"Yikes! We Really Need to Improve our ADR. What Now?" Tips and Tricks to Maximise ADR and Avoid the Shade

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Adenoma Detection Rate (ADR)

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Outline

- Why does ADR matter?
- What should my ADR be?
- How can I improve my ADR?

Why does ADR matter?

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Adenoma Detection Rate and Risk of Colorectal Cancer and Death

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Why does ADR matter?

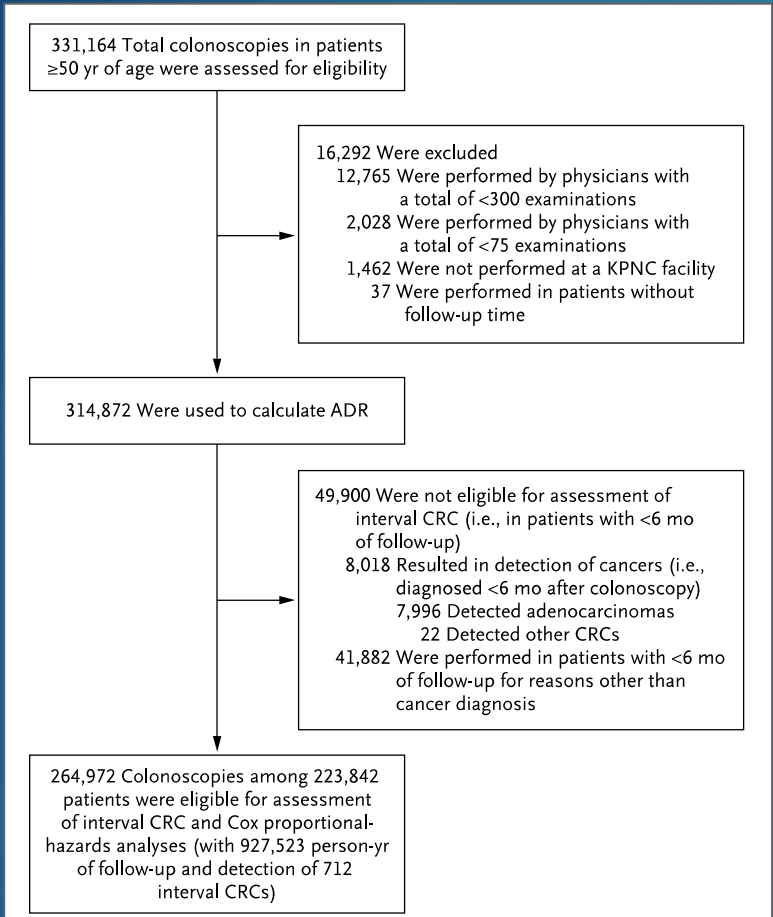


Figure 1. Colonoscopic Examinations Performed by 136 Gastroenterologists.
ADR denotes adenoma detection rate, CRC colorectal cancer, and KPNC Kaiser Permanente Northern California.

Table 2. Adenoma Detection Rate and Risk of an Interval Colorectal Cancer among All Patients.

Adenoma Detection Rate	Interval Cancer	Hazard Ratio (95% CI)*	Unadjusted Risk
	no. of cases		*no. of cases/ 10,000 person-yr*
Continuous rate	712	0.97 (0.96–0.98)	7.7
Rate quintile			
Quintile 1: 7.35–19.05%	186	1.00 (reference)	9.8
Quintile 2: 19.06–23.85%	144	0.93 (0.70–1.23)	8.6
Quintile 3: 23.86–28.40%	139	0.85 (0.68–1.06)	8.0
Quintile 4: 28.41–33.50%	167	0.70 (0.54–0.91)	7.0
Quintile 5: 33.51–52.51%	76	0.52 (0.39–0.69)	4.8

Why does ADR matter?

