

**Colorectal Cancer Screening in Average-Risk
Population: a Multicenter, Randomized
Controlled Trial Comparing Immunochemical
Fecal Occult Blood Testing vs. Colonoscopy**

The COLONPREV Study



Background

Colorectal cancer screening in average-risk population

Tests that Detect Adenomatous Polyps and Cancer

Flexible sigmoidoscopy every 5 years, or

Colonoscopy every 10 years, or

Double-contrast barium enema every 5 years, or

Computed tomographic colonography every 5 years

Tests that Primarily Detect Cancer

Annual guaiac-based fecal occult blood test with high test sensitivity for cancer, or

Annual fecal immunochemical test with high test sensitivity for cancer, or

Stool DNA test with high sensitivity for cancer, interval uncertain

U.S. Multi-Society Task Force. CA Cancer J Clin 2008

Aims

Primary end-point

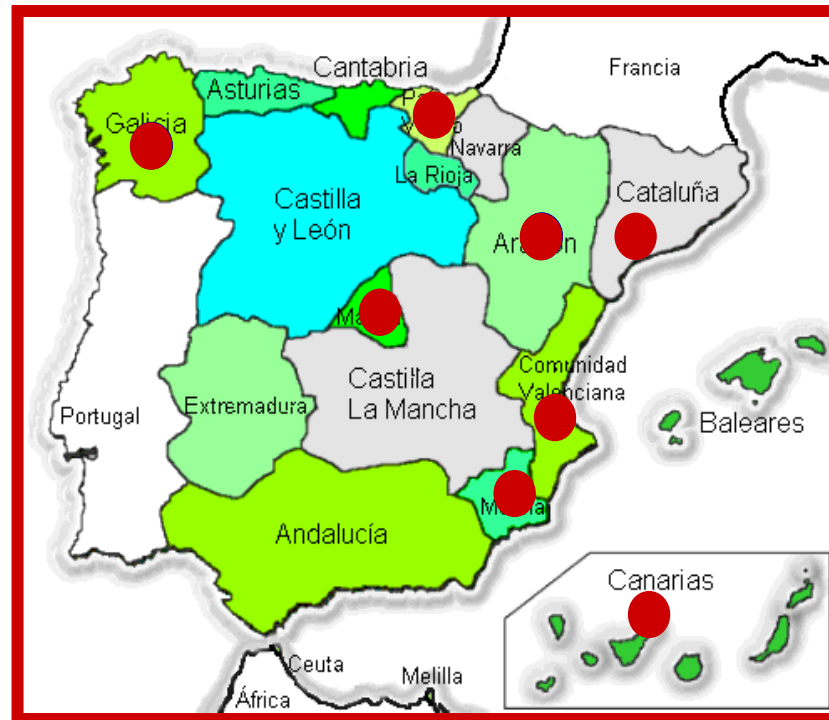
- To compare the efficacy of one-time colonoscopy vs. biennial FIT for the reduction of CRC-related mortality at 10 years in average-risk population

Secondary end-points

- Participation (1st round) and compliance (at 10 years)
- Diagnostic rate and diagnostic yield (1st round and cumulative at 10 years) of advanced colorectal neoplasia
- Complication rate (1st round and cumulative at 10 years)
- Cost-efficacy

Study design

Multicenter, randomized controlled trial in 8 Spanish regions and 15 participating centers



ClinicalTrials.gov number: NCT00906997

Methodology (I)

Inclusion criteria

- Men and women aged 50-69 years

Exclusion criteria

- Personal history of CRC, colorectal adenoma or colorectal polyposis
- Personal history of inflammatory bowel disease
- Family history of colorectal polyposis, Lynch syndrome or familial CRC (≥ 2 FDR with CRC, or one FDR with CRC diagnosed < 60 years of age)
- Severe comorbidity
- Previous total colectomy
- Not signed informed consent to participate

Methodology (II)

Exclusion criteria (temporary)

- **Previous colorectal examination:**
 - **Colonoscopy or flexible sigmoidoscopy within 5 years**
 - **FOBT within 2 years**
- **Presence of colorectal symptoms (rectal bleeding, abdominal pain, changes in intestinal habits, weight loss, fatigue, etc.)**

Methodology (III)

- Cross-over between study groups is allowed
- Incomplete colonoscopy: CT-colonography
- Quality-assurance program:
 - Colonoscopy (i.e. bowel cleansing)
 - Recruitment process
- Online database ([w](#))
- Communication plan
- Analysis by:
 - Intention-to-screen
 - As-screened
 - Per protocol

