

Panel:
**Early-Age Onset Colorectal
Cancer: Scientific Updates and
Member Work to Increase
Action and Awareness**

2:20 PM – 3:30 PM

Panel: Early-Age Onset Colorectal Cancer: Scientific Updates and Member Work to Increase Action and Awareness



Moderator

Peter Liang, MD, MPH
NYU Langone Health



Yin Cao, ScD, MPH
Washington University School
of Medicine in St Louis



Lynn M. Durham, EdD
Georgia Center for Oncology
Research and Education



Cynthia Yoshida, MD
University of Virginia Health
System



Andrea (Andi) Dwyer, MPH
University of Colorado Cancer
Center; Colorado School of
Public Health

Early-onset Colorectal Cancer (EOCRC) Scientific Update

Yin Cao, ScD, MPH

Associate Professor of Surgery and Medicine

Co-Director, Biobank and Big Data Core, Digestive Disease Research Core Center

Co-Team Lead, PROSPECT of Cancer Grand Challenges

ACS NCCRT Annual Meeting, November 19th, 2025



WashU Medicine



Disclosures



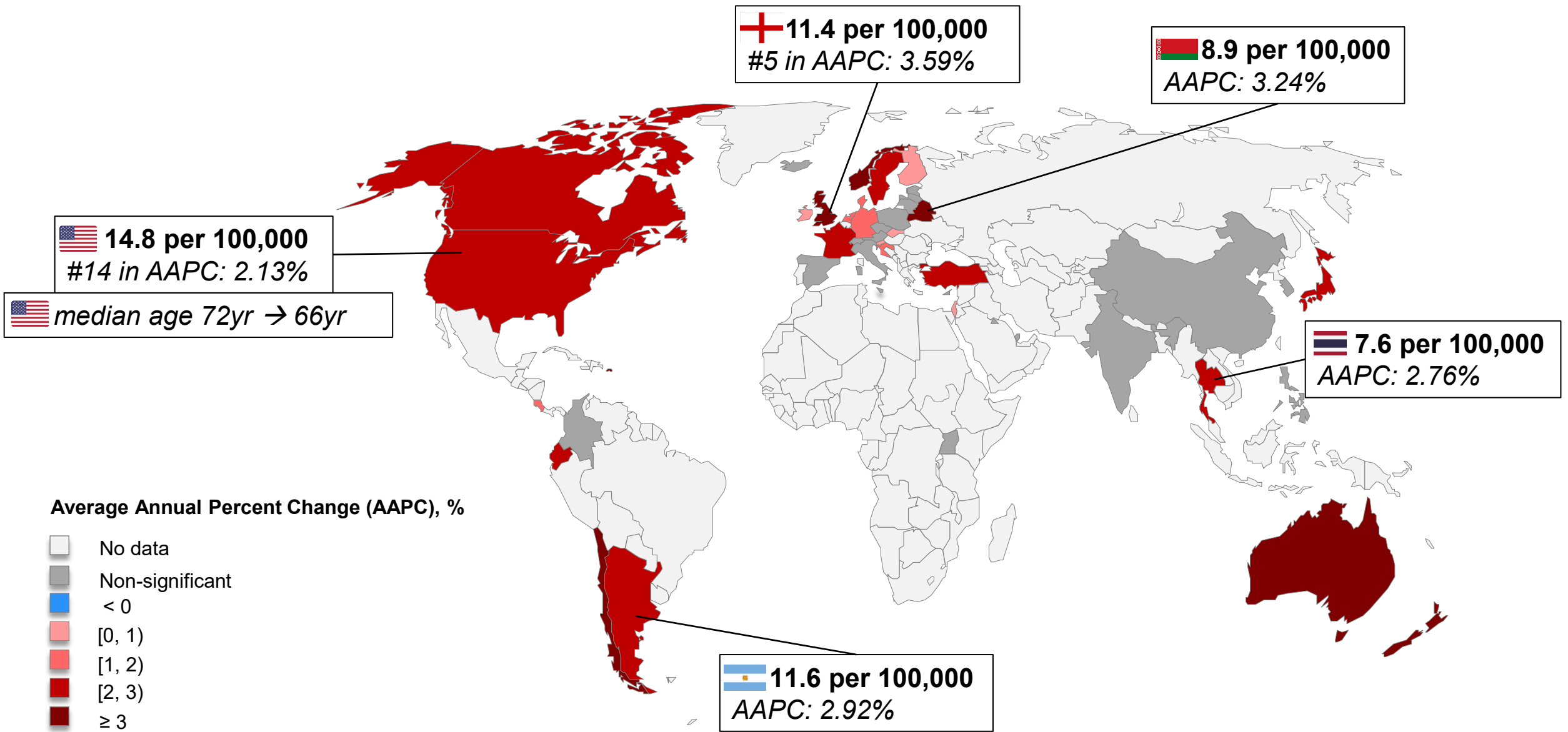
- Yin Cao, ScD, MPH
- Consulting fees from Need and Bayer.

Outline



- **EOCRC global incidence and molecular characteristics**
- **Risk factors**
- **Emerging mechanisms and frameworks**
- **Early detection and diagnosis**

EOCRC is increasing in 27 countries (2008–2017*)



*Exceptions are Costa Rica and Spain (2005–16) and Japan (2006–15).

