

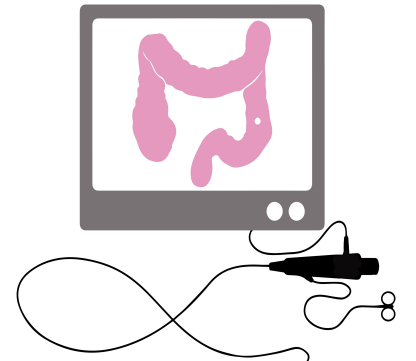
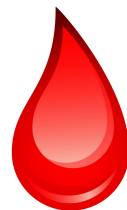
Bruk av test for blod i avføringen i klinikken og Tarmscreeningprogrammet

Øyvind Holme

Overlege Sørlandet Sykehus Kristiansand

Førsteamanuensis, Universitetet i Oslo

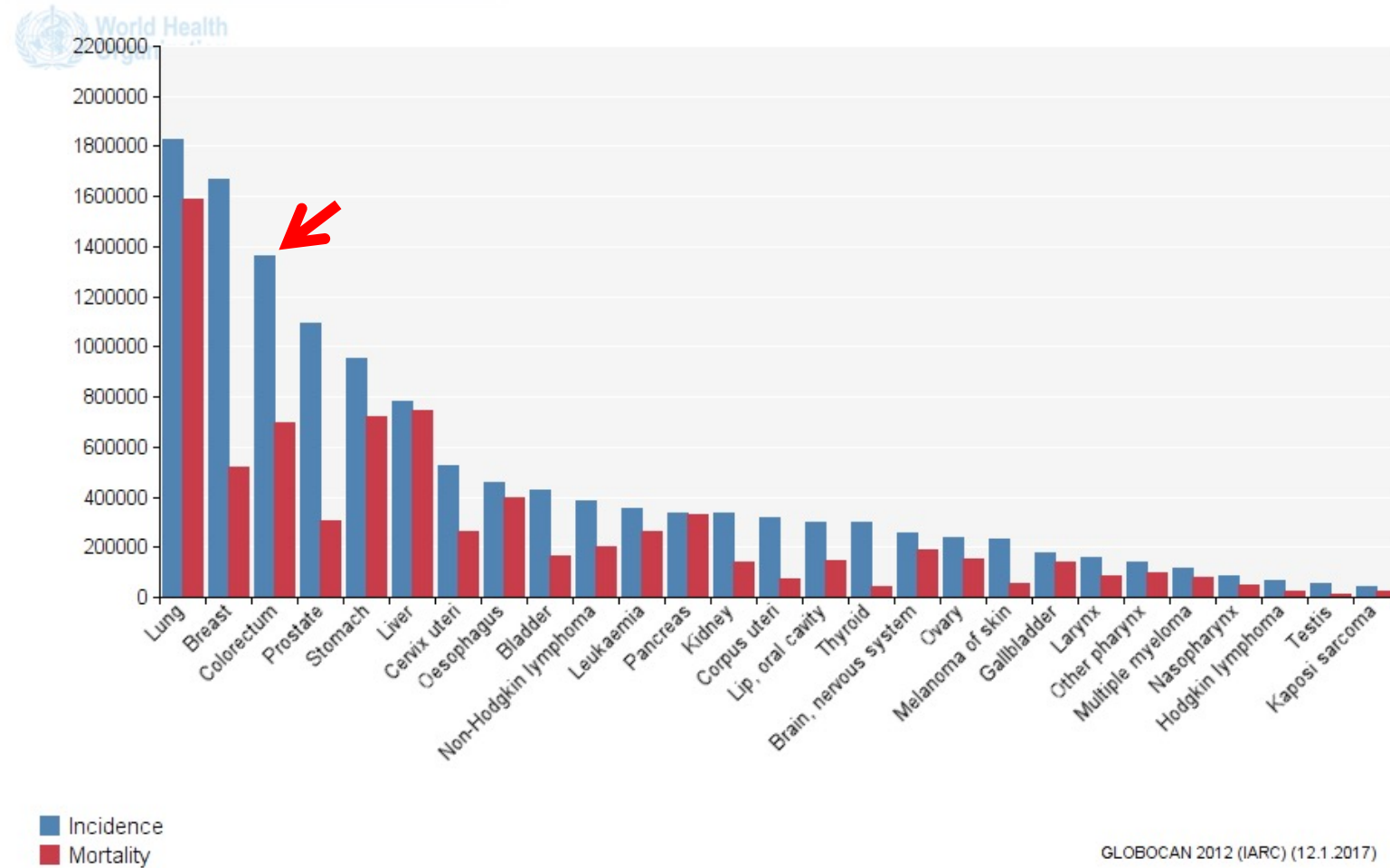
Nasjonal koordinator for Tarmscreeningprogrammet



Tarmkreft i verden

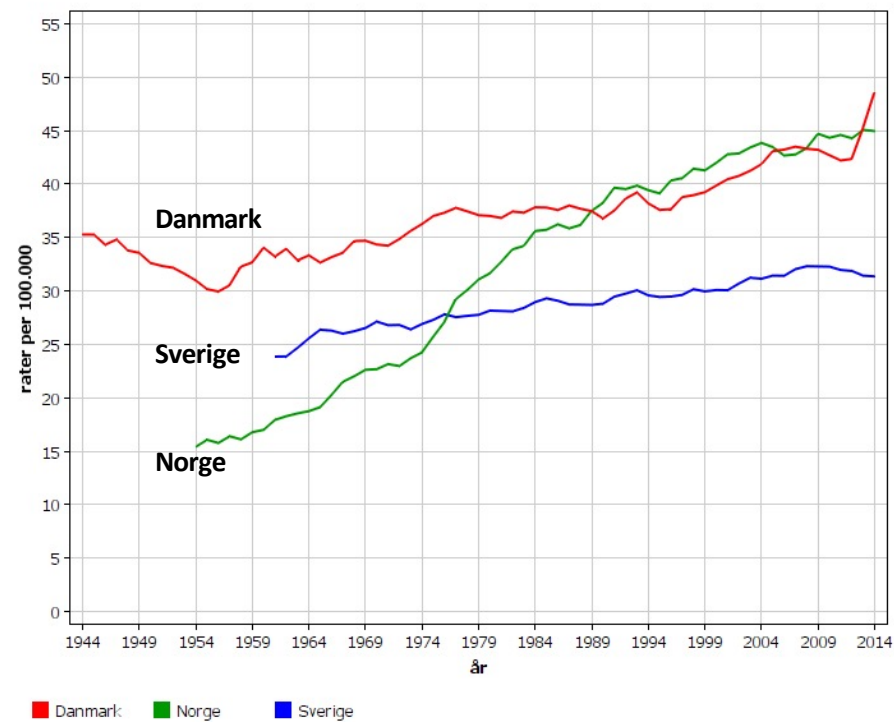
International Agency for Research on Cancer

