Author	Year	Journal	Countrv	Studv tvpe	Aim/ouestion	Enrollment criteria	Patients included (analvsed)	Age. mean. vears	Adequate bowel preparation (%)	Complete	Method	Kev result	Conclusion	Reference	Link
Cash (TOPAZ study)	2021	Gut	USA	Multicentre, prospective, randomised study	The TOPAZ study was designed to compare the performance of the PillCam COLON 2 CCE device with CTC in an average risk CRC screening population	Eligible subjects between 50 and 75 years of age (African Americans, 45–75 years of age) classified as average risk for CRC and willing and able to participate in the study procedures were included.	320 (286)	55.7 years (SD ±5.68).	84.1% of CCE subjects and 90.1% of CTC subjects	In the CCE group was 159/145 (95.9%) and in the CTC group it was 140/141 (99.3%)	After obtaining informed consent, subjects were randomised in a 1:1 ratio to receive CRC screening by either CCE or CTC. Randomisation was performed centrally using an Interactive Web Response System. Investigators were unaware of the randomisation schedule until they randomised a patient.	The proportion of subjects with any polyp ≥6 mm confirmed by OC was 31.6% for CCE versus 8.6% for CTC (pPr non-inferiority and superiority=0.999). The diagnostic yield of polyps ≥10 mm was 13.5% with CCE versus 6.3% with CTC (pPr non-inferiority=0.9954). The sensitivity and specificity of CCE for polyps ≥6 mm was 79.2% and 96.3% while that of CTC was 26.8% and 98.9%. The sensitivity and specificity of CCE for polyps ≥10 mm was 85.7% and 98.2% compared with 50% and 99.1% for CTC. Both tests were well tolerated/safe.	CCE was superior to CTC for detection of polyps ≥6 mm and non-inferior for identification of polyps ≥10 mm. CCE should be considered comparable or superior to CTC as a colorectal neoplasia screening test, although neither test is as effective as OC.	Cash, B. D., Fleisher, M. R., Fern, S., Rajan, E., Haithcock, R., Kastenberg, D. M., . . . Rex, D. K. (2020). Multicentre, prospective, randomised study comparing the diagnostic yield of colon capsule endoscopy versus CT colonography in a screening population (the TOPAZ study). Gut, gutjnl-2020-322578. doi:10.1136/gutjnl-2020-322578	
Dading	2020	United European Gastroenterology	Denmark	Prospective paired study	Investigate relative sensitivity of CCE compared with CTC following incomplete OC, investigate the completion rate when combining results from the incomplete OC and CCE, and develop a **forwardtracking algorithm** ensuring a safe completeness of combined examination	Patients with indication for CTC following incomplete OC	105 (97)	N/A	76	68	Patients with indication for CTC following incomplete OC were included for CCE and CTC. Location of CCE abortion and OC abortion were registered to identify complete combined investigations. AI-based algorithm for localization of capsules were developed reconstructing the passage of the colon.	Including CCEs which reached most oral point of incomplete OC, 73 (75%) had complete colonic investigations; 78 (80%) had conclusive investigations. Relative sensitivity of CCE compared with CTC was 2.67 (95% confidence interval (CI) 1.76,4.04) for polyps >5 mm and 1.91 (95% CI 1.18,3.09) for polyps >9 mm. An AI-based algorithm was developed.	Sensitivity of CCE following incomplete OC was superior to CTC. Introducing and improving algorithm-based localization of capsule abortion may increase identification of overall complete investigation rates following incomplete OC	Dading U, Herp J, Havshoei AL, Kobaek-Larsen M, Buijs MM, Nadimi ES, Baatrup G. Colon capsule endoscopy versus CT colonography after incomplete colonoscopy. Application of artificial intelligence algorithms to identify complete colonic investigations. United European Gastroenterol J. 2020 Aug;8(7):782-789. doi: 10.1177/2050640620937593. PMID: 32731841; PMCID: PMC7435000.	https://pubmed.ncbi.nlm.nih.gov/32731841/
