

COLON CANCER PREVENTION

Quality in Colonoscopy

G. S. Raju, MD



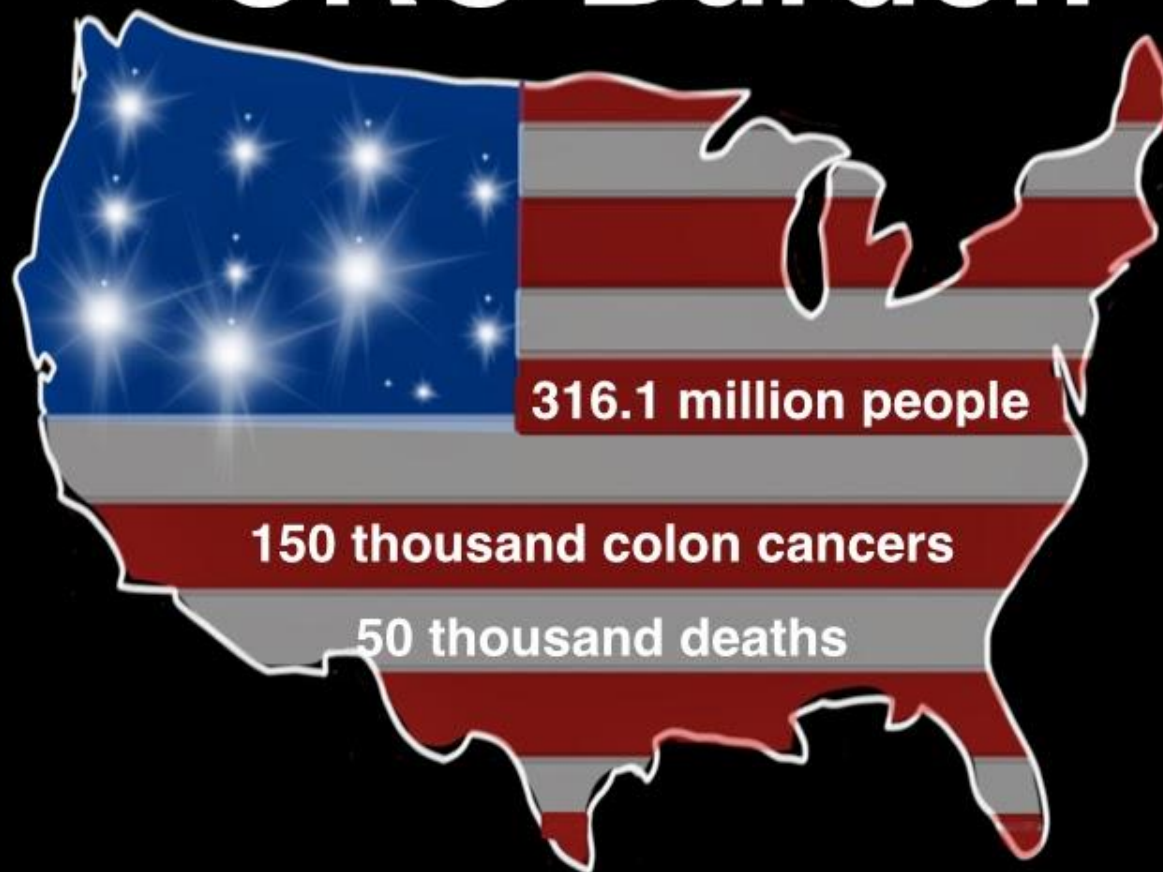
You see a 50 year old man in the clinic. You recommend colonoscopy for colorectal cancer screening.

1. What is the **probability of CRC** in a life time?
2. What are the **benefits of colonoscopy**?
3. What are the **risks of colonoscopy**?
4. What are the **flaws of colonoscopy in CRC prevention**?
5. **Where should you send your patient** for colonoscopy?
6. What is a **quality colonoscopy screening**?
7. What is a **quality colonoscopy resection**?
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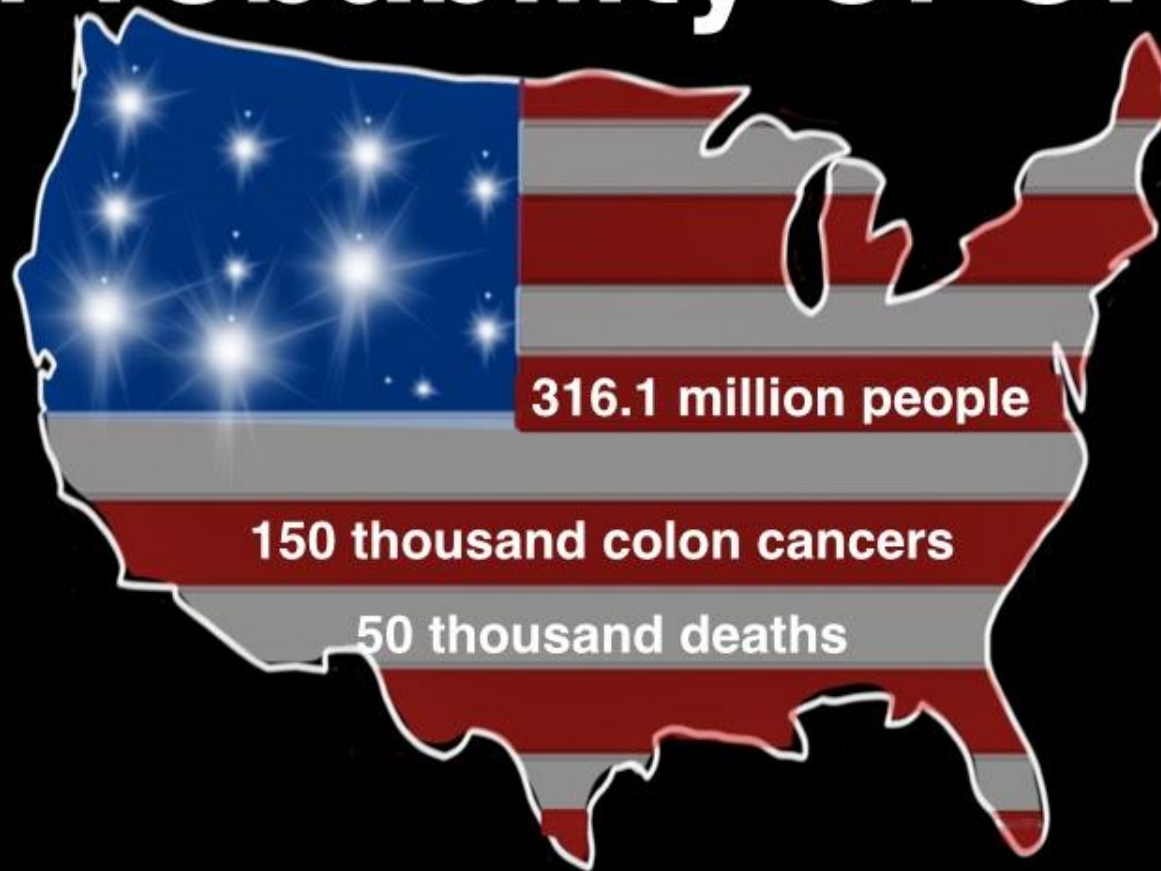
CRC Burden



