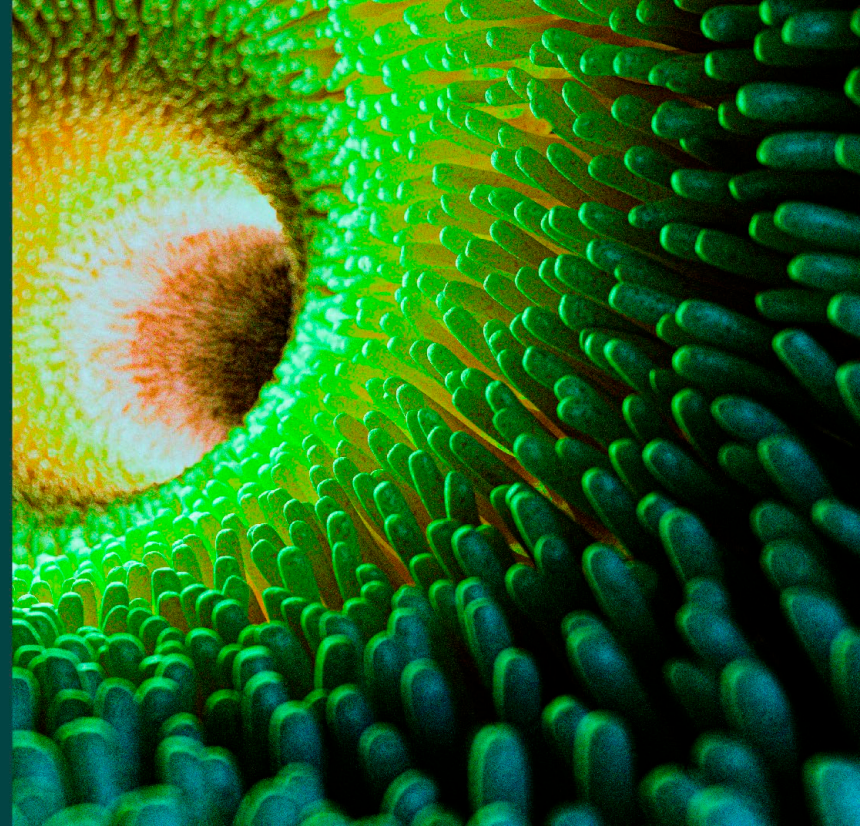
top ten
in gastroenterologia
14^ EDIZIONE
24-25 NOVEMBRE 2023
BERGAMO
HOTEL EXCELSIOR SAN MARCO
Piazza della Repubblica, 6



Dott.ssa Silvia Paggi
UOC Gastroenterologia
Ospedale Valduce
Como

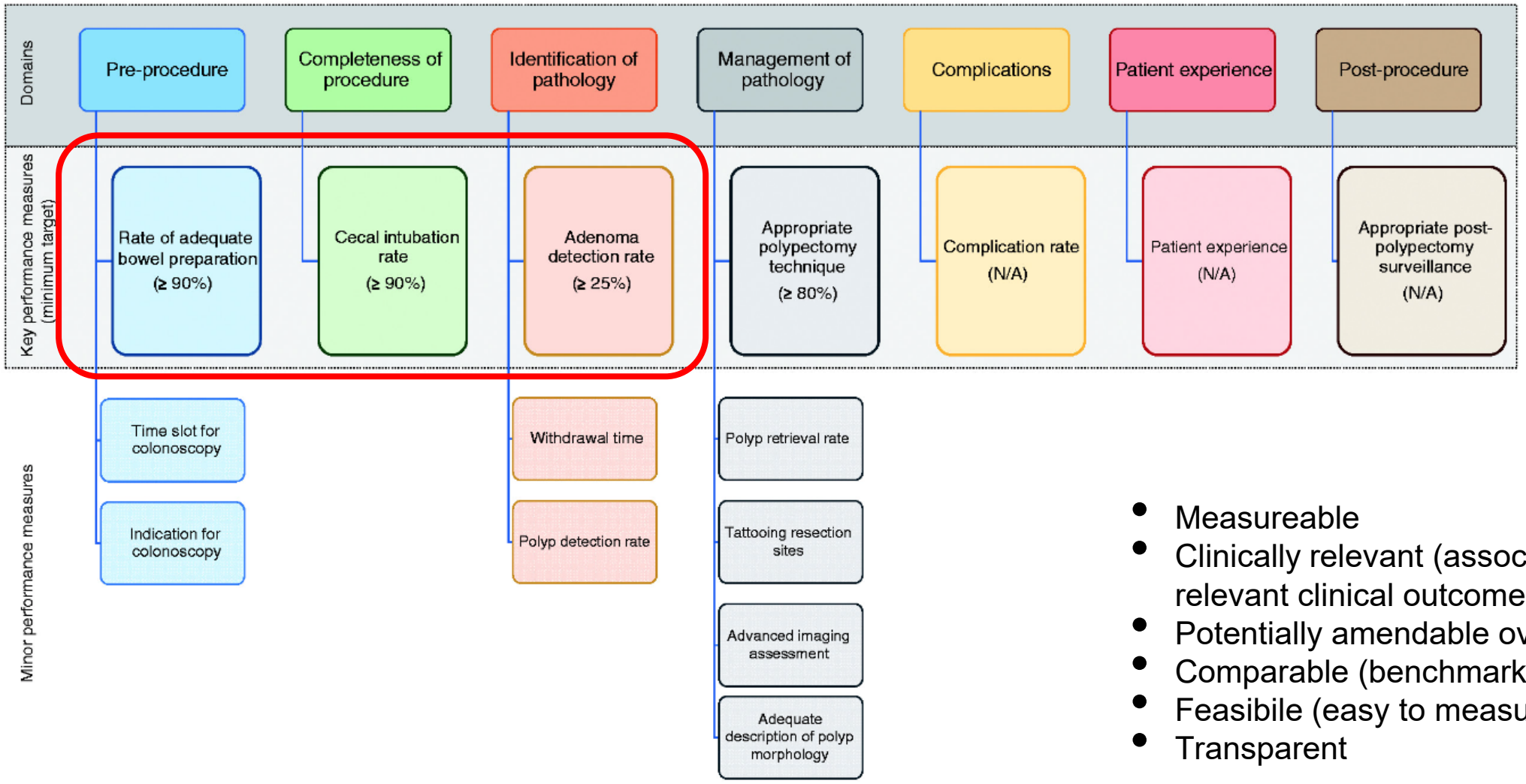
Indicatori di una colonscopia di qualità

Disclorures

No conficts of interest to declare

Colonoscopy Performance Measures

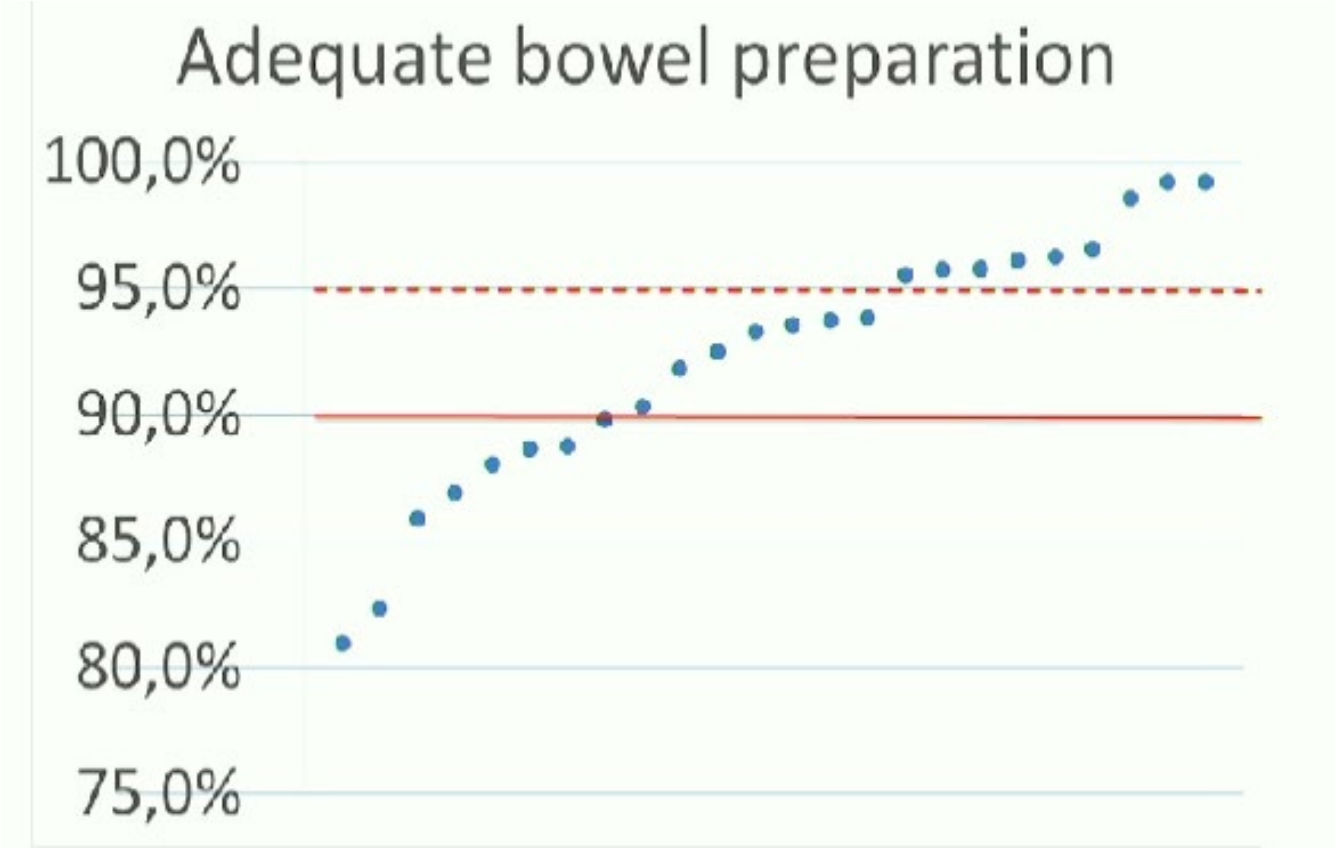
Kaminski M et al. Performance measures for lower gastrointestinal endoscopy: a European Society of Gastrointestinal Endoscopy (ESGE) Quality Improvement Initiative. *Endoscopy* 2017



- Measureable
- Clinically relevant (associated with relevant clinical outcomes)
- Potentially amendable over time (CQI)
- Comparable (benchmarking)
- Feasibile (easy to measure)
- Transparent

Inadequate bowel preparation

Poland
43 277 subjects, screening colonoscopy
25 endoscopy organized screening centers

