Is home screening a true colonoscopy alternative?

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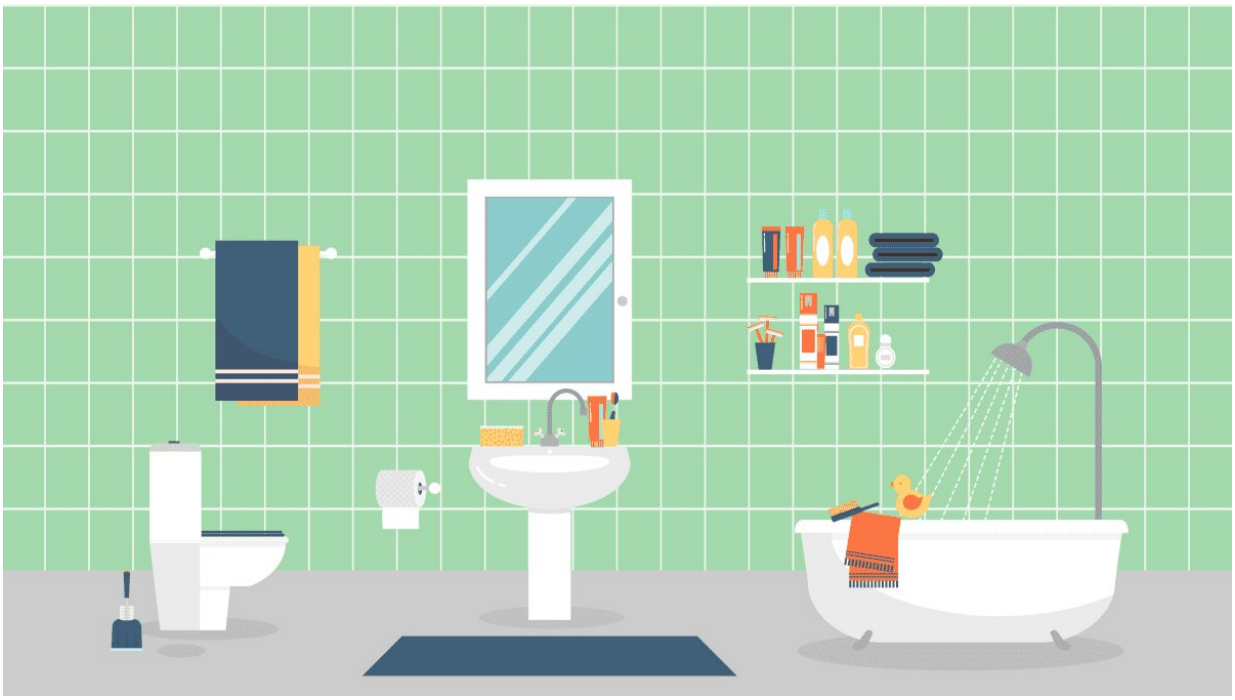

With the wide variety of available at-home products, like pulse oximeters and DNA kits, Yale Medicine GI experts weigh in on the use of at-home colorectal cancer screening tests. Credit: Yale University

There are a few things in life that are, for the most part, universally recognized: the joy of welcoming a child, the fear of embarrassment, and the dread of getting a colonoscopy.

Each year, some of us inch closer to that magic age when we must have the procedure, which will look for (and take care of) cancerous or precancerous polyps. Even though the colonoscopy itself is not unpleasant, those who have already had one know how displeasing the previous night's prep—and colon cleanse—can be.

So, with the wide variety of available at-home products, such as pulse oximeters, home pregnancy tests, and DNA kits, shouldn't there also be a way to screen yourself for colorectal cancer at home?

The good news is that there are home tests that doctors recommend to certain "average risk" patients. These fecal immunochemical tests (FIT) are mailed to your home and contain instructions and materials to take a small sample and send it to a laboratory for testing.