THE UNIVERSITY OF TEXAS

MD Anderson
Cancer Center

Probability of CRC



1 in 19 men

1 in 21 men

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Goals of Colonoscopy

Safe

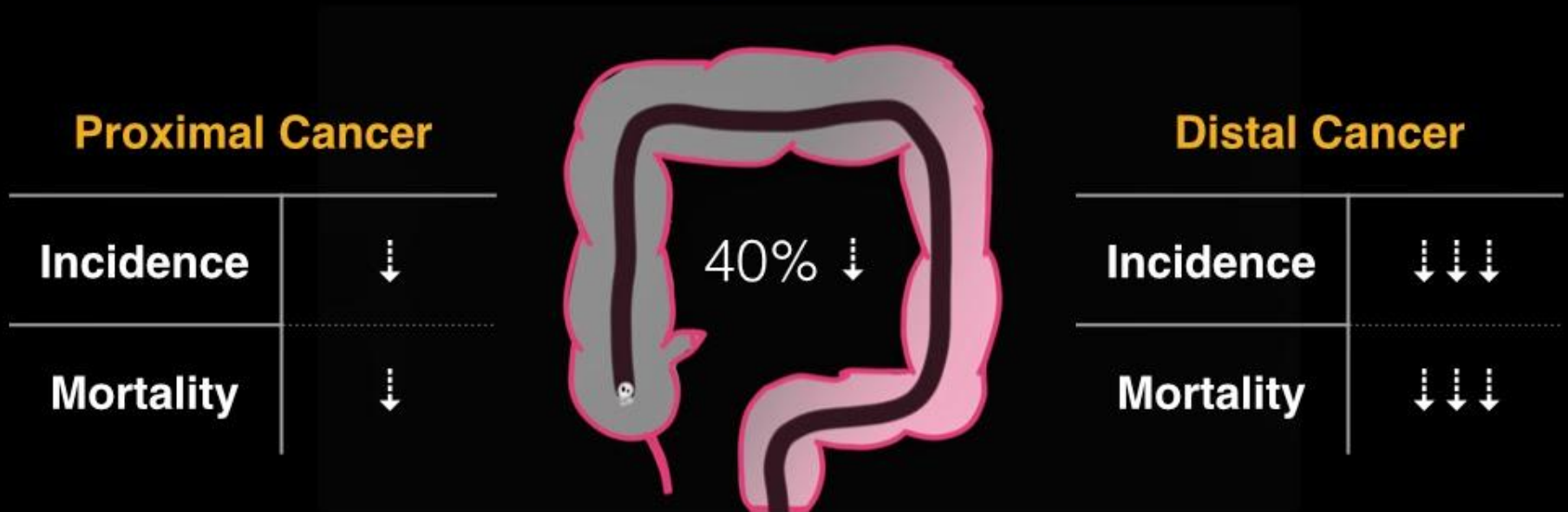
Detection

Resection

Complete

Colon Cancer Prevention

Screening Colonoscopy



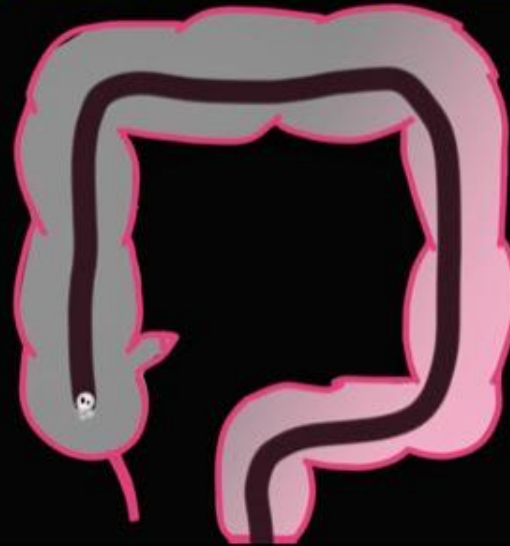
Nurses Health Study (n=121,700)
Health Professionals FU Study (51,529)

*Multivariate hazard ratio

Colon Cancer Prevention

Screening Colonoscopy

Negative Colonoscopy - 5.1-15 yrs



Nurses Health Study (n=121,700)
Health Professionals FU Study (51,529)

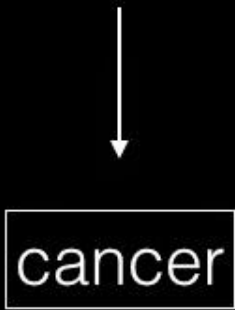
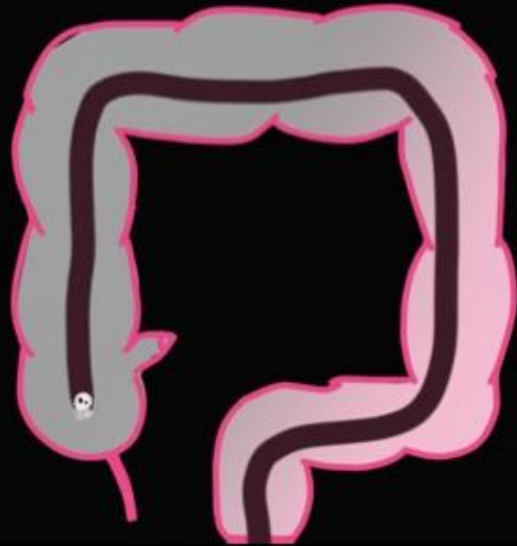
*Multivariate hazard ratio

Negative colonoscopy: 1 (0.43); 2 (0.32); 3 (0.23)

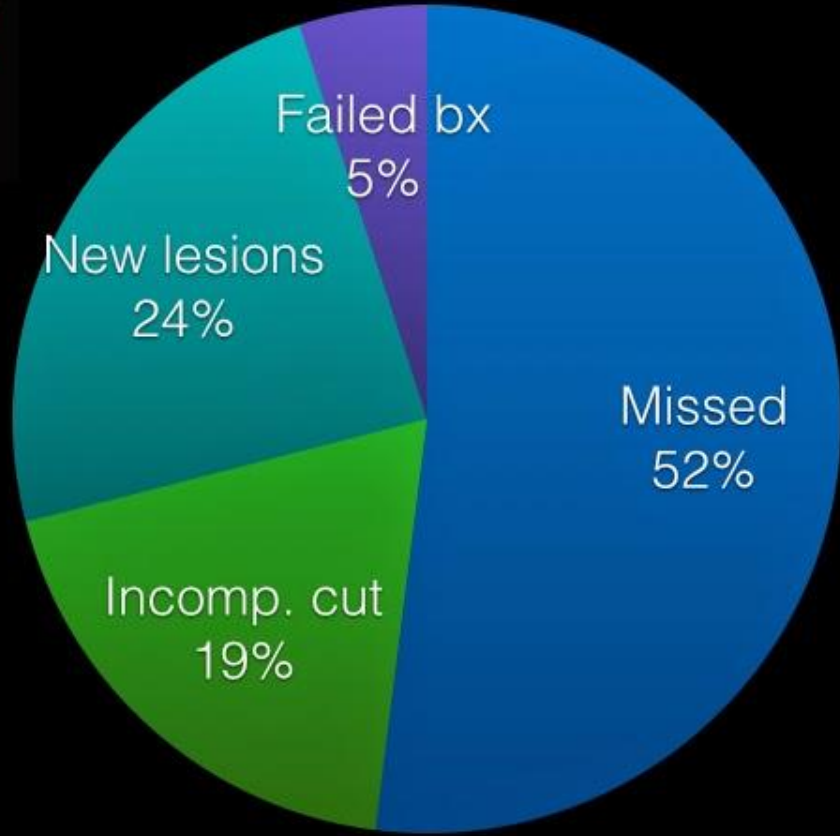
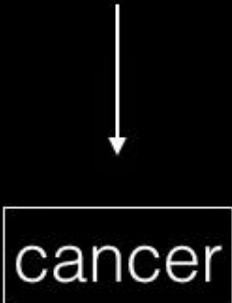
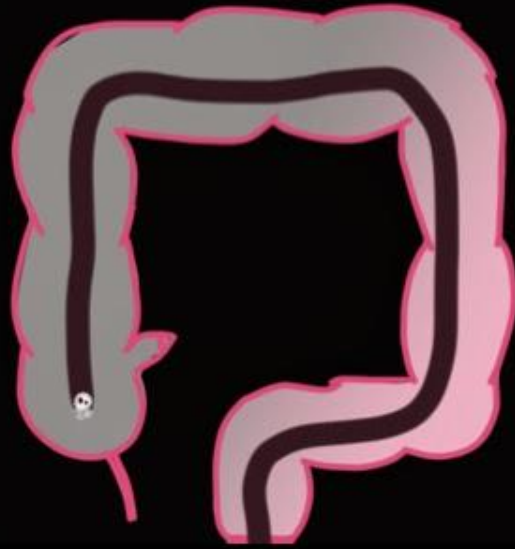
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Interval Cancer



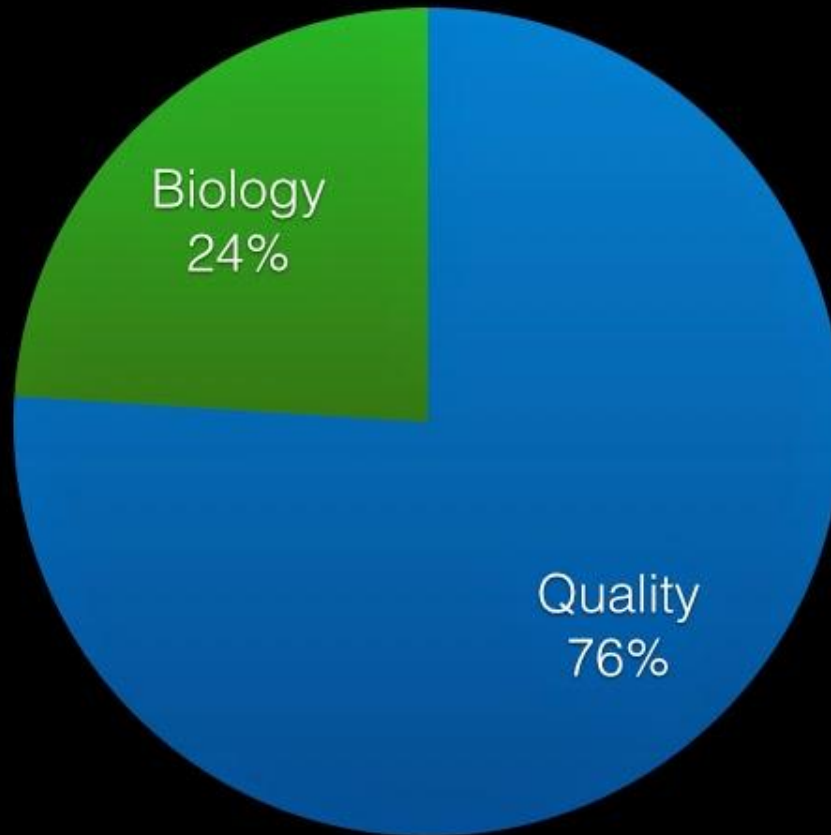
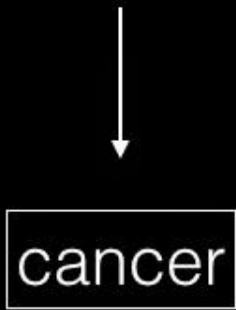
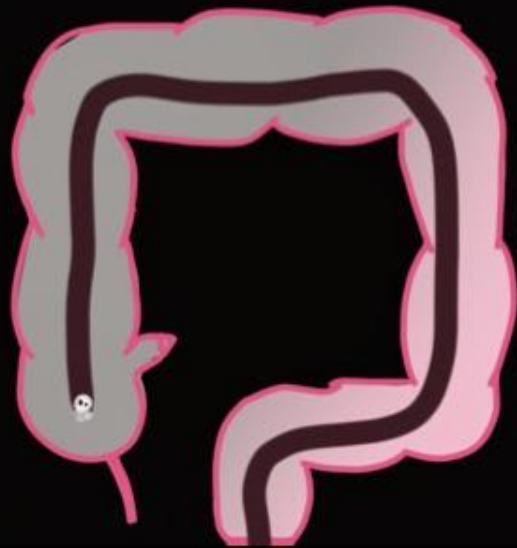
Interval Cancer