444 SEED Guidelines

Clinical practice Guidelines: quality of colonoscopy



Alianza para la prevención
del cáncer de colon

AL ENDOSCOPY

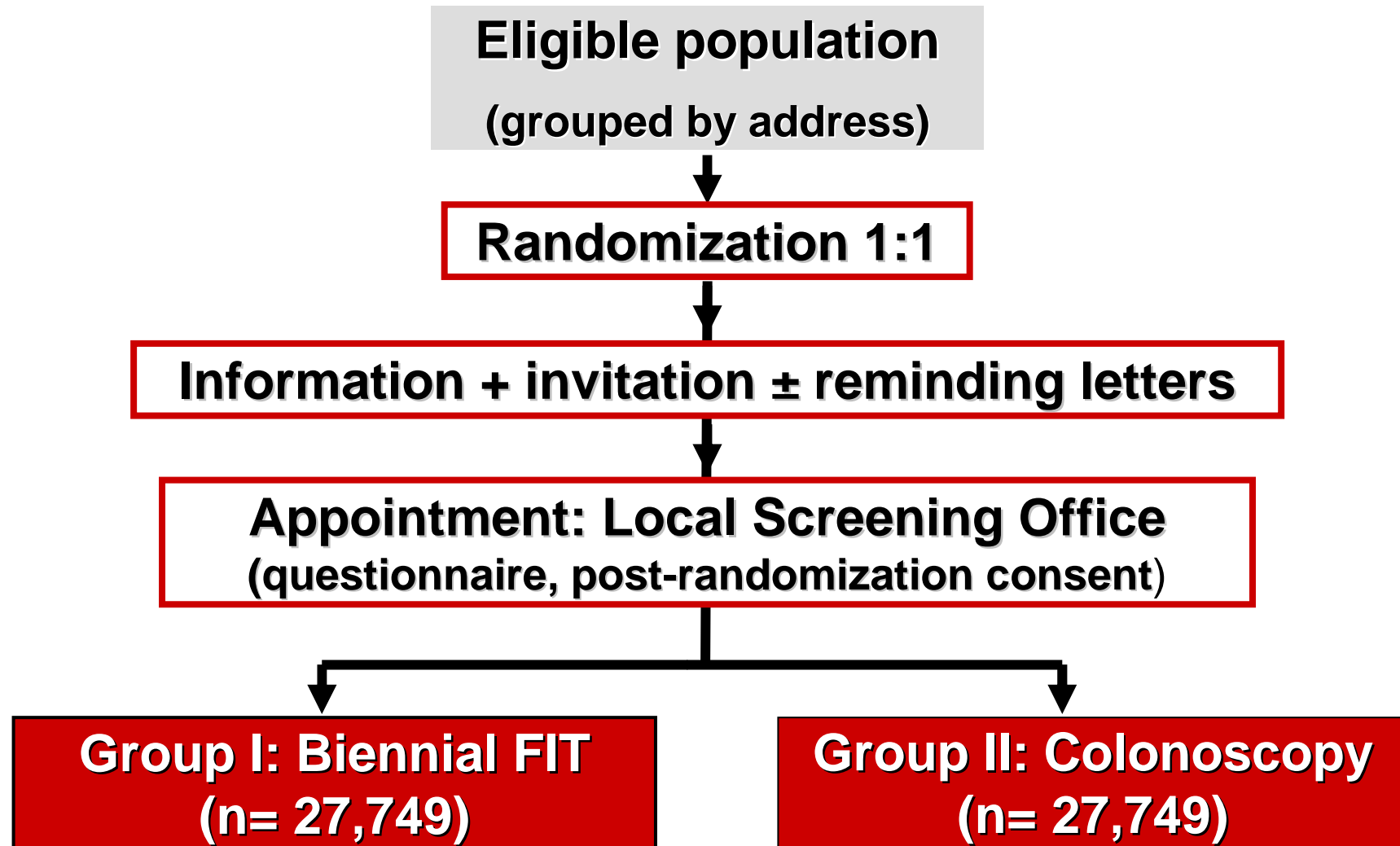
2012

Sample size calculation

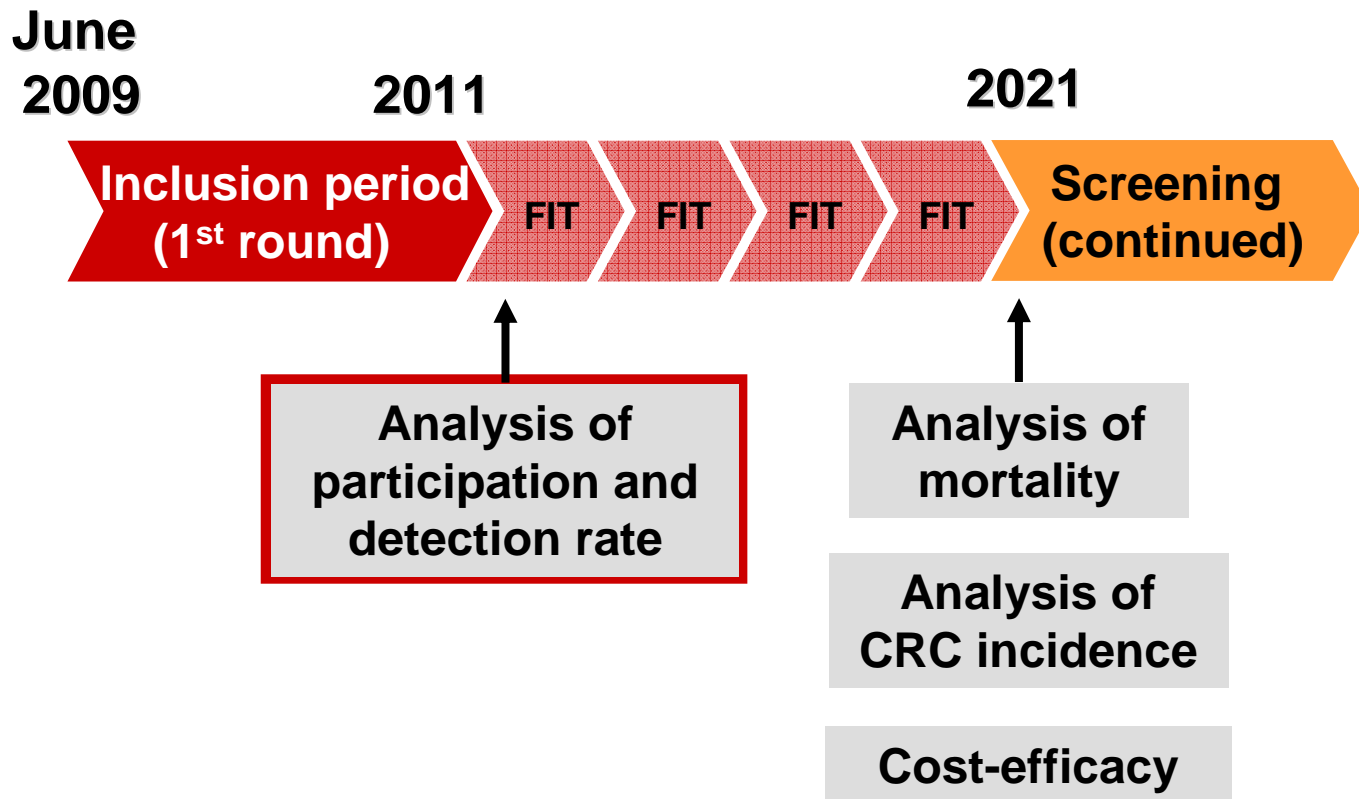