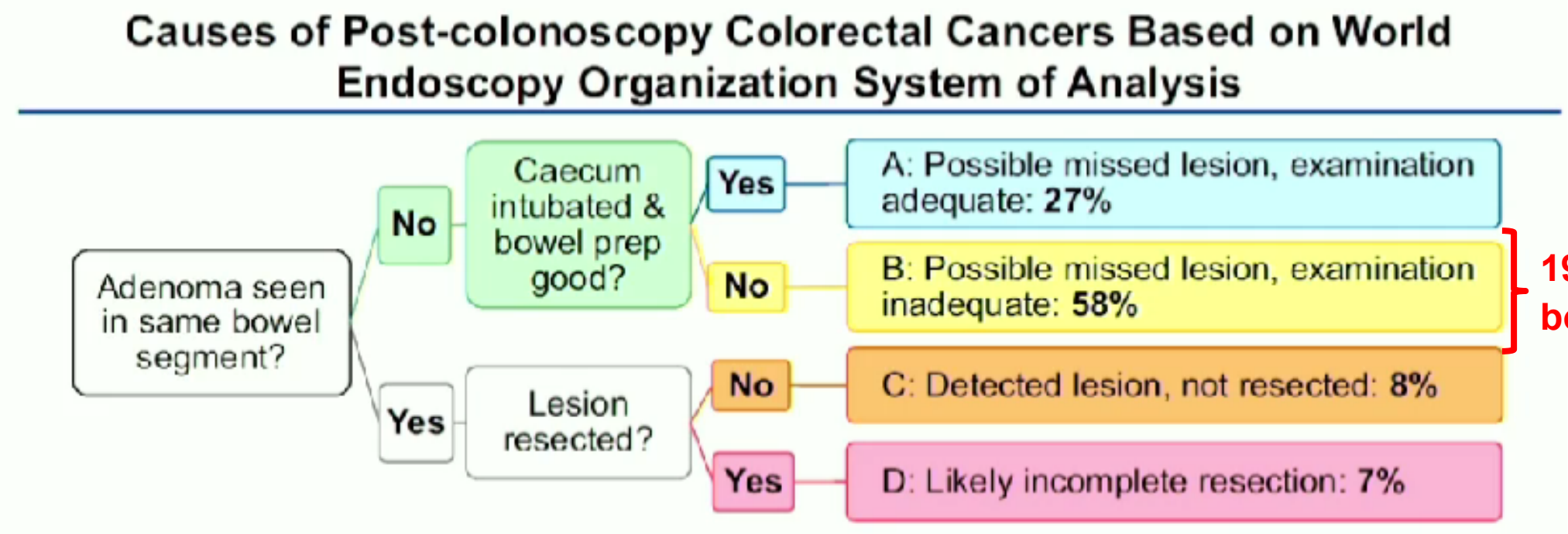


Adequate bowel preparation rate 91,3% (79,2%-99,2%)

Bugajski M, Endoscopy 2019; 51:858-865

Inadequate bowel preparation AND PCCRC

United Kingdom
107 post colonoscopy cancers (2010-2017)
Single endoscopy center



Anderson R, Gastroenterology 2020; 158:1287-1299

Any potential explanation?

1. Patient case mix

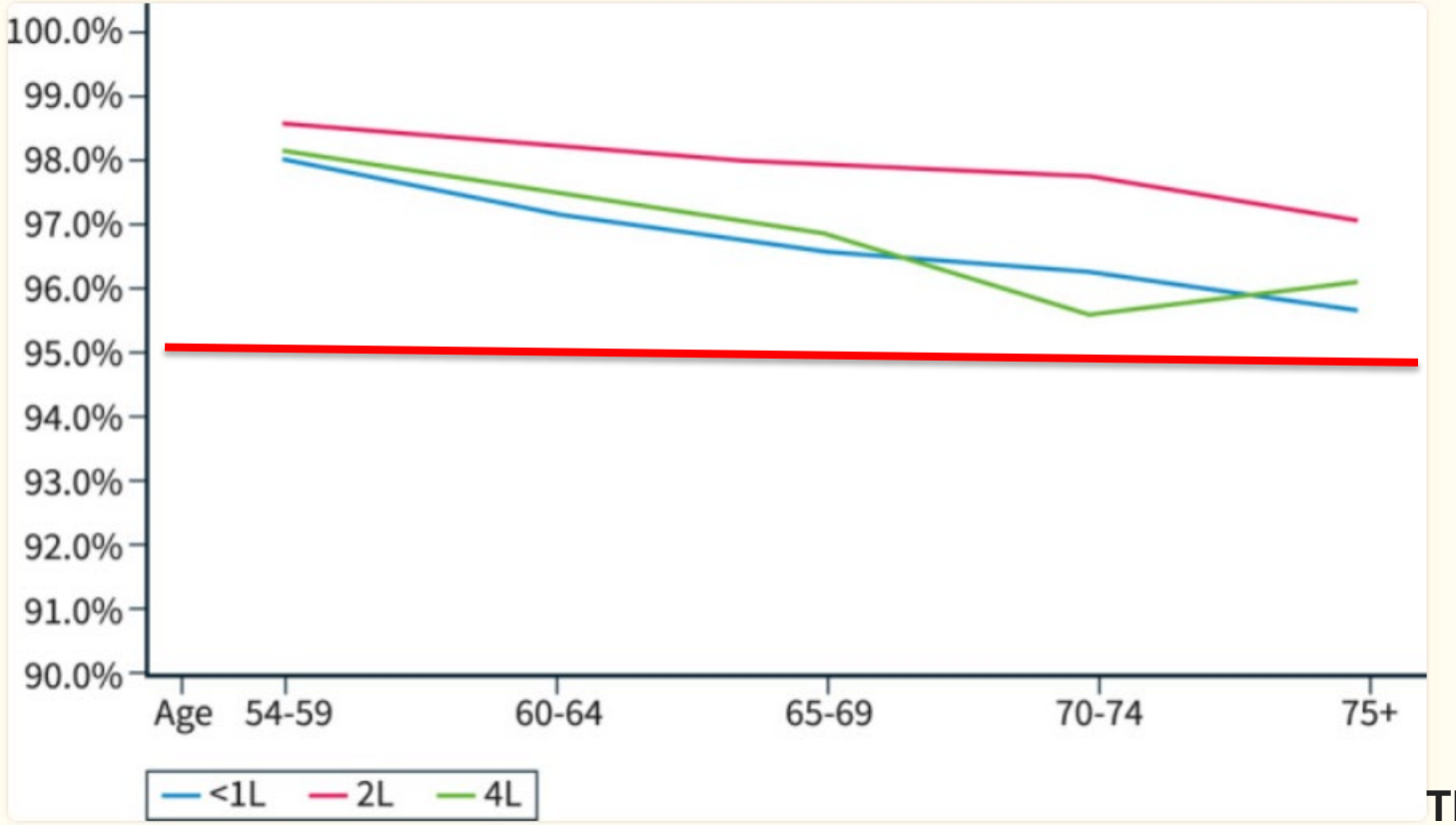
Inpatient status
Chronic constipation
Inflammatory bowel disease
Medications
History of inadequate bowel preparation
Diabetes mellitus
Previous colonic surgery

Any potential explanation?

1. Patient case mix
2. Organizational issues: split the dose!
3. Cultural issues: use of written instructions
4. Bowel regimen issues: high versus low versus ultra-low

