

What is the impact of population screening for CRC?

Monique van Leerdam

Gastroenterologist

Netherlands Cancer Institute Antoni van Leeuwenhoek

Amsterdam

The Netherlands

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Conflicts of interest

- None

CRC incidence

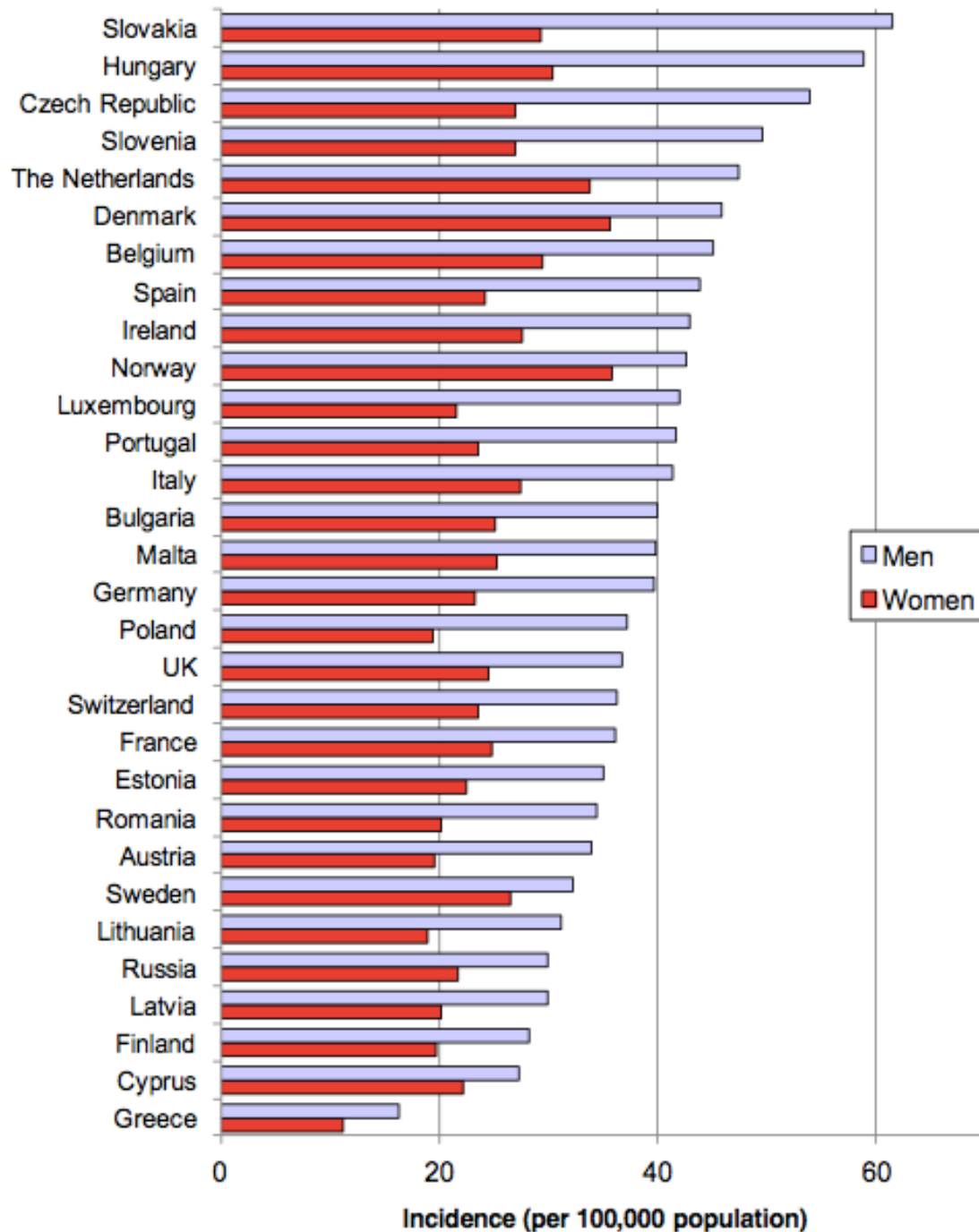
- CRC is the third most common cancer in Europe
342,000 new cases in 2012 (13% of all cancers)
- Overall incidence rate: 68 per 100,000 population
- Incidence in men: 79 per 100,000
- Incidence in women: 54 per 100,000

White book 2014, Ferlay Eur J Cancer 2013



CRC Incidence 2012

Five-fold
variation
in IR



CRC mortality

- CRC is the second most common cause of cancer related death in Europe
- 215,000 cases in 2012 (12-13% of all cancer deaths)

