

Κατευθυντήριες Οδηγίες Διαλογής (Screening) για τον Κολο-ορθικό Καρκίνο

ΕΣ Φελέκουρας





Types of cancer in the colon and rectum

- **Adenocarcinomas:**
 - More than 95% of colorectal cancers are adenocarcinomas
- Carcinoid tumors
- Gastrointestinal stromal tumors (GISTs)
- Lymphomas
- Sarcomas

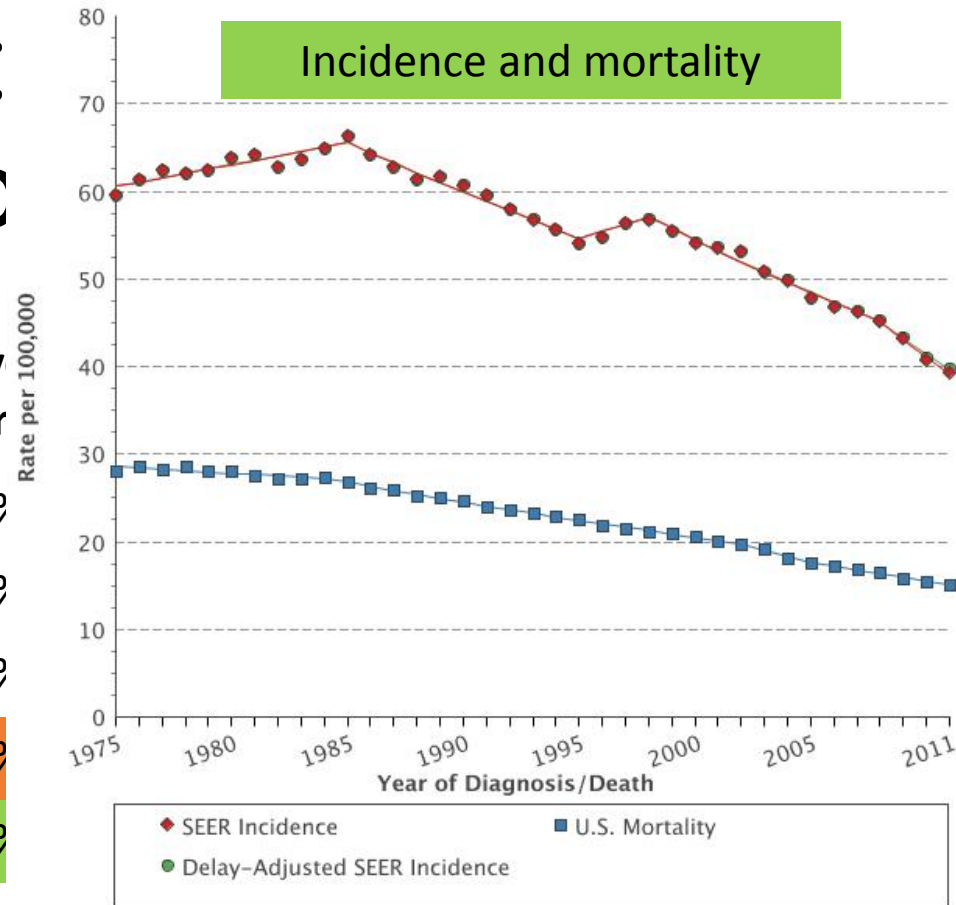




Survival rates

Stage	5-y Survival
I	92%
IIA	87%
IIB	63%
IIIA	89%
IIIB	69%
IIIC	53%
IV	11%

Age-Adjusted Rates
By Data Type
Colon and Rectum, All Ages, All Races, Both Sexes
1975-2011



er, by stage

Relative I Rate



Cancer sites include invasive cases only unless otherwise noted.
Mortality source: US Mortality Files, National Center for Health Statistics, CDC.
Incidence source: SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).
Delay-Adjusted Incidence source: SEER 9 areas (San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, and Atlanta).
Rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130). Regression lines are calculated using the Joinpoint Program Version 4.1.0, April 2014, National Cancer Institute.