World: Both sexes, all ages

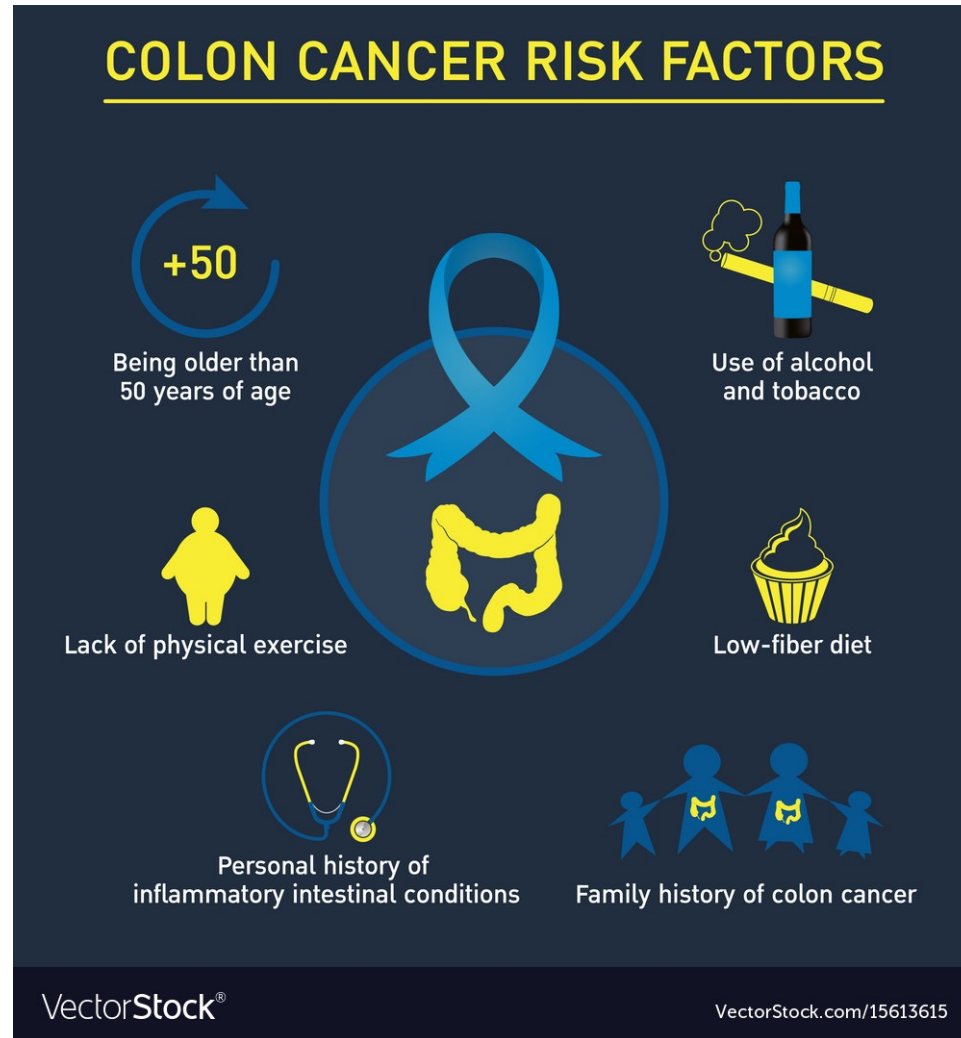


Tarmkreft i skandinavia

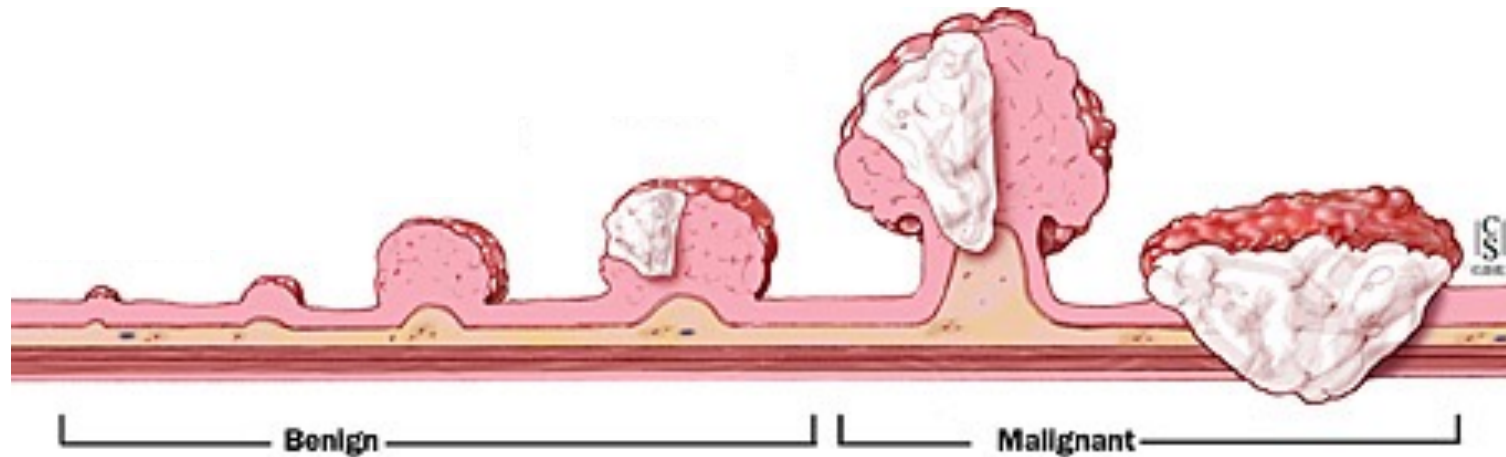
Tykk- og endetarm
Insidens: ASR (W), Menn alder 0-85+



