WEO

The voice of world endoscopy

Tandem Talk: Integrated screening approaches in CRC Screening populations

are we ready for an add on gastroscopy in primary colonoscopy screening?

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ESGE Quality Improvement Committee
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Disclosures

No conflict of interest to declare.

Are we ready for add-on gastroscopy?

…No

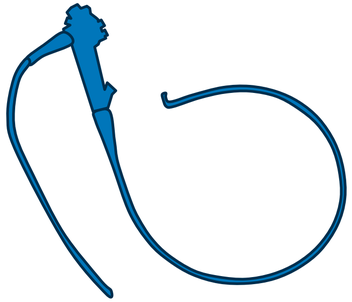
…Not yet

Why?

CRC Screening in Austria

Current practice: colonoscopy for every individual over the age of 50 years with average risk for CRC and separate recommendations for

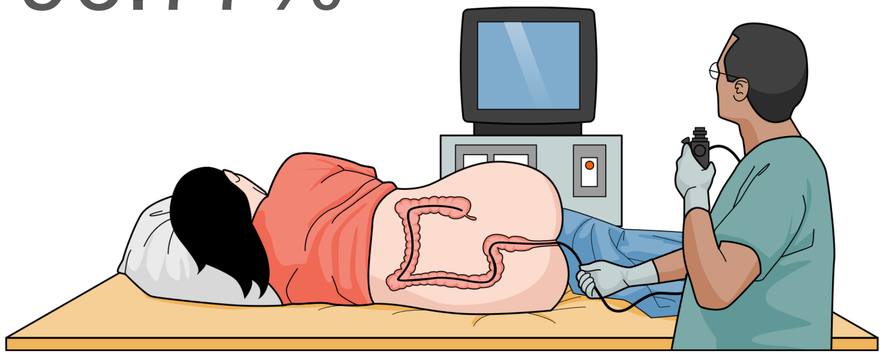
- individuals with predisposing conditions
- individuals with a family history of CRC



Primary Colonoscopy

Sedation rate:

96.77%



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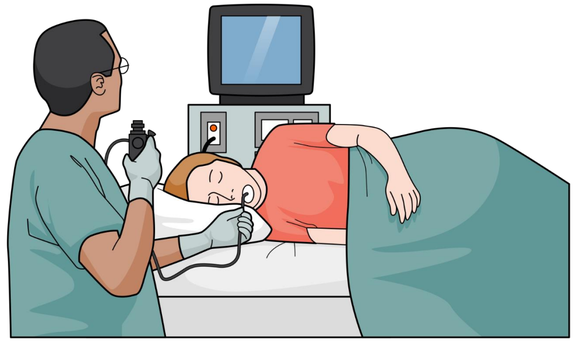

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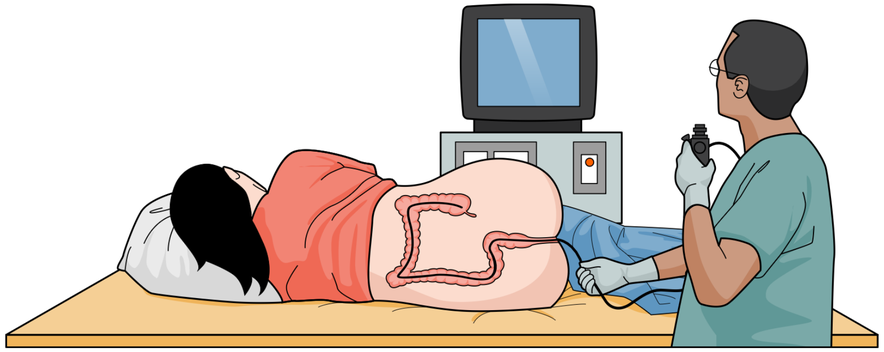
unselected population



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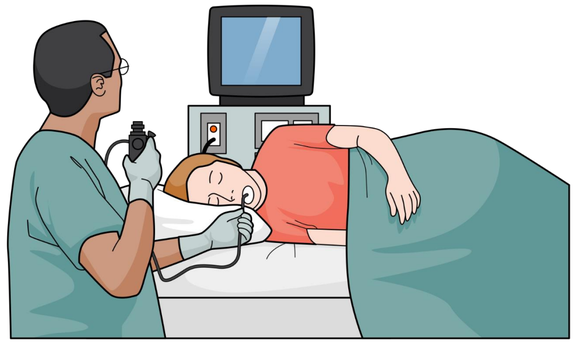