Colorectal cancer (CRC) Facts (ACS)

The number of colorectal cancer cases in the United States for 2014
are:

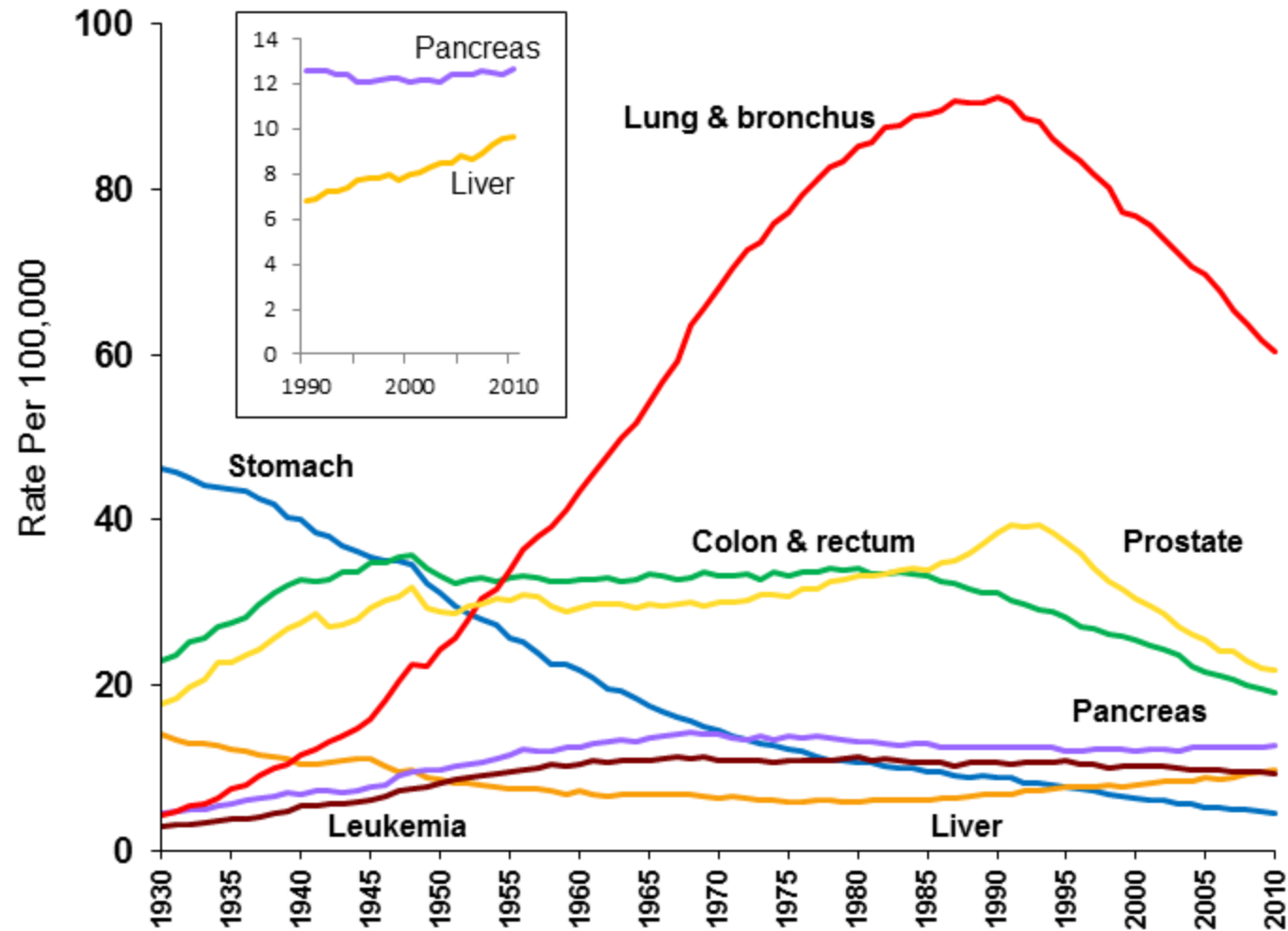
- 3rd common cause of cancer
- 3rd leading cause of cancer-related deaths in men and women in the US
- the **lifetime risk** is about 1 in 20 (**5%**).
 - This risk is slightly higher in men than in women.
- A number of other factors (“Risk factors for colorectal cancer”) can also affect a person’s risk for developing colorectal cancer.

American Cancer Society. Cancer facts and figures 2014.
Atlanta: American Cancer Society; 2014





Trends in Cancer Death Rates* Among Men, US, 1930-2010



*Age-adjusted to the 2000 US standard population.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2013.