White book 2014, Ferlay Eur J Cancer 2013



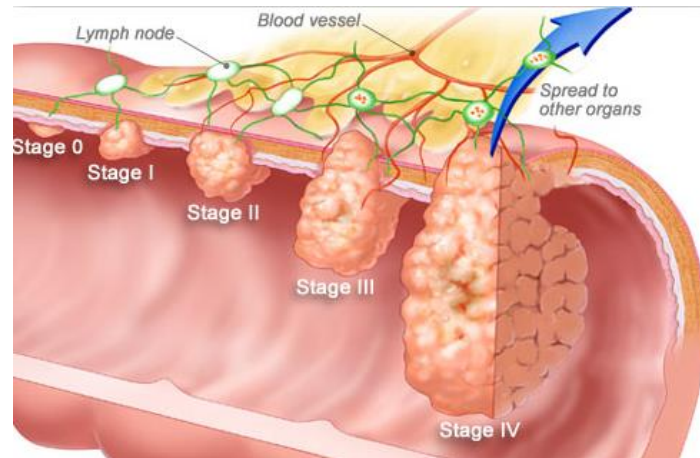
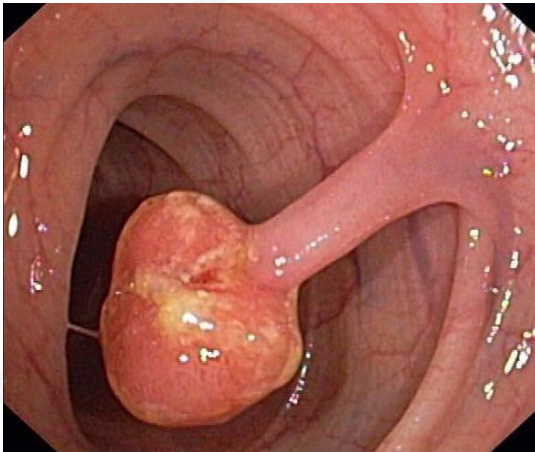
CRC screening



CRC screening

CRC is very suitable for screening

- Detectable and treatable pre-malignant lesions (adenomas)
- Early detection of CRC improves the prognosis
- Benefits outweigh the potential harms



Cost-effectiveness of CRC screening

- CRC screening is cost-effective compared to no screening (cost-saving)
- No single strategy found to be the most effective or preferred for a given willingness to pay per LYG
- Reappraisal of CEA of CRC screening over time in light of rising treatment costs

Cost-effective Screening methods

FOBT

Chemical test (gFOBT)

Immunochemical test (iFOBT)

~~Stool DNA tests~~



Endoscopy

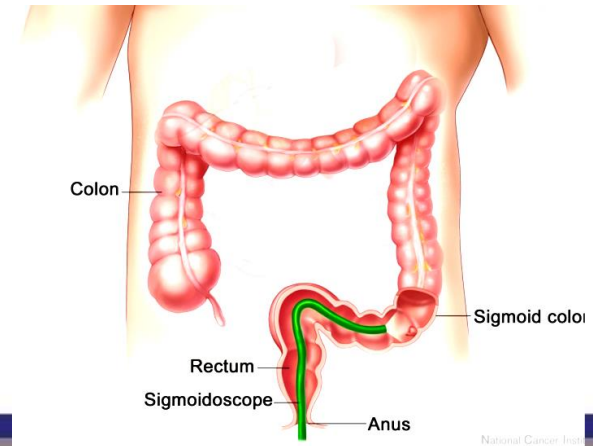
Sigmoidoscopy

Colonoscopy



~~CTC~~

~~Capsule endoscopy~~



EU Counsel recommendation on cancer screening 2003

The Code against Cancer recommends:

