

Virtual Colonoscopy Shows Promise

Study Shows It's Less Invasive and Possibly More Effective Than Conventional Screening

By [Sid Kirchheimer](#)

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Reviewed By [Brunilda Nazario, MD](#)

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Dec. 1, 2003 -- Virtual colonoscopy -- a new, less-invasive method of screening for colon cancer and other bowel diseases -- is already known to be faster and less troublesome for patients than conventional colonoscopy. Now, a study shows it may also be slightly more effective.

In evaluating the two procedures in more than 1,200 patients -- all deemed to be at average risk of colon cancer -- researchers say the new three-dimensional virtual colonoscopy detected about 93% of polyps larger than 8 millimeters. By comparison, some 90% of polyps were detected when screening with conventional colonoscopy. Average risk patients had some risk factors for the development of colorectal cancer but did not have a first-degree relative with colorectal cancer diagnosed at an early age or two or more first-degree relatives with colorectal cancer diagnosed at any age.

"Our study suggests that virtual colonoscopy is at least as effective, if not more so," study researcher J. Richard Choi, MD, ScD, tells WebMD. "But it certainly is less invasive than the conventional method."

With the new procedure, radiologists can obtain 3-D images of the interior of the colon from different angles to detect polyps, diverticulosis, and cancer with computed tomography (CT), sometimes called a CAT scan. Patients lie on their back and a thin tube is inserted into the rectum. While holding their breath, the table moves through a scanner to produce a continuously rotating X-ray beam that provides cross-section images of the length of the colon. A computer program slices together these images to create a "movie-like" series of 3-D pictures viewed on the video screen. This scanning procedure is then repeated with patients lying on their stomach.

The entire procedure takes about 10 minutes and requires no sedation. With conventional colonoscopy, which can take up to an hour, patients must be sedated as a long, flexible tube with a miniature camera on its tip is snaked through the entire colon -- up to 6 feet. Because of the bowel's twists and turns, doctors must frequently inflate it with puffs of air to allow for better maneuverability.

"And when the procedure is over, they can drive themselves home because they haven't been sedated."

Both procedures require the same preparations -- avoiding solid food the day before the test and cleansing the bowel with laxatives to remove all fecal matter.

Choi's study, presented Monday before the Radiological Society of North America and published in this week's *New England Journal of Medicine*, is the first to test 3-D computed tomography as a screening method for colon cancer for average-risk people. But in recent years doctors have taken two-dimensional CT images of the colon, and studies have suggested these virtual 2-D images may be less sensitive at detecting polyps than conventional colonoscopy in a low-risk population.

In fact, an analysis of 16 previous studies presented in October before the American College of Gastroenterology indicated that virtual colonoscopy missed 27% of colorectal lesions that were picked up by conventional colonoscopy.

"Based on that analysis, that means one in five patients had polyps missed with virtual colonoscopy that were picked up with conventional colonoscopy," says Aaron A. Link, MD, of the University of Michigan, who headed that analysis.

"It would be great if these new findings could be replicated because there are many times when virtual colonoscopy is very useful," Link tells WebMD. "It's certainly easier on the patient, and many aren't agreeable to conventional colonoscopy."

Only about 40% of Americans at risk for colon cancer -- the second largest cause of cancer-related death -- get screened because they say colonoscopy is unpleasant. The procedure is recommended for all people after age 50, and earlier for those with a family history of colon cancer or other bowel diseases. Guidelines recommend screening of adults who are at average risk because detection and removal of polyps has been shown to virtually eliminate the risk of colon cancer.

"The goal of screening with virtual colonoscopy is to increase the number of patients that would participate," says Choi.

Still, the newer virtual method can only screen the colon for the presence of polyps. If a polyp is detected, traditional colonoscopy or surgery is needed to remove it.