High versus low volume regimens

The Netherlands
25 screening centers, 2016-2020
39042 screening colonoscopies

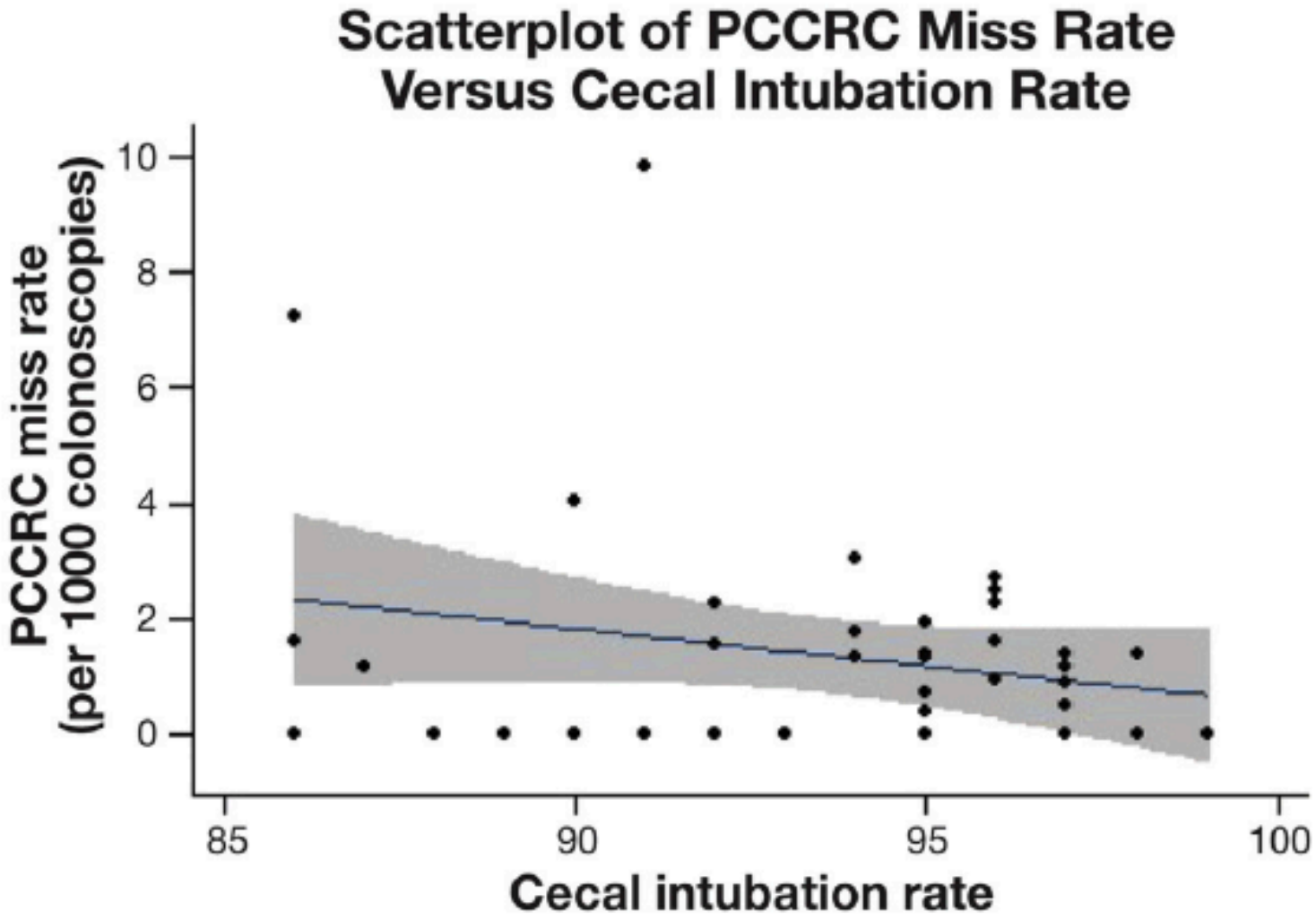


ESGE benchmark met in all cases

Theunissen F. UEGJ 2023: 11: 448–457

Caecal intubation rate AND PCCRC

United Kingdom
107 post colonoscopy cancers (2010-2017)
Single endoscopy center

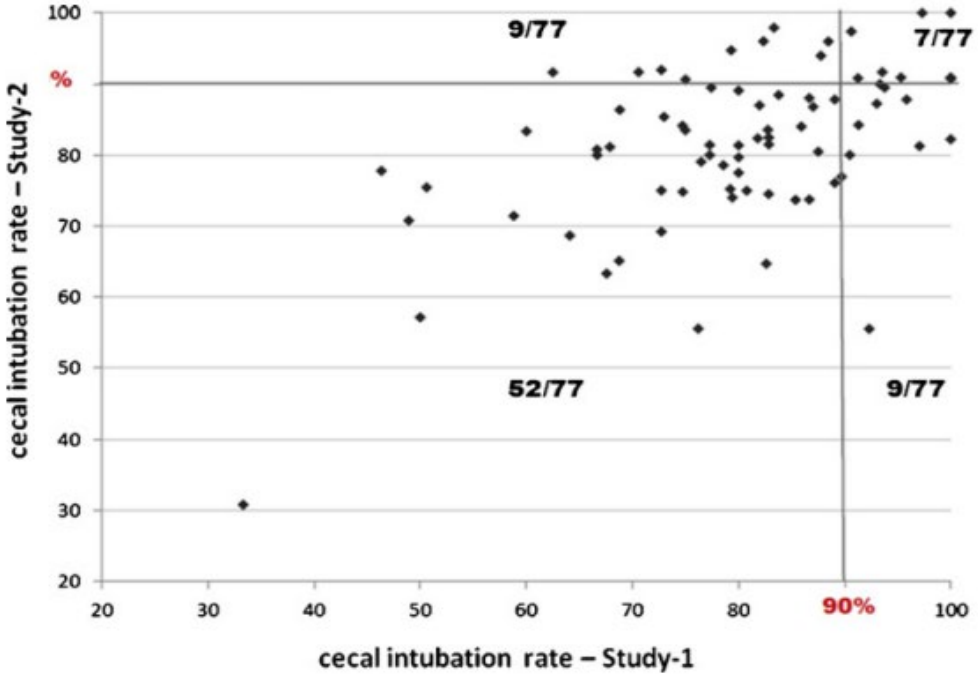


Anderson R, Gastroenterology 2020; 158:1287-1299

Caecal intubation rate

Radaelli F, Digest Liver Dis 2013; 45:28-32

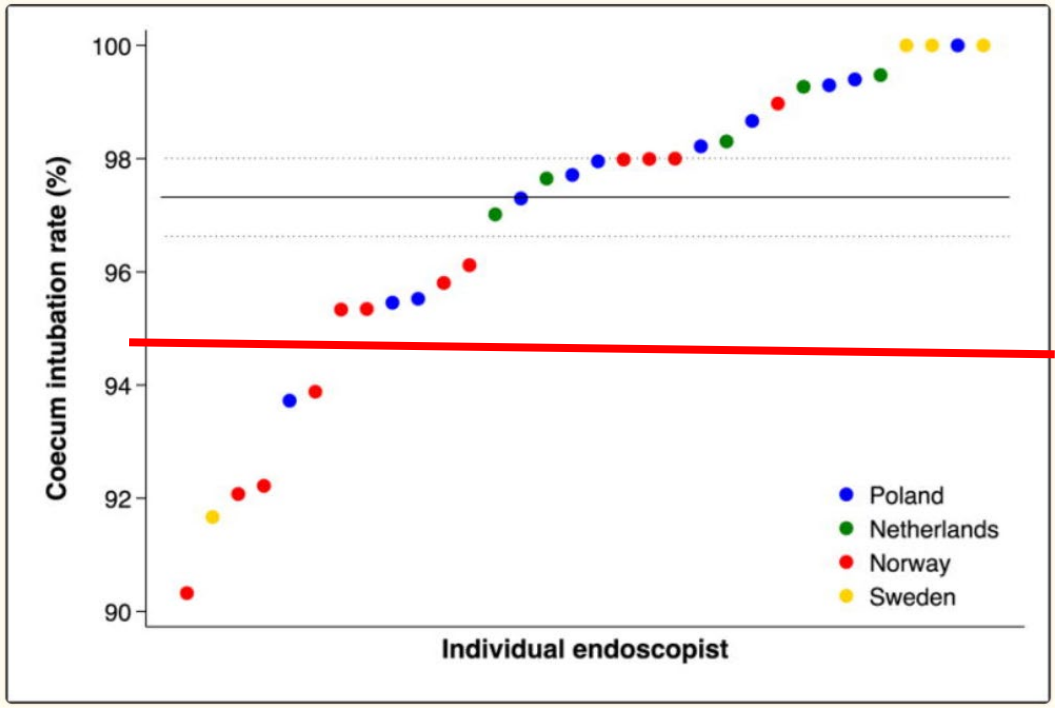
Italy
77 endoscopy centers participating in two surveys
(year 2004 and 2009)



Caecal intubation rate 80,6% → 85%

Bretthauer M, JAMA Intern Med 2016; 176:894-902

Poland, The Nederlands, Norway, Sweden
94 959 subjects
35 Endoscopists



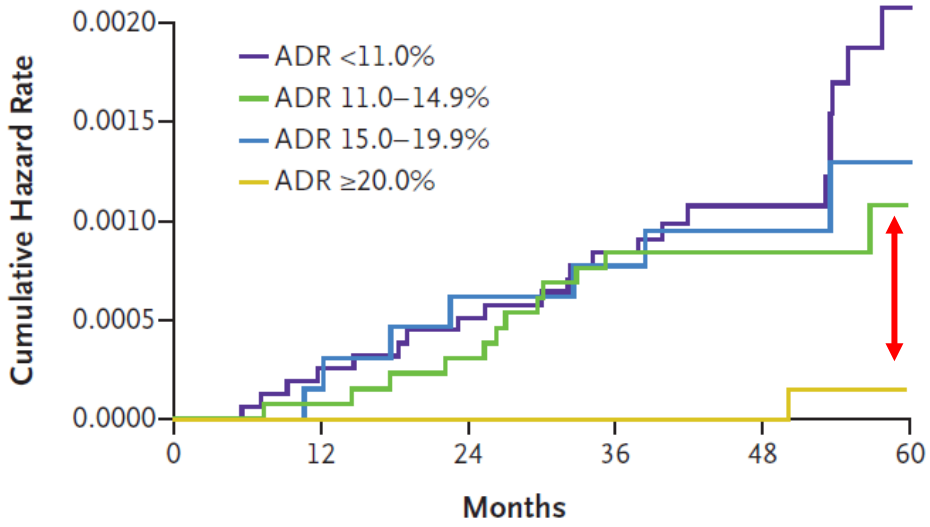
Ceacal intubation rate 97,2%

Risk of PCCRC and endoscopist's ADR

Kaminski MF, *N Engl J Med* 2010; 362: 1795-803

Poland
45.026 subjects, screening colonoscopy
188,788 person-years

186 endoscopists (14% with ADR > 20%)
42 i-CRC

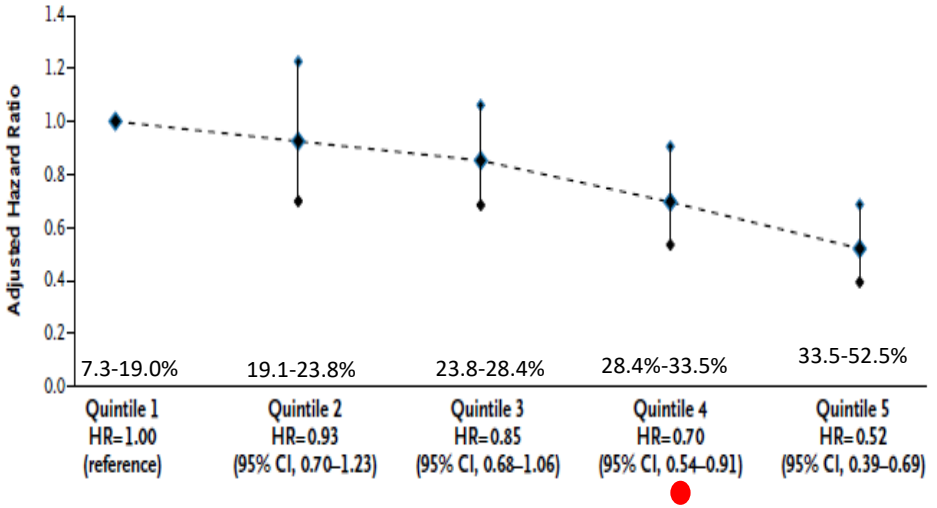


ADR >20% = 10x risk reduction of i-CRC

Corley DA, N Engl J Med 2014; 370:1298-306

Kaiser Permanente Northern California, US
223,842 subjects, screening colonocopy
927,523 person-yr

136 endoscopists (ADR 7.3% - 55.5%)
712 i-CRC

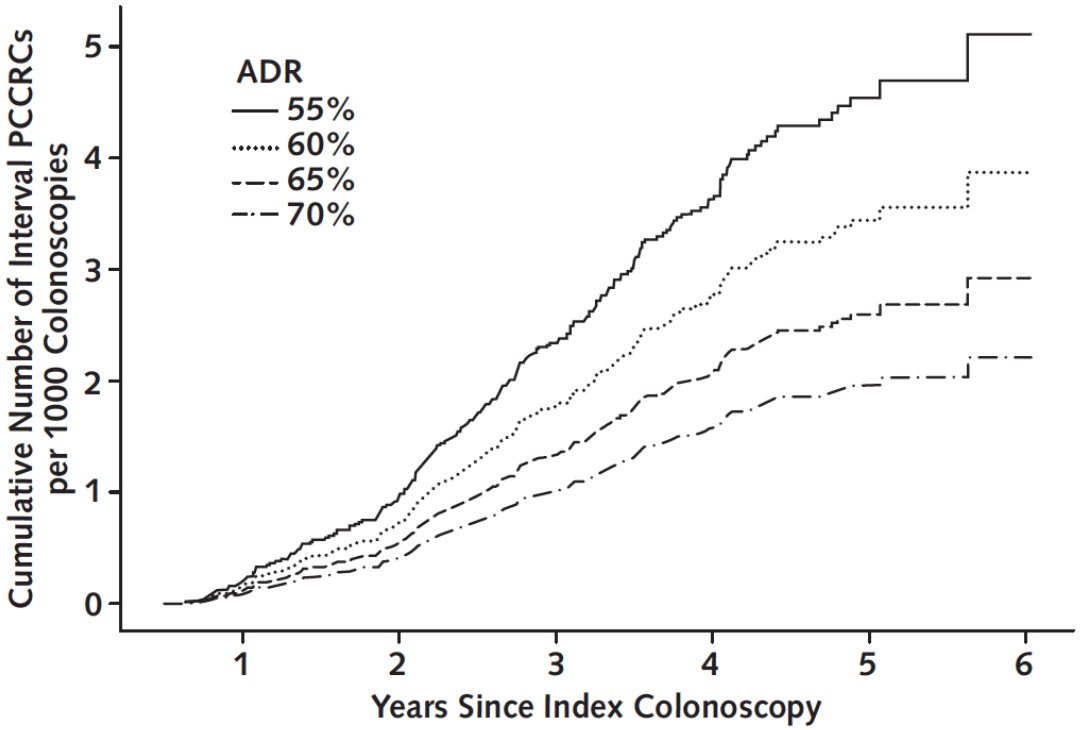


Each + 1% ADR = - 3% relative risk of i-CRC

Risk of PCCRC and endoscopist's ADR in FIT+

Wisse P, Annals Intern Med 2022; 156: 1366-1373

FIT cut-off: 47 µg Hb/g faeces
116,360 colonoscopies (2014-2016)
359.589 person-years f-up
311 endoscopists (median ADR of 67%)
209 i-CRC

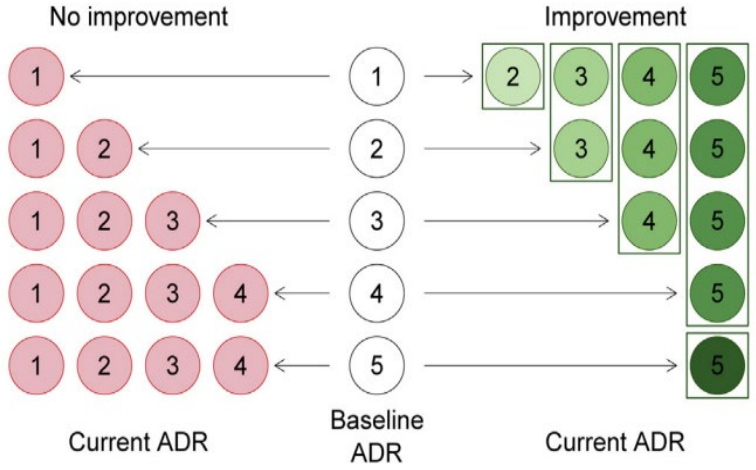


Each + 1% ADR = - 5% relative risk of PCCRC

ADR improvement and risk of PCCRC

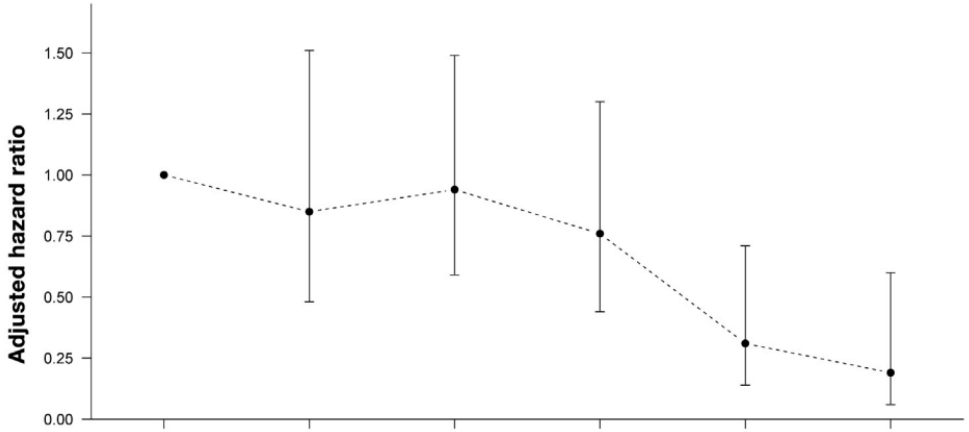
Kaminski MF, ***Gastroenterology*** **2017; 153: 98-105**

