



QUALITY IN ENDOSCOPY

ESGE / ESDO SYMPOSIUM

COLONOSCOPY &  
COLONIC NEOPLASMS

Prague, Czech Republic April 17-18, 2015

# How to improve mucosal inspection

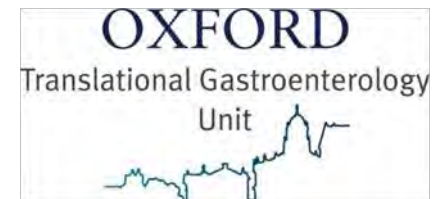
TRAINING AND UPSKILLING COLONOSCOPY

Session 2

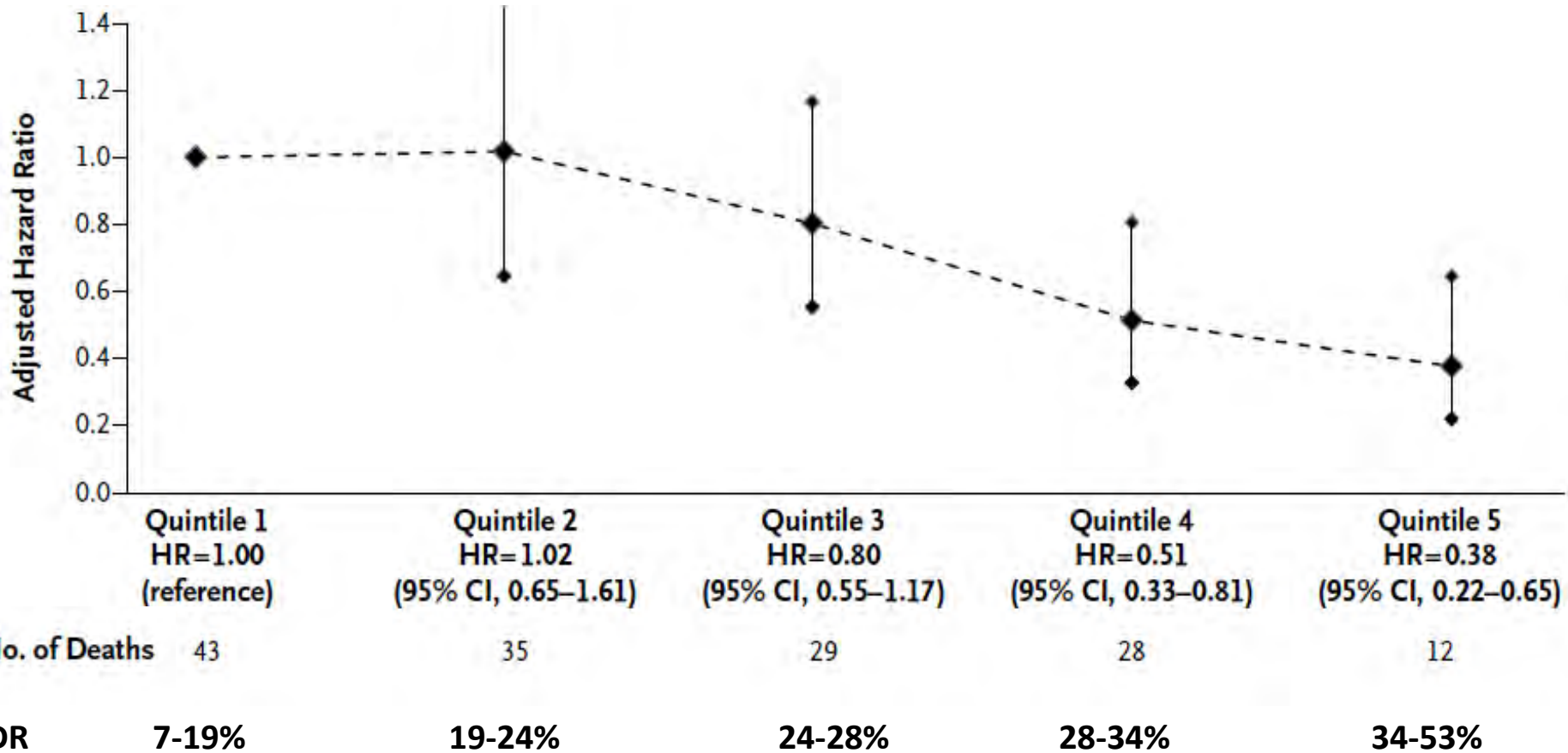
**Dr. James East**

Translational Gastroenterology Unit, Oxford

United Kingdom



# Risk of CRC death by ADR



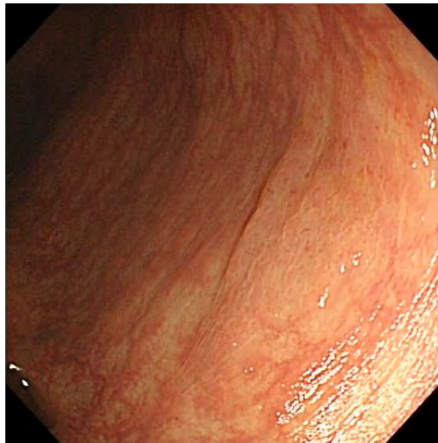
Corley DA *et al.* N Engl J Med 2014;**370**:1298-306

