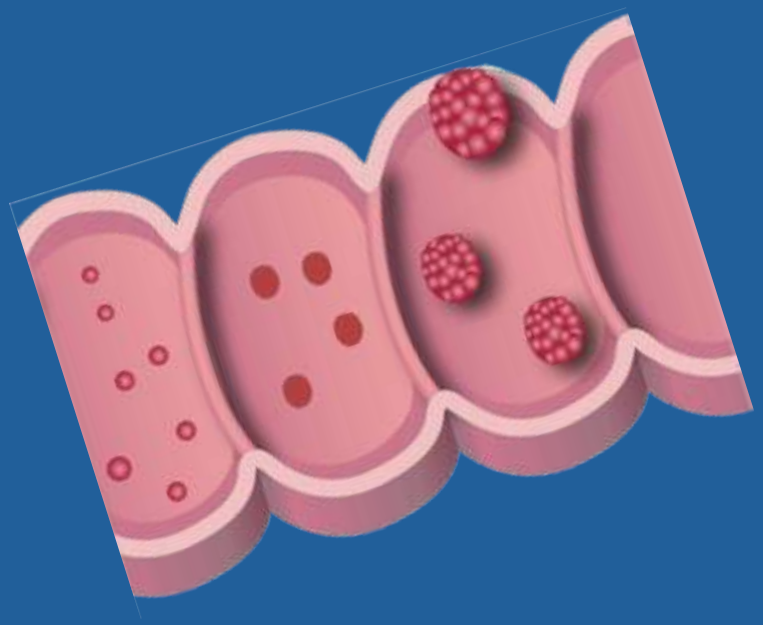
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How to improve the adenoma detection rate

Finding the lesion in everyday practice



BSGIE teaching session

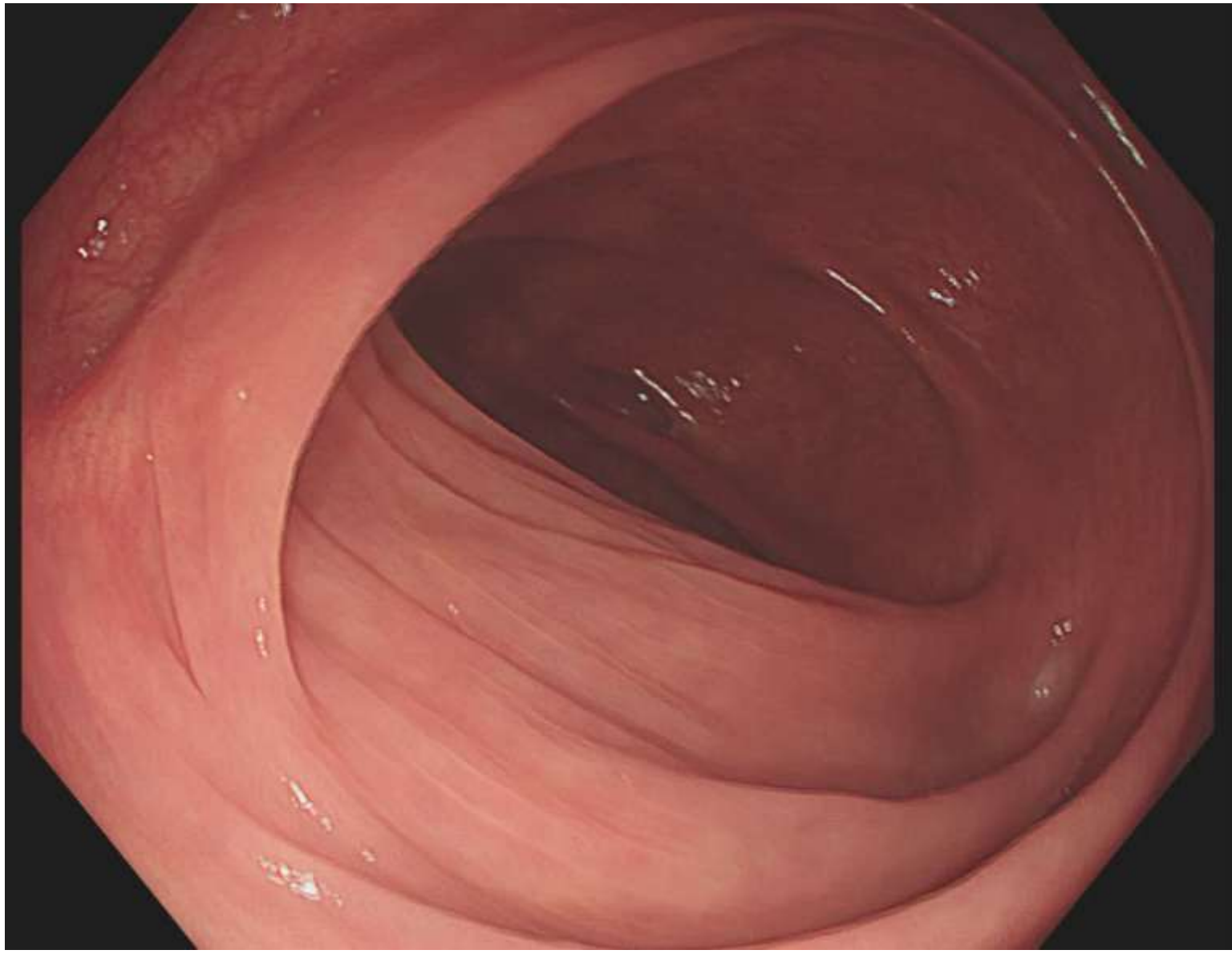
Mariana Figueiredo Ferreira
Brussels

A lesion waiting to be found

58 years old

Screening colonoscopy

Cecum reached.
Withdrawal begins.



R1, R2

Adenoma detection rate (ADR)

proportion of eligible colonoscopies with ≧ 1 histologically confirmed conventional adenoma

R1, R2, R3

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Why detection matters

1% percentage point higher operator ADR

3% lower relative interval cancer risk

Observational association

R3

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Four parts of a better examination



Prepare **Expose** **Recognize** **Improve**

R1, R2, R20

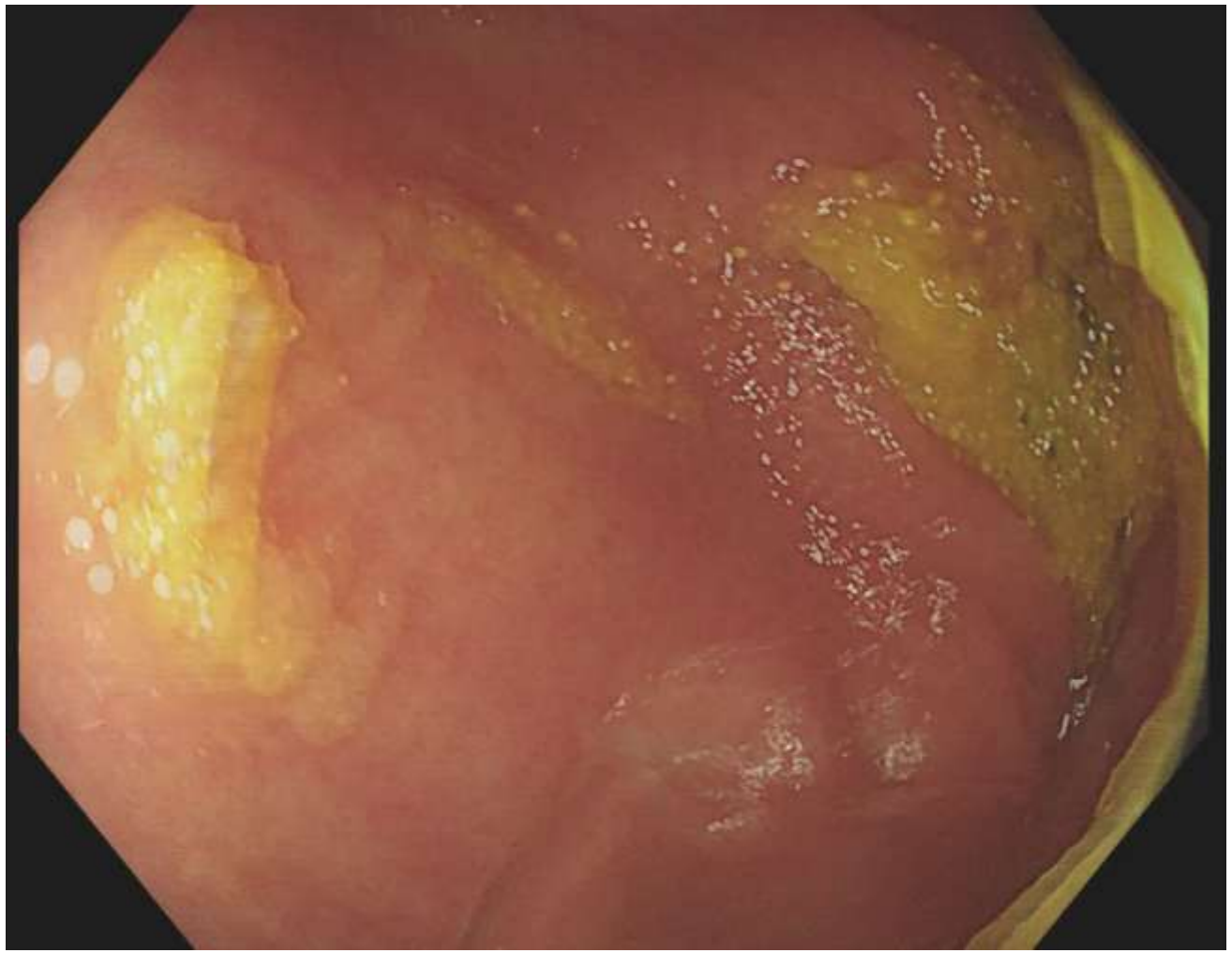
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Preparation starts before the scope