"A patient is considered 'average risk' for colorectal cancer if they don't have a family history of colon cancer [a first degree relative diagnosed under age 60], have never had precancerous polyps, and don't have any diseases that predispose them to colon cancer, such as inflammatory bowel disease [IBD] or primary sclerosing cholangitis [a disease of the bile ducts]," explains Jill Gaidos, MD, a Yale Medicine specialist in IBD.

Home testing is definitely better than no testing, but there are a few distinctions to make, adds Anne Mongiu, MD, Ph.D., a Yale Medicine colorectal surgeon. "The main thing I stress is that home tests are really for detecting cancer—or early cancer—or maybe a large bleeding polyp," she says. "Colonoscopy, on the other hand, not only looks for cancer, but it can also prevent cancer by removing polyps that, if left alone, could turn into a cancer. I tell my patients that a colonoscopy is like 'yard maintenance," where the team comes out to not only examine the lawn, but also to spray all the weeds so they can't grow up and ruin it."

Below, Drs. Gaidos and Mongiu discuss colorectal cancer in general and how to know which screening method is best for you.

Why screening for colorectal cancer matters

Colorectal cancer—a cancer that begins in either the colon or the rectum—is the third most common form of cancer and the third most common cause of death from cancer in the U.S.

It was once considered something only older people needed to worry about, but that's changing. About 18,000 people under age 50 will be diagnosed with colorectal cancer in the U.S. this year—12% of total cases—and more than 3,600 of these patients are projected to die, the American Cancer Society estimates. Colonoscopies are not only an important screening tool, but actually preventive because they can detect precancerous polyps—abnormal growths in the colon or rectum—which can then be removed before they turn into cancer.

"Most cancers of the colon take seven to 10 years to go from polyp to full-blown cancer," explains Dr. Mongiu, highlighting the value in screening to catch disease at an early stage when it is easier to treat and hasn't yet spread.

It's even more important to catch it early in young people. Colorectal cancer is, perhaps surprisingly, on the rise among Millennials. In early 2018, the American Cancer Society reported on the largest analysis of the trend so far in the *Journal of the National Cancer Institute*. They found people born in 1990—who would be 31 years old this year—have double the risk of colon cancer and quadruple the risk of rectal cancer compared to people born around 1950, highlighting the need to raise awareness of colorectal cancer and screening.

How does a colonoscopy work, exactly?

A colonoscopy has long been the gold standard screening method because it is one of the best ways to help diagnose colorectal cancer in its early stages, while it is most treatable.

Here's a snapshot of how it works: The day before the procedure, you will be on a clear liquid diet and drink half of a liquid laxative at night to cleanse your bowels. You will finish the other half in the morning, four hours before the colonoscopy. (Procedure specifics may vary by office.) You will also have to recruit a volunteer to drive you home on the day of the procedure. Because you will be under anesthesia or light sedation, you will not be able to drive for 24 hours afterwards, and doctors advise against taking public transportation. "Our policy is to cancel the procedure or do it unsedated if the patient shows up without a ride," says Dr. Gaidos.

On the day of the procedure (and after you receive anesthesia or light sedation), the doctor will insert a tube called a colonoscope into your rectum. The tube has a light and camera at the end of it that will display images for the doctor to review. The goal is to find and remove any polyps and other abnormalities. The polyps will be sent to a pathologist, who will examine them under a microscope to determine whether or not they are cancerous or precancerous.

Most colonoscopies take between 30 minutes and an hour to complete. They are typically performed every 10 years with shorter intervals for those who are found to have precancerous polyps, adds Dr. Gaidos.

Colonoscopy is the most commonly performed gastrointestinal procedure in the U.S. It has a very high detection rate for colorectal cancer, says Dr. Gaidos, and a review of several studies reported a pooled reduction of 69% in overall colorectal cancer incidence and a

reduction of 68% in colorectal cancer mortality associated with screening colonoscopy, according to the American College of Gastroenterology (ACG).

When should I first be screened, at 45 or 50?