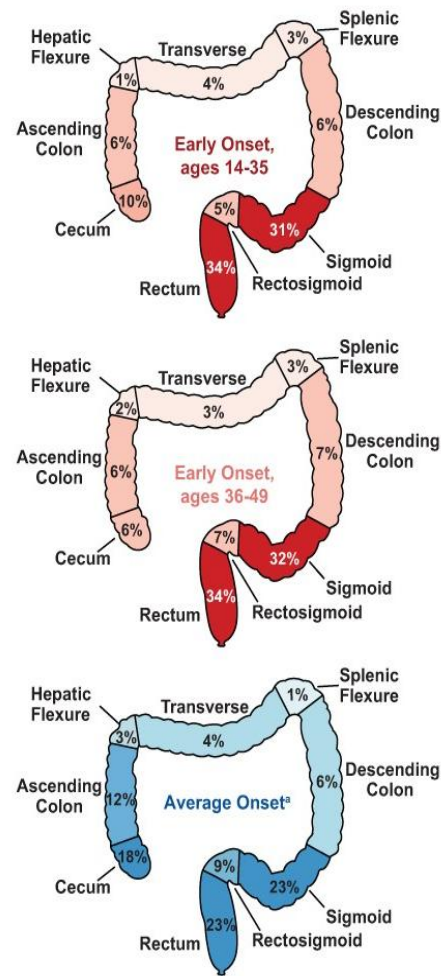
EOCRC clinicopathological features, US



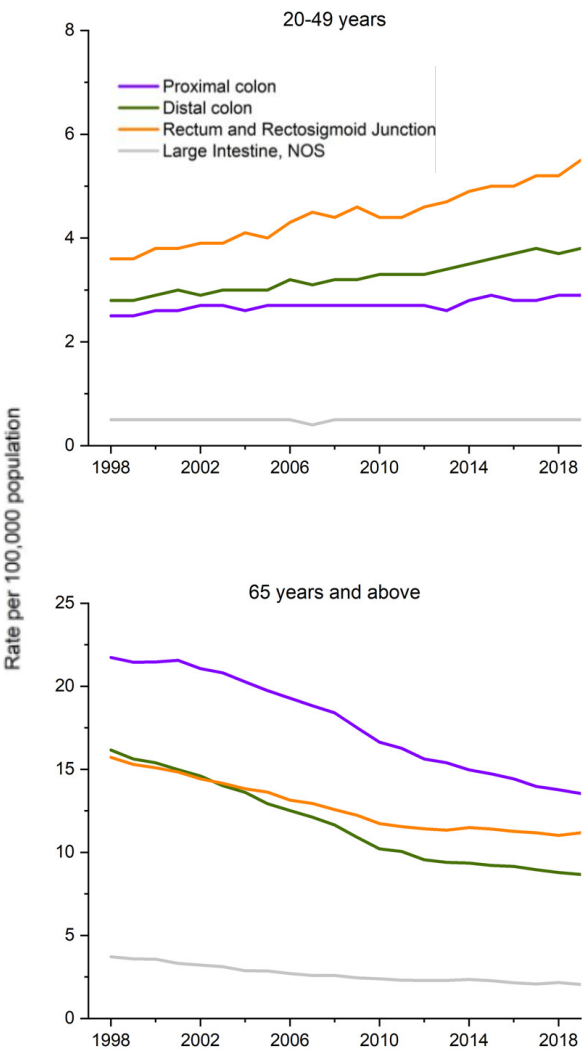
Majority are left-sided

Advanced stages, poorly differentiated

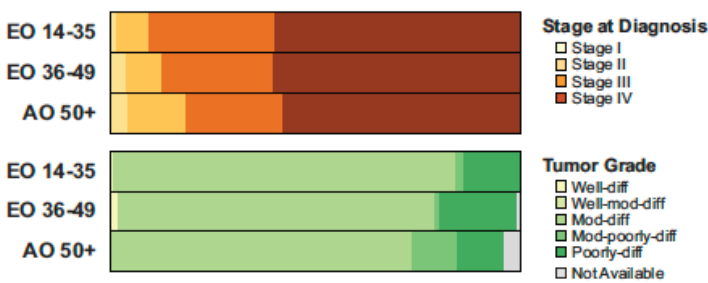
Distribution of Primary Tumor Location



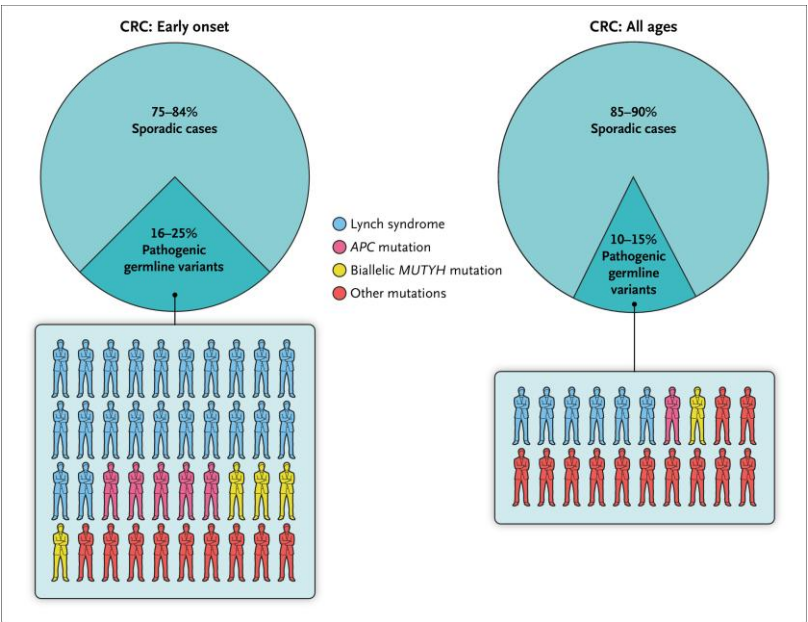
Cercek et al., JNCI, 2021



Siegel et al., CA Cancer J Clin, 2023



Majority are sporadic



Sinicrope, NEJM, 2022

EOCRC genomic landscape



- 4983 EOCRC vs. 12150 LOCRC (8 countries)
- Target panel + WES

Country	EOCRC (%)
USA	82%
China	13%
Other 6 countries	5%

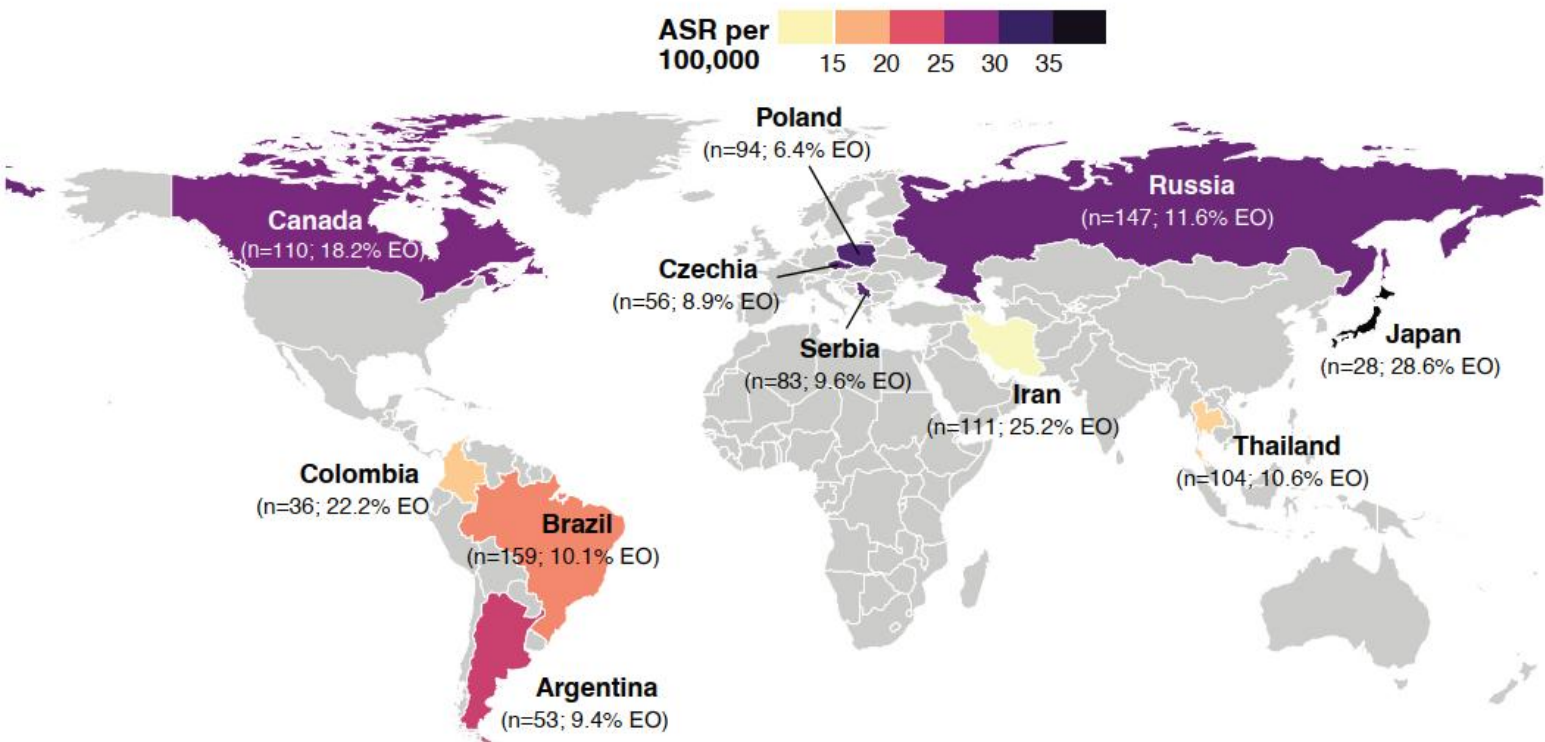
- **EOCRC:**
 - Higher mutation frequency in 137 genes including *TP53*, *TCF7L2*, *CTNNB1*
 - Lower mutation frequency in 6 genes: *BRAF*, *RNF43*, *SOX9*, *AXIN2*, *HNF1A*, *ELF3*

EOCRC vs LOCRC	
Hypermuted	Non-hypermuted
↑ <i>APC</i> , ↑ <i>KRAS</i> , ↑ <i>CTNNB1</i> ↓ <i>BRAF</i> , ↓ <i>RNF43</i>	↑ <i>TP53</i> ↓ <i>BRAF</i> , ↓ <i>KRAS</i>

EOCRC mutational signatures



- 132 EOCRC vs. 849 LOCRC (11 countries)
- WGS T/N
- Colibactin signatures (SBS88, ID18) more common in EOCRC

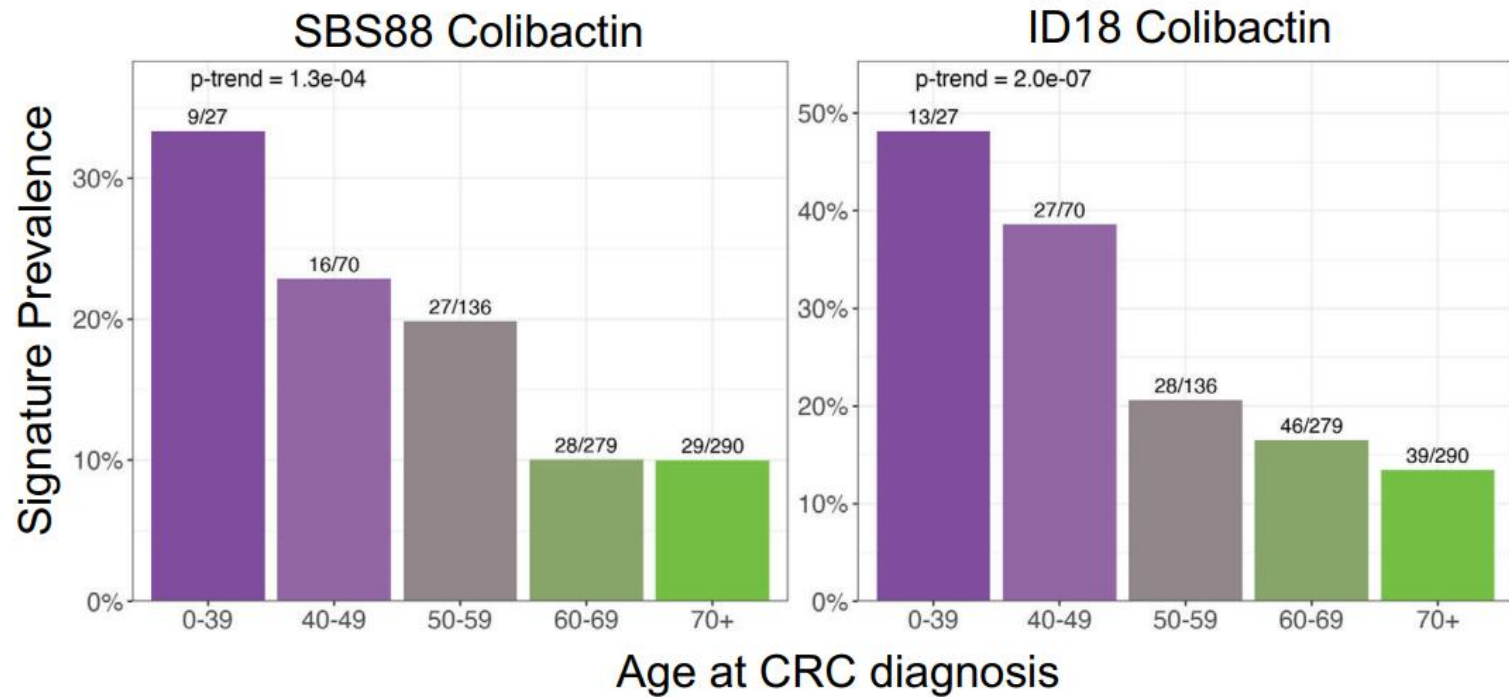
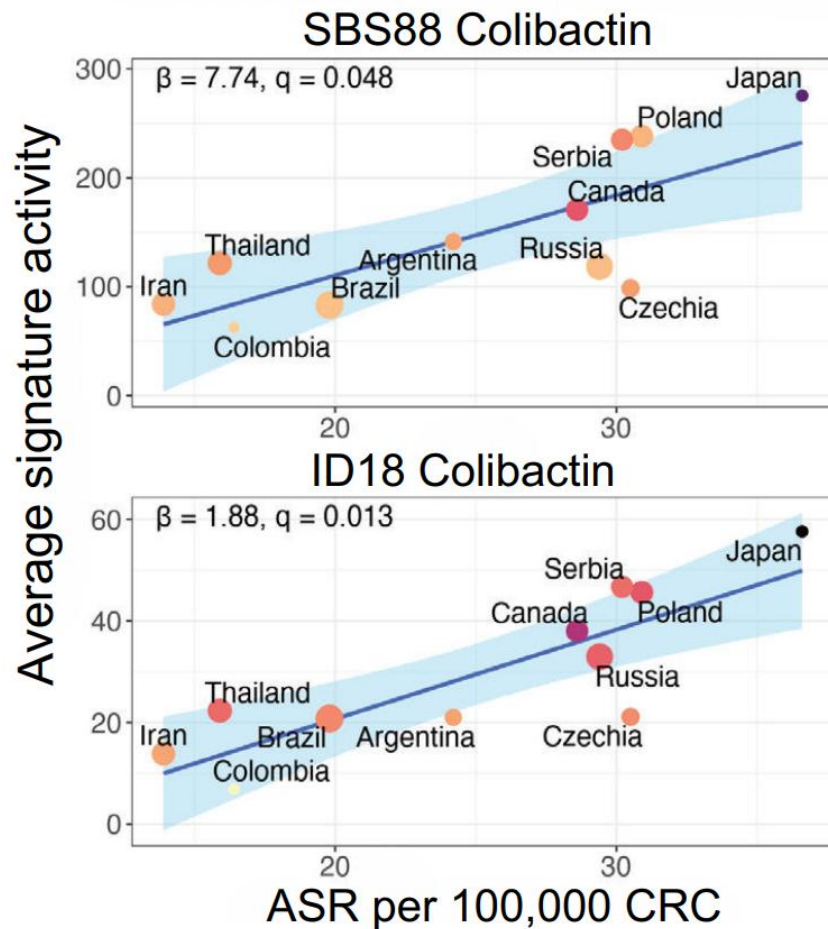


Colorectal cancers	
Total	981
Number of Countries	11
Europe	
Russia	147
Poland	94
Serbia	83
Czech Republic	56
Asia	
Iran	111
Thailand	104
Japan	28
South America	
Brazil	159
Argentina	53
Colombia	36
North America	
Canada	110

EOCRC mutational signatures



- 132 EOCRC vs. 849 LOCRC (11 countries)
- WGS T/N
- **Colibactin signatures (SBS88, ID18) more common in EOCRC**