US Cohort Study
n=8 studies
9167 patients

6 per 1000 individuals
4 yrs following
colonoscopy

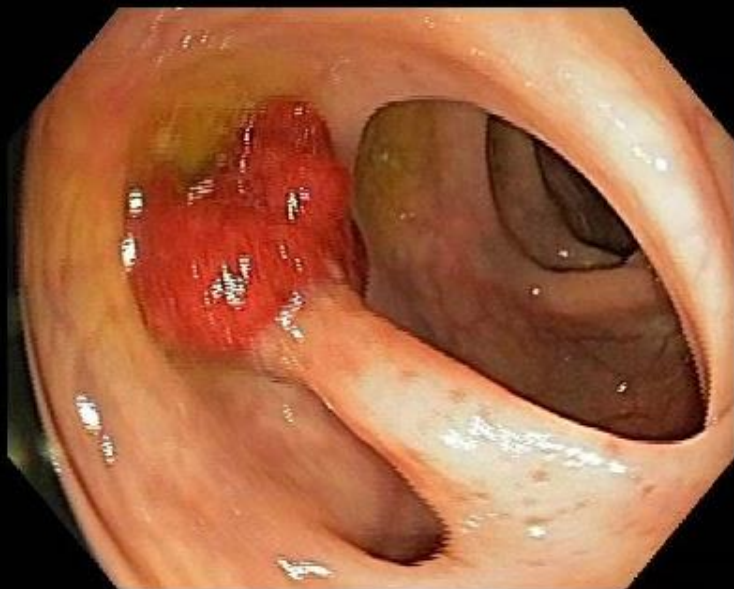
Interval Cancer



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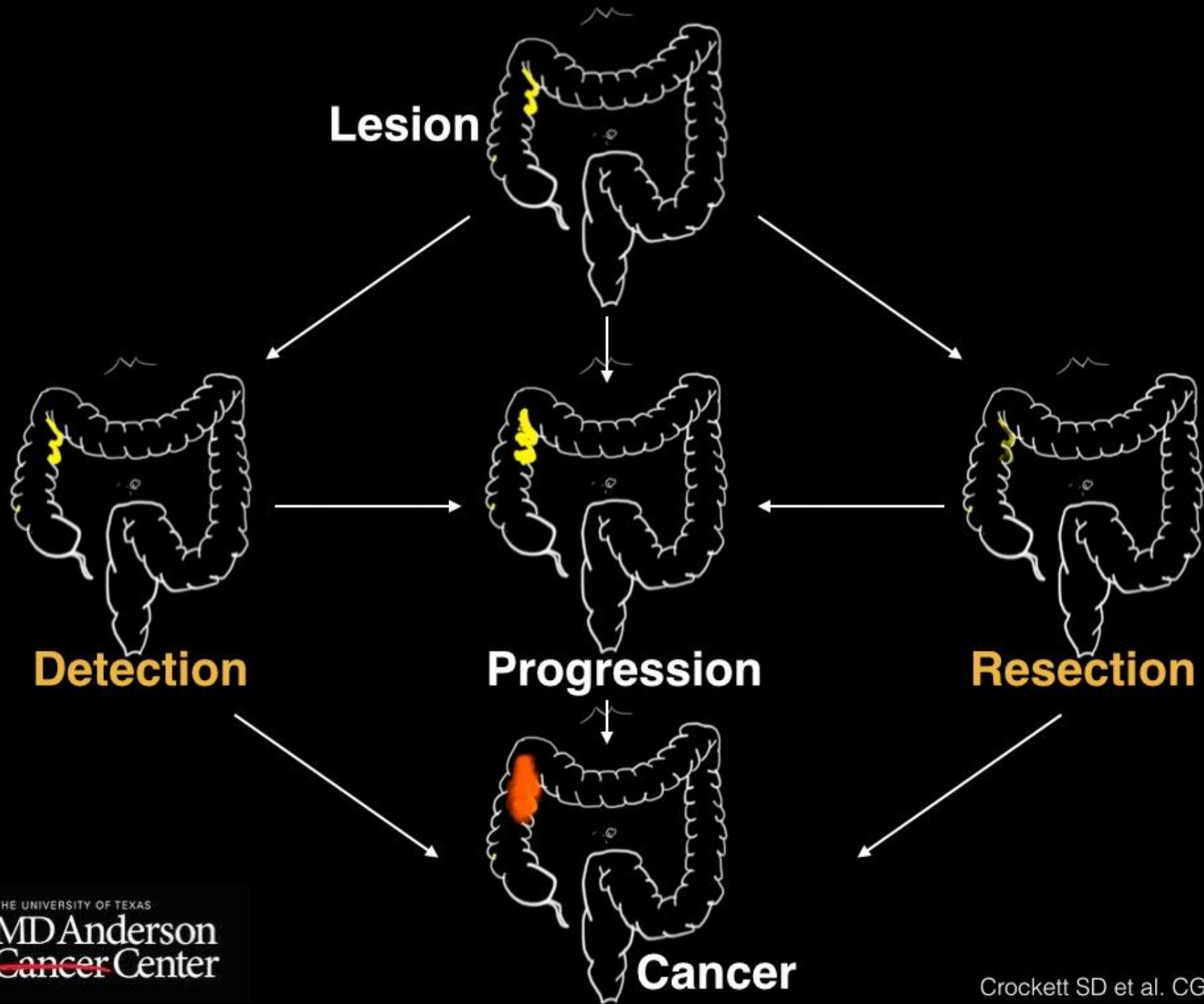
Mindset