unselected population

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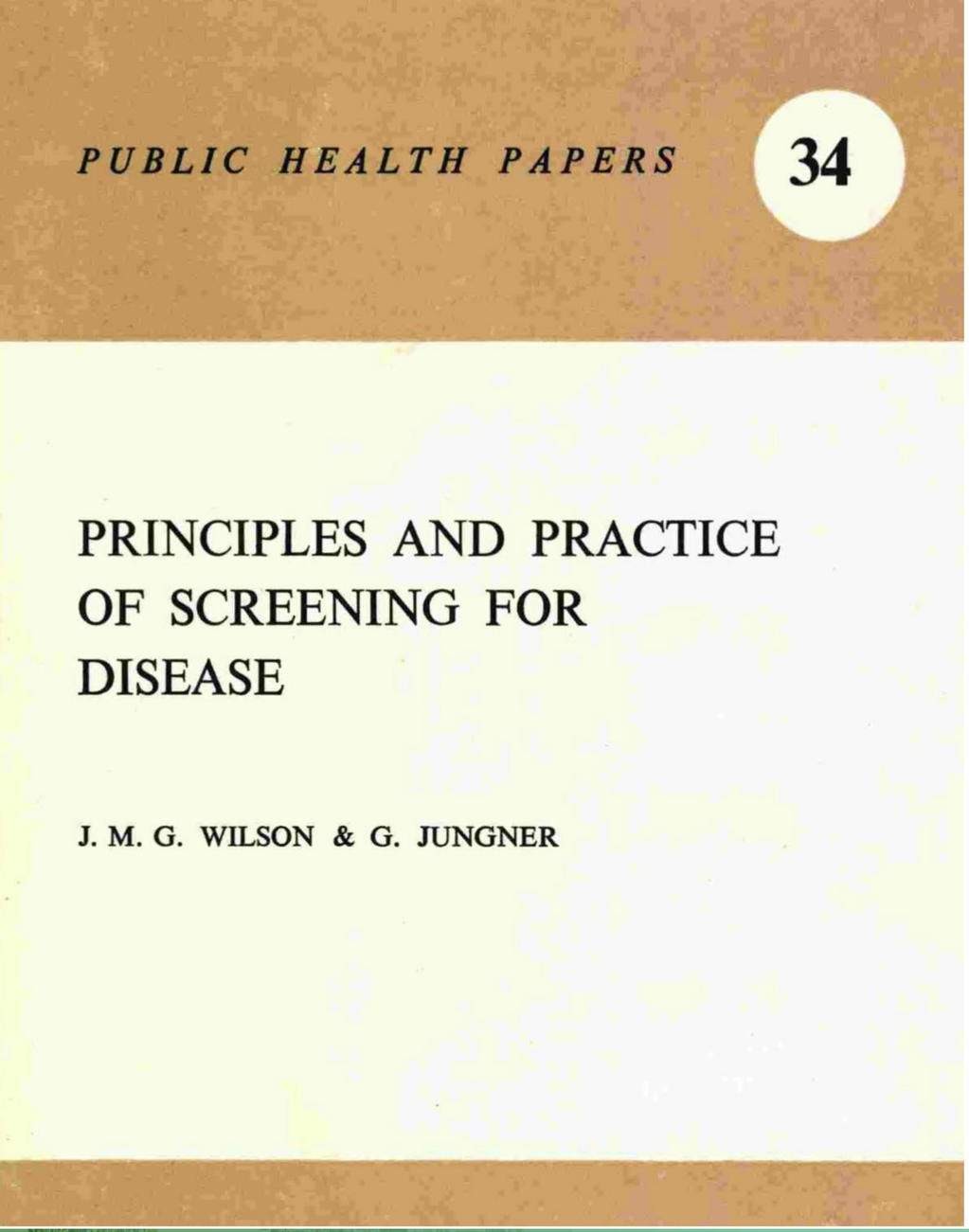
Prevalence of

- Barrett’s esophagus: 3%
- HP Gastritis: 19%
- Esophageal cancer: 0.015%
- Gastric cancer: 0.08%

Wernly et al. ÖGGH Jahrestagung, 2024
Statistik Austria, 2022



(1) The condition sought should be an important health problem.

(2) There should be an accepted treatment for patients with recognized disease.

(3) Facilities for diagnosis and treatment should be available.

(4) There should be a recognizable latent or early symptomatic stage.

(5) There should be a suitable test or examination.

(6) The test should be acceptable to the population.

(7) The natural history of the condition, including development from latent to declared disease, should be adequately understood.

(8) There should be an agreed policy on whom to treat as patients.

(9) The cost of case-finding (including diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole.