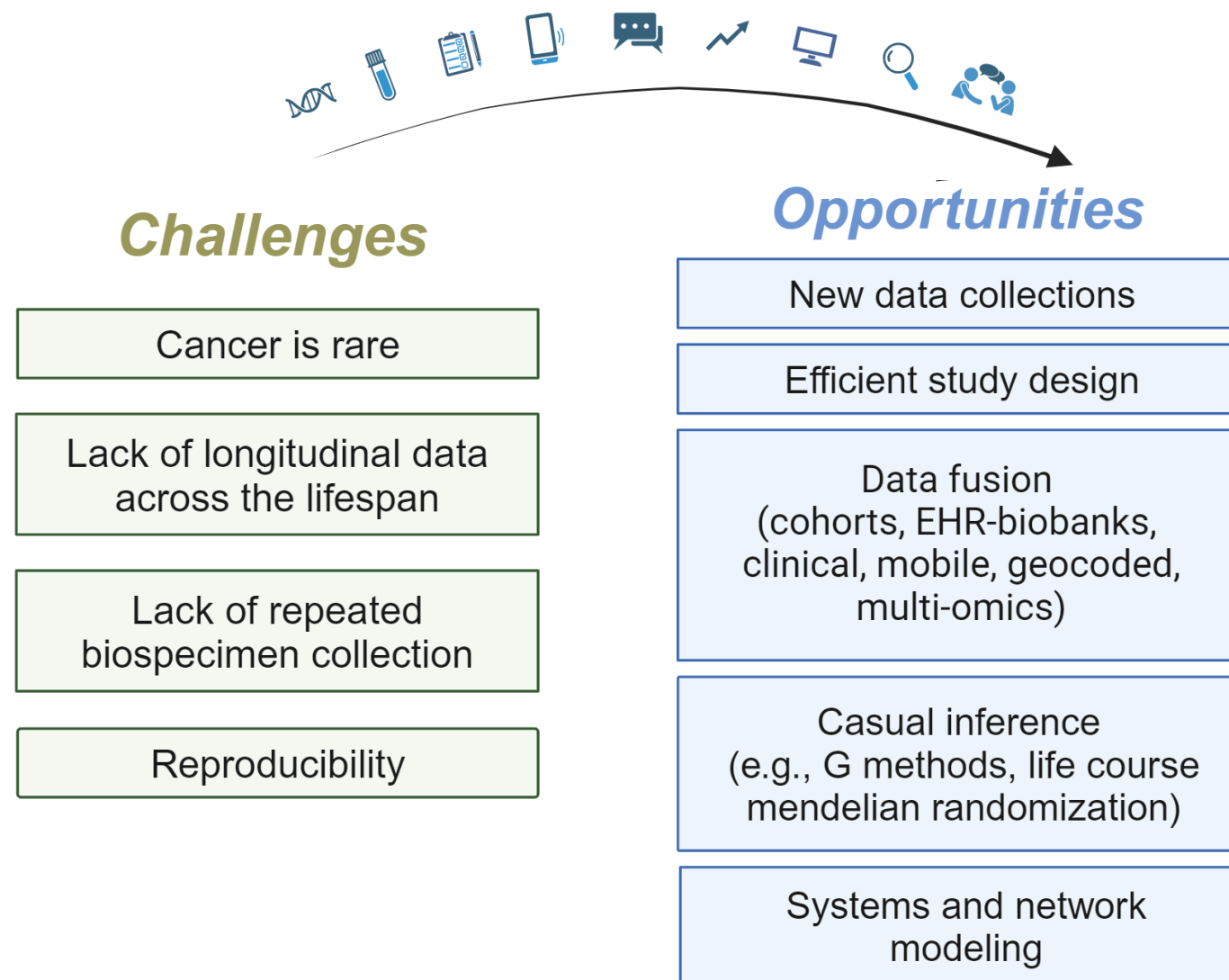


Outline



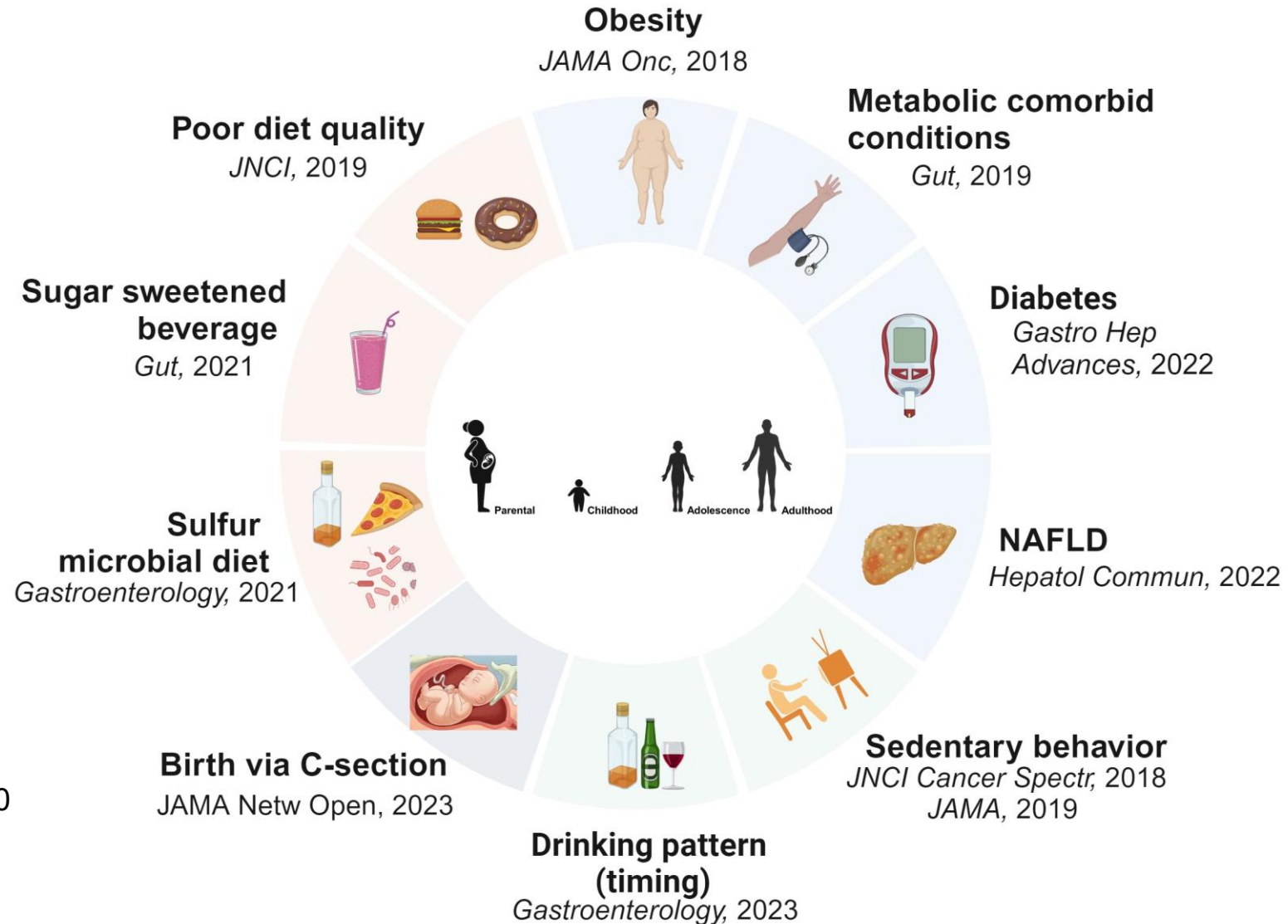
- EOCRC global incidence and molecular characteristics
- **Risk factors**
- Emerging mechanisms and frameworks
- Early detection and diagnosis

Challenges and opportunities in EOCRC risk factor discovery



Kuh & Ben-Shlomo, Oxford 2004
Hanson et al, J Clin Transl Sci 2020
Wright & Hanson, Trends in Cancer 2022
Wagner et al, Lancet Public Health 2024

EOCRC risk factors that are **common** and **emerging** in recent generations (**Cao lab, 2017+**)



Hofseth et al., Nat Rev Gastro, 2020
Sinicrope, NEJM, 2022
Zaki et al., Nat Rev Gastro, 2023
Du et al., Nat Rev Endocrinol, 2025



Recent evidence on **antibiotic use**

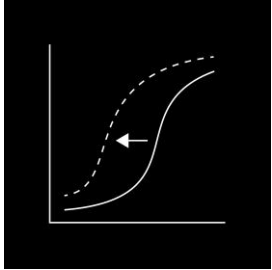
- Nested case-control study, Kaiser Permanente Northern California
- 1359 EOCRC vs. 4711 controls

No associations for antibiotic type (any, by spectrum, bacterial target, class) and duration of use

Antibiotic Type	Time Interval for Antibiotic Use Prior to Index Date			
	No Previous Use	2–4 y vs No Prior Use	5–7 y vs No Prior Use	≥8 y vs No Prior Use
Any				
Cases	99	194	191	254
Controls	306	643	614	868
OR (95% CI) ^a	1.00 (Ref)	1.00 (0.78–1.30)	1.06 (0.83–1.37)	0.88 (0.64–1.21)
OR (95% CI) ^b	1.00 (Ref)	1.01 (0.78–1.30)	1.07 (0.83–1.39)	0.88 (0.64–1.21)

Kane et al., Clin Gastroenterol
Hepatol, 2025

Lu et al., JNCI, 2021
Nguyen*, Cao* et al., CTG, 2022



PROSPECT (2024-2029, 25 million direct cost)

Pathways, Risk factors, and mOleculeS to Prevent Early-onset Colorectal Tumors

<https://www.cancergrandchallenges.org/prospect>

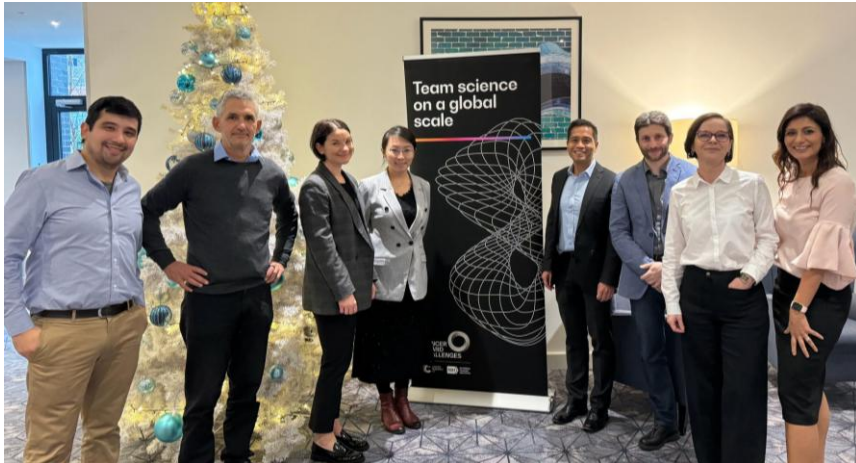
Team leads:

Yin Cao

Washington University in St. Louis

Andrew Chan

Massachusetts General Hospital



TEAM PROSPECT



Team:
PROSPECT

Yin Cao, ScD, MPH (co-TL)
Cancer epidemiology
 WashU



Andrew Chan, MD, MPH (co-TL)
Gastroenterologist; Cancer prevention
Mass General Hospital

Gary Patti, PhD
Exposomics/Metabolism
 WashU

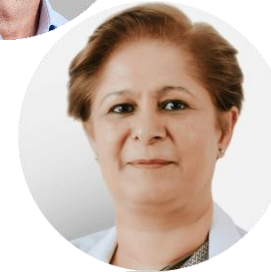


Tim Spector, MD
Clinician; Genetic epidemiology; precision nutrition
King's College London

Nicola Segata, PhD
Computational biology
 U Trento



**+~30 collaborators
(32% early stage)
+~30 future leaders
+~15 cohorts/biobanks
7 countries**



Bhawna Sirohi, MBBS, FRCP
Medical oncologist; Global oncology
BALCO Medical Centre

Emily Balskus, PhD
Chemical biology
 HHMI, Harvard



Ömer Yilmaz, MD, PhD
Pathologist; Stem cell biology
MIT

Jason Buenrostro, PhD
Cellular & molecular biology
 Harvard



Curtis Huttenhower, PhD
Computational biology
Broad Institute



Yasmine Belkaid, PhD
Immunology
Institut Pasteur





“We found the meaning of our work”

- PAs actively engage in all levels of science

“We learned how to communicate science and uncertainty behind it”

- PAs developed **5 big picture questions** to help our future leaders communicate science

“They are our bridge to the public”

- Instagram: **993K views** with extensive engagement
- Media engagement: Times, BBC, Telegraph, Sun, Daily Express, ITV’s Lorraine

Outline

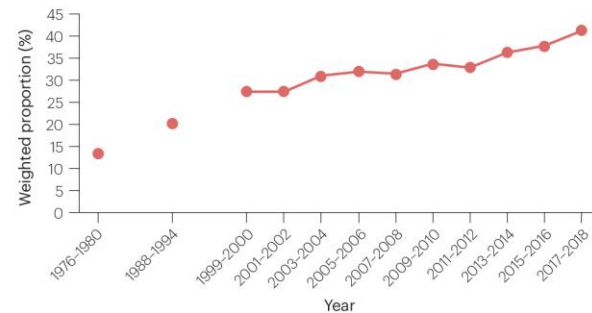


- EOCRC global incidence and molecular characteristics
- Risk factors
- **Emerging mechanisms and frameworks**
- Early detection and diagnosis

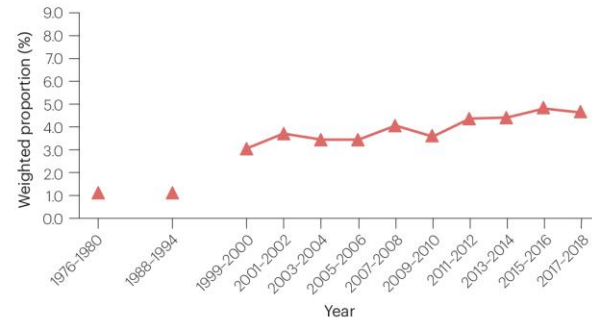
EOCRC: an emerging disease of **metabolic dysregulation**



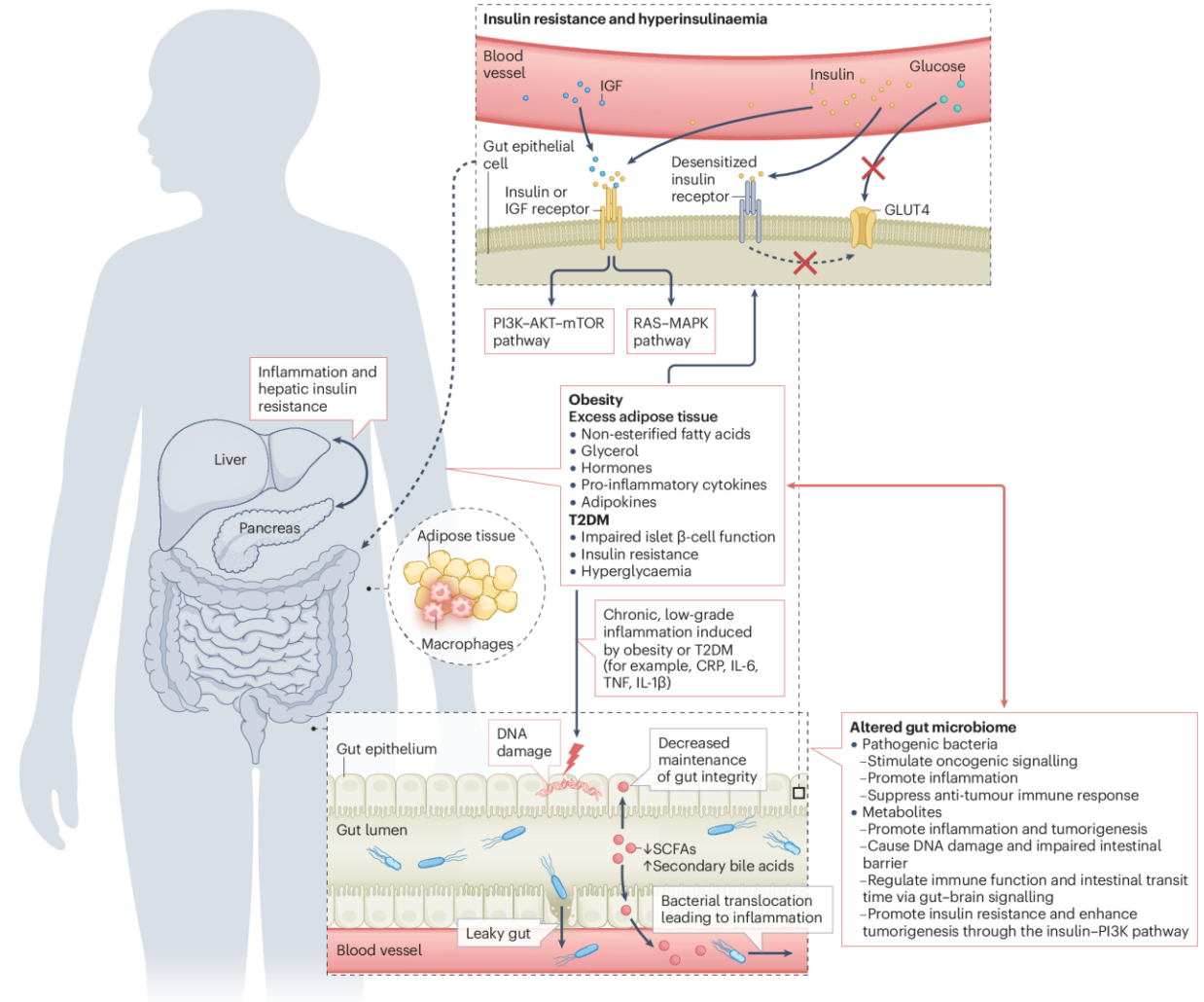
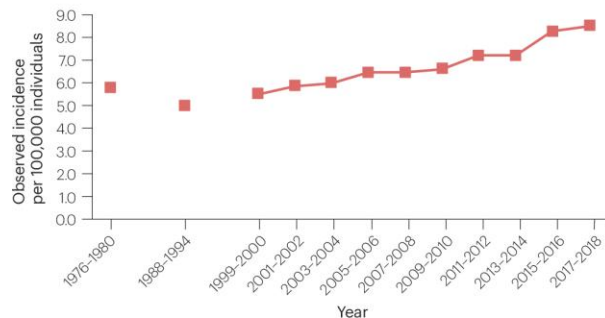
Prevalence of obesity, NHANES 1976–2018