Split dosing

Clear instructions

Segmental assessment
after **washing**



R1, R4, R5

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PRÉPARATION À LA COLOSCOPIE AVEC "PLENVU®"



LA VEILLE DE L'EXAMEN :



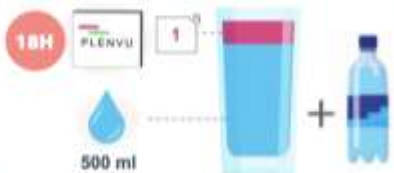
Un petit-déjeuner et un dîner léger.

17H



17H00 : un dernier repas léger toujours sans déchets (ex. bouillon + biscottes).

18H



18H00 : Diluer la **dose 1 de PLENVU®** dans **500ml d'eau froide** et préparer une autre bouteille avec **500ml d'eau.**

>19H



18H-19H : Boire en alternance 3 gorgées de PLENVU® dilué et 3 gorgées d'eau. Donc, en 1h maximum, vous devez avoir bu : **500ml de PLENVU® dilué + 500ml d'eau.**

Si vous avez soif, vous pouvez boire plus de quantité d'eau.

⚠ Attention ! Ne mangez absolument pas **pendant** la prise de PLENVU®.

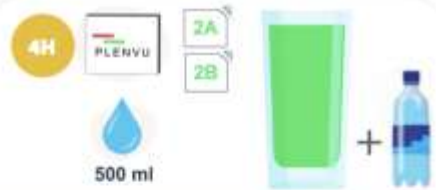
Le jour de l'examen .... / .... / ....

☐ EN MATINÉE



Interdit de manger.

4H



4H00 : Diluer la **dose 2A + 2B de PLENVU®** dans **500ml d'eau froide** et préparez une autre bouteille avec **500ml d'eau.**

>5H



4H-5H : Boire en alternance **3 gorgées de PLENVU®** dilué et **3 gorgées d'eau.** Donc, en 1H maximum vous devez avoir bu 500ml de PLENVU® + **500 ml d'eau.**

Si vous avez soif, vous pouvez boire plus de quantité d'eau jusqu'à 5h30 du matin.

5H30



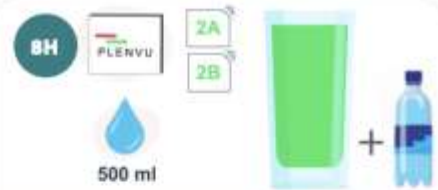
Plus de boisson à partir de **5h30.**

■ EN APRÈS-MIDI



Interdit de manger.

8H



8H00 : Diluer la **dose 2A + 2B de PLENVU®** dans **500ml d'eau froide** et préparez une autre bouteille avec **500ml d'eau.**

>9H



8H-9H : Boire en alternance **3 gorgées de PLENVU®** dilué et **3 gorgées d'eau.** Donc, en 1H maximum vous devez avoir bu 500ml de PLENVU® + **500 ml d'eau.**

Si vous avez soif, vous pouvez boire plus de quantité d'eau jusqu'à 10h du matin.