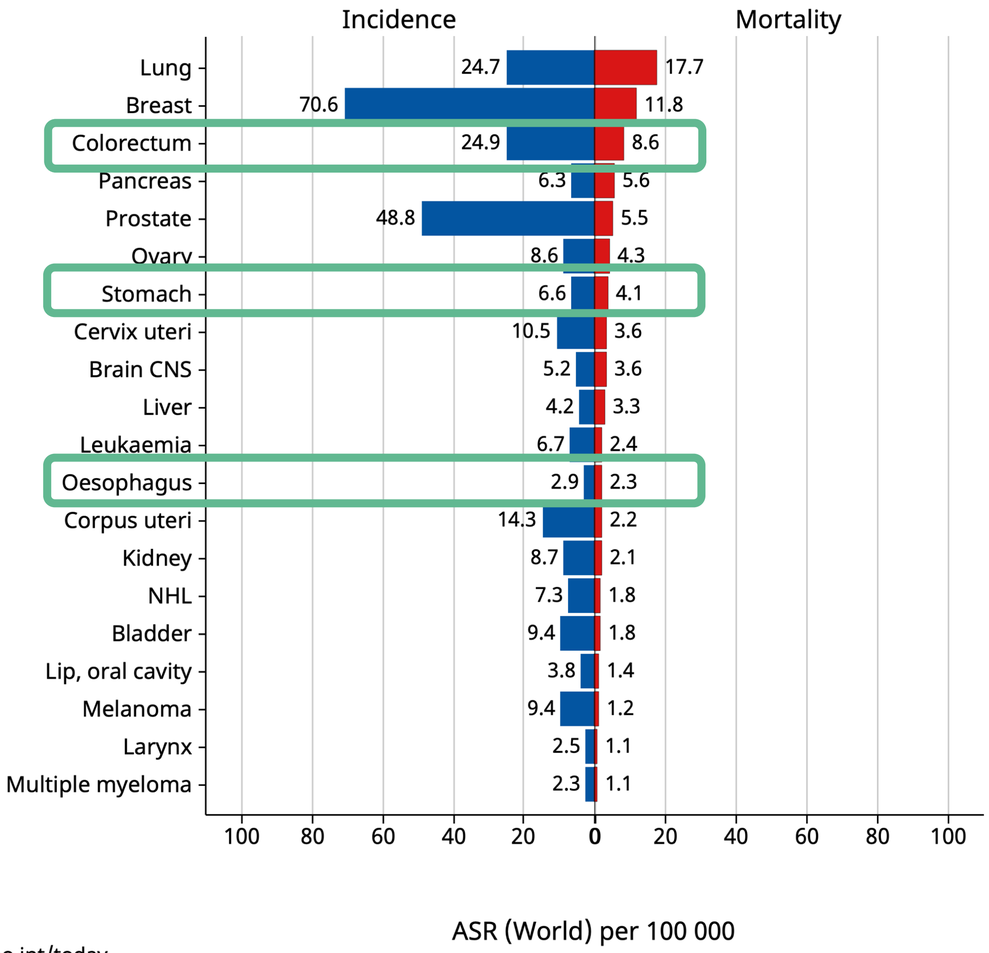
(10) Case-finding should be a continuing process and not a "once and for all" project.

Wilson & Jungner, World Health Organization, 1968

A matter of risk

Very highly developed countries

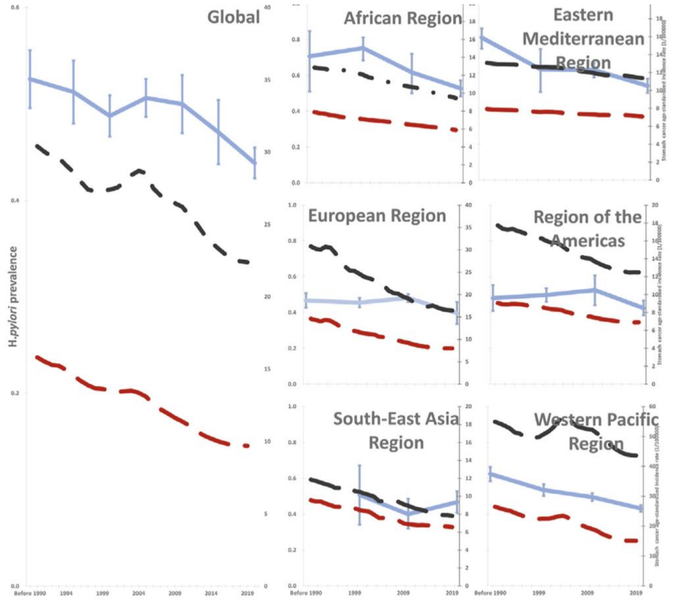
- Lifetime risk for gastric or esophageal cancer = 2.88%
- Lifetime risk of CRC = 5.35%