Risikofaktorer for tarmkreft



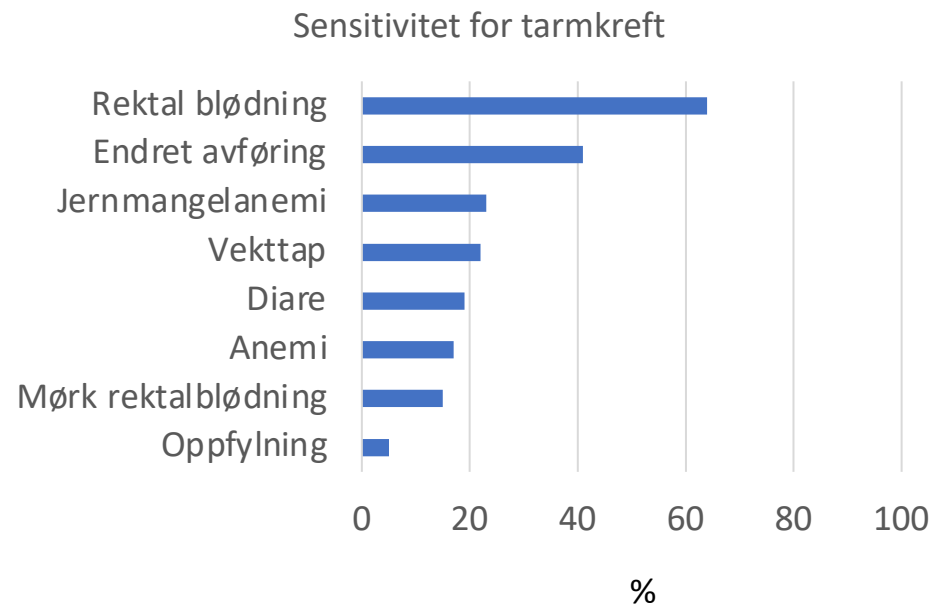
Tarmkreft utvikles fra polypper



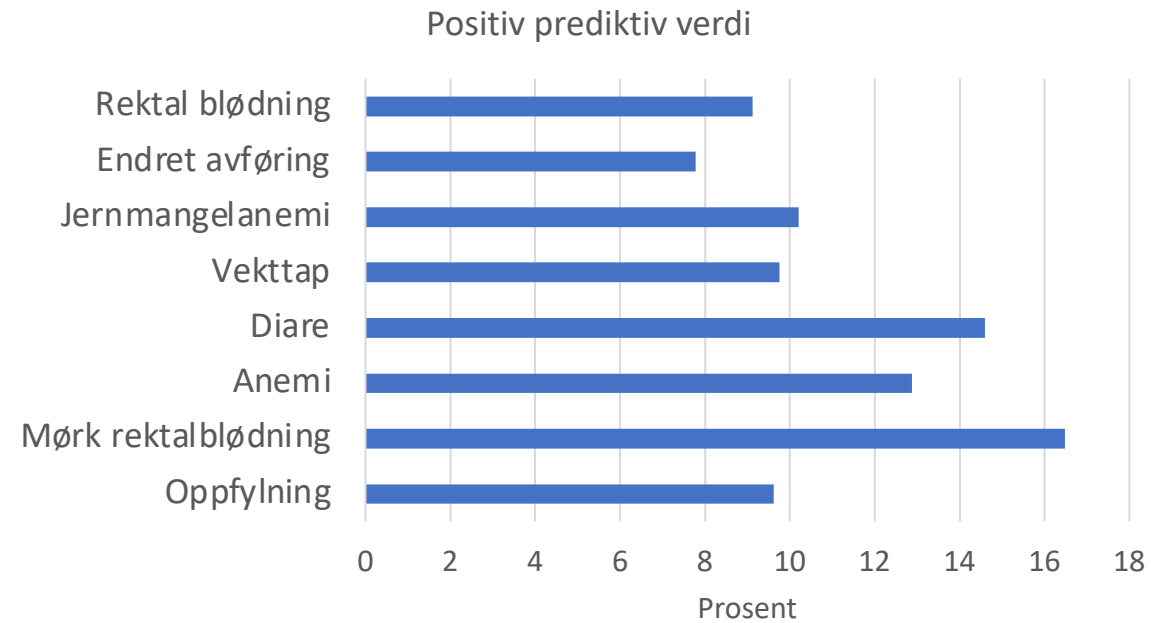
Symptomer på tarmkreft

- Magesmerter
- Blod i avføringen
- Endret avføringsmønster
- Slapphet
- Vekttap

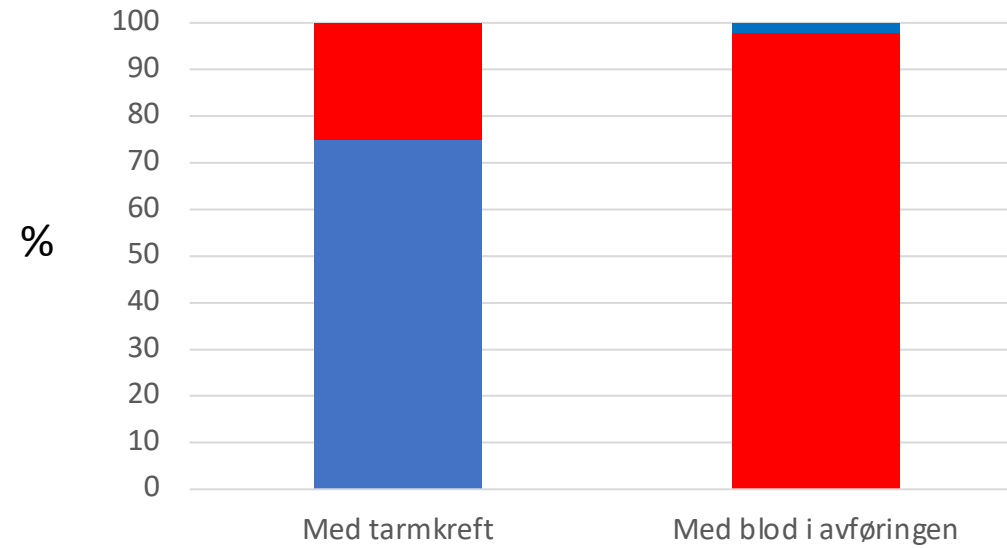
Symptomer og tarmkreft



Positiv prediktiv verdi av symptomer



Erfarings fra pilotprosjektet (tarmscreening)



Personer med synlig blod i avføringen

Pakkeforløp hos 9822 pasienter (England): De fleste har ingen funn!

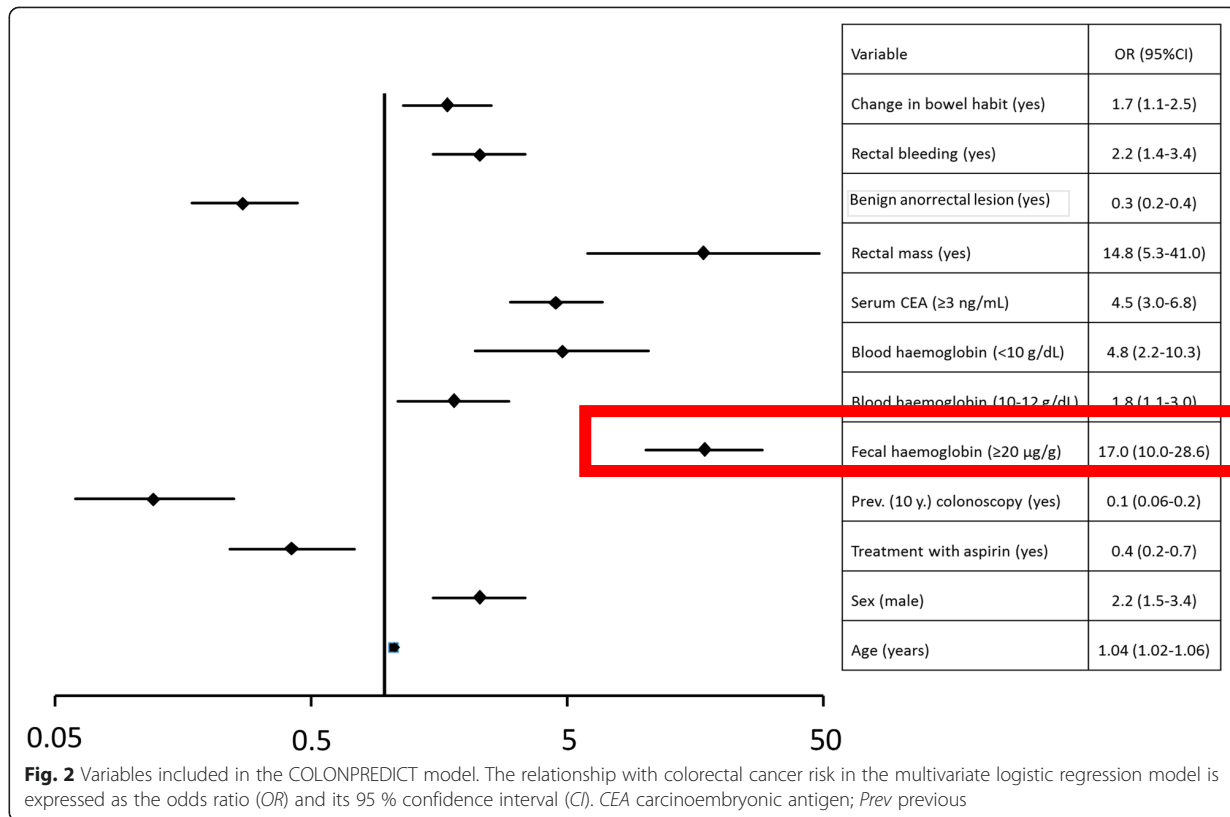
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Diagnosis	N	%
Normal	3079	31.3
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Perianal disease*	723	7.4
Inflammatory bowel disease	427	4.3
High-risk adenoma	421	4.3
Colorectal cancer	329	3.3
Microscopic colitis	152	1.5
Other†	53	0.5
Angiodysplasia	23	0.2

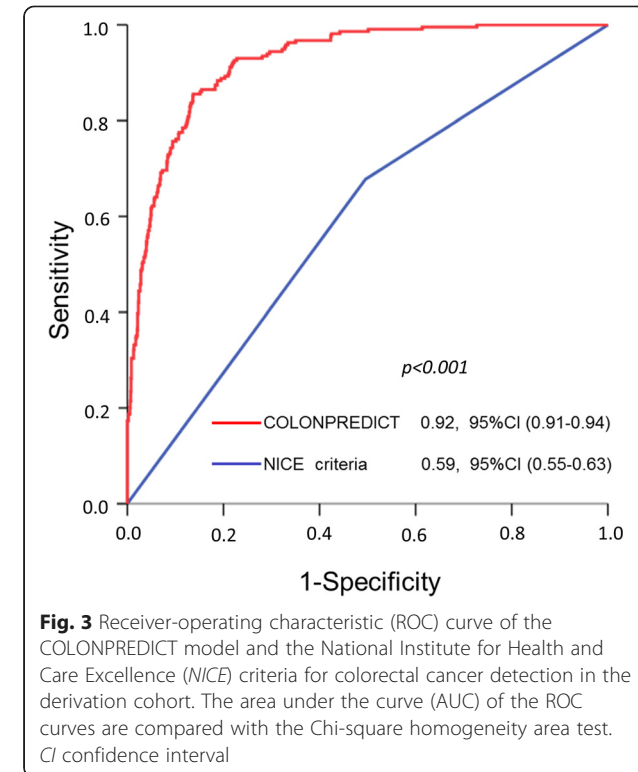
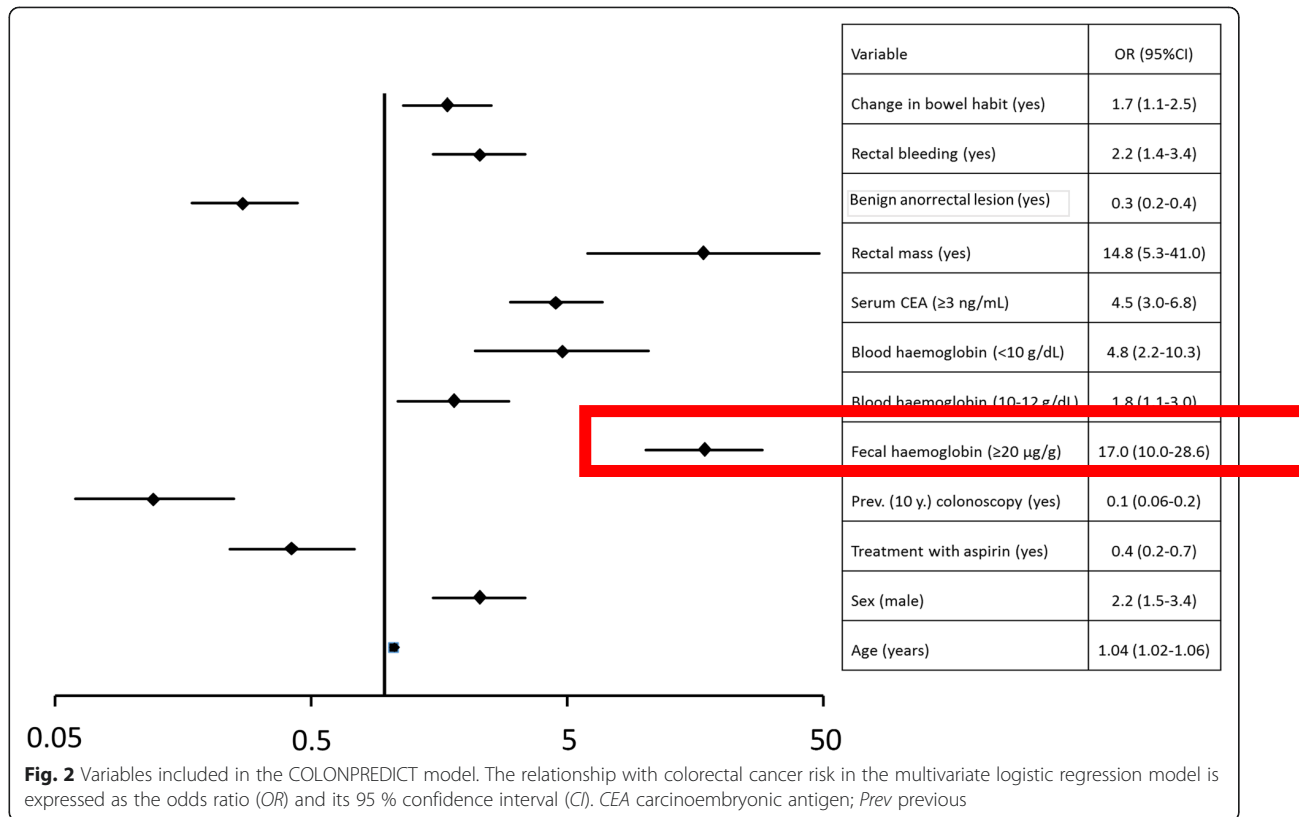
Kan test for blod i avføringen hjelpe oss?