- **Non-inferiority: absolute difference $\leq 1.6\%$ in CRC mortality rate at 10 years:**
 - **FOBT: 3.41%**
 - **Colonoscopy: 1.74%**
- **Alpha risk (one-sided): 0.025**
- **Power (1-beta): 0.20**
- **Overall compliance rate: 30%**

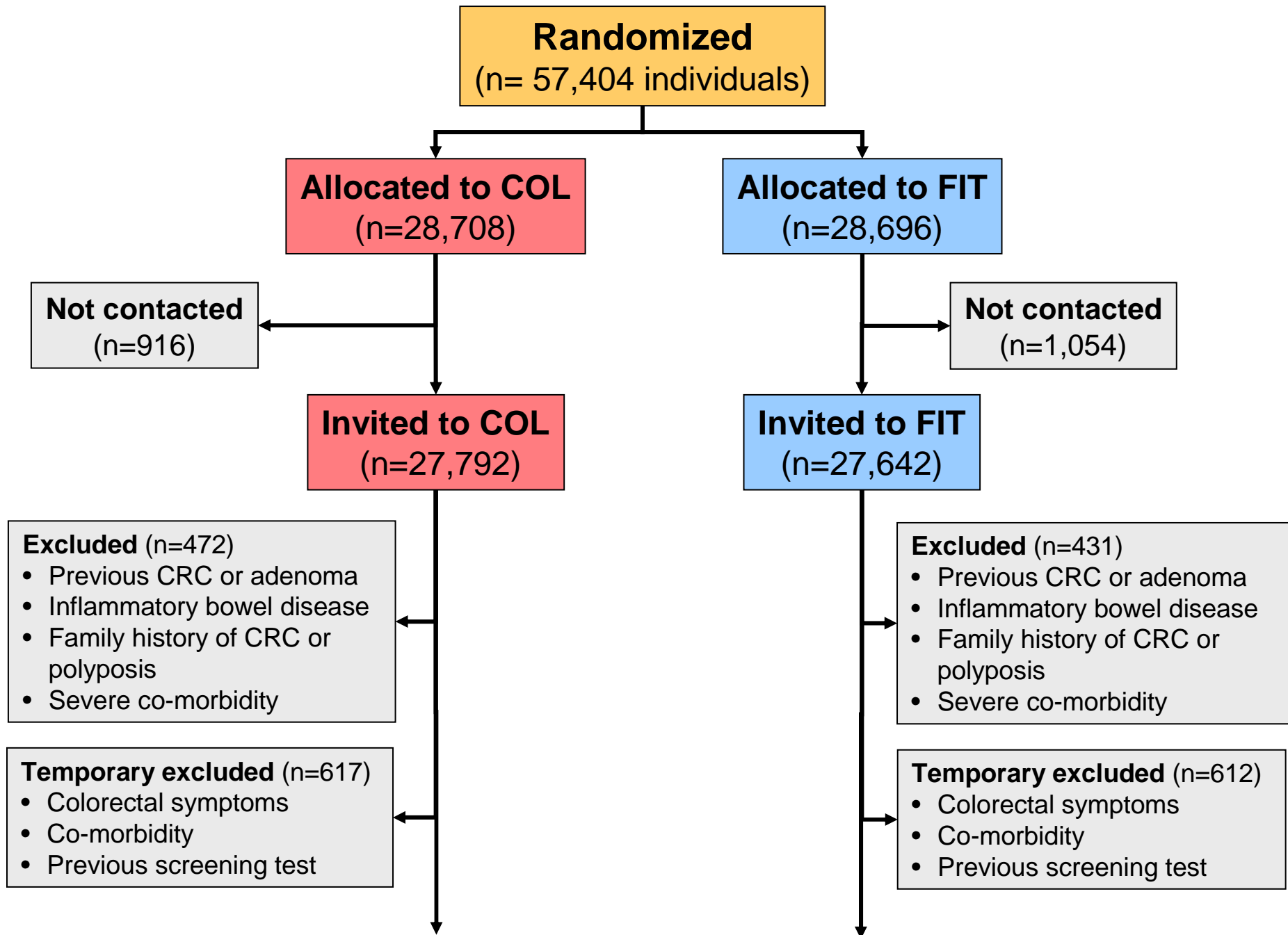
27,749 subjects in each group (total: 55,498)