Poland
Prospective cohort study
146.860 colonoscopies (2004-2008)
294 colonoscopists
Intervention: annual feedback



Quintiles categories:
1. <11.21%
2. 11.22% - 15.10%
3. 15.11% - 19.17%
4. 19.18%-24.56%
5. >24.56%

74% increased their annualy ADR category



	No improvement	Improvement from 1 to 2	Improvement from 1 or 2 to 3	Improvement from 1−3 to 4	Improvement from 1−4 to 5	Remain in 5th
HR	1.00	0.90	0.74	0.64	0.27	0.18
95% CI		(0.61, 1.34)	(0.47, 1.16)	(0.41, 1.01)	(0.12, 0.63)	(0.06, 0.56)
No. of cancers/ 100,000 p−yrs	25.34	22.67	18.86	16.25	7.09	4.49

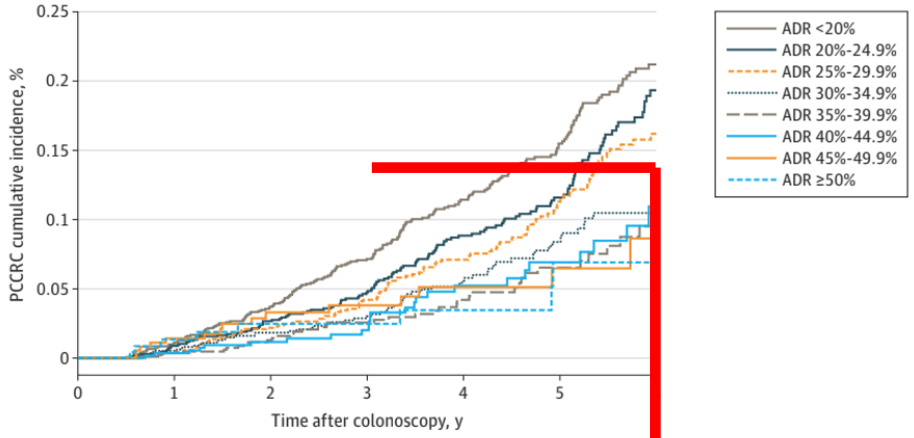
Endoscopists who reached or maintanied the highest ADR quintiles (ADR > 24.5%) had a lower risk of iCRC for their patients of 73% (aHR 0.27, 95% CI 0.12–0.63)

Is there any relevant threshold for ADR?

Schottinger JE et al., *JAMA* 2022; 327: 2114-2122.

3 Kaiser Permanente Health Systems (Northern California, Southern California, Washington)
735,396 subjects (50-75yr) with negative colonoscopy (2011-2017)
Median f-up 3.25 yr (IQR 1.56-5.01); 2.4 million person-yr

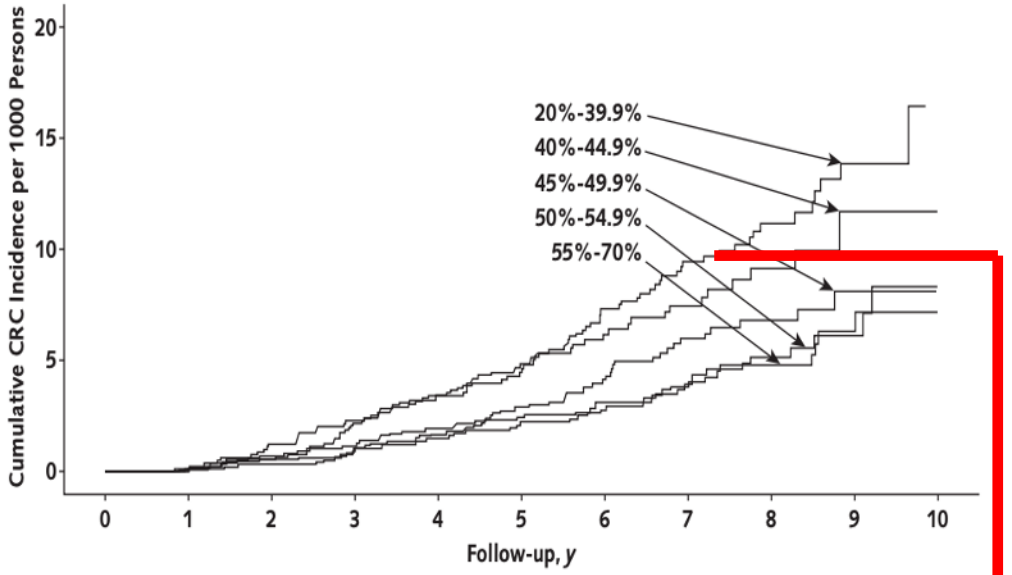
283 endoscopists, 43 endoscopy centres
619 i-CRC



ADR 35%

Zorzi M, et al. Ann Intern Med 2023, 76:303-310

49,626 colonoscopies(2012-2017)
328.778 person-years f-up
113 endoscopists (median ADR of 48.3%)
277 i-CRC



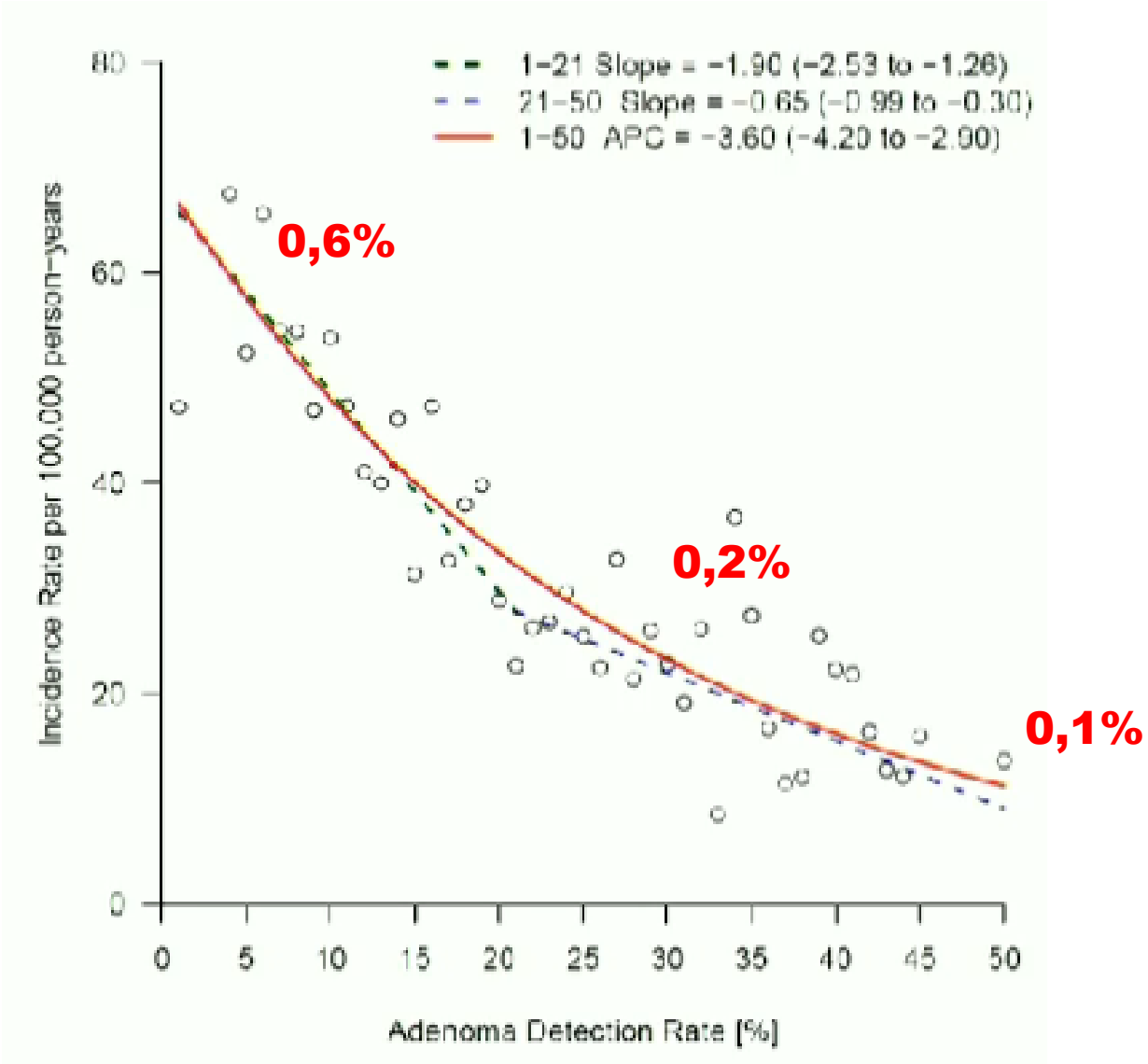
ADR 45%

How high should we push?

Pilonis ND, DDW 2022

402.654 primary colonoscopy subjects
789 endoscopists
Median ADR 19,7%
Median f-up 8,5 yrs