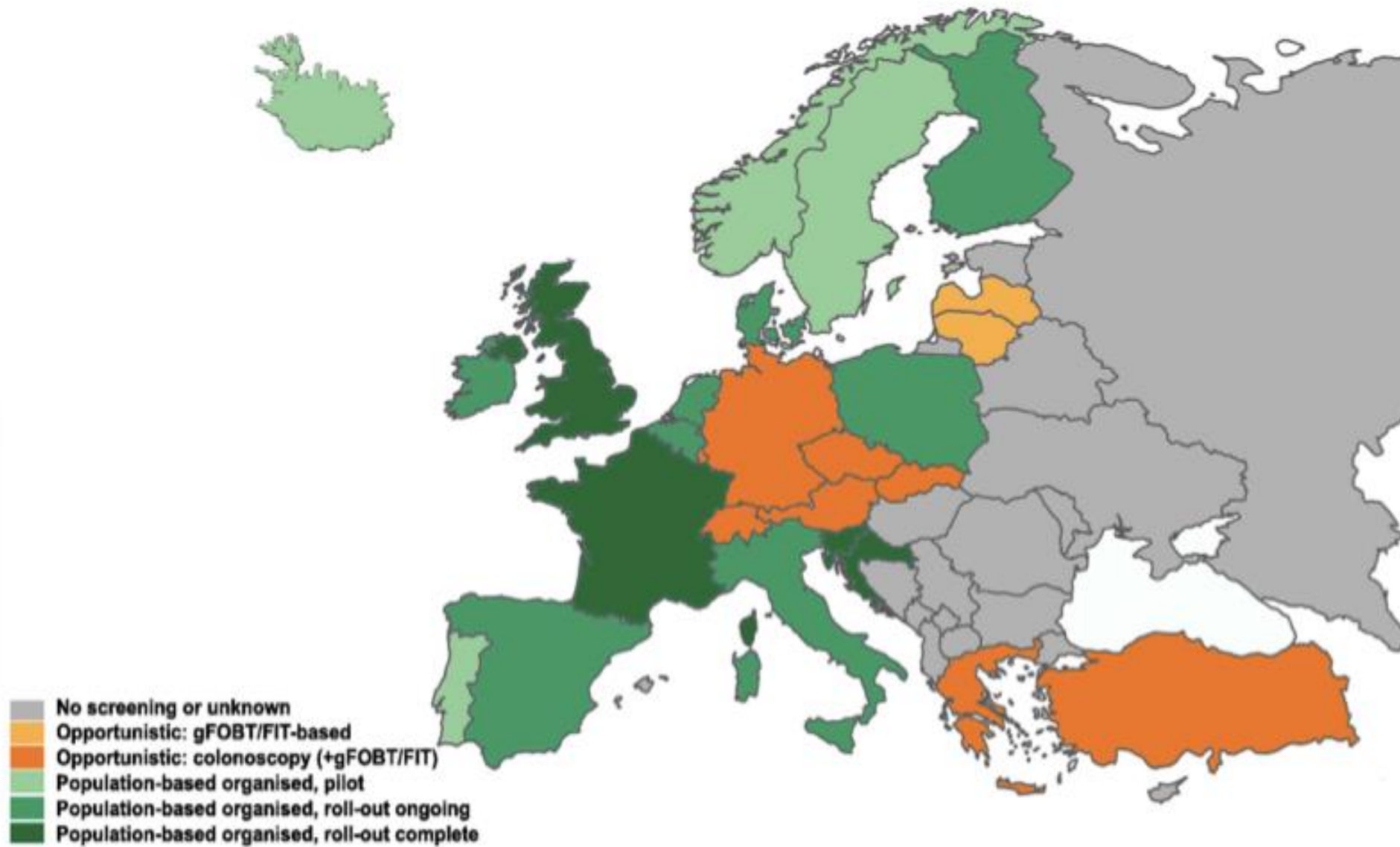
- **faecal occult blood screening** for colorectal cancer in men and women aged 50-74



EUR-Lex

Access to European Union law





Schreuders Gut 2015 (WEO),

CRC screening

Making screening effective depends on several factors;

- Solid organisation/ efficacy of the program
- Uptake
- Quality assurance on all levels