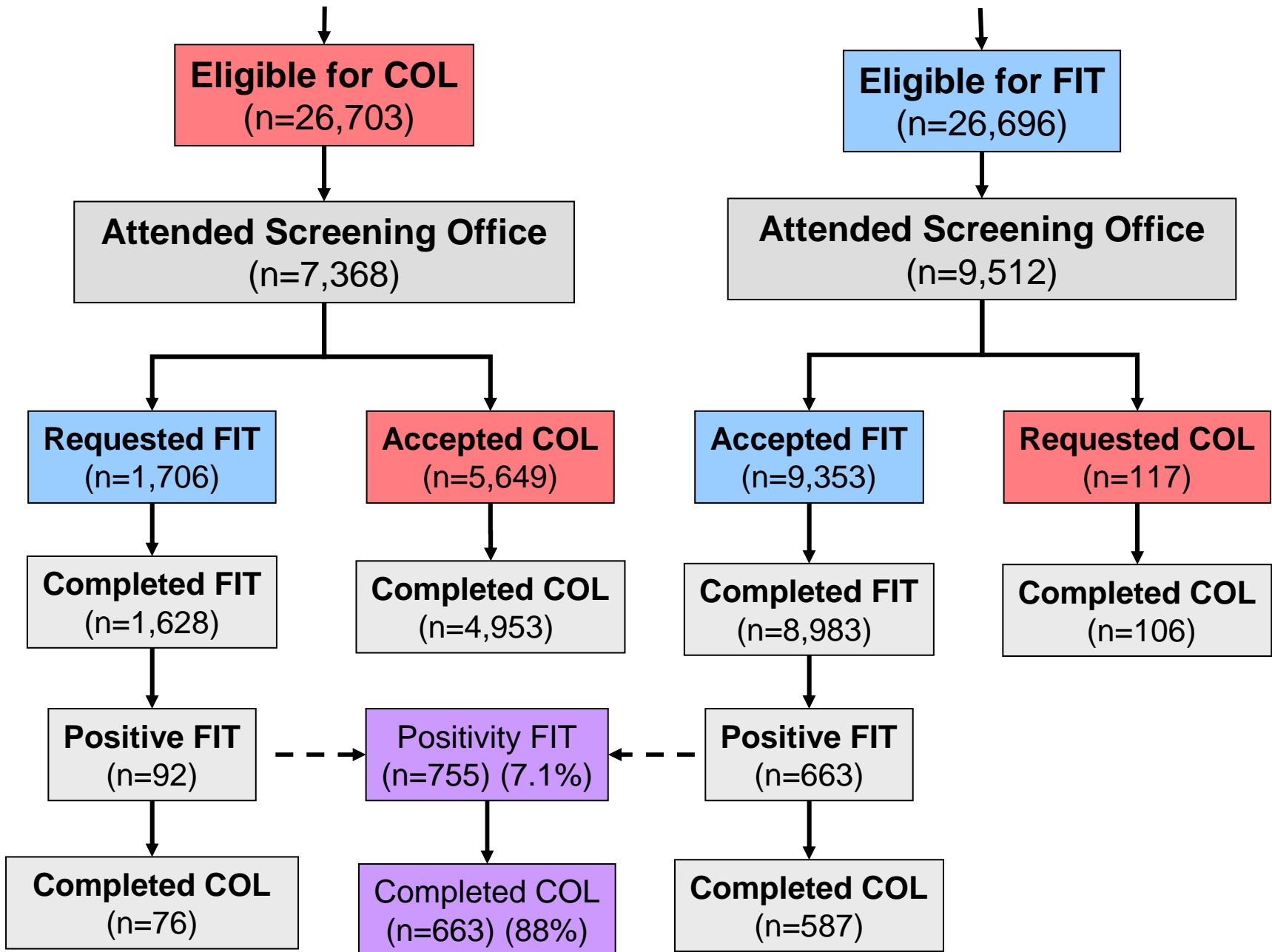
Study flow-chart



Chronogram

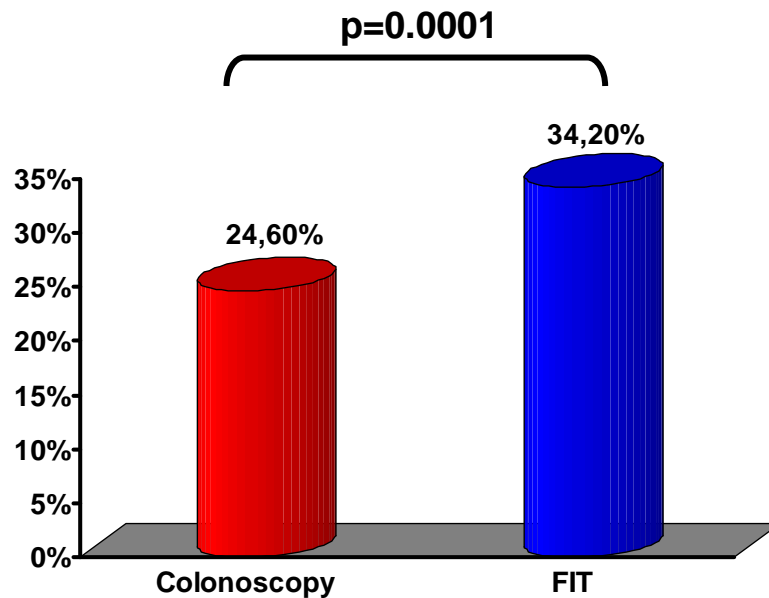






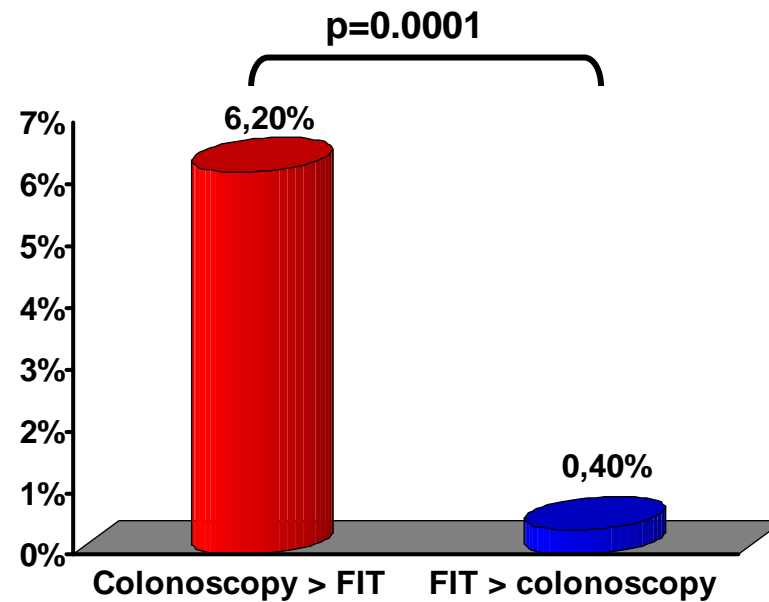
