Colorectal Cancer (CRC) incidence in Honk Kong is definitely rising and is now the second commonest cancer in both male and female. It is used to say that incidence of CRC in Chinese is lower than the western people because our diet is healthier but this is obviously not true any more. The incidence has risen so much that it is now in the same range as in most western countries. There is no reason that we should not adopt the practice of CRC screening now.

The 5 year survival rate for early Duke’s A cancer is over 90% which is down to less than 20% in advance Duke’s C cancer. Hence early diagnosis is important to improve survival. Most CRCs develop from adenomatous polyps and it takes about 10 years for a small polyp to transform into invasive cancer. This forms the basic rationale of screening and prevention of CRC in asymptomatic individuals.

Some people have risk factors for CRC which include personal history of colon polyps or cancer, personal history of long standing inflammatory bowel disease, family history of CRC, and the familial polyposis syndromes like Familial Adenomatous Polyposis (FAP) and Hereditary Nonpolyposis Colon Cancer (HNPCC). The majority of individuals outside this scope are considered to be of average risk. Screening strategy is different in individuals with increased risk and average risk.

### Screening for individuals with average risk

The current recommendation is *yearly Faecal Occult Blood Test* starting at age 50 for both sexes. 3 consecutive stool tests should be done instead of one. PR examination should be avoided before stool collection. Proven test is guaiac-based test and usually unhydrated. Rehydration of the specimens increases the sensitivity but also increases the false positive rate. Diet restriction like avoiding meat is recommended before the test. The newer immune stool test detects human haeme specifically and diet restriction is not necessary but most studies in the past did not use this test. Once the test is positive one should proceed to a full colonoscopy. An alternative is double contrast Ba enema and flexible sigmoidoscopy though colonoscopy is the preferred method. Prospective randomised trials of this approach have demonstrated a 15-33% reduction of CRC related mortality.

**Flexible sigmoidoscopy** is also widely recommended *every 5 years* beginning at age 50. Individuals with a polyp over 1 cm should have a full colonoscopy. For individuals who have a single polyp less than 1 cm the decision for colonoscopy should be individualised. There is no published prospective randomised trial but indirect evidence suggests a reduction of CRC mortality by 45%. There is limited evidence that by combining yearly stool tests and sigmoidoscopy every 5 years results in better long term survival if cancers are detected.

Some authorities endorse **Double Contrast Barium Enema every 5-10 years** as an alternative for screening in the average risk individuals. **Flexible sigmoidoscopy** should be added as the visualisation of rectosigmoid colon by Ba enema is poor. There is no prospective study demonstrating a reduction of CRC related mortality.

**Colonoscopy** is also recommended *every 10 years* as an alternative for screening average risk individuals. Colonoscopy has the advantage of examining the whole colon as well as polypectomy potential. It is clearly better than Ba enema in detecting CRC - 95% vs 83% in a prospective study. It should be the same or better than sigmoidoscopy in CRC mortality reduction and several large prospective studies are ongoing. But the procedure is more time consuming and perforation is a genuine risk.

So it is very clear that CRC screening should be offered to all individuals from age 50 but the appropriate age at which screening should be discontinued is not known. Screening studies usually include individuals up to 80 years of age. Obviously co morbid conditions and life expectancy should be taken into account when discontinuation of screening is considered.

### Screening for individuals with high risk

Colonoscopy for CRC screening is appropriate in the group of high risk individuals.

**Personal history of adenomatous polyp**

Individuals having multiple large adenomatous polyps are at risk of CRC. If the initial colonoscopy is not clear
due to poor bowel preparations, clearance colonoscopy should be arranged within a year or earlier if the examination is grossly inadequate. After that the subsequent colonoscopy is 3 years and if negative, every 5 years afterwards. Individual with only one polyp less than 1 cm is considered to be of average risk only.

**Personal history of colon cancer**

If clearance colonoscopy has been performed either before or after curative resection, the first colonoscopy is 3 years and then every 3-5 years subsequently.

**Personal history of inflammatory bowel disease**

Patients with long standing IBD are at increase risk of CRC. For *Ulcerative Colitis*, CRC screening is performed 8 years after pancolitis and 15 years after *left sided colitis*. Colonoscopy with systematic biopsies is performed every one to three years. Screening is not indicated for ulcerative proctitis alone. Patients with *Crohn's colitis* are also at risk and colonoscopy should be offered but the exact timing and frequency of colonoscopy is not clear.

**Personal history of sporadic CRC**

Colonoscopy should be offered to individuals with first degree relatives with CRC or adenomas before age 60 or who have multiple first degree relatives with CRC or adenomas. Screening should start 10 years younger than the age of the youngest relatives and then repeat at 3-5 years intervals. For those who have first degree relatives with CRC after age 60, the type and frequency of screening should be individualised. One suggestion is to screen them as average risk individuals but starting at age 40. Colonoscopy can be offered every 5-10 years.

**Familial Adenomatous Polyposis FAP**

FAP is inherited in an autosomal dominant manner but one-third of cases are de novo mutations. Commercial genetic testing is available and is positive in about 80% of kindreds with FAP. If the proband is positive, genetic screening should be offered to the relatives. Family members with positive genetic tests should have annual flexible sigmoidoscopy beginning at age 10-12 up to age 40. Family members who have negative genetic tests still warrant flexible sigmoidoscopy every 7-10 years to account for the potential error in genetic testing. If the genetic testing of the proband is negative then all potentially affected family members should be screened with annual sigmoidoscopy at age 10-12. After the age of 40, even in the absence of adenomas, surveillance is still required but at increased interval of every 3-5 years. Full colonoscopy is not necessary because adenomas are found throughout the entire colon in this syndrome.

**Hereditary Non-Polyposis Colorectal Cancer Syndrome (HNPCC)**

HNPCC is also an autosomal dominant disorder. This syndrome is characterized by: CRC in at least 3 relatives; one should be a first degree relative of the other two; at least 2 successive generations involved; and one having CRC before age 50. A commercial genetic test is available but only positive in about 50% of the kindreds. Potentially affected family members should have colonoscopy every two years beginning at age 25 or 5 years younger than the youngest affected family member. After the age of 40, colonoscopy should be increased to yearly. Sigmoidoscopy is not enough in this syndrome as adenomas are more commonly right sided.

**Conclusion**

CRC screening has been practising in many western countries for over a decade and we should adopt this practice now as the incidence of CRC has risen to a level making population screening cost effective. Yearly stool occult blood test is easy to start and the value of endoscopy is proven beyond doubt but obviously there is limitation regarding the availability and the small risk of perforation and bleeding. The newer technique like CT colography (virtual colonoscopy) sounds attractive for those who can afford it but there are no data and certainly small or flat tumours are difficult to be recognised by this technique.

**References:**