Impact of CRC screening



CRC screening; proven effect on mortality



Cochrane
Library

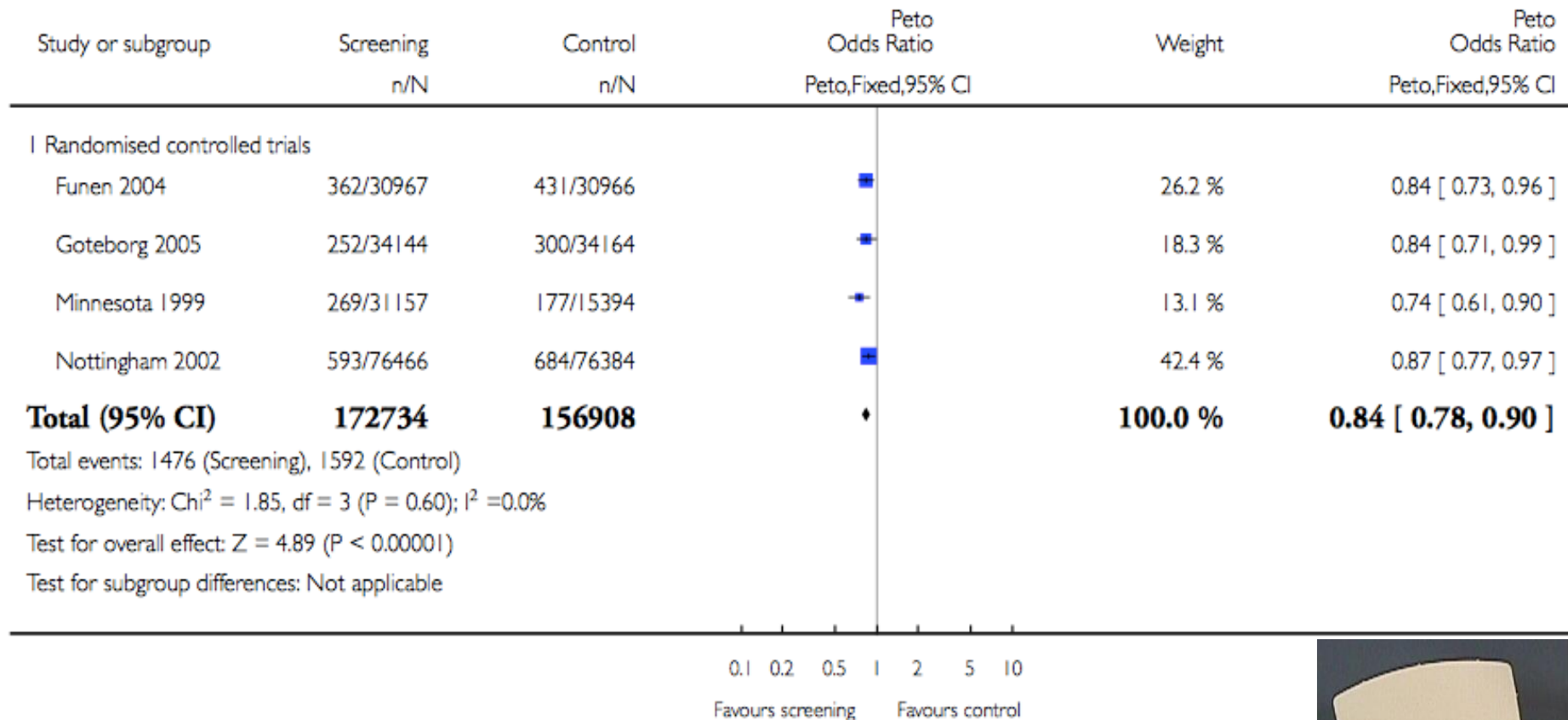
Cochrane Database of Systematic Reviews



Screening for colorectal cancer using the faecal occult blood test, Hemoccult (Review)

Hewitson P, Glasziou PP, Irwig L, Towler B, Watson E

CRC mortality; Hemoccult screening vs control



2007

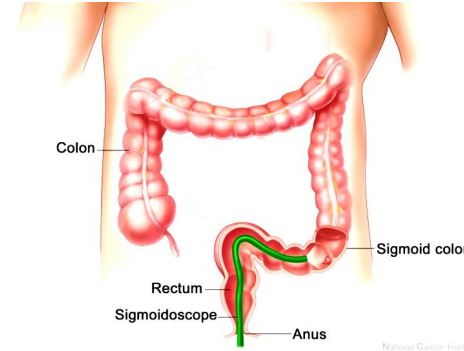
16% mortality reduction

CRC screening; proven effect on mortality



Cochrane
Library

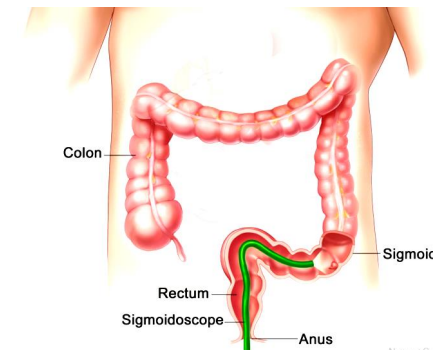
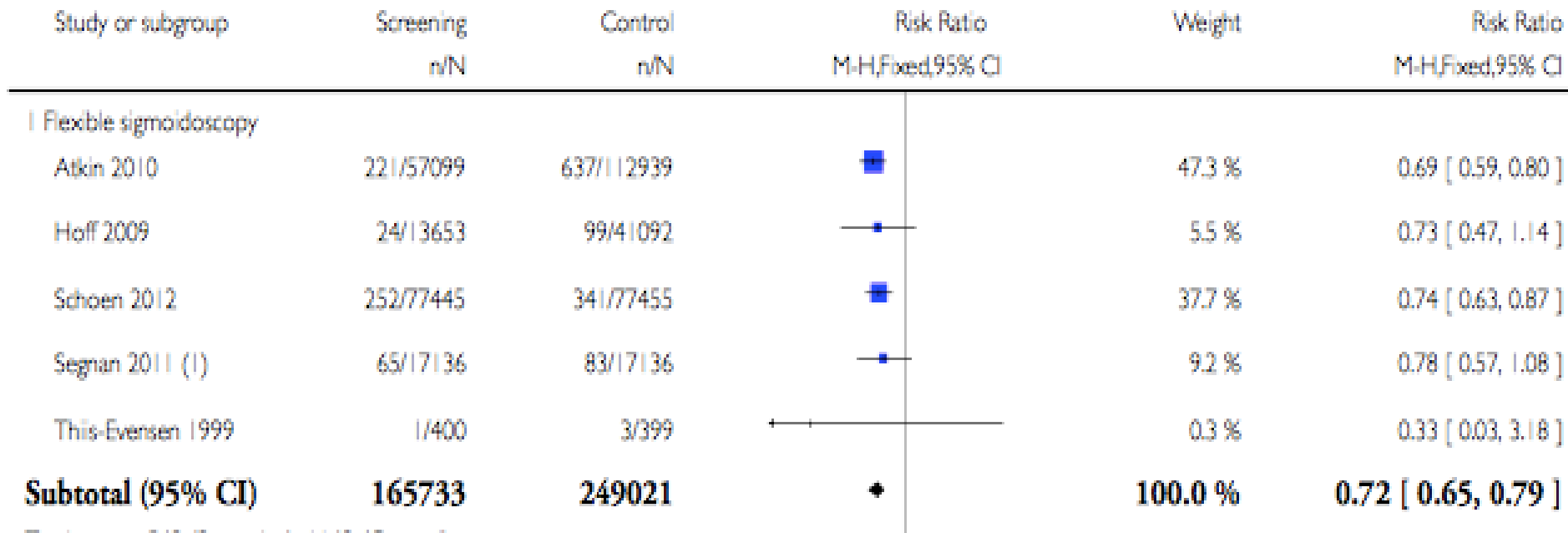
Cochrane Database of Systematic Reviews



