

Nationwide Evaluation of the Dutch Colorectal Cancer Screening Program

Lucie de Jonge, Hilliene J. van de Schootbrugge-Vandermeer, Esther Toes-Zoutendijk, Iris Serieese, Wendy Koster, Iris D. Nagtegaal, Anneke J. van Vuuren, Folkert J. van Kemenade, Evelien Dekker, Manon C.W. Spaander, Monique E. van Leerdam, Iris Lansdorp-Vogelaar.

International Cancer Screening Network 2023 - Turin

Department of Public Health



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Erasmus MC
Universiteit Medisch Centrum Rotterdam

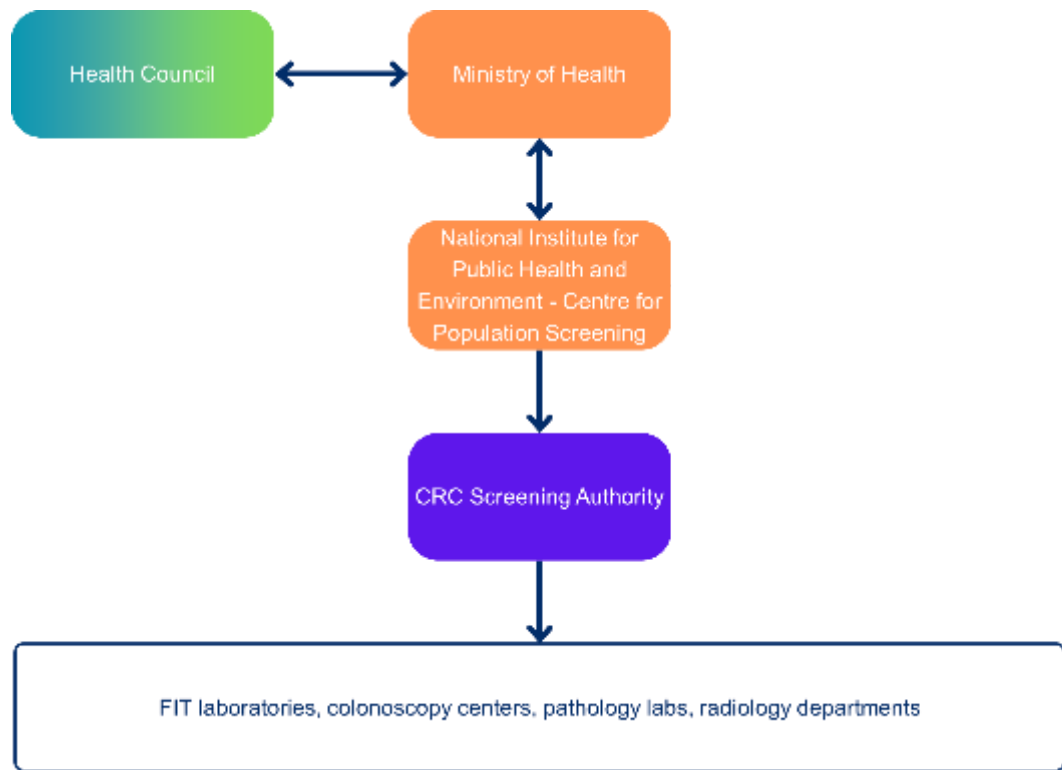


Dutch organized CRC screening program

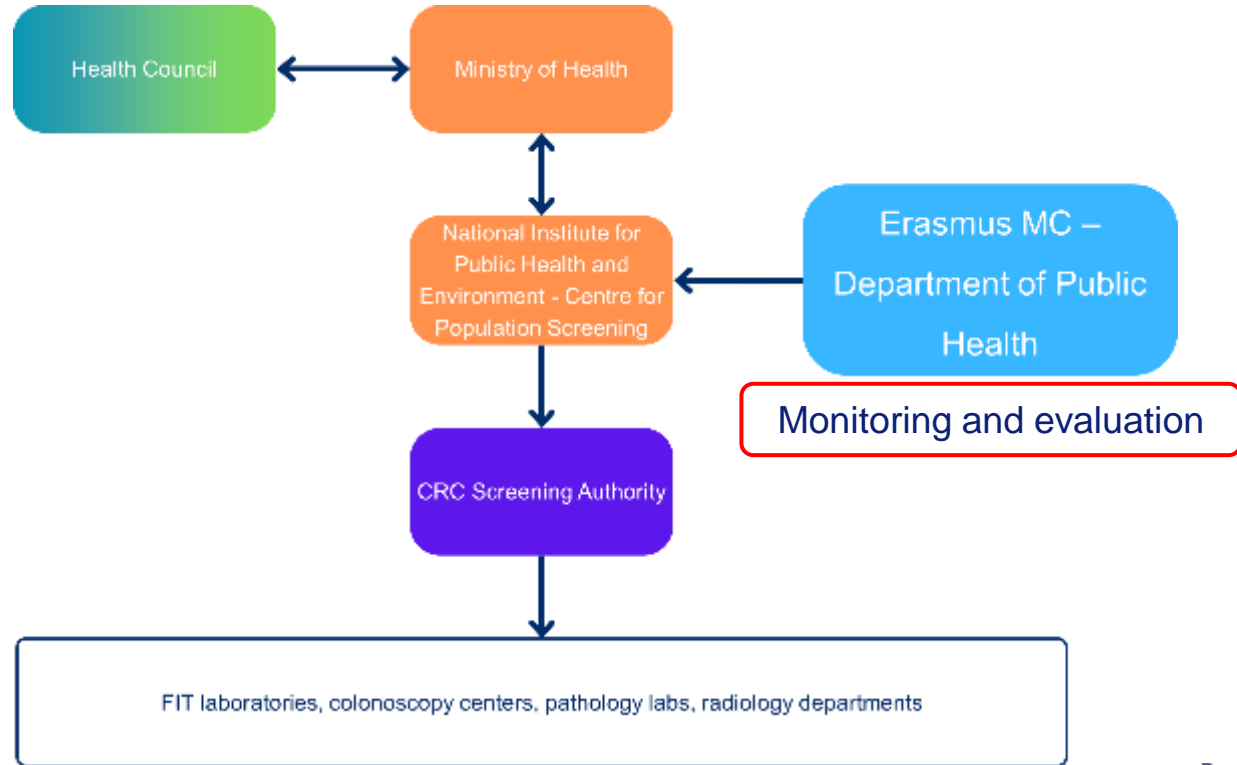
- Individuals aged 55-75 years
- Biennial FIT
- Cut-off: 47 μg Hb/g feces
 - Follow-up colonoscopy



Stakeholders



Stakeholders

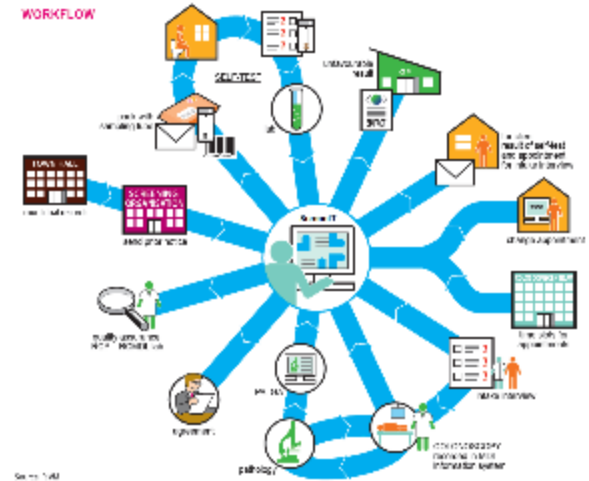




Aim of study

Provide input for the large evaluation of the program in 2022 by the Dutch Health Council

- Key performance indicators
 - Participation rate
 - FIT positivity rate
 - Positive predictive value
 - FIT sensitivity