1191 PCCRC

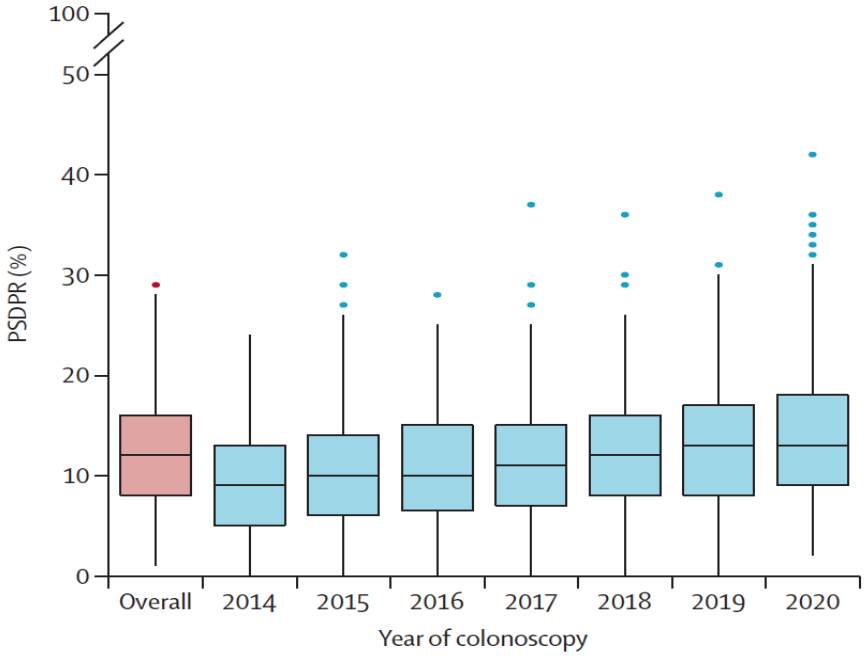


SSA/Ps and risk of PCCRC

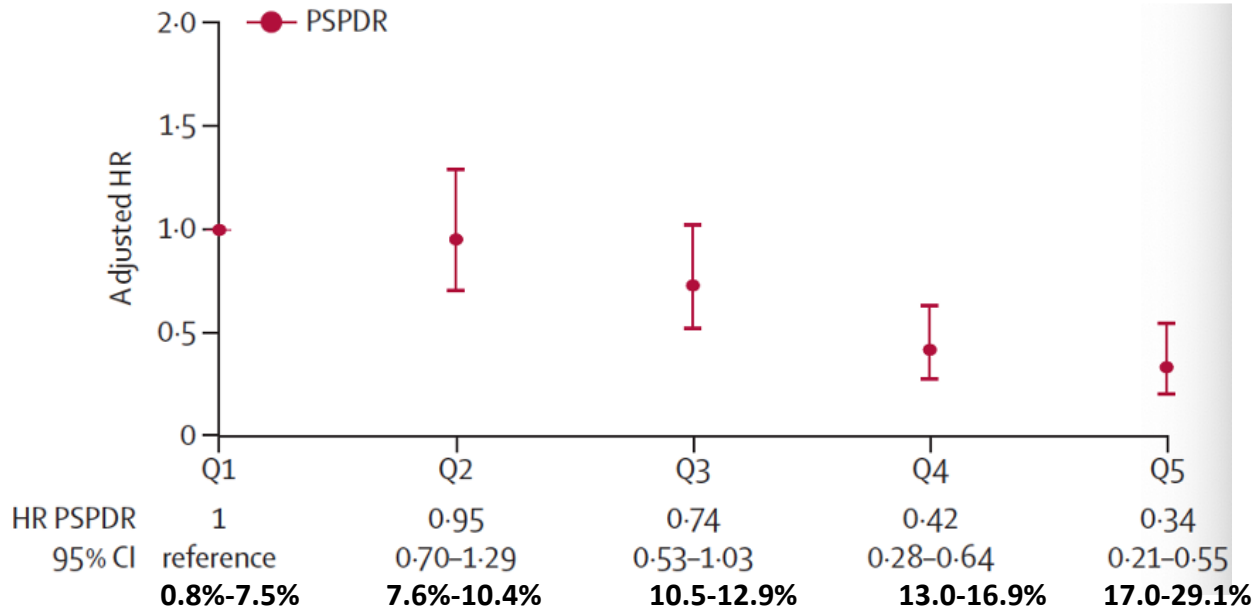
***van Toledo DEF et al. Lancet Gastroenterol Hepatol* 2022; 7: 747–54**

Dutch screening program (FIT cut-off: 47 µg Hb/g faeces)
277.555 screening patients 55-77 yr (2014-2020)
441 endoscopists
median follow-up of 33 months
305 i-CRCs.

PSPDR = DR of serrated polyp (SSLs+HPs) proximal to the descending colon



Mean PSPDR: 11.9 (IQR 8.3-15.8)
Mean ADR: 66.3% (61.4-69.9)



Each + 1% PSPDR = - 7% risk of PCCRC

SSA/Ps and risk of PCCRC

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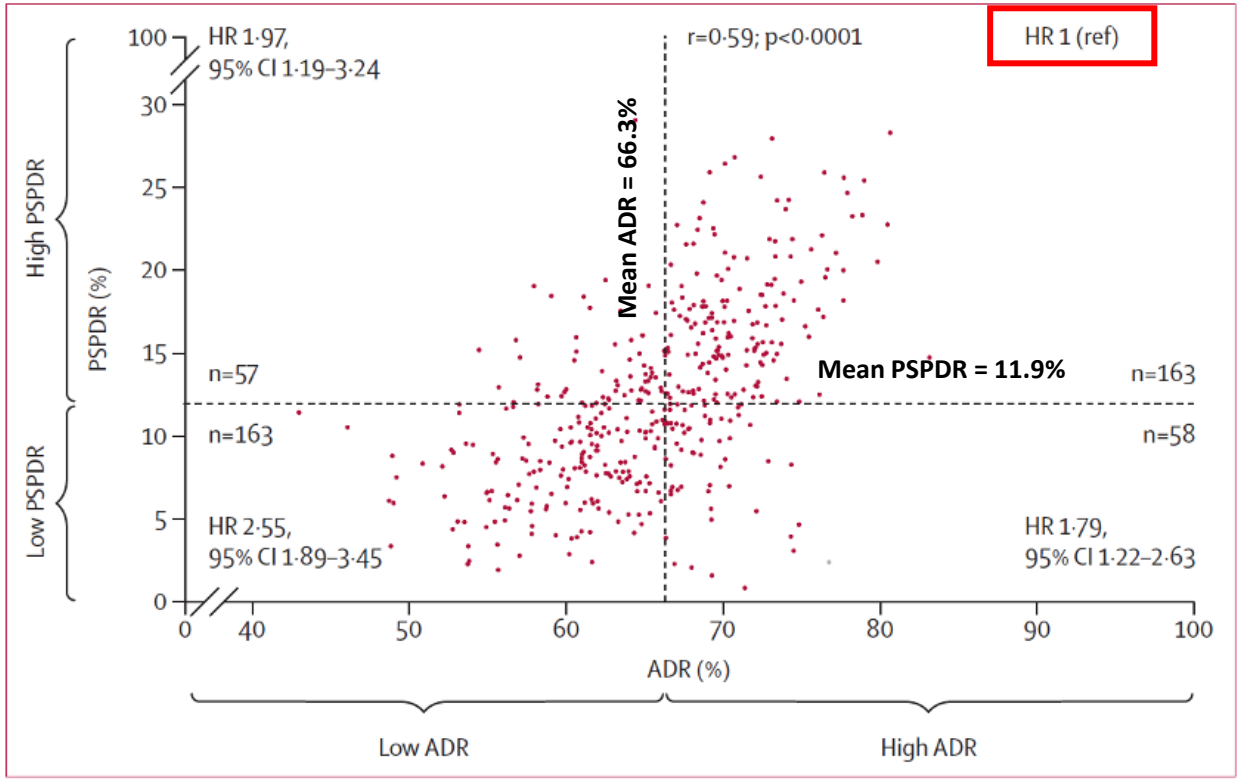


Figure 3: Risk of interval post-colonoscopy colorectal cancer for endoscopists with a high PSPDR and a high ADR compared with endoscopists with a high PSPDR and a low ADR, low PSPDR and high ADR, or low PSPDR and low ADR

Implications of all the available evidence

At present, the ADR is the only evidence-based polyp detection parameter. Based on our results, monitoring of serrated polyp detection could be a valuable addition to optimise colonoscopy quality and reduce interval post-colonoscopy colorectal cancer incidence.

Is ADR really the best indicator?

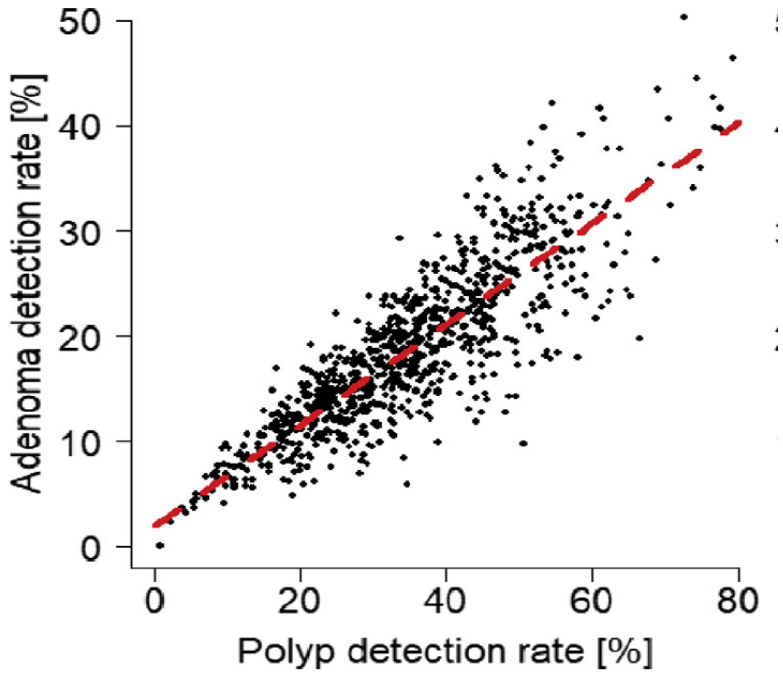
- **Measureable**
- **Clinically relevant (associated with relevant clinical outcomes)**
- **Scientific acceptability**
- **Potentially amendable over time (CQI)**
- **Comparable (benchmarking)**

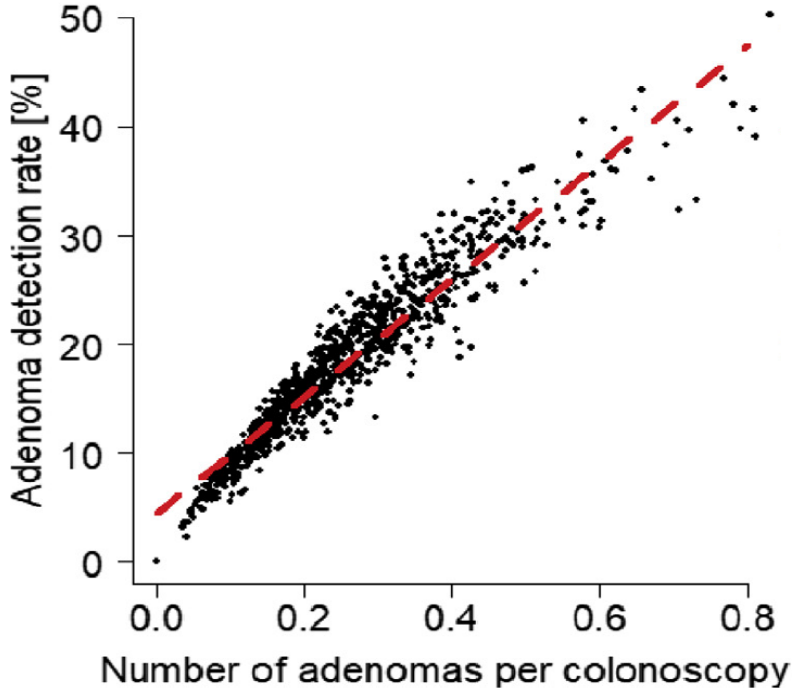
- Feasibility (easy to measure)
  - Need to populate quality/ endoscopy database with pathology information
  - Reliability of ADR depends on procedural volume (narrower 95% CI)
    (?) 100 colonoscopies according to ESGE guidelines ? 500? (Ao, A et al. *Gastrointest Endosc* 2013)
- Transparent
  - Potentially gaming (*one-and-done* procedure)

ADR and correlation with PDR and APC

Wieszczy P, *Clin Gastroenterol and Hepatol* 2023;21:200–209

Poland
173,287 screening patients (2000-2011)
262 endoscopists (>100 colonoscopies)
median follow-up of 10 years. and 1,490,683 person-years,
395 i-CRCs.