Participation and cross-over rates (*intention-to-screen* analysis)

Participation rate



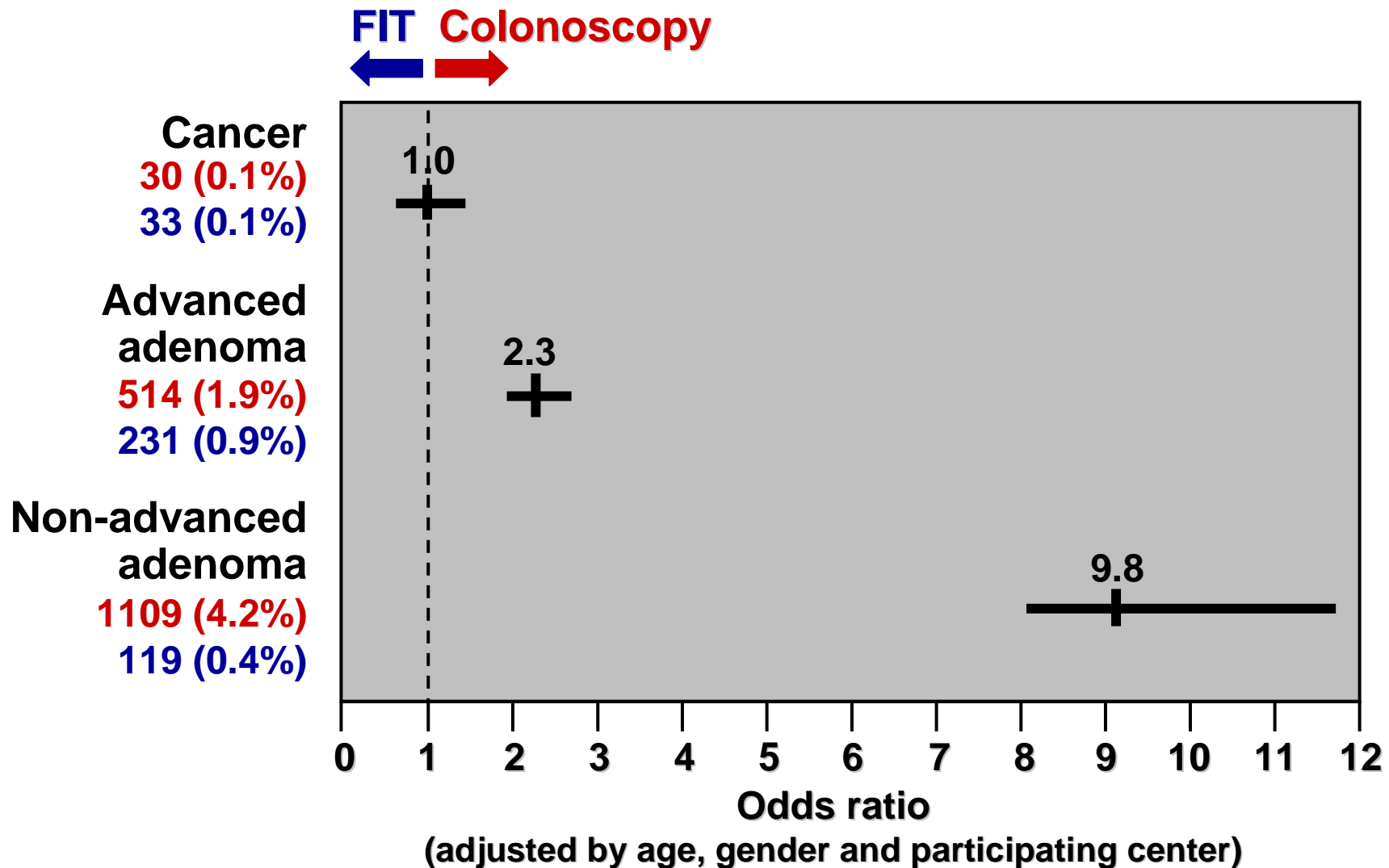
OR, 0.63 (95% CI, 0.60-0.65)