10H



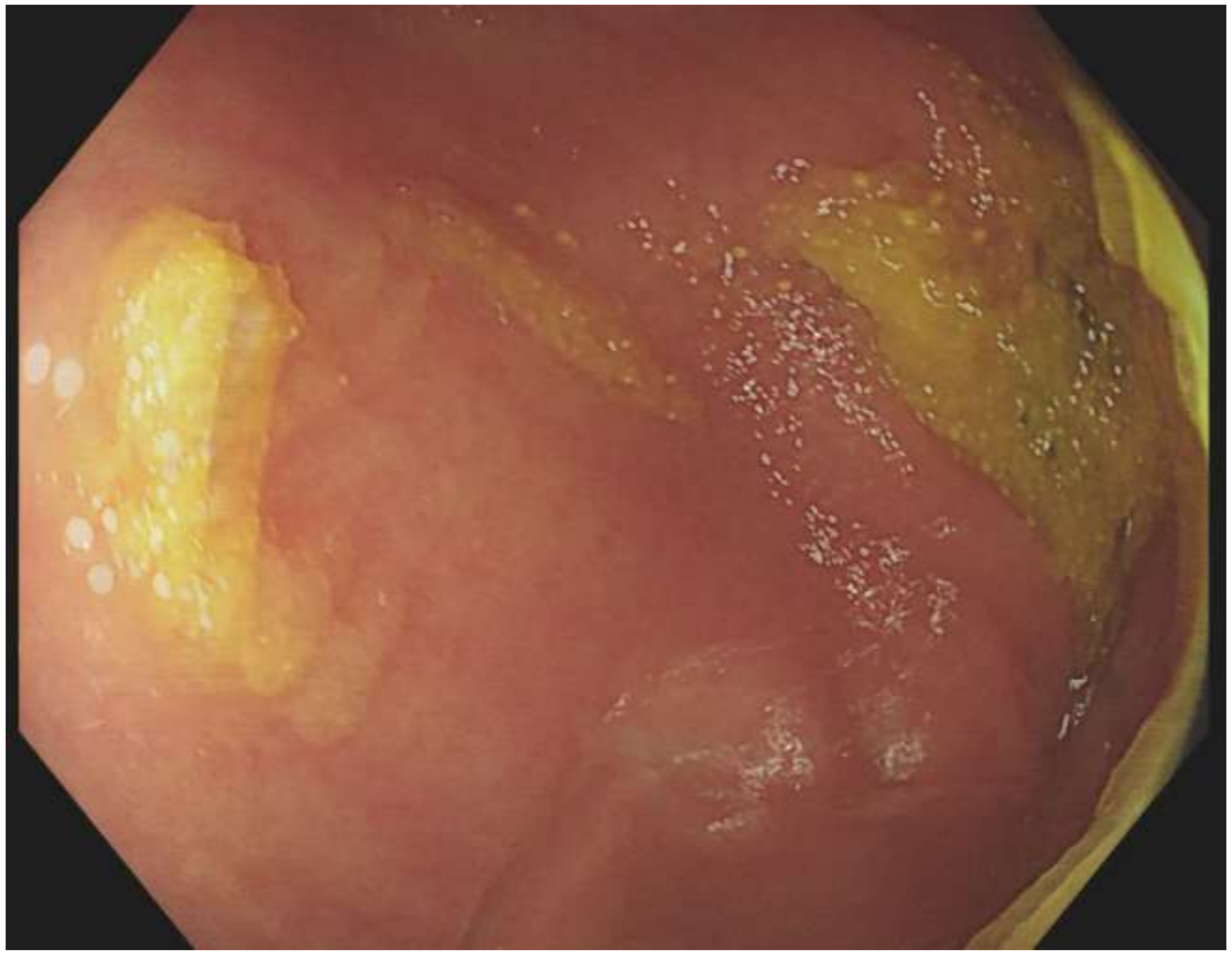
Plus de boisson à partir de **10h.**

Preparation starts before the scope

Split dosing

Clear instructions

Segmental assessment
after **washing**

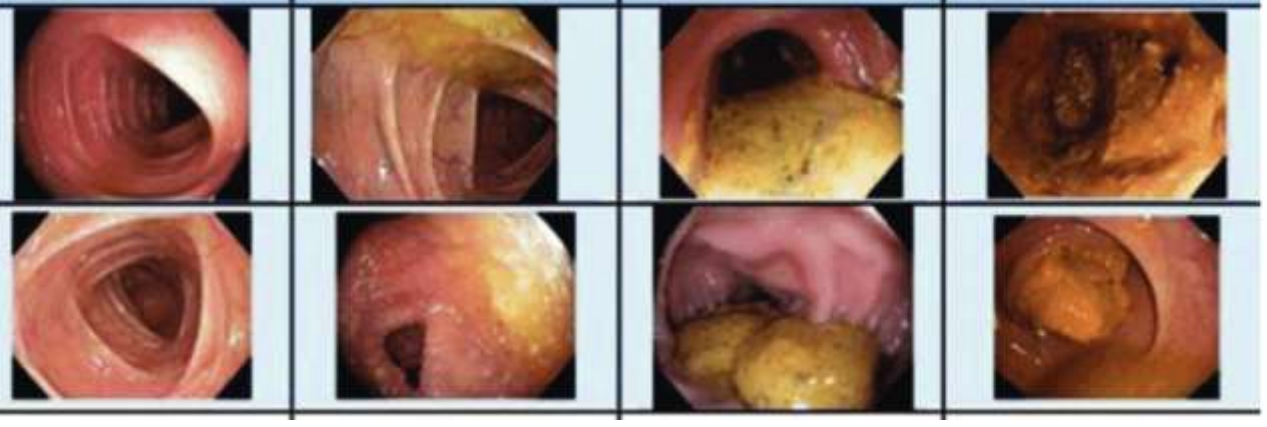


R1, R4, R5

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Assess and report bowel preparation

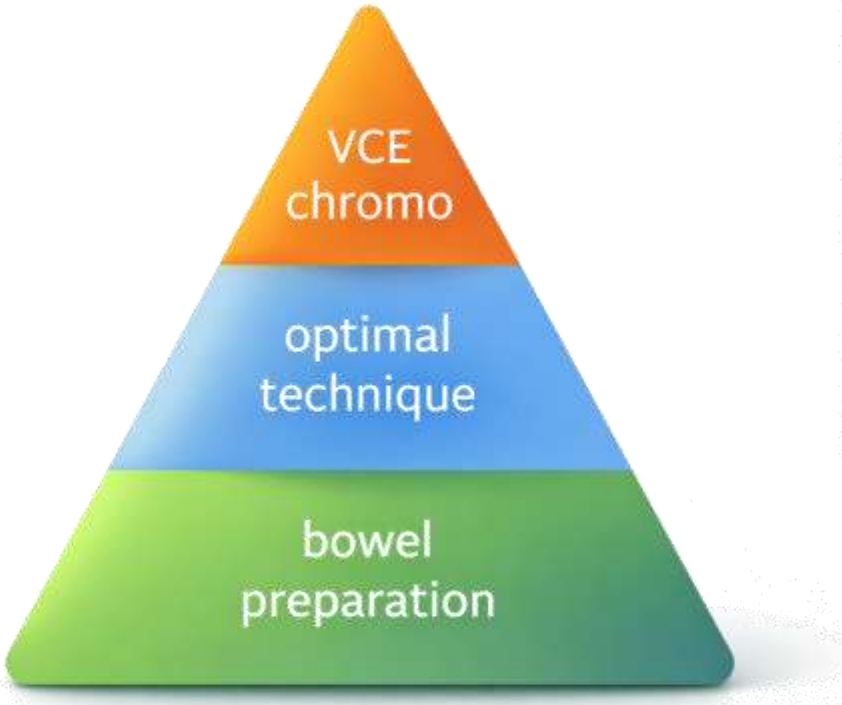
Boston bowel preparation scale

BBPS	3	2	1	0
3=Excellent 2=Good 1=Poor 0=Inadequate				

Harefield Cleansing Scale

HCS	4	3	2	1	0
4=Excellent 3=Good 2=Fair 1=Poor 0=Inadequate					

Quality measurements



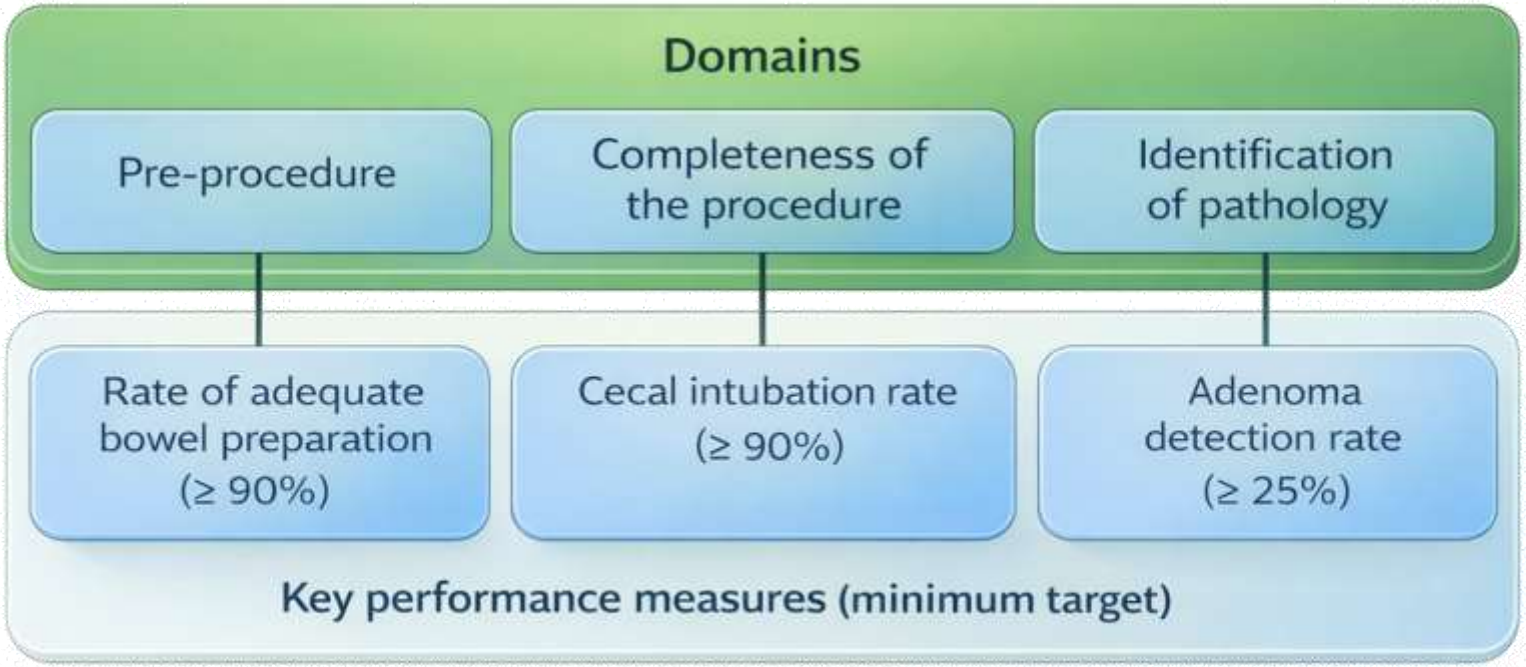


Figure adapted from Kaminski et al., 2017

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Cecal intubation

Stable scope without any loop (65-90 cm

Insufflation and deflation balance

Water exchange technique

Patient position changes when needed



Gentle progress. A clear view.

