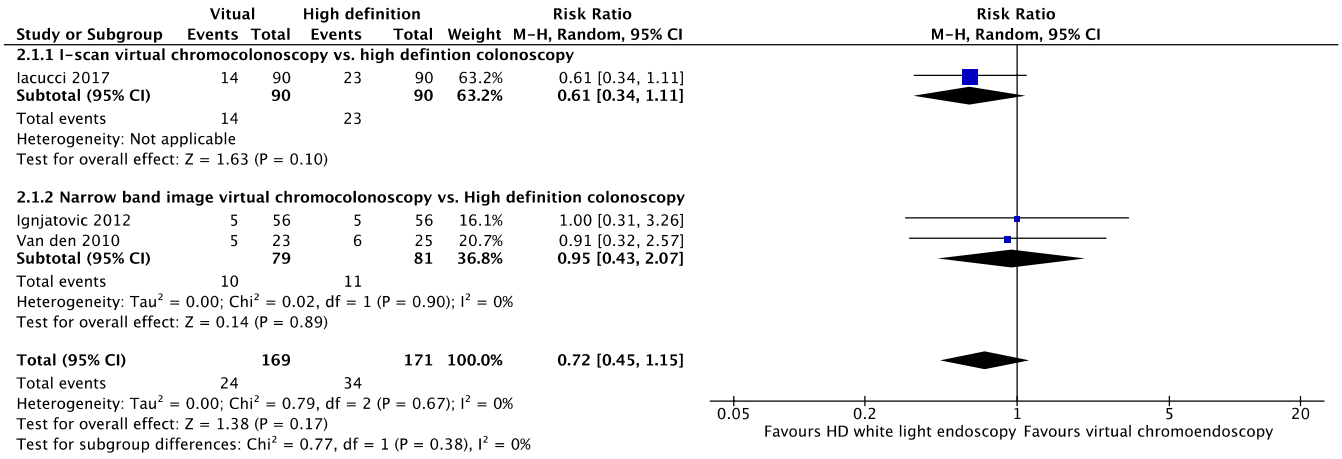
Improving Outcomes of Inflammatory Bowel Disease

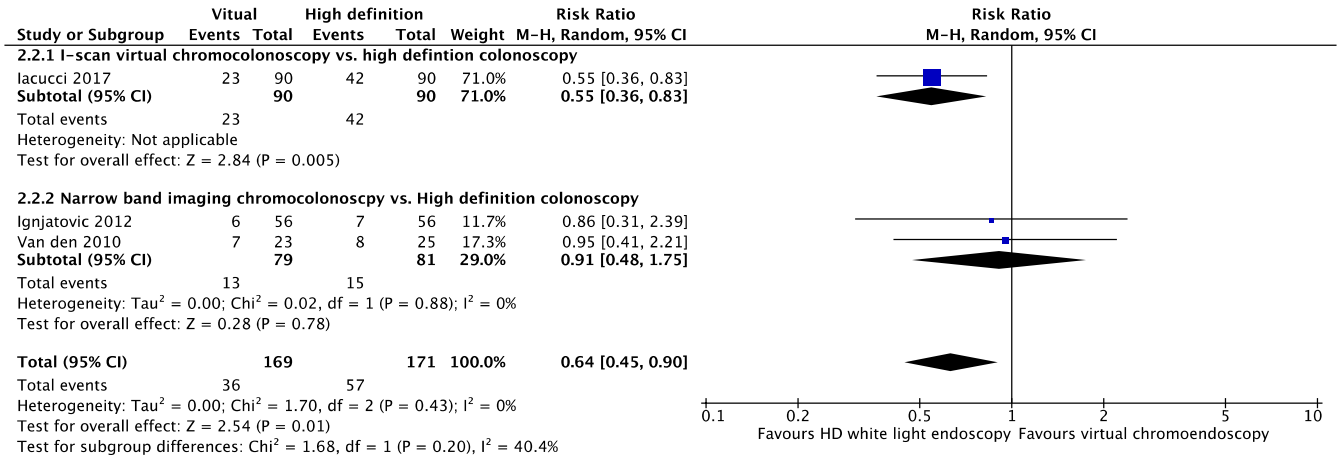
Supplementary figures and tables.

Table of content:

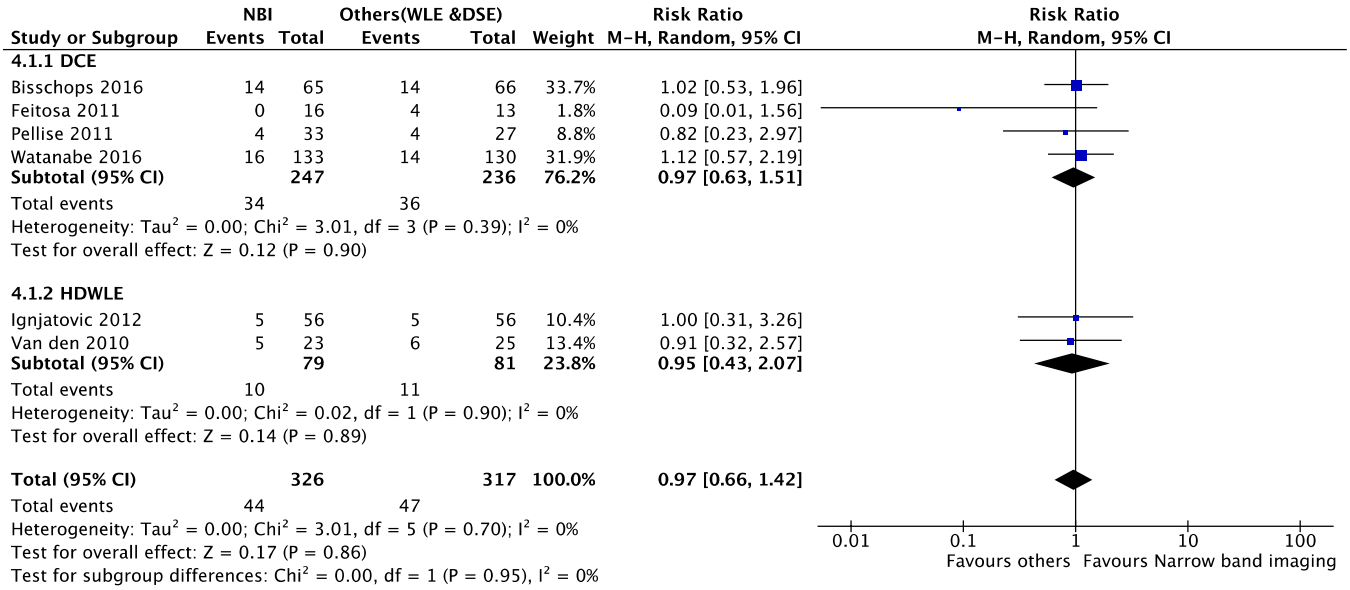
Supplementary Figures:



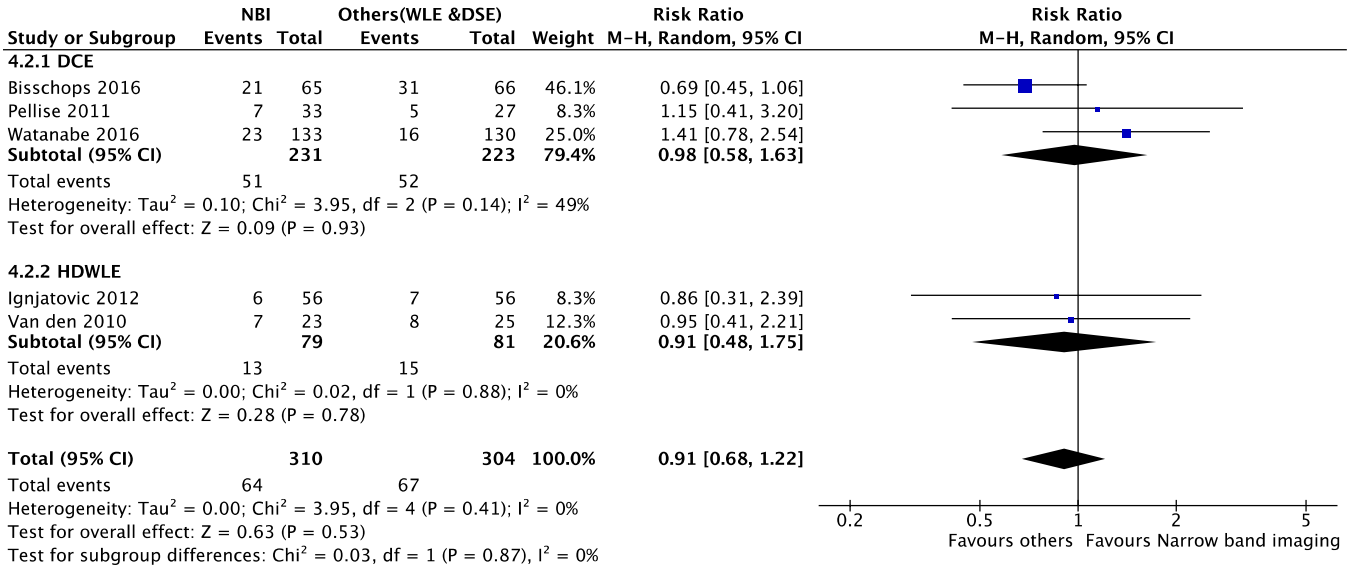
Supplementary figure 1. Forest plot comparing subgroups of virtual chromoendoscopy to high definition white light colonoscopy in detecting dysplasia per patient's analysis.



Supplementary figure 2. Forest plot comparing subgroups of virtual chromoendoscopy to high definition white light colonoscopy in detecting dysplasia per number of lesions analysis.



Supplementary figure 3. Forest plot comparing Narrow band imaging virtual chromoendoscopy to non-virtual chromoendoscopy [dye spraying chromoendoscopy (DSE) and white light endoscopy (WLE)]in detecting dysplasia per patient's analysis.



Supplementary figure 4. Forest plot comparing Narrow band imaging virtual chromoendoscopy to non-virtual chromoendoscopy [dye spraying chromoendoscopy (DSE) and white light endoscopy (WLE)] in detecting dysplasia per number of lesions analysis.