Colorectal Cancer Facts

- Incidence of CRC has been declining in the US
 - by 2-3% per year over the last 15 years
- CRC screening probably accounts for this decline by early detection and removal of polyps
- Good evidence shows that screening reduces mortality from CRC

American Cancer Society. Cancer facts and figures 2014.
Atlanta: American Cancer Society; 2014





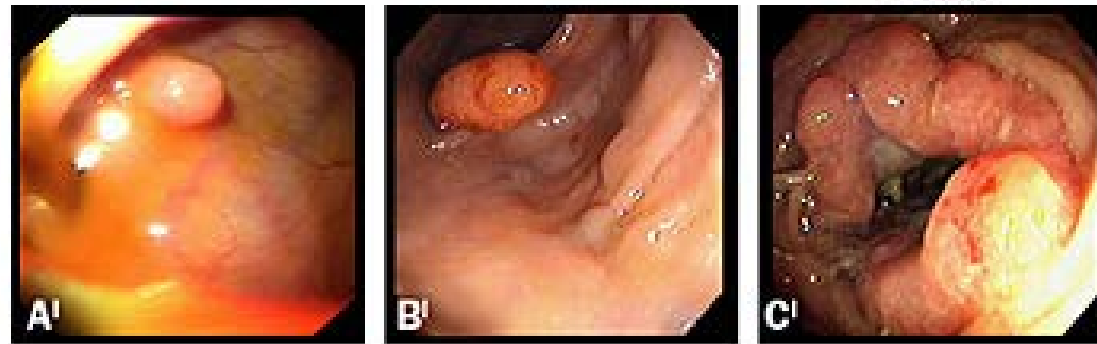
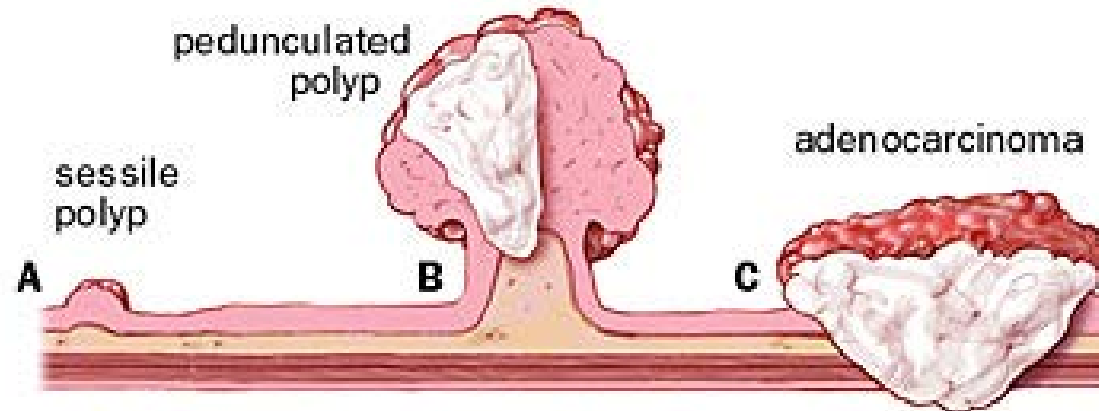
Signs and symptoms of colorectal cancer

- A change in bowel habits, such as **diarrhea, constipation, or narrowing** of the stool, that lasts for more than a few days
- A feeling that you need to have a bowel movement that is not relieved by doing so
- **Rectal bleeding, dark stools, or blood in the stool** (often, though, the stool will look normal)
- Cramping or abdominal (belly) **pain**
- **Weakness and fatigue**
- **Unintended weight loss**





Polyp to Cancer Progression



A. Sessile polyp B. Pedunculated polyp C. Colon cancer





Reasons for decline of death rate

(colon and rectal adenocarcinoma)

1. Polyps are being found by screening and removed before they can develop into cancers.
2. Screening also allows more colorectal cancers to be found earlier, when the disease is easier to cure.
3. In addition, treatment for colorectal cancer has improved over the last several years.

As a result, there are now more than 1 million survivors of colorectal cancer in the United States.





Screening

Screening is the process

of looking for cancer in people who have **no symptoms** of the disease.