R1, R9, R20

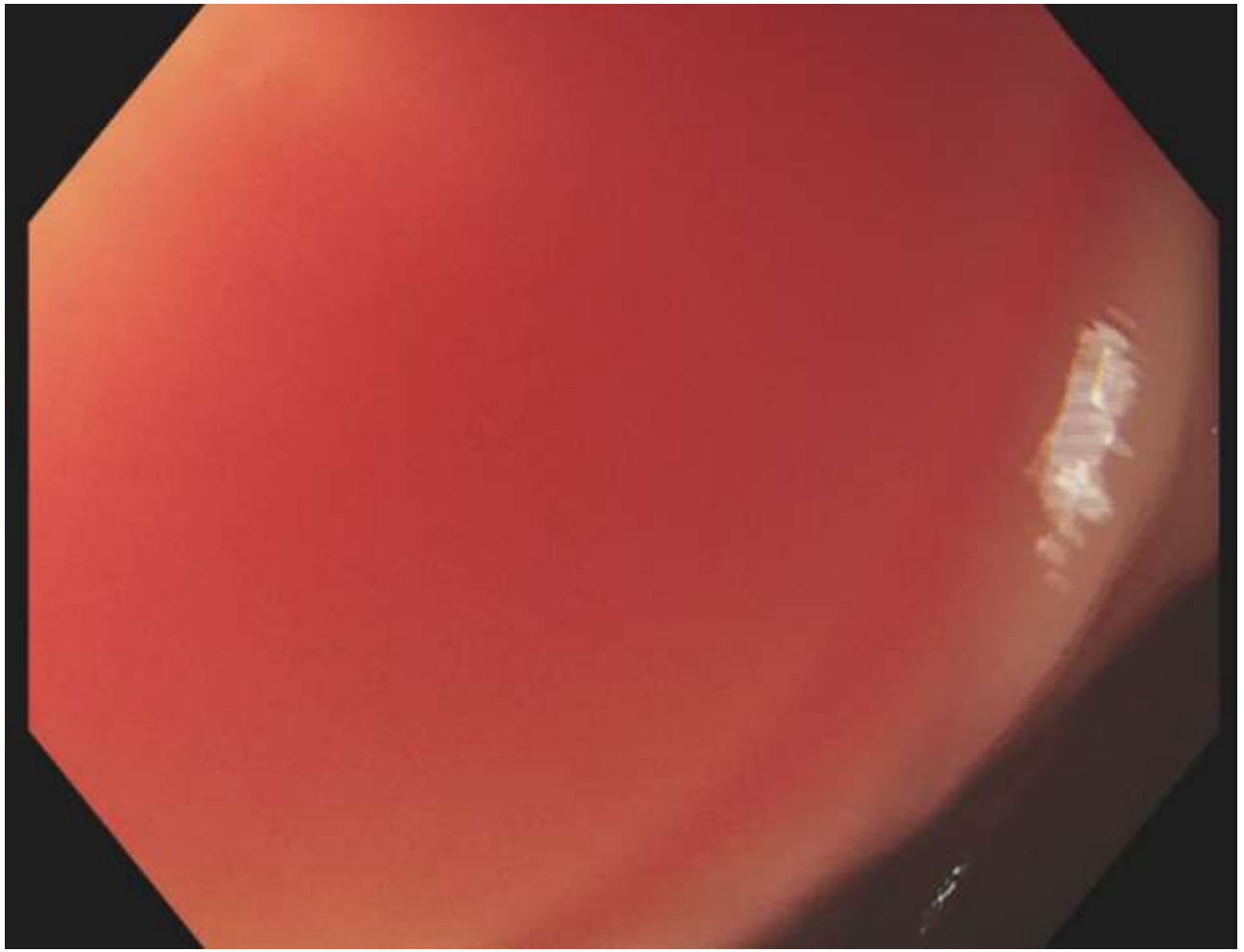
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Cecal intubation begins the inspection