- Kan F-Hb hjelpe fastlegene i diagnostisk utredning og henvisning?
- Kan F-Hb hjelpe sykehuslegene til å prioritere?

F-Hb bedre enn det meste annet!



F-Hb bedre enn det meste annet!

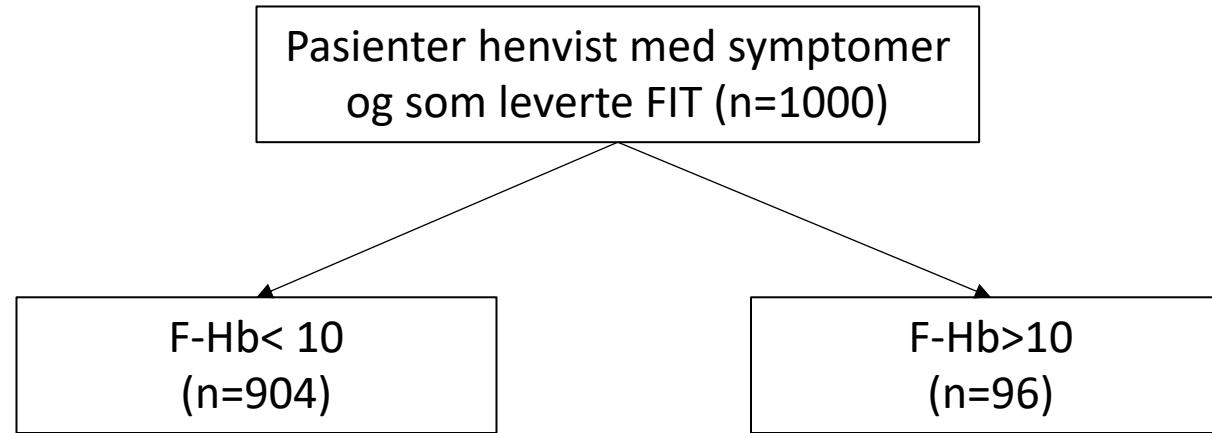


Meta-analyse fra primærhelsetjenesten

- 22 studier: 69 000 pasienter med mageplager

Terskelverdi	Tarmkreft	
mcg Hb/g feces	Sensitivitet	Spesifisitet
> 10	0,87 (0,81-0,92)	0,84 (0,79-0,88)
> 20	0,84 (0,79-0,88)	0,87 (0,76-0,93)
> 150	0,64 (0,58-0,70)	0,95 (0,91-0,97)

Kan f-Hb brukes til risiko-stratifisering?



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Faecal immunochemical testing for adults with symptoms of colorectal cancer attending English primary care: a retrospective cohort study of 14 487 consecutive test requests

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¹Huffield Department of Primary Care Health Sciences, University of Oxford, Oxford, UK
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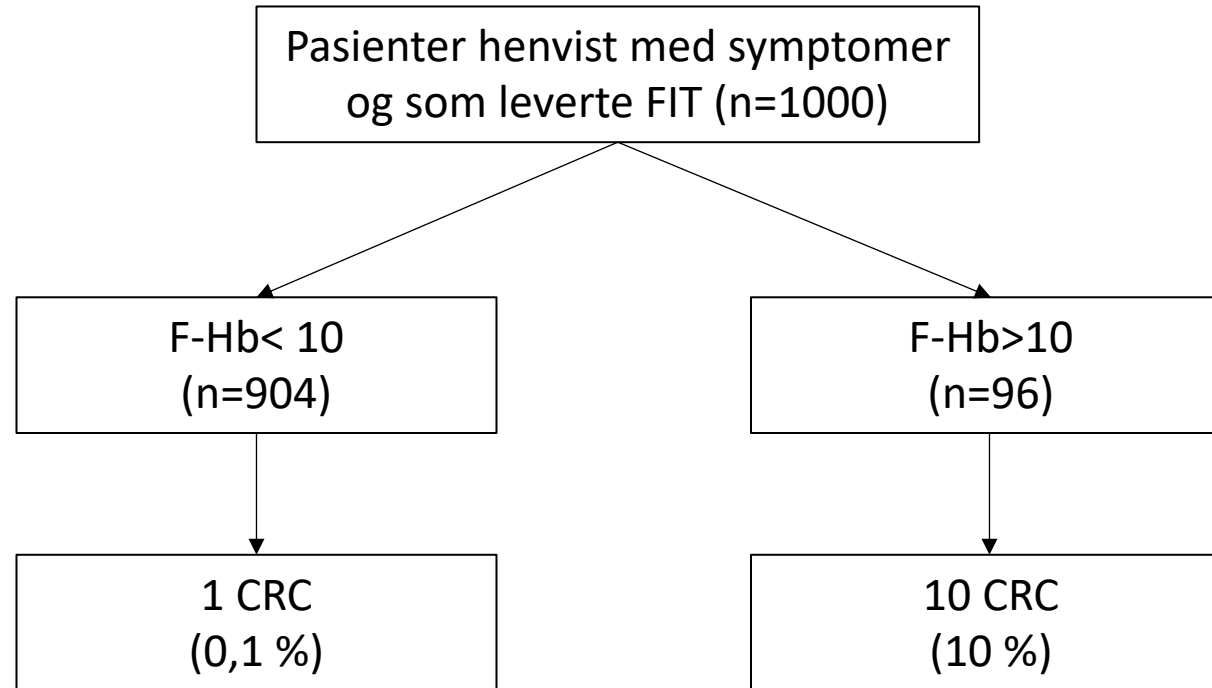
Correspondence
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Funding information
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Summary
Background: Faecal immunochemical testing (FIT) is recommended by the National Institute for Health and Care Excellence (NICE) to triage symptomatic primary care patients for further investigation of colorectal cancer.
Aim: To ascertain the diagnostic performance of FIT in symptomatic adult primary care patients.
Methods: Faecal samples from routine primary care practice in Oxfordshire, UK were analysed using the HM-JACKarc FIT method between March 2017 and March 2020. Clinical details were recorded. Patients were followed up for up to 36 months in linked hospital records for evidence of benign and serious (colorectal cancer, high-risk adenomas and bowel inflammation) colorectal disease. The diagnostic accuracy of FIT is reported by gender, age group and FIT threshold.
Results: In 98% adult patients with at least 6-month follow-up, a FIT result $\geq 10 \mu\text{g Hb/g faeces}$ had a sensitivity for colorectal cancer of 90.5% (95% CI 84.9%–96.1%), specificity 91.3% (90.8%–91.9%), positive predictive value (PPV) 10.1% (8.15%–12.0%) and negative predictive value (NPV) 99.9% (99.8%–100.0%). The PPV and specificity for serious colorectal disease were higher and the sensitivity and NPV lower than for colorectal cancer alone. The area under the curve for all adults did not change substantially by gender or by increasing the minimum age of testing. Using $\geq 10 \mu\text{g Hb/g faeces}$, 10% of adults would be investigated to detect 91% of cancers, a number needed to scope of ten to detect one cancer. Using ≥ 7 , ≥ 50 and $\geq 150 \mu\text{g Hb/g faeces}$, 11%, 4% and 3% of adults would be investigated, and 91%, 74% and 54% cancers detected, respectively.
Conclusion: A FIT threshold of $\geq 10 \mu\text{g Hb/g faeces}$ would be appropriate to triage adult patients presenting to primary care with symptoms of serious colorectal disease. FIT may be used to reprioritise patients referred with colorectal cancer symptoms whose investigations have been delayed by the COVID-19 pandemic.