Cross-over rate

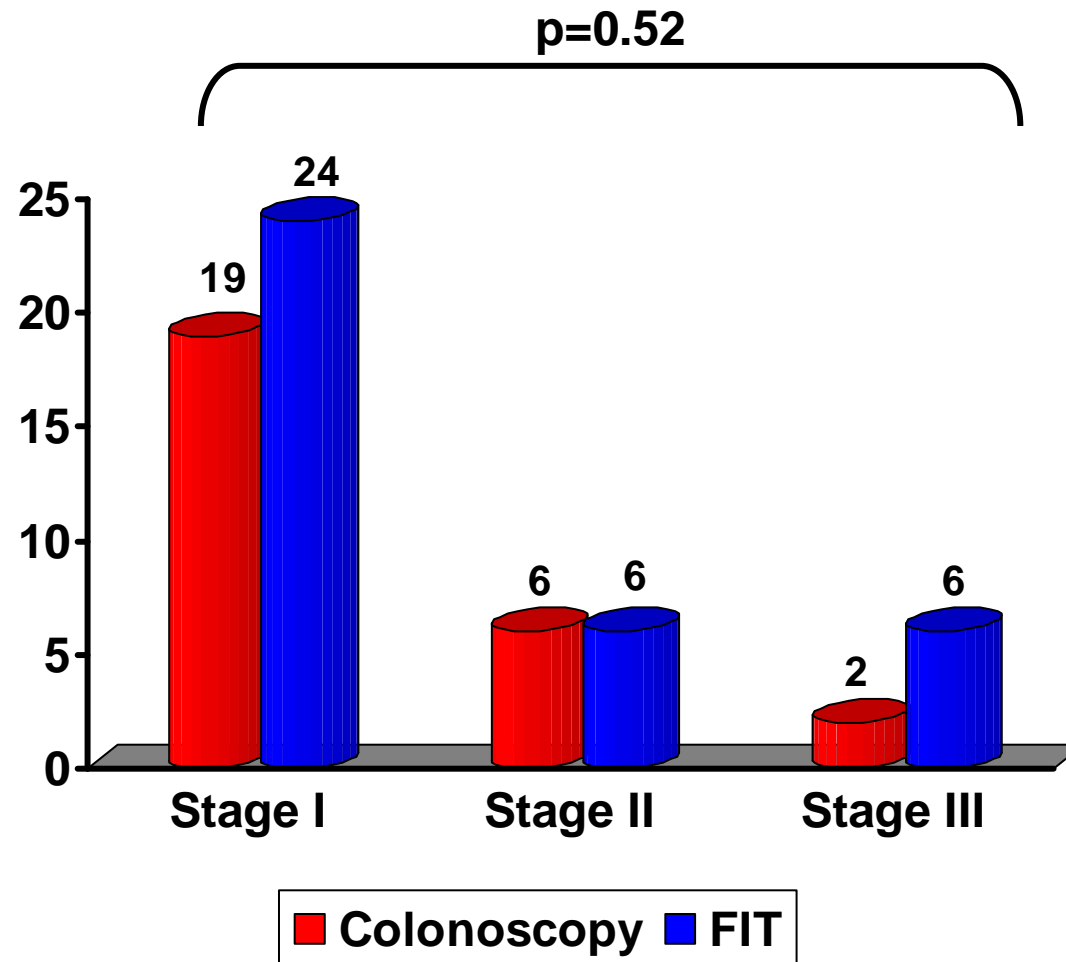


OR, 16.8; 95% CI, 13.9-20.2)