Gonzalez-Suarez	2020	BMC Med	Spain	Prospective, single-centre, randomised trial	Compare CCE and CTC for the identification of patients with Colorectal neoplasia among participants in a CRC screening programme with positive faecal immunochemical test (FIT).	Individuals with a positive FIT result (≥ 20 μg of haemoglobinin g of faeces) from the population-based, organised CRC screening programme of Barcelona.	349 (290)	60	82	82	Patients were randomised to CCE or CTC before colonoscopy. Endoscopists were blinded to the results of CCE and CTC. Outcome was to compare the performance of CCE and CTC in detecting patients with neoplastic lesions. Included (analysed) by group: 173 (147) in the CCE group and 176 (143)in the CTC group	In the intention-to screen analysis, sensitivity, specificity and positive and negative predictive values for the identification of individuals with colorectal neoplasia were 98.1%, 76.6%, 93.7% and 92.0% in the CCE group and 64.9%, 95.7%, 96.8% and 57.7% in the CTC group. In terms of detecting significant neoplastic lesions, the sensitivity of CCE and CTC was 96.1% and 79.3%, respectively. Detection rate for advanced colorectal neoplasm was higher in the CCE group than in the CTC group (100% and 93.1%, respectively; RR = 1.07; p = 0.08). Both CCE and CTC identified all patients with cancer. CCE detected more patients with any lesion than CTC (98.6% and 81.0%, respectively; RR = 1.22; p = 0.002).	Although both techniques seem to be similar in detecting patients with advanced colorectal neoplasms, CCE is more sensitive for the detection of any neoplastic lesion. No significant differences in terms of patients'acceptance and adverse events between both strategies. CCE may benefit from a higher sensitivity for detecting small, flat, sessile and serrated lesions. CTC more specific CCE (96.3% CCE could not be evaluated in 18.3% of patients due to incomplete studies. higher than expected drop out rate in both screening strategies may have contributed to the lack of a significant difference vs. 88.2%, respectively) in identifying significant neoplastic lesions.	González-Suárez, B., Pagés, M., Araujo, I.K. et al. Colon capsule endoscopy versus CT colonography in FIT-positive colorectal cancer screening subjects: a prospective randomised trial—the VICOCA study. BMC Med 18, 255 (2020). https://doi.org/10.1186/s12916-020-01717-4	https://pubmed.ncbi.nlm.nih.gov/32943059/
Utano	2019	Digestion		Multicenter prospective study	Evaluate the performance of CCE and CTC for the diagnosis of non-polypoid (flat) tumors ≥ 20 mm	Patients referred for endoscopic submucosal dissection of non-polypoid tumours measuring ≥20 mm were enrolled.	30 (27)	NA	NA	85	Patients first underwent CCE, then colonoscopy (without resection) and CTC on the same day. An experienced gastroenterologist in a third hospital evaluated the CCE and recorded the location, size and morphology of all lesions detected, blinded to the colonoscopic findings. An experienced radiologist read the CTC under the same conditions. Colonoscopic findings were defined as the reference	A total of 30 lesions in 27 patients were assessed. Non-polypoid tumors tend to be depicted as polypoid on CCE. Non-polypoid tumours tend to be depicted as polypoid on CCE. Per patient sensitivities were 0.89 (24/27) by CCE and 0.70 (19/27) by CTC (p = 0.0253; McNemar), and per lesion sensitivities were 0.87 (26/30) and 0.67 (20/30) respectively (p = 0.0143). Most lesions missed by both modalities were located in the proximal colon.Per-lesion sensitivity by CCE was 87%, higher than that of CTC which was 67% (p=0.0143).	Utano K, Katsuki S, Matsuda T, Mitsuzaki K, Fujita T, Nemoto	https://pubmed.ncbi.nlm.nih.gov/31574525/
Pioche	2017	Endoscopy	France	Randomized trial	Compare video capsule endoscopy (VCE) and computed tomography colonography (CTC) in terms of participation rate and detection outcomes when offered to patients with a positive gFOBT who did not undergo the recommended colonoscopy	Patients with a positive guaiac fecal occult blood test (gFOBT) d	NA	NA	NA	NA	An invitation letter offering CTC or VCE was sent to selected patients after randomization. Acceptance of the proposed (or alternative) procedure and procedure results were recorded. Sample size was evaluated according to the hypothesis of a 13 % increase of participation with VCE.	A total of 756 patients were targeted. Following the invitation letter, 5.0 % (19/378) of patients underwent the proposed VCE and 7.4 % (28/378) underwent CTC. (P = 0.18). Following the letter, 9.8 % (37/378) of patients in the VCE group underwent a diagnostic procedure (19 VCE, 1 CTC, 17 colonoscopy) vs. 10.8 % in the CTC group (41/378: 28 CTC, 13 colonoscopy; P = 0.55). There were more potentially neoplastic lesions diagnosed in the VCE group than in the CTC group (12/20 [60.0 %] vs. 8/28 [28.6 %]; P = 0.04).	