Cancer TODAY | IARC - https://gco.iarc.who.int/today
Data version : Globocan 2022 (version 1.1)

International Agency for Research on Cancer
World Health Organization

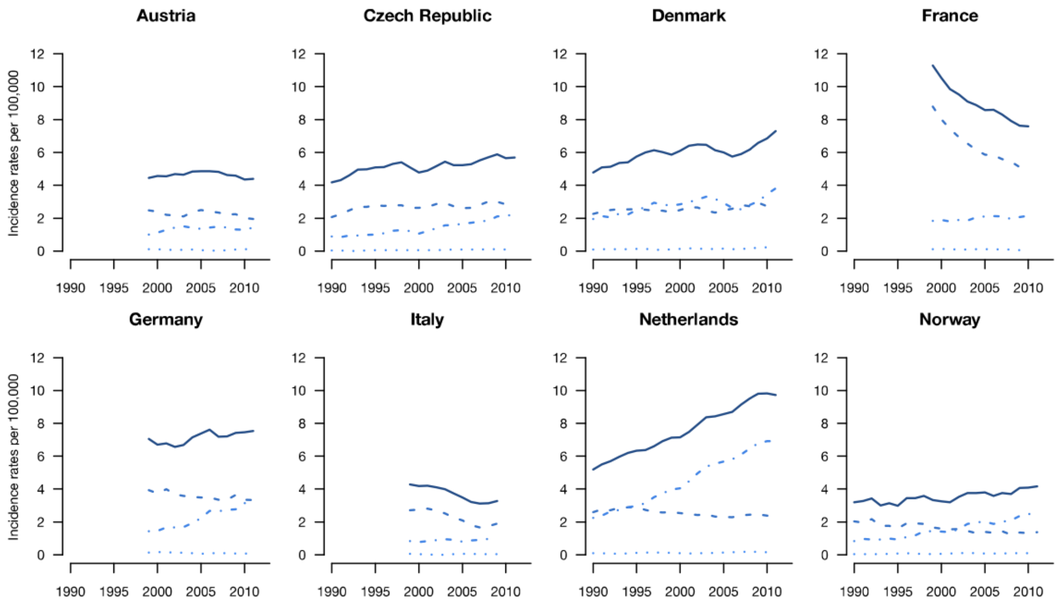
Trends in incidence of uGI disease



Estimated adults HP prevalence

Gastric cancer incidence rate (male)

Gastric cancer incidence rate (female)