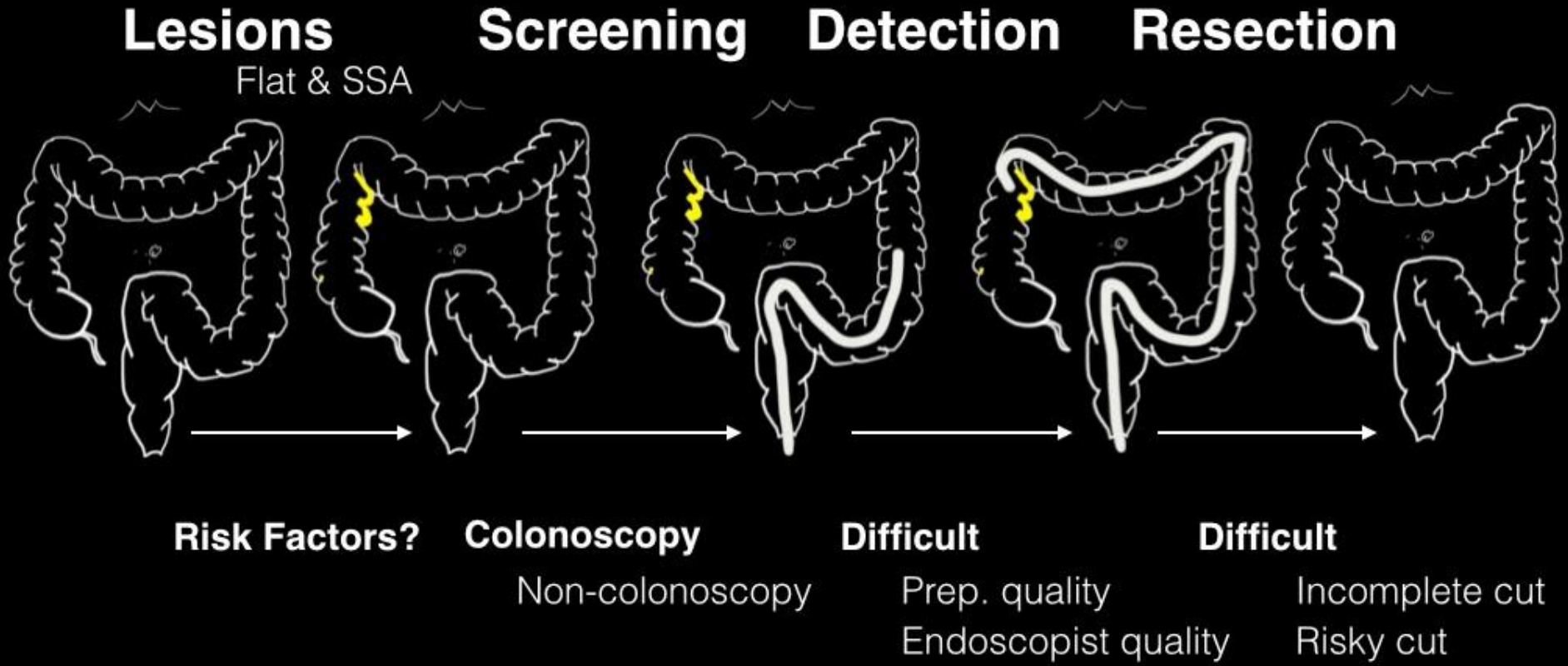
Preparation

Lesion

Snare



Flaws in CRC Prevention Programs



Pathology Interpretation - variable
Surveillance guidelines - unclear

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Colonoscopist

Safe

Effective

Detection

Resection

THE UNIVERSITY OF TEXAS

MD Anderson
Cancer Center



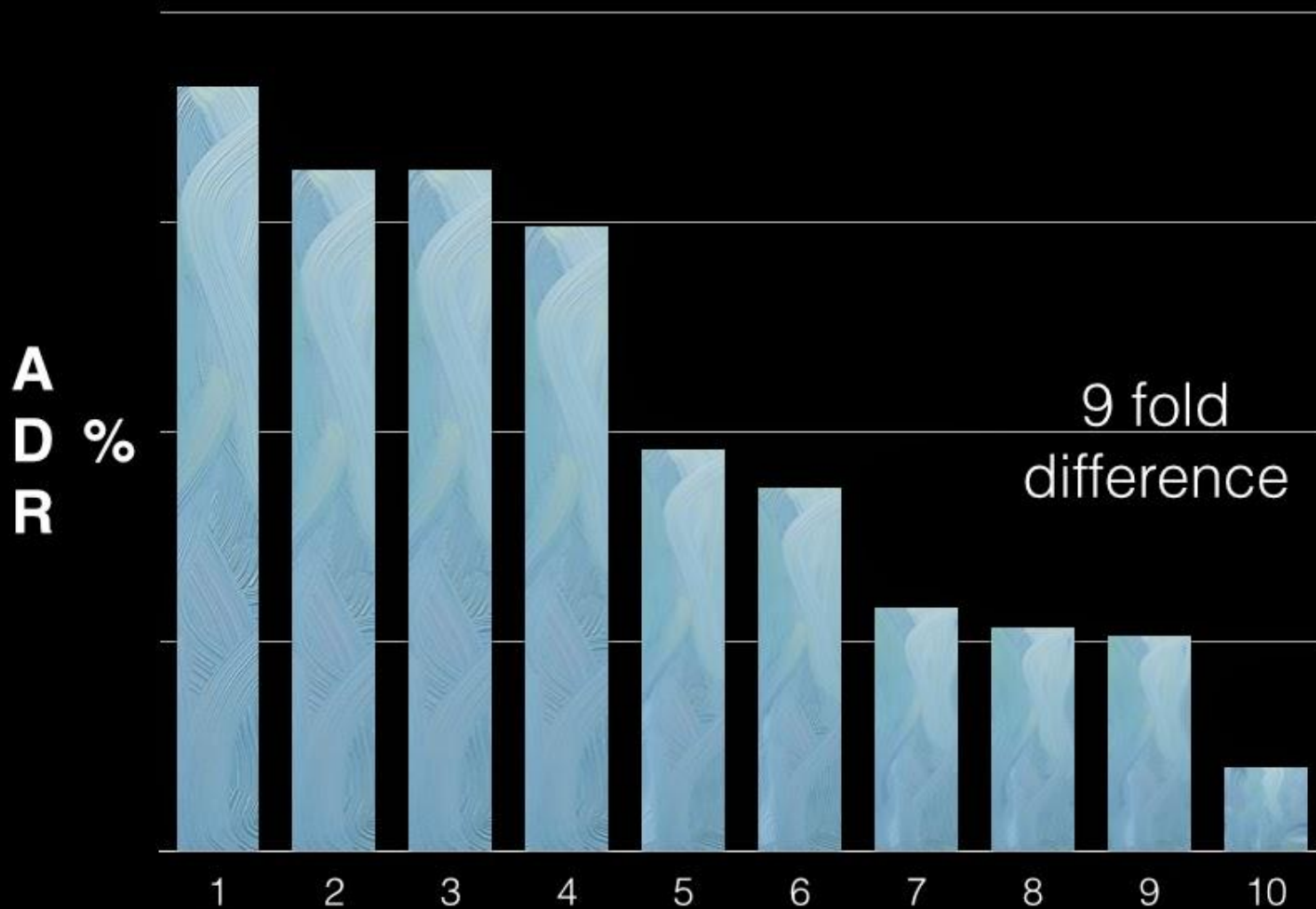
Colonoscopist

Vary

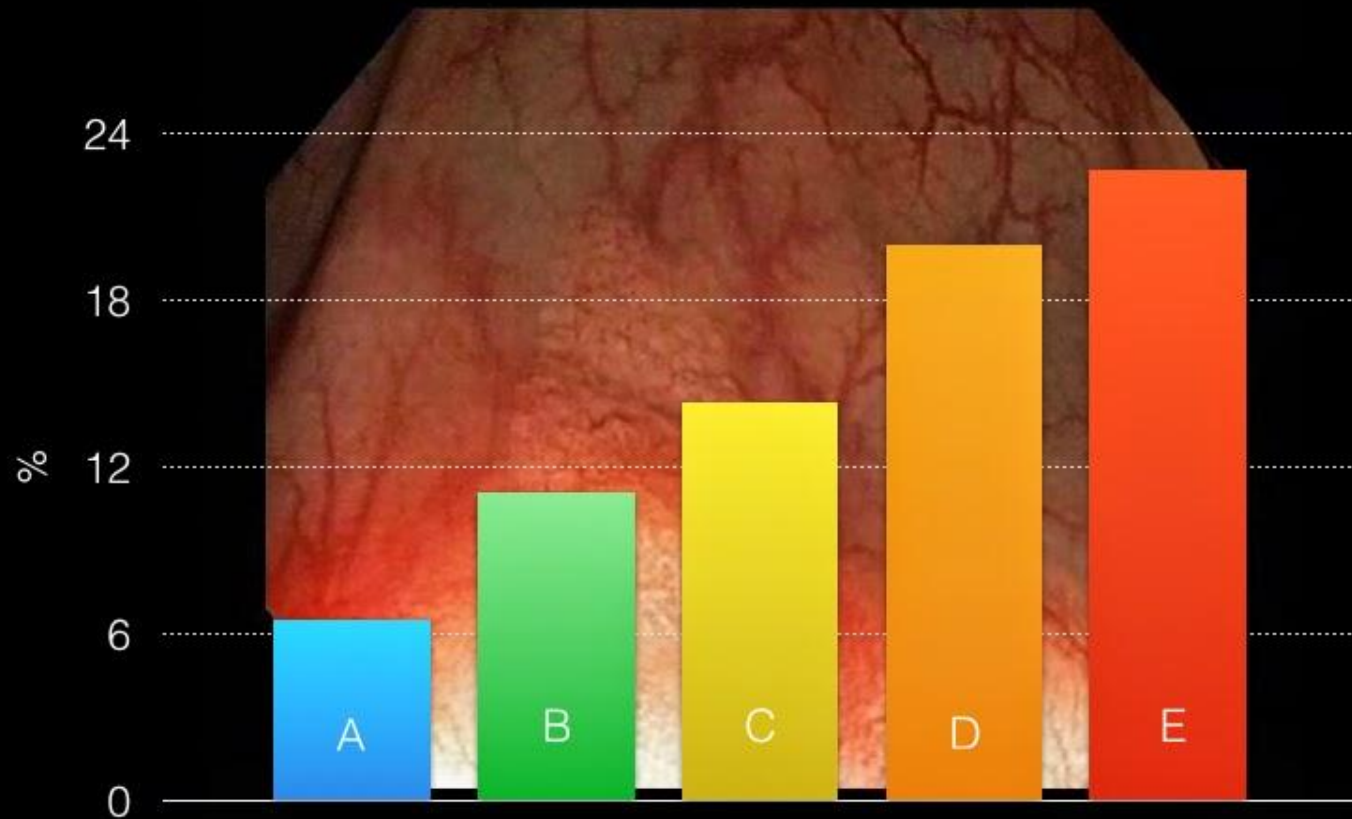
Detection

Resection