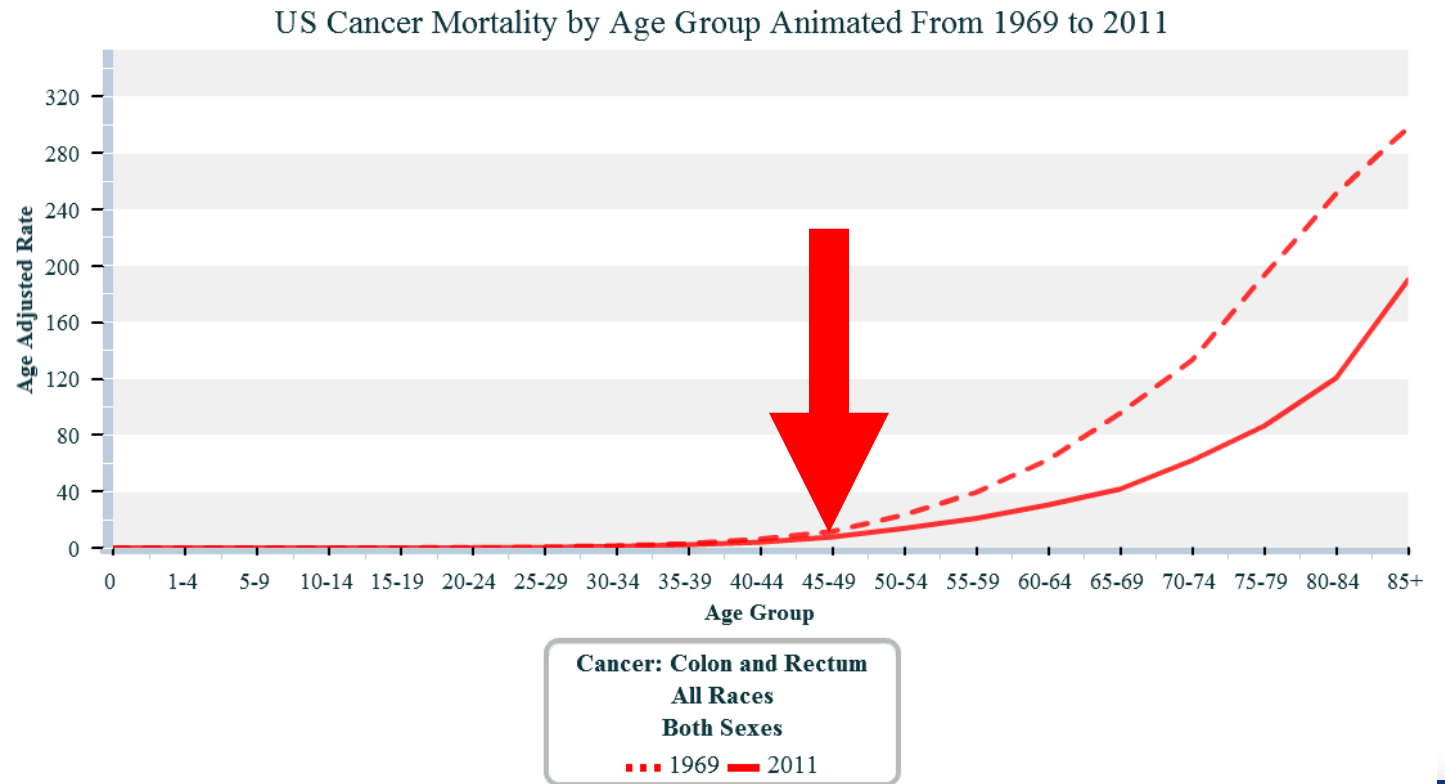
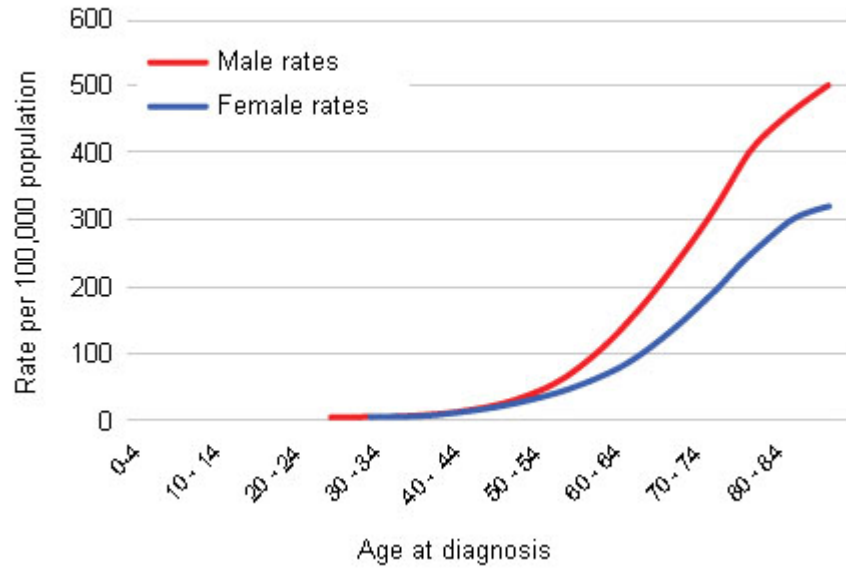




