

New methods to detecting colorectal cancer

26 June 2014 / by [agelessadmin](#) / [no comments](#)

With colorectal cancer increasing, more reliable options than endoscopy are being explored.

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Doctor with patient

Colorectal cancer (also known as colon cancer, rectal cancer, bowel cancer or colorectal adenocarcinoma) is the number one cancer in Singapore with close to 1,460 newly diagnosed cases and 640 deaths every year. It affects those over the age of 45 and doesn't discriminate on sex.

As early detection is crucial, endoscopy is often the common detection method used.

Ageless Online talks to Dr Jarrod Lee, a consultant gastroenterologist, at Jarrod Lee Gastroenterology & Liver Clinic at Mt Elizabeth Novena Specialist Centre about endoscopy and other detection methods:

You mentioned that endoscopy is an unreliable process. Why is that so?

Endoscopy (procedure) is used in two scenarios. Firstly, it is used as a confirmatory test when other tests suggest the presence of cancer. This includes a positive Faecal Occult Blood (FOBT) test, or even symptoms. Secondly, it can be used as a primary screening test. However, strict standards need to be met before colonoscopy (a type of endoscopy) can satisfy the requirements of a primary screening test.

The following standards have been shown to be important in order for a colonoscopy to be able to detect polyps and prevent cancers:

- Patients need to have good bowel preparation. This needs to be achieved in over 95 percent of patients undergoing colonoscopy.
- Doctors need to have adequate training in cancer screening, not just routine colonoscopy. Also, doctors need to perform a minimum number of such colonoscopies every year to be current.
- Doctors need to achieve certain detection rates for polyps, and to spend adequate time examining the colon.

Also, endoscopy has a 25-percent chance of missing growths in the colon wall. Missed polyps can be categorised to three main factors: Doctor factors, polyp factors and bowel preparation. Doctor factors are the most important and account for the majority of missed polyps. These are due to doctors who do not examine the colon carefully, or who do not have adequate training or experience to reach established standards.

Polyp factors are due to polyps that are difficult to see due to subtle appearance or in a difficult-to-see

location. A dirty colon is the last factor and makes it easy to miss polyps. This is the easiest factor to address, and modern split dose bowel preparation regimes have been shown to have excellent bowel preparation results.

If that is the case, what are some more reliable detection methods?

These can include the latest detection methods such as the Narrow Band Imaging (NBI) and water colonoscopy.

NBI utilises optical filters to enhance surface features and blood vessels. NBI allows the endoscopist to better evaluate suspected growths real-time, and to obtain biopsy samples from suspicious areas with high accuracy. This improves the diagnosis and treatment during endoscopy, which is an added step to ensure that biopsies are done accurately.

Water colonoscopy is a new technique of doing colonoscopy, where water instead of air is used to distend the colon for examination. It is well proven to be more comfortable, thus making patients more likely to undergo the next colonoscopy screening. Water colonoscopy also allows lower doses of sedation drugs to be used, and facilitates colonoscopy without sedation altogether. Water colonoscopy has recently been shown to improve detection rates of colon polyps. This is attributed to the extra cleansing, as well as less patient discomfort.

Can you share the costs?

It is difficult to give a cost, as there are so few doctors who can do water colonoscopy. For me, the cost of water colonoscopy is the same as normal colonoscopy as I routinely use the technique for all my patients who undergo colonoscopy. The median (50th percentile) cost can be found on the Ministry of Health (MOH) website.

A basic NBI study should have no additional cost as the technology is built into the endoscopy system. However, the challenge is that few centres have the latest equipment, and there are even fewer doctors who are properly trained to use it.

So why don't doctors consider these methods rather than endoscopy?

These are new methods and very specialised. Very few doctors invest the time to learn them, and training opportunities are not available in Singapore.

How often should men and women go through detection methods and at what age?

For an average risk person, colorectal cancer screening should begin at 50 years. There are three methods of screening recommended: Stool for occult blood, CT colonography and colonoscopy. Patients should discuss with their doctors regarding which method is most suitable for them. If normal, the screening test needs to be repeated regularly to be effective: Stool tests need to be annually, CT colonography every five years, and colonoscopy every 10 years. If abnormal, subsequent tests will be determined by the abnormal finding.

Some people are at higher risk of colorectal cancer. These include people with family history and those with certain colon conditions. They should consult their doctors on the optimum age to start screening, which will depend largely on their risk for cancer.

I understand that there are even newer methods of screening for colorectal cancer including virtual colonoscopy and tests that analyse human DNA in stool or blood samples for certain changes. Could you comment?

Virtual colonoscopy or CT colonography has been available in Singapore for several years now. Internationally, it is well-established as an option for colorectal cancer screening. It is essentially a CT scan that obtains hundreds of images of the colon as gas is passed through the anus.

The computer then reconstructs a 3D image of the colon. It is accurate for cancers and large polyps that are larger than 1cm, but it is less accurate for small polyps. Any abnormal finding will require a colonoscopy for further evaluation. A normal test will mean that the next cancer screening can be in five years' time. Concerns over this method include radiation, and the need for bowel cleansing, similar to colonoscopy. The cost of a CT colonography ranges from S\$526 to S\$768.

Stool DNA test has the potential to become the preferred method of colorectal cancer screening in the future. The premise is simple. Stool DNA test detects the DNA from cancer and pre-cancerous polyps. This makes it more accurate than the current stool test used for cancer screening, which detects blood as an indirect marker of cancer. Research is still ongoing as to the best way to do the stool DNA test. Also, I suspect making the test affordable will be critical to whether it will replace the current methods of cancer screening. The test is not yet available in Singapore. In US, the cost ranges from US\$400 (S\$501) to US\$800 (S\$1,001). This is as compared to US\$3 (S\$3.76) to US\$40 (S\$50) for the current FOBT test.

With so many different methods/processes appearing, how do patients make a decision as to which is best for them?

I advise patients to discuss with their doctors on the most suitable method for each individual patient. Every patient is different, and what is ideal for one patient may not be appropriate for another.

(PHOTO above provided by Dr Lee.)**