# Colonoscopic cancer prevention



## Left colon

Sessile & pedunculated adenomas



## Right colon

Flat adenomas & serrated lesions

Easy & effective

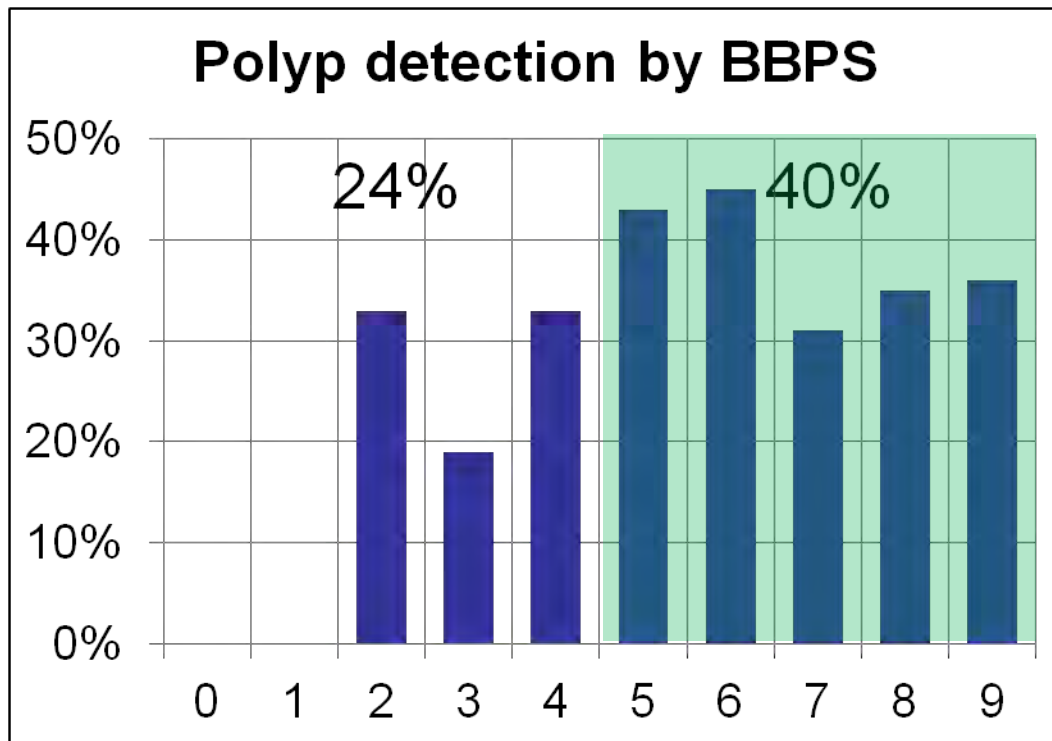


Harder

# Overview

1. Bowel Preparation
2. Withdrawal time
3. Position Changes
4. Anti-spasmodics
5. Rectal retroflexion