All histologies

Squamous cell carcinoma

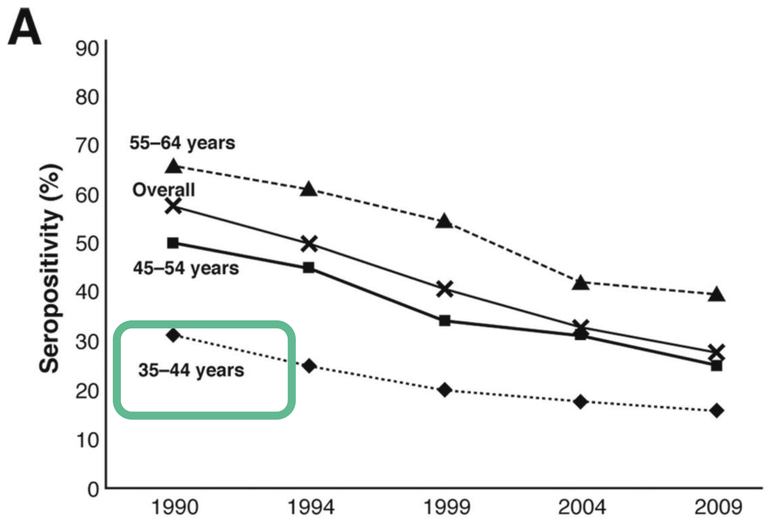
Adenocarcinoma

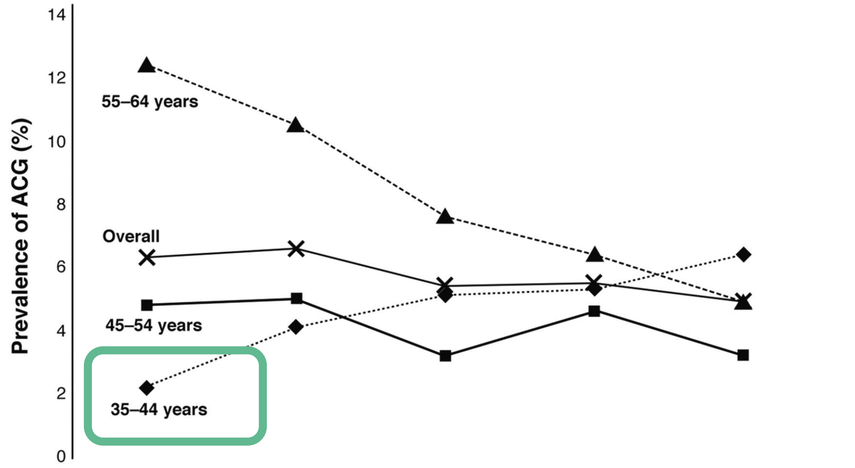
Other specified carcinoma

Chen, Yi-Chu et al.
Gastroenterology, 2023 Volume 166, Issue 4, 605 - 619

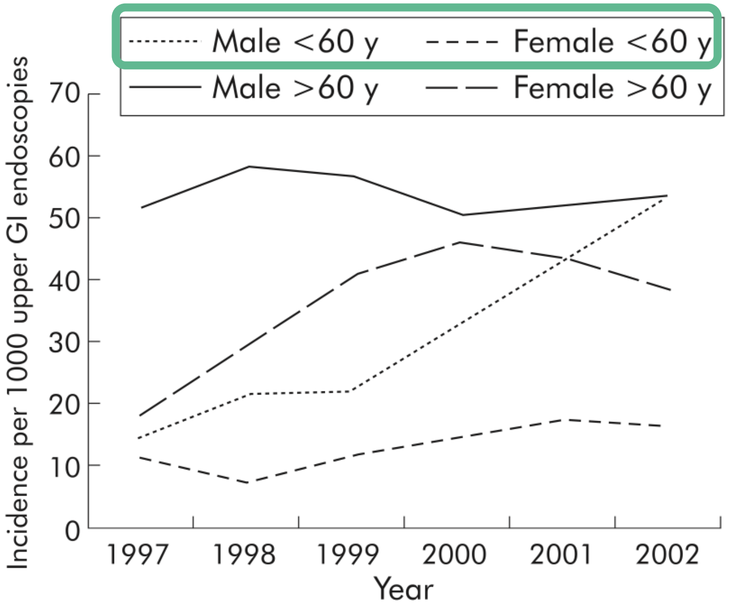
Santucci et al. Cancer Epidemiology, Volume 87, 2023, 102486

Trends in incidence of uGI premalignant conditions





Age group	1990 Positive/all (%)	1994 Positive/all (%)	1999 Positive/all (%)	2004 Positive/all (%)	2009 Positive/all (%)
35–44 years	8/367 (2.2)	15/367 (4.1)	15/294 (5.1)	17/321 (5.3)	19/297 (6.4)
45–54 years	18/377 (4.8)	20/400 (5.0)	11/344 (3.2)	16/350 (4.6)	11/311 (3.5)
55–64 years	43/348 (12.4)	42/400 (10.5)	28/368 (7.6)	25/393 (6.4)	17/346 (4.9)
Overall	69/1092 (6.3)	77/1167 (6.6)	52/1006 (5.4)	58/1064 (5.5)	47/954 (4.9)



Seropositivity of H. pylori

Prevalence of CAG (Pepsinogen I)

Incidence of Barrett's esophagus

Song, Huan et al. Clinical Gastroenterology and Hepatology, 2015

van Soest EM, et al. Gut, 2005.

Mass screening approach

- High yield
- Less complex

No randomized trials

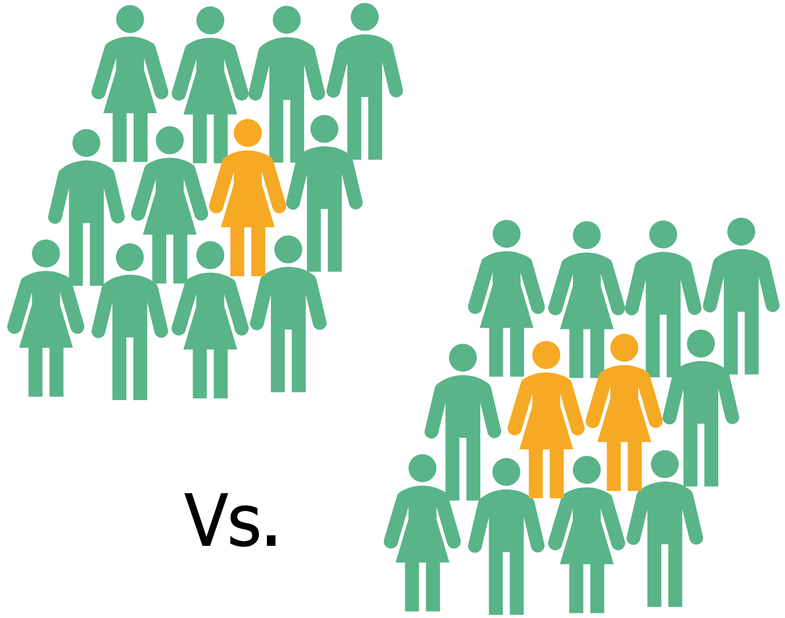
High-risk approach

- Better cost effectiveness
- Less harm

One size does not fit all?