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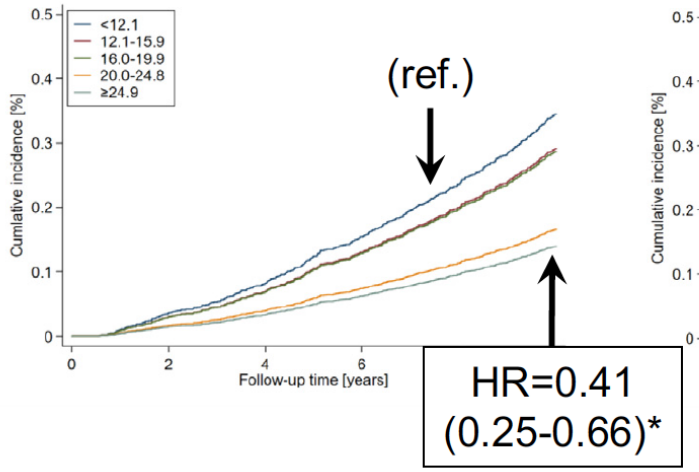
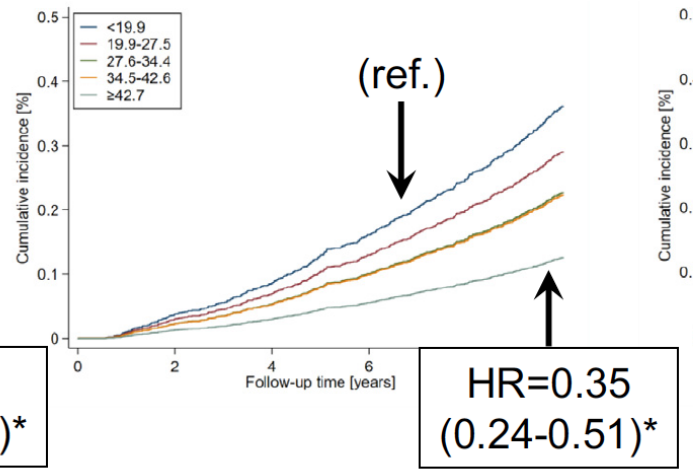
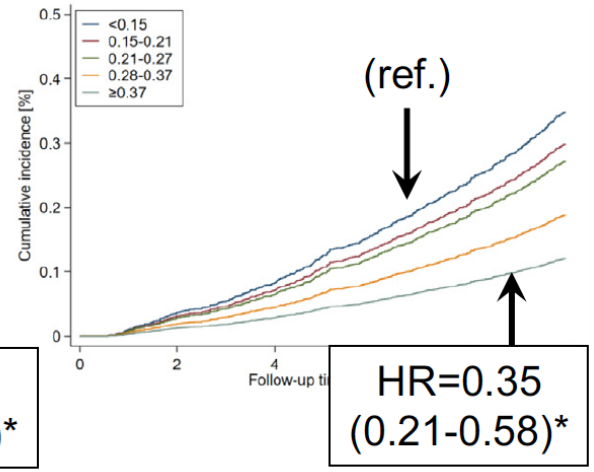
Adenoma detection rate (ADR)



Polyp detection rate (PDR)



No. of adenomas per colonoscopy (APC)



PDR ≥43% and APC ≥0.37 have an effect on PCCRC reduction comparable to ADR ≥25%

Feedback on ADR: Meta-analysis

Boregowda U et al. Ann Gastroenterol 2021;34: 214-223.

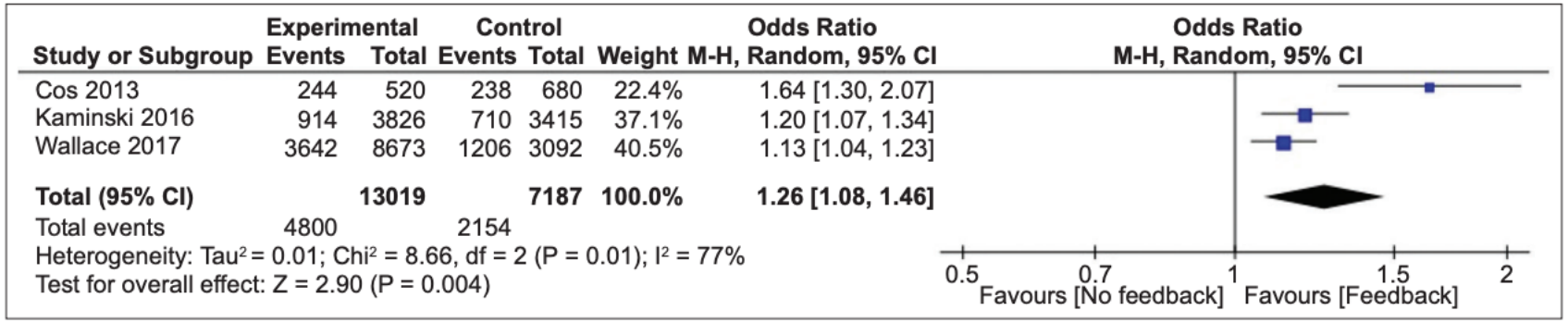
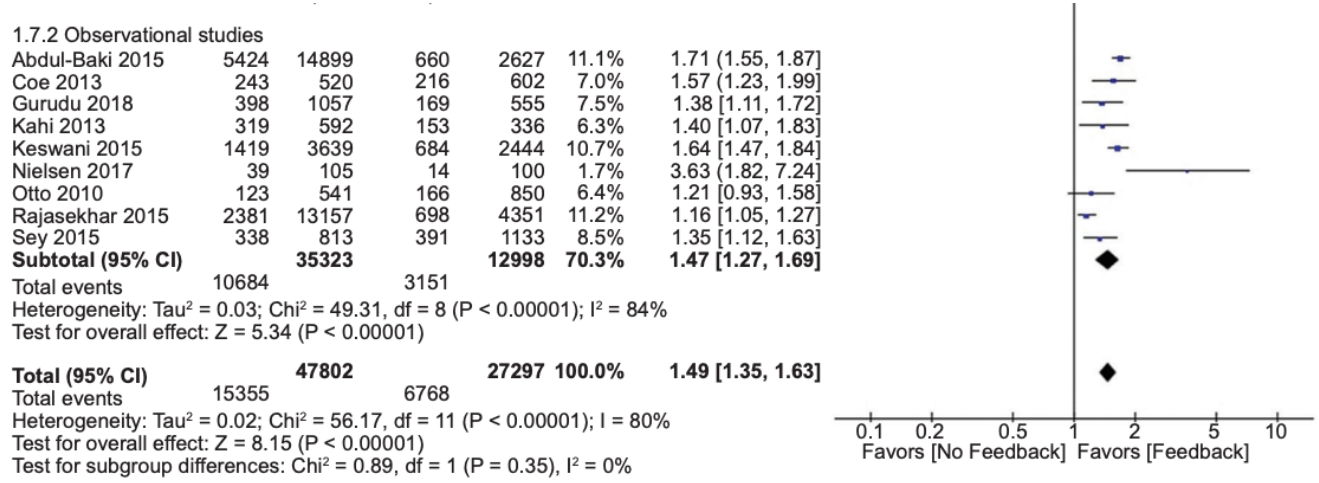


Figure 2 Forest plot for pooled analysis of randomized controlled trials: control vs. study groups
CI, *confidence interval*



Patient Reported Outcome Measures (PROMs)


Many thanks for your
kind attention

TOP TEN Slides

Colonoscopy Performance Measures

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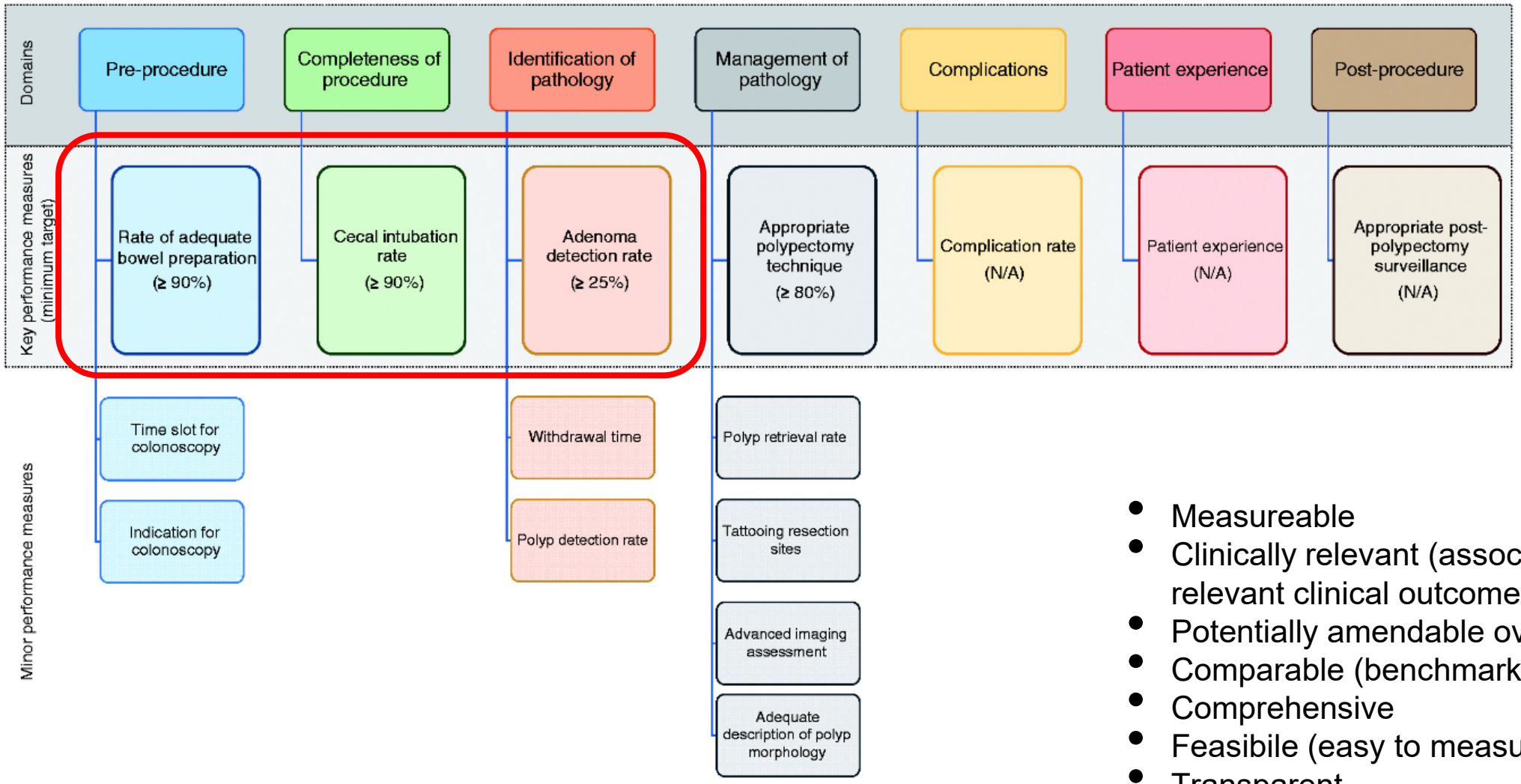

