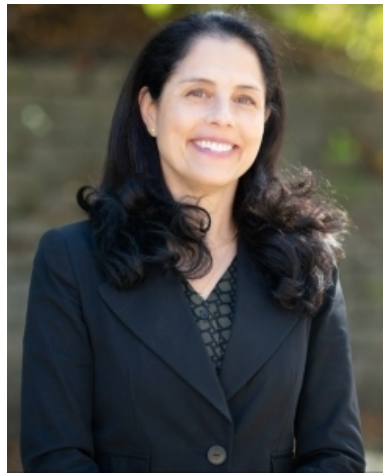
Diverticular Disease: Unpacking the Pockets of Mystery and Navigating Effective Management

ACG Postgraduate Course

Sunday, October 26, 2025



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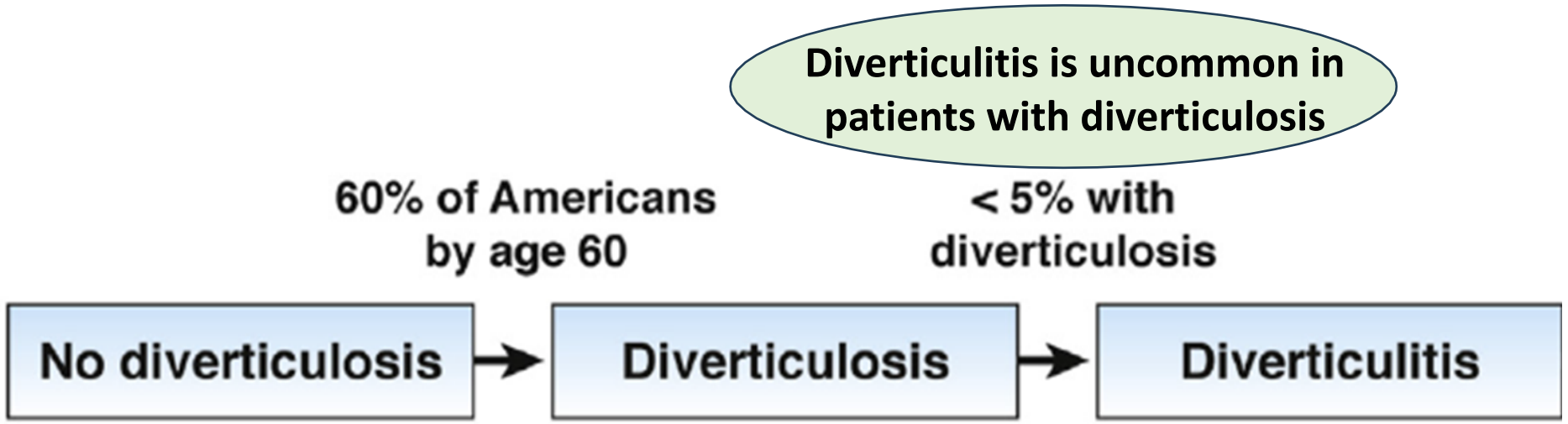
Outline

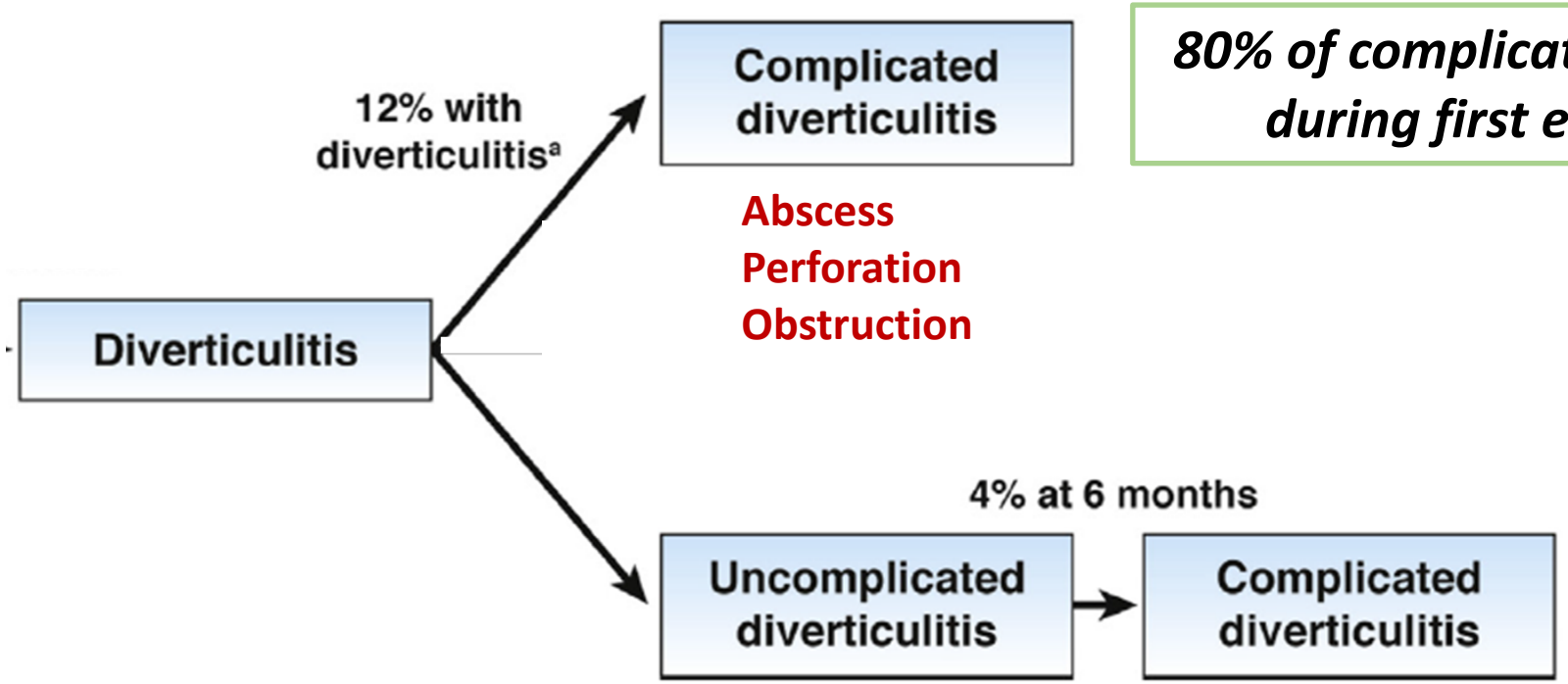
- Natural history
- Management of Uncomplicated diverticulitis
  - Antibiotics?
  - Colonoscopy after diverticulitis?
- Prevention of recurrent diverticulitis
  - Surgery
  - Lifestyle modification
  - Genetics

Diverticulitis – An Uncommon Complication of a Common Disease



Peery, et al Gastroenterol 2022
Strate L, Morris A Gastroenterology 2019
Shahedi K, et al Clin Gastroenterol Hepatol 2013

