

## **Abstract**

### **Title: Initial participation as a predictor for continuous participation in population based colorectal cancer screening**

**Objectives:** The aim was to assess patterns of participation and probabilities of participation in subsequent screening rounds, during the first 8 years of the population based colorectal cancer screening program in Stockholm-Gotland region.

**Methods:** All individuals who were invited between 1 January 2008 and 30 September 2015 were included in the study, during which guaiac-based FOBT was used. All individuals with three complete invitation rounds were included in the analysis.

**Results:** In total, 346.168 individuals were eligible for invitation to screening and the average participation rate during the follow-up period was 60 %, (65 % and 55 % for women and men respectively). Overall, 71 % participated at least once and 50 % participated in all three rounds. Participation at first invitation was a strong predictor for participation in subsequent rounds, and the likelihood of continuous participation was 84 % provided that the individual participated in the first screening round. Of those who attended the first and second rounds, 93 % also participated in the third round. Similar patterns of consistency were seen among non-participants. For individuals not participating in the first screening round, the likelihood of consistent non-participation was 71%.

**Conclusions:** Participation in the first round of screening is a strong predictor for participation in subsequent rounds. Therefore, reducing barriers for initial participation is a key for achieving consistent participation over several rounds in organized colorectal cancer screening programmes.