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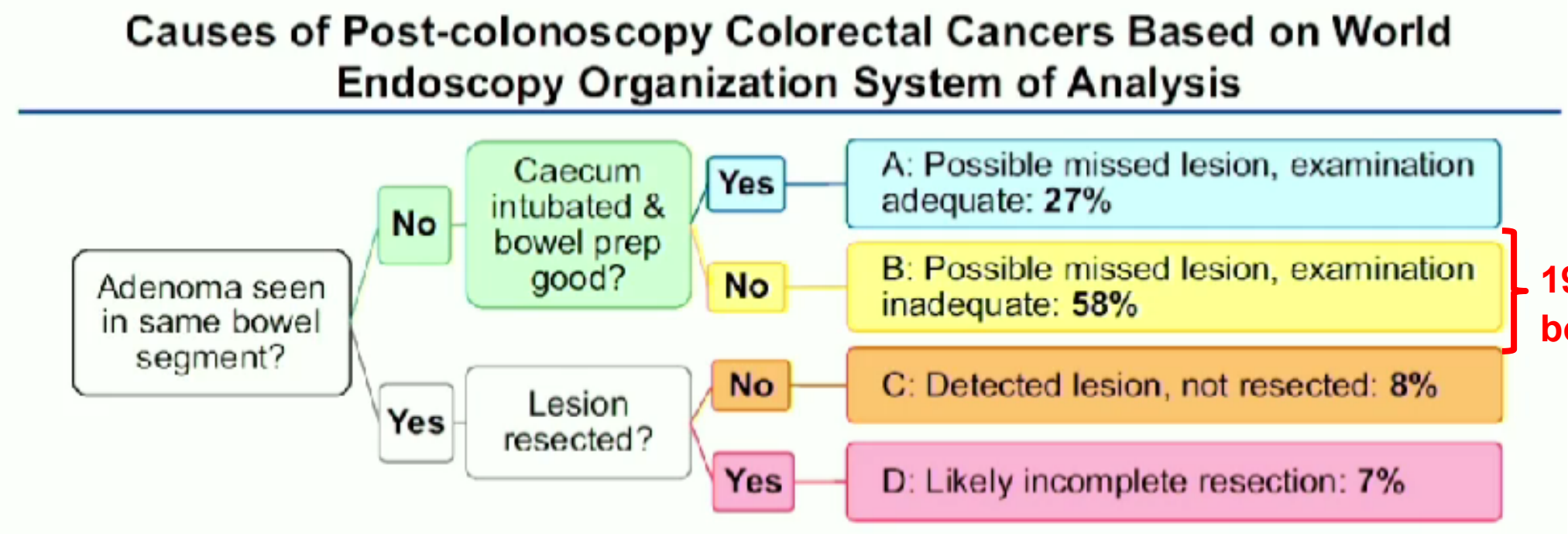

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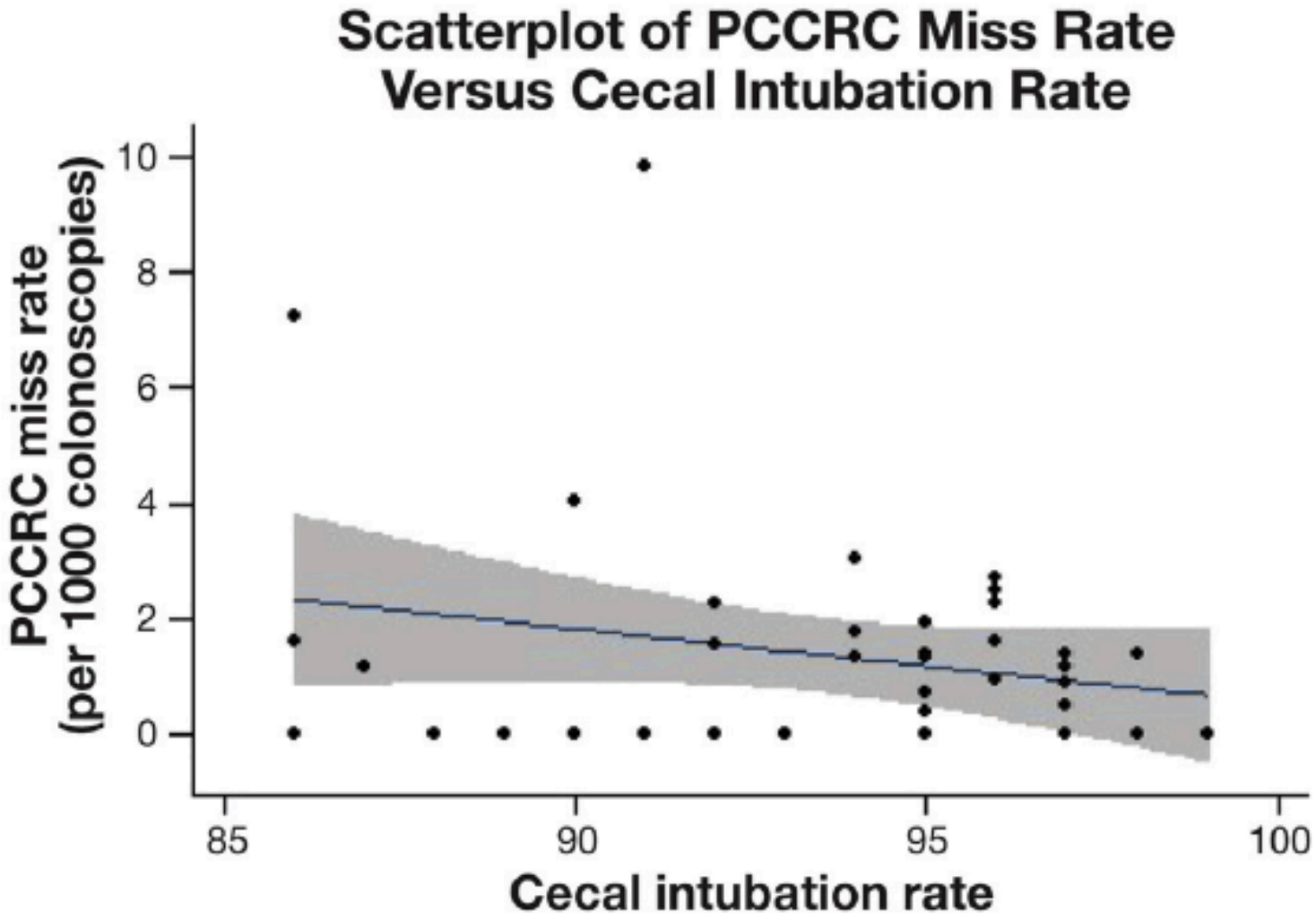

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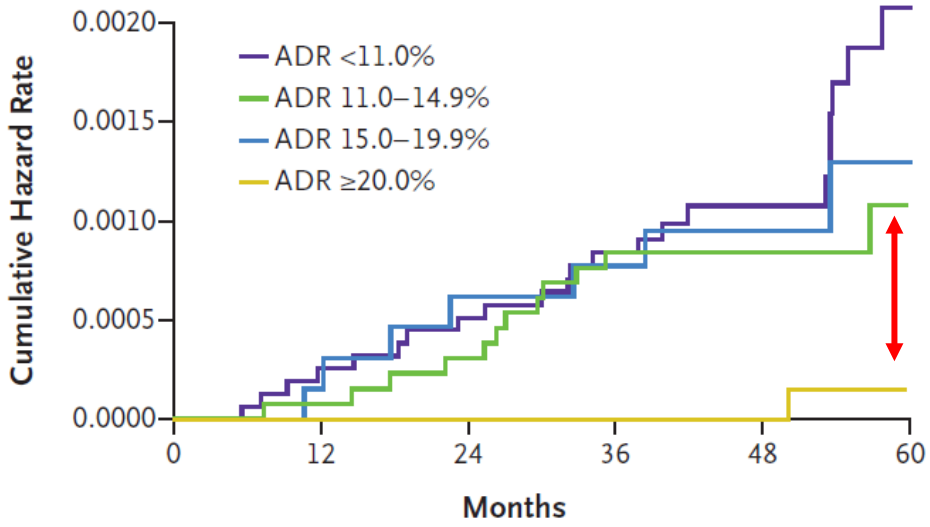

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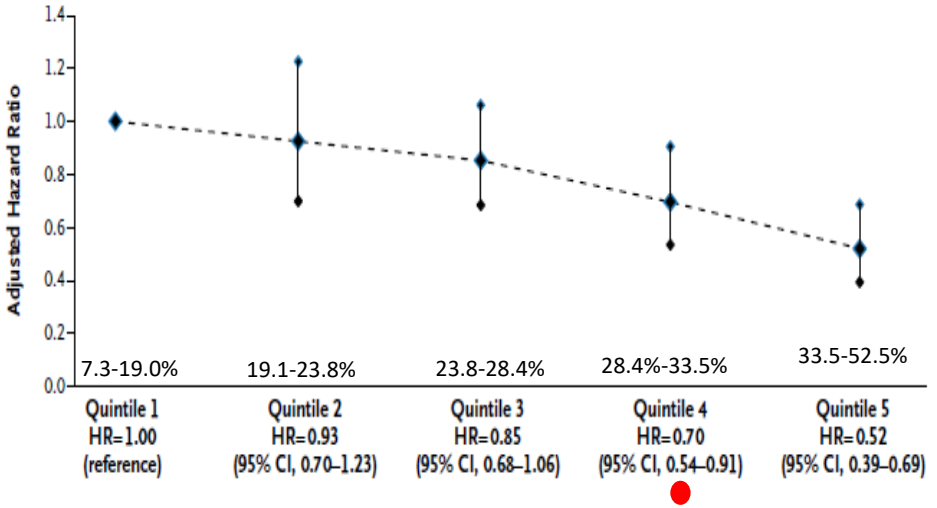

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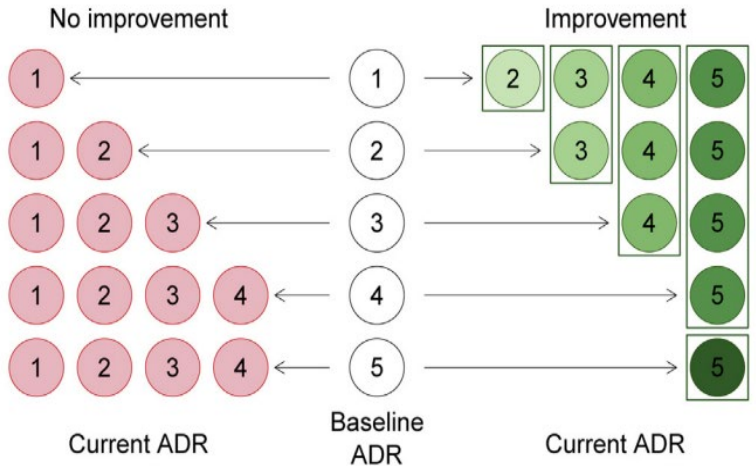

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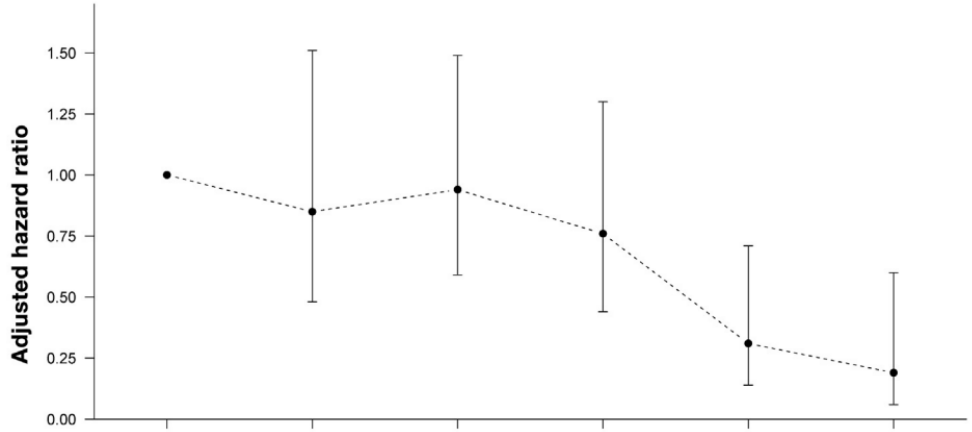

	No improvement	Improvement from 1 to 2	Improvement from 1 or 2 to 3	Improvement from 1−3 to 4	Improvement from 1−4 to 5	Remain in 5th
HR	1.00	0.90	0.74	0.64	0.27	0.18
95% CI		(0.61, 1.34)	(0.47, 1.16)	(0.41, 1.01)	(0.12, 0.63)	(0.06, 0.56)
No. of cancers/ 100,000 p−yrs	25.34	22.67	18.86	16.25	7.09	4.49