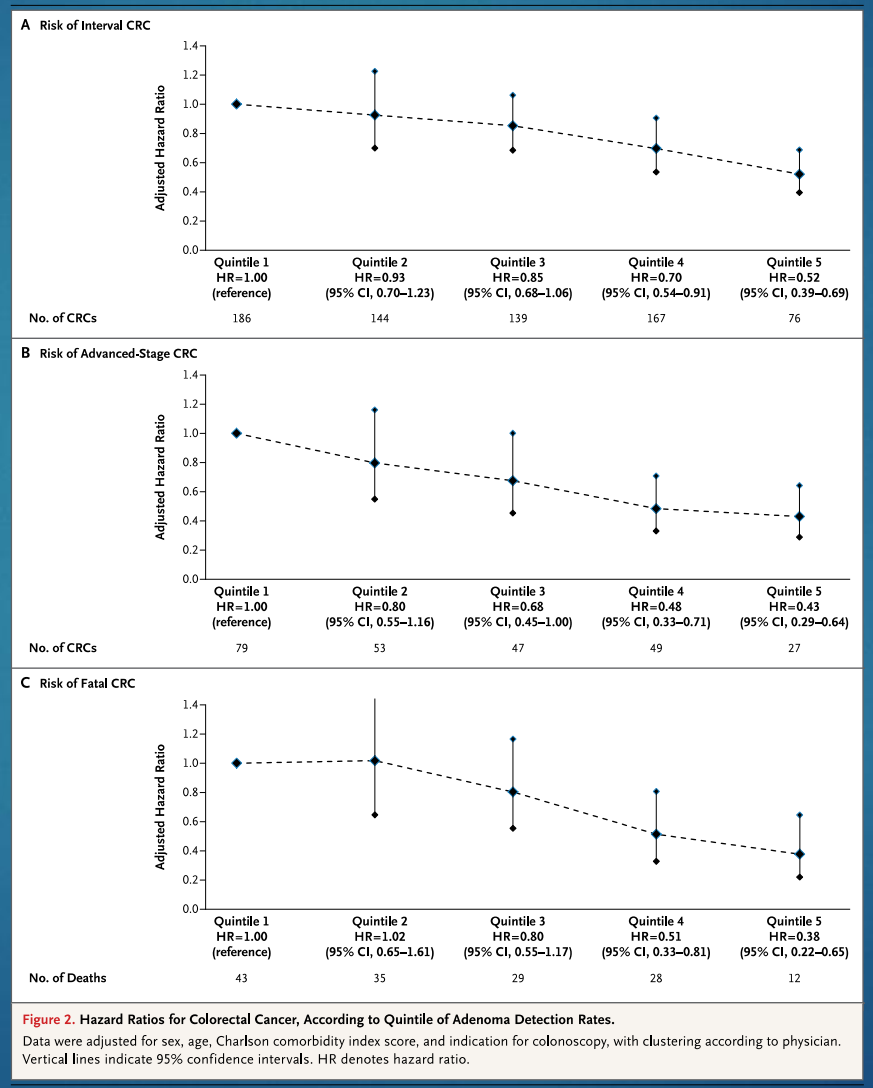
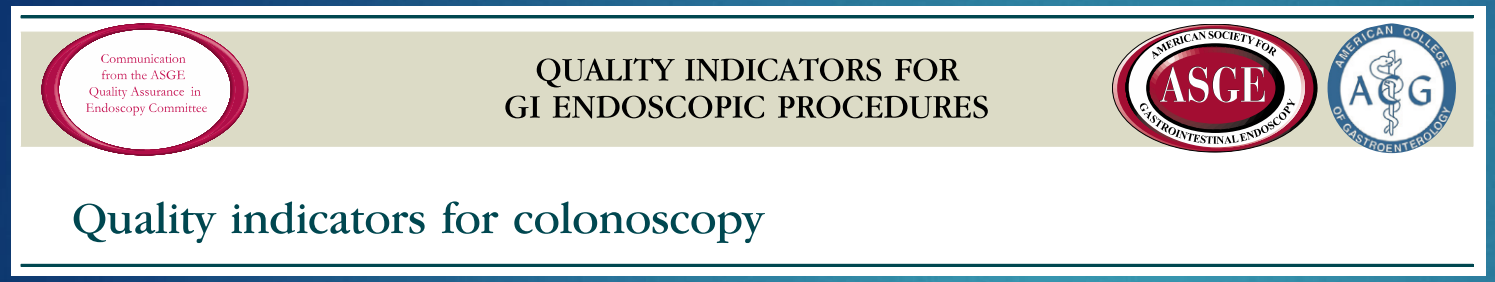


Figure 2. Hazard Ratios for Colorectal Cancer, According to Quintile of Adenoma Detection Rates.