Wash and fully suction pools

Adequate distension

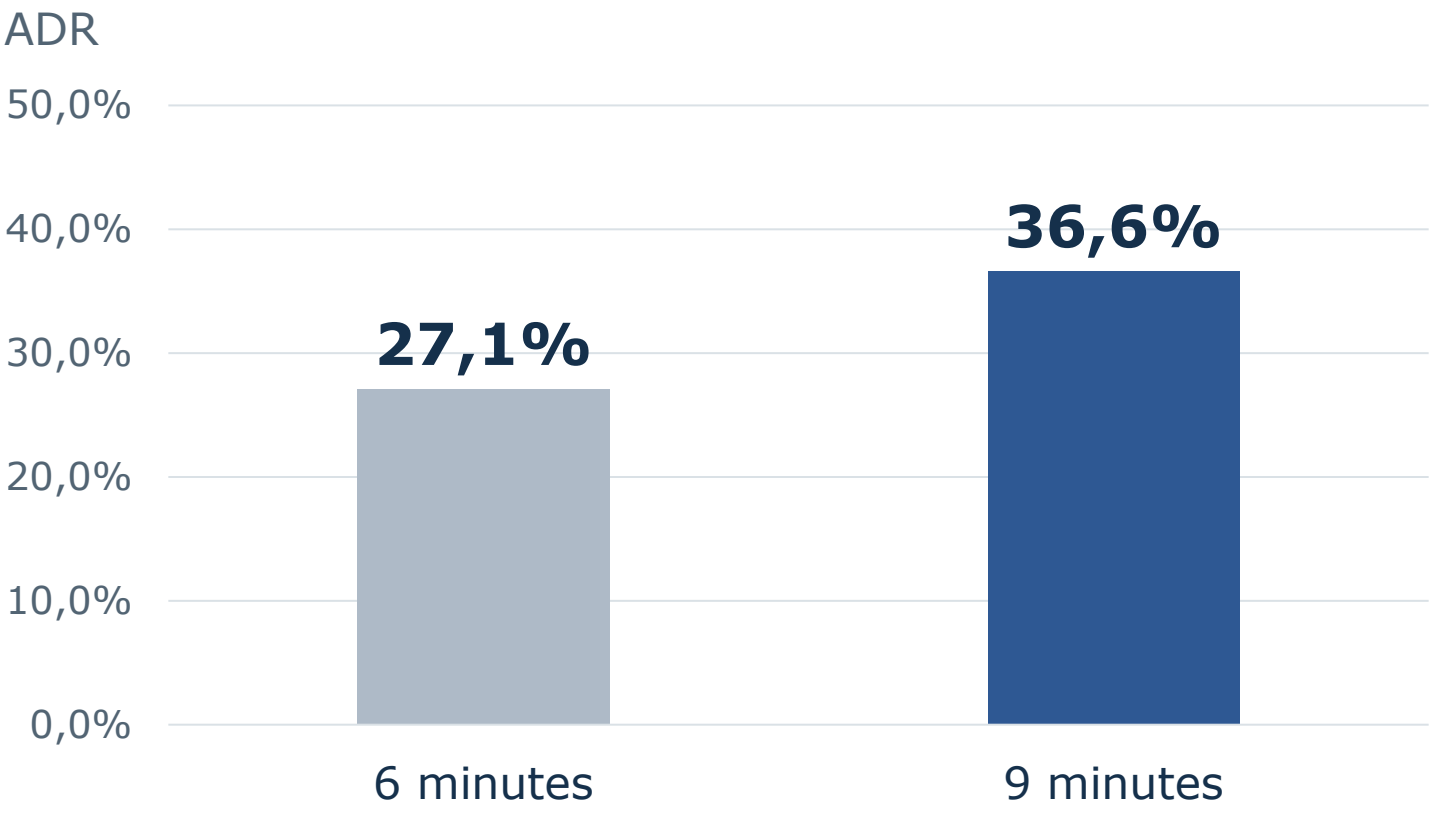
Inspect behind folds and valves



R1, R2, R20

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Inspection needs time



Multicentre randomized trial, n = 1027. P = .001

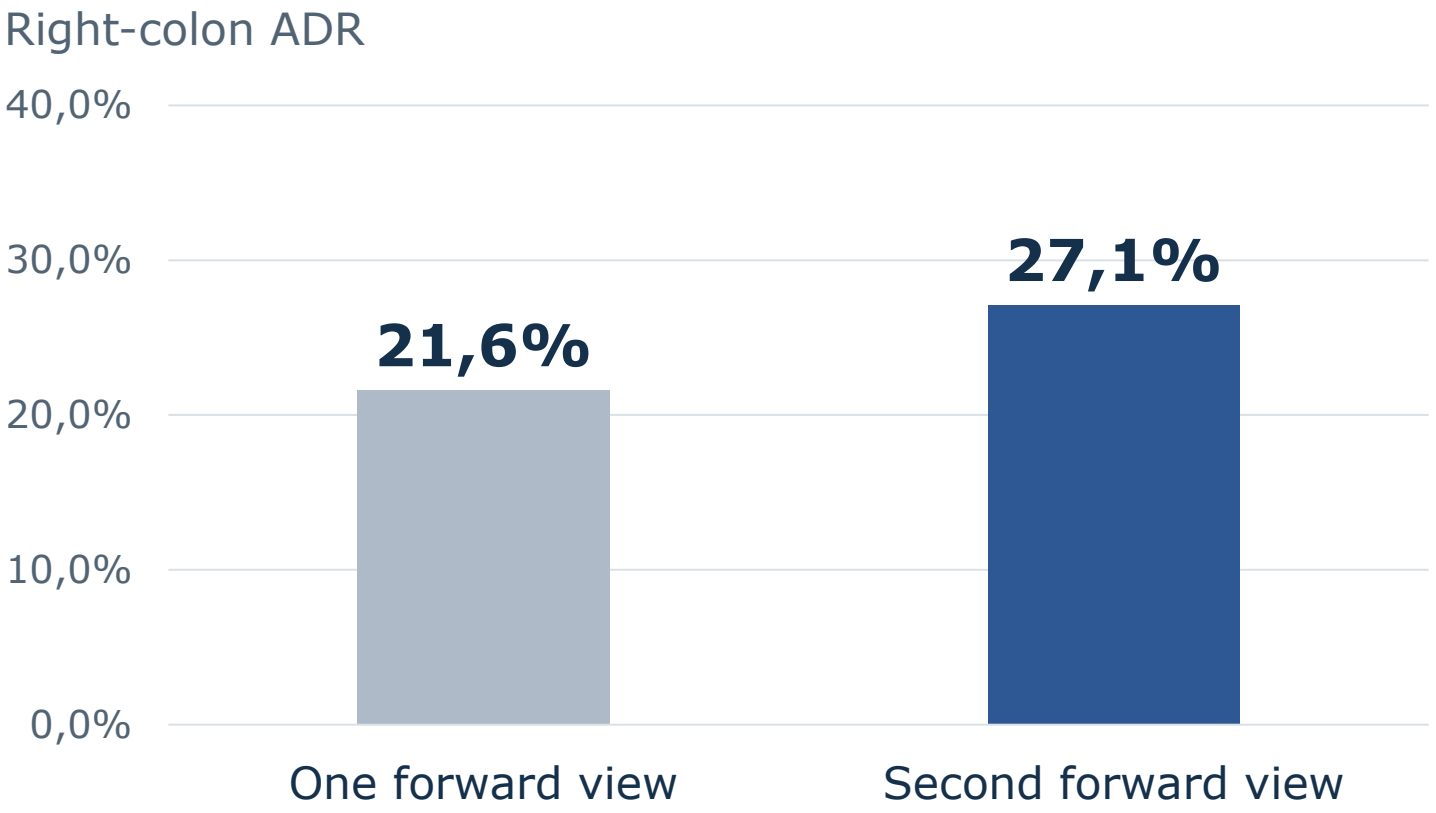
9.5 percentage-point ADR increase

Time used for systematic inspection

R6, R19, R4, R20

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The right colon deserves another look



International randomized trial, n = 1011. P = .042

A second forward view

Approximately 1.5 minutes longer withdrawal

R7, R1, R20

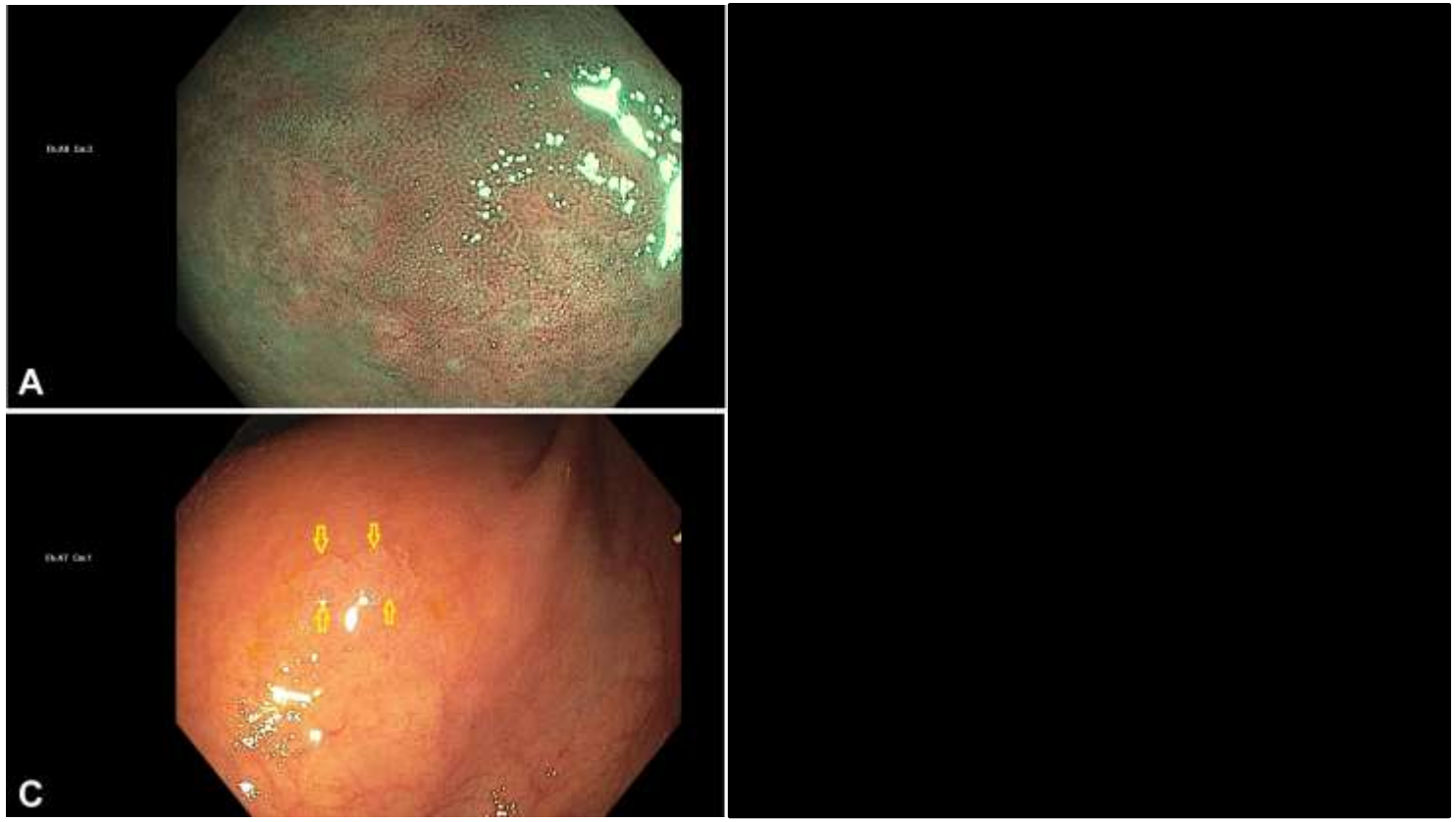
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Subtle lesions need deliberate recognition

Flat contour

A faint edge or color change

A mucus cap or altered surface



R1, R4, R20

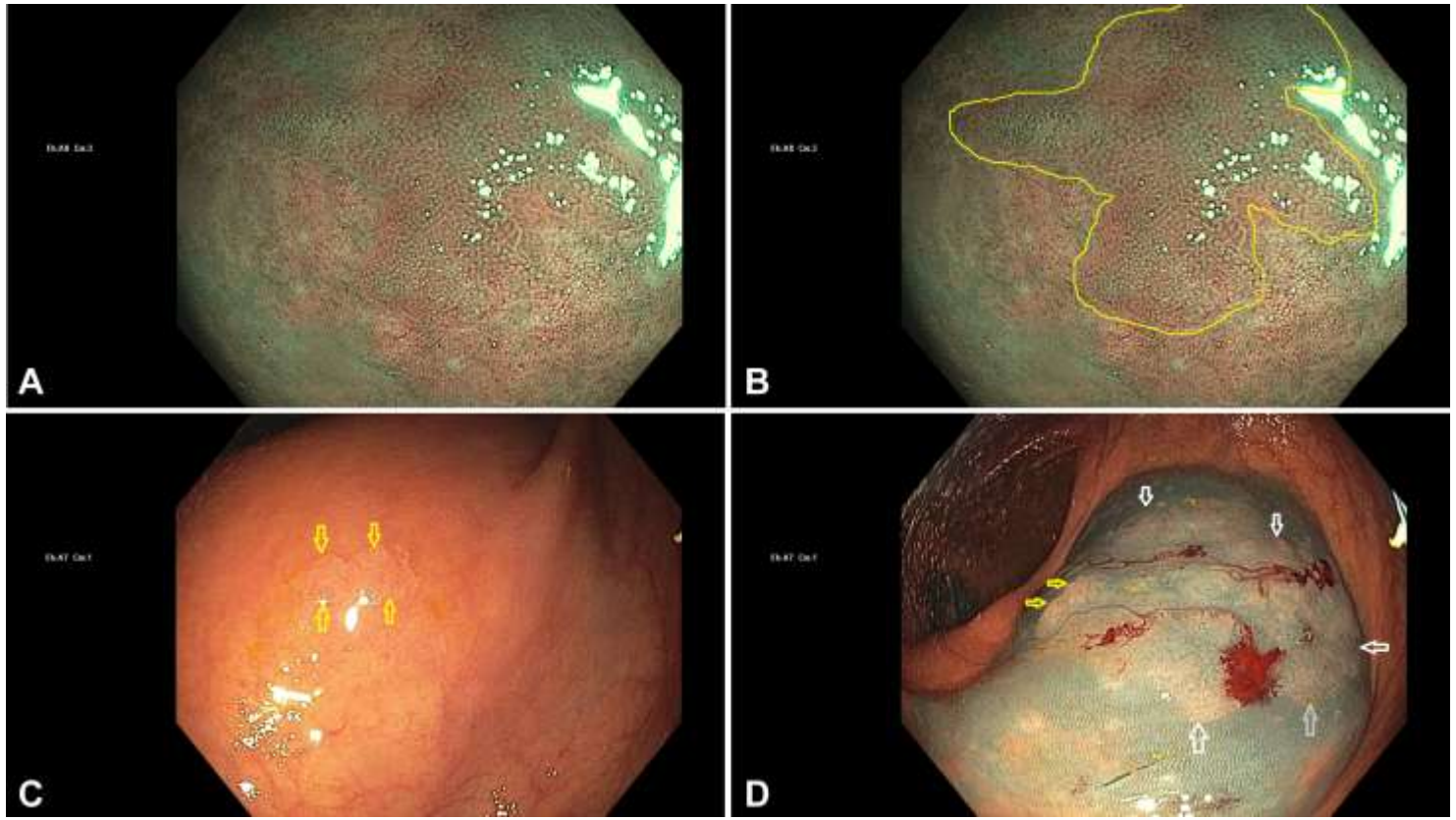
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Subtle lesions need deliberate recognition