Flexible sigmoidoscopy versus faecal occult blood testing for colorectal cancer screening in asymptomatic individuals (Review)

Holme Ø, Bretthauer M, Fretheim A, Odgaard-Jensen J, Hoff G

CRC mortality; FS screening vs control



28% mortality reduction
18% incidence reduction

2013

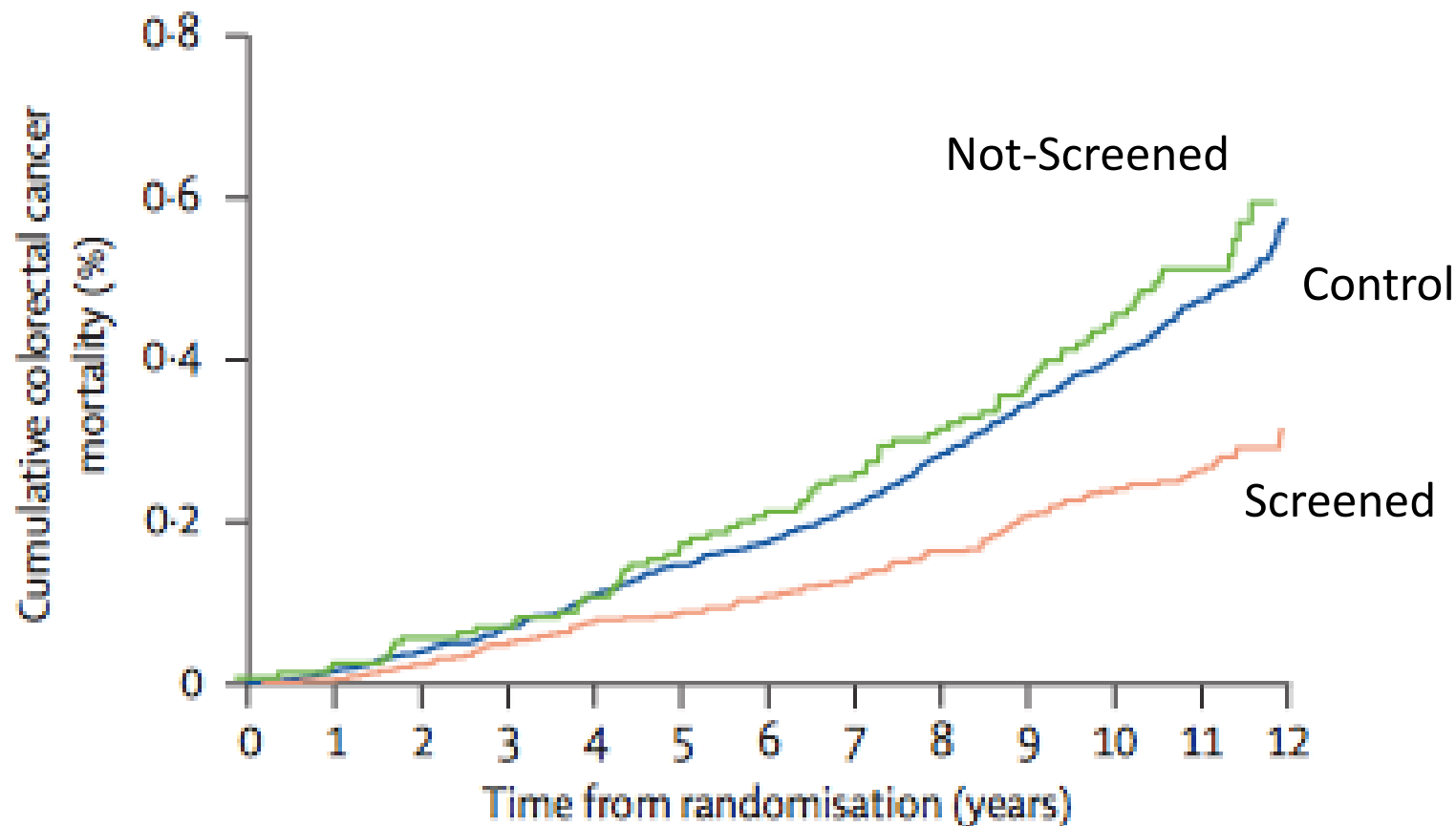
CRC screening; proven effect on mortality and incidence

Once-only flexible sigmoidoscopy screening in prevention of colorectal cancer: a multicentre randomised controlled trial

Wendy S Atkin, Rob Edwards, Ines Kralj-Hans, Kate Wooldrage, Andrew R Hart, John M A Northover, D Max Parkin, Jane Wardle, Stephen W Duffy, Jack Cuzick, UK Flexible Sigmoidoscopy Trial Investigators