Prevalence of diabetes mellitus, NHANES 1980–2018



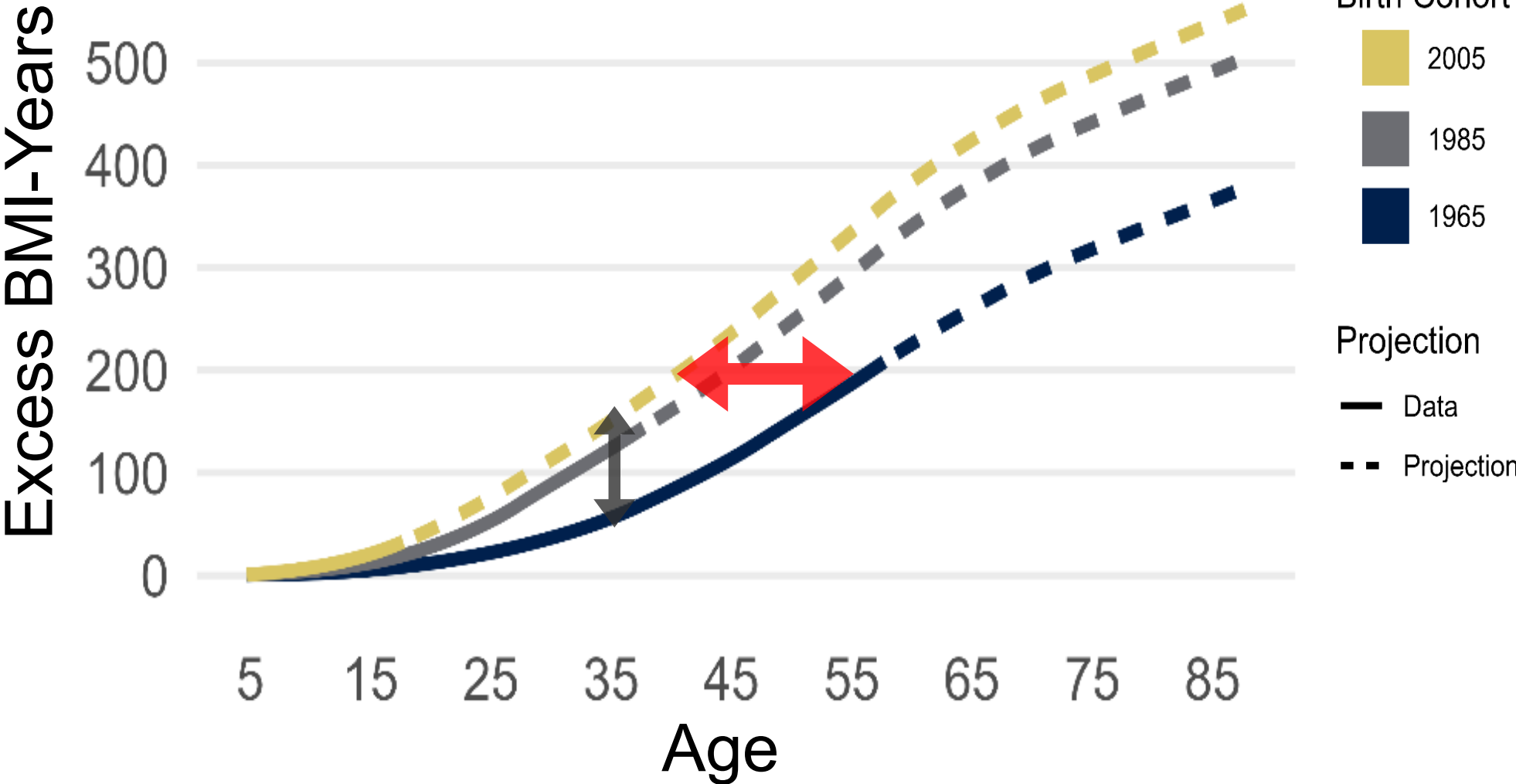
Incidence rate of EOCRC, SEER 1976–2018



Mapping **exposome** throughout life course (Longitudinal)



Female, NHB



Ann Zauber



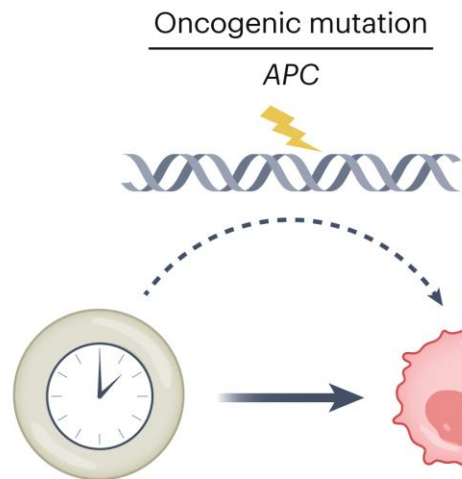
Iris
Lansdorp-Vogelaar



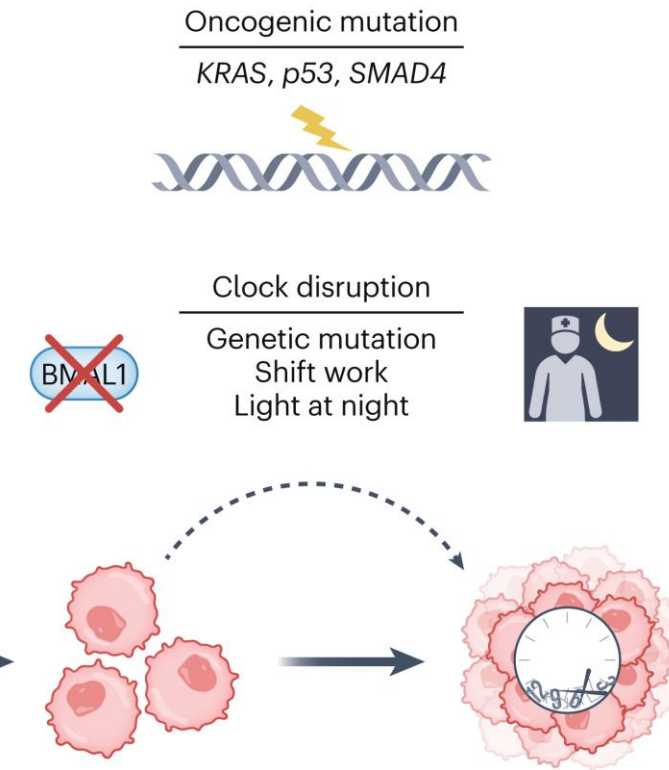
Emerging risk factor/mechanisms: **circadian dysregulation**



a Cancer initiation



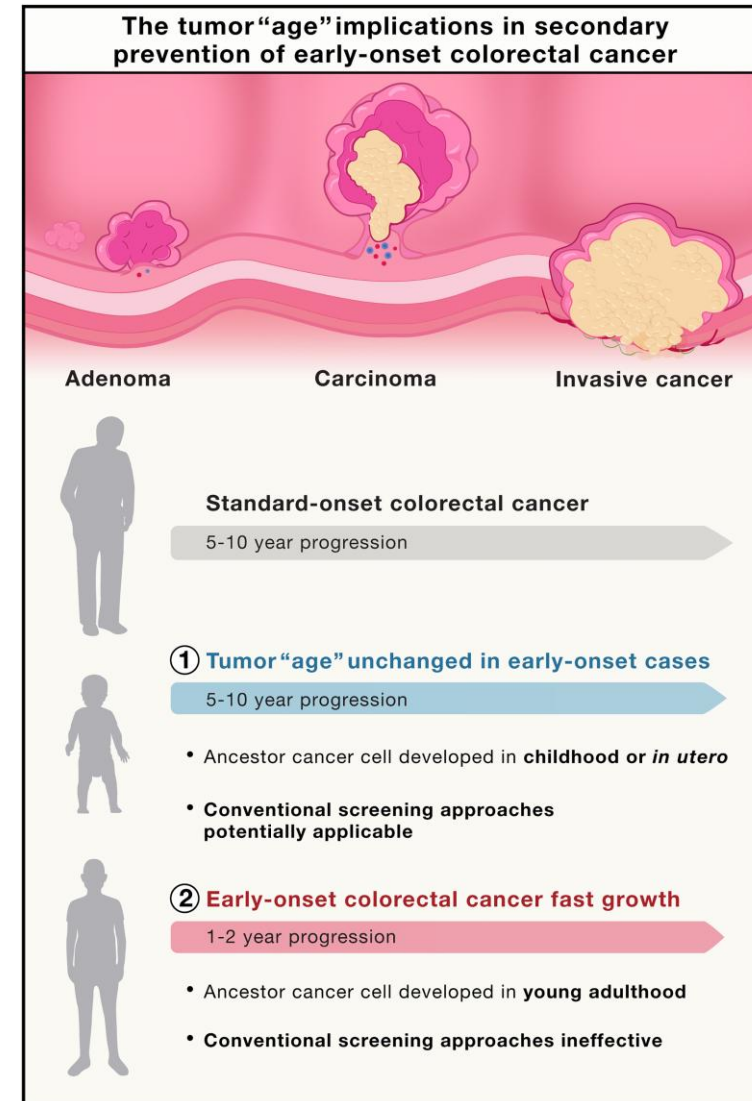
b Cancer progression



Circadian regulation coordinates cell cycle control, DNA repair, immunity, and metabolism in both homeostasis and cancer; **yet except shift work, human evidence is limited.**

Emerging framework: **tumor age**

- **Tumor age** defines time from first neoplastic cell to diagnosis; crucial to understand EOCRC biology.
- EOCRC may evolve faster than standard-onset CRC proposed as **“fast-track” tumorigenesis**.
- Lowering screening age alone is inadequate for early detection.