Data were adjusted for sex, age, Charlson comorbidity index score, and indication for colonoscopy, with clustering according to physician. Vertical lines indicate 95% confidence intervals. HR denotes hazard ratio.

What should my ADR be?



Adenoma Detection Rate	At least 25% in eligible patients. "Eligible patients" are those who are 50 years of age or older, have intact colons and who did not have an indication of IBD as the reason for their colonoscopy.
Sessile Serrated Adenoma/Polyp Detection Rate	A growing body of evidence is emerging which demonstrates the importance of SSA/P detection and resection at colonoscopy in the prevention of right-sided interval cancer. Consequently the Committee has determined that SSA/P detection should be included as another measure of quality in colonoscopy and a requirement for recertification. After examining the international literature and the data from within the Recertification program it was decided that the initial SSA/P detection rate will be 4%. This new criterion will be introduced from 1 February 2019 and will only be applicable to logbooks submitted from 1 February 2019. Any logbook submitted up until and including 31 January 2019 will not be subject to this criterion.

Withdrawal time: surrogate for ADR?

9b. Average withdrawal time in negative-result screening colonoscopies

Level of evidence: 2C

Performance target: ≥6 minute average

Type of measure: process

Withdrawal time should be measured in all colonoscopy examinations, with the performance target being a ≥6 minute average withdrawal time in negative-result screening colonoscopies.

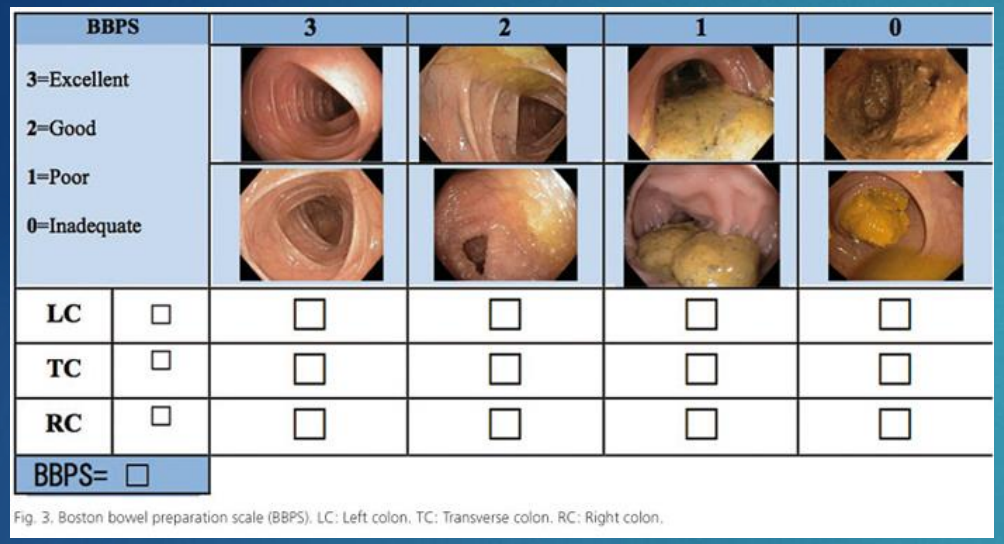
Minor performance measure	Withdrawal time
Description	Time spent on withdrawal of the endoscope from cecum to anal canal and inspection of the entire bowel mucosa at negative (no biopsy or therapy) screening or diagnostic colonoscopy
Domain	Identification of pathology
Category	Process
Rationale	A mean withdrawal time of 6 minutes or longer was associated with higher ADRs and lower interval cancer rates as compared to shorter withdrawal times
Construct	Withdrawal time is measured from cecum to anal sphincter **Denominator:** Number of negative (no biopsy/therapy) screening or diagnostic colonoscopies **Numerator:** Sum of withdrawal time in colonoscopies included in the numerator **Exclusions:** ▪ Emergency colonoscopy ▪ Incomplete colonoscopy Calculation: Mean time in minutes Level of analysis: Endoscopist level Frequency: Measured only if the ADR is insufficient, using a sample of 100 consecutive colonoscopies
Standards	Minimum standard: mean 6 minutes Target standard: mean 10 minutes Time can be measured by different methods: stopwatch operated by a nurse, time stamp on photodocumentation of the cecum and rectum, length of video recording, or external device (this requires inclusion of the withdrawal time in the colonoscopy report) Withdrawal time should be measured only when the ADR is insufficient Feedback on mean withdrawal time should be given to endoscopists
Consensus agreement	87.5%
PICO	3.6 (see Supporting Information)
Evidence grading	Moderate quality evidence