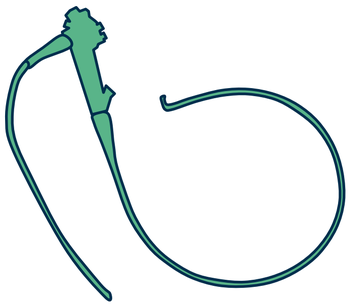
Prevalence of BE in colonoscopy screening participants

- GERD: 8.3%
- No GERD: 5.6%

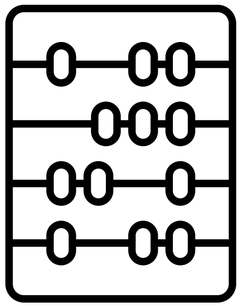


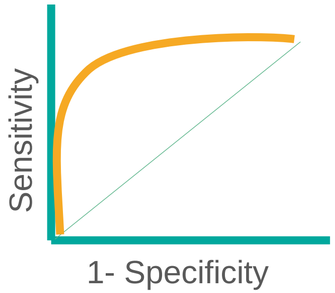
Vs.

Rex DK, et al. Gastroenterology, 2003



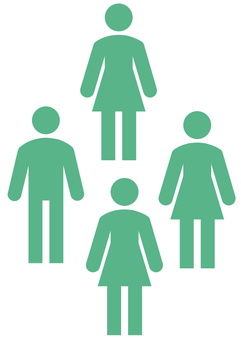
Demographics
Symptoms
Family hx
Polygenic risk scores
Liquid biopsy
…





10-year cancer risk probability

colorectal	1.8%
esophageal	0.4%
gastric	0.2%



10-year cancer risk probability

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uGI endoscopy

Risk prediction of upper GI conditions based on demographic risk factors

Model	Outcome – Western populations				
	Esophageal AC	Esophageal SCC	Barrett's esophagus	Chronic atrophic gastritis	Gastric cancer
Kunzmann	✓				
Qcancer®	✓	✓			✓
K-ECAN	✓				
M-BERET			✓		
HUNT	✓		✓		
CanPredict®	✓	✓			