Outline



- EOCRC global incidence and molecular characteristics
- Risk factors
- Emerging mechanisms and frameworks
- **Early detection and diagnosis**

Proposed diagnostic pathways to improve EOCRC early diagnosis



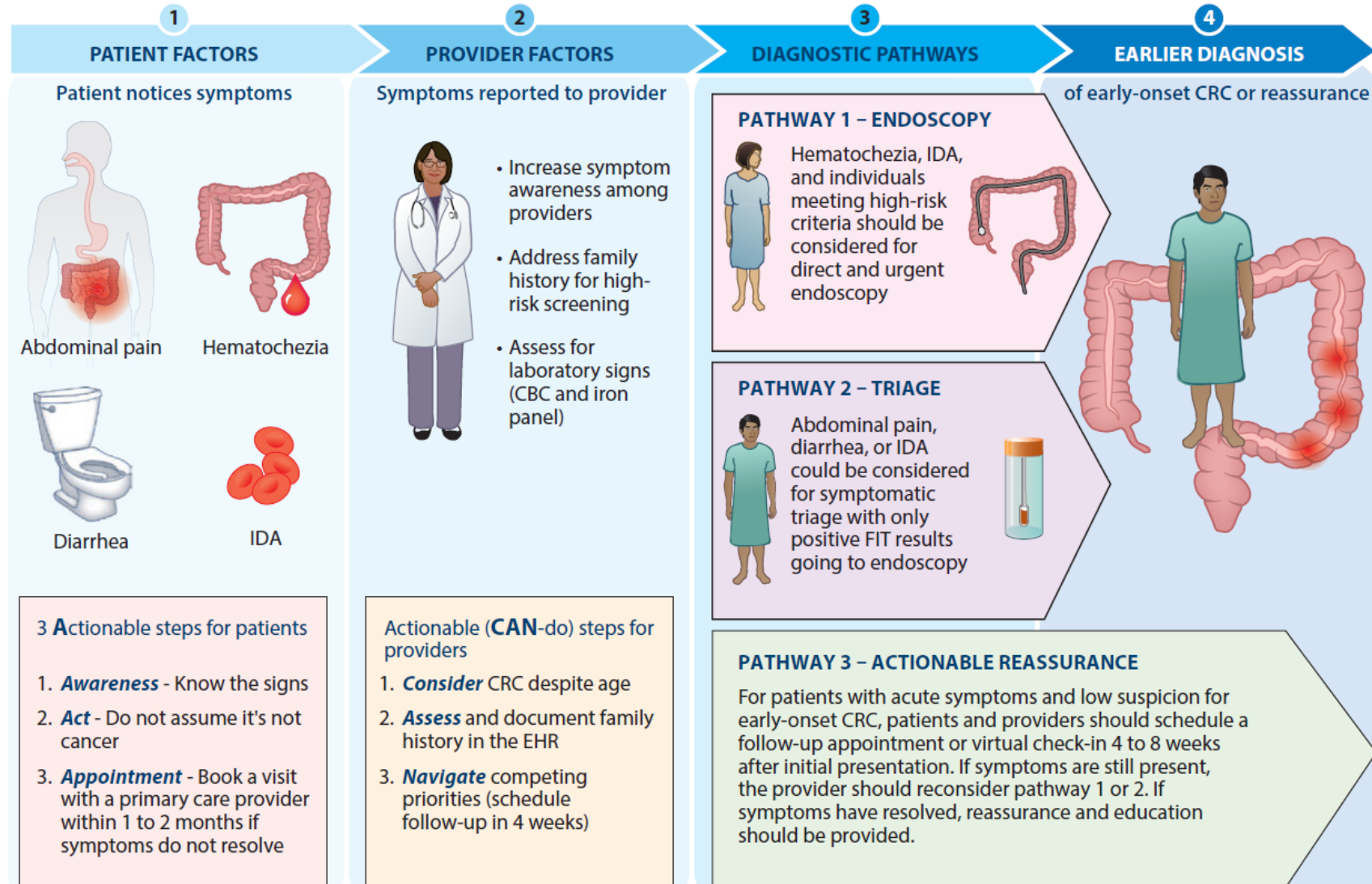
Cassandra
Fritz



Manju
George



John
Carethers



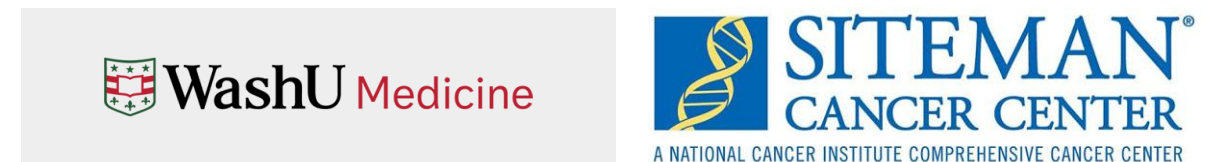


Conclusions

- We have made important strides in defining **EOCRC molecular features, clarifying risk factors, and identifying gaps in early detection.**
- **Yet much work remains to truly advance prevention.**
- **We need **all** to drive this revolution!**
 - Epidemiologists, biologists, geneticists, data scientists, environmental scientists, chemists, toxicologists, behavioral and implementation scientists, economists, modeling...
 - Policy makers, health providers, teachers, parents, patients, general public...
 - Funding agencies and philanthropic support...
 - **Next generation of interdisciplinary scientists!!**

Acknowledgement

Cao Lab @WashU



Acknowledgement



WashU

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Philip Payne
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Malachi Griffith
Linda Peterson
Mark Huffman
Kelly Bolton
Meng Wu

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Cancer Program

*Center for the Environment

*Air Quality and Health Initiative

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Walter Willett
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Shuji Ogino
Long Nguyen
*CRC research group

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VUMC

Wei Zheng

MDACC

Ernest Hawk

Fred Hutch Cancer Center

Ulrike Peters

*GECCO Consortium

William Hazelton

UC Irvine

Selma Masri

Institut Pasteur

Yasmine Belkaid

University College London

Charles Swanton

Karolinska Institutet

Jonas Ludvigsson

Erasmus Medical Cancer

Iris Lansdorp-Vogelaar

Imperial College London

Marc Gunter

Team PROSPECT

All co-Is, collaborators,
patient advocates, SAB, future
leaders

All colleagues of CGC



**We look forward to
collaborating with
you!**

yin.cao@wustl.edu



Thank You



Strengthening Georgia's Cancer Fight

Launch + Tactical

Disclosures

- Georgia General Assembly
- Georgia Society of Clinical Oncology
- Amgen

THE CHALLENGE:

**A CAMPAIGN THAT
WOULD GET 25-45 YEAR
OLDS TALKING ABOUT
COLON CANCER.**

THE IDEA



WEIRD LOOKING STOOLS

Georgia CORE replaces dozens of bar seats with weird looking stools to remind people to check their stool for weird symptoms of colorectal cancer.

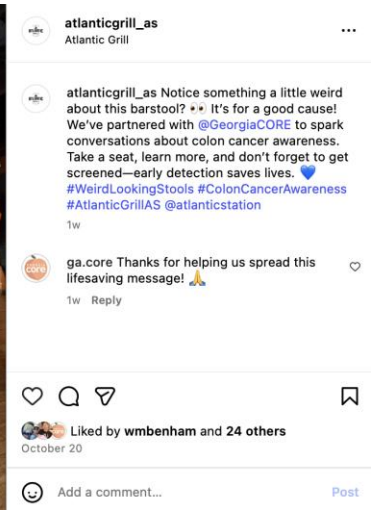
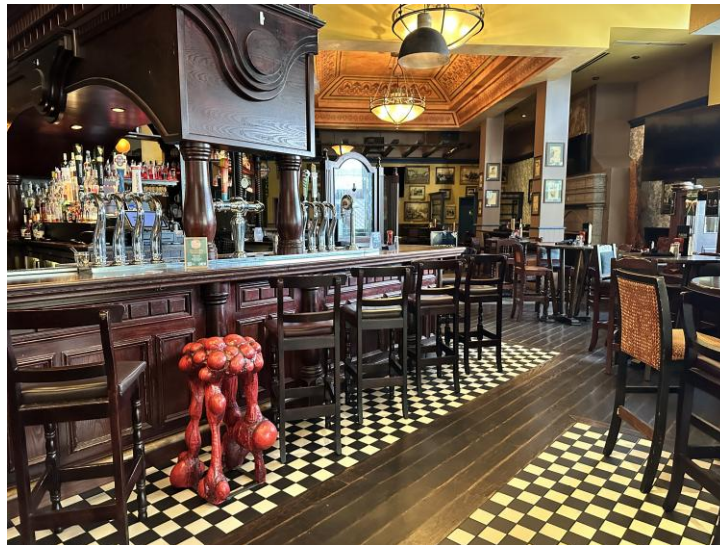
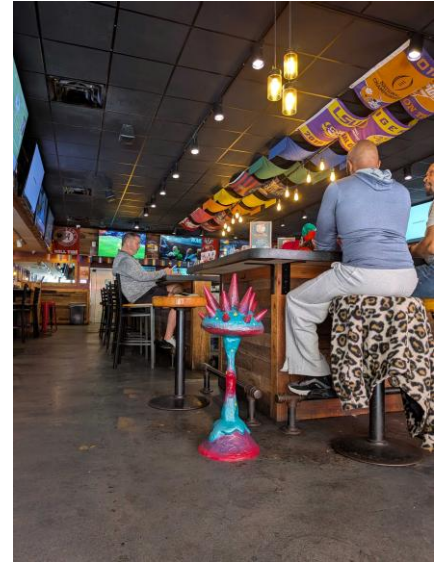
We've all sat on a stool where one leg is a lil' off. And a stool that's a lil' off is a sign of colorectal cancer. So, let's replace stools at bars around GA with discolored, wobbly, weirdly shaped stools that have a plaques warning of colorectal cancer signs.



**SO WE MADE DOZENS OF
WEIRD LOOKING STOOLS...**



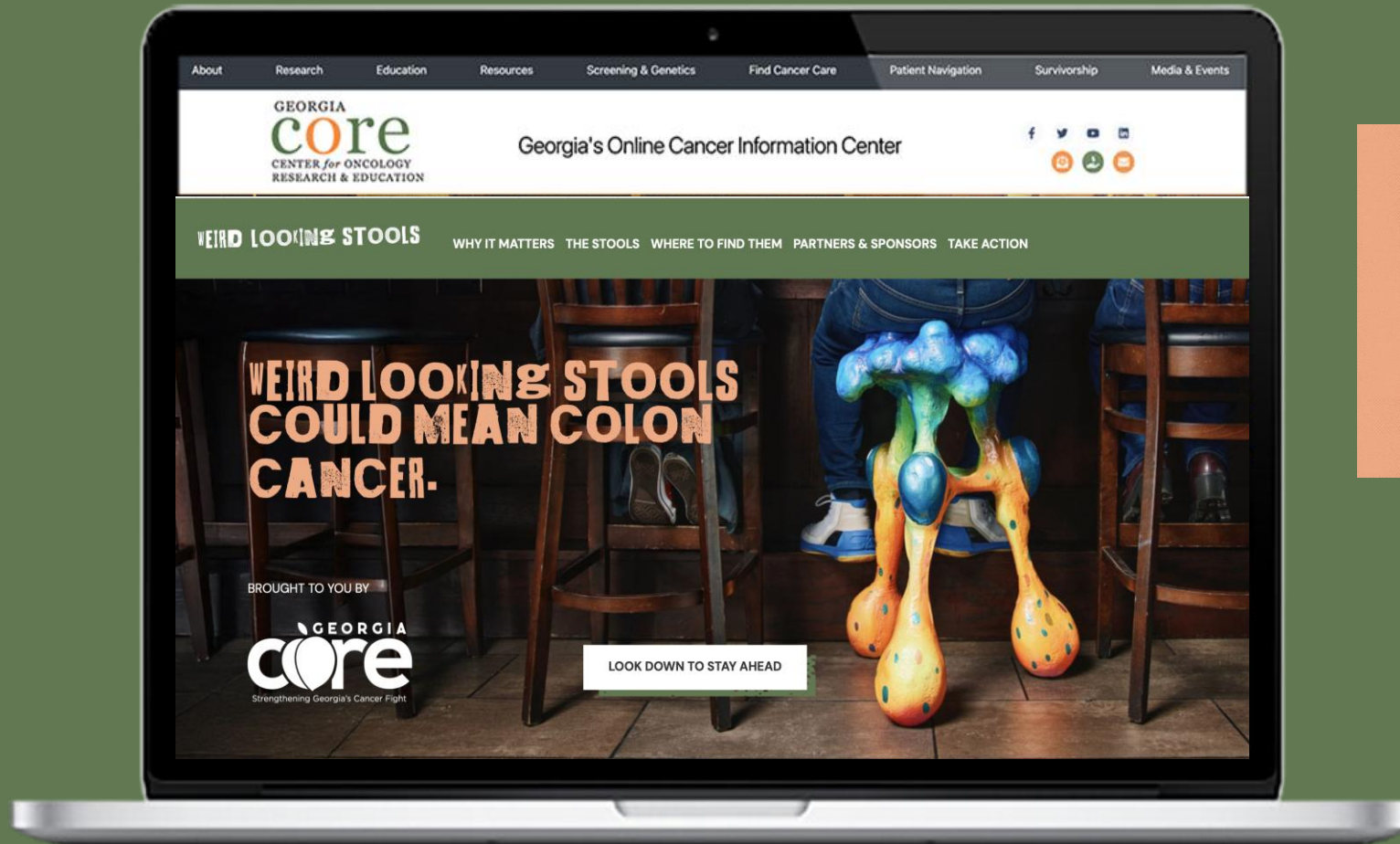
AND PUT THEM IN BARS & COFFEE SHOPS AROUND GEORGIA



ALONG WITH
SIGNAGE,
COASTERS,
AND COFFEE
SLEEVES WITH
MORE INFO



**WE CREATED A
LANDING PAGE
FOR MORE INFO,
LINKS, AND
LEARNING.**



WHY IT MATTERS


DID YOU KNOW

COLON CANCER IS THE 2ND LEADING CAUSE OF CANCER DEATH IN BOTH MEN AND WOMEN IN GEORGIA.¹


By 2030, it's projected to be #1 for people under 50.² Cases in young adults are rising fast. The good news? Caught early, colon cancer is highly preventable.

These symptoms could be signs of a larger issue.

 STOMACH PAIN

 UNEXPLAINED WEIGHT LOSS

 CHANGES IN BOWEL HABITS

 BLOOD IN STOOL

TAKE THE QUIZ

Check out this quiz to see your level of risk for colon cancer.

TAKE THE QUIZ

SIGNS AND SYMPTOMS³

- Stomach pain
- Unexplained weight loss
- Changes in bowel habits
- Blood in stool
- Funky or skinny poop
- Diarrhea
- Anemia
- Fatigue

Genetics can also play a role. Consider your family history if you have a relative diagnosed with colon cancer.