Flat contour

A faint edge or color change

A mucus cap or altered surface



R1, R4, R20

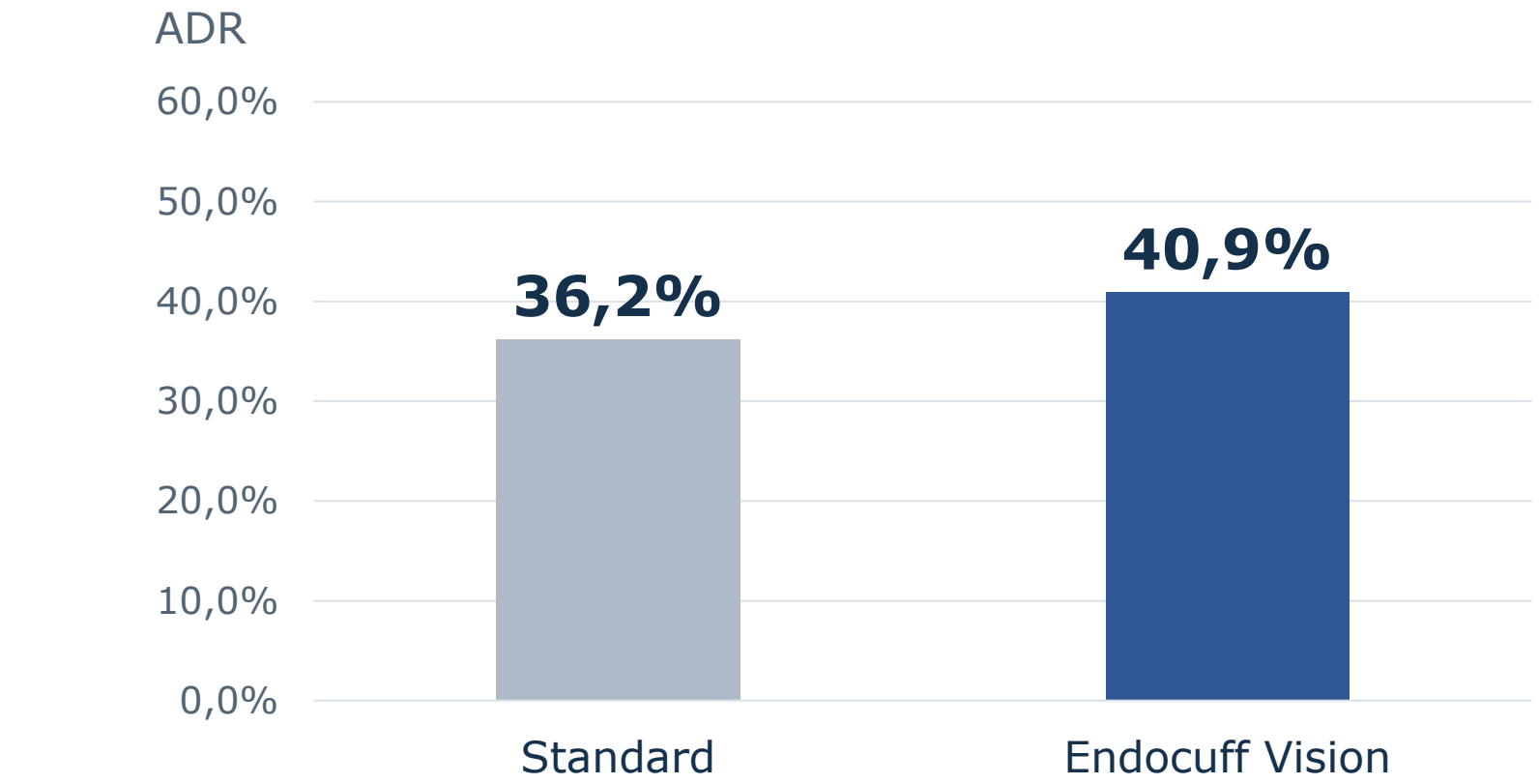
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The tool follows the problem

Exposure	Inspection and attachments
Contrast	Image enhancement technologies
Attention	Second observer or CADe

R1, R2, R20

Endocuff Vision improves mucosal exposure



ADENOMA randomized trial, n = 1772. P = .02



A modest overall detection gain

Benefit varies with the population

R8, R1, R20

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Water exchange supports a cleaner view