Data collection



Participants between 2014-2020; 3,988,027 individual records



National CRC screening registry



Stratified by

- Screening round (1st, 2nd, 3rd, 4th)
- Sex
- Fecal Hemoglobin level

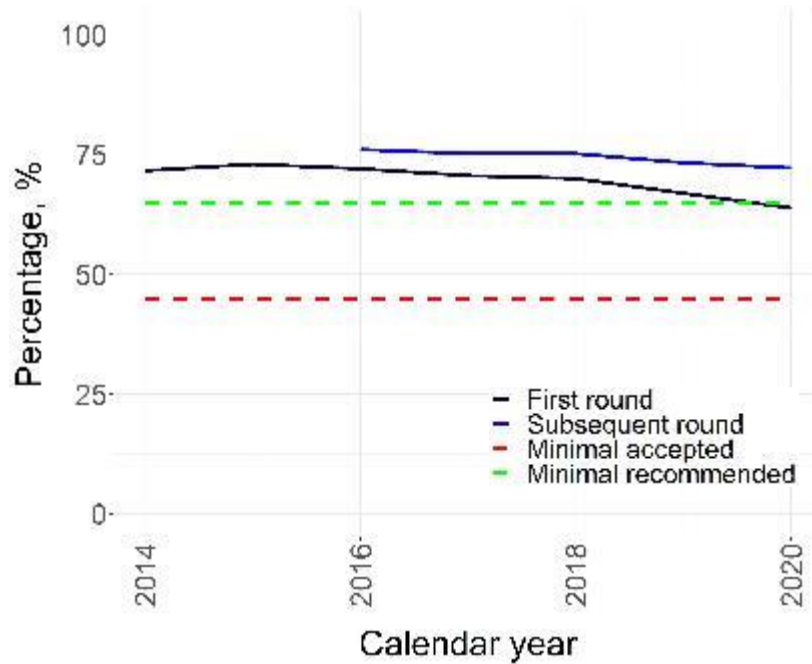


Key performance indicators



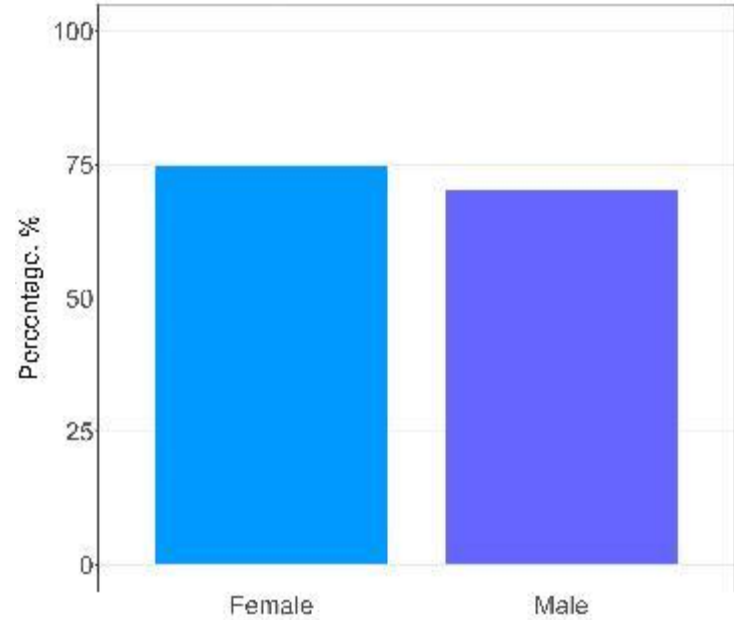
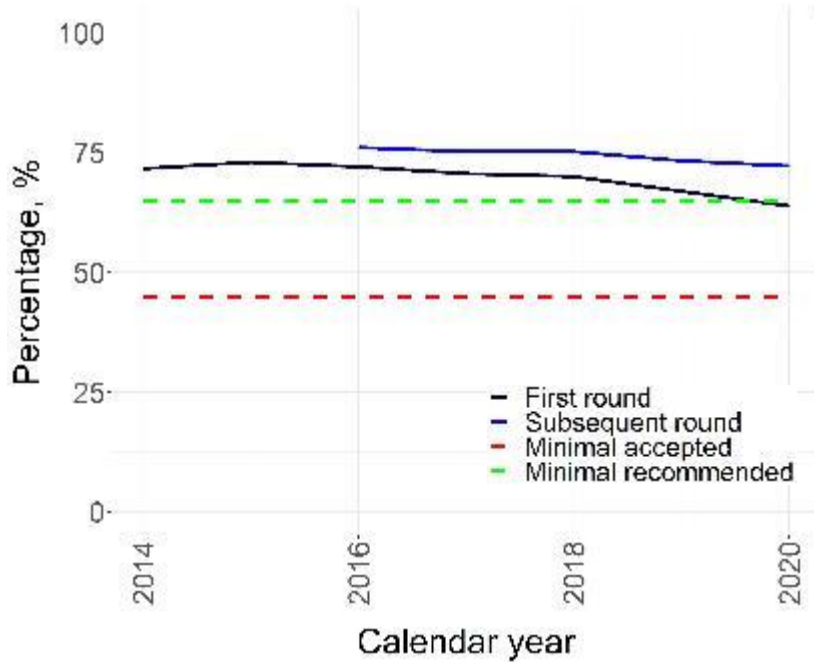