Thus, 15/20 noninvasive procedures in the VCE group (19 VCE, 1 CTC; 75.0 %) vs. 10/28 in the CTC group (35.7 %; P = 0.01) resulted in a recommendation of further colonoscopy, but only 10/25 patients actually underwent this proposed colonoscopy. Patients with a positive gFOBT result who do not undergo the recommended colonoscopy are difficult to recruit to the screening program and simply proposing an additional, less-invasive procedure, such as VCE or CTC, is not an effective strategy	Pioche M et al. Colon capsule versus computed tomography colonography for colorectal cancer screening in patients with positive fecal occult blood test who refuse colonoscopy: a randomized trial. Endoscopy 2018; 50(8):761-769	https://pubmed.ncbi.nlm.nih.gov/29486502/
Spada	2015	Gut	Italy	Prospective comparative trial (unblinded)	Compare colon capsule endoscopy (CCE) and CT colonography (CTC) in a prospective cohort of patients with incomplete colonoscopy	Patients with incomplete colonoscopy	100 (97)	60	83	98	Consecutive patients with a previous incomplete colonoscopy underwent CCE and CTC followed by colonoscopy in case of positive findings on either test (polyps/mass lesions ≥6 mm). Clinical follow-up was performed in the other cases to rule out missed cancer. CTC was performed after colon capsule excretion or 15–12 h postingestion. Since the gold standard colonoscopy was performed only in positive cases, diagnostic yield and positive predictive values of CCE and CTC were used as study end-points.	CCE detected at least one ≥6mm polyp in 24 patients, while CTC detected at least one ≥6mm polyp in 12 patients, resulting in a significantly improved relative sensitivity of 2.0 for CCE. CCE detected at least one ≥10mm polyp in five patients, while CTC detected at least one ≥10mm polyp in three patients, resulting in a relative sensitivity of 1.67 in favor of CCE. Positive predictive values for polyps ≥6mm and ≥10mm were 96% and 85.7%, and 83.3% and 100% for CCE and CTC, respectively. No missed cancer occurred at clinical follow-up of a mean of 20 months.	CCE and CTC were of comparable efficacy in completing colon evaluation after incomplete colonoscopy; the overall diagnostic yield of colon capsule was superior to CTC	Spada C, et al. Colon capsule versus CT colonography in patients with incomplete colonoscopy: a prospective, comparative trial. Gut 2015; 64(2): 272-81.	https://gut.bmj.com/content/64/2/272
Rondonotti	2014	Clinical Gastroenterology and Hepa	Italy	Interventional (Clinical Trial)	We compared the accuracy of CC2 and CTC in identifying individuals with at least 1 polyp greater than 6 mm and subjects' attitude toward the procedures.	Positive results from the immunochemical fecal occult blood test (iFOBT-positive)	50	59	70	90	Participating individuals underwent CC2, CTC, and OC. The procedures were scheduled as follows: first, the patient underwent the CC2, and, about 15 days later, the patient underwent CTC early in the morning, followed by OC later that day. In a per-patient analysis, the accuracy of CC2 and CTC were assessed for individuals with at least 1 polyp 6 mm or larger. Individuals were asked to choose which procedure they would be willing to repeat between CTC and CC2.	The combination of OC, CTC, and CC2 identified 16 cases with at least 1 polyp 6 mm or larger (reference standard). CTC identified the polyps with 88.2% sensitivity, 84.8% specificity, a 3.0 positive likelihood ratio, and a 0.07 negative likelihood ratio. CC2 identified the polyps with 88.2% sensitivity, 87.8% specificity, a 3.75 positive likelihood ratio, and a 0.06 negative likelihood ratio. Thirty-nine subjects (78%) said they preferred CC2 to CTC.	CC2 and CTC detect polyps 6 mm and larger with high levels of accuracy; these techniques are effective in selecting iFOBT-positive individuals who do not need to be referred for colonoscopy. CC2 seems to be better tolerated than CTC, and could be a reliable alternative to CTC for iFOBT-positive individuals who are unable or unwilling to undergo OC	Rondonotti E, Borghi C, Mandelli G, et al. Accuracy of capsule colonoscopy and computed tomographic colonography in individuals with positive results from the fecal occult blood test. Clin Gastroenterol Hepatol. 2014;12(8):1303-10.	https://pubmed.ncbi.nlm.nih.gov/24398064/