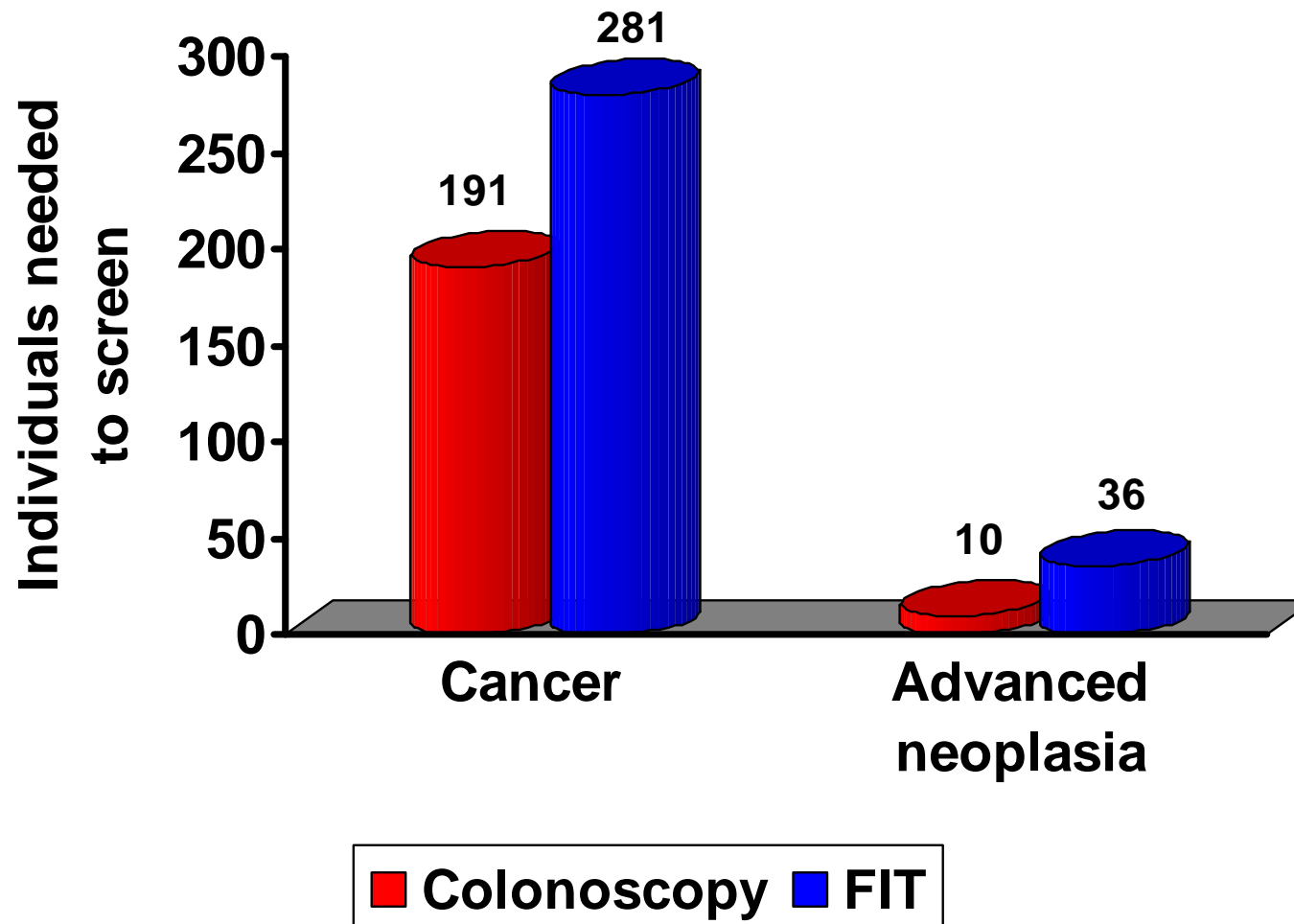
Diagnostic yield (*intention-to-screen* analysis)