# Bowel preparation



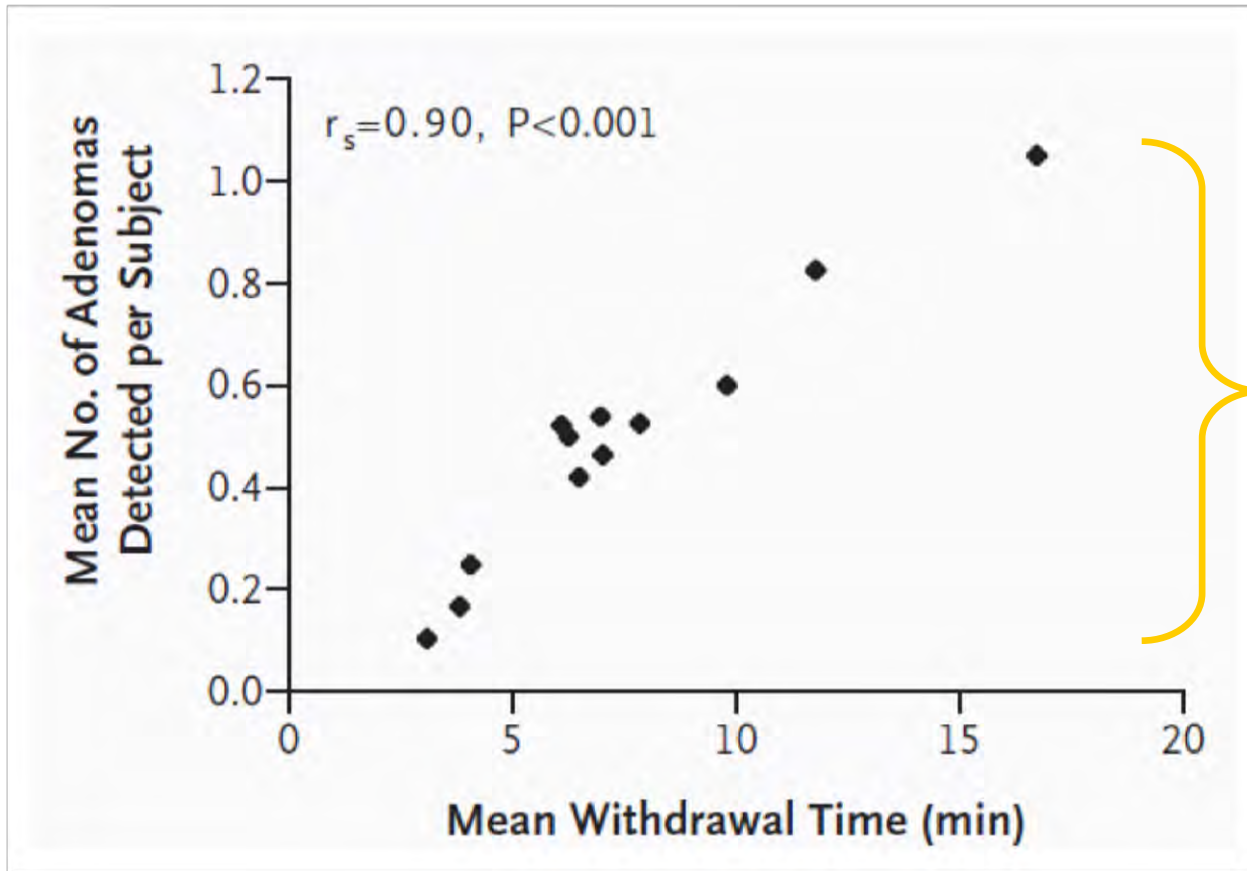
Boston Bowel Prep Score  
**Post**-colonoscopist  
cleaning efforts  
0-3 for 3 colonic  
segments  
Validated

US multi-society  
taskforce CRC

SPLIT DOSE PREP

Lai EJ *et al.* *Gastrointest Endosc* 2009;**69**:620-5  
Johnson DA *et al.* *Gastroenterology* 2014;**147**:903–924