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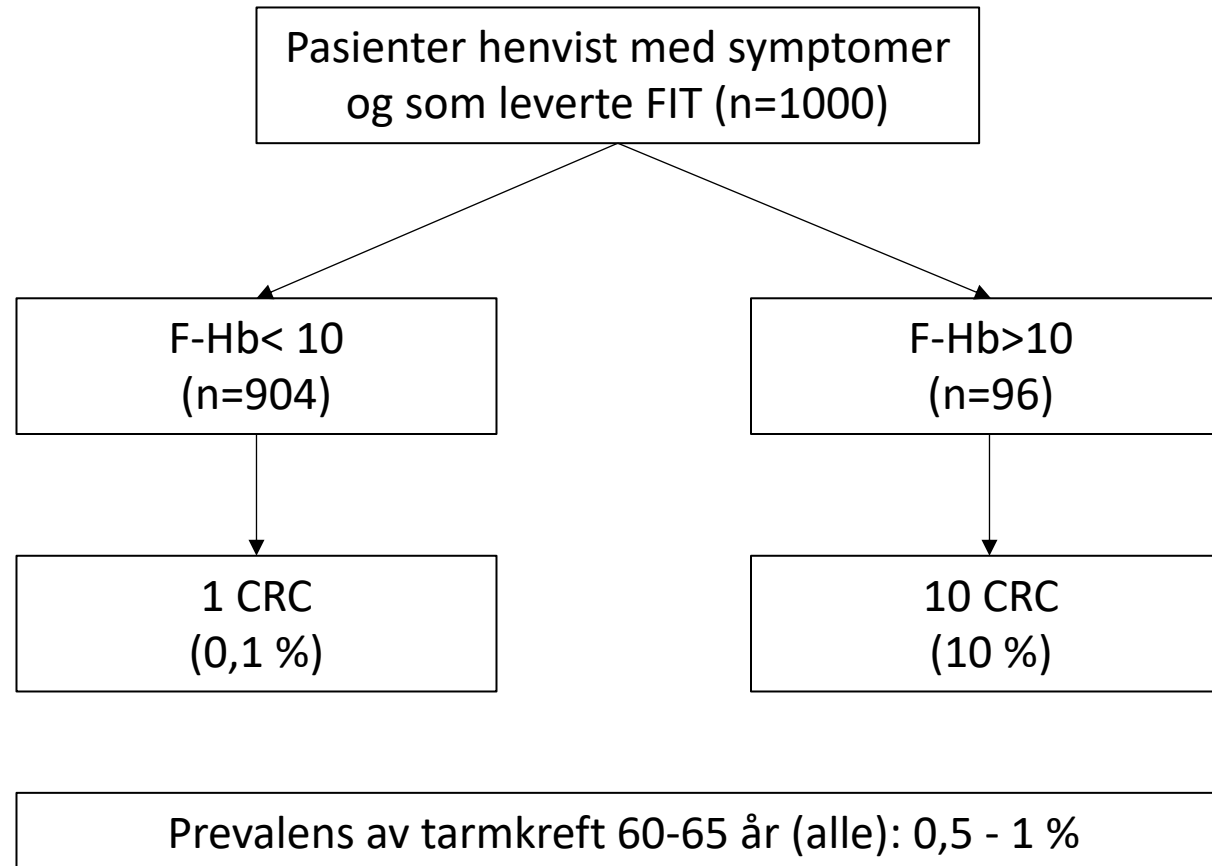
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Aliment Pharmacol Ther. 2020;00:1–11.

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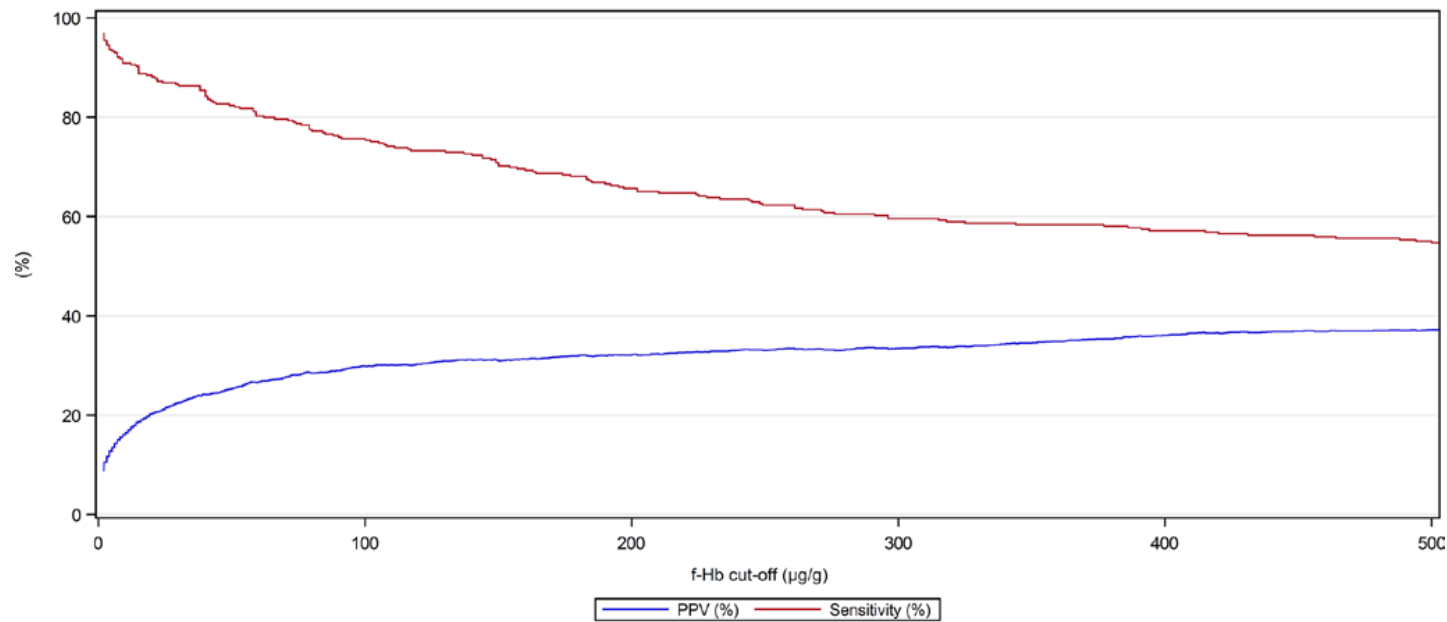
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Aliment Pharmacol Ther. 2020;00:1–11.

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Positiv prediktiv verdi for tarmkreft og F-Hb



F-Hb har stor innvirkning på henvisning

Table 1 Influence of faecal haemoglobin concentration (f-Hb) on clinical decision-making in patients (n, (%)) with new bowel symptoms (n=5372)

	Total n	f-Hb <10 µg/g n (%)	f-Hb ≥10 µg/g n (%)	P value†
Patients with valid f-Hb result	5372	4197 (78.1)	1175 (21.9)	
Not referred by GP	2521	2403 (95.3)	118 (4.7)	<0.001

43 % henvist

90 % henvist

Hvilken grense skal vi sette?