Endoscopists - Detection



Endoscopists - Resection



Incomplete Resection

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ADR & Interval CRC

Risk of Interval CRC



Quintile	1	2	3	4	5
ADR	16%	21%	25%	28%	38%



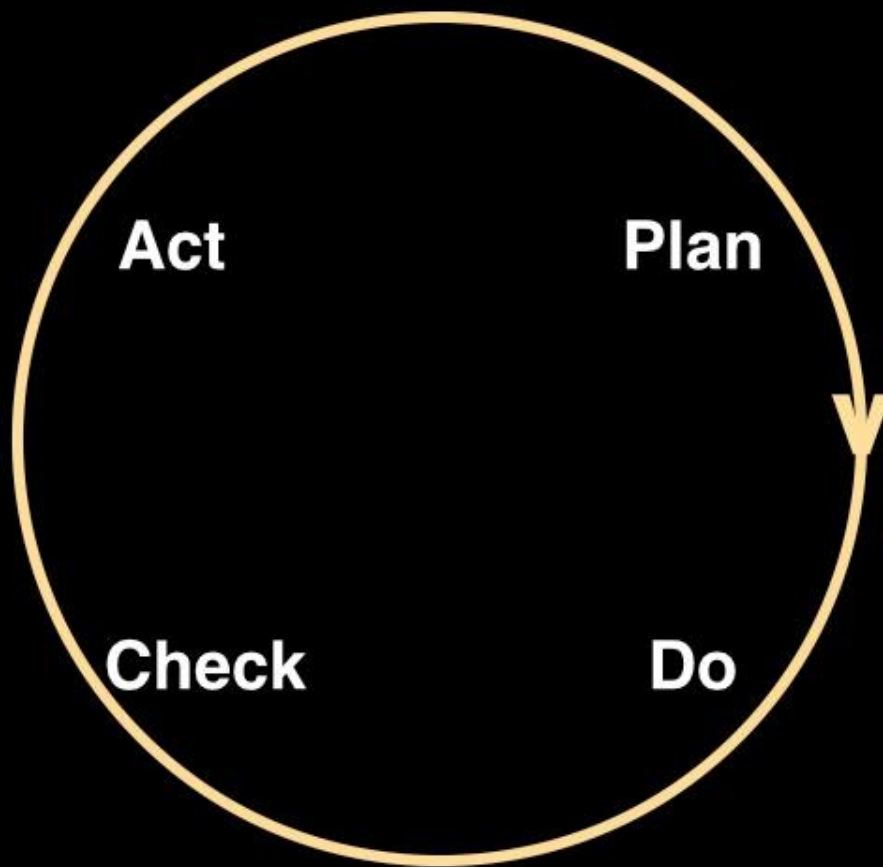
Advanced CRC



Fatal CRC

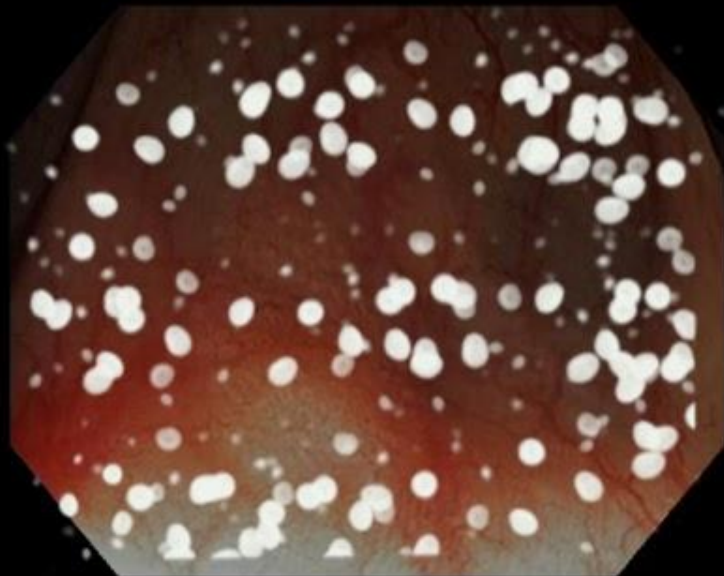
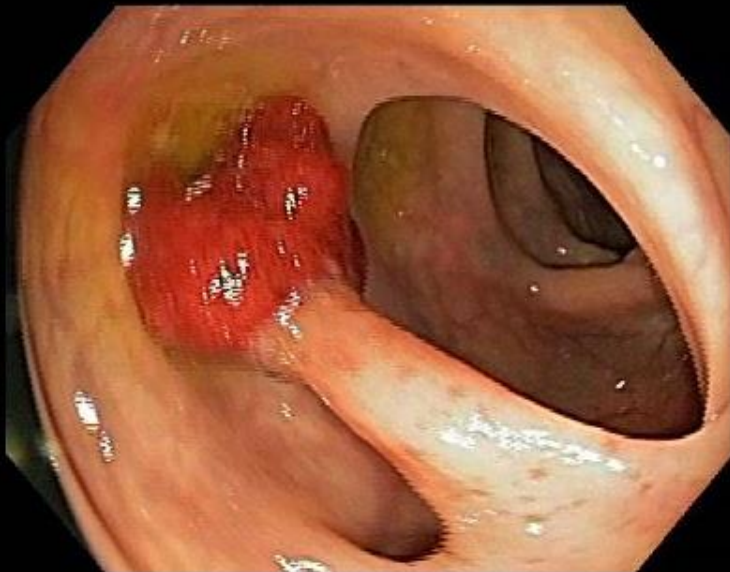
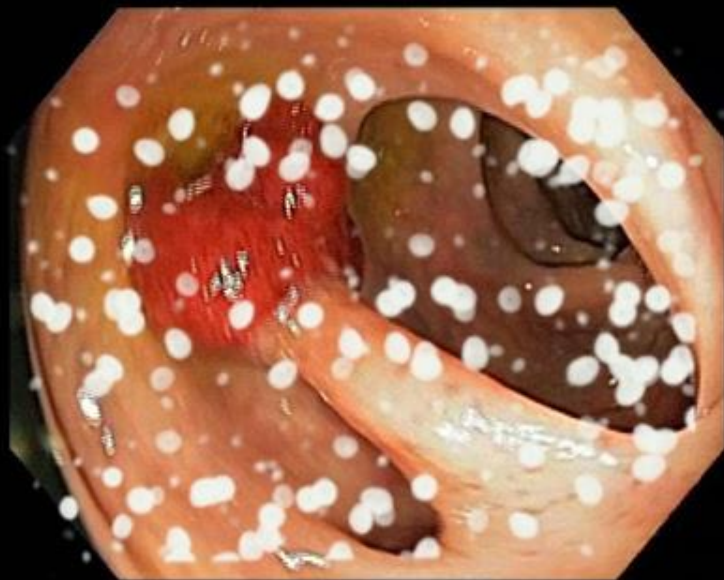
1% ↑ ADR
associated with
5% ↓ fatal interval CRC