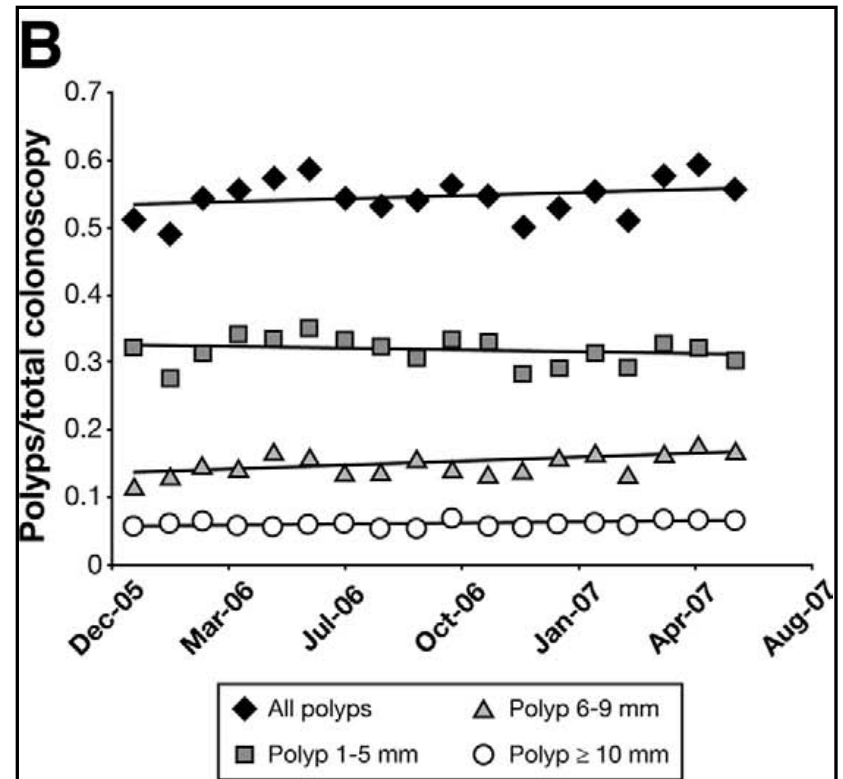
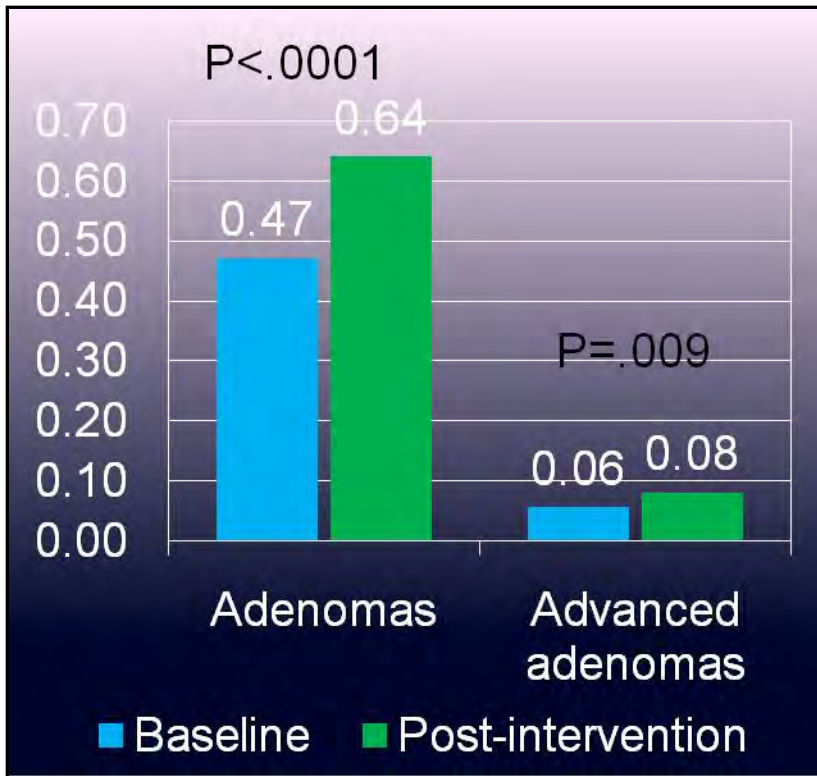
# Variability and Withdrawal time