Complicated Diverticulitis is Uncommon



80% of complications occur during first episode

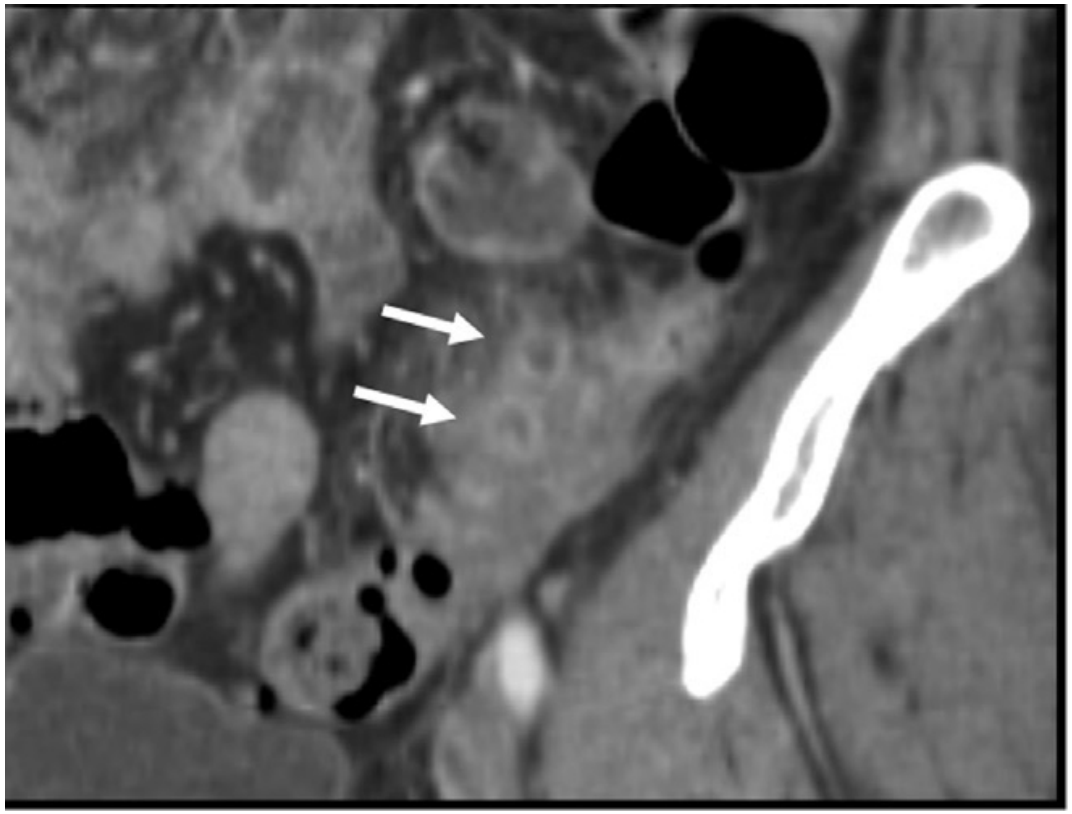
Bharucha et al Am J Gastroenterol 2015
Daniels L et BJS 2017
Strate L, Morris A Gastroenterology 2019

Uncomplicated diverticulitis rarely evolves

Case 1 - Diverticulitis

- 33-year-old male presents with LLQ pain and constipation
  - WBC 13
  - Afebrile
  - No peritoneal signs
  - CT scan – uncomplicated diverticulitis

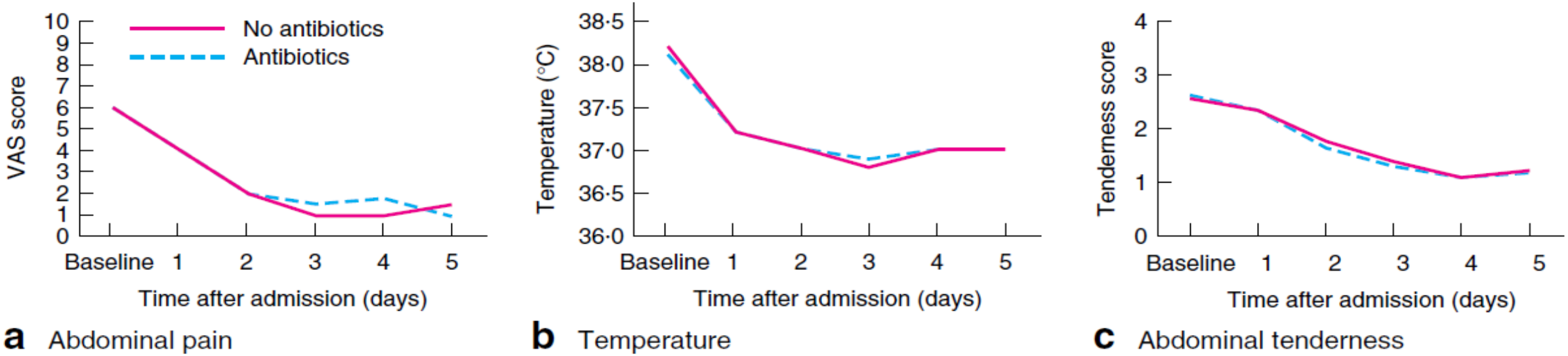
Are antibiotics necessary?



Antibiotics Do Not Hasten Recovery or Reduce Acute Complications

*Multicenter RCT (AVOD trial) of CT confirmed **uncomplicated** diverticulitis*

	No Antibiotics (n=309)	Antibiotics (n=316)
Abscess	6 (1.9%)	3 (1.0%)
Recurrence	47 (16.2%)	46 (15.8%)



Chabok A et al. British Journal of Surgery 2012;99:532.

Current U.S. Antibiotic Guidelines- Selective Use

- AGA, ASCRS and ACP recommend

  *Selective use in **healthy, immunocompetent** patients with **uncomplicated** diverticulitis*

  (conditional recommendation, low quality evidence)

Stollman et al. Gastroenterology 2015;149
Hall J, et al. Dis Colon Rectum 2020;63
Qaseem et al. Annals Int Med 2022;175

High Risk Patients – Treat with Antibiotics

- **Immunocompromised**
- Frail or elderly
- Significant comorbidity (ASA class 3 or 4)
- No reliable follow up

Higher risk of adverse outcomes

- Significantly elevated WBC (>15 cells/L), CRP (>140mg/L)
- Signs of sepsis
- Severe inflammation on CT
- History of **smoldering/refractory diverticulitis**

Severe presentation

Broersen LHA, et al BMJ Open Gastroenterol 2017;4
Rottier SJ, et al Surg Infect (Larchmt) 2019
Van Dijk ST, et al Int J Colorectal dis 2017;32

Choice of Outpatient Antibiotic-
Amox-Clavulanic Acid > Metronidazole+ Fluoroquinolone

Amoxicillin-clavulanic acid versus metronidazole + fluoroquinolone
Using nationwide administrative databases

Outcome	Difference
1-year risk of hospital admission	No difference
1-year risk of surgery	No difference
1-year risk of C difficile colitis	Higher with fluoroquinolone
3-year risk of elective surgery	No difference

