

Computer-assisted colonoscopy identifies more precancerous polyps compared to traditional colonoscopy

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Colonoscopies performed with computer-aided detection, or artificial intelligence, (AI) saw an increase in the overall rate of detection of

adenoma, or cancerous and precancerous polyps, by 27% in average-risk patients, according to new data presented today at the Digestive Disease Week Annual Meeting.

The results of the prospective, randomized, multicenter study, led by clinician-scientist Aasma Shaukat, MD, MPH, at NYU Grossman School of Medicine, will be published online in the journal *Gastroenterology*. The team found that when AI was used during a [screening colonoscopy](#), the adenoma per colonoscopy rate increased significantly by 22%, from .82 to 1.05. This research further suggests that AI can be an efficient tool for gastroenterologists and endoscopists to incorporate into their procedures to reduce the number of polyps missed and left behind in the colon, many of which can be precancerous.

"Our findings add to the growing amount of literature that shows using computer-aided technology during an endoscopy procedure can improve the quality of exams performed and improve outcomes for our patients," says Dr. Shaukat, the Robert M. and Mary H. Glickman Professor of Medicine and Gastroenterology and Director of Outcomes Research for the Division of Gastroenterology and Hepatology. "Several software technologies are currently available for clinicians and incorporating the use of these resources will only enhance the care we provide our patients and improve the quality of exams we as physicians are able to perform."

Colonoscopy is considered the most effective test for [colorectal cancer](#) screenings and prevention as the procedure reduces the incidence and mortality through early detection. During a colonoscopy, a doctor inserts and threads a narrow, flexible tube called a colonoscope into the rectum and through the entire colon, or large intestine. The colonoscope is equipped with a small camera at its end that allows the doctor to visualize and examine the lining of the colon and rectum as they withdraw the scope. If the physician identifies an abnormal growth or polyp during the procedure, they will remove it and have it sent to

pathology for a definitive diagnosis.

While the procedure is effective, results vary depending on the skill of the physician performing the exam and an estimated 30 percent of polyps are missed during a traditional procedure. In an effort to improve quality and efficacy researchers are working with [artificial intelligence](#) platforms to act as a second set of eyes for the endoscopist. A computer-aided detection was developed for the identification of colorectal polyps during high-definition white-light colonoscopy procedures. The device analyzes the colonoscope video feed in real time to identify potential polyps and identify areas of concern on the monitor that the endoscopist can look at in real time, thus improving the results of the procedure.

Study details

For the study, 22, skilled, board-certified gastroenterologists performed colonoscopies on 1,440 patients during January 2021—September 2021, who were randomized to receive either a standard colonoscopy or a colonoscopy using computer-aided detection software. All patients included in the study were over the age of 40 and were undergoing a screening or surveillance colonoscopy, but who had not had a previous colonoscopy within the last three years. 677 patients were randomized to the standard arm and 682 into the computer-aided arm. The number of polyps found using a computer-aided colonoscope was 1.05 compared to .82 and there was no decrease in the true histology rate indicating the [polyps](#) of concern were all removed.

"Colorectal cancer is the second leading cause of cancer related deaths in the United States and it is one of the few cancers that can be prevented if caught early," said Dr. Shaukat. "Our mission remains to improve and enhance the quality and efficacy of the [colonoscopy](#) across the board to provide the best care for patients."

The researchers acknowledge that long-term follow up studies are needed to further evaluate the benefit of computer-assisted devices on clinical outcomes.

Provided by NYU Langone Health

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