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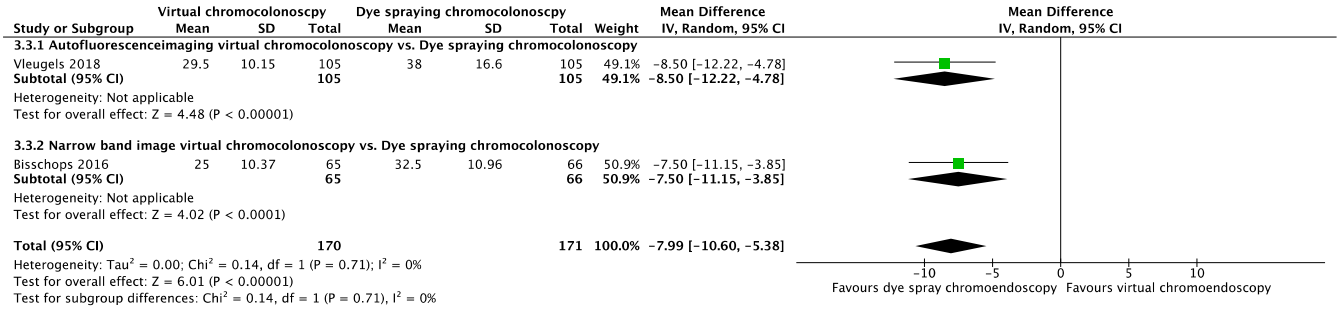
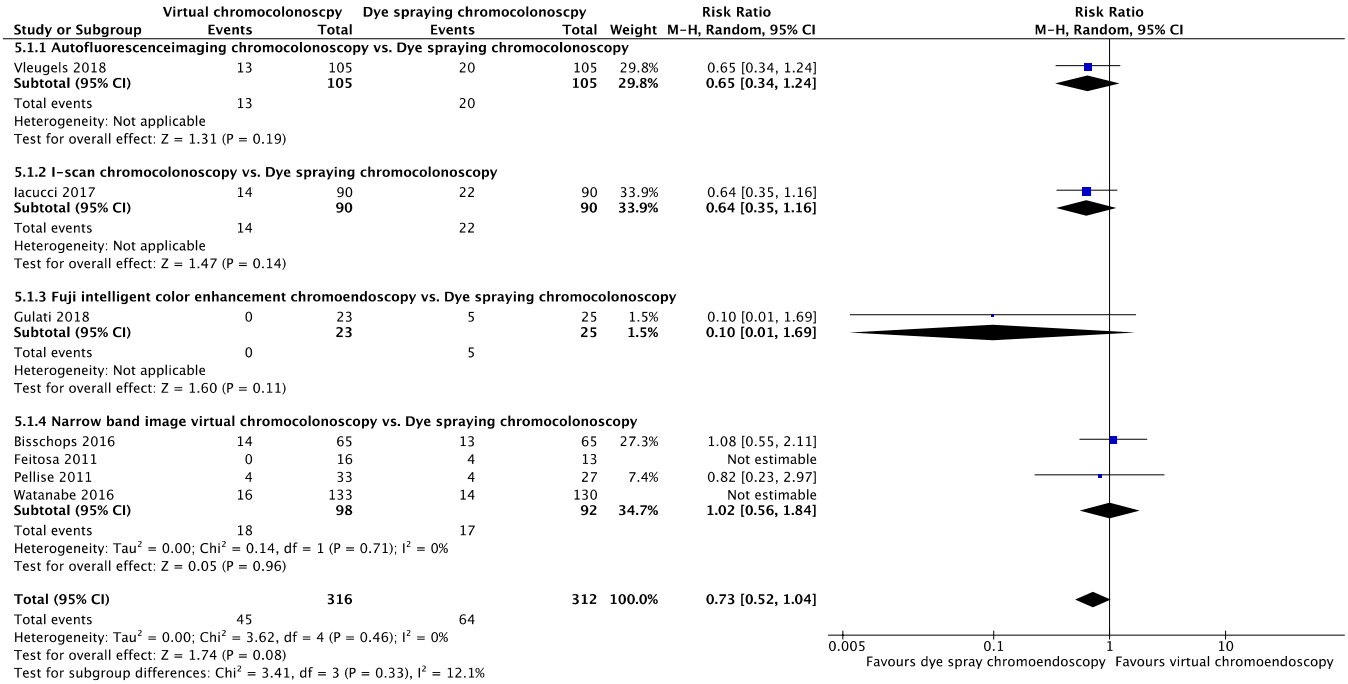
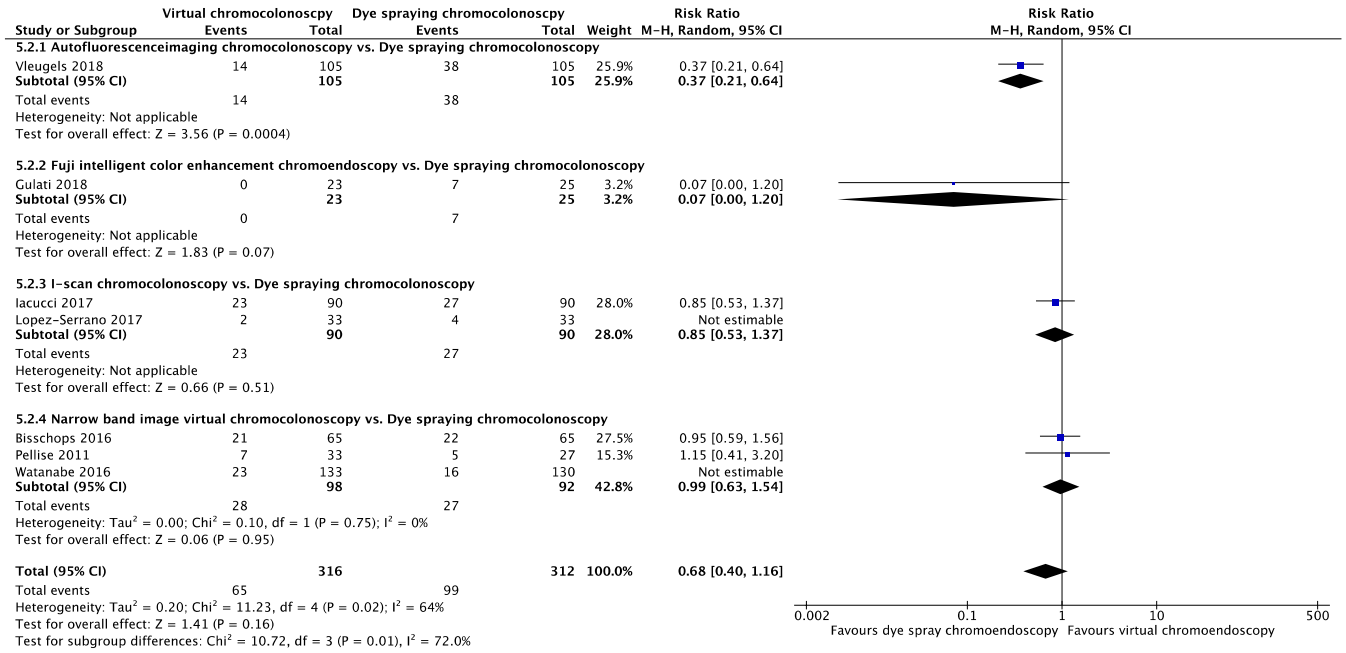