10x

Barclay R *et al.* N Engl J Med 2006; **355**:2533-2541

# Extending withdrawal

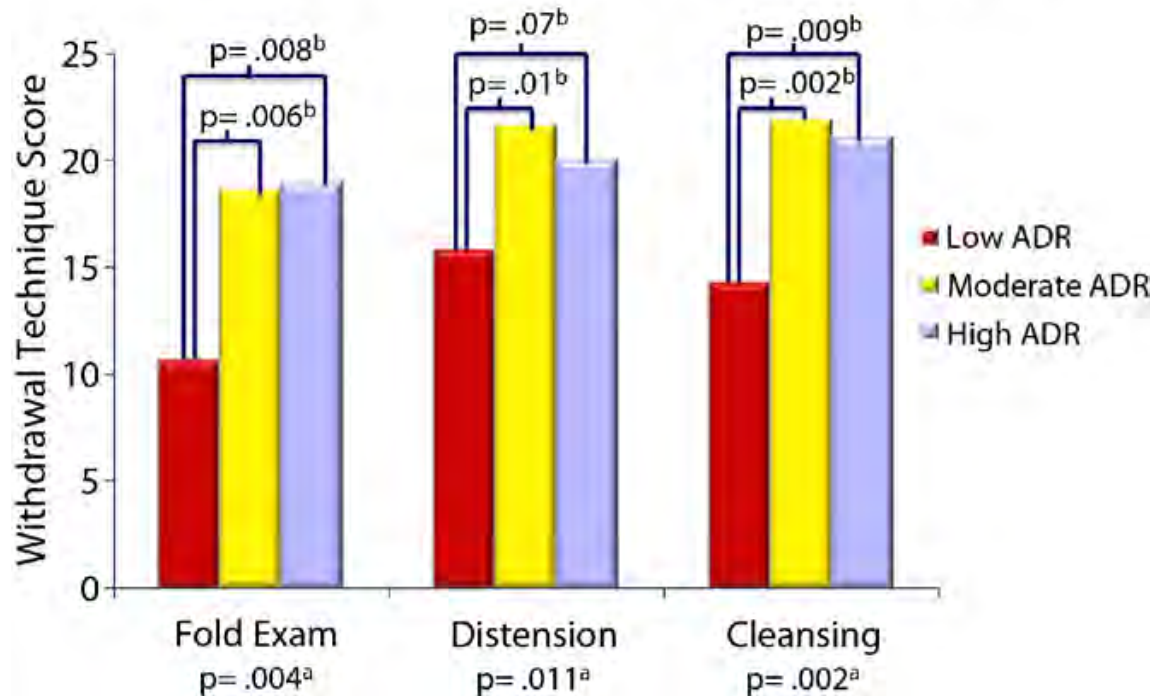


Barclay R *et al.* Clin Gastro Hep 2008;6:1091-8

Sawhney M *et al.* Gastroenterology 2008;135:1892-8

# “What you do with the time...”

## Technique Score Aspects



Highest ADR vs lowest ADR operator

Withdrawal time same: 6.6 vs 7.4 mins, P=0.36

Technique score 36 vs 63, P<0.001

Lee RH *et al.* Gastrointest Endosc 2011;**74**:128-34



# Barium Enema

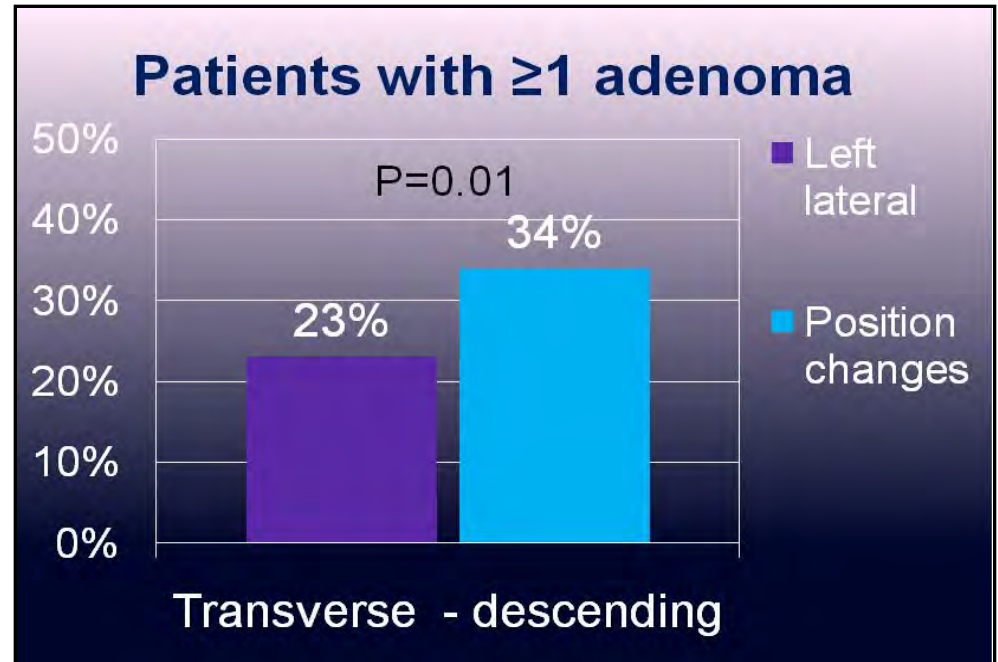
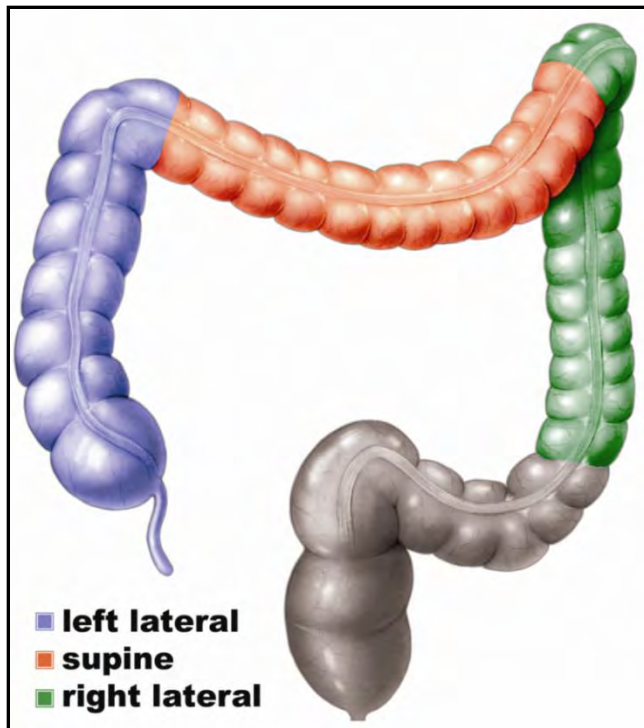


