sigmoidoscopy every 5 years plus high-sensitivity FOBT at the mid-interval.

CT colonography and fecal DNA were not recommended as screening tests because the evidence was judged to be insufficient for proper evaluation of the benefits and harms of these two tests. The Task Force continued to recommend that colorectal cancer screening begin at age 50 in average-risk persons, and continue until age 75. Based on the simulation model, the Task Force stated that screening adults ages 76–85 had less potential for benefits to patients and recommended against routine screening in this age group, especially for those with several previous negative screening test results. For patients older than age 85, the Task Force recommended against screening for colorectal cancer, noting that the harms outweigh the benefits. An important caveat of the age limits is that the report did not issue a blanket statement against screening in the 76–85 year age group. For individuals within this age range who have never been screened with any test, clinicians should decide about screening based on individual patient characteristics, such as estimated life expectancy, comorbidities and preferences for screening, as evidence suggests that the benefits of screening are not seen until 7 years later.^{61,62} These recommendations do not apply to persons with a finding on

colonoscopy that requires surveillance (ie, follow-up) colonoscopy.⁶¹

While flexible sigmoidoscopy is listed as a screening modality by all of the major organizations, because it examines only the distal colon there is

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concern about the frequency with which proximal lesions are missed. Ideally, biopsies should be taken of any polyps found during the examination of the distal colon. If an adenoma is found, colonoscopy is recommended to look for synchronous (ie, co-existing) adenomas in the proximal colon. Some individuals, however, have no distal sentinel findings to trigger a colonoscopy but have advanced neoplasia proximally. Studies have evaluated how often advanced proximal neoplasia would be missed if flexible sigmoidoscopy alone were used for screening. Imperiale and colleagues found that approximately half the cases of advanced proximal neoplasia were not associated with any distal sentinel lesions, although the affected individuals represented just 1.5% of the entire cohort of nearly 2,000.¹¹

Certain factors may increase the risk for advanced proximal neoplasia in the absence of distal findings; age is one such risk factor, and Imperiale et al found an increased relative risk of 1.3 for every 5 years in those over age 50.¹⁰ Levin et al reported an odds ratio of 1.7 (95% CI: 1.16–2.52) for advanced proximal lesions in persons age 65 or older.⁶³ Male gender also increased the risk for isolated advanced proximal lesions (RR= 3.3; CI: 1.3–7.1).¹¹ In the VA Cooperative study of screening colonoscopy, in which 97% of the participants were men, 2.7% of

those with no distal adenomas had advanced proximal neoplasms.⁶⁴ African-Americans also may have more proximal lesions. Early studies showed an increased rate of proximal lesions in African-Americans, but

more recent studies found no difference in prevalence.^{65–68} A higher prevalence of proximal lesions (> 9 mm) was seen in African-Americans over the age of 60 compared to whites in the same age group.⁶⁸ A recent study examined the incidence of colorectal cancers up to 7 years after screening flexible sigmoidoscopy. While a decrease in colorectal cancer was seen in terms of distal cancers, proximal colon cancer incidence was the same in the screened group as in those who had never been screened.⁶⁹ In a similar study looking at colonoscopy, the incidence of proximal colon cancers was decreased compared to a population that had never been screened; the magnitude of the decrease was, however, far less than that for distal cancers.⁷⁰ This has not been substantiated in other studies, but it does suggest that colonoscopy may miss more proximal lesions than previously thought, despite finding more proximal cancers than flexible sigmoidoscopy alone. While flexible sigmoidoscopy can be recommended as a screening tool, it may be better suited to subgroups at lower risk for advanced proximal neoplasia (for example, Caucasian women younger than 55–60 years).

Barriers to Screening

Even with all of the information available regarding appropriate screening

modalities, colorectal cancer incidence and mortality will not be reduced if people do not undergo screening. Unfortunately, screening rates are still lower for colorectal cancer than for other cancers, including breast and

and a lack of recognition of the need for screening.

Several studies have demonstrated an association between the lack of medical insurance and lower rates of colorectal cancer screening.⁷⁴⁻⁷⁶ Using

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cervical cancer. Studies have shown that women have lower screening rates than men. One study looked at rates from 1987-2003 and found that 46.5% of men, compared with 43.1% for women, were current in their colorectal cancer screening.⁷¹ Women age 65 and older had higher rates of screening than did women between the ages of 50 and 64.^{71,72} Additionally, 37% of women were current with their colorectal cancer screening while 48.6% had never been screened.⁷² Surprisingly, more than 80% of both men and women who were not current with their screening said they had not received a recommendation from their physician to undergo screening with any test.⁷² Interestingly, another study compared physician self-reporting to patient reporting on whether colorectal cancer screening was discussed during their visit: physicians reported discussing it 80% of the time while patients reported hearing about screening only 20%-30% of the time.⁷³ This study suggests that physicians are probably not discussing it with patients as frequently as they believe. Furthermore, it suggests that patients may not receive the message.

Characteristics of those persons who do not undergo screening include lower education level, lower income, lack of a primary care physician and lack of insurance.^{71,72} These barriers reflect a lack of access to screening

a randomized telephone survey termed the Behavioral Risk Factor Surveillance System (BRFSS), the Centers for Disease Control found that 63% (95% CI: 62.5-63.5) of people with health insurance had undergone either FOBT in the past year or endoscopy in the past 10 years compared to 36.7% (95% CI: 34.3-39.1) of people without health insurance.⁷⁶ Limitations of the study included inability to distinguish between screening and diagnostic procedures and between the type of endoscopy performed (flexible sigmoidoscopy versus colonoscopy). Type of insurance coverage can also affect which screening test a patient undergoes. One study looked at rates of cancer screening before and after switching to a plan with a high deductible. While they found no difference in colorectal cancer screening rates, subjects who changed their coverage to a high-deductible plan were more likely to switch from colonoscopy, flexible sigmoidoscopy or double-contrast barium enema to FOBT.⁷⁷ Availability of health insurance through Medicare may also explain why women over the age of 65 are more likely to have undergone colorectal screening compared to those younger than 65 (who are not yet eligible for Medicare).^{71,78} Women who were current with breast or cervical cancer screening were more likely to be current with colorectal cancer

screening, although the numbers are far smaller than those seen with the former modalities (approximately 70% versus approximately 40%).⁷² African-American women were also less likely to be current in their screening.⁷² The method of screening appears to affect compliance rates. Regarding colonoscopic screening, women were more likely to find the test "too painful, unpleasant or embarrassing."⁷² Another study noted that women were more likely to report embarrassment or fright with lower endoscopy.⁷⁹ Women also expressed a preference for a same-sex endoscopist.⁷⁹ It is important for healthcare providers to understand the reasons that women do not undergo endoscopic screening, and to either suggest noninvasive screening tests or provide counseling and education about the recommended screening modality.

Summary and Conclusions

Women age 50 and older have a significant risk of developing colorectal cancer; physicians should emphasize the importance of screening in this age group. Fears and concerns regarding the various screening tests should be discussed with the patient and a joint decision should be made regarding the appropriate screening modality. A woman's risk factors (especially age and family history) should be considered when deciding which screening test is most appropriate. Physicians should educate patients about colorectal cancer risk factors and should emphasize those that are modifiable, such as smoking and obesity. Physicians have the opportunity to positively impact their patients' risk of developing colorectal cancer. ■

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(continued on page 26)

Colorectal Cancer Screening in Average-Risk Women

(continued from page 21)

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