


**OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING**  
**Saturday, May 1, DDW New Orleans, 2010**  
**Presenter: Sietze Van Turenhout**

 **World Organisation of Digestive Endoscopy**

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**Colorectal Screening Committee**  
S.T. van Turenhout  
L.G.M. van Rossum

**Immunochemical fecal occult blood tests:  
how to use quantification**

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**The perfect choice in quantification**

for colorectal cancer (CRC) screening  
with quantitative fecal immunochemical  
tests (FIT)

**DOES NOT EXIST**

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**Background**

- FIT superior to g-FOBT:
  - Detection rates
  - Participation rates
  - Objective analysis
  - High throughput analysis
- *Wet* FITs → Quantitative results → Cut-off values

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## Consequences of cut-off values

• Publications on effect of cut-off values

**ORIGINAL PAPER**  
 Basic variables at different positivity thresholds of a quantitative immunochemical test for faecal occult blood


**Annals of Internal Medicine**  
 A Quantitative Immunochemical Fecal Occult Blood Test for Colorectal Neoplasia

**ARTICLE**  
 Screening for colorectal cancer: random comparison of guaiac and immunochemical fecal occult blood testing at different cut-off levels

Immunohistochemical fecal occult blood test: number of samples and positivity cutoff. What is the best strategy for colorectal cancer screening?

**Which cut-off value is optimal?**

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## Cause and effect / action and reaction

	g-FORT	FIT 50	FIT 100	FIT 400
Positivity rate			5,5%	2,4%
Endoscoped Pos	103	428	30	122
CRC	11	28	1	16
Adv. Adeno		161	1	53
Extra CRC	n.a.	17	13	5
Extra AA	n.a.	7	7	7
PPV CRC	11%			13%
PPV CRC+AA	55%	44%		57%
NNT Scope CRC	1,8	2,3	1,9	1,8
Scopies/10 <sup>5</sup> invited			2,800	1,250

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## Screening perspectives

- Cure all cases (high sensitivity)
- Limit false positives (high specificity)
- Not only diagnostic performance:
  - Culture
  - Acceptation of program by society
  - Capacity
  - Screening round frequency
  - Number of samples
  - Running program

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**Current and future programs:**

**Italy**

- Introduction program: 1982 g-FOBT
- Introduction FIT: 1996
- Choice: 100ng/ml, repeated biannually  
**sensitivity over specificity**

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**Current and future programs:**

**Scotland**

- After Nottingham trial: g-FOBT
- Future: introduction of FIT
- **Colonoscopy capacity as directive!**
- Cut-off value from  
 very high – in the *prevalent* phase  
 to 'normal' – in the *incident* phase

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**High cut-off value**

	<i>g-FOBT</i>	FIT 400	FIT 500
Positivity rate	<b>2,4%</b>	2,4%	2,0%
CRC	11	16	16
Adv. Adenomas	46	53	46
Extra CRC	-	<b>+45%</b>	<b>+45%</b>
Extra AA	-	<b>+15%</b>	0?
PPV CRC	11%	13%	<b>15%</b>
PPV CRC+AA	55%	57%	60%
NNT Scope CRC+AA	1.8	1.8	1.7
Scopies/10 <sup>5</sup> invited	<b>1,000</b>	1,250	<b>1,000</b>

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**Current and future programs:**

**the Netherlands**

- Dutch Health Counsel: start implementation
- 50ng/ml most effective
- Conclusion: start with 75ng/ml, 55-75 yrs
  - CRC detection 50ng ≈ 75ng
  - Extra detection at 50ng = adv adenomas
- **Strength of screening lies in repetition**

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**Conclusion and discussion**

- **Not one** single optimal cut-off value exists
- Influencing the optimal quantification for FIT:
  - Intention of the program
  - Diagnostic performance
  - Capacity
  - Decision on screening test
  - Current screening status
  - Others...

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