FIT participation



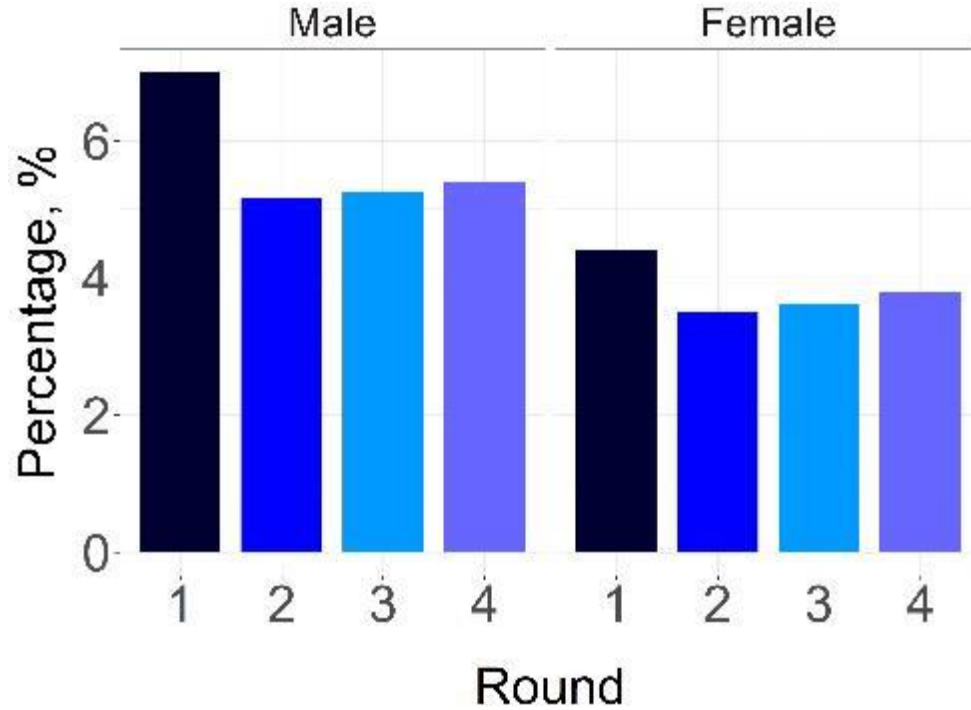


FIT participation



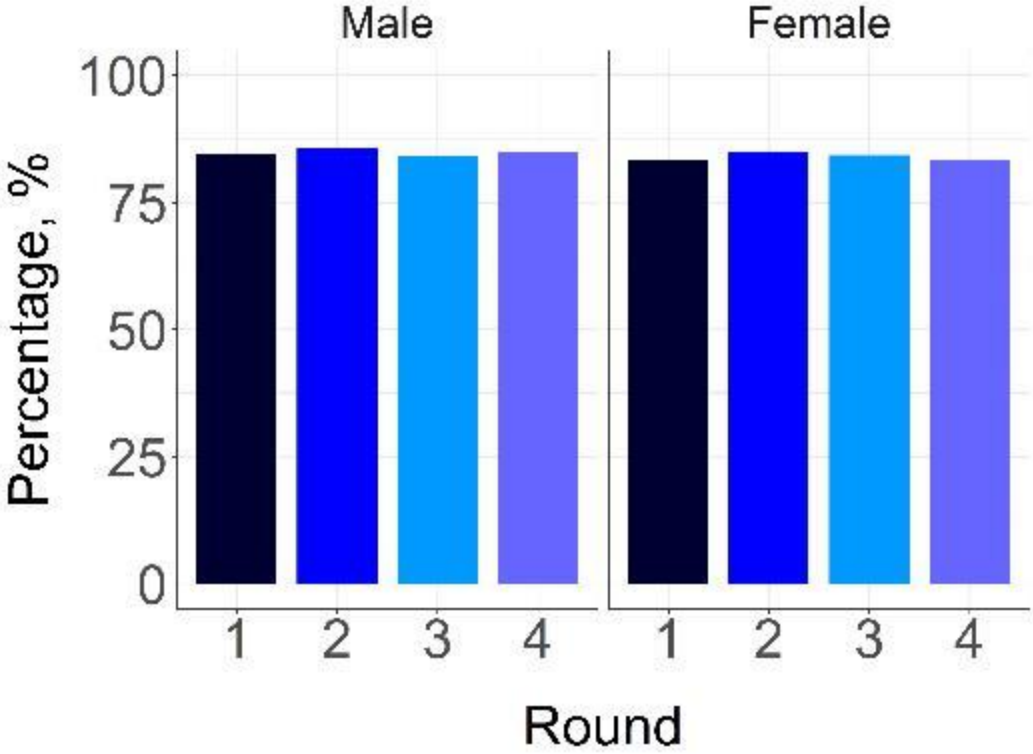


FIT positivity rate





Colonoscopy participation



Benefits



Positive predictive value for CRC and advanced adenomas:

Round 1

Round 2

Round 3

Round 4



Benefits



Positive predictive value for CRC and advanced adenomas:



Round 1

Round 2

Round 3

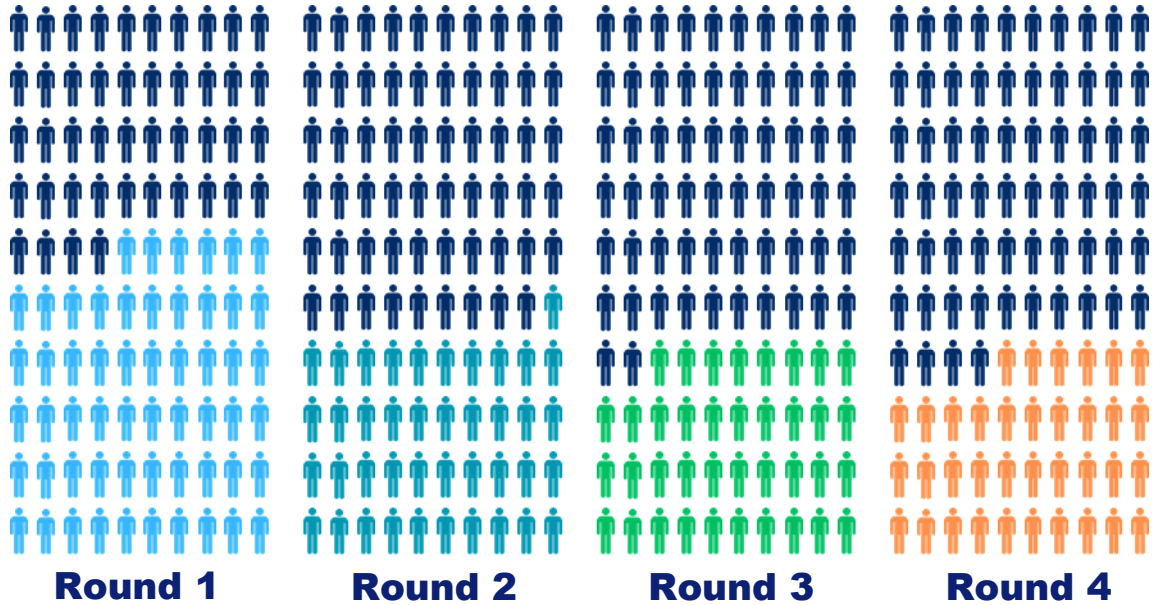
Round 4



Benefits



Positive predictive value for CRC and advanced adenomas:



Benefits



Positive predictive value for CRC and advanced adenomas:



Round 1

Round 2

Round 3

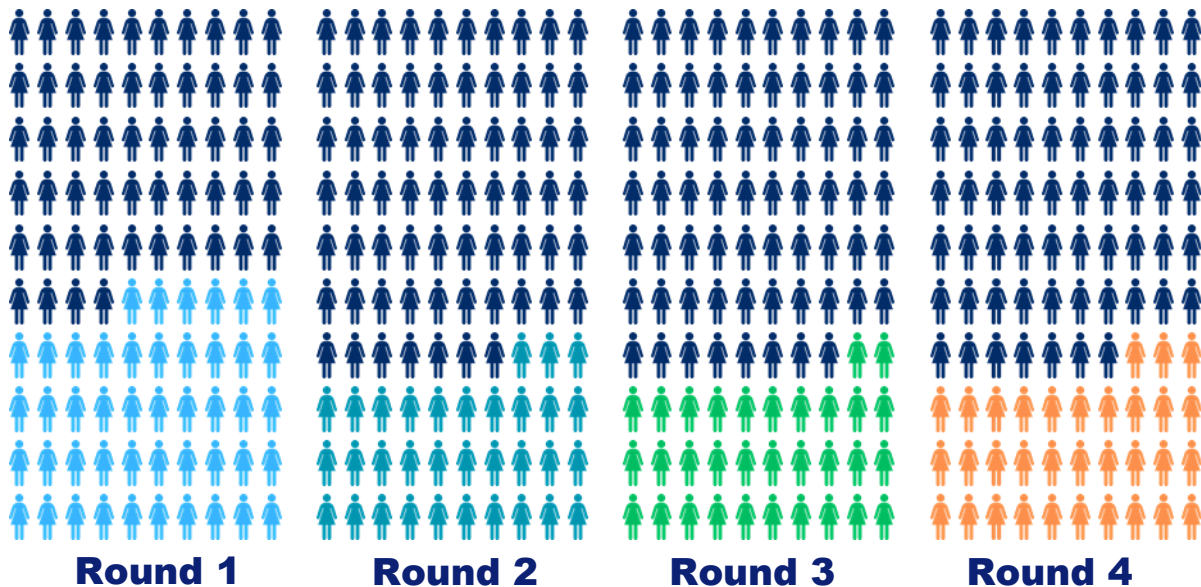
Round 4



Benefits



Positive predictive value for CRC and advanced adenomas:



Harms

- False positive rate:

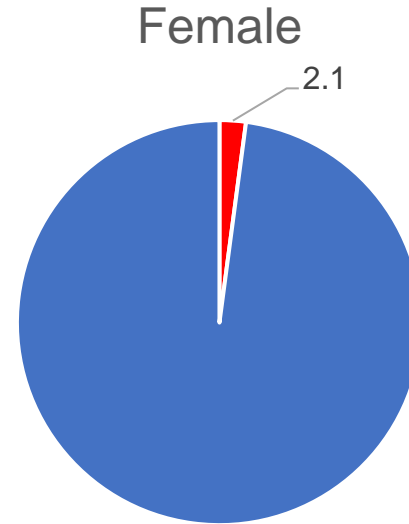
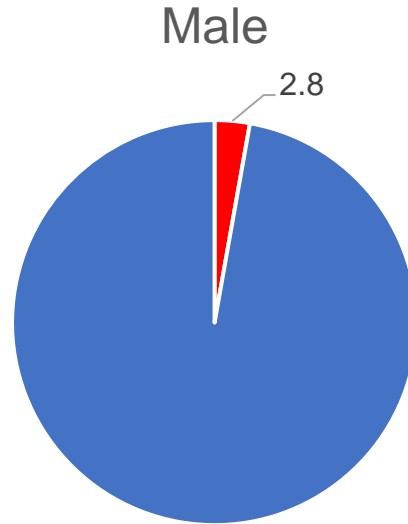
- Colonoscopy complication rate