**WE ACTIVATED
PAID MEDIA FOR
FURTHER REACH
AND IMPACT**

**A 3-MONTH LONG MASS
AWARENESS CAMPAIGN**

OVER 50 BILLBOARDS ACROSS ATL & HIGH INCIDENCE MARKETS LIKE APPLING, EMANUEL, LEE, TERRELL, CARROLL, WARE, SUMTER, STEPHENS, BURKE



TARGETED META & INSTAGRAM ADS



ga.core

NO STOOL SHOULD FEEL THIS UNCOMFORTABLE

[LEARN MORE](#)



ga.core

WEIRD LOOKING STOOLS COULD BE A SIGN OF COLON CANCER

[Learn more](#)

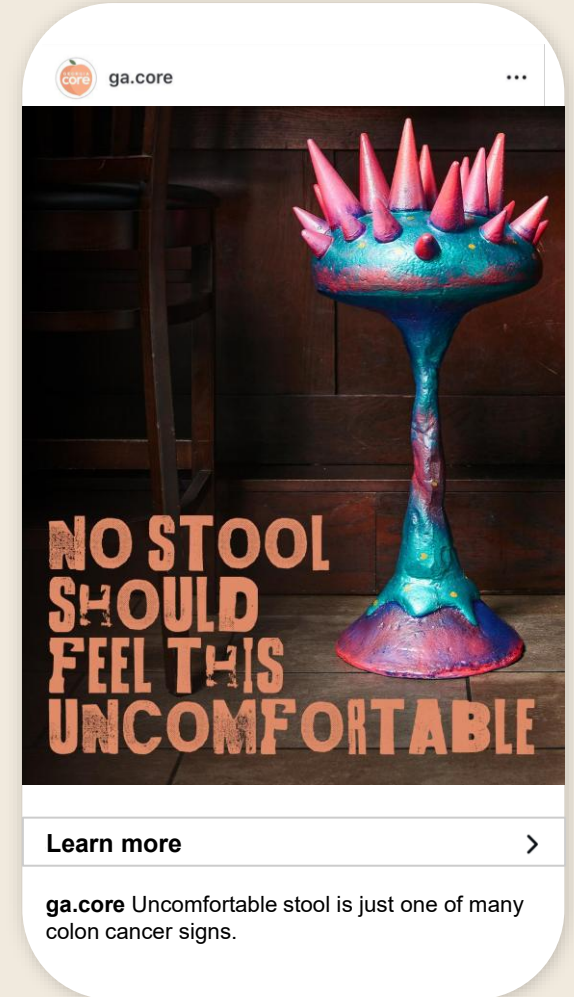
ga.core Learn about your stool, and the multiple signs of colon cancer.



ga.core

CHECK FOR WEIRD LOOKING STOOLS

[LEARN MORE](#)



ga.core

NO STOOL SHOULD FEEL THIS UNCOMFORTABLE

[Learn more](#)

ga.core Uncomfortable stool is just one of many colon cancer signs.

OUR STOOLS HAVE BEEN MAKING THEIR WAY AROUND THE CREATIVE AND CANCER COMMUNITY



Launch Event – Park Bar



Atlanta Against Cancer x ABV Gallery



CCA Walk to End Colon Cancer

UPCOMING

Wellstar Content

Grady Content & Partnership w/
Community and Creative
influencer, Cam Kirk

Northside Hospital Event

THE RESULTS

 **Marta H. Garcia**  • 2nd
Award winning trailblazer in international educational development


What an imaginative and FUN way to Call attention to a delicate subject!
And save lives along the way!!

Like | Reply


 **Jackie Nemeth**  • 2nd
Communications Manager (Retired), Georgia Tech, School of Electric...

This is such a creative way to remind people about an important health issue and to get people to talk about it!

Like | Reply



 **Emily Mason Beard**
Love this campaign - definitely an attention grabber! Very clever.

4d Like Reply

 **Erica Joy Brunner**  • 3rd+
Marketing and Film Enthusiast | Creative Professional | Pitt Alum



This is such an interesting campaign

Like | Reply

 **Andrew Wiseman**  • 2nd
Owner | Providential SIGNWORKS



Thank you for bringing awareness to Colon cancer, great experiential marketing! Wishing you much success!

Like | Reply

 **Dawn McCarthy**  • 2nd
Creative Director | Thought Leader | Brand Cultivator | Board Member

Smartest experiential work I've seen in a while.

Like · 🌍 2 | Reply

 **Erica Joy Brunner**  • 3rd+
Marketing and Film Enthusiast | Creative Professional | Pitt Alum

This is such a creative way to get more people talking about colon cancer

Like · 🌍 1 | Reply

 **Robert Patterson**  • 2nd
Driving AI Innovation & Digital Transformation in Travel & Hospitality ...

I love the creativity and playfulness that is still able to highlight a serious health topic. Well done.

Like · 🌍 1 | Reply

 **Suzanne Wynn**  • 2nd
Commercial VO + Script Polish + Full Audio Production | One Partner...

Someone deserves a big raise! That's so fantastic! (Will I see any of these at the Loft in Columbus next week?)

Like · 🌍 1 | Reply · 2 replies

**OVER 57K VISITORS TO
WEIRDLOOKINGSTOOLS.COM**

**12,624,926 IMPRESSIONS
(PAID MEDIA)**

OVER 365 MILLION EARNED IMPRESSIONS!

AJC (online)
AJC (print)
The Telegraph (Macon)
Woman's World
Yahoo!News
Black Press USA
The Atlanta 100
The Grio
Yahoo!News
AOL
WANF - TV (Atlanta, GA)
WRDW (pick-up)
WALB News (pick-up)
MSN (pick-up)
Cancer Health

WAGT (NBC) - Augusta, GA News 26 This Morning
WALB (NBC) - Albany, GA WALB News Atlanta News First
(WANF-CBS) - Atlanta, GA ANF News Live
Peachtree TV - Atlanta, GA - ANF News Live
WHNS (FOX) - Greenville, SC (6PM News)
WCTV (CBS) - Tallahassee, FL (5:30PM News)
WRDW (CBS) - Augusta, GA (News 12 Live at 5)
Peachtree TV - Atlanta, GA ANF AM Live
Atlanta News First (WANF-CBS) - Atlanta, GA ANF AM Live
WHNS (FOX) - Greenville, SC - Morning News
WRDW (CBS) - Augusta, GA - News 12 This Morning
WAGT (NBC) - Augusta, GA News 26 This Morning

Ad Age
PharmaLive
Little Black Book
Media Marketing
Med Ad News
Roastbrief US
Muse by Clios
Indie Agency

The Atlanta Journal-Constitution


Wellness

Sports Entertainment Food Things to do Wellness Access ATL

Wellness

Strange seats bring colon cancer awareness to Georgia bars, coffee shops

Sculptural seats by an Atlanta artist give new meaning to 'check your stool.'



Designed by artist Julian Scalia, each stool visually represents a key symptom associated with colon cancer and features QR codes linking to screening info. (Ben Rollins/Courtesy of Chemistry Advertising)

By Tara Duncan – For The Atlanta Journal-Constitution

Oct 26, 2025

Have a seat and let's talk about something we usually don't talk about. This fall across the state, stools are taking center stage to spark conversation about colon cancer.

Read today's Edition

The Telegraph

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NEWS EDUCATION RESTAURANTS SPORTS GEORGIA GAMES OBITUARIES FINANCE CLASSIFIEDS | 49°F

LOCAL

'Weird-looking stools' on display in Macon are meant to raise awareness for health issue

By Ava Lauer For The Telegraph

Updated September 29, 2025 8:57 AM | Gift Article



THE ATLANTA 100


Building the Atlanta community 100 words at a time

Home » Artful stools spark conversation on rising colon cancer rates

LIFESTYLE » WELLNESS

Artful stools spark conversation on rising colon cancer rates

1 October 2025




Little Black Book

NEWS CREATIVE LIBRARY IMMORTAL AWARDS MEMBER COMPANIES

Creative


Georgia CORE Sparks Life-Saving Colon Cancer Conversations with 'Weird Looking Stools'

The bold campaign, created with Chemistry, spotlights colon cancer awareness with one-of-a-kind stools created by artist Julian Scalia




Cancer Health

Don't miss out on our weekly cancer treatment and news updates



Cancer Health Email Newsletter

Advertisement



Georgia CORE's "Weird Looking Stools" designed by Julian Scalia raise awareness of colon cancer. Courtesy of Chemistry Advertising

NEWSFEED


"Weird Looking Stools" in Bars Spark Talks About Colon Cancer

ANF ATLANTA NEWS FIRST

55° Atlanta, GA


News Watch Live First Alert Weather Stream ANF+ First Alert Traffic ANF Investigates Sports

ADVERTISEMENT



Private Vacation Rentals

'Weird Looking Stools' campaign turns heads to start life-saving conversations about colon cancer



ABBY KOUSOURIS FADO MIDTOWN

ANF

PharmaLive.com

MARKETING & ADVERTISING R&D THERAPEUTICS RESOURCES MANNY AWARDS

CHEMISTRY AND GEORGIA CORE TEAM UP ON 'WEIRD LOOKING STOOLS' CAMPAIGN FOR COLON CANCER



MUSE BY CLIPS

ENTERTAINMENT ~ LIFESTYLE ~ COMMUNITY VOICES ~

HEALTH AND WELLNESS

The Story Behind 'Weird Looking Stools' That Fight Colon Cancer

Inside one of the year's most audacious and artful health campaigns

by Dan Lemaux

October 28, 2025 10:30 am 3 min read




AdAge

Creativity Top 5 Biggest advertisers ranked Agency Review Tracker

WORK

Chemistry's 'Weird Looking Stools' bring colon cancer awareness to the bar



**MORE TO
COME.**



Thank You

Medical School Curricula

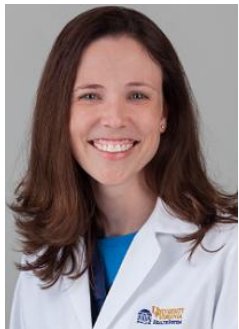
Early-Age Onset Colorectal Cancer: Scientific Updates
and Member Work to Increase Action and Awareness

Cindy Yoshida MD, AGAF
University of Virginia Health System

Disclosure

I have no actual or potential conflict of interest in relation to this presentation