Gaber et al Annals of Int Med 2021

Practical Approach in Low-Risk Patients

CT if first episode or severe presentation

Discuss antibiotics vs no antibiotics

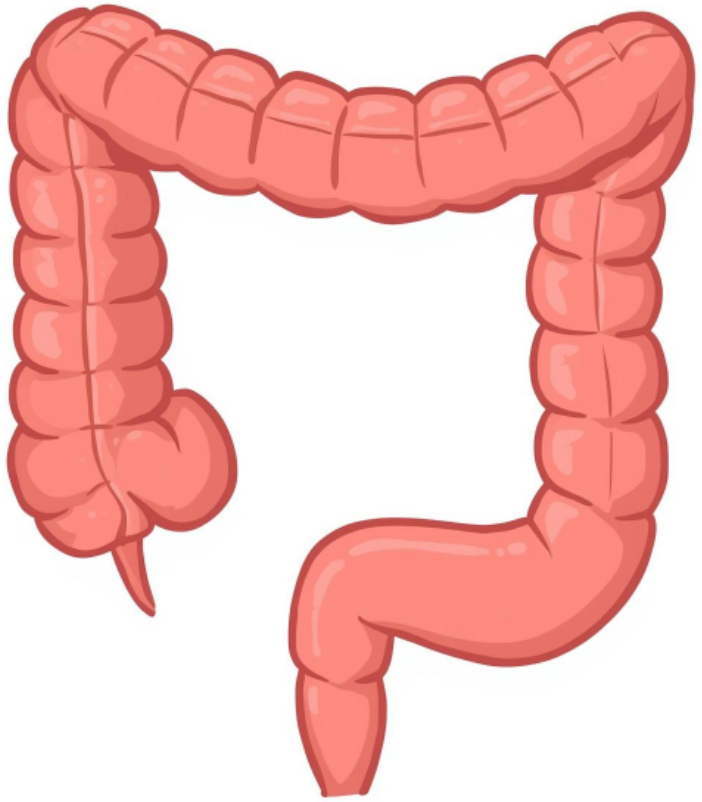
Start with **4-day course**;
amox-clavulanate > fluoroquinolone +metronidazole

Antispasmodic + acetaminophen (avoid NSAIDs)

Clear liquids 1-2 days; advance as tolerated

Andeweg et al Ann Surg 2011;253:940; Schug-Pass C, et al. Int J Colorectal Dis 2010;25:751; Gaber Annals Int Med 2021;174:737

Case 1 Continued– Diverticulitis Follow up



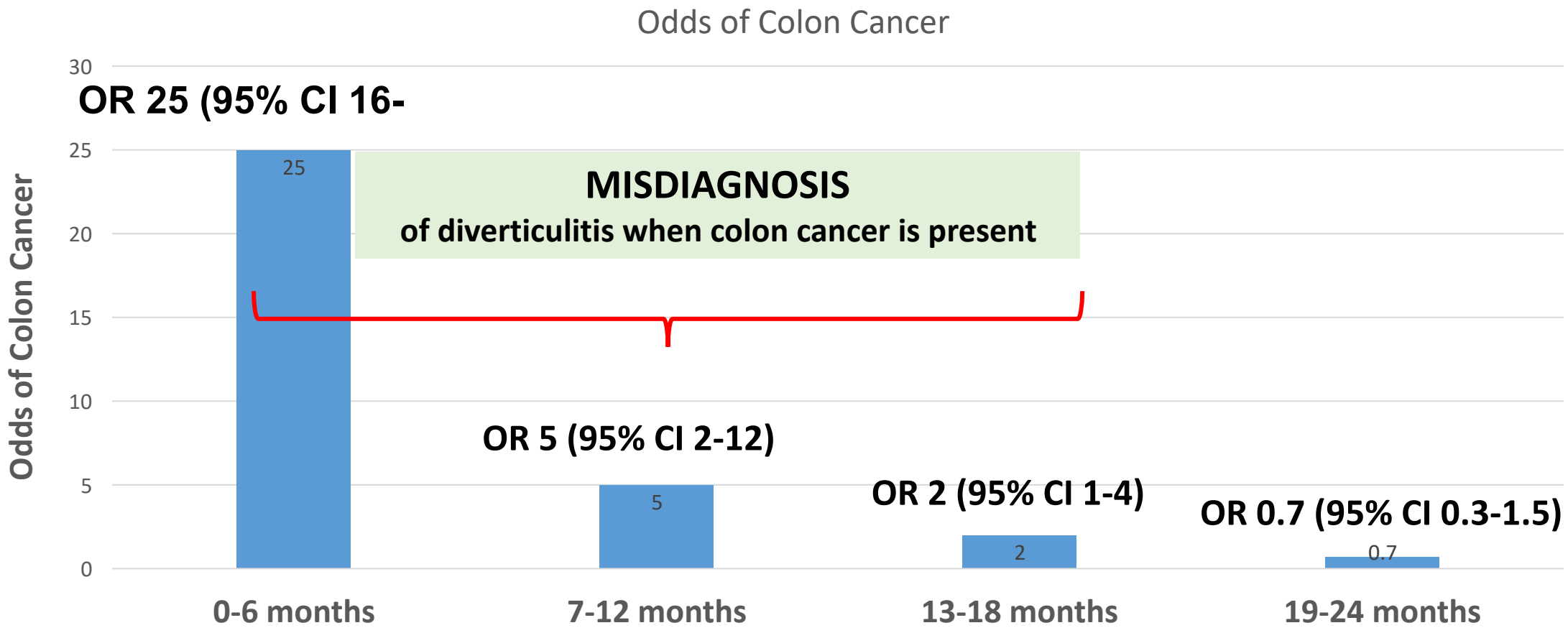
33M recovers from uncomplicated diverticulitis

- Asymptomatic; denies rectal bleeding.
- No family history of colon polyps or cancer.

Colonoscopy or Not?

Colon Cancer After a Diagnosis of Diverticulitis

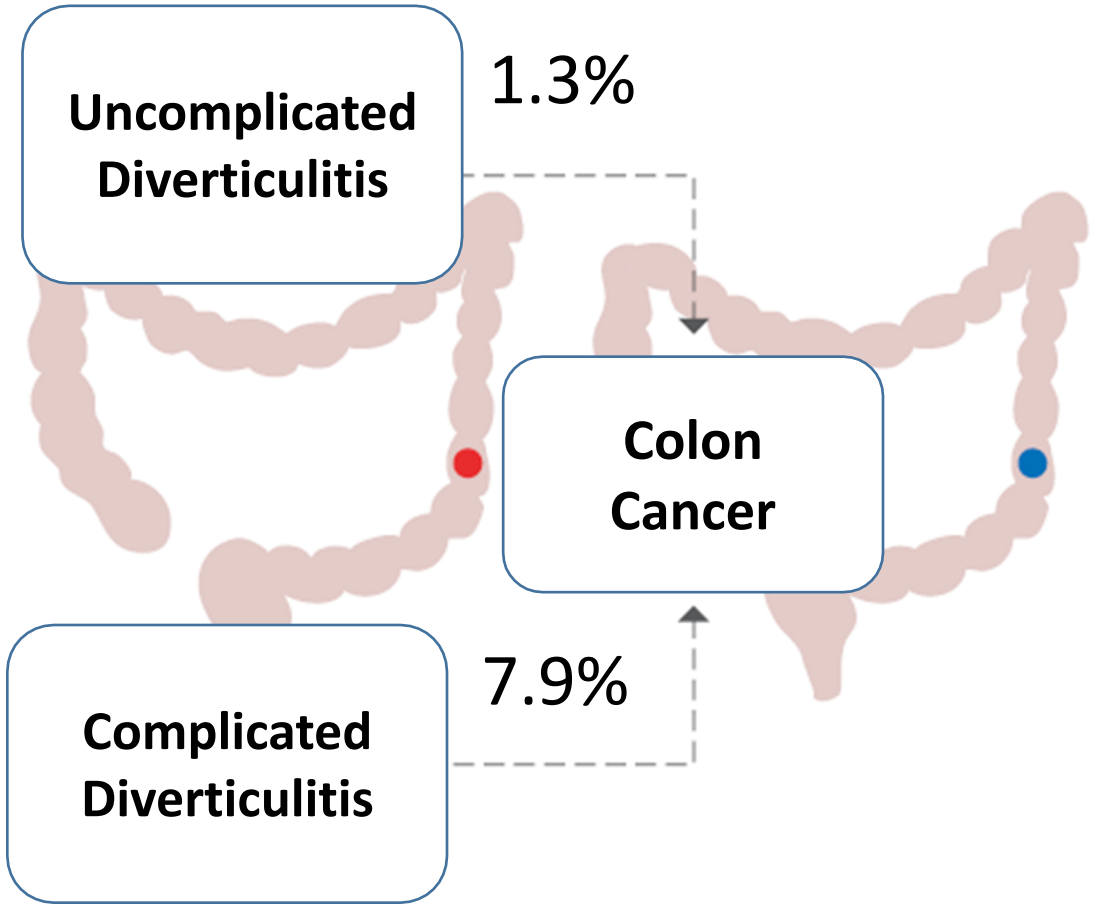
Nationwide Case-Control Study in Sweden



Granlund et al APT 2011; 34:675

Colonoscopy After Complicated Diverticulitis

Meta-analysis of 31 studies and >50,000 patients



- **ACP Recommendation:**

After an initial episode of COMPLICATED left-sided colonic diverticulitis
(conditional recommendation; low certainty evidence).