Quality Improvement



W. Edwards Deming

Better Detection



YouTube



uploaded on Jun 15, 2010

140,573

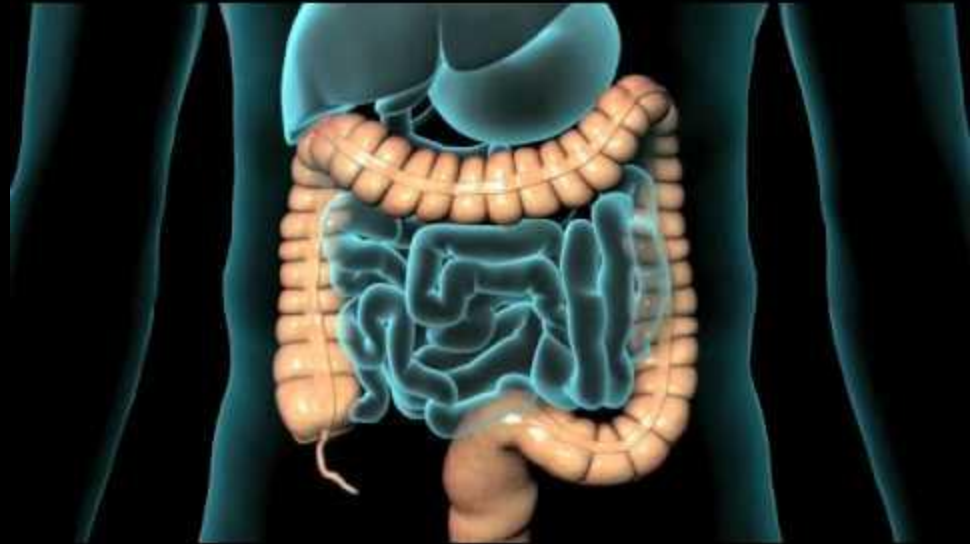


YouTube

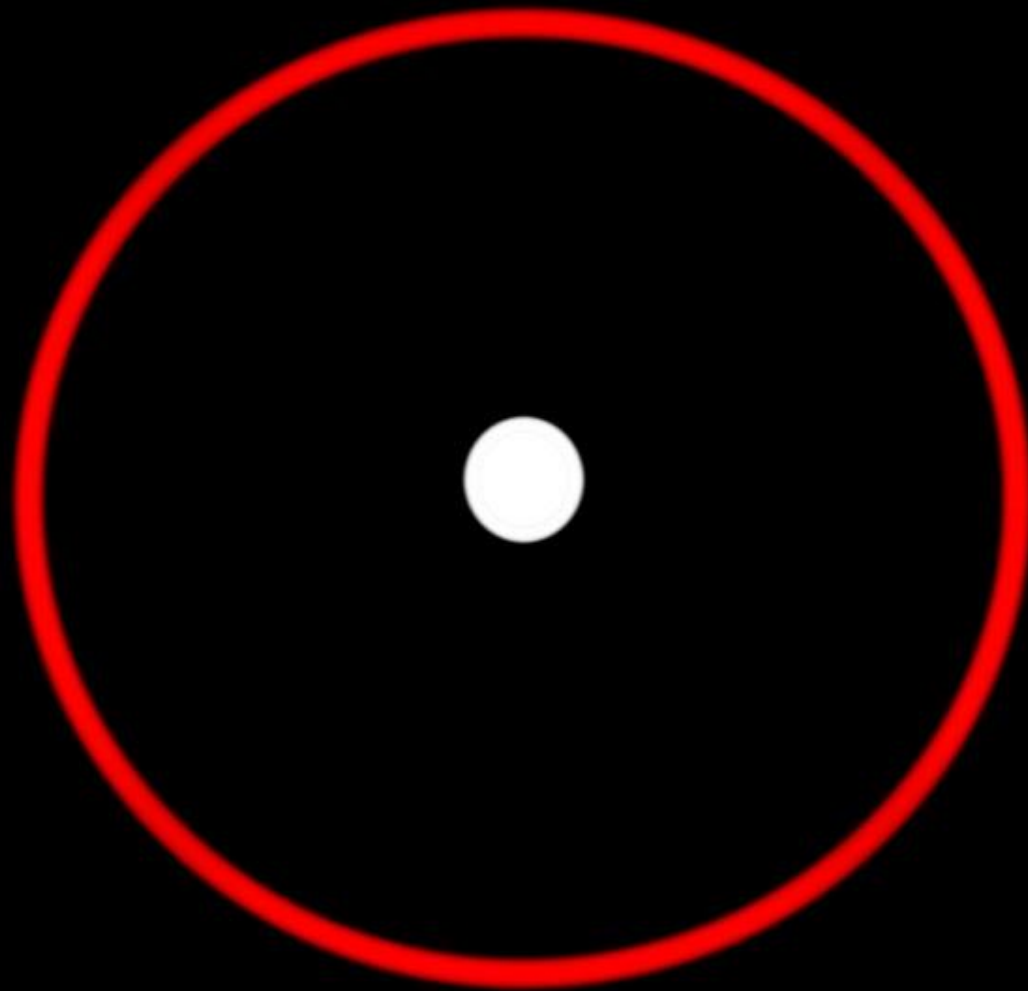


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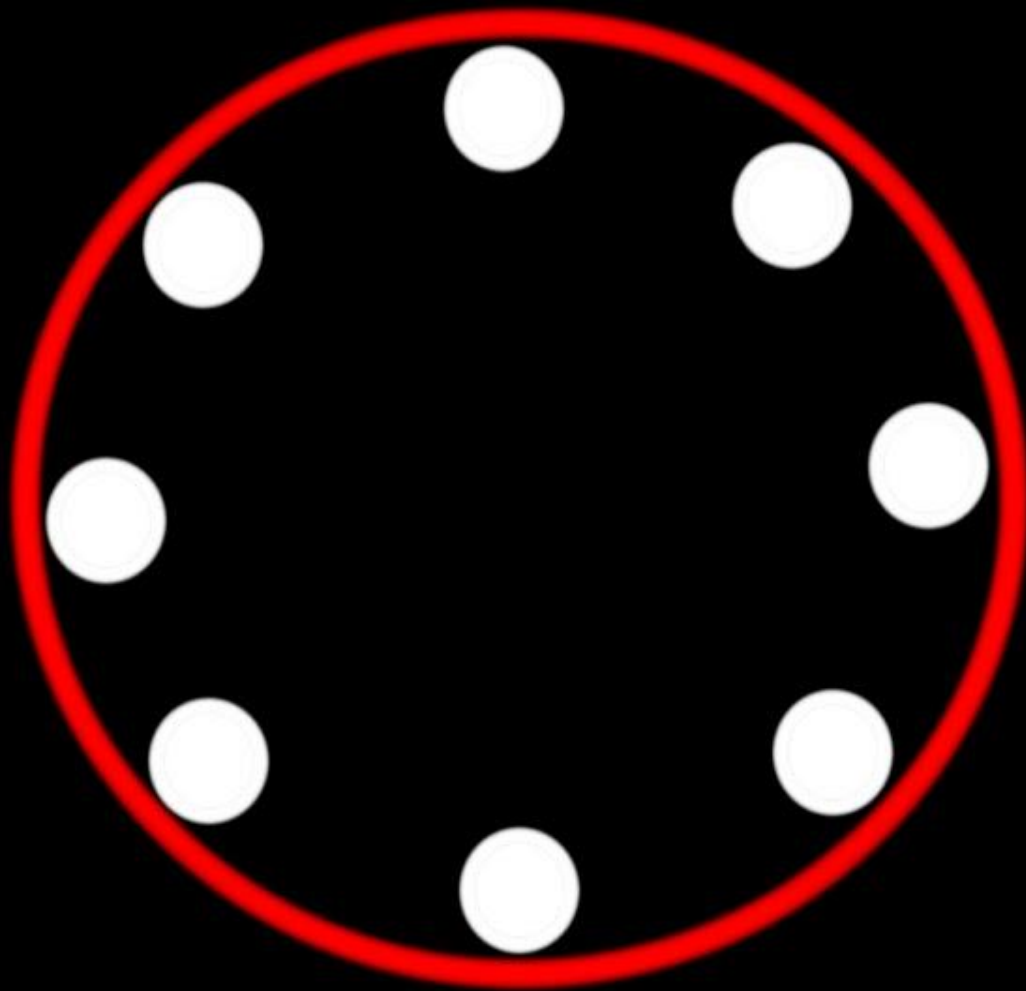