CRC screening; proven effect on mortality

ITT 31%
PP 43%

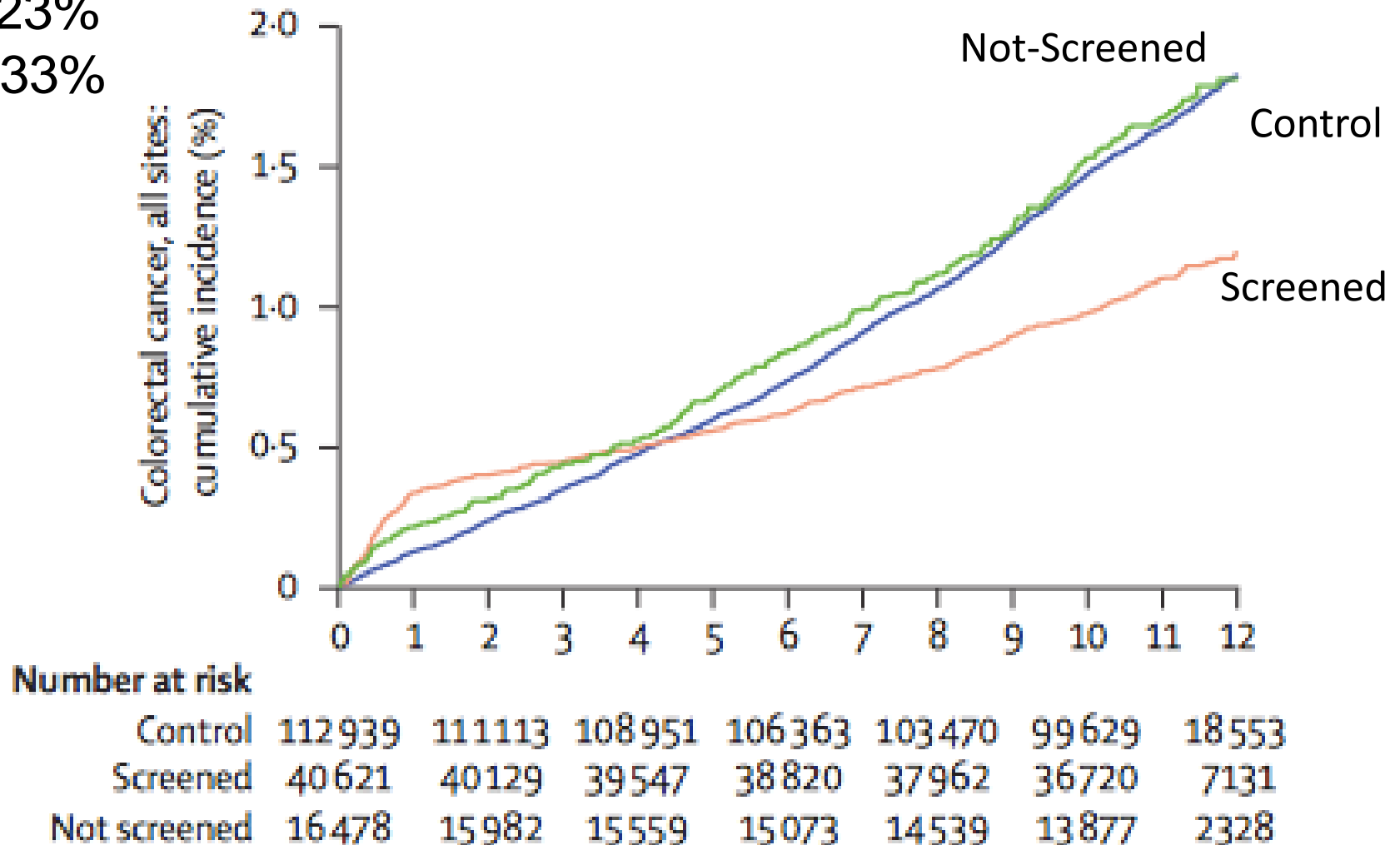


Number at risk

Control	112939	111321	109319	106907	104196	100597	18748
Screened	40621	40279	39705	39004	38169	36959	7187
Not screened	16478	16021	15620	15160	14640	14013	2352