After uncomplicated diverticulitis if not up to date with screening or concerning features

- **Wait until symptoms resolve** (~4 weeks)

Peery AF BMJ 2021

Meyer J, et al. Clin Gastroenterol Hepatol 2019;17:1448

Qaseem A, et al Ann Int Med 2022

Case – Recurrent Diverticulitis

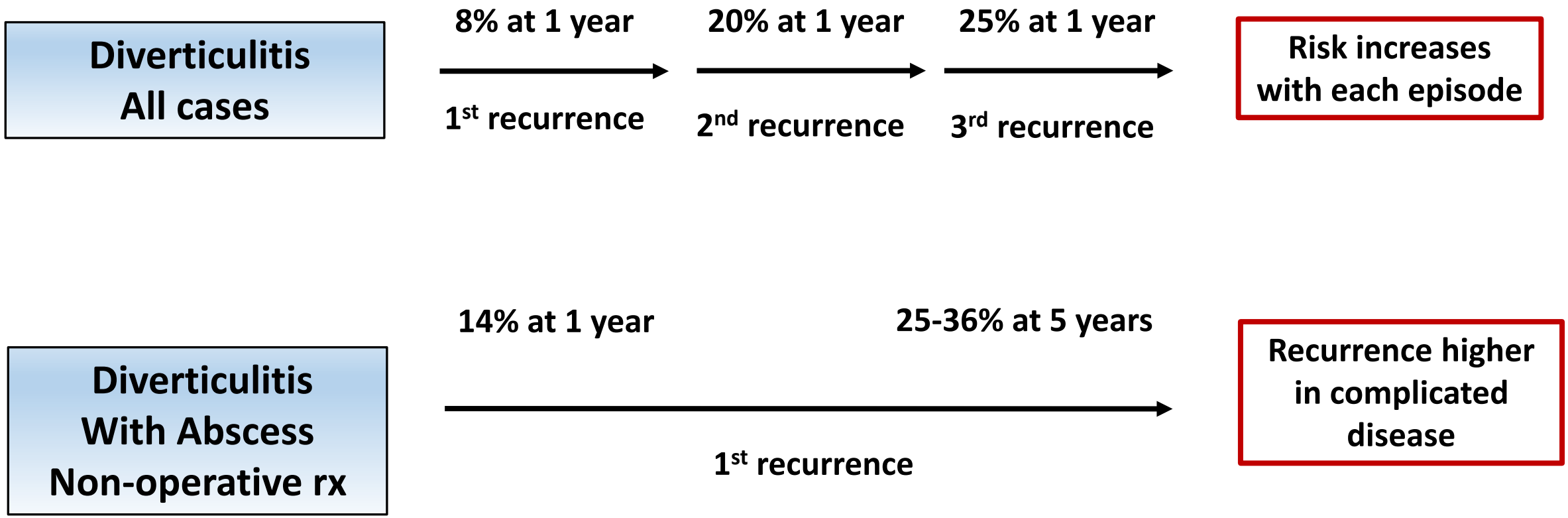
The same patient presents to your clinic with recurrent diverticulitis

- 4 recurrences over 2 years, all presented similarly
- CT scan done for 2 episodes found sigmoid uncomplicated diverticulitis
- All episodes resolve promptly with or without antibiotics
- He is concerned about possibility of serious future events
- He wants to know how to prevent episodes

How to prevent recurrent diverticulitis?

Recurrent Diverticulitis is Common

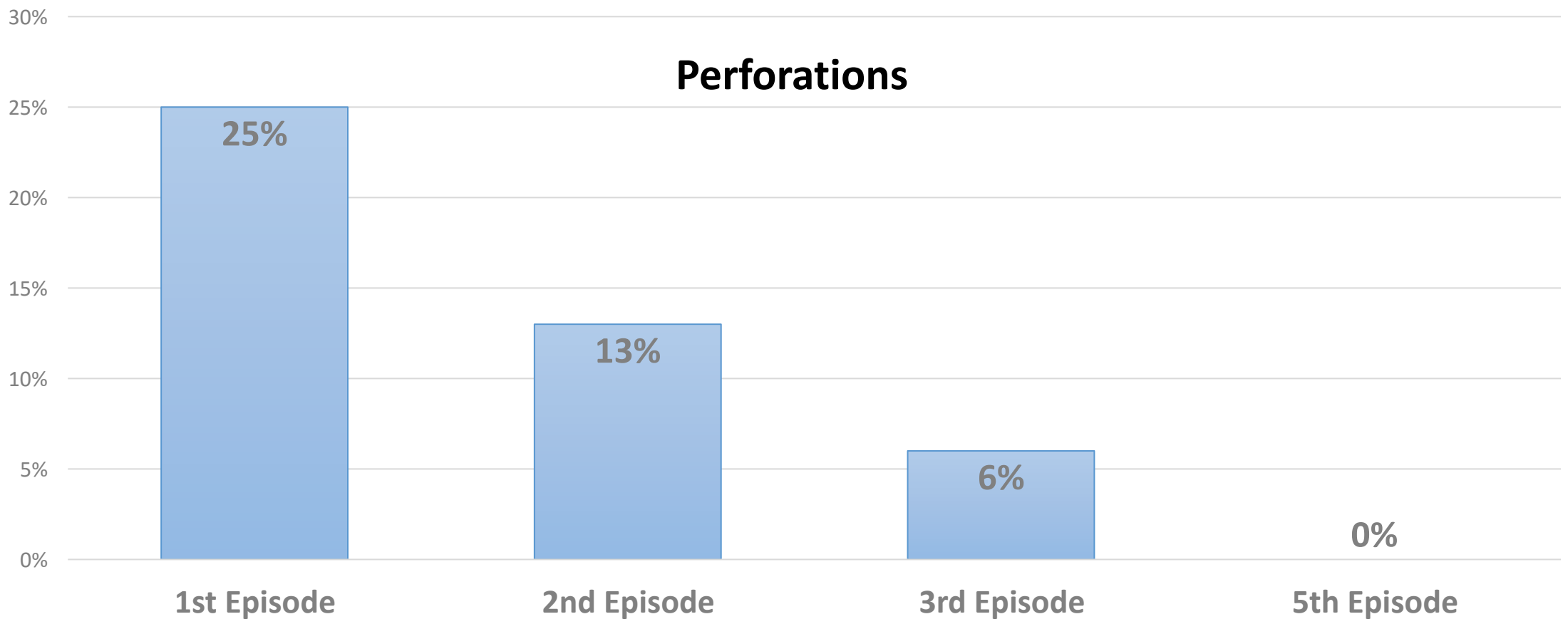
20% of all patients



Bharucha et al Am J Gastroenterol 2015; 110:1589
Aquina et al BJS 2019;106: 467

Risk of Perforation DECREASES with Subsequent Episodes

Prospective single center study of 934 patients over 11-year period



Ritz et al Surgery 2011;149:606

NO Pharmacological Prevention

	5-ASA (Mesalamine)	Rifaximin	Probiotics
Benefit	**No benefit**	**?**	**?**
Type of evidence	**6 RCTs Meta-analyses**	**Small unblinded trial rifaximin vs fiber**	**Small randomized trial**
Quality of evidence	**Moderate**	**Low**	**Low**
Recommendation	**Not recommended**	**Not recommended**	**Not recommended**