Better Detection



focus beyond the lumen

Better Detection



focus on the wall

Better Detection



look at the vascular architecture

Better Detection



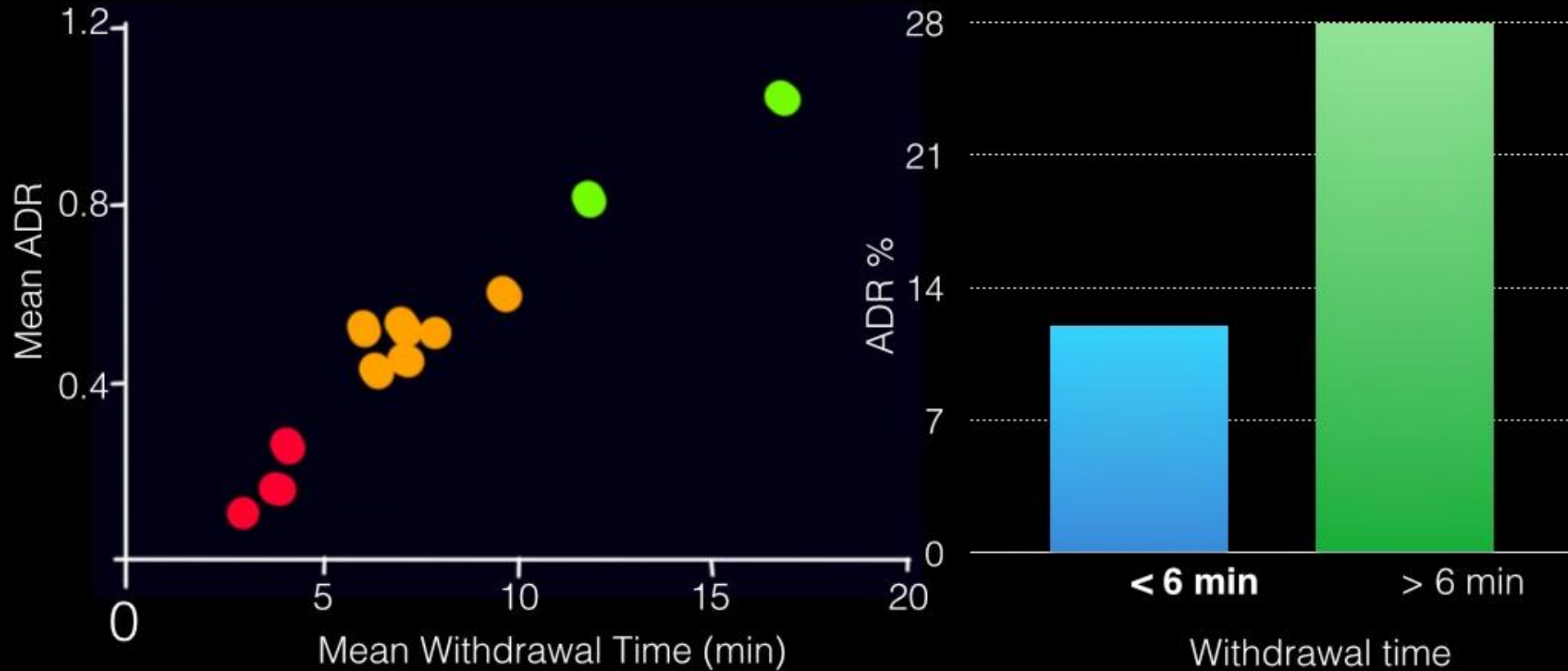
look at the vascular architecture

Better Detection



look at the vascular architecture

ADR & Withdrawal Time



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Better Resection

Snare Resection



Risks

Bleeding

Perforation

Incomplete Cut

Better Resection

Endoscopic Mucosal Resection



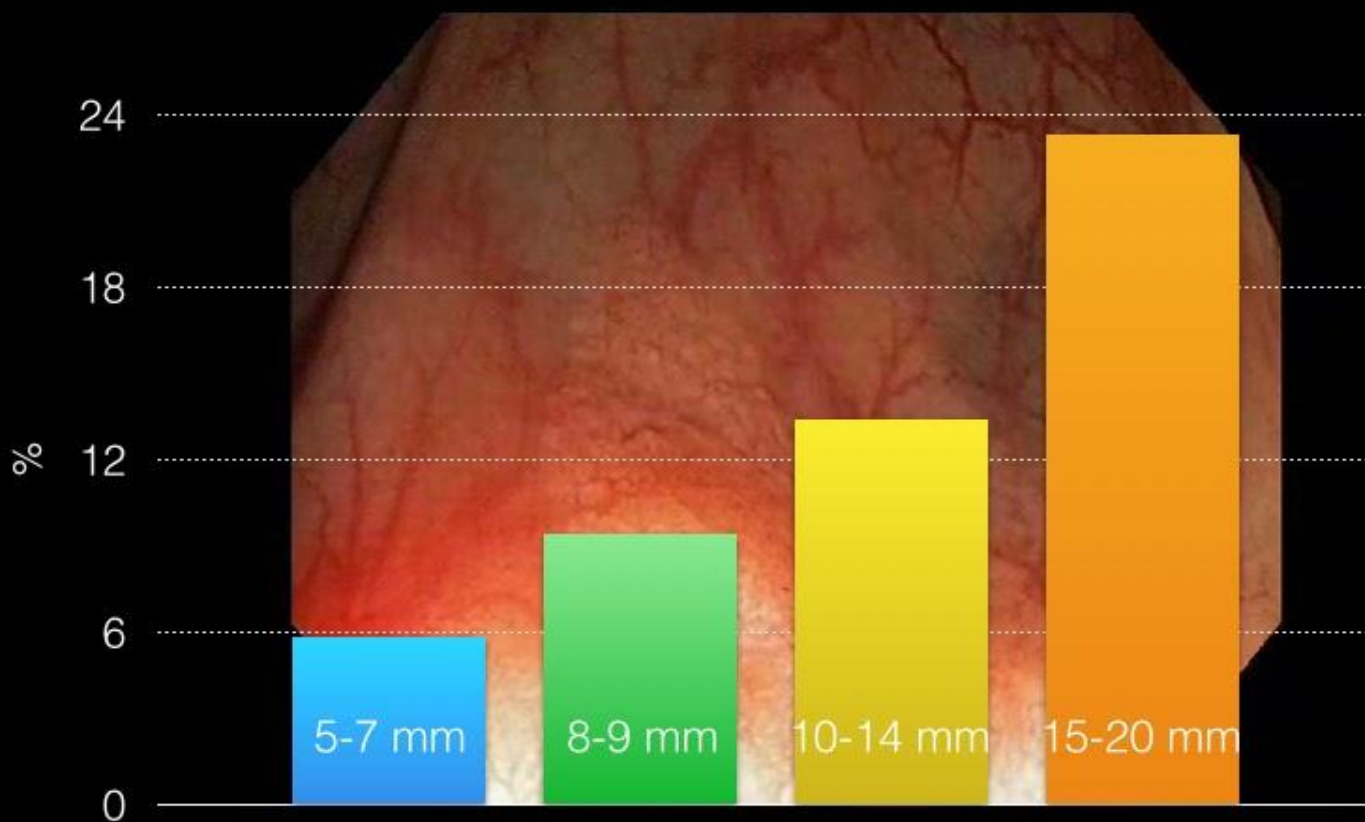
Risks

Bleeding

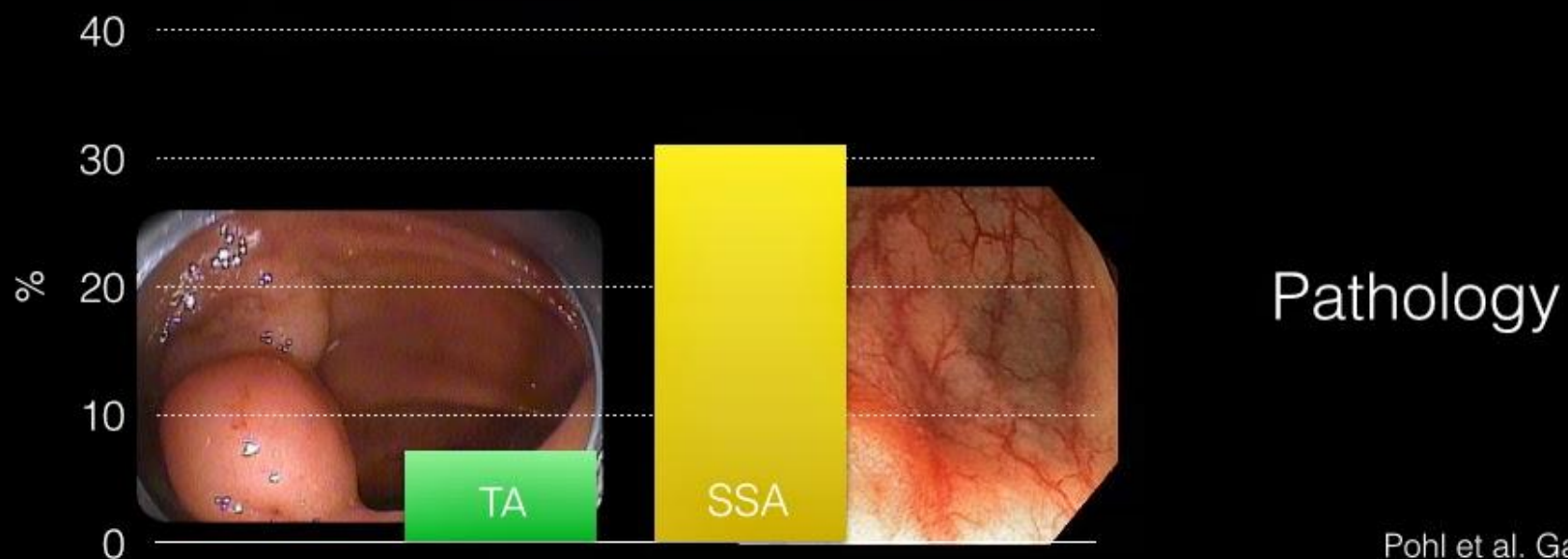
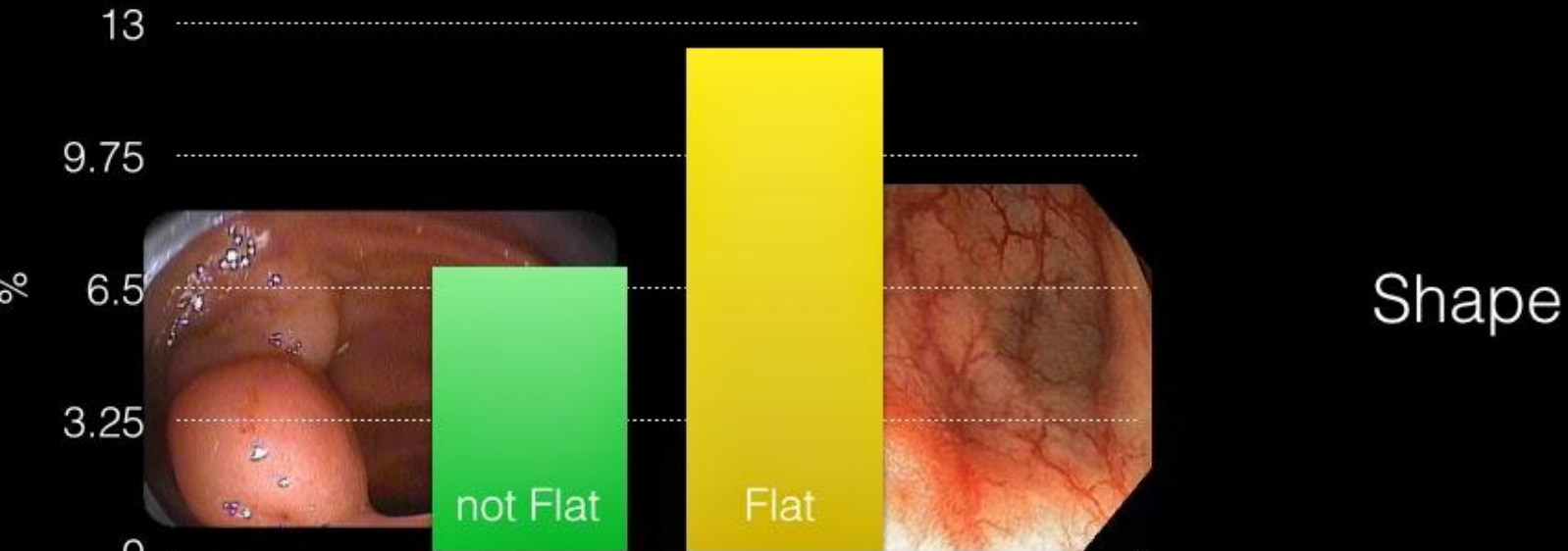
Perforation