Hippisley-Cox et al. The Lancet Regional Health – Europe, 2023

Kunzmann, Andrew T. et al. Clinical Gastroenterology and Hepatology, 2018

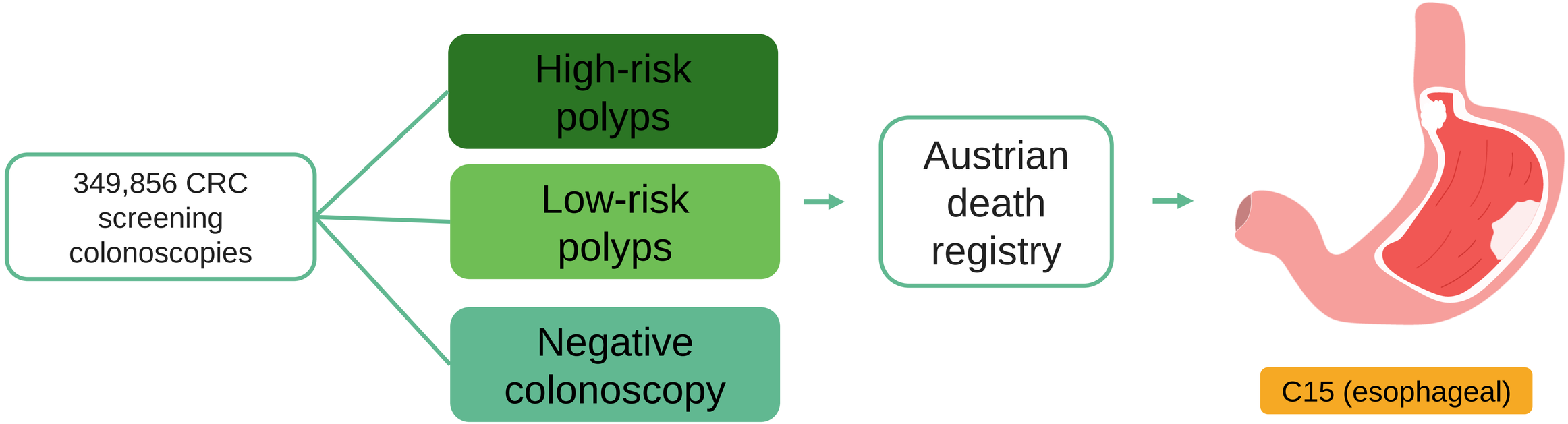
Hippisley-Cox J et al. BMJ Open 2015

Rubenstein, Joel H. et al. Gastroenterology, 2013

Rubenstein JH, et al. Am J Gastroenterol. 2013

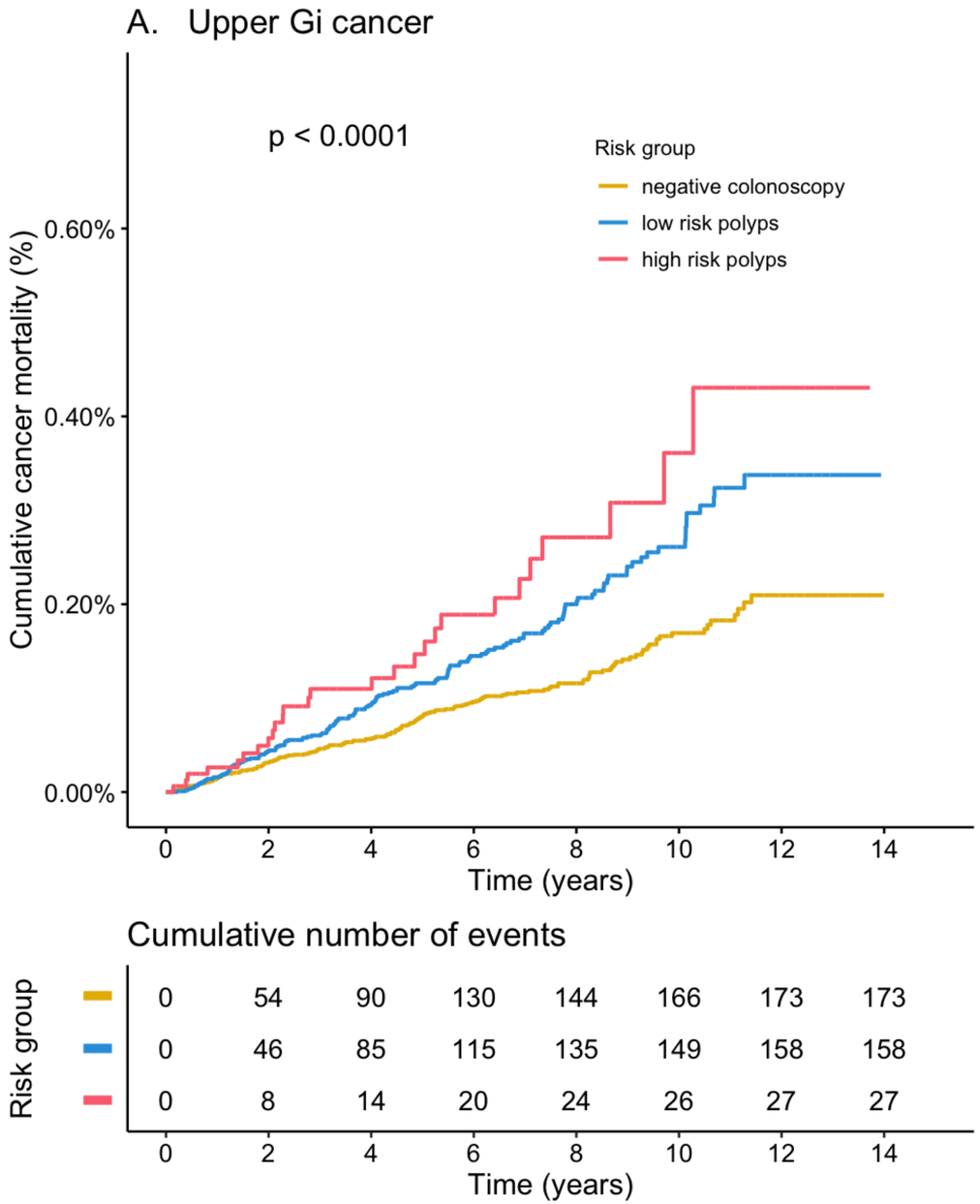
Xie SH et al. Am J Gastroenterol. 2018

Upper GI mortality in Austrian CRC screening participants



Zessner-Spitzenberg J et al. Endosc Int Open, 2024

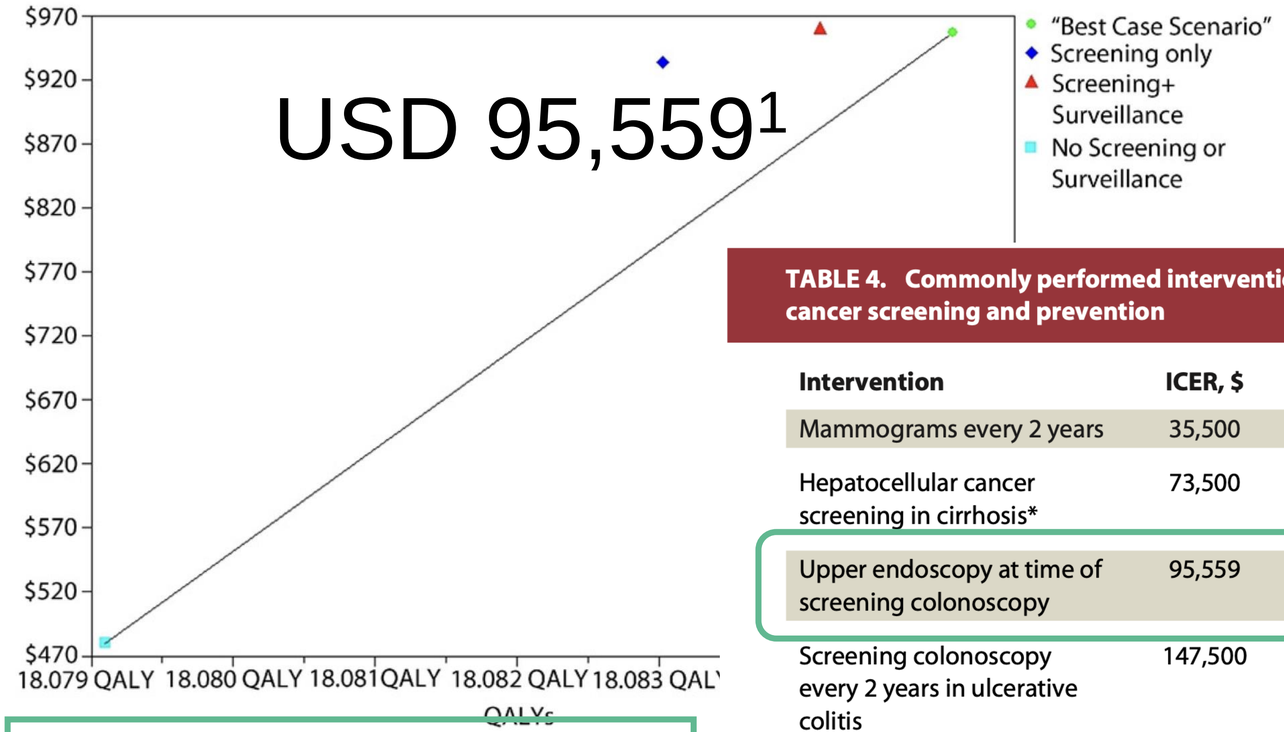
Upper GI mortality in Austrian CRC screening participants



Zessner-Spitzenberg J et al. Endosc Int Open, 2024

Integrated Screening - Costs

Stand-alone upper GI screening is not cost-effective in low-risk countries – but might be if combined with screening colonoscopy



Europe (GC, 10 y): ICER of €15,407/QALY[2]

TABLE 4. Commonly performed interventions for cancer screening and prevention

Intervention	ICER, $	Reference
Mammograms every 2 years	35,500	(118)
Hepatocellular cancer screening in cirrhosis*	73,500	(119)
Upper endoscopy at time of screening colonoscopy	95,559	
Screening colonoscopy every 2 years in ulcerative colitis	147,500	(120)
Human papilloma virus vaccination for girls	152,700	(121)

ICER, Incremental cost-effectiveness ratio.
*Using semiannual US and alpha-fetoprotein level testing.

1. Gupta N, et al. Gastrointest Endosc. 2011
2. Areia M, et al. United European Gastroenterol J. 2018

Discussion

Questions need to be answered before upper GI endoscopy screening can be added to primary colonoscopy

- Mass screening vs risk-adaptive screening?
- Risk factors for (pre)malignant uGI conditions?
- (Cost)Effectiveness of uGI endoscopy in screening populations?

Thank you!

WEO
World Endoscopy Organization

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