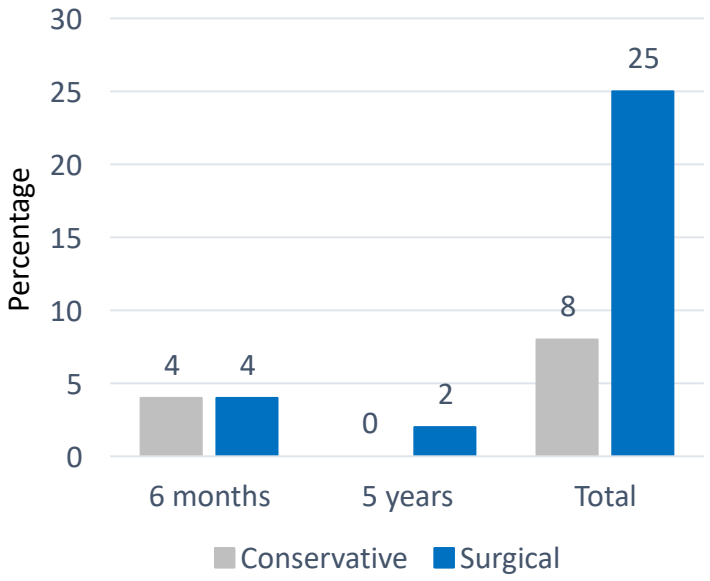
Strate, Peery, Neumann Gastroenterol 2015; Stollman et al Gastroenterol 2015

Surgery Decreases Events and Improves QOL in Recurrent Diverticulitis

The DIRECT trial of 109 patients followed for 5 years

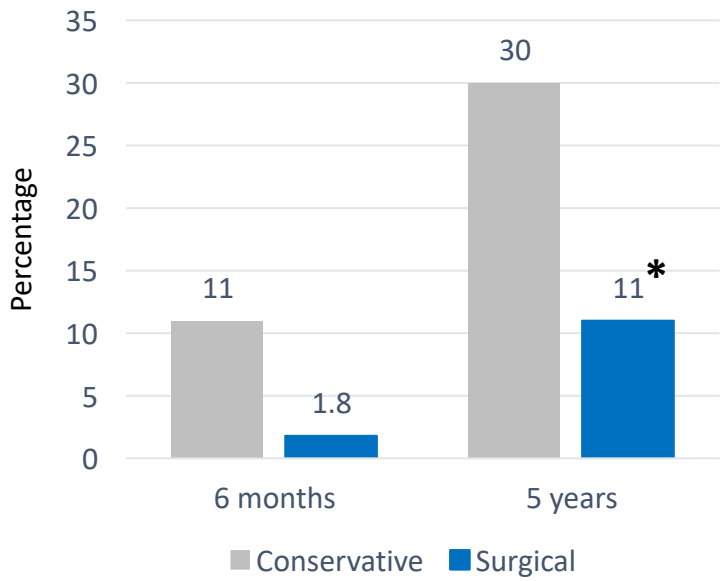
Upfront, short-term risk of complications

Stoma

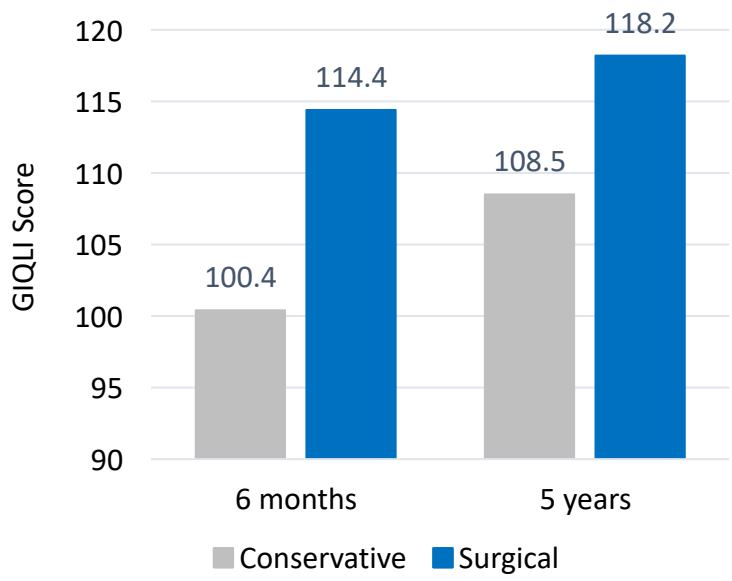


Potential long-term benefits

Recurrent Diverticulitis



GI Quality of Life Index



*7.5% in per-protocol analysis
*46% in conservative arm underwent surgery

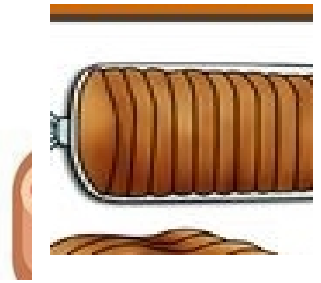
* difference > 10 considered clinically meaningful