Incomplete Cut

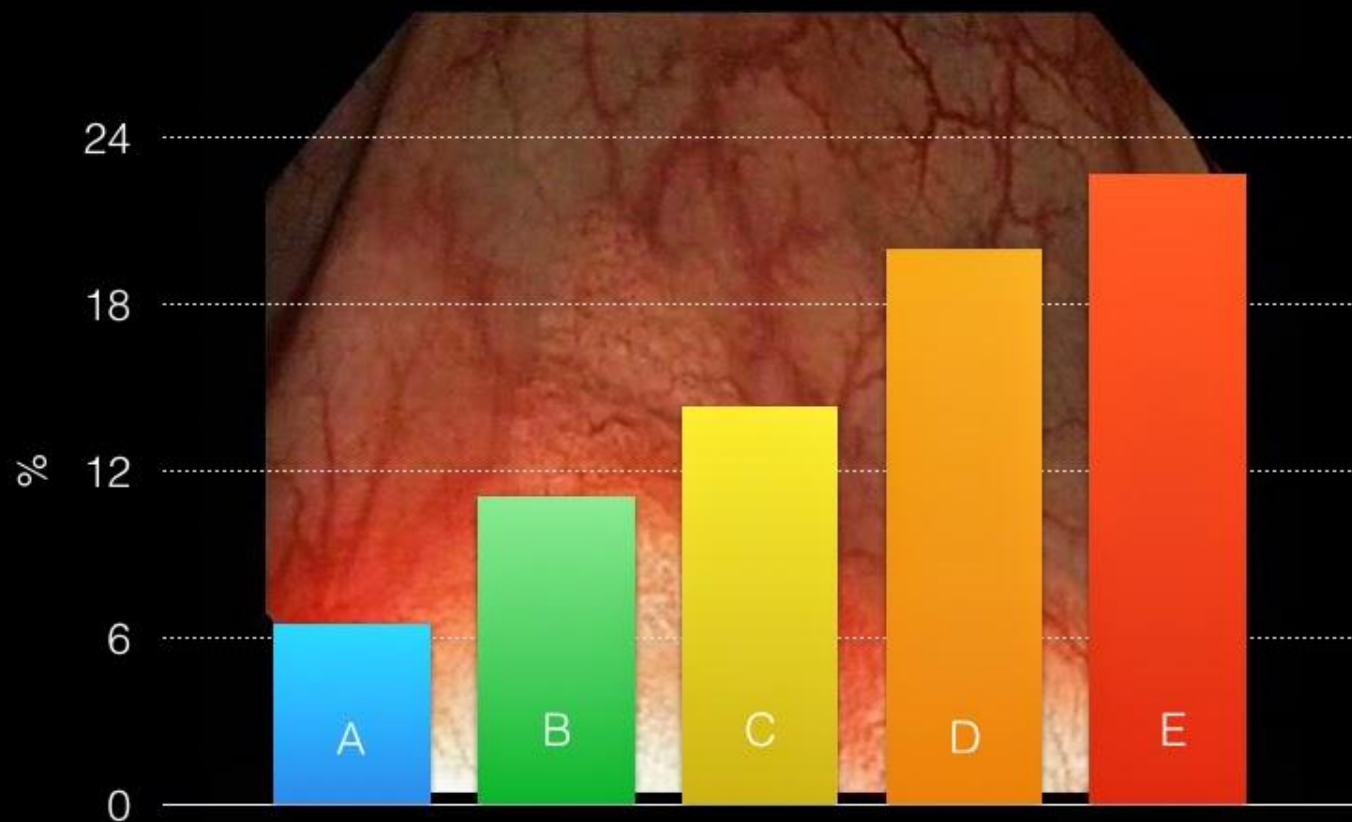
Incomplete Cut - Lesion size



Incomplete Cut - Shape & Path.



Incomplete Cut - Endoscopist



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Adenoma Detection Rate

Men

> 30%

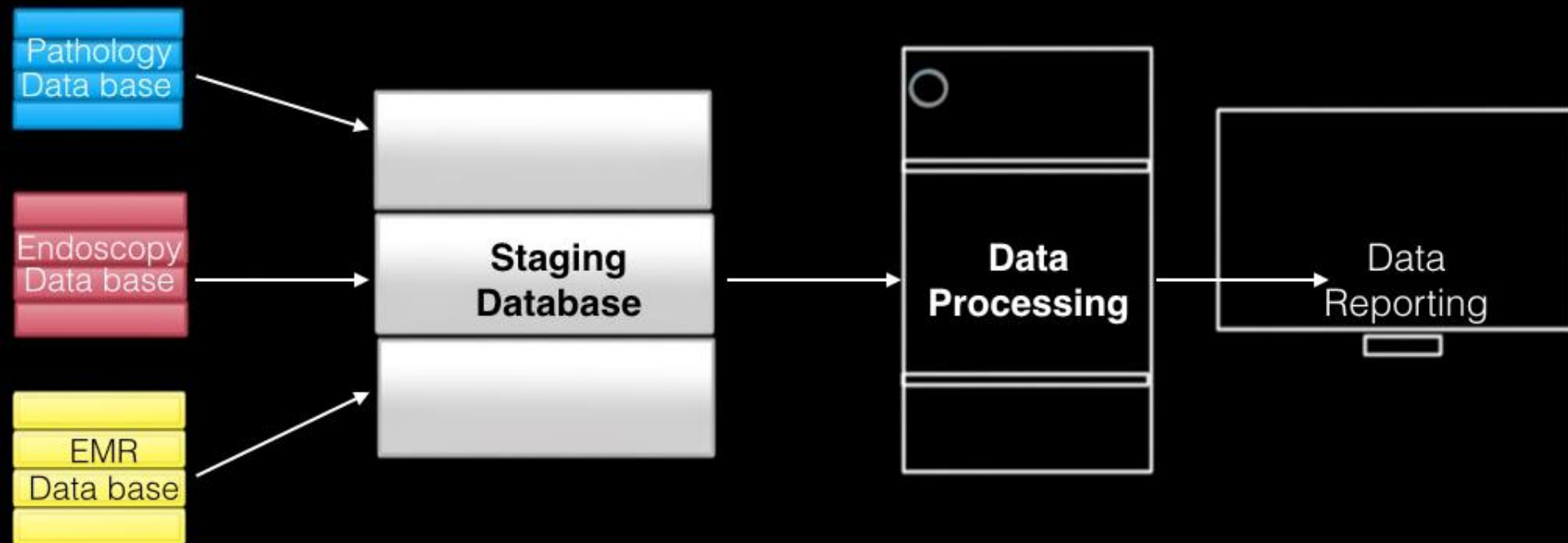
Women

> 20%

Both mena and women

>25%

Natural Language Processing



NLP-Based Extraction of Screening Information (n=12,748)

	Manual Extraction	NLP Method	Reviewed
Screening	2259	2169	2288
Correctly identified	87.8%	91.3%	2288
Not Screening	10,489	10,579	10,460
Correctly identified	97.6%	99.2%	10,460

NLP-Based Extraction of ADR

	Manual Extraction	NLP Method	Reviewed
Called Adenoma	951	962	966
Correctly identified	98.3%	99.4%	966
Called Not Adenoma	1308	1297	1293
Correctly identified	99.9%	99.8%	1293

YouTube



GottumukkalaSRaju