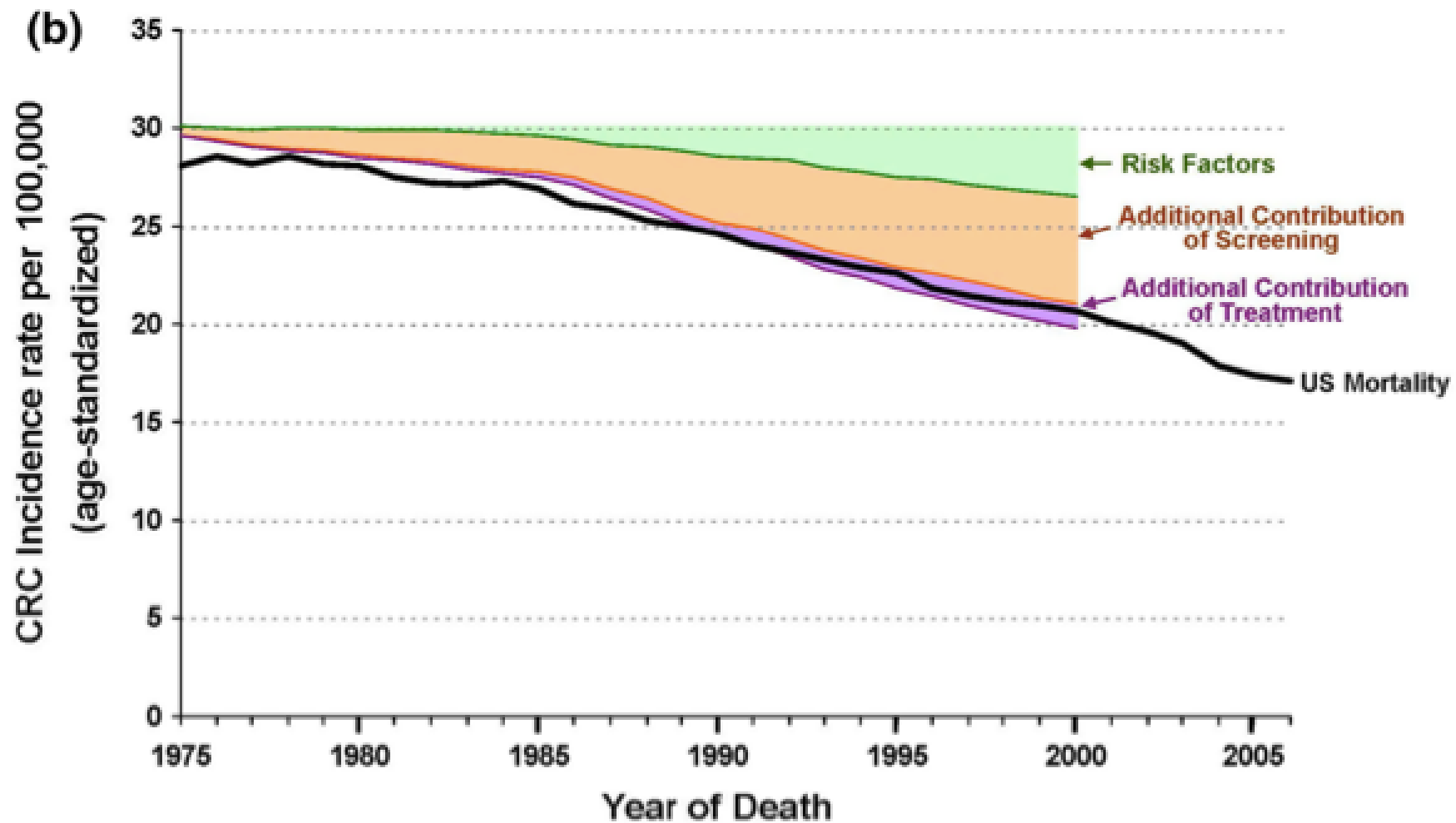
CRC screening; proven effect on incidence

ITT 23%
PP 33%



Impact of CRC screening

- Microsimulation modeling suggests that decline in CRC incidence and death in the USA are due to a relative large contribution from screening



CRC screening program

Effect on site and stage distribution

Effect on site distribution

- UK program (gFOBT) 1772 CRCs

Site	%
Rectum	28.7%
Sigmoid	45.4%
Descending	3.3%
Transverse	8.3%
Right (ascending)	14.3%

77% vs 66%

Cancer site data were missing for 3.2%

Effect on stage distribution

- UK program (gFOBT) 1772 CRCs

Stage	%	71%
Malignant polyp	9.8%	
Dukes A	32.0%	
Dukes B	29.5%	
Dukes C	25.7%	
Dukes D	3.0%	

Cancer staging data were missing for 11.2%

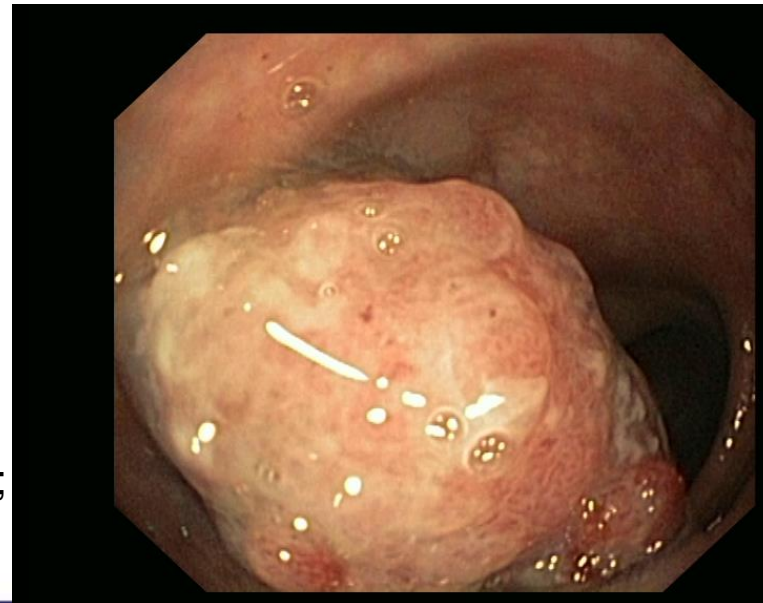
Effect on stage distribution

UK gFOBT program;