Bolkenstein HE, et al DIRECT-Trial Ann Surg 2019;269:612

Diet and Lifestyle Risk Factors for Diverticulitis

- **Positive Associations (↑ risk)**

Red meat



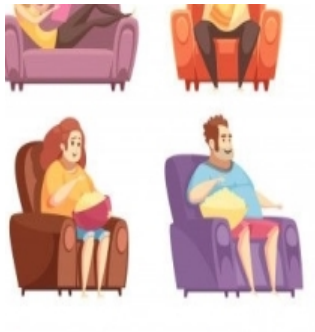
Low fiber

Sedentary behavior

Alcohol & Smoking

BMI > 30

- **Negative Associations (↓ risk)**



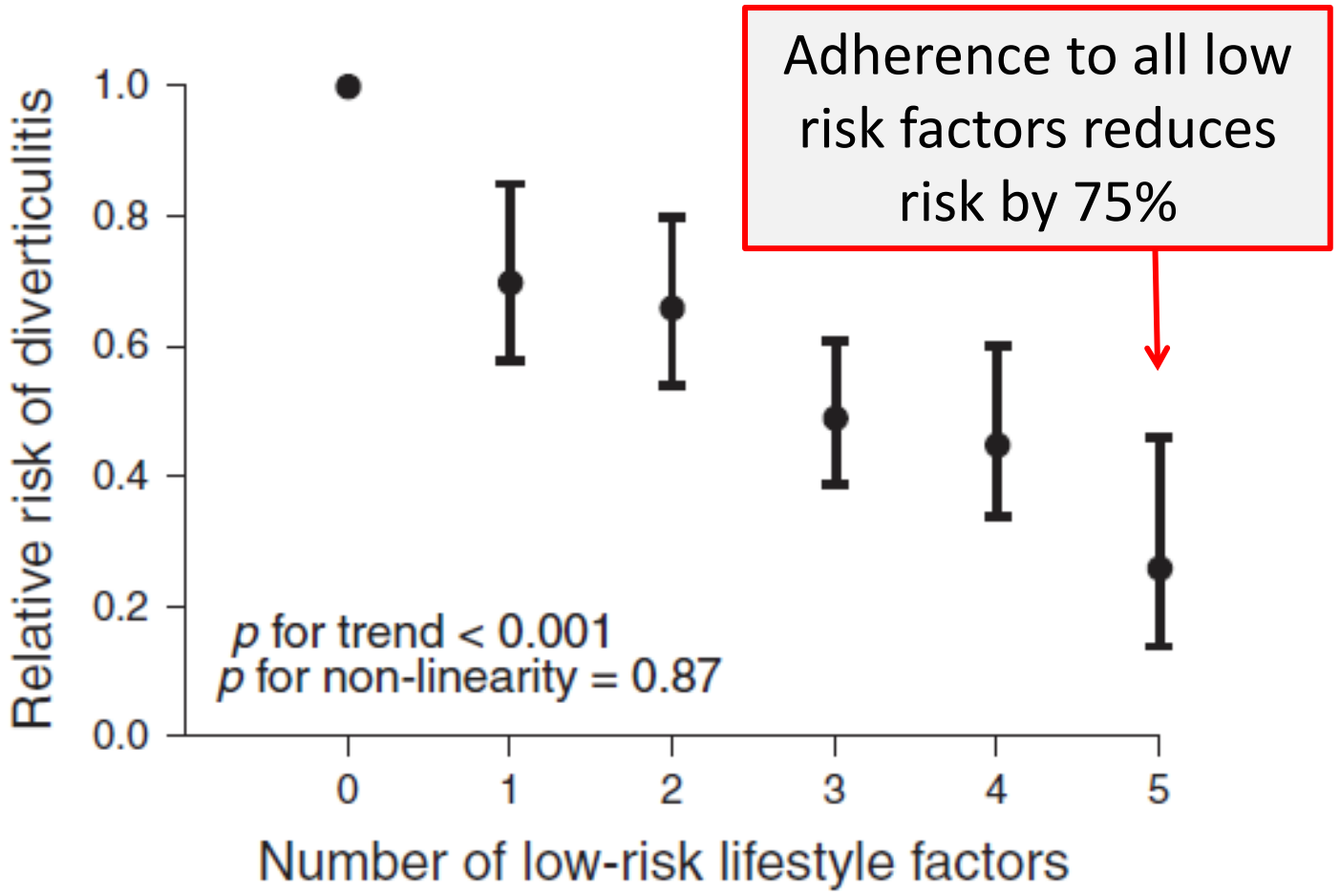
High Fiber

Physical Activity

Normal BMI

Ma et a; Gastro 2018;
Strate, et al Gastro 2017; Cao et al Gut 2017
Strate, et al Gastro 2009; Crowe BMJ 2011
Strate, et al Am J Gastroenterol 2009

Adherence to Low-Risk Factors ↓ ↓ Risk



Adherence to all low risk factors reduces risk by 75%

<u>Low Risk Factors</u>:

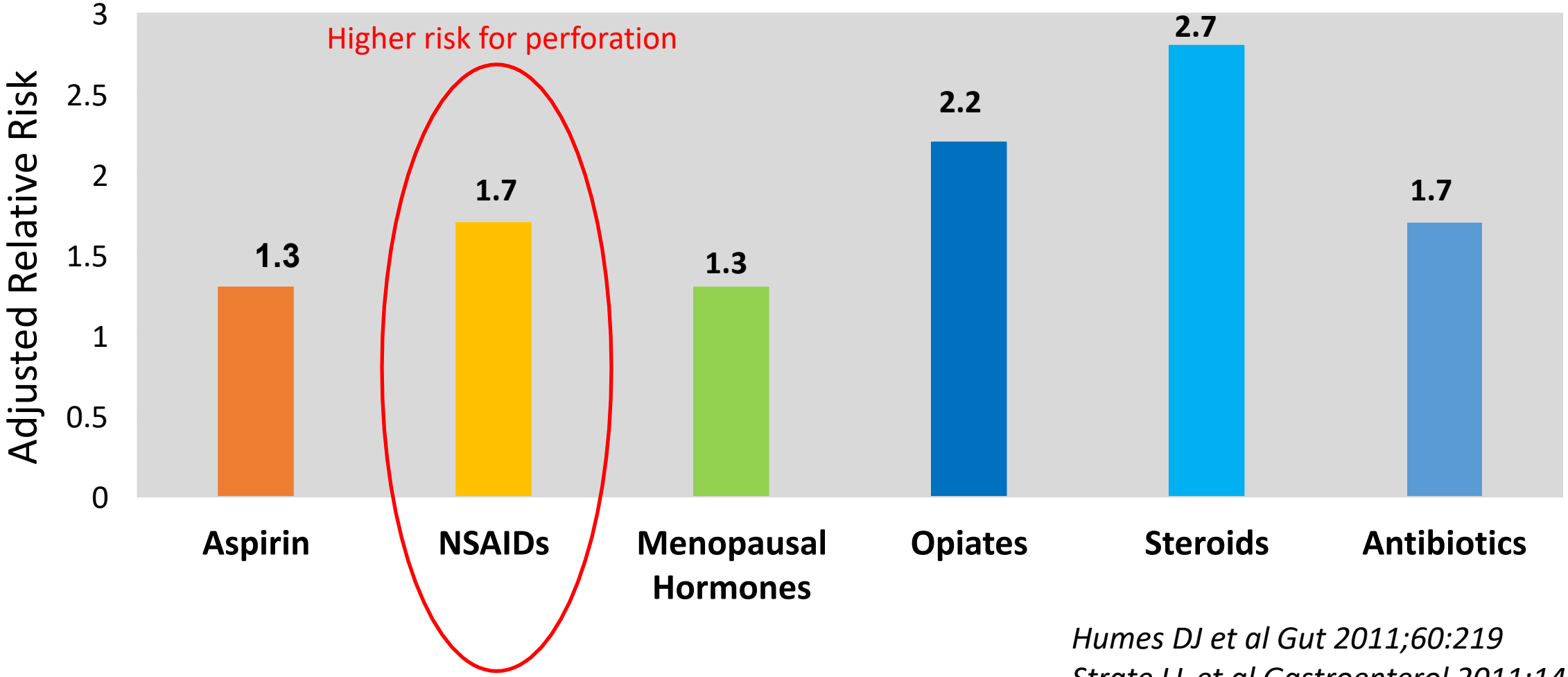
- BMI 18-25
- Red meat < 4/week
- ≥ 23 g fiber / day
- Exercise 2 h/week
- No smoking

50% of population attributable risk

Liu PH, et al, Am J Gastroenterol 2017

Medications and Risk of Diverticulitis

Estimates from select, large population-based cohort or case-controls studies with adjustment for confounding