Left Lateral

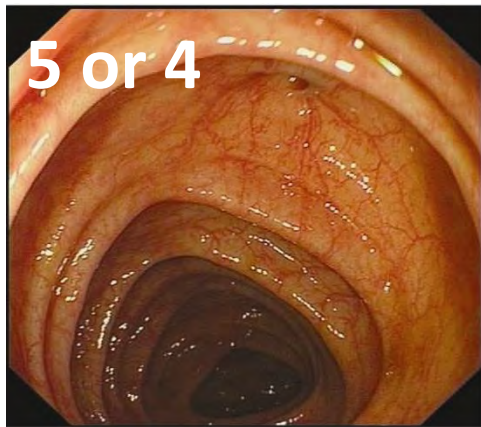


Right lateral

# Dynamic Position Changes



East JE *et al.* Gastrointest Endosc 2011;**73**:456-63

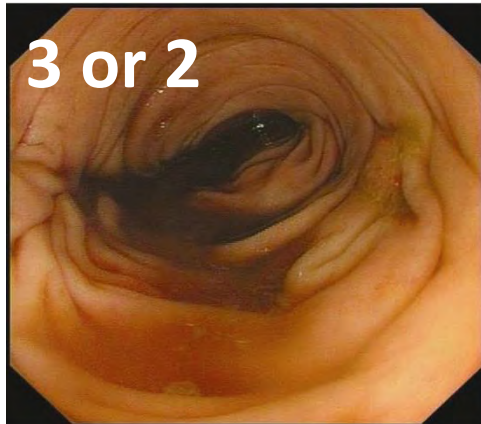


5 or 4

# Luminal Distension

16%

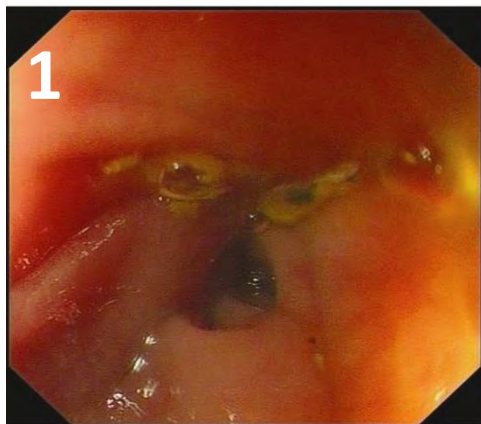
Improved with dynamic position changes



3 or 2

Adenoma and polyp detection correlated

7%



1

Lesion	Detection	Score 1-3, n (%)	Score 4-5, n (%)	P value
Adenoma	No	233 (93)	1097 (84)	<.001
	Yes	18 (7)	208 (16)	
Polyp	No	228 (91)	995 (76)	<.001
	Yes	23 (9)	313 (24)	