Harms

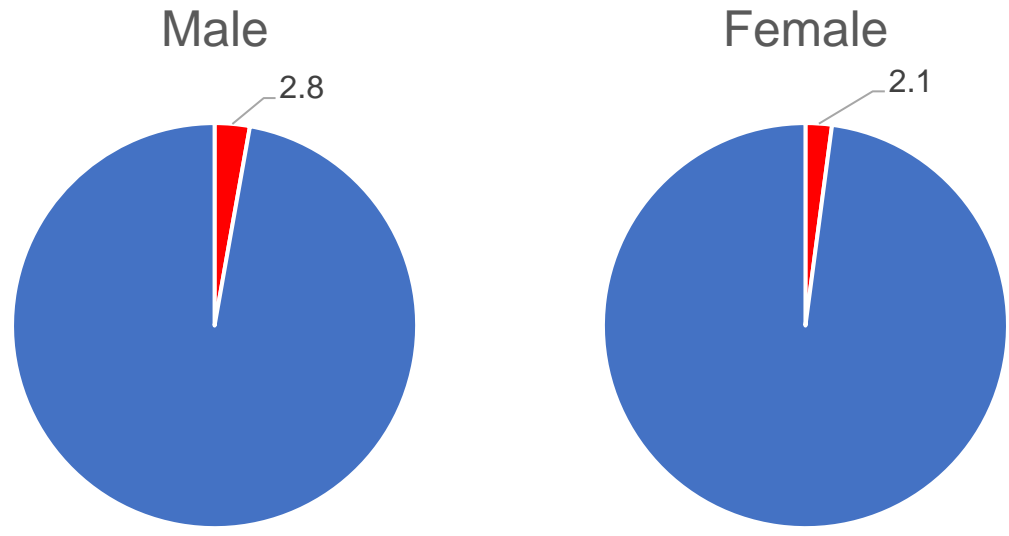
- False positive rate:





Harms

- False positive rate:



- Colonoscopy complication rate: < 1%



Performance of FIT



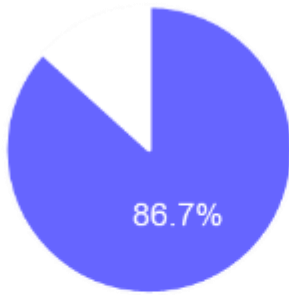
Performance of FIT

- FIT sensitivity
 - Detection method in one episode
 - $\frac{\text{(Screen-detected cancers in one episode)}}{\text{Screen-detected cancers + Interval cancers in one episode}}$

