

# SCREENING FOR COLORECTAL CANCER BY FIT: NUMBER NEEDED TO SCREEN AND TO SCOPE TO FIND ONE ADVANCED NEOPLASM



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## Background

In a screening program for colorectal cancer one method of expressing the costs and benefits is the number of people who need to be screened (NNS) and the number who need to be scoped (NNSC) to detect one advanced neoplasm (AN-advanced adenoma or cancer). There is a lack of data of NNS in repeated rounds with fecal immunological test (FIT).

## Population and Methods

Starting from October 2001, the 2959 subjects aged 50 to 74, out of 9814 resident in two towns of Aosta Valley (Italy), were invited every 2 years by letter to perform a 1-day latex FIT (OC Sensor), with a 100 ng/ml cut-off. Patients with positive test were referred for colonoscopy. We calculated the NNS, the NNSC and the cumulative number of tests over 4 biennial rounds of screening in the same cohort of people.

## Results

Of the 2959 subjects in the initial cohort, 2161 (73%) performed at least 1 test, 1559 (53%) 2 consecutive tests, 971 (33%) 3 consecutive tests and 713 (24%) 4 tests. The yields of screening are reported in table 1. The NNS necessary to detect one AN in the first round was 62, higher for women than for men (89 vs 45). The NNS increased to 87 and 97 in the subsequent two rounds. The NNSC was higher for women than men (3.8 vs 2.3) and remained essentially unchanged even after several negative tests, reflecting the stability of the positive predictive value. The total number of exams to find one AN, in people having consecutive negative tests, increased 3 to over 4 times in the three subsequent rounds, always with sharp difference between men and women.

**Table 1:** NNS and NNSC and cumulative exams to find one AN in consecutive FIT

Tests	1	2	3	4
People	2161 (73%)	1559 (53%)	971 (33%)	713 (24%)
FIT+	92 (4,2%)	67 (4,3%)	33 (3,4%)	36 (5,0%)
Colonoscopy	87	58	29	35
AN	35	18	10	11
NNS	62	87	97	64
NNSC	2.5	3.2	2.9	3.2
<b>CUMULATIVE</b>				
Exams	2161	3118	2913	2852
N test/1AN	62	173	291	259

## Conclusions

The NNS to detect one AN was 62 in the first round, lower than when using guaiac in French population screening<sup>1</sup> (NNS:107) and similar to a study<sup>2</sup> (NNS: 41) with the same FIT as our. In the other rounds the NNS increased but not too much, in relation to the number of negative previous exams. The NNSC was always around 3. The total number of exams to find one AN rose from 3 to over 4 times in subsequent rounds. The NNS and the NNSC were always higher in women. Over 4 rounds 29 people had to be screened on average 2.6 times to detect one AN. The NNS and the NNSC were always higher in women.