“If, after the age of fifty, you wake up in the morning and nothing hurts, this is strong evidence that you have died during the night.”



Incidence and Mortality



Note: Mortality rates are per 100,000 and are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130).
Source: US Mortality Files, National Center for Health Statistics, Centers for Disease Control and Prevention.
Created by <http://seer.cancer.gov/canstat/animato/> on 11/1/2014





Risk factors

Risk factors you cannot change

- Age
- Personal history of colorectal polyps or colorectal cancer
- Personal history of inflammatory bowel disease (IBD)
- Family history of colorectal cancer or adenomatous polyps
- Inherited syndromes
 - any history of cancer in more distant relatives is also important.
 - Familial Adenomatous Polyposis (FAP)
 - Gardner syndrome is a type of FAP that also involves benign (non-cancerous) tumors of the skin, soft connective tissue, and bones.
 - Hereditary non-polyposis colon cancer (HNPCC): HNPCC, also known as Lynch syndrome, accounts for about 2% to 4% of all colorectal cancers.
 - Turcot syndrome
 - Peutz-Jeghers syndrome:
 - MUTYH-associated polyposis
- Racial and ethnic background
 - African Americans
 - Jews of Eastern European descent (Ashkenazi Jews)

Risk factors you can change

- Type 2 diabetes
- Lifestyle-related factors
 - Certain types of diets
 - Physical inactivity
 - Obesity
 - Smoking
 - Heavy alcohol use

Factors with uncertain, controversial, or unproven effects

- Night shift work
- men who survive testicular cancer.
- men who received radiation therapy to treat prostate

American Cancer Society. Cancer facts and figures 2014.
Atlanta: American Cancer Society; 2014





Table 2. Summary of Selected Risk Factors for Colorectal Cancer

	Relative Risk*
Factors that increase risk:	
Heredity and Medical History	
Family history	
1 first-degree relative ⁴³	2.2
more than 1 relative ⁴³	4.0
relative with diagnosis before age 45 ⁴⁴	3.9
Inflammatory bowel disease ^{† 62}	
Crohn disease (colon)	2.6
Ulcerative colitis	
colon	2.8
rectum	1.9
Diabetes ⁴²	1.2
Behavioral factors⁴²	
Alcohol consumption (heavy vs. nondrinkers)	1.6
Obesity	1.2
Red meat consumption	1.2
Processed meat consumption	1.2
Smoking (current vs. never)	1.2
Factors that decrease risk:	
Physical activity (colon) ⁷³	0.7
Dairy consumption ⁸⁷	0.8
Fruit consumption ⁸⁵	0.9
Vegetable consumption ⁸⁵	0.9
Total dietary fiber (10 g/day) ⁸⁴	0.9

*Relative risk compares the risk of disease among people with a particular "exposure" to the risk among people without that exposure. Relative risk for dietary factors compares the highest with the lowest consumption. If the relative risk is more than 1.0, then risk is higher among exposed than unexposed persons. Relative risks less than 1.0 indicate a protective effect.

†Several recent, small studies indicate that current risk may be lower due to improvements in treatment and the use of colonoscopy screening to detect precancerous lesions.





Facts

- People who have no identified risk factors (other than age) should begin regular screening **at age 50**.
- Those who have a family history or other risk factors for colorectal polyps or cancer (“Risk factors for colorectal cancer”)
 - earlier screening for people with an increased colorectal cancer risk.
 - These recommendations differ from those for people at average risk.