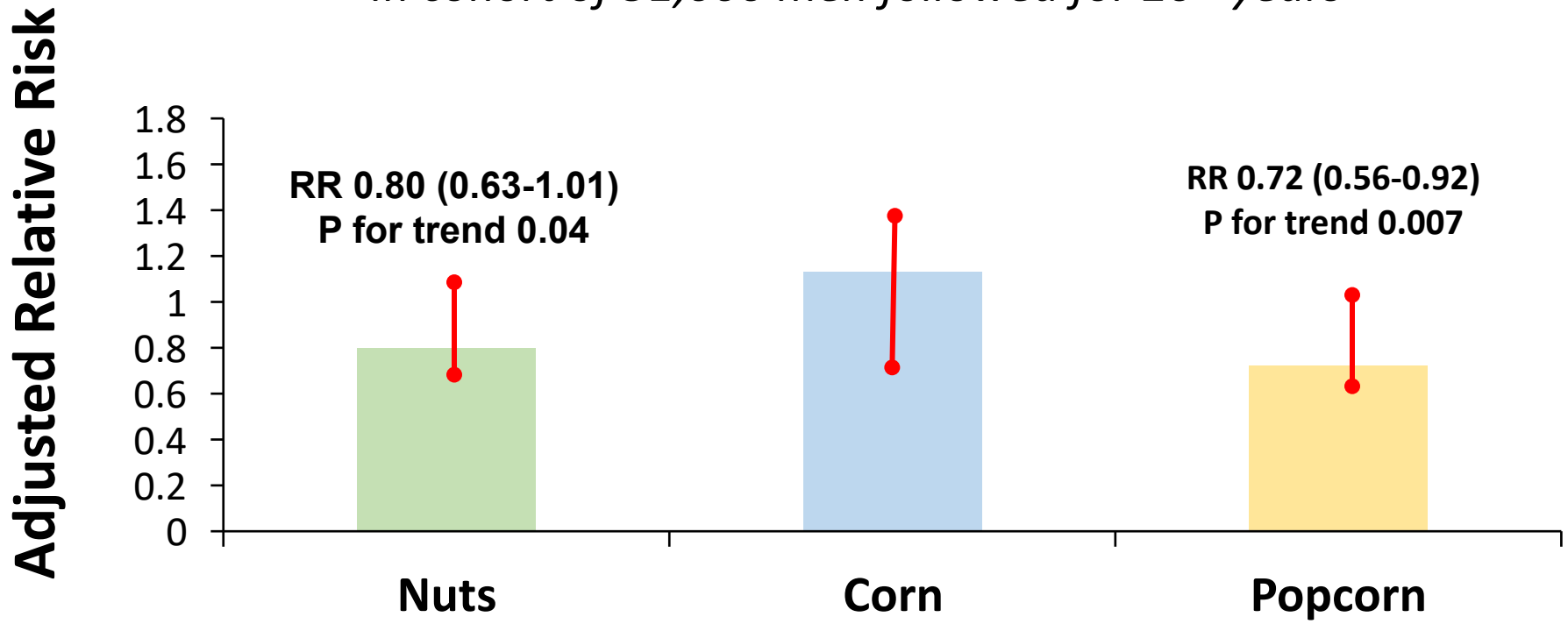


Humes DJ et al Gut 2011;60:219
Strate LL et al Gastroenterol 2011;140
Jovani M et al Am J Gastroetenrol 2019;114
Nguyen LH et al Gastroenterol 2021

Dispelling Three Common Myths

Nuts, Corn, Popcorn: NO Increased Risk of Diverticulitis

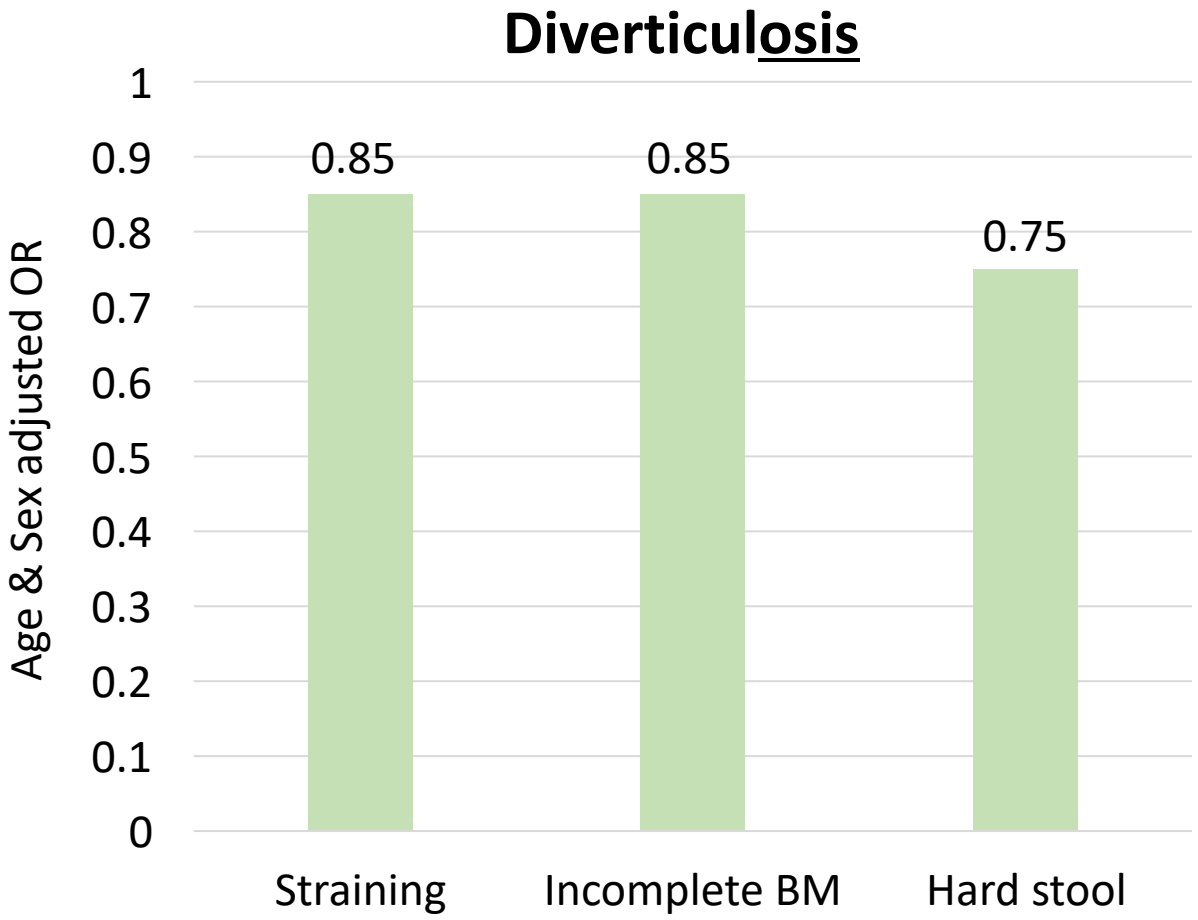
Comparison of high to low quartile of intake
In cohort of 51,000 men followed for 20+ years