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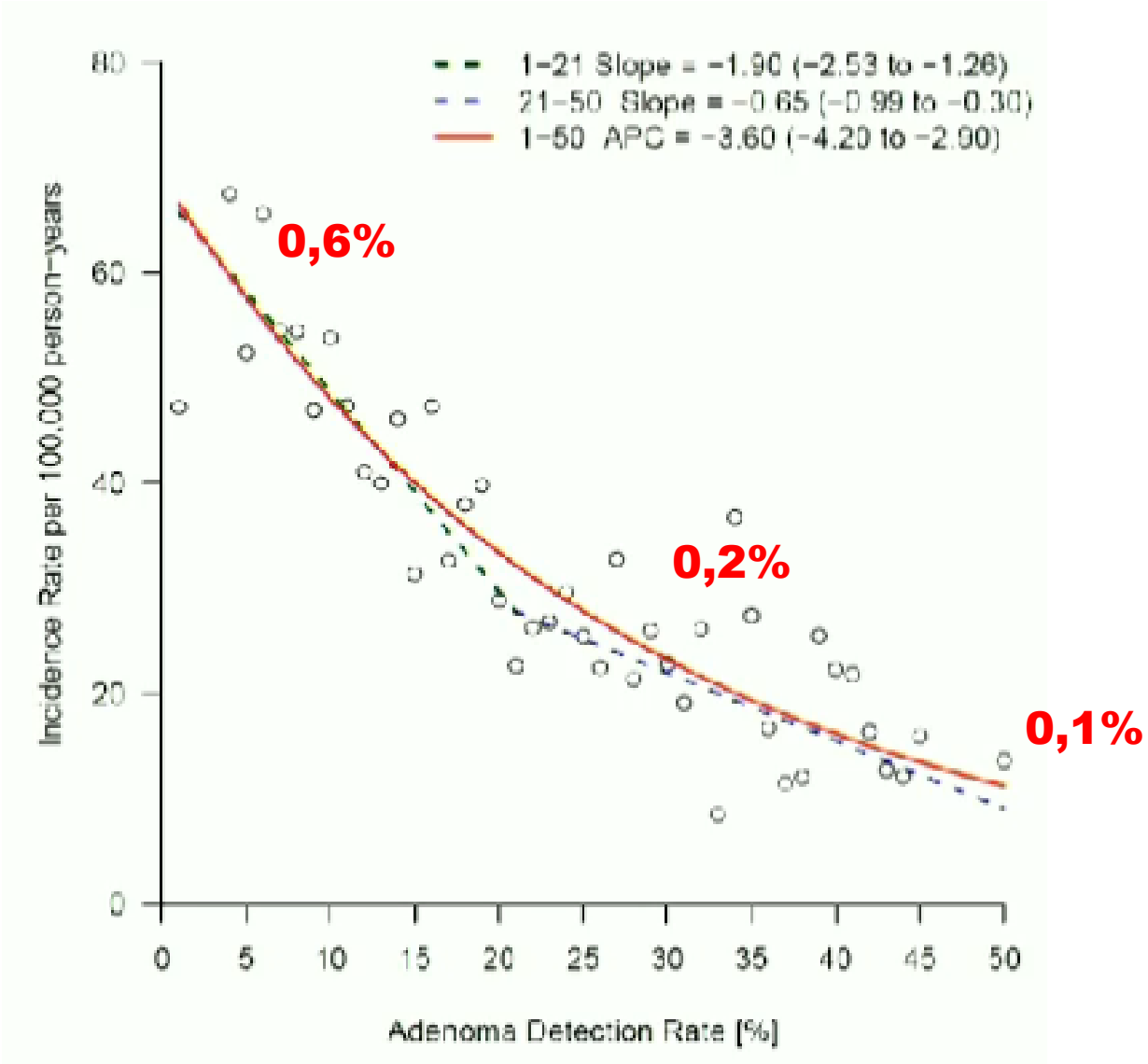

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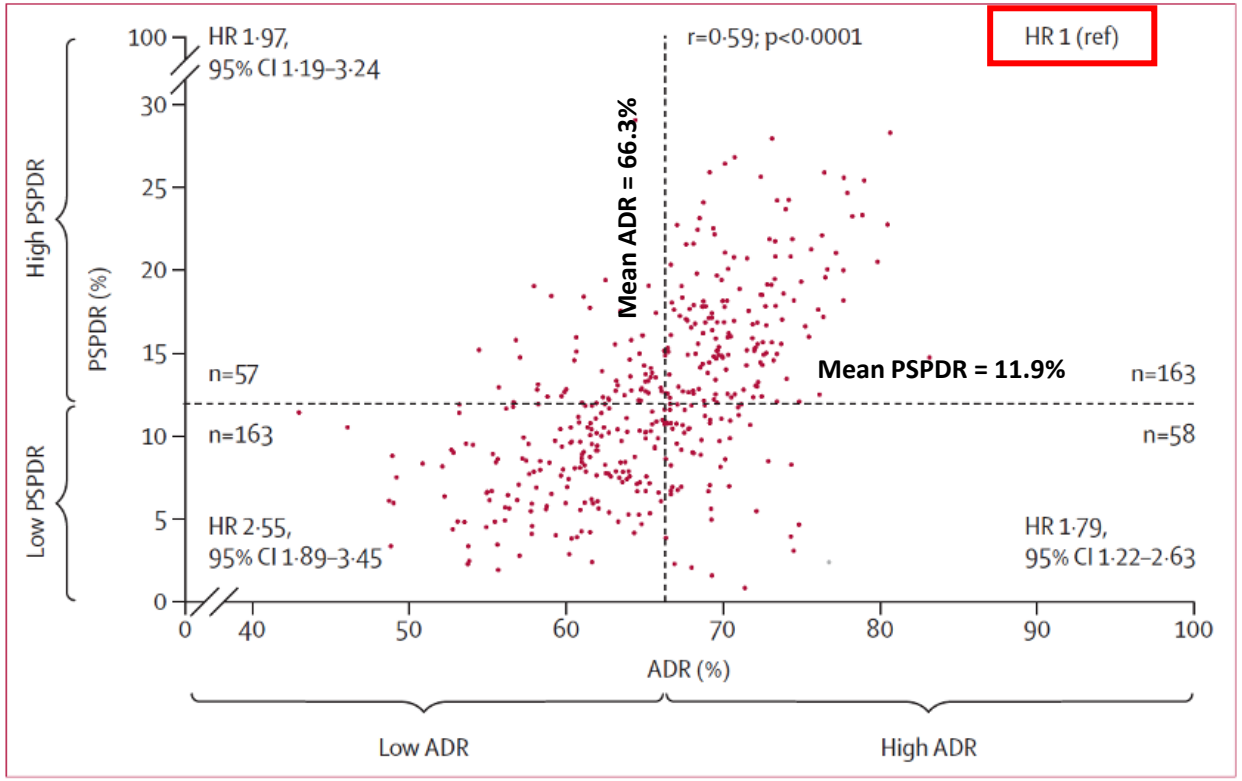
***van Toledo DEF et al. Lancet Gastroenterol Hepatol* 2022; 7: 747–54**



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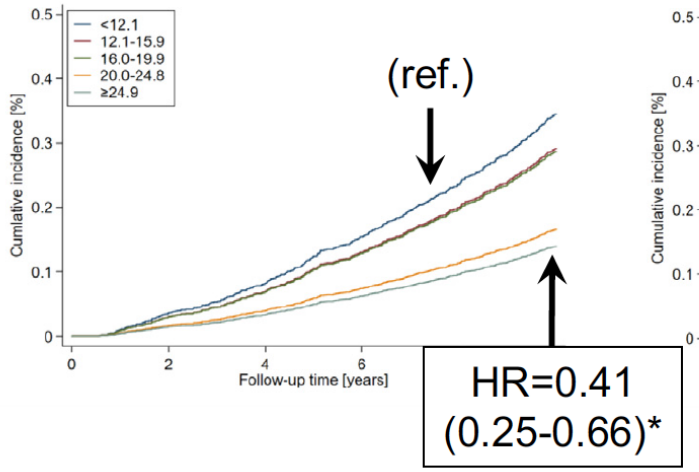
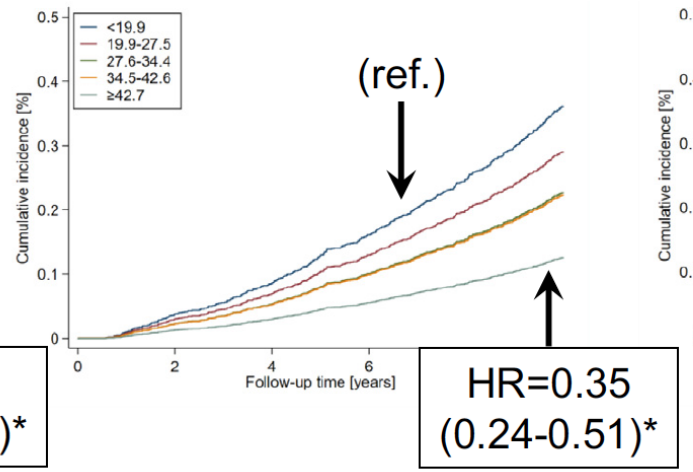
395 CRCs.

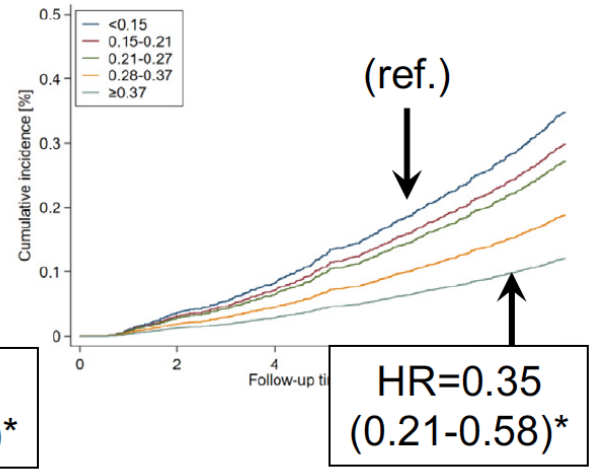
Adenoma detection rate (ADR)



Polyp detection rate (PDR)



No. of adenomas per colonoscopy (APC)



PDR ≥43% and APC ≥0.37 have an effect on PCCRC reduction comparable to ADR ≥25%

Feedback on ADR: Meta-analysis

Boregowda U et al. Ann Gastroenterol 2021;34: 214-223.

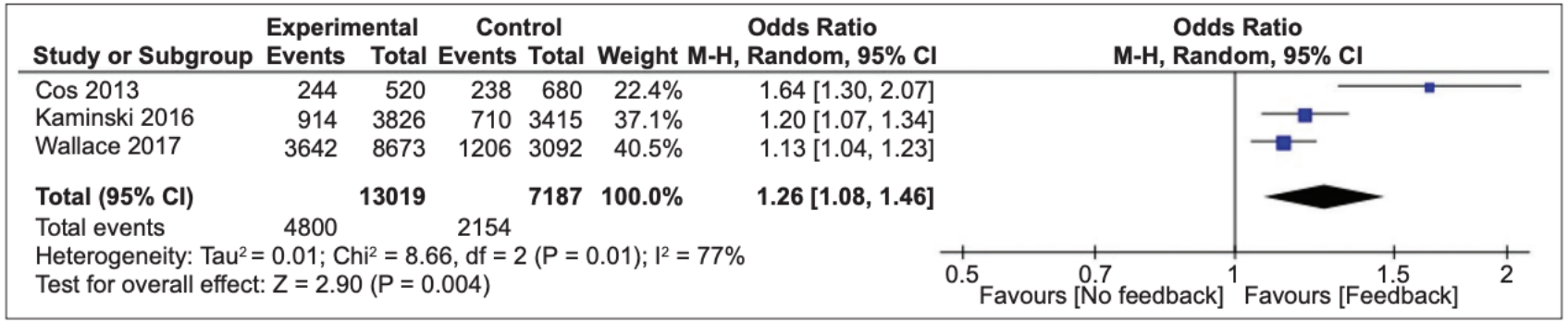


Figure 2 Forest plot for pooled analysis of randomized controlled trials: control vs. study groups
CI, *confidence interval*