

**Program:** The Tools for Colon Cancer Prevention: Fecal Blood, Fecal DNA, and Colonoscopy  
What Works, What Doesn't and Why (via Zoom)

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**Attendance:** 100

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The recorded copy of today's presentation can be accessed at: [www.scientechclub.org/zoom/471.mp4](http://www.scientechclub.org/zoom/471.mp4)

As we get older, the location of cancer moves to different locations in the colon.

Stages – if cancer spreads to lymph nodes it's diagnosed as Stage III. Treatment is adjuvant chemo after surgery – survival rate is pretty good – about 60%. It is diagnosed as Stage IV when it has spread to distant organs, most commonly the liver and lungs – there is a significant drop off in survival rate at Stage IV. CT scans can show any impact on these organs.

Colon cancer starts with a growth (polyp) in the inner lining of the colon. Removal of polyps before cancer starts will help the patient avoid cancer. The US has the biggest and most significant declines in colon cancer in the world because of heavy and increasing use of colonoscopies.

CRC (colon/rectal cancer) is the 2<sup>nd</sup> leading cause of cancer deaths in US.

Famous people have had it: President Reagan, Pope John Paul II, Vince Lombardi, and Justice Ginsburg. The publicity has led to the increased use of colon cancer screening which has led to the incidence of colon cancer declining.

All races are affected; median age in whites 73; African Americans are most affected and get it at median age of 66 and have a higher incidence and higher mortality. Incidence is declining in persons age 50 and older but rising in those younger than 50 years. This started in the mid-1970s; the cause is unclear.

Risk factors – most important is AGE; men are at a slightly greater risk at any given age than women. Cigarette smoking, obesity, diabetes, and family history are also risk factors.

Symptoms – 60% of those diagnosed with symptoms have stage 3 or 4 disease (bleeding is the most important symptom to pay attention to; 80% of those diagnosed without symptoms have Stage 1 or 2 cancer which is much more treatable. CRC screening is important before symptoms appear. The real advantage of screening is prevention by polyp removal. Adenomas are 75-80% of all cancerous lesions. Serrated lesions are very flat - there are no blood vessels on the surface so there is no blood in stool and likely cause about 20% of CRCs.

In 2001 congress legislated that Medicare cover CRC screening which undoubtedly contributes to the rates of new colon cancer going down 3-4% per year since year 2000.

Four million people turn 50 each year; 25 million Americans are not screened. Some doctors don't mention it to their patients; screening is included in education and training. Some countries (e.g. Netherlands, Australia, UK) have organized screening programs. Kaiser Permanente has used a plan like that successfully in California where they send screening tools to every one of their insured population of appropriate age annually.

Vocabulary and concepts (see slide)

- Polyps flat lesions and depressed lesions are types of precancerous lesions.
- Prevention involves the detection and removal of precancerous lesions
- Detection involves finding early cancers
- Screening (testing on people with no symptoms; lots of options) vs. surveillance (of people who have previously had polyps or cancer) vs. diagnostic exams (of people with symptoms, or tested positive with Cologuard or FIT test)

FIT testing - stool test – annually – assumes cancers will bleed; can be done at home and at low cost.

Standard is 20 micrograms or more of hemoglobin per gram feces indicates potential cancer – next test is colonoscopy. (Old sigmoidoscopy is not done anymore).

False positive rate is approximately 5%.

If positive it must be followed up with a colonoscopy.

Blood testing will likely be available for diagnosis in the next few years.

Cologuard testing is indicated for people age 45 – 85 and includes FIT and FIT-fecal DNA mutations and methylation markers which get larger as we get older, therefore yields a higher false positive rate (20% for older people). If the test is negative, repeat every 3 years. It is better at detecting serrated lesions which tend to not have blood on the surface. It is not recommended for those with adenomas or prior colonoscopies or with a family history of CRC or advanced polyps. If positive the patient must get a colonoscopy. Otherwise, colonoscopies are recommended every 10 years; likely going to 15 years. They are the gold standard and allows for a single session for both diagnosis and resection of precancerous polyps. The down side of the colonoscopy is the bowel preparations. Pill prep not used – a new food-based test may be available in 2023.

Colonoscopy tests are highly operator dependent. It is recommended that you investigate the Adenoma Detection Rate (ADR) for that doctor. Successful resection also is doctor-dependent. Get data on the physician ahead of time. Ask about his ADR rate; it must be above 25 per cent where higher is better.

The colon has lots of folds. It's important that the doctor look behind the folds obsessively, clean up debris, and distend the colon. Withdrawal time of the scope while looking and analyzing should be at least nine minutes. Optics on the devices are now High Definition. The doctor can also look with blue light to see contrast better to find cancer.

Starting screenings at age 50 (age 45-49 for African Americans) is cost effective. When to stop screening? Screening is not considered cost effective any more at age 85: If the patient has never had polyps they should consider stopping at age 75. Comorbidities, age, polyp history, etc. are considerations as well.

Bottom line: Options for:

- Screening: Colonoscopy, FIT, FIT-fecal DNA
- Surveillance and diagnosis: colonoscopy

Remember that colonoscopy results are operator dependent.

Q&A: Insert slowly and withdraw fast is standard practice in some other countries, but in US the standard is to insert quickly and withdraw slowly. Why? If you see a polyp it's best to stop and take it out. What matters is total amount of time taken to examine the colon.

Sometimes prep is not covered by insurance although the procedure is covered. Why? Ask questions ahead of time. Likely depends on ranking of testing products (first, second or third tier) or can be determined to be screening vs. diagnostic.

What are the risks? Damage to colon occurs in 1 in 1000 in US and increases with diverticular disease and with age. Many practitioners believe these numbers may be overblown. There is some risk of bleeding in removal of large polyps. Risks of removal of polyps during a colonoscopy are much less than removal by surgery. Risk of sedation: reflux and aspiration pneumonia – 1 in 1000; usually fairly minor.

What is a good ADR? 25% would be the minimum acceptable. Good over 40%; great over 50% in screening exams

Family history yields risks – start screening at age 40 or 10 years younger than the age of the family member when diagnosed.

People with Lynch Syndrome are usually screened by colonoscopy every year or two. These people are also at risk for other cancers and need other checks.

Blood from hemorrhoids vs. cancerous polyps; if you see rectal blood, go directly to request a colonoscopy.

Don't test stool for blood based on finger rectal exam – very poor sensitivity and specificity.

Is Artificial Intelligence being used to read colonoscopies? Not yet – 3 tests not yet approved in US – should be available in the next couple of years.

What about nurse-performed colonoscopy? There is evidence in UK that it's ok but have physicians close by in case of complications; unlikely to be approved in the US.



Dr. Rex