Table 3 Diagnostic accuracy of FIT for CRC at different cut-offs

Cut-off (µg/g)	Positivity (%)	NNS	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	TP	FN	FP	TN
2	37.2	11.5	97.0 (94.5 to 98.5)	64.9 (63.9 to 65.8)	8.7 (7.8 to 9.7)	99.8 (99.7 to 99.9)	319	10	3336	6157
10	19.0	6.2	90.9 (87.2 to 93.8)	83.5 (82.8 to 84.3)	16.1 (14.4 to 17.8)	99.6 (99.5 to 99.7)	299	30	1563	7930
150	7.6	3.2	70.8 (65.6 to 75.7)	94.6 (94.1 to 95.0)	31.1 (27.8 to 34.6)	98.9 (98.7 to 99.1)	233	96	516	8977
<2	62.8	616.7	3 (1.5 to 5.5)	35.1 (34.2 to 36.1)	0.2 (0.1 to 0.3)	91.3 (90.3 to 92.2)	10	319	6157	3336

95% CIs within brackets.

CRC, colorectal cancer; FIT, faecal immunochemical test; FN, false negatives; FP, false positives; NNS, number needed to scope; NPV, negative predictive value; PPV, positive predictive value; TN, true negatives; TP, true positives.

Kanskje bedre med 0 som grense?

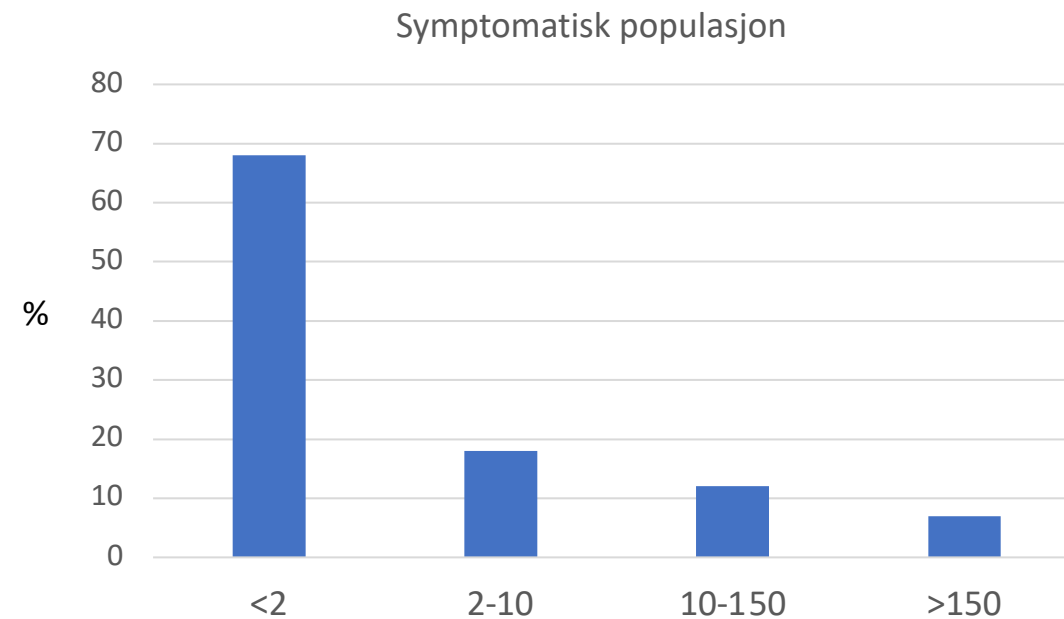
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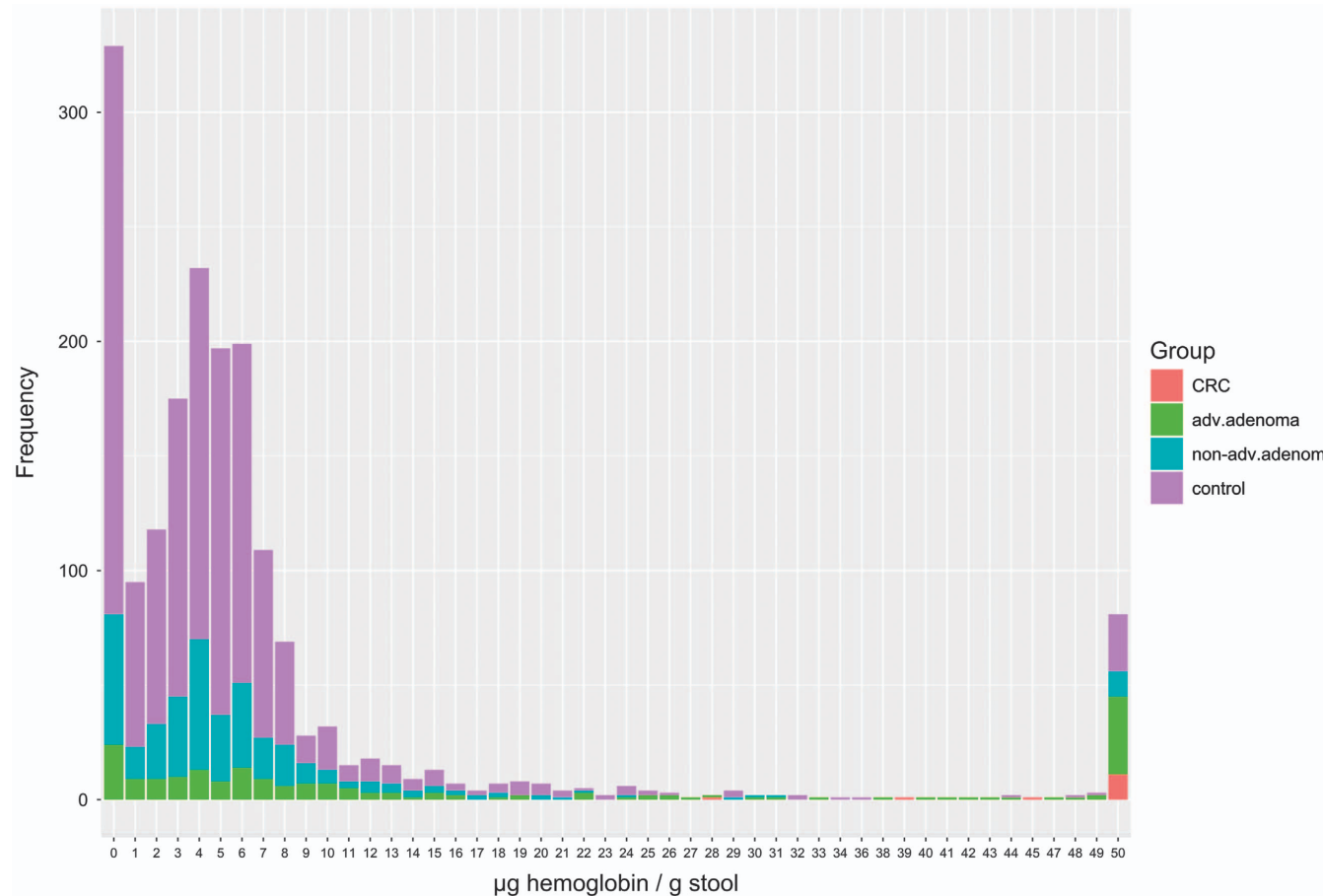
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Det vanligste er å ikke ha blod i avføringen!