How can I improve my ADR?

- Prep quality: be able to see adenomas
- Polyp identification: know what you're looking for
- Technique: look for them

- New technology devices: mechanical, optical

Prep quality: be able to see adenomas

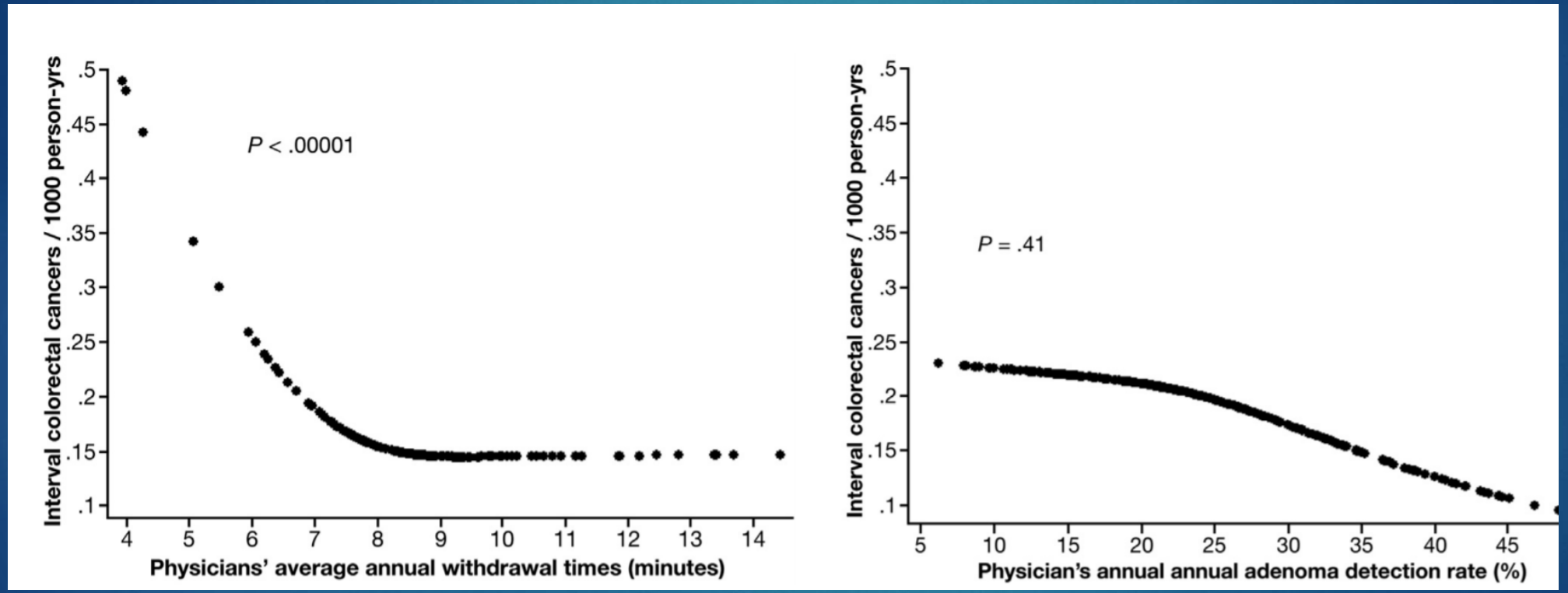


BBPS		3	2	1	0
3=Excellent 2=Good 1=Poor 0=Inadequate					
LC	☐	☐	☐	☐	☐
TC	☐	☐	☐	☐	☐
RC	☐	☐	☐	☐	☐
BBPS= ☐					

Fig. 3. Boston bowel preparation scale (BBPS). LC: Left colon. TC: Transverse colon. RC: Right colon.

- Split-dose
  - Radaelli F et al. Gut 2017; 66: 270-7.
  - RCT 690 pts