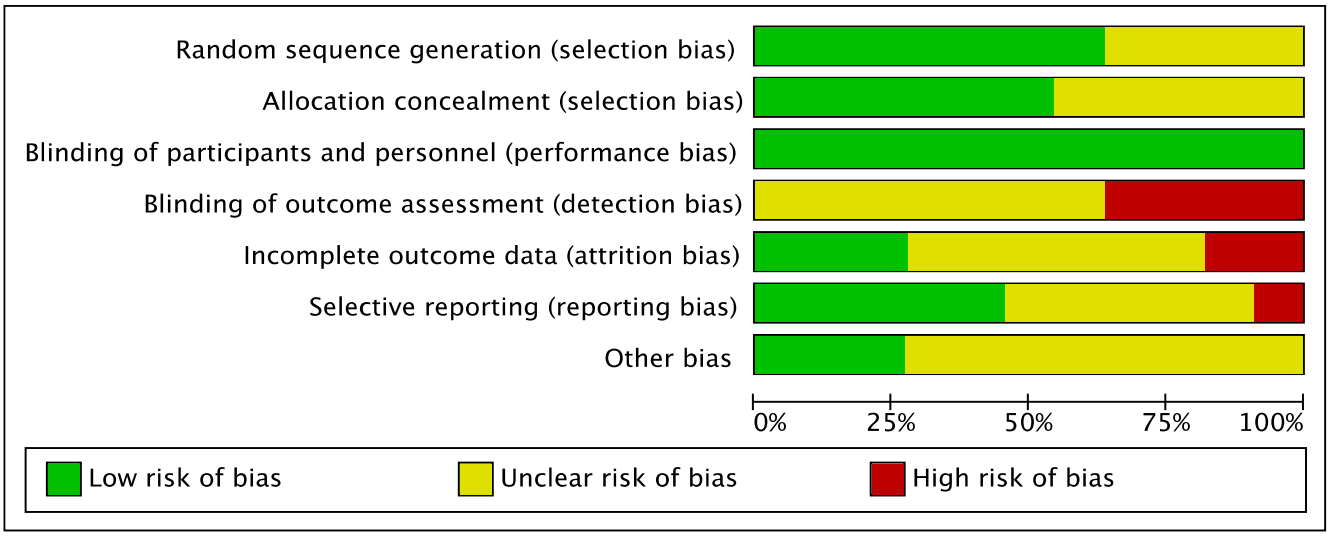
Supplementary figure 5. Forest plot of total procedure time measured by pooled mean difference between virtual chromoendoscopy vs. dye spraying chromoendoscopy.



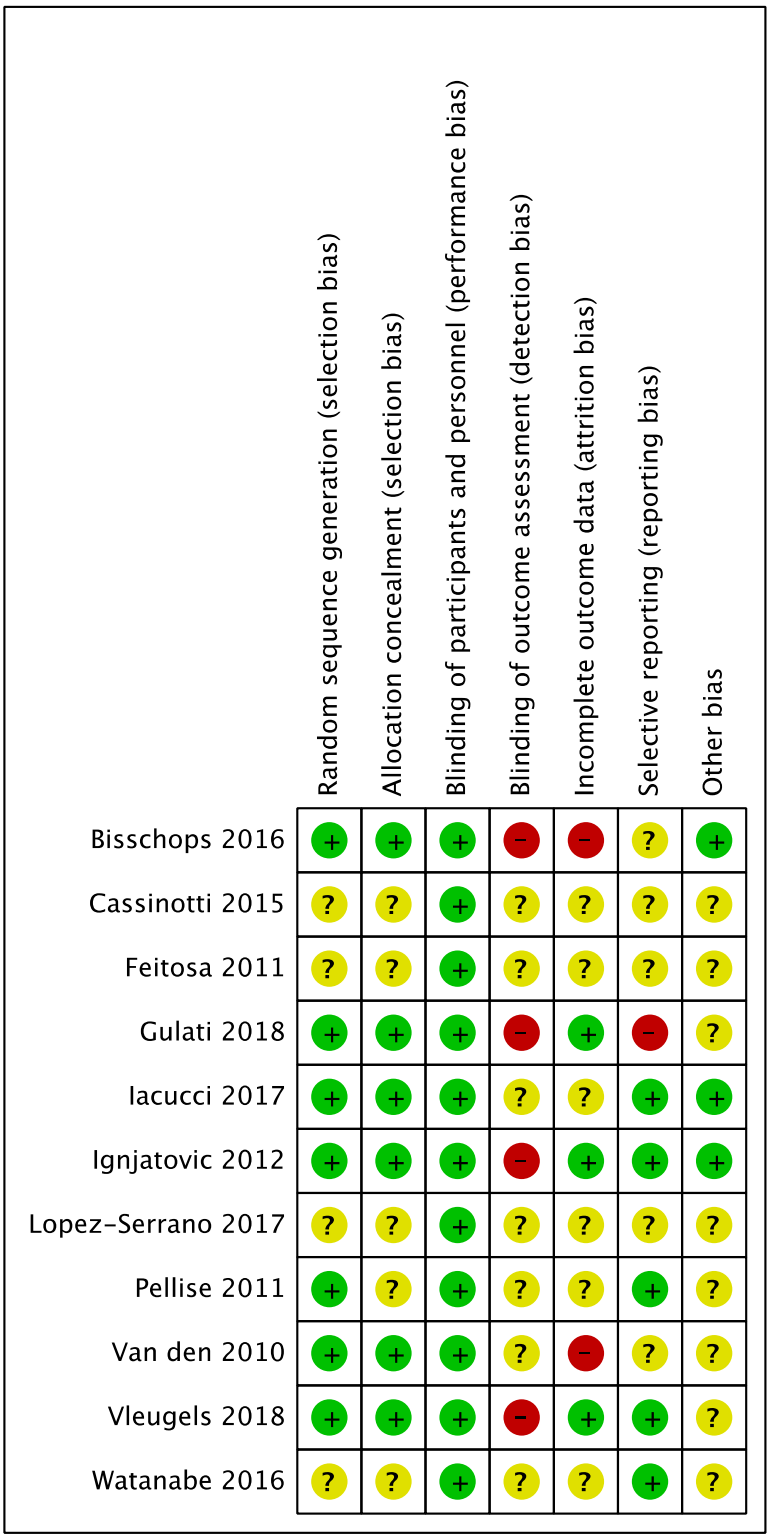
Supplementary figure 6. Forest plot of secondary meta-analysis comparing virtual chromoendoscopy to dye spraying chromoendoscopy in detecting dysplasia per patient's analysis.