Fordeling av F-Hb verdier i symptomatisk populasjon

De fleste personer med polypper har F-Hb < 10



Det er også andre ting i tarmen

Table 2 Frequency of pathology findings at colonoscopy in symptomatic patients referred via 2WW pathways

Diagnosis	N	%
Normal	3079	31.3
Low risk adenoma	2321	23.6
Diverticular disease	2294	23.4
Perianal disease*	723	7.4
Inflammatory bowel disease	427	4.3
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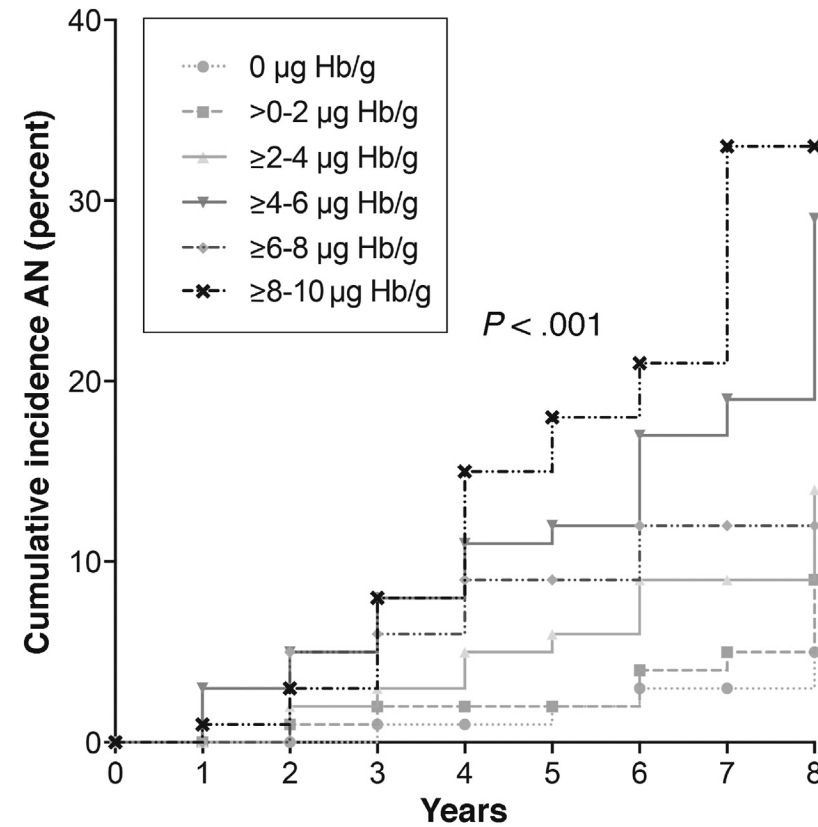
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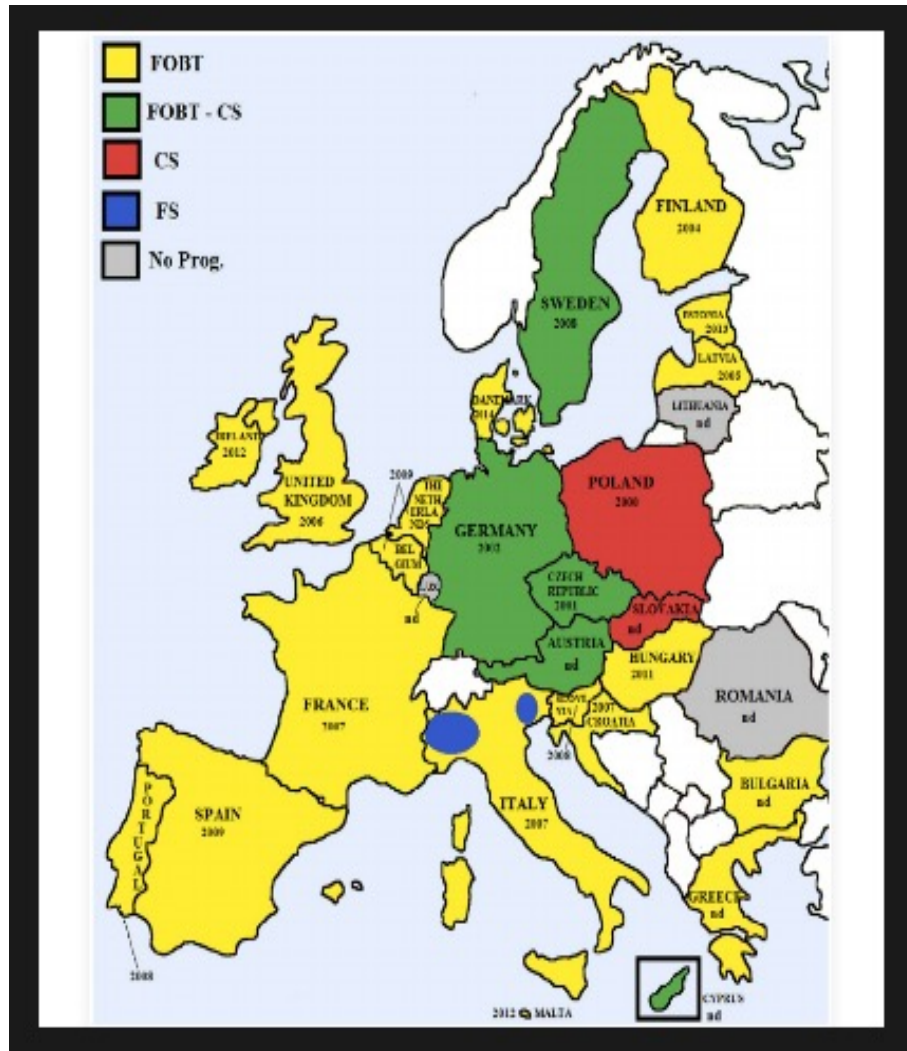
Table 4 Diagnostic accuracy of FIT for CRC and SBD at different cut-offs

Risk category	FIT positivity	Cut-off (µg/g)	Sensitivity	Specificity	PPV	NPV
≥2	37.2	CRC	97.0 (94.5 to 98.5)	64.9 (63.9 to 65.8)	8.7 (7.8 to 9.7)	99.8 (99.7 to 99.9)
		HRA	65.8 (61.0 to 70.3)	64.1 (63.1 to 65.0)	7.6 (6.7 to 8.5)	97.7 (97.3 to 98.0)
		IBD	73.1 (68.6 to 77.2)	64.4 (63.4 to 65.4)	8.5 (7.7 to 9.5)	98.1 (97.8 to 98.5)
		SBD	77.1 (74.6 to 79.5)	68.2 (67.2 to 69.2)	24.8 (23.4 to 26.3)	95.6 (95.1 to 96.1)
≥10	19.0	CRC	90.9 (87.2 to 93.8)	83.5 (82.8 to 84.3)	16.1 (14.4 to 17.8)	99.6 (99.5 to 99.7)
		HRA	45.4 (40.5 to 50.3)	82.2 (81.4 to 83.0)	10.3 (8.9 to 11.7)	97.1 (96.7 to 97.5)
		IBD	57.9 (53.9 to 61.9)	82.8 (82.0 to 83.6)	13.3 (11.8 to 14.9)	97.7 (97.4 to 98.1)
		SBD	62.6 (59.8 to 65.4)	87.0 (86.3 to 87.7)	39.6 (37.4 to 41.8)	94.5 (93.9 to 95.0)
≥150	7.6	CRC	72.8 (65.6 to 79.9)	94.6 (94.1 to 95.0)	31.1 (27.8 to 34.6)	98.9 (98.7 to 99.1)
		HRA	22.1 (18.2 to 26.4)	93.0 (92.5 to 93.5)	12.4 (10.1 to 15.0)	96.4 (96.0 to 96.8)
		IBD	36.8 (32.2 to 41.5)	93.7 (93.2 to 94.2)	21.0 (18.1 to 24.1)	97.0 (96.7 to 97.4)
		SBD	41.0 (38.2 to 43.9)	96.9 (96.5 to 97.3)	64.5 (60.9 to 67.9)	92.4 (91.8 to 92.9)