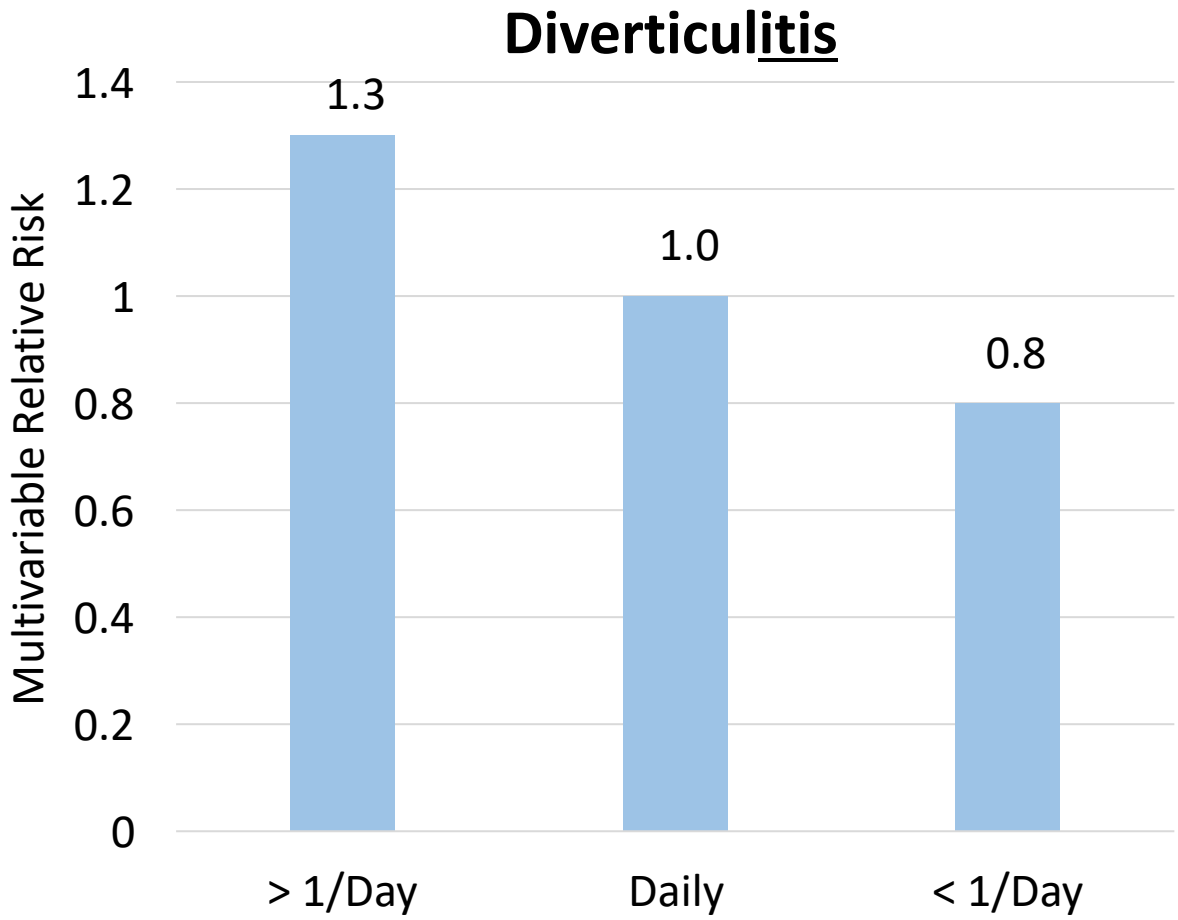


** Adjusted for age, period, dietary fat, red meat, calories, fiber, nuts/corn, NSAIDs, activity*

Strate, et al. Jama 2008
Barlowe et al Ann Int Med 2025

Constipation is NOT associated with Diverticulosis or Diverticulitis



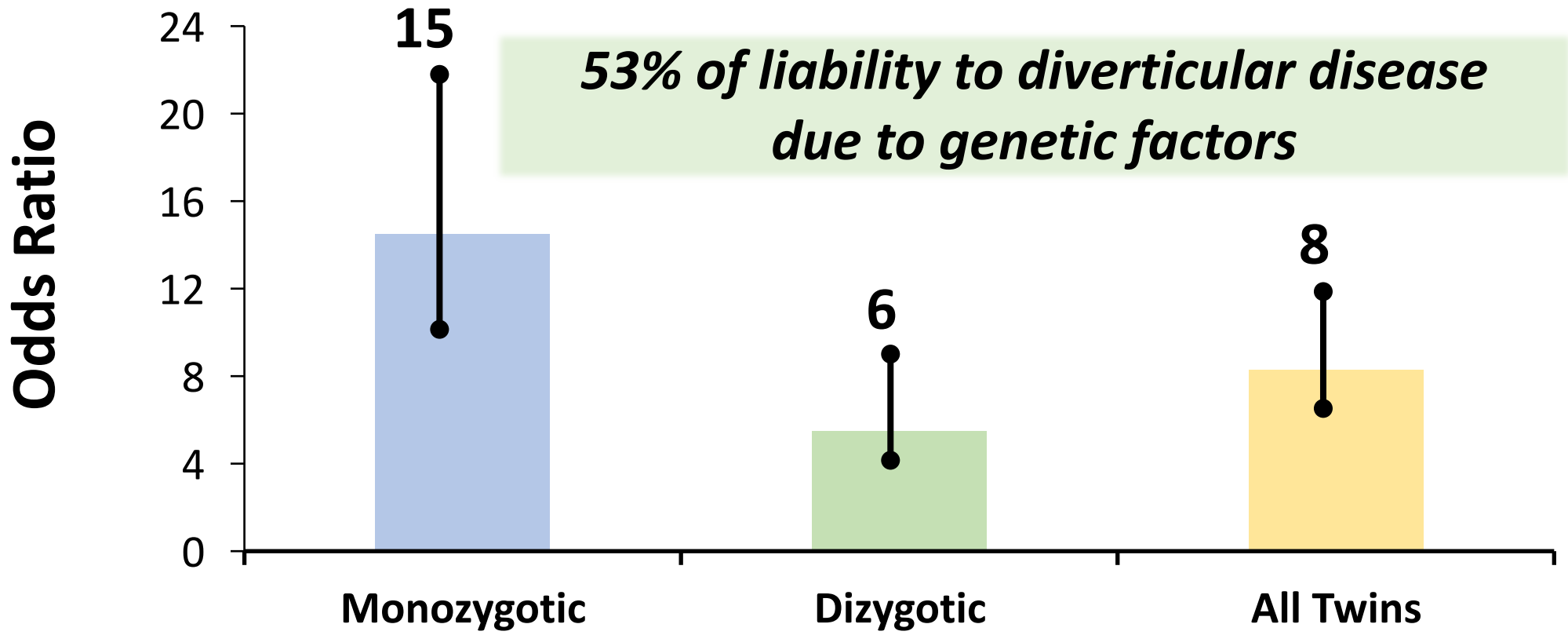


Peery et al Clin Gastroenterol Hepatol 2013

Jovani et al Clin Gastroenterol Hepatol 2021

Not all Risk Factors are Environmental – Genetics Plays a Role

Danish nationwide patient and twin registries 1977-2011
10,400 index siblings and 923 twins with diverticular disease



53% of liability to diverticular disease due to genetic factors

Strate, et al. Gastroenterol 2013

Take Home Points

Diverticulitis is an uncommon complication of a very common disorder

- Most diverticulitis is uncomplicated
- Most complications occur during the first or second episode

Treatment of uncomplicated diverticulitis

- No antibiotics in healthy, immunocompetent patients with mild disease
- If antibiotics, avoid fluoroquinolone and use a short course (4-7 days)

Colonoscopy after diverticulitis

- After an episode of complicated diverticulitis
- After INITIAL uncomplicated diverticulitis IF concerning features or screening not up to date.

Take Home Points

Diet and Lifestyle are Modifiable Risk Factors

- **Diverticulitis is an opportunity to motivate patients to change behaviors!**
- **Genetics likely account for risk in patients without known risk factors**

No need to tell patients to avoid nuts and worry about constipation