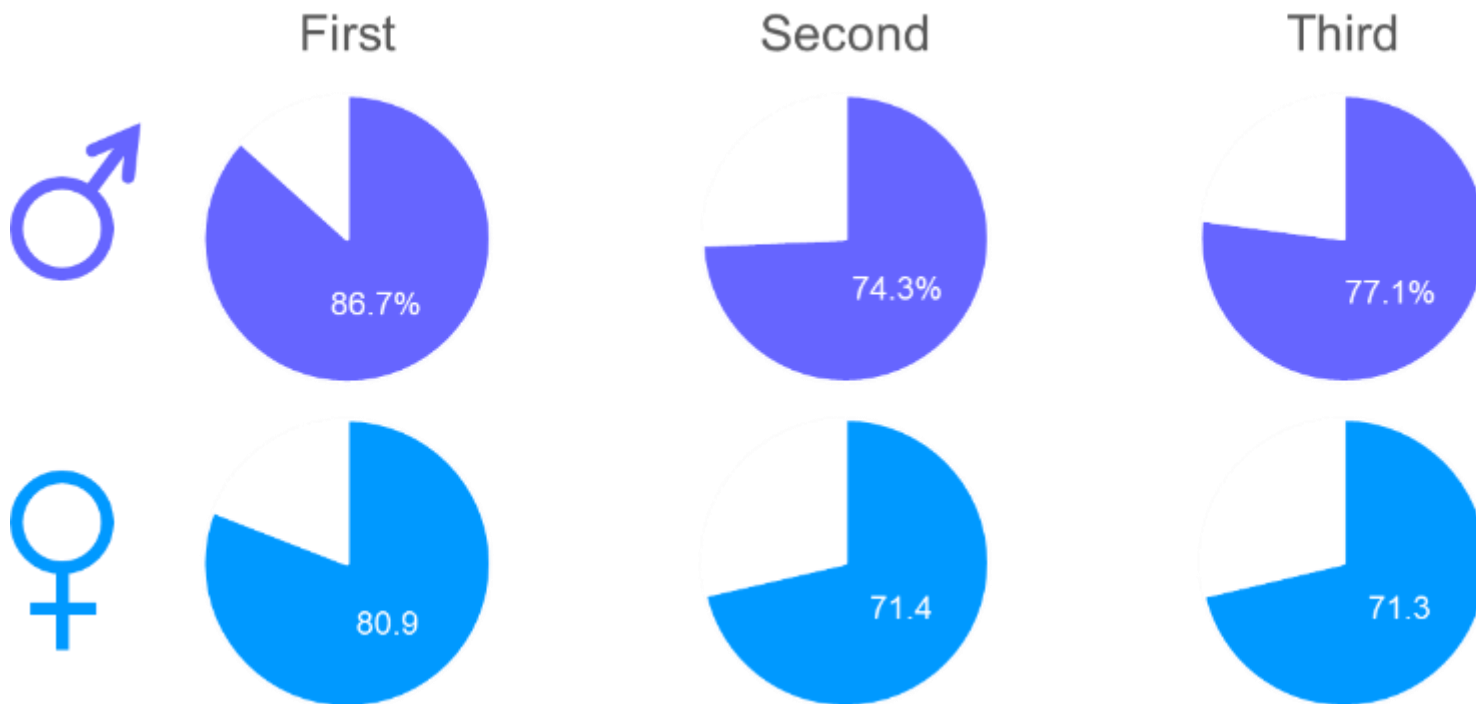


FIT sensitivity

First



FIT sensitivity





One size fits all?

- Currently, uniform screening



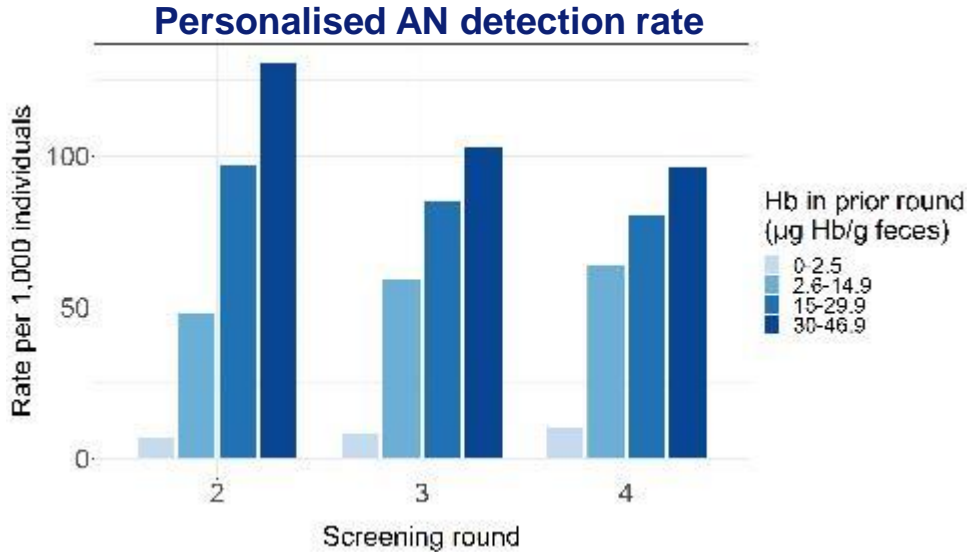
One size fits all?

- Currently, uniform screening
- Harm-benefit ratio differs between
 - Sex
 - Age



One size fits all?

- Currently, uniform screening
- Harm-benefit ratio differs between
 - Sex
 - Age
 - Screening history





Take home message

- Based on these screening indicators, the Dutch Health Council concluded
 - the Dutch CRC screening program has a **favorable harm-benefit ratio**
 - future research into **improving** the program with a **personalized screening strategy**.



Thank you!

Lucie de Jonge
l.dejonge.3@erasmusmc.nl



Want to know more about the
advice of the Health Council?

Department of Public Health



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Erasmus MC
Universiteit Medisch Centrum Rotterdam