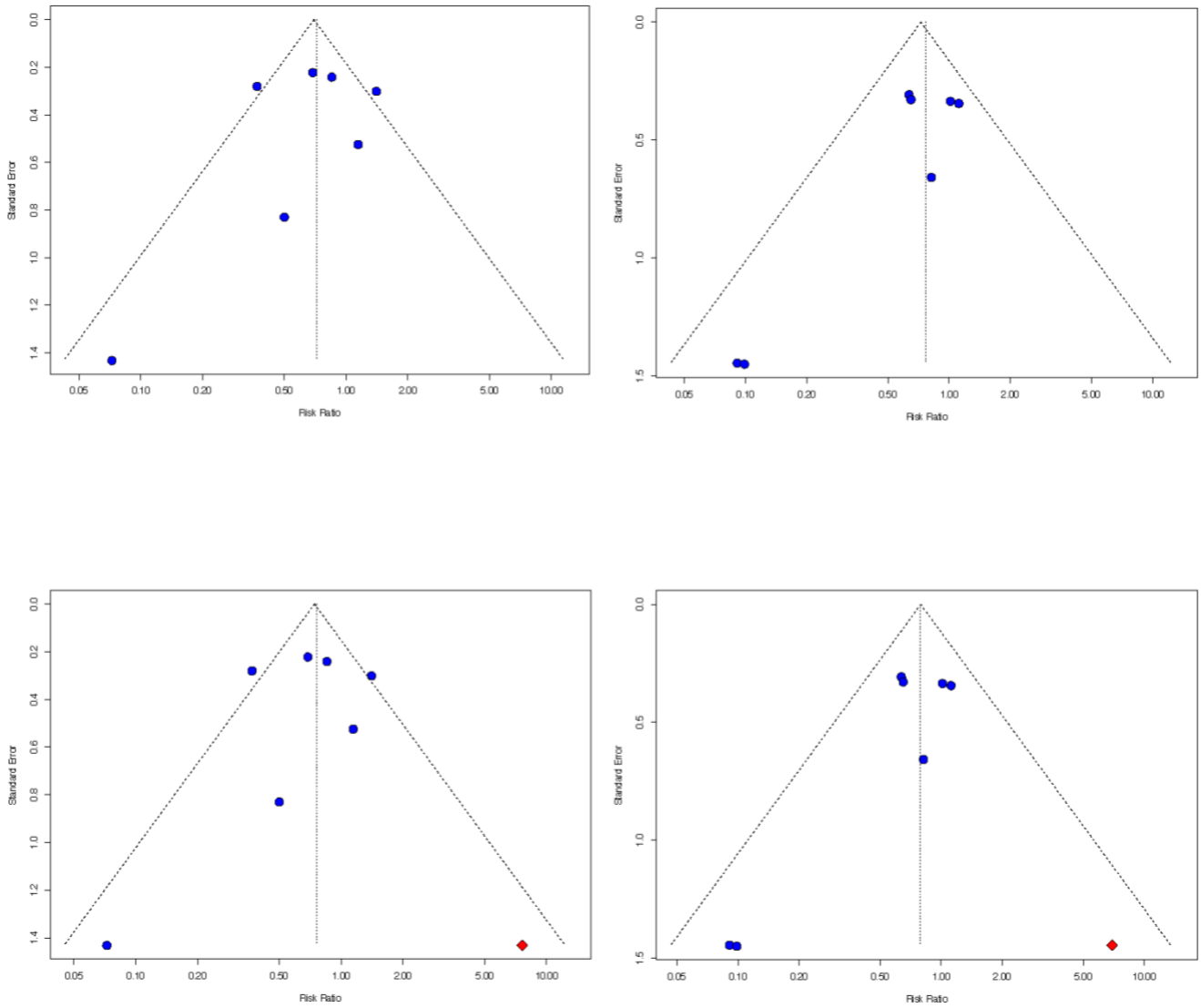
Supplementary figure 7. Forest plot of secondary meta-analysis comparing virtual chromoendoscopy to dye spraying chromoendoscopy in detecting dysplasia per number of lesions analysis.



Supplementary figure 8. Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.



Supplementary figure 9. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.



Supplementary figure 10. A. (Top left) Funnel plot to assess publication bias in the included studies that compared virtual chromoendoscopy vs. dye spraying chromoendoscopy per dysplastic lesions analysis. B. (Top right) Funnel plot to assess publication bias in the included studies that compared virtual chromoendoscopy vs. dye spraying chromoendoscopy per patient analysis. C and D (Bottom left and bottom right respectively) Trim and fill methodology to adjust for possible missing small studies per dysplastic lesions analysis and per patient analysis respectively. The blue dots represent the original studies and the red dots represent the added studies (fill).

Supplemental table 1: PRISMA check list

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	4
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	5
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4 and 5
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	4 and 5
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5
Risk of bias in individual	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or	5 and 6

studies		outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	5 and 6
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	6
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	6
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	6
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	8
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	6 and 7
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	6 and 7
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	8
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	7 and 8
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	8
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	9
Conclusions	26	Provide a general interpretation of the results in the context of other	10

		evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	10

Supplemental table 2: Search criteria in Pubmed, EMBASE, and Web of science.

PubMed:

(chromoendoscop*[tiab] OR chromo endoscop*[tiab] OR chromo colonoscop*[tiab] OR chromocolonoscop*[tiab]) AND (Virtual[tiab] OR real time[tiab] OR optical[tiab] OR video[tiab] OR post processing[tiab] OR digital[tiab] OR magnif*[tiab] OR confocal endomicroscop* [tiab] OR image enhance*[tiab] OR high performance[tiab] OR high definition[tiab] OR high resolution[tiab] OR electronic[tiab]) OR (magnify*[tiab] AND zoom[tiab] AND imag*[tiab]) OR (narrow band[tiab] OR NBI[tiab] OR narrow*spectrum endoscop*[tiab] OR optical diagnosis[tiab] OR optical imaging[tiab] OR image enhancement[tiab]) OR EVIS LUCERA[tiab] OR CV-290/CLV-290SL[tiab] OR CV-enhancement[tiab] OR EVIS EXERA[tiab] OR dual focus[tiab] OR (290HQ/290H[tiab] AND endoscop*[tiab]) OR (290HQ/290H[tiab] AND Olympus) OR (260Q/260H[tiab] AND endoscop*[tiab]) OR (260Q/260H[tiab] AND Olympus) OR FICE[tiab] OR flexible spectral imag*[tiab] OR white light[tiab] OR limited white[tiab] OR (Fuji intelligent colo*[tiab] AND enhancement[tiab]) OR (Fuji AND chromoendoscop*) OR (Fuji AND endoscop*) OR Fujinon/Aquilant Endoscop*[tiab] OR Fuji Aquilant Endoscop*[tiab] OR EPX-4450HD[tiab] OR EPX3500HD[tiab] OR EPX-4400[tiab] OR (Fuji[tiab] AND (500 series[tiab] OR 600 series[tiab] OR 600CMOS[tiab])) OR i-scan[tiab] OR image enhanced endoscop*[tiab] OR image enhanced chromoendoscop*[tiab] OR (Pentax and endoscop*[tiab]) OR EPK i5000[tiab] OR EPK i7000[tiab] OR EPK i7010[tiab] OR (Pentax AND (i10 OR 90i OR 90K)) OR (high definition[tiab] AND video processing[tiab])) AND ("Colonoscopy"[Mesh] OR Colonoscop*[tiab] OR Sigmoidoscop*[tiab] OR Proctosigmoidoscop*[tiab] OR "Colonic Polyps"[Mesh] OR "Colonic Polyps"[tiab] OR (("Colon"[Mesh] OR Colon[tiab] OR Colonic[tiab] OR rectal[tiab]) AND ("Adenoma"[Mesh] OR Adenoma*[tiab] OR "Polyps"[Mesh] OR polyp[tiab] OR polyps[tiab] OR lesion*[tiab])) OR neoplastic polyp[tiab] OR neoplastic polyps[tiab] OR "Colorectal Neoplasms"[Mesh] OR ((Colorectal[tiab] OR colon[tiab] OR colonic[tiab] OR rectal[tiab]) AND (Neoplasm[tiab] OR Tumor[tiab] OR tumors[tiab] OR tumours[tiab] OR Carcinoma*[tiab] OR Cancer*[tiab])))

EMBASE:

(Virtual:ab,ti OR 'real time':ab,ti OR optical:ab,ti OR video:ab,ti OR 'post processing':ab,ti OR digital:ab,ti OR magnif*:ab,ti OR ('confocal endomicroscop*':ab,ti) OR ('image enhance*':ab,ti) OR 'high performance':ab,ti OR 'high definition':ab,ti OR 'high resolution':ab,ti OR electronic:ab,ti OR (magnify*:ab,ti AND zoom:ab,ti AND imag*:ab,ti) OR 'narrow band':ab,ti OR NBI:ab,ti OR (narrow*:ab,ti AND spectrum:ab,ti AND endoscop*:ab,ti) OR 'optical diagnosis':ab,ti OR 'optical imaging':ab,ti OR 'image enhancement':ab,ti OR 'EVIS LUCERA':ab,ti OR CV-290:ab,ti OR CLV-290SL:ab,ti OR CV-enhancement:ab,ti OR 'EVIS EXERA':ab,ti OR 'dual focus':ab,ti OR (290HQ:ab,ti OR 290H:ab,ti AND endoscop*:ab,ti) OR (290HQ:ab,ti OR 290H:ab,ti AND Olympus) OR (260Q:ab,ti OR 260H:ab,ti AND endoscop*:ab,ti) OR (260Q:ab,ti OR 260H:ab,ti AND Olympus) OR FICE:ab,ti OR 'flexible spectral imag*':ab,ti OR 'white light':ab,ti OR 'limited white':ab,ti OR ('Fuji intelligent colo*':ab,ti AND enhancement:ab,ti) OR (Fuji AND chromoendoscop*) OR (Fuji AND endoscop*) OR Fujinon:ab,ti OR 'Aquilant Endoscop*':ab,ti OR 'Fuji Aquilant Endoscop*':ab,ti OR EPX-4450HD:ab,ti OR EPX3500HD:ab,ti OR EPX-4400:ab,ti OR (Fuji:ab,ti AND (500 series:ab,ti OR 600 series:ab,ti OR 600CMOS:ab,ti)) OR i-scan:ab,ti OR 'image enhanced endoscop*':ab,ti OR 'image enhanced chromoendoscop*':ab,ti OR (Pentax and endoscop*:ab,ti) OR 'EPK i5000':ab,ti OR 'EPK i7000':ab,ti OR 'EPK i7010':ab,ti OR (Pentax AND (i10 OR 90i OR 90K)) OR ('high definition':ab,ti AND 'video processing':ab,ti) AND

(('colonoscopy'/exp OR colonoscop*:ab,ti OR sigmoidoscop*:ab,ti OR proctosigmoidoscop*:ab,ti OR 'colon polyp'/exp OR 'colonic polyps':ab,ti OR (('colon'/exp OR colon:ab,ti OR colonic:ab,ti OR rectal:ab,ti) AND ('adenoma'/exp OR adenoma*:ab,ti OR 'polyp'/exp OR polyp:ab,ti OR polyps:ab,ti OR lesion*:ab,ti)) OR neoplastic) AND polyp:ab,ti OR neoplastic) AND polyps:ab,ti OR 'colorectal tumor'/exp OR ((colorectal:ab,ti OR colon:ab,ti OR colonic:ab,ti OR rectal:ab,ti) AND (neoplasm:ab,ti OR tumor:ab,ti OR tumors:ab,ti OR tumours:ab,ti OR carcinoma*:ab,ti OR cancer*:ab,ti))) AND (chromoendoscop*:ab,ti OR 'chromo endoscop*':ab,ti OR 'chromo colonoscop*':ab,ti OR chromocolonoscop*:ab,ti)

Web of science:

((virtual OR 'real time' OR optical OR video OR 'post processing' OR digital OR magnif* OR 'confocal endomicroscop*' OR 'image enhance*' OR 'high performance' OR 'high definition' OR 'high resolution' OR electronic OR (magnify* AND zoom AND imag*) OR 'narrow band' OR nbi OR (narrow* AND spectrum AND endoscop*) OR 'optical diagnosis' OR 'optical imaging' OR 'image enhancement' OR 'evis lucera' OR 'cv 290' OR 'clv 290sl' OR 'cv enhancement' OR 'evis exera' OR 'dual focus' OR ((290hq OR 290h) AND endoscop*) OR ((290hq OR 290h) AND olympus) OR ((260q OR 260h) AND endoscop*) OR ((260q OR 260h) AND olympus) OR fice OR 'flexible spectral imag*' OR 'white light' OR 'limited white' OR ('fuji intelligent colo*' AND enhancement) OR (fuji AND chromoendoscop*) OR (fuji AND endoscop*) OR fujinon OR 'aquilant endoscop*' OR 'fuji aquilant endoscop*' OR 'epx 4450hd' OR epx3500hd OR 'epx 4400' OR (fuji AND ((500 AND series OR 600) AND series OR 600cmos)) OR 'i scan' OR 'image enhanced endoscop*' OR 'image enhanced chromoendoscop*' OR (pentax AND endoscop*) OR 'epk i5000' OR 'epk i7000' OR 'epk i7010' OR (pentax AND (i10 OR 90i OR 90k)) OR ('high definition' AND 'video processing')) AND ((colonoscop* OR sigmoidoscop* OR proctosigmoidoscop* OR 'colon polyp' OR 'colonic polyps' OR ((colon OR colonic OR rectal) AND (adenoma* OR polyp OR polyps OR lesion*)) OR neoplastic) AND polyp OR neoplastic) AND polyps OR 'colorectal tumor' OR ((colorectal OR colon OR colonic OR rectal) AND (neoplasm OR tumor OR tumors OR tumours OR carcinoma* OR cancer*))) AND (chromoendoscop* OR 'chromo endoscop*' OR 'chromo colonoscop*' OR chromocolonoscop*)

Supplementary table 3: Review authors' judge of studies bias

Characteristics of included studies

Bisschops 2016

Methods	RCT, parallel
Participants	Patient with UC
Interventions	NBI vs. dye spraying chromoendoscopy
Outcomes	Number of patients wtih dyplasia and number of dysplasia
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Randomisation in a 1:1 ratio was used. The endoscopic surveillance technique to be used (NBI or CE) was marked and placed in batches of 20 sealed (opaque and unresectable) envelopes that were created by an independent research assistant"
Allocation concealment (selection bias)	Low risk	Quote: "Randomisation in a 1:1 ratio was used. The endoscopic surveillance technique to be used (NBI or CE) was marked and placed in batches of 20 sealed (opaque and unresectable) envelopes that were created by an independent research assistant"
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	High risk	Comment: No mention if endoscopist and/or the pathologist were blinded to the procedure. The author judge as high risk of bias.
Incomplete outcome data (attrition bias)	High risk	Quot: "After randomisation, 26 patients were excluded, according to the predefined inclusion and exclusion criteria (6 in the CE group and 17 in the NBI group)" Comment: unbalanced drop out
Selective reporting (reporting bias)	Unclear risk	Comment: The study protocol is available, clinicaltrial. gov ID: NCT01882205). Original the study planned to compare HDWLE vs. DCE vs. NBI, with a sample size of 402 patients. Not clear whey the study protocol got changed

Other bias	Low risk	Comment: The study appears to be free of other sources of bias.

Cassinotti 2015

Methods	RCT, parallel
Participants	Patients with UC
Interventions	FICE vs. SDWLE
Outcomes	Number of dysplasia
Notes	Abstract

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Allocation concealment (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Incomplete outcome data (attrition bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Selective reporting (reporting bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Other bias	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’

Feitosa 2011

Methods	RCT, parallel
Participants	Patient with IBD
Interventions	NBI vs. dye spraying chromoendoscopy

Outcomes	Number of patients with dysplasia
Notes	Abstract

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Allocation concealment (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Incomplete outcome data (attrition bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Selective reporting (reporting bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Other bias	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’

Gulati 2018

Methods	RCT, crossover
Participants	Patient with IBD
Interventions	FICE vs. dye sprying chromoendoscopy
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	Crossover

Risk of bias table

Bias	Authors' judgement	Support for judgement

Random sequence generation (selection bias)	Low risk	Quot: "Patients were randomized (1:1) on the day of the first procedure to receive either CE or VCE using a KCTU webbased randomization system"
Allocation concealment (selection bias)	Low risk	Quot: "...designed to conceal allocation from researchers, the chief investigator, and the statistician."
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	High risk	Comment: Neither the endoscopist nor the histopathologist were blinded to the procedure. The author judge as high risk of detection bias.
Incomplete outcome data (attrition bias)	Low risk	12 patients withdrawn from the study after randomization, it looks balanced between the two groups
Selective reporting (reporting bias)	High risk	Comment: The study protocol is available, (NCT02543021). In the study protocol the 1ry outcome was (quot: "Patient adherence to study design - success of recruitment (minimum recruitment of 75%) and retention of patients (minimum target of 75%) [Time Frame: 2 years]"). In the published study, the 1ry outcome is (quot: "The study was deemed feasible if any of the following criteria were met: recruitment of >60% of participants, retention of >50% of recruited patients, similar patient experience in VCE compared with CE, no evidence of contamination"
Other bias	Unclear risk	Comment: The study has a potential source of bias related to the crossoer design

Iacucci 2017

Methods	RCT, parellel
Participants	Patients with IBD
Interventions	HDWLE vs. dye spray chromoendoscopy vs. I-scan
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement

Random sequence generation (selection bias)	Low risk	Quot: "All patients enrolled were randomly allocated in blocks of four and assigned at a 1:1:1 ratio to undergo colonoscopy with high defi nition WLE (HD-WLE, group A), high defi nition DCE (HDDCE, group B), or high defi nition VCE (HD-VCE, group C) using a computer generated allocation."
Allocation concealment (selection bias)	Low risk	Quot: "Th e randomization was assigned before the colonoscopy by an independent coordinator blinded to the patients' history."
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Quot: "Th e histology was assessed by XG, SU, and PM, who were blinded to the endoscopic reports" Comment: The pathologist were blinded, but the endoscopist were not (as expected). Authors judge unclear risk of bias
Incomplete outcome data (attrition bias)	Unclear risk	No drop out after randomization
Selective reporting (reporting bias)	Low risk	Comment: The study protocol is available, (ClinicalTrials.gov with identifi cation number: NCT02098798), and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way
Other bias	Low risk	Comment: The study appears to be free of other sources of bias.