Infusion with removal during insertion

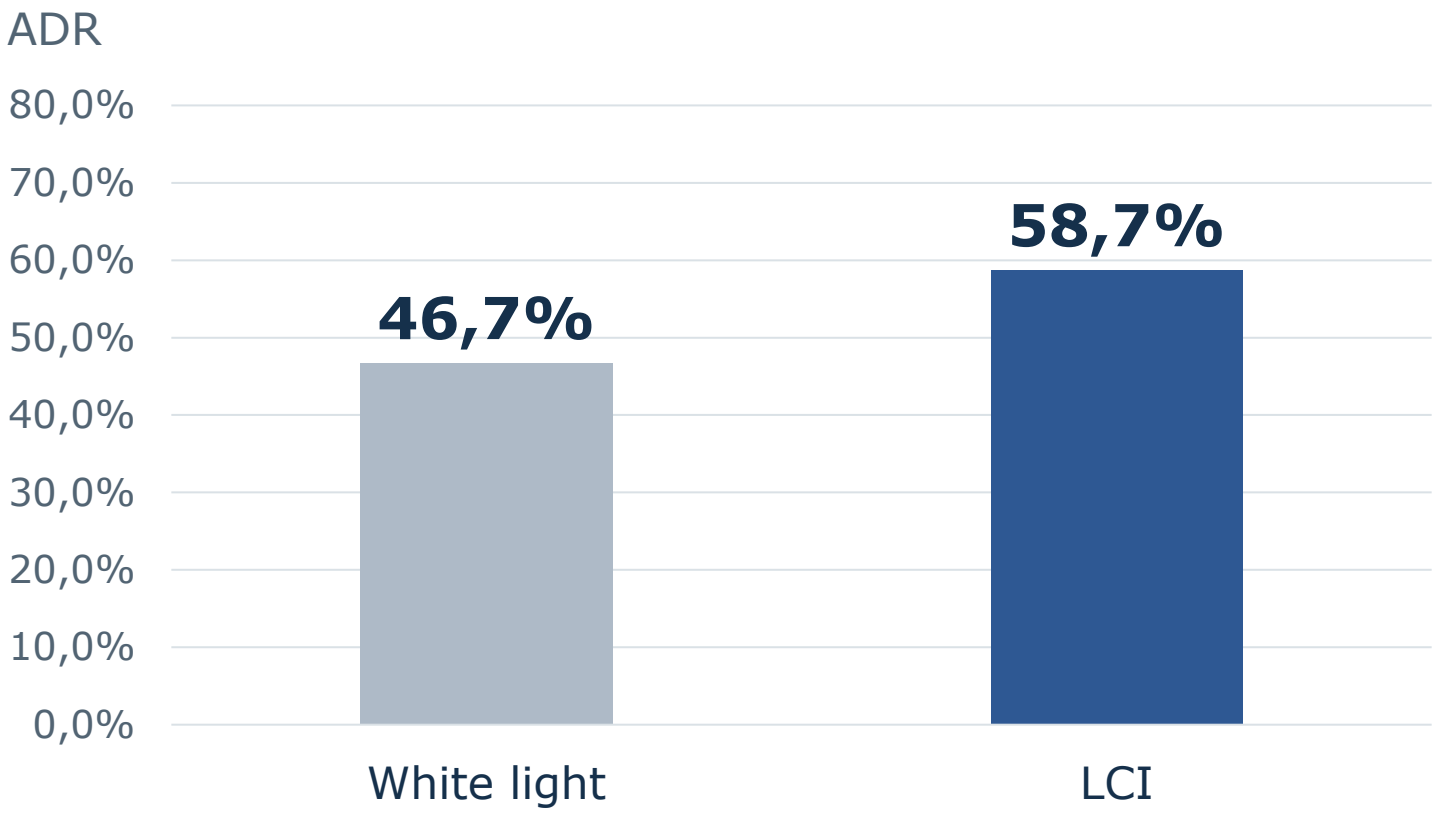
Cleaner mucosa for withdrawal

A technique that requires training



R9, R1, R20

Image enhancement increases contrast



ATLAS randomized trial, n = 3050. P < .01

LCI compared with high definition white light

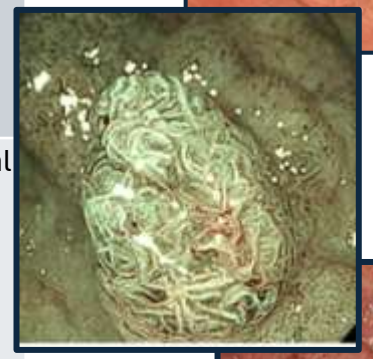
The operator still has to expose and recognize

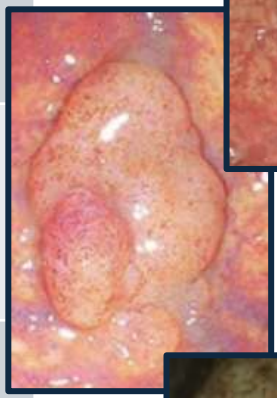
R10, R2, R20

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Image enhancement increases contrast

Technology	Manufacturer	Light Source / Principle	Main Clinical Application	Typical Visual Appearance
WL / WLI (White Light Imaging)	All	Full-spectrum visible white light.	**Initial inspection**, macroscopic evaluation, and anatomy screening.	Natural mucosal colors (standard pinkish/reddish tones).
NBI (Narrow Band Imaging)	Olympus	Optical filters of narrow-band light: Blue (415 nm) and Green (540 nm).	High-magnification detailing of mucosal microvascular (pit pattern) and capillary structures (**characterization**).	Brownish mucosa; superficial capillaries appear dark brown, deeper vessels appear cyan.
TXI (Texture & Color Enhancement)	Olympus	White light split into components with digital texture, brightness, and color enhancement.	Enhancing visibility of flat lesions, subtle polyps, and inflammation during scope withdrawal (**detection**).	Bright image; subtle reddish areas become intensely and clearly red.
LCI (Linked Color Imaging)	Fujifilm	Digital expansion and separation of red/white color tones.	Maximizing color contrast to rapidly spot lesions (high Adenoma **Detection** Rate - ADR).	Red areas appear vivid red, pale/white areas appear bright white (high contrast).
BLI (Blue Light Imaging)	Fujifilm	High-intensity LED/Laser short-wavelength light (410 nm blue-violet).	High-contrast tumor vessel assessment, similar to NBI, to predict invasion depth (**characterization**).	Cool, darker bluish-toned image with sharply outlined microvessels.



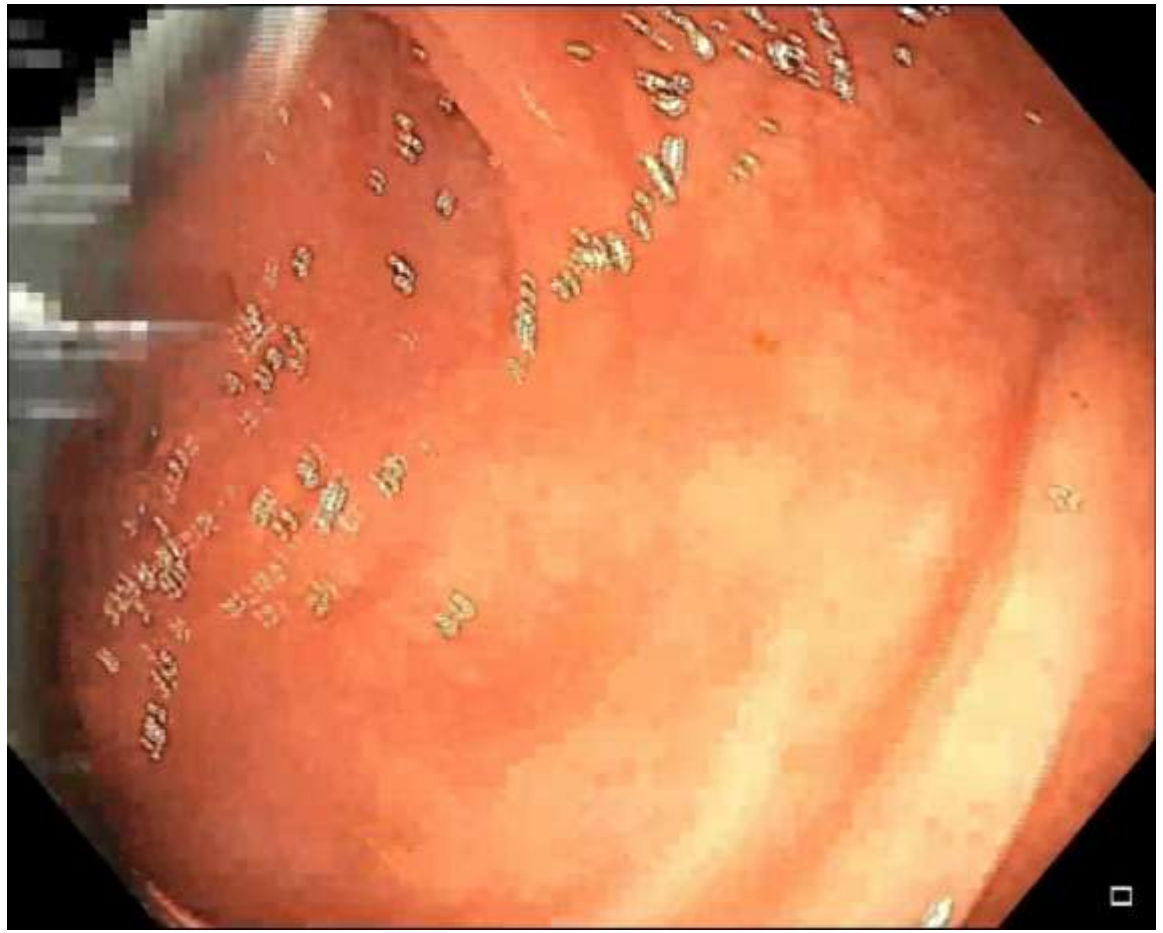

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AI provides another prompt to look

CADe highlights suspected lesions

The endoscopist examines and decides

Exposure and attention remain essential



R11, R12, R13, R20

More adenomas and cancer prevention



Detection gains are established for several tools

Tool-specific cancer benefits remain uncertain

Advanced lesions and SSLs also matter

R2, R12, R14, R15, R16

Improvement needs feedback

ADR and adenomas per colonoscopy (APC)