  - Sig higher ADR in SDG than DBG 53% vs 40.9%
- Several studies: adequate bowel cleansing assoc w ↑ ADR
- ?Is good/fair prep sufficient
  - ?Extra time washing facilitates lesion recognition

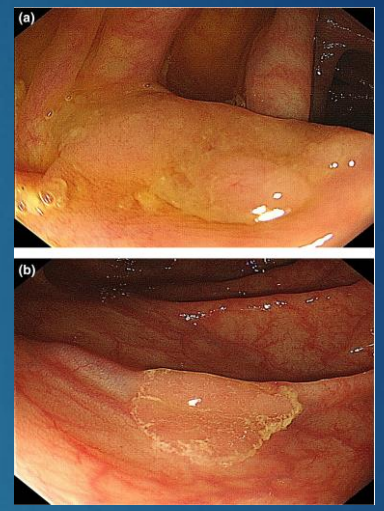
Technique: withdrawal time

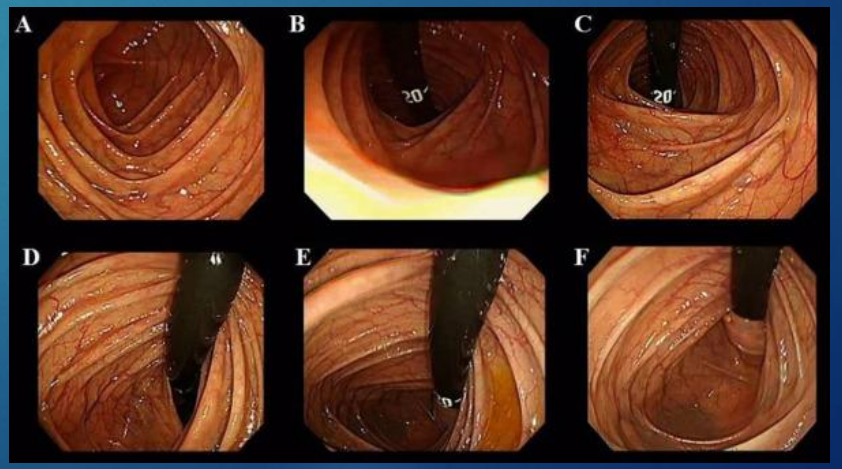


Shaukat A et al. Gastroenterol 2015; 149(4): 952-7.

Technique: right colon visualisation

- Majority of missed cancers are in the right colon
  - Increased tendency for SSLs
- Visualising R colon twice: ↑ ADR by 10%
  - Retroflexion vs second forward view