# Position change versus standard practice

**TABLE 3. Intention-to-treat analysis**

	Control (n = 388)	Dynamic (n = 388)	OR, 95% CI; P value
Polyp detection rate	58.2% (n = 226)	58.0% (n = 225)	0.99, 0.74-1.32; .93
Adenoma detection rate	37.9% (n = 147)	41.8% (n = 162)	1.17, 0.88-1.57; .28
Malignancy	1.5% (n = 6)	1.3% (n = 5)	0.83, 0.25-2.79; .76
			<b>Ratio, 95% CI; P value</b>
Mean no. of polyps (SD)	1.31 (1.98)	1.27 (1.75)	0.97, 0.78-1.20; .74
Mean no. of adenomas (SD)	0.63 (1.05)	0.68 (1.08)	1.03, 0.79-1.34; .81

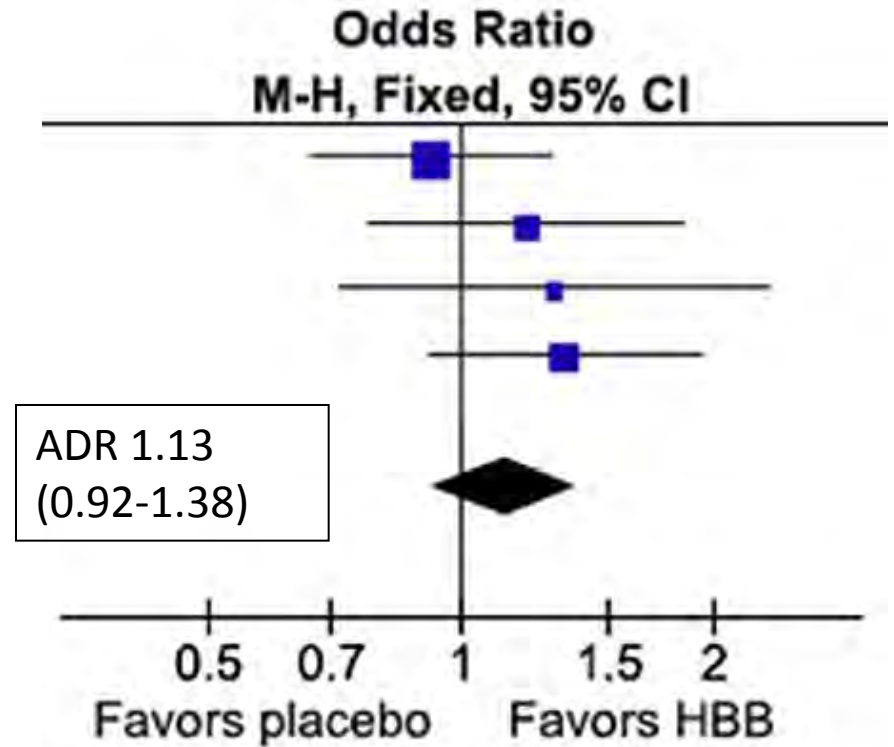
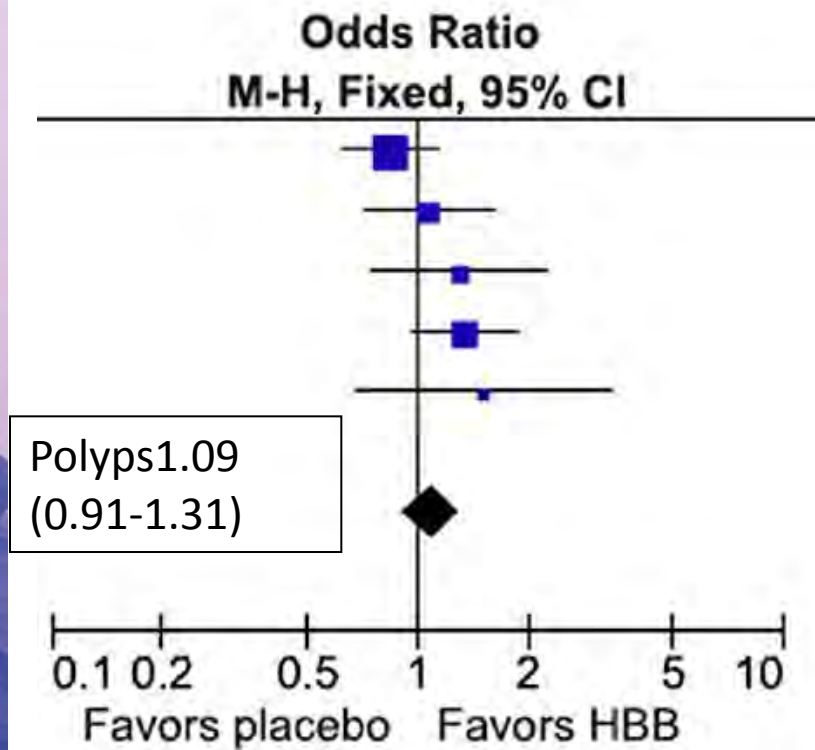
Room air for insufflation