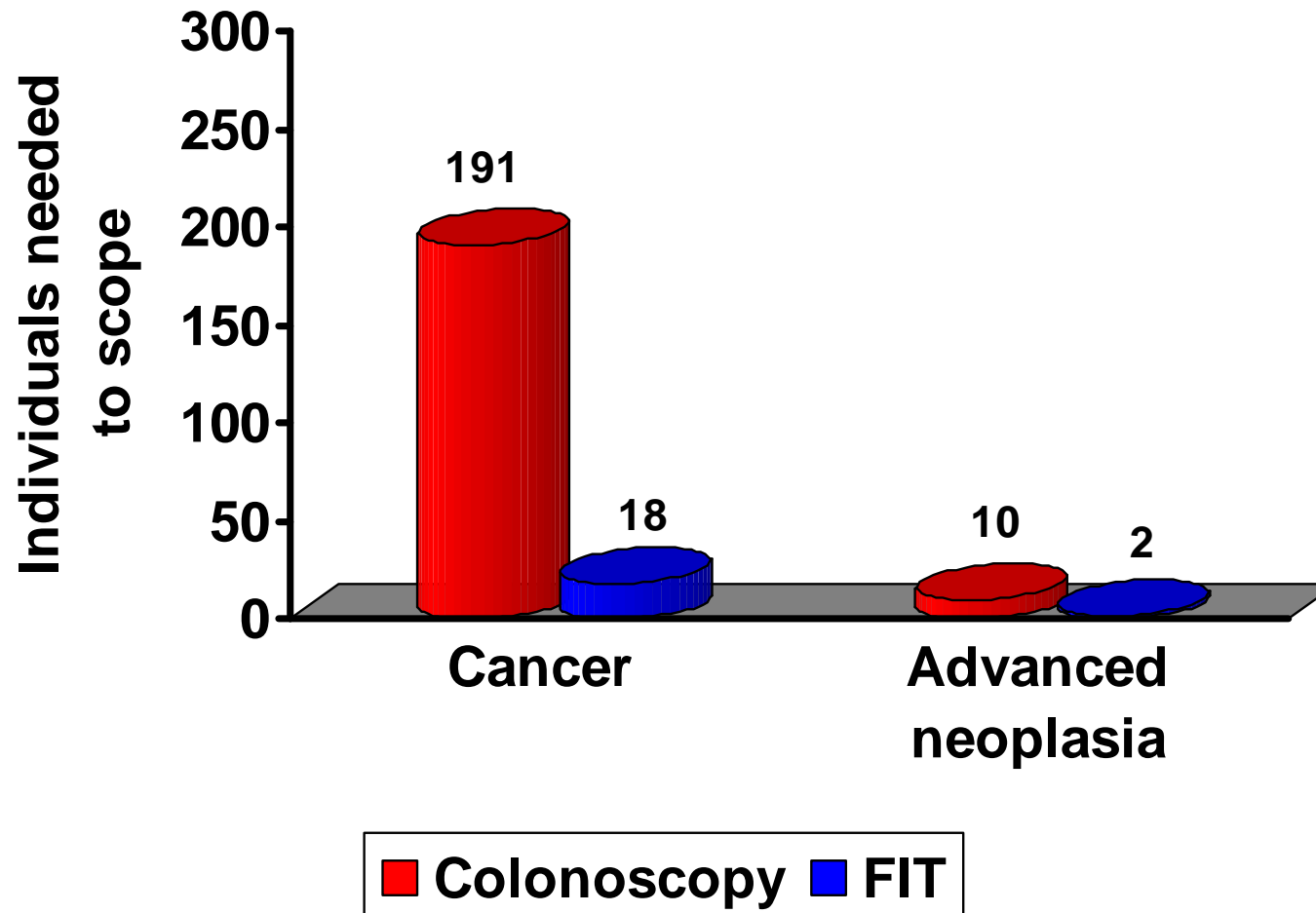
Colorectal cancer staging (*as-screened* analysis)



Number needed to screen (*per protocol analysis*)



Number needed to scope (*per protocol analysis*)



Summary

- **Subjects in the FIT group were more likely to participate in CRC screening than subjects in the colonoscopy group.**
- **On the baseline screening examination, the number of subjects in whom CRC was detected was similar in the two study groups, but more adenomas were detected in the colonoscopy group.**
- **The comparative effectiveness of FIT and colonoscopy for preventing death from CRC will be assessed at the completion of this 10-year trial.**

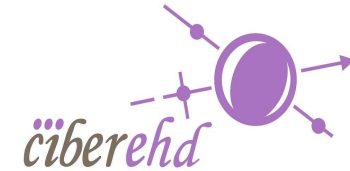
Estudios anidados

- Rendimiento de la sigmoidoscopia en el cribado de CCR (**Antoni Castells, Enrique Quintero, Xavier Bessa**)
- Evaluación de distintos puntos de corte de SOH-i (**Xavier Bessa, Montse Andreu**)
- Factores predictivos de participación (**Lola Salas**)
- Prevalencia de pólipos serrados (**Xavier Bessa, Montse Andreu**)
- Precisión diagnóstica de la determinación de SOH-i cuantitativo en cribado de CCR (**Vicent Hernández**)
- Marcadores para la detección precoz del CCR (**Paz Cadena**)
- Factores predictivos de neoplasia colorrectal (**Rodrigo Jover**)
- Efecto de AAS, AINES y anticoagulantes orales en el resultado de la SOH-i (**Luis Bujanda**)
- Prevalencia de neoplasia colorrectal en familiares de primer grado de pacientes con CCR (**Enrique Quintero**)

Equipo investigador

- **Coordinadores:**
 - **Nacionales:** Enrique Quintero, Antoni Castells
 - **Aragón:** Ángel Lanas
 - **Canarias:** Enrique Quintero
 - **Catalunya:** Montse Andreu
 - **Galicia:** Joaquin Cubiella
 - **Madrid:** Juan Diego Morillas
 - **Murcia:** Fernando Carballo
 - **País Vasco:** Luis Bujanda
 - **Valencia:** Dolores Salas
- **Coordinador de calidad:** Rodrigo Jover
- **Investigadores:** gastroenterólogos, preventivistas, epidemiólogos, patólogos, médicos de AP, enfermeras

Grant support



Local grant support



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