Technique: changing patient position

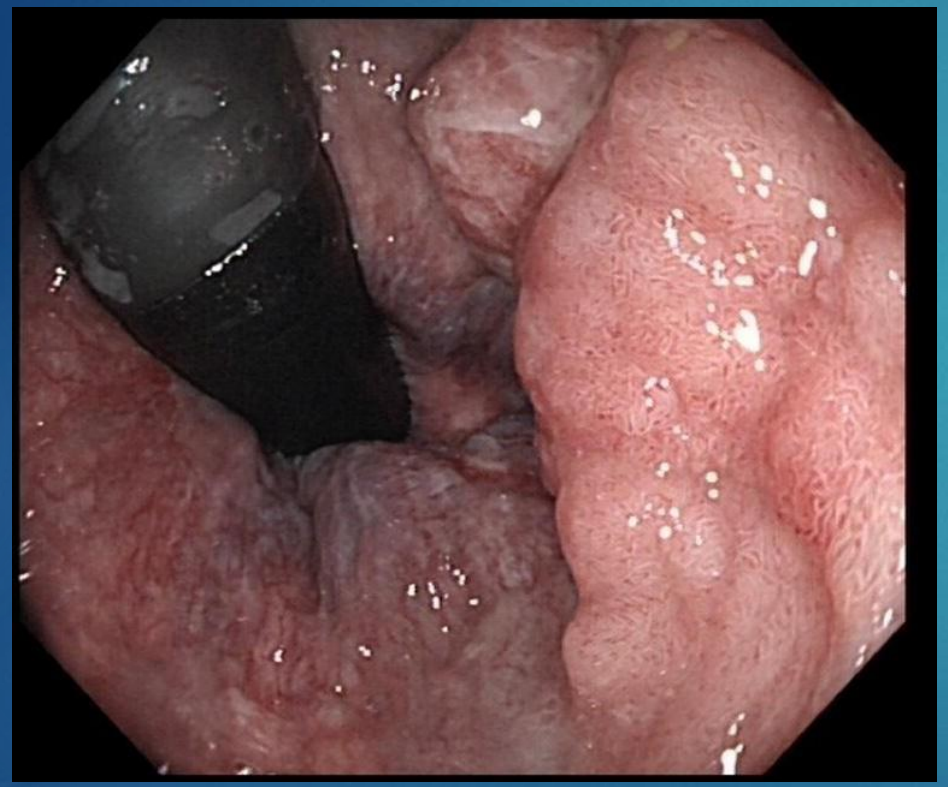
- In theory, and from extrapolation of CTC practice, should ↑ ADR

Table 3. Studies evaluating the adenoma detection rate in patients undergoing positional changes during colonoscopy.

				Results		
Author, year [ref.]	Study design	Patients	Colonoscopy indication	ADR in patients undergoing positional changes (%)	ADR in controls (%)	*P*
East JE, 2011 [46]	Randomized crossover	130	Mixed indications	34.0	23.0	0.01
Köksal IH, 2013 [47]	Randomized crossover	120	Mixed indications	33.3	23.5	0.002
Ball AJ, 2015 [48]	Randomized crossover	130	Diagnostic procedures	30.0	25.4	0.11
Lee SW, 2016 [49]	RCT	1072	Mixed indications	42.4	33.0	0.002
Ou g, 2014 [50]	RCT	776	Mixed indications	37.9	41.8	0.28

ADR: Adenoma detection rate; RCT: randomized controlled trial; PDR: polyp detection rate.