49% of screen-detected CRC pT1/T2N0

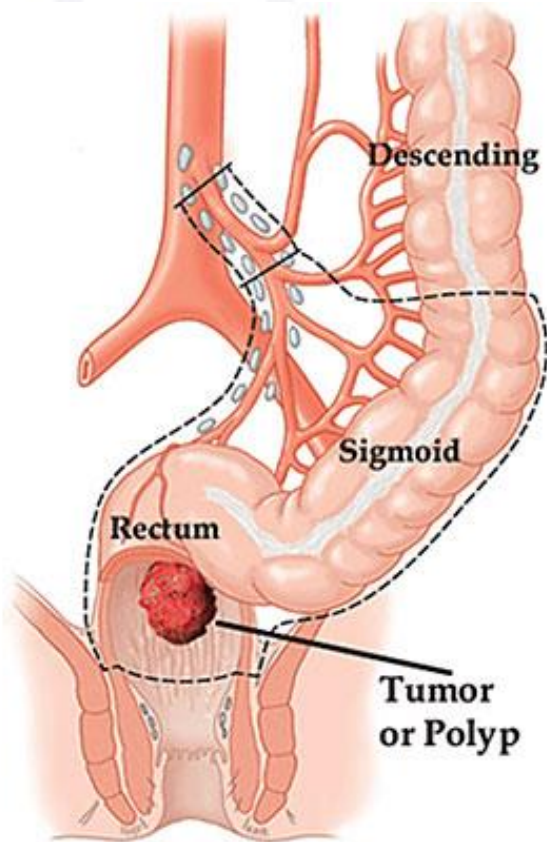
German colonoscopy screening program;

43% of screen-detected CRC pT1/T2N0



UK Colorectal Cancer Screening Pilot Group. BMJ 2004;
Bokemeyer, Eur J Gastro&Hepatol 2009;21:650

Colon/ Rectal preserving therapy?



Postoperative mortality

Short term morbidity

Anastomotic leakage

Long term morbidity

Bowel dysfunction

Bladder dysfunction

Sexual dysfunction

Colon/ Rectal preserving treatment

Complete clinical staging, discussion in MDT meeting, expertise mandatory

Endoscopic technique first choice (EMR, TEM, SILS port) for clinically low risk T1 cancers (< 3-4 cm)

High risk T1 of T2 after local excision: completion surgery



Dutch CRC guideline 2014

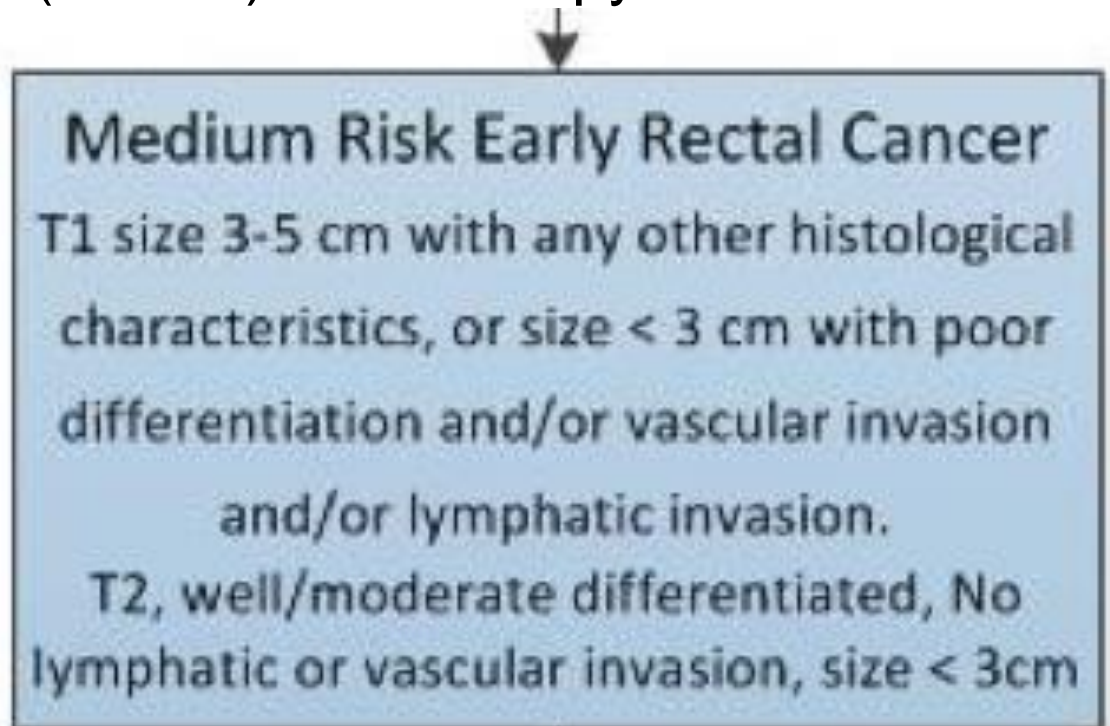


TEM

Median risk early Rectal Cancer?

T1/T2 N0 Rectal Cancer

Role for neo-adjuvant (chemo) radiotherapy?



TESAR trial

Conclusions

CRC screening decreases CRC mortality and CRC incidence

Size and stage distribution changes with screening

Place for local excision for early CRC

Place for organ preserving treatment of early Rectal Cancer???

Acknowledgement

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