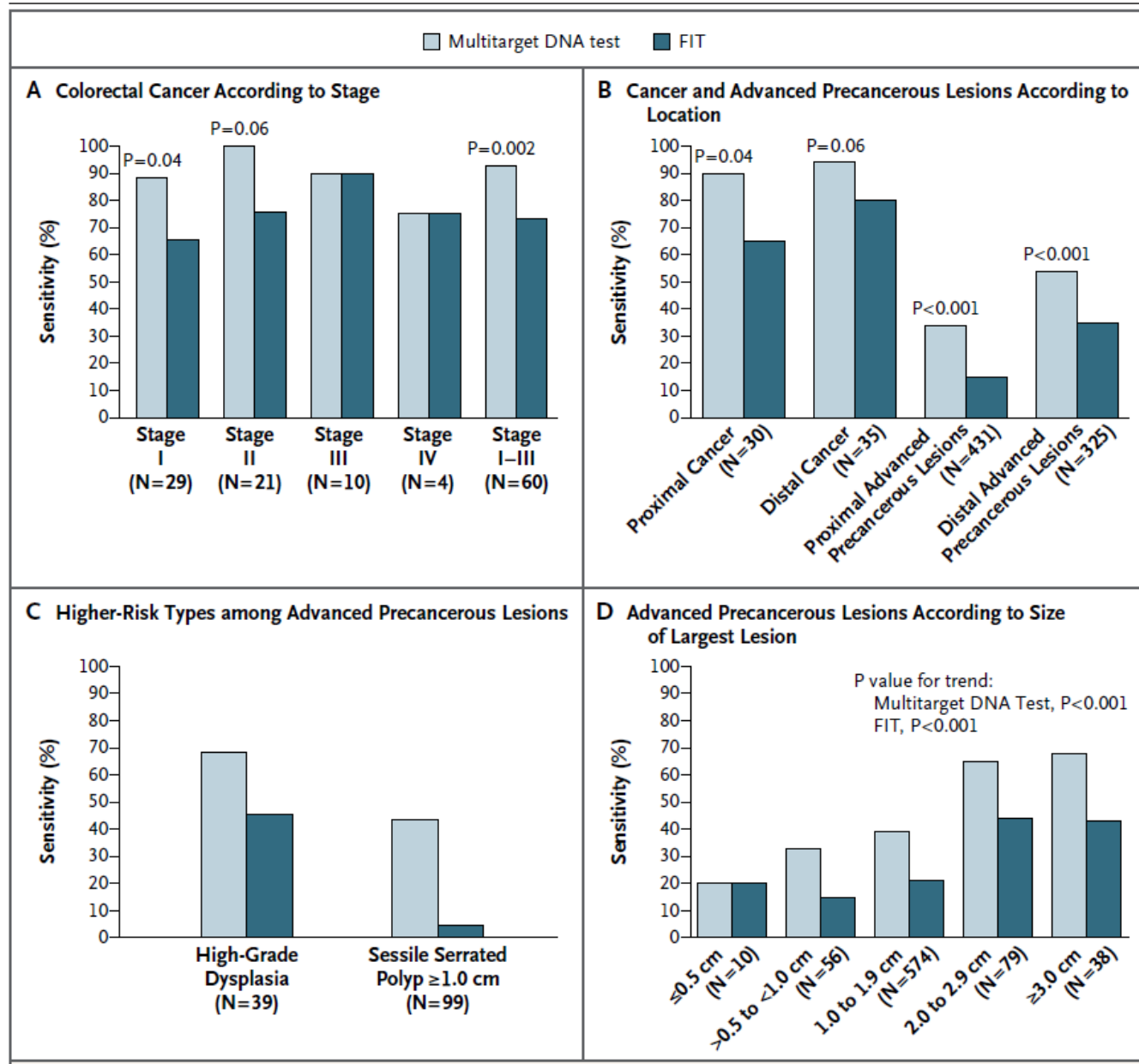




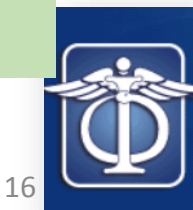
Tests that find

- Flexible sigmoidoscopy
- Colonoscopy every 10 years
- Double-contrast barium enema every 5 years
- CT colonography (virtual colonoscopy) every 5 years*

PREVENTION



find cancer
 (FOBT) every
 year
 test (FIT) every
 5 years
 done if test
 positive
 is a screening
 simple sample
 An FOBT or FIT
 is a simple
 stool exam in the
 home
 adequate for





The benefits of early detection colorectal cancer screening



- Not only does colorectal cancer **screening save lives, but it also is cost effective.**
- **It is much less expensive** to remove a polyp during screening than to try to treat advanced colorectal cancer.