Technique: rectal retroflexion



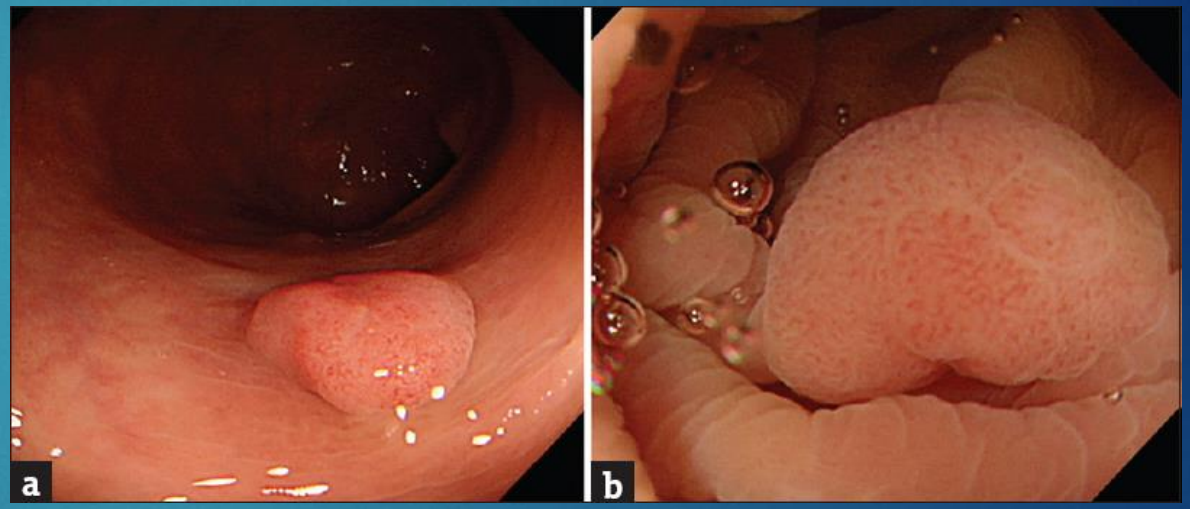
- Low rectum vulnerable
  - 6/21 polyps >6mm missed at colonoscopy were in lower rectum
- ?Perform at the start of colonoscopy when analgesia/sedation intensity is high

Technique: second observer

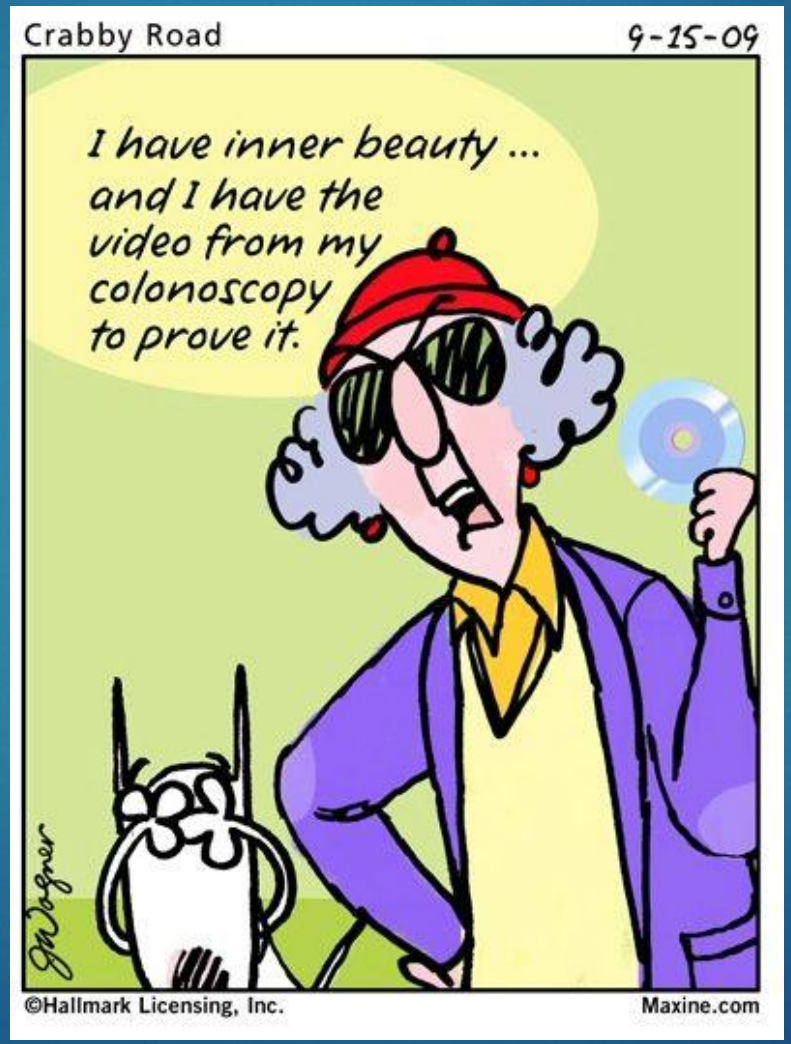
- "Change blindness"
- "Inattention blindness"
- Nurse observer/GI assistant
  - Dependent on experience
  - ADR 45.7% vs 39.3% on meta-analysis
- ?Competition leads to ↑ ADR by Endoscopist