SSL detection and preparation quality

Education and feedback



R1, R4, R17, R18, R20

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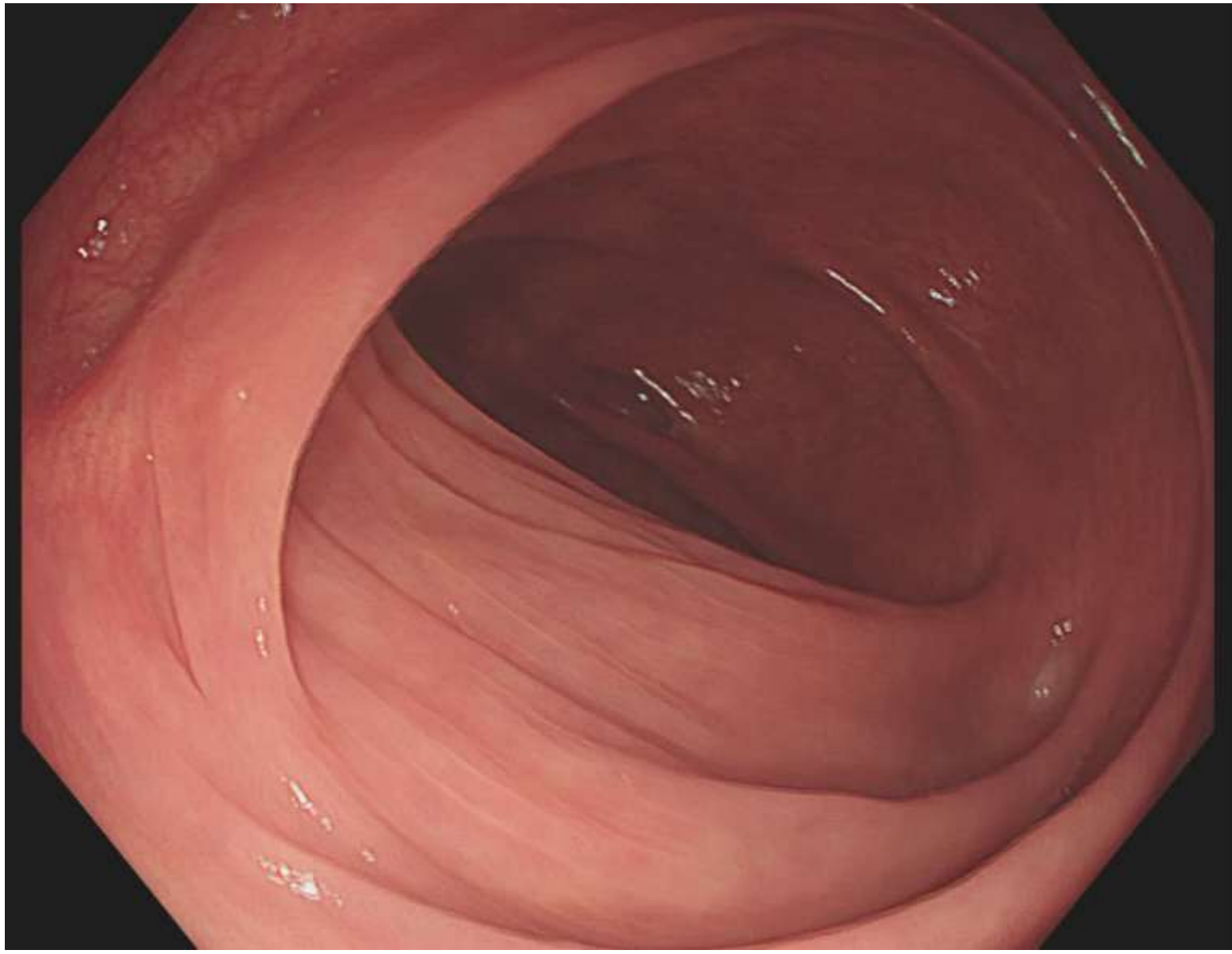
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Our patient revisited

A clean mucosal surface

Systematic exposure and right-colon reinspection

Recognition followed by careful assessment



R1, R2, R4



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Polyp detection, stage by stage

Before the scope	Split dosing, clear instructions and preparation review
During insertion	Stable scope; water exchange if trained
During withdrawal	Wash and suction; distend; inspect behind every fold
In the right colon	A second examination, usually forward view
At a subtle change	Inspect the edge, color and vessels; enhance if useful
After the examination	Record preparation; review ADR, APC and SSL detection

Adjuncts support exposure or recognition after the basics are in place

R1, R4, R5, R9, R20

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The next colonoscopy



R1, R2

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Scientific references 1

R1 Shaukat A, Tuskey A, Rao VL, et al. Interventions to improve adenoma detection rates for colonoscopy. Gastrointest Endosc. 2022;96:171–183. doi:10.1016/j.gie.2022.03.026.

R2 Khan R, Ruan Y, Yuan Y, et al. Relative Efficacies of Interventions to Improve the Quality of Screening-Related Colonoscopy. Gastroenterology. 2024;167:560–590. doi:10.1053/j.gastro.2024.03.018.

R3 Corley DA, Jensen CD, Marks AR, et al. Adenoma detection rate and risk of colorectal cancer and death. N Engl J Med. 2014;370:1298–1306. doi:10.1056/NEJMoa1309086.

R4 Rex DK, Anderson JC, Butterly LF, et al. Quality indicators for colonoscopy. Gastrointest Endosc. 2024;100:352-381. doi:10.1016/j.gie.2024.04.2905. PMID:39177519.

R5 Jacobson BC, Anderson JC, Burke CA, et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology. 2025;168:798-829. doi:10.1053/j.gastro.2025.02.002. PMID:40047732.

R6 Zhao S, Yang X, Wang S, et al. Impact of 9-Minute Withdrawal Time on the Adenoma Detection Rate: A Multicenter Randomized Controlled Trial. Clin Gastroenterol Hepatol. 2022;20:e168-e181. doi:10.1016/j.cgh.2020.11.019. PMID:33220526.

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R10 Suzuki S, Aniwan S, Chiu HM, et al. Linked-Color Imaging Detects More Colorectal Adenoma and Serrated Lesions: An International Randomized Controlled Trial. Clin Gastroenterol Hepatol. 2023;21:1493-1502.e4. doi:10.1016/j.cgh.2022.10.021. PMID:36328306.

R11 Repici A, Badalamenti M, Maselli R, et al. Efficacy of Real-Time Computer-Aided Detection of Colorectal Neoplasia in a Randomized Trial. Gastroenterology. 2020;159:512-520.e7. doi:10.1053/j.gastro.2020.04.062. PMID:32371116.

R12 Dominitz JA, Gawron AJ, McKee GB, et al. Impact of Availability of Computer-Aided Detection Devices on Adenoma Detection During Colonoscopy: A Cluster Randomized Study. Gastroenterology. 2026. Online ahead of print. Article S0016-5085(26)06941-6. doi:10.1053/j.gastro.2026.05.018. PMID:42250891.

R13 Budzyń K, Romańczyk M, Kitala D, et al. Endoscopist deskilling risk after exposure to artificial intelligence in colonoscopy: a multicentre, observational study. Lancet Gastroenterol Hepatol. 2025;10:896-903. doi:10.1016/s2468-1253(25)00133-5. PMID:40816301.

Scientific references 3

R14 Bretthauer M, Ahmed J, Antonelli G, et al. Use of computer-assisted detection (CADe) colonoscopy in colorectal cancer screening and surveillance: European Society of Gastrointestinal Endoscopy (ESGE) Position Statement. Endoscopy. 2025;57:667-673. doi:10.1055/a-2543-0370. PMID:40148135.

R15 Sultan S, Shung DL, Kolb JM, et al. AGA Living Clinical Practice Guideline on Computer-Aided Detection-Assisted Colonoscopy. Gastroenterology. 2025;168:691-700. doi:10.1053/j.gastro.2025.01.002. PMID:40121061.

R16 Foroutan F, Vandvik PO, Helsingen LM, et al. Computer aided detection and diagnosis of polyps in adult patients undergoing colonoscopy: a living clinical practice guideline. BMJ. 2025;388:e082656. doi:10.1136/bmj-2024-082656. PMID:40147837.

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R18 Wallace MB, Crook JE, Thomas CS, et al. Effect of an endoscopic quality improvement program on adenoma detection rates: a multicenter cluster-randomized controlled trial in a clinical practice setting (EQUIP-3). Gastrointest Endosc. 2017;85:538-545.e4. doi:10.1016/j.gie.2016.07.042. PMID:27473182.

R19 Zhao S, Song Y, Wang S, et al. Reduced Adenoma Miss Rate With 9-Minute vs 6-Minute Withdrawal Times for Screening Colonoscopy: A Multicenter Randomized Tandem Trial. Am J Gastroenterol. 2023;118:802-811. doi:10.14309/ajg.0000000000002055. PMID:36219172.

R20 Rex DK. Top tips for maximum detection during colonoscope withdrawal (with video). Gastrointest Endosc. 2022;96:1050–1054. doi:10.1016/j.gie.2022.07.034.