Ignjatovic 2012

Methods	RCT, parallel
Participants	Patients with UC
Interventions	NBI vs. HDWLE
Outcomes	Number of patients wtih dyplasia and number of dysplasia
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement

Random sequence generation (selection bias)	Low risk	Quot: "Randomization results obtained using a computer-generated sequence were kept in sealed opaque envelopes"
Allocation concealment (selection bias)	Low risk	Quot: "Randomization results obtained using a computer-generated sequence were kept in sealed opaque envelopes that were opened by the research nurse once the cecum had been reached."
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	High risk	Comment: No mention if endoscopist and/or the pathologist were blinded to the procedure. The author judge as high risk of bias.
Incomplete outcome data (attrition bias)	Low risk	Comment: No drop out after randomization
Selective reporting (reporting bias)	Low risk	Comment: The study protocol is available, ClinicalTrials.gov identifi er NCT00292175, and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way
Other bias	Low risk	Comment: The study appears to be free of other sources of bias.

Lopez-Serrano 2017

Methods	RCT, parallel
Participants	Patients with IBD
Interventions	I-scan vs. dye spraying chromoendoscpy
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	Abstract

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of 'Low risk' or 'High risk'
Allocation concealment (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of 'Low risk' or 'High risk'

Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Incomplete outcome data (attrition bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Selective reporting (reporting bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Other bias	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’

Pellise 2011

Methods	RCT, crossover
Participants	Patients wtih IBD
Interventions	NBI vs. chromoendoscopy
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	Crossover

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quot: "The order in which the examinations were performed was randomized (1:1) to provide sufficient safeguards against the influence of any potential confounding effects"
Allocation concealment (selection bias)	Unclear risk	Comment: There was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Quot: "For purposes of this study, the pathologists were blinded to the endoscopic technique in question" Comment: The pathologist were blinded, but the endoscopist were not (as expected). Authors judge unclear risk of bias

Incomplete outcome data (attrition bias)	Unclear risk	Comment: There were 20 drop out after randomization, unclear from which group, however, given the crossover design of the study, it is unlikely to cause bias.
Selective reporting (reporting bias)	Low risk	Comment: The study protocol is not available but it is clear that the published reports include all expected outcomes, including those that were pre-specified.
Other bias	Unclear risk	Comment: The study has a potential source of bias related to the crossoer design

Van den 2010

Methods	RCT, Crossover
Participants	Patient with UC
Interventions	Narrow-band imaging versus high-definition endoscopy
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	Only the first period of the crossover was included

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quot: "Randomization was done by opening opaque sealed envelopes (containing notes with either “HDE first” or “NBI first” in a 1:1 ratio) once the cecum had been reached during the first procedure." Comment: no specific statement regarding the sequence generation, but the authors judge based on the (1:1) and using the close envelope method that there is low risk of bias
Allocation concealment (selection bias)	Low risk	Quot: "Randoization was done by opening opaque sealed envelopes (containing notes with either “HDE first” or “NBI first” in a 1:1 ratio) once the cecum had been reached during the first procedure."
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Quot: "The pathologists were blinded to detection technique and endoscopic diagnosis" Quot: "

		Comment: Histopathologist were blinded, endoscopist were blinded until they reached the cecum, but then unblinded (as expected). Authors judge unclear risk of bias
Incomplete outcome data (attrition bias)	High risk	Comment: No patient excluded after the randomization (after reaching the cecum)
Selective reporting (reporting bias)	Unclear risk	Comment: The study protocol is available, (ISRCTN trial number 56671833; www.trialregister.nl), and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way
Other bias	Unclear risk	Comment: The study has a potential source of bias related to the crossoer design

Vleugels 2018

Methods	RCT, parellel
Participants	Patients with UC
Interventions	AF vs. DCE
Outcomes	Number of patient with dysplasia and number of dysplasia
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quot: "A research assistant used an online randomisation program (ALEA) to randomly assign (1:1) patients to colonoscopy with either autofluorescence imaging or chromoendoscopy."
Allocation concealment (selection bias)	Low risk	Comment: No statement about concealment, however, the risk of bias seems to be low given that the allocation was done by a research assistance using a website after the cecum was reached.
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	High risk	Quot: "The executing endoscopists could not be masked to the endoscopic strategy used because chromoendoscopy and autofluorescence imaging generate very different image types. Colonic tissue from patients in the chromoendoscopy group contained blue dye in the specimen, so

		the pathologists might also not have been masked to group assignment."
Incomplete outcome data (attrition bias)	Low risk	No drop out after randomization
Selective reporting (reporting bias)	Low risk	Comment: Comment: The study protocol is not available to the authors but it is clear that the published reports include all expected outcomes, including those that were pre-specified.
Other bias	Unclear risk	Quot: "The randomisation strategy was a deviation from the block randomisation approach specified in the protocol" Comment: This change might have introduced bias

Watanabe 2016

Methods	RCT, parallel
Participants	Patients with UC
Interventions	NBI vs. dye spraying chromoendoscpy
Outcomes	Number of dysplasia
Notes	Abstract

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Allocation concealment (selection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Blinding of participants and personnel (performance bias)	Low risk	Comment: The review authors judge that the outcome is not likely to be influenced by lack of blinding.
Blinding of outcome assessment (detection bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’
Incomplete outcome data (attrition bias)	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of ‘Low risk’ or ‘High risk’

Selective reporting (reporting bias)	Low risk	Comment: The study protocol is available, (UMIN000013527), and all of the study's pre-specified (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way
Other bias	Unclear risk	Comment: this was an abstract publication, there was insufficient information to permit judgement of 'Low risk' or 'High risk'