Technique: water-aided colonoscopy

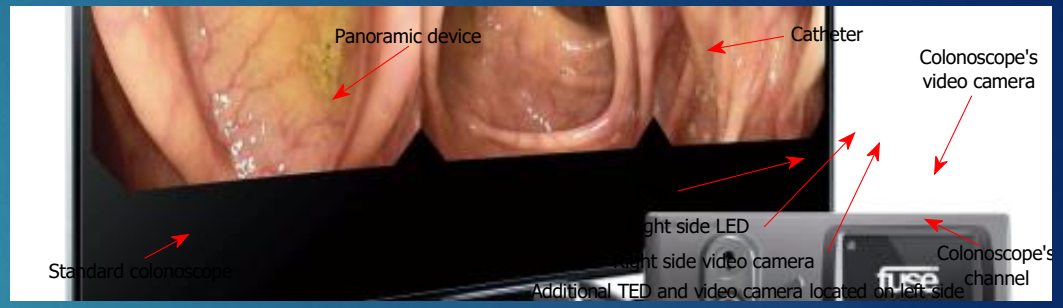
- Water immersion vs exchange
- Various systematic reviews
  - WE: ↑ ADR, especially proximal to SF
- One RCT
  - 3,303 pts WE vs air
  - Sig difference overall ADR 18.3% vs 13.4%
  - Jia H et al. Am J Gastroenterol 2017; 112: 568-76.

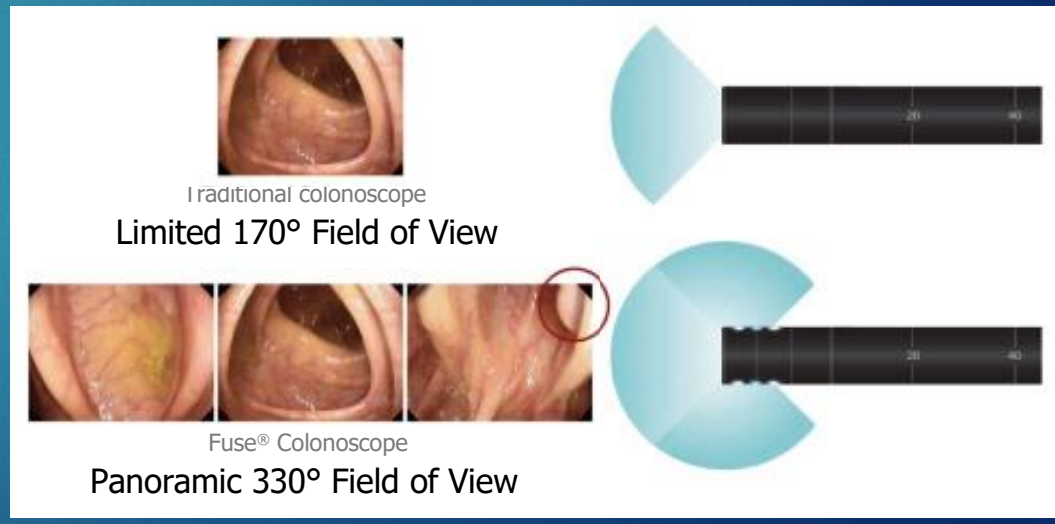


Technique: HD endoscopy



New technology devices





Summary

- ADR is a validated marker of quality in colonoscopy
- ↑ ADR = ↓ interval cancer
- Endoscopist ADR can be improved
  - Split prep/good quality prep
  - Withdrawal time & technique
  - Look behind folds, look for flat lesions
  - Look AGAIN (right colon, 2nd observer)
  - Reposition the patient
- There will always be new gadgets