Introducing Early-Age Onset CRC into the UVA Medical School Curriculum

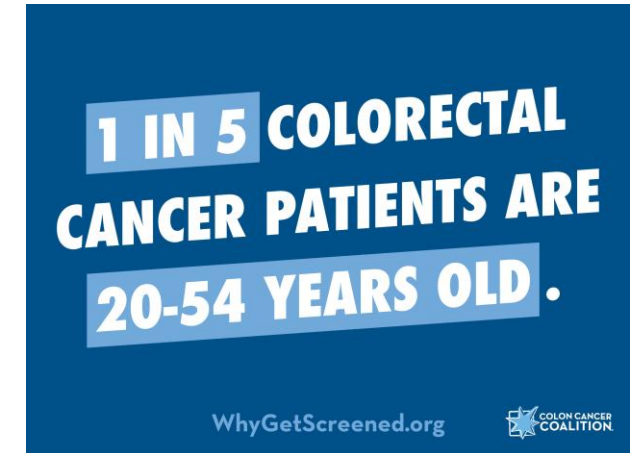
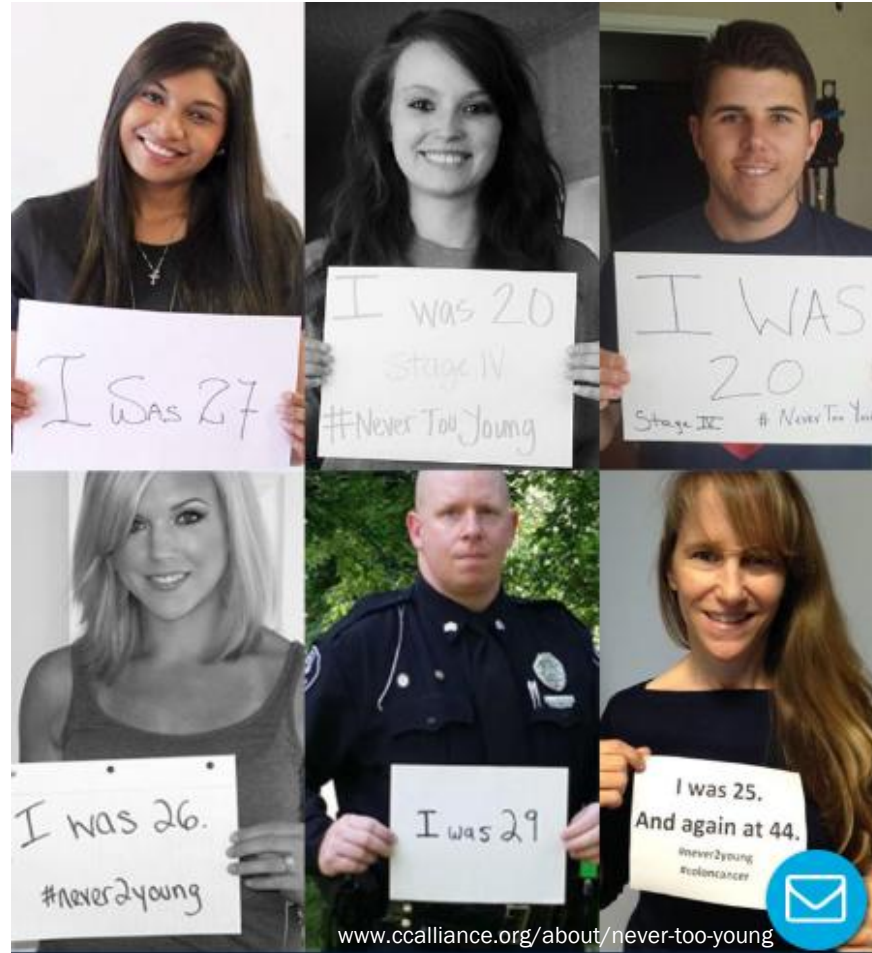
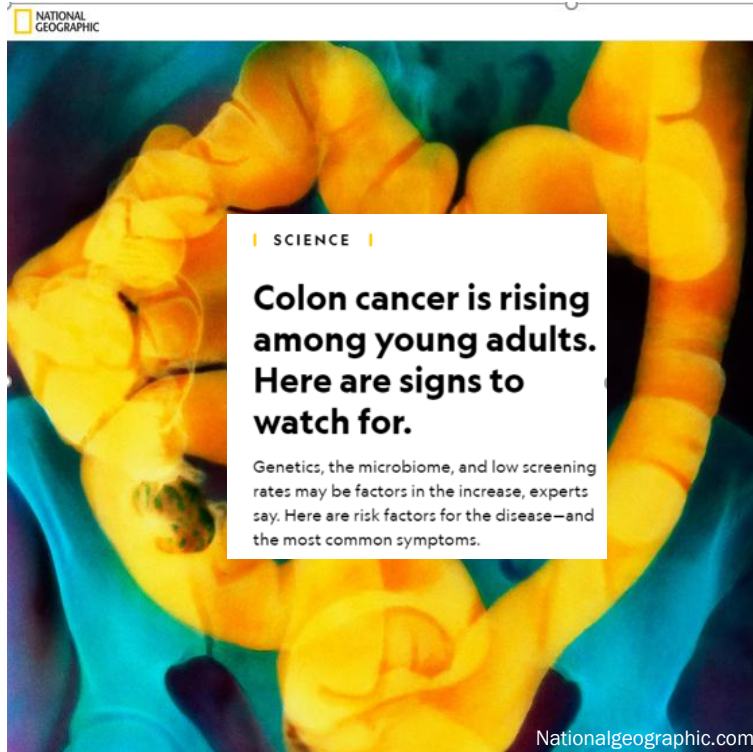


- WHO? First year medical students
- WHEN? Pre-clerkship 'classroom learning'
- WHY? Captive/engaged audience, ~100 Gen Z'ers

Why Engage Medical Students in the Fight Against Early-Age Onset CRC?


- 1. Rising incidence in younger adults** – Awareness/symptom recognition are key to early detection
- 2. Early recognition saves lives** - Educating future clinicians to recognize red-flag signs can reduce diagnostic delays and improve survival outcomes
- 3. Shift public and professional perception** - Help clinicians consider CRC in younger symptomatic patients
- 4. Cultivate advocacy and prevention mindset** - Medical students are the next generation of healthcare providers who can champion timely screening, patient education, and family history awareness
- 5. Enhance interest in research and innovation**

Early-Age Onset Colorectal Cancer (EAO-CRC) Increasing in the U.S. and Globally (~1-2% per year)



EAO-CRC Symptoms and Key Facts

Red-flag signs and symptoms for earlier diagnosis of early-onset colorectal cancer

Cassandra D. L. Fritz, MD, MPHS,^{1,†} Ebunoluwa E. Otegbeye , MD, MPHS,^{2,†} Xiaoyu Zong , MPH,³ Joshua Demb, PhD, MPH,^{4,5} Katelin B. Nickel , MPH,⁶ Margaret A. Olsen, PhD, MPH,^{3,6} Matthew Mutch, MD,⁷ Nicholas O. Davidson, MD, DSc,¹ Samir Gupta, MD, MSCS,^{4,5,8,9,5} Yin Cao , ScD, MPH^{1,3,10,4,5}



Abdominal pain



Rectal bleeding



Iron deficiency anemia



Change in bowel habits

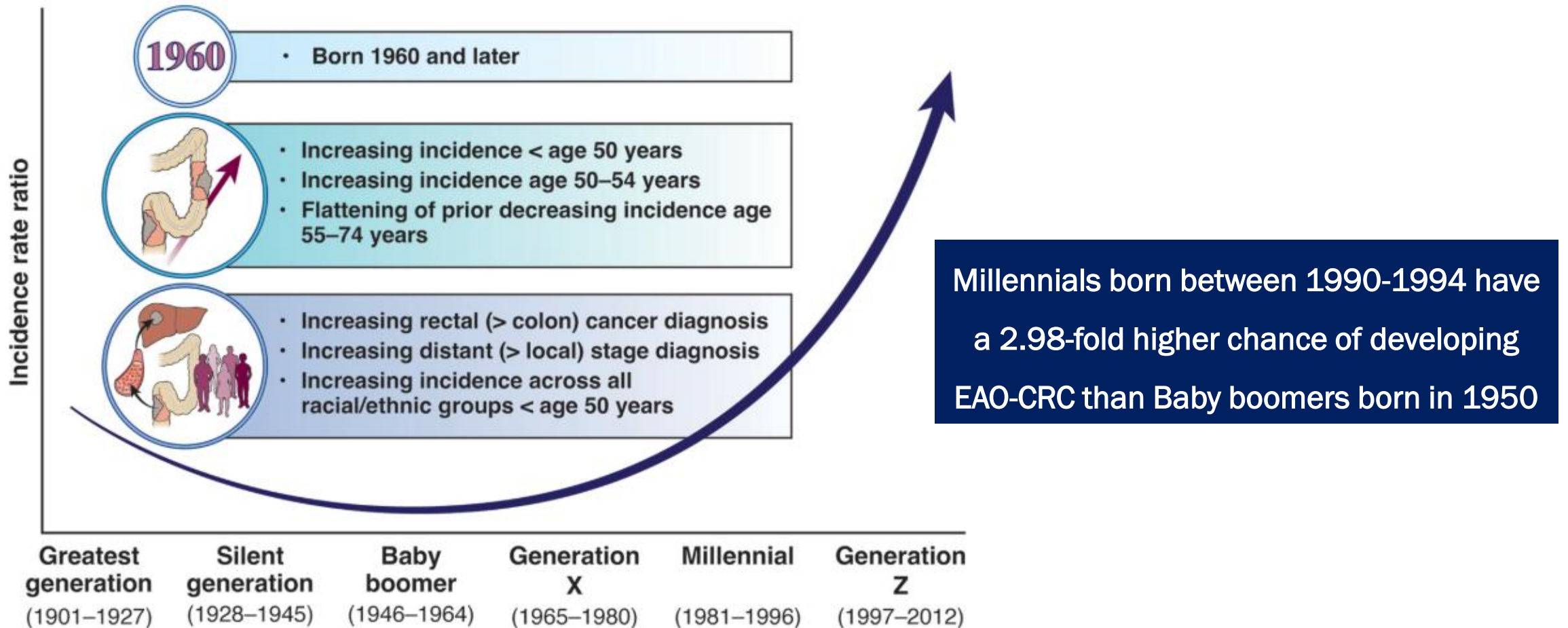
Age < 50

Red Flag Signs (3 mos – 2 y before index CRC)

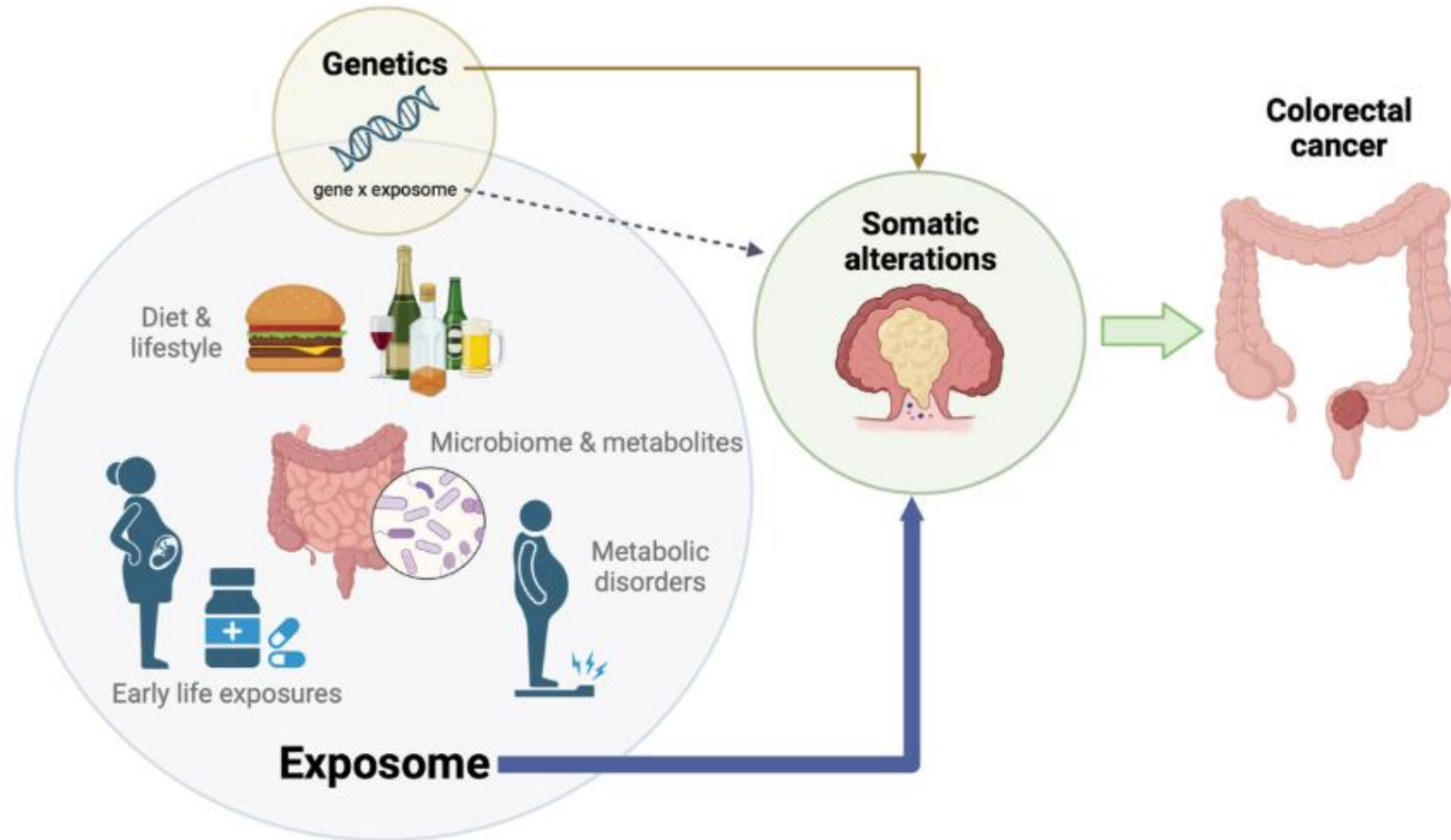
# signs/symptoms	Risk of EAO-CRC (OR)
1	1.9 x
2	3.6 x
3	6.5 x

- Deadliest cancer in young men and 2nd deadliest in young women
- Predominantly **left colon and rectal distribution**; higher proportion of mucinous/signet ring histologic subtype
- Often **diagnosed at more advanced stages**
- Young pts experience **delays in diagnosis** due a personal or provider failure to associate red-flag symptoms with an ↑ risk of CRC
- Young patients who present with **red flag symptoms** should be **referred for further evaluation** (e.g., colonoscopy or referral to GI).

Early-Age Onset CRC: Birth Cohort Effect



EAO-CRC Potential Causes/Mechanisms



Can the ACS NCCRT Scale This Idea For All Medical Schools?

