



SUSPECTED COLORECTAL NEOPLASM

- Symptomatic patients with suspected colorectal cancer (eg. iron deficiency anaemia, altered bowel habit etc) should have an optical colonoscopy if feasible. Use of CT colonography in screening populations has not yet been definitively validated. [1](#)

Colonoscopy

- Colonoscopy remains the investigation of choice for patients with suspected colorectal neoplasm due to its ability to perform therapeutic interventions and obtain histology. [1](#)
- Other advantages:
 - Avoids ionising radiation
- Disadvantages:
 - Invasive, usually requiring sedation
 - Risk of perforation (approximately 1:1000) [1](#)



Computed Tomography Colonography (CTC) and Double Contrast Barium Enema

- CT colonography is an emerging diagnostic tool to evaluate colonic mucosa. Its use as a screening tool is asymptomatic, average risk persons is controversial and currently the subject of large, randomised multi-centre trials. [2](#)
- CT colonography is indicated in the following circumstances:
 1. for total colonic evaluation in a patient that has had an incomplete colonoscopy
 2. in patients with an obstructing carcinoma to rule out a more proximal synchronous lesion
 3. in patients who are unsuitable for colonoscopy (ie. medically unfit for sedation, anti-coagulated or who have had a previous difficult colonoscopy).
- A review of 17 studies showed that CTC had a combined sensitivity of more than 96% for detecting colorectal carcinoma. [3](#)
- Meta-analysis of 7 studies using multi-detector CT scanners reporting overall sensitivity showed homogenously high per patient sensitivity of 95%. [4](#)
- CTC has been shown to be equal to or superior to double contrast barium enema (DCBE) for the detection of colonic neoplasms, if better tolerated, has the ability to diagnose extra-colonic pathology and where available, should probably replace it. [2,5,6](#)
- Heterogeneity in CTC study results has been attributable to differences in: [3,4,7](#)
 1. Study population (average versus high risk)
 2. CT technology (multi-detector versus single-detector)
 3. Scanning protocol (especially collimation and slice thickness)
 4. Bowel preparation (cathartic versus non-cathartic versus oral faecal tagging)
 5. Image processing and interpretation (2D versus 3D and use of computer aided detection software)
 6. Operator dependence (ie. experience of reporting radiologist)
 7. Gold standard used (optical colonoscopy alone versus segmental unblinding of optical colonoscopy)
- Symptomatic colonic perforations associated with CTC have been reported but are rare (approximately 1 in 3000). [8-10](#)





- The risk of colonic perforation is likely to be increased in non-screening patients and patients with obstruction. Use of an inflatable rectal balloon catheter designed for barium enema and manual gas insufflation are also likely to increase perforation risk. Where possible, automatic or patient controlled insufflation should be used in conjunction with a small flexible rectal tube. [8](#)
- Automatic insufflation also provides better distension in addition to its likely increased safety. [11](#), [12](#)
- Use of carbon dioxide gas is thought to decrease post-procedural discomfort due to its faster absorption through bowel wall compared with room air. [13](#)
- The radiation dose associated with CTC can be considerably less than other abdominal CT scans and is generally less than a DCBE study. The estimated risk of radiation induced carcinoma (fatal or non-fatal) from a CTC study was 0.14% in a 50 year old patient and 0.07% in a 79 year old patient using a low dose protocol. [14](#)
- Radiation doses less than one-sixth of those used in estimates above have already been reported with a sensitivity of 95.5% for detecting polyps over 8mm in size. [15](#)
- Some studies have shown that increased interpreting experience leads to increased accuracy [16,17](#) but this has not been confirmed in other studies. [18](#)
- Use of smooth muscle relaxants has shown generally poor results for glucagon [19-21](#) and mixed results for Buscopan. [19,22,23](#)

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