No anti-spasmodic

50% position changes

High baseline  
performance

# Antispasmodics meta-analysis



Colonoscopy characteristics	Patients (n = 31 088), n (%)	Patients with ≥1 adenoma (n = 14 423), n (%) <sup>1</sup>	P	Patients with ≥1 advanced adenoma (n = 8985), n (%) <sup>1</sup>	P
Cecal Intubation					
No	1365 (4.4)	244 (17.9)	<0.001	151 (11.1)	<0.001
Yes	29723 (95.6)	14179 (47.7)		8834 (29.7)	
Rectal retroversion					
No	3115 (10.0)	1433 (46.0)	0.645	1001 (32.1)	<0.001
Yes	27973 (90.0)	12990 (46.4)		7984 (28.5)	
Colonoscopist mean nc-CWT, minutes					
<10	19816 (63.7)	9020 (45.5)	<0.001	5769 (29.1)	0.280
≥10	11272 (36.3)	5403 (47.9)		3216 (28.5)	
Bowel preparation quality <sup>2</sup>					
Inadequate preparation	1637 (5.3)	620 (37.9)	<0.001	360 (22.0)	<0.001
Excellent or adequate	29280 (94.2)	13775 (47.0)		8610 (29.4)	
Antispasmodic use					
No	20521 (66.0)	9129 (44.5)	<0.001	5629 (27.4)	<0.001
Yes	10567 (34.0)	5294 (50.1)		3356 (31.8)	

# Rectal retroflexion

Flexiscope trial (480 patients)

12 (2.5%) polyps seen only on retroflexion

4 adenomas (3 TAs <5mm, 1 x 15mm TVA)

Large colonoscopy series (1502 cases)

40 (2.7%) had a distal rectal polyp

8 (0.5%) retroflexed view only

1 x 4mm tubular adenoma



Multi-centre series, 4+ endoscopists (934 pt)

10 (1%) lesions retroflexion only, all clinically relevant

8 polyps 5-10mm, 5 adenomas

Hanson J *et al.* Dis Colon Rectum 2001;**44**:1706-82

Saad A *et al.* World J Gastroenterol 2008;**14**:6503-5

Télliez-Ávila F *et al.* Clin Endosc 2014;**47**:79-83

# Overview

## 1. Bowel Preparation

2.

*The* **NEW ENGLAND**  
**JOURNAL** *of* **MEDICINE**

3.

ESTABLISHED IN 1812

DECEMBER 28, 2006

VOL. 355 NO. 26

4.

### An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

## 5. Rectal retroflexion



# Quality Improvement in Colonoscopy (QIC) study

Quartile	Before			After			Ratio	p value
	N procedures	Patients with adenomas	ADR (%) [CI]	N procedures	Patients with adenomas	ADR (%) [CI]		
Upper	785	215	27.4 [24.4-30.6]	2508	538	21.5 [19.9-23.1]	0.78	<0.001
Upper Middle	1116	195	17.5 [15.4-19.8]	3119	599	19.2 [17.9-20.6]	1.10	0.24
Lower Middle	785	104	13.3 [11.1-15.8]	2539	490	19.3 [18.8-22.0]	1.45	<0.001
Lower	936	68	7.3 [5.8-9.8]	2405	334	13.9 [12.6-15.3]	1.91	<0.001

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# 'Marginal gains' – Tour de France 2012

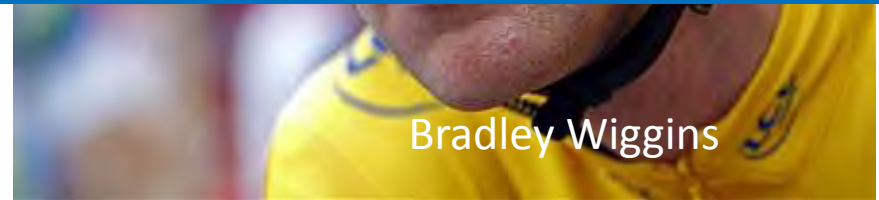


"The whole principle came from the idea that if you broke down everything you could think of that goes into riding a bike, and then improved it by 1%, you will get a significant increase when you put them all together"

Dave Brailsford(2012)



David Brailsford



Bradley Wiggins