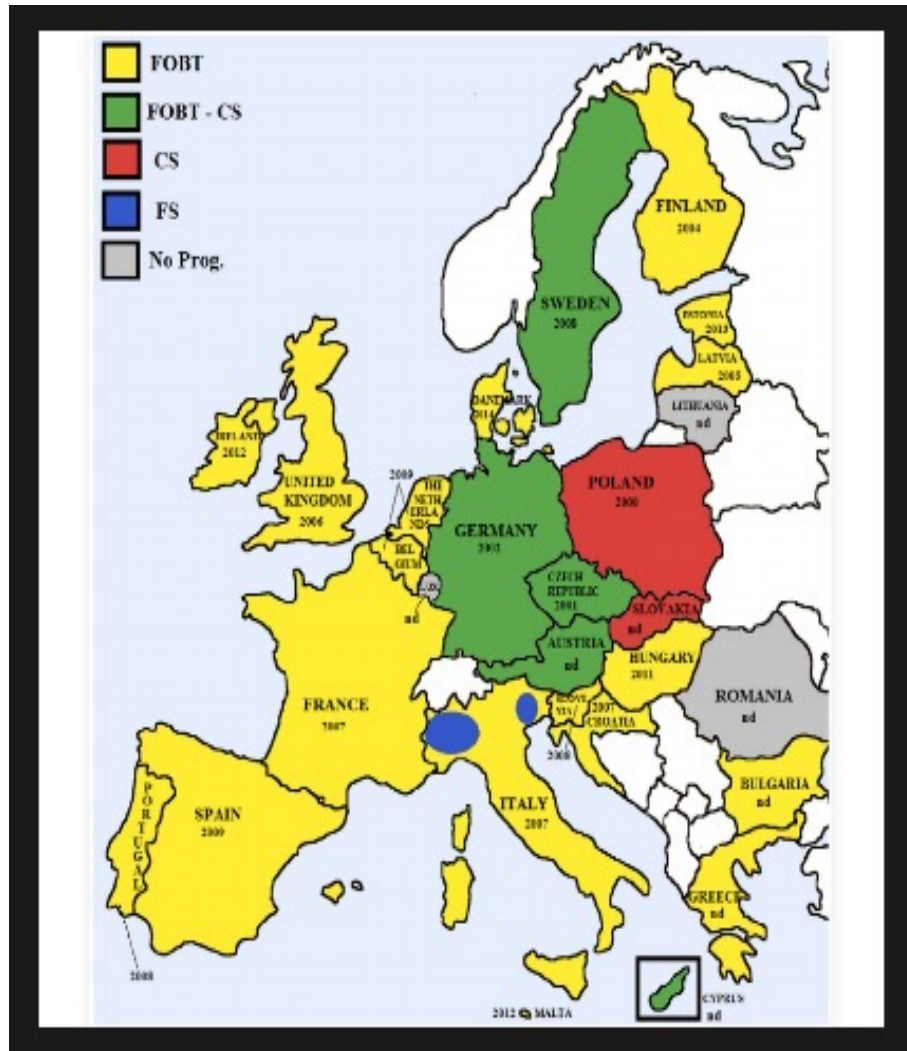
Hva skjer i tiden etter hos personer med F-Hb < 10?



F-Hb og screening for tarmkreft



F-Hb og screening for tarmkreft

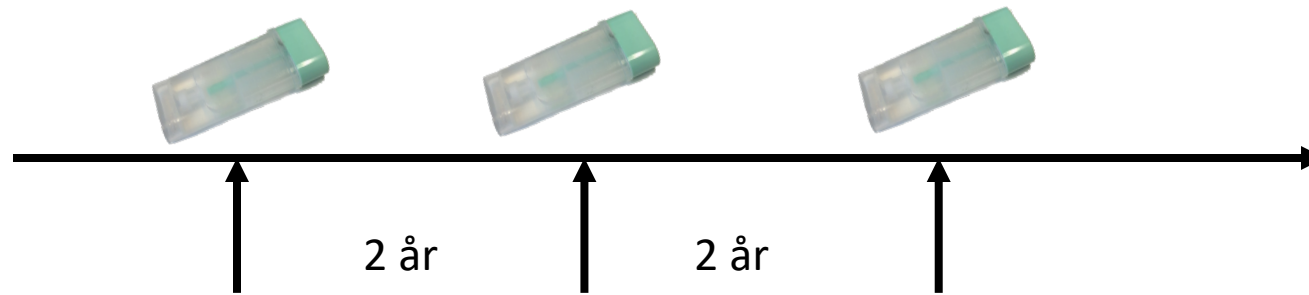


Tarmscreening i Norge:

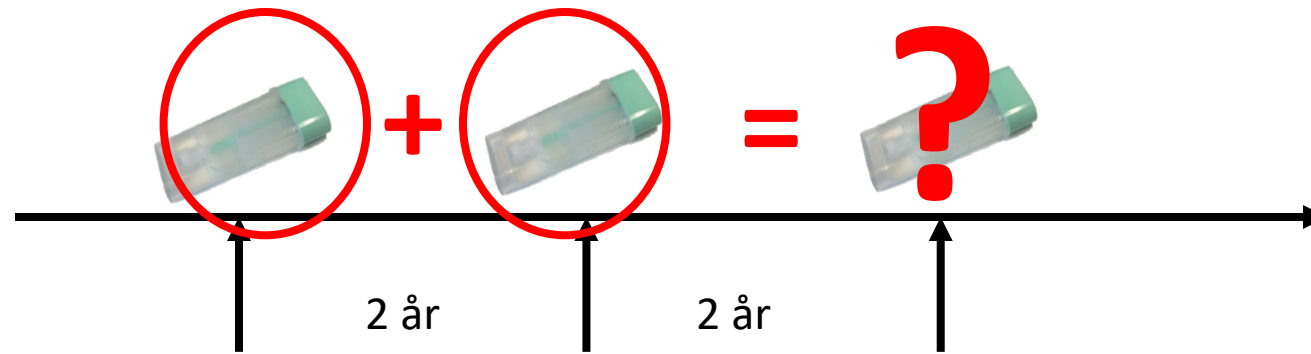
- F-Hb
- Terskelverdi: 15 mcg/g
- Starter våren 2022
- 55 år
- 2.hvert år



F-Hb for persontilpasset screening?



F-Hb for persontilpasset screening?



F-Hb for person-to-person screening?

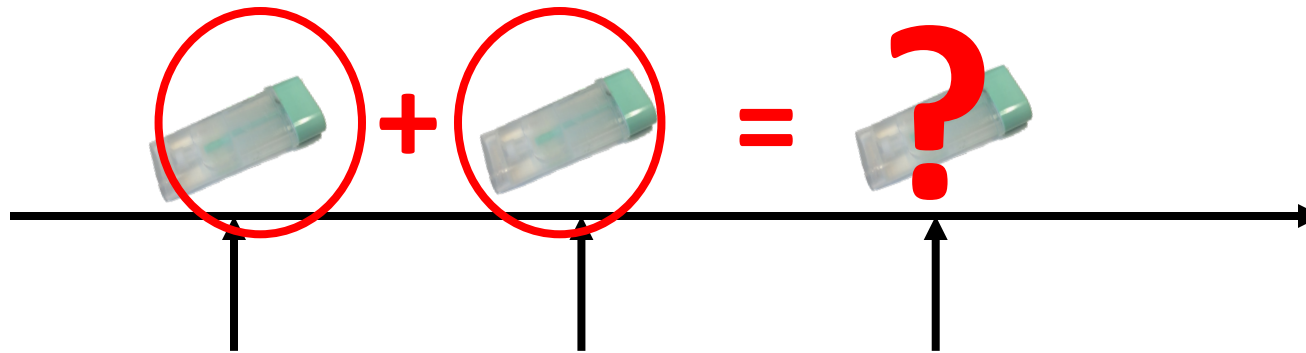


Table 2 Predictors of the DR of CRC, advanced adenoma and AN at the third FIT

		CRC	
		OR	95% CI
Cumulative f-Hb level at previous 2 FIT tests (FIT1 + FIT2) µg Hb/g faeces	0	1	
	0.1–3.9	2.26	1.47 to 3.46
	4–9.9	4.01	2.51 to 6.39
	10–14.9	10.11	6.04 to 16.93
	15–19.9	11.63	6.42 to 21.07
	≥20	38.92	22.50 to 67.31

Hvorfor test for blod i avføringen

- Kan F-Hb hjelpe fastlegene i diagnostisk utredning og henvisning?
- Kan F-Hb hjelpe sykehuslegene til å prioritere

Hvorfor test for blod i avføringen

- Kan F-Hb hjelpe fastlegene i diagnostisk utredning og henvisning?
 - Ja

Hvorfor test for blod i avføringen

- Kan F-Hb hjelpe fastlegene i diagnostisk utredning og henvisning?
 - Ja, men:
 - Er ikke en diagnostisk test
 - Kan skille ut de som har lav risiko for tarmkreft og som ikke trenger henvisning
 - Kun Australia, UK og Spania anbefaler dette
 - Hvilken terskelverdi er den riktige?
 - Samvalg – hvilken risiko for alvorlig sykdom er akseptabel? Ressursbruk?

Hvorfor test for blod i avføringen

- Kan F-Hb hjelpe sykehuslegene til å prioritere?
 - Ja!

Oppsummering

- F-Hb er den beste biomarkøren vi har for tarmkreft
- Kliniker har behov for et kvantitativt svar
- Nyttig verktøy, men ikke som diagnostisk test

Hvorfor test for blod i avføringen

- Kan F-Hb hjelpe fastlegene i diagnostisk utredning og henvisning?
 - Er et hjelpemiddel i utredning
 - Er ikke en diagnostisk test
 - Kan skille ut de som har lav risiko for tarmkreft og som ikke trenger henvisning
 - Kun Australia, UK og Spania anbefaler dette
 - Hvilken terskelverdi er den riktige?
 - Samvalg – hvilken risiko for alvorlig sykdom er akseptabel?