Growing its impact from a successful pilot
to a widespread educational product
that can effect deep and meaningful change
for a greater number of students and schools



ACS NCCRT EAO-CRC Educational Toolkit

Slide Set With Notes/References



EAO-CRC Symptoms and Key Facts

Red-flag signs and symptoms for earlier diagnosis of early-onset colorectal cancer

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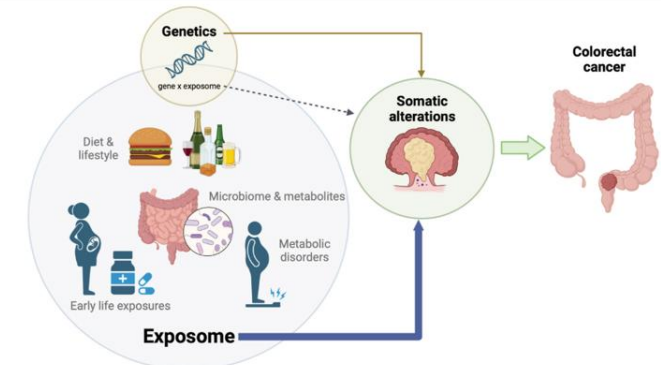
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Fritz CDL, et al. JNCI 2023; 115(8):909-916. <https://doi.org/10.1093/jnci/djad068>; <https://colorectalcaner.org/resources-support/community-support/young-onset-support/young-onset-crc-facts>

Early-onset colorectal cancer (EAO-CRC) has seen an alarming rise worldwide over the past two decades. The reason for this global trend is poorly understood. EAO-CRC appears to have its own **unique clinical and molecular features**: EAO-CRC tends to have a predominantly **left colonic and rectal distribution**, a **higher proportion of mucinous and signet ring histologic subtype**, poorer cell differentiation, a higher pathologic grade, and a **more advanced stage at presentation**. **Half of EAO-CRC pts are younger than age 45 years** and will not be detected via screening. Therefore, **most EAO-CRC pts will continue to be diagnosed after developing symptoms**. **EAO-CRC pts, are more likely to experience diagnostic delays (compared to older pts), indicating a lack of awareness of red-flag signs and symptoms**. Younger patients with CRC are more often diagnosed at



EAO-CRC Potential Causes/Mechanisms



Gupta S et al. Clin Gastroenterol Hepatol 2024; 22(3):455 - 469.e7

Based on current evidence, we postulate **exposomal** factors, possibly mediated through changes in the microbiome, play a **larger role than germline genetics in driving somatic alterations and CRC risk**, and that gene-by-exposome interactions likely modify somatic alterations and cancer development

- **Exposomal factors** such as diet and lifestyle (eg, alcohol, Western diet), early-life exposures (eg, mode of delivery, antibiotics), metabolic disorders (eg, obesity, diabetes), and gut microbiome and metabolites are believed to initiate and/or promote somatic alterations leading to CRC.
- **Germline genetic factors** such as high-penetrance pathogenic variants (eg, mismatch repair genes in Lynch syndrome) and moderate- to low-penetrance variants (eg, single nucleotide polymorphisms) also drive somatic alterations and carcinogenesis.

ACS NCCRT EAO-CRC Educational Toolkit

Learning Objectives

1. Understand the epidemiologic trends and distinct clinical, histopathologic, and molecular characteristics of early-age onset colorectal cancer (EAO-CRC).
2. Recognize the common presenting symptoms and red-flag warning signs of EAO-CRC, and explain how delayed recognition contributes to diagnosis at more advanced stages.

ACS NCCRT EAO-CRC Educational Toolkit

Questions/Assessment

Application/Clinical Scenario Question

A 30-year-old man presents with new-onset rectal bleeding and a change in bowel habits for the past two months. Based on current evidence regarding early-age onset colorectal cancer, what should be the clinician's next step and why?

- A. Wait until he is 45 years old to initiate colorectal cancer screening
- B. Colonoscopy or referral to gastroenterology**
- C. Reassure the patient that his symptoms are likely due to hemorrhoids
- D. Schedule a follow-up visit in 6 months to see if the symptoms persist

Correct Answer: B

Prompt diagnostic evaluation (e.g., colonoscopy) should be performed rather than attributing symptoms to benign causes as these red-flag signs are associated with a significantly increased risk of EAO-CRC and early detection can improve outcomes.

Engaging Young Trainees in Virginia

- UVA Medical School Curriculum
- March EAO-CRC Social Media Campaign
 - UVA GI fellowship, UVA Internal Medicine Residency, UVA Health and UVA Cancer Center Instagram posts
- Virginia Colorectal Cancer Roundtable (VCCRT) Trainee Corner
 - Internal Medicine Residents/GI fellows from UVA, Virginia Tech, VCU, Inova
 - Presentations at quarterly meetings
 - Statewide March 2026 EAO-CRC Campaign



VCCRT
Virginia Colorectal Cancer Roundtable



Education is the most powerful
weapon which you can use to
change the world

— *Nelson Mandela*



Thank You

***GLOBAL EARLY ONSET
COLORECTAL CANCER THINK
TANK (GEOCRCTT)***

***Andrea (Andi) Dwyer, MPH
Advisor Fight CRC
Medical Advisory Board Member***

No Disclosures

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#GEOCRCTT

FIGHT CRC

Sponsors and Partners

FIGHT CRC^{trad}



Bowel Cancer
AUSTRALIA



DIGESTIVE CANCERS
EUROPE



**GLOBAL
COLON CANCER
ASSOCIATION**



**COLORECTAL
CANCER
CANADA**



Bowel Cancer^{UK}
Beating bowel cancer together

GEOCRCTT RECAP

18 Countries
71 Attendees
Barcelona June, 2025



#GEOCRCTT

F!GHT CRC

GEOCRCTT RECAP



A conference

 **IT WAS:**

An invitation to
participate in a
2-year global
initiative
*(beginning with a
conference)*

 **GOAL:**

Develop and begin to
execute a unified global
research strategy
addressing the rise of
early onset colorectal
cancer

Objectives

- 1. Research Community:** Develop connections and unity among the global research community working on EOCRC.
- 2. Understand Drivers:** Deepen our understanding of the suspected etiologic drivers of EOCRC based on research in each of the represented regions.
- 3. Launch Initiative:** Launch an initiative and post-conference workgroups to determine a way forward to support this work. Create workgroup charters and identify members.

IN SCOPE:

Etiologic Drivers of EOCRC

- Lifestyle and Environmental Factors
- Biological Factors
- Molecular Pathways
- Life Course & Exposures

OUT OF SCOPE:

- Health System Interventions
- Screening Programs
- Insurance Coverage
- Screening Guidelines

Agenda At a Glance

JUNE 18, 16:30-23:00	
16:30	Welcome
16:40	Getting to know each other
16:55	Tonight, tomorrow, and beyond
17:05	International advocacy groups
18:05	The patient perspective
19:00	Dinner
21:00	Cocktails

#GEOCRCTT

JUNE 19, 8:00-17:00	
9:00	Introduction
9:20	Connecting as global partners
9:45	Global perspective: Most recent data
11:00	Regional perspective: Etiologic drivers from around the globe, Pt 1.
12:05	Lunch
12:55	Regional perspective: Etiologic drivers from around the globe, Pt 2.
13:30	Etiology drivers review
14:00	Our Workgroups
14:50	Workgroup breakouts
16:30	Moving forward

Themes Explored & the Need to Design and Build Global Perspective:

The rise in early-onset CRC is a global phenomenon, and understanding its causes and solutions requires looking beyond our own borders. *Engaging in international research helps us uncover patterns, risk factors, and disparities that would remain invisible in a single-country study.*

Experts confirmed:

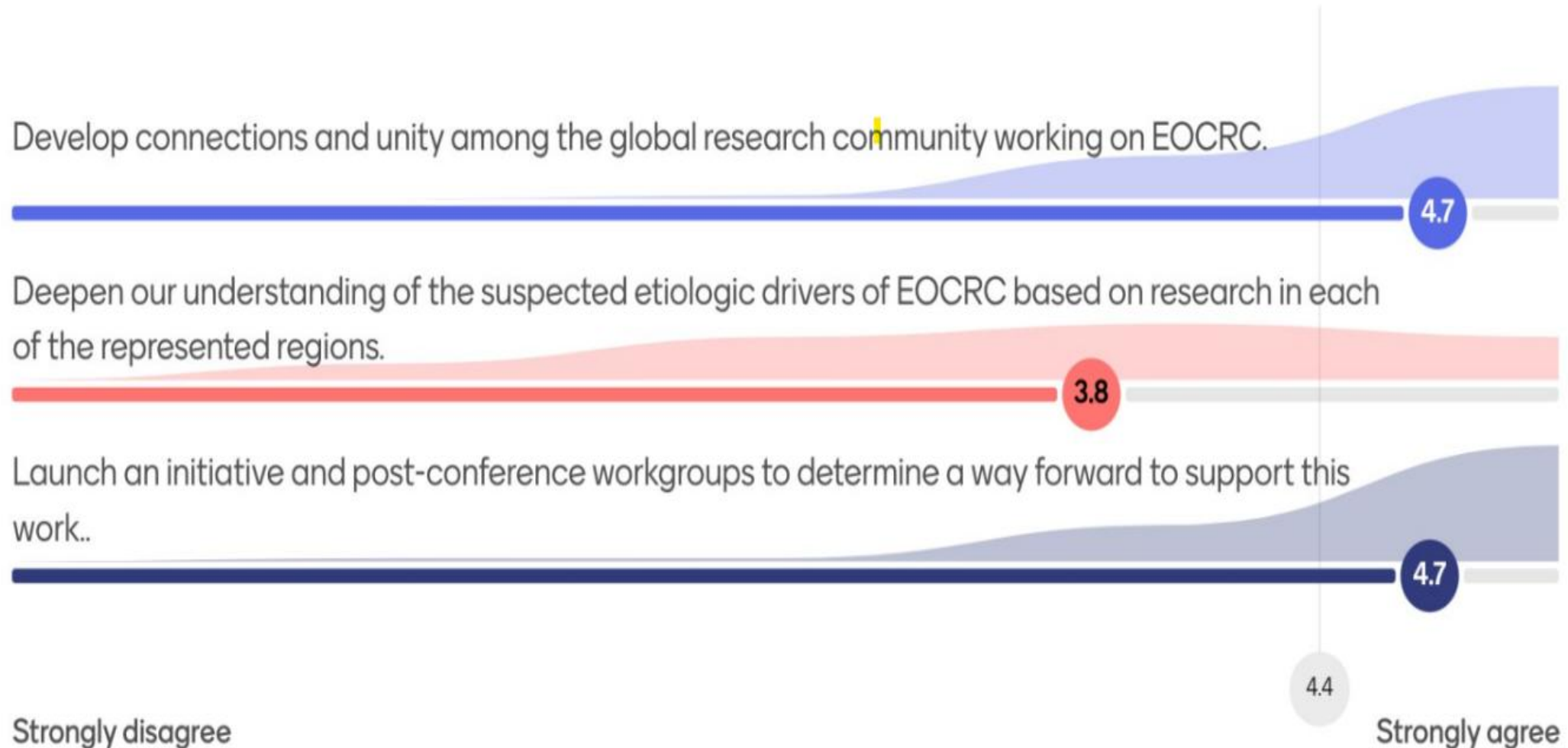
- EOCRC incidence is rising in countries like the U.S., Australia, Canada, Germany, and more — even as overall CRC rates fall.
- Mortality rates for young patients are rising, proving this is a true increase in disease, not just improved detection.
- Patterns do not vary by sex, making hormonal causes unlikely.
- The disease primarily affects the rectum and sigmoid colon, with many patients diagnosed at later stages.

Participants discussed factors requiring urgent study:

- Dramatic shifts in diet and higher processed food consumption.
- Circadian rhythm disruptions from night shifts or poor sleep.
- Emerging evidence of microbiome changes.
- Genetic predispositions and potential novel mutations.
- Regional disparities suggesting unique local drivers.

Post-Event Feedback

We successfully started to...



ACROSS WORKGROUP

Scientific Research Themes	Epi Tools	Biobanking	Risk Stratification
<ul style="list-style-type: none"> • Research topic groups drafted from member input • Member poll to identify top priority areas • Each group to develop a consensus paper (evidence, gaps, recommendations) • Next meeting: confirm assignments, timeline, and support 	<ul style="list-style-type: none"> • Launch of two subgroups: <ol style="list-style-type: none"> 1. Global Data Repository <ul style="list-style-type: none"> • Map existing datasets; does not store new data • Detail access processes and limitations • May link to publications and user feedback • Potential scoping review to identify data gaps 2. Common Data Elements <ul style="list-style-type: none"> • Build on existing draft survey modules (Fight CRC collaborators) • Identify priority domains and knowledge gaps • Promote standardization for cross-study analysis • Dynamic resource updated as the field advances 	<ul style="list-style-type: none"> • Survey circulated to identify existing CRC biobanks and available data • Gathering global input to map resources and collaboration opportunities • Systematic review registered on PROSPERO to catalogue EOCRC biobanks 	<ul style="list-style-type: none"> • Member survey launched to shape priorities and collaborations • Focus on three domains: <ol style="list-style-type: none"> 1. Identifying increased risk (symptomatic & asymptomatic) 2. Risk-informed intervention strategies 3. Awareness & education for public and providers • Responses will guide next steps and subgroup formation

Upcoming Opportunities to Contribute:

Need Input:

Biobanking



Epi Tool Collections (contact Andi details)

Relaunch of Patient Facing Global Survey



Upcoming Gathering Times Join Us:

AACR Meeting – December 10 to 13 2025 | Montreal, QC, Canada

GI ASCO Meeting January 8 to 10, 2026

ESMO Munich July 1 to 4, 2026

Full Member Reconvening in Summer of 2027 (Date TBD)



Thank You

[CONTACT](#) KIRAN ILAGAN: KIRAN@FIGHTCRC.ORG To Join The GEOCR TT

FIGHTCRC



Questions