The answer is that it's complicated. The United States Preventive Services Task Force (USPSTF), an independent panel of experts in primary care that develops recommendations for clinical preventive services, has its own advice: screening should start at age 50 and continue until age 75. In October 2020, they released a draft recommendation in which the age was lowered to 45, but the draft has not yet been approved.

Then, other professional organizations, such as the American Cancer Society, have their own recommendations: In 2018, they lowered their recommended age for people at average risk of colorectal cancer to 45.

Meanwhile, recently published and updated guidelines from ACG recommend colonoscopy or FIT for those at average risk of colon cancer begin at age 45.

Hospital systems, individual providers, and insurance carriers may follow different recommendations. Talk to your doctor to determine when you should receive your first colonoscopy.

Two types of home tests

If you are considered average risk for colorectal cancer and are reluctant to get a colonoscopy, you may have the option of using home tests.

"Typically, primary care doctors will talk to their patients about colon

cancer screening when they turn 45 or 50, depending on which guidelines they follow," Dr. Gaidos says. "The test is ordered and you receive a kit to collect your stool." The sample can be returned by mail or dropped off at a lab or your doctor's office.

There are two different kinds of at-home tests, and neither one requires dietary or drug restrictions—or even a special preparation beforehand.

FIT test

One home test, mentioned above, is called FIT (fecal immunochemical test). It is mailed to your home in a small cardboard box and contains instructions and equipment for taking a stool sample, which you will send to a lab for testing. "You will have to 'smear' a stool sample on the card [included with the kit] for processing," says Dr. Gaidos. FIT can detect microscopic amounts of blood, which could be an early sign of cancer.

If the test results are normal, your doctor will have you repeat the test each year. If blood is found in the stool, your doctor will likely ask you to schedule a colonoscopy.

"A FIT test is important to do on an annual basis because it is about cancer diagnosis, not polyp diagnosis," explains Dr. Gaidos. "A FIT test is looking for an early cancer or really large polyps that are oozing or bleeding."

It should also be covered by insurance, Dr. Gaidos says.

Although there have been no long-term studies on reduction of colorectal cancer mortality with FIT, annual tests—over multiple rounds of screening—have shown an overall colorectal cancer detection rate of 80%.

FIT-DNA test

Another type of home test—and one that is newer to the market—is a stool DNA test, also known as FIT-DNA. Sold under the brand name Cologuard in the U.S., this test looks for blood and certain DNA mutations (changes) in genes that may signify cancerous or precancerous cells.

For FIT-DNA, you receive a kit in the mail that you use to collect a stool sample, which can be mailed to a lab. If the test finds DNA changes or blood, you will need a colonoscopy. If the test is negative, you can repeat the screening every three years.

This test, notes Dr. Gaidos, is a little bit more labor intensive. "These tests require providing a stool sample instead of just a smear. Plus, you need to pack it on ice and ship it back to the company within one day of collection," she says. "And, we don't have as much data on how often this test needs to be repeated."

Of note, Dr. Gaidos adds, new guidelines support the use of stool DNA testing every three years in patients who are unable or unwilling to undergo a colonoscopy or FIT, but not all insurance companies will pay for it.

As with the FIT test, there have not yet been long-term studies on the FIT-DNA test's role in reducing colorectal cancer incidence and mortality, but it has been shown to have a better sensitivity for (meaning it's more likely to detect) advanced adenomas (noncancerous tumors) and large serrated lesions than FIT alone.

How do I decide what is best for me?

Colorectal cancer screening should be a part of routine health care once you reach a certain age—or sooner if you have certain health conditions. Talk to your doctor to help decide which kind of screening is right for you.

"At the end of the day, general gastroenterologist and primary care providers want to screen as many people as best we can," Dr. Mongiu says. "Since there is a stigma associated with colonoscopy, people might not do it every 10 years. So, it's a lot better, in that case, to do a test everyone will comply with."

Dr. Gaidos agrees. "There are studies that show at-home tests actually improve screening rates because they are more accessible," she says. "Not everyone needs to take the day off and come into the hospital to get a scope.

Provided by Yale University