

# Cut-off value in the population-based colorectal cancer screening programme

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## Executive summary

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Health Council of the Netherlands



In 2009, the Health Council of the Netherlands recommended introducing a population-based screening programme for colorectal cancer for men and women in the age of 55 to 75 years. The screening programme was phased in from 2014 onwards, so that the entire target group would be invited to take part at the end of 2019. The population-based screening programme comprises a faecal test in which participants' stools are examined for the presence of blood. If the concentration exceeds a predetermined threshold (the cut-off value), the participant is referred for a visual examination of the large intestine (colonoscopy) to enable diagnosis of colorectal cancer.

At the start of the screening programme, a cut-off value was adopted for haemoglobin (a protein found in human blood) of 88 nanograms per millilitre of stool dissolved in a buffer. Soon after, the cut-off value was raised because an unexpectedly high number of participants were being referred for a colonoscopy. A cut-off value of 275 ng/ml appeared to bring the results

back in line with the expectations and corresponding favourable risk-benefit ratio, as reported in the the Health Council's advice in 2009. That cut-off value is since then being used.

Now that the phasing in of age groups nears completion, more data is available than in 2009 and 2014. The State Secretary of Health, Welfare and Sport has asked the Health Council to consider the cut-off value used in the screening programme. In addition, he has asked whether a different cut-off value than in the screening programme could be used in colorectal cancer research.

The Committee on Population Screening has compared the results of the current screening programme against the results expected in the advice issued by the Health Council in 2009. The results are sufficiently comparable to the expectations and fit a favourable risk-benefit ratio. The risk of complications due to a colonoscopy was difficult to compare, because

of insufficient data in 2009. Weighing it all up, the committee has no concerns about the risk-benefit ratio of the screening. The faecal test and the current cut-off value seem to reasonably predict whether a participant, in follow-up testing, will be diagnosed with colorectal cancer or advanced adenomas and the number of complications due to a colonoscopy is allowable. The committee therefore advises provisionally against changing the cut-off value.

For colorectal cancer studies using a faecal test, usually permits will be required within the extent of the Population Screening Act. Permits can be granted for such studies if the requirements imposed by the Population Screening Act are met. These requirements for example concern the scientific validity and a favourable risk-benefit ratio of the screening study. And these need to be determined for each individual study application into faecal tests, irrespective of a similar, higher or lower cut-off value.



The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity.

The reports are available to the public.

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