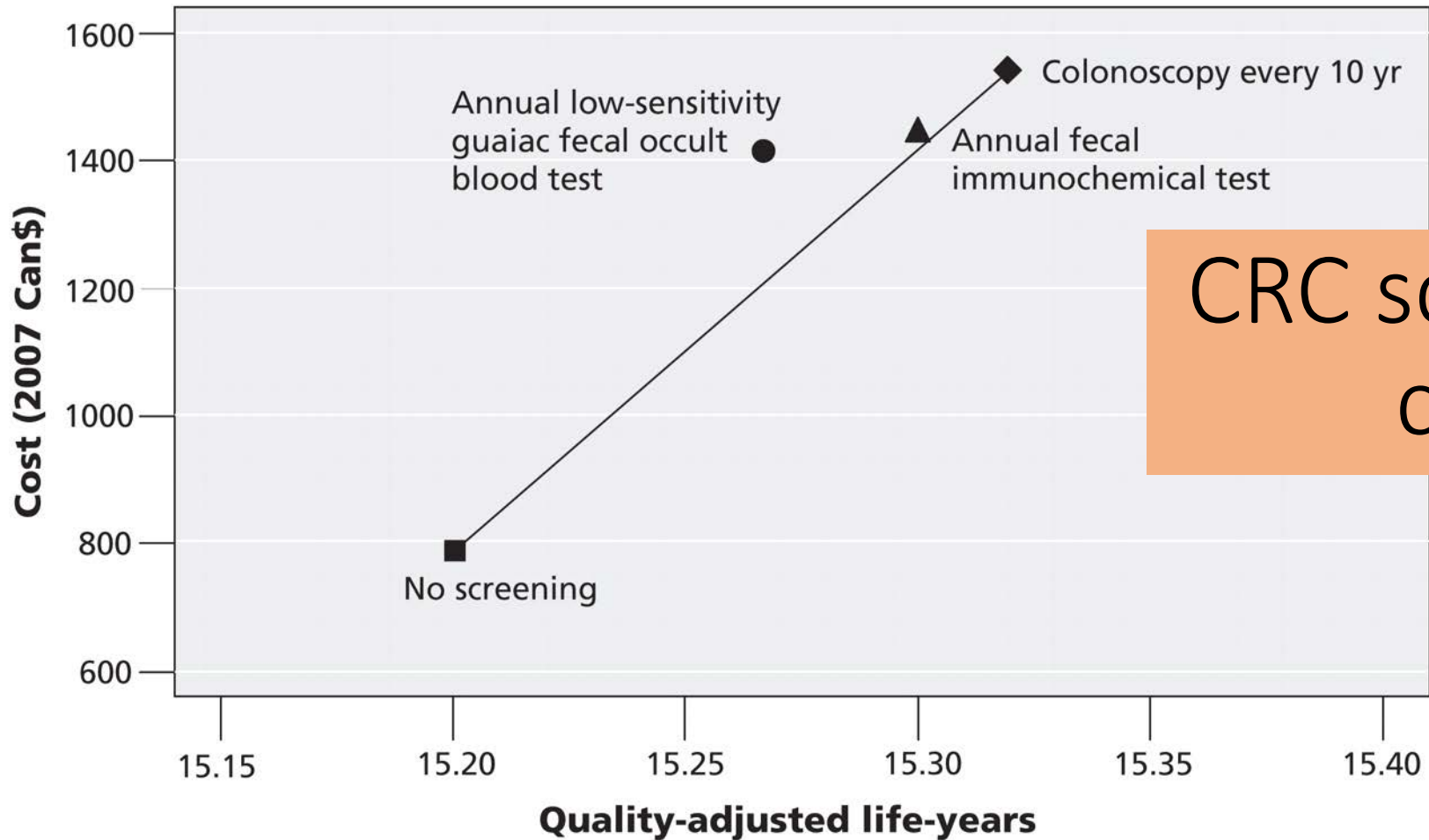




Figure 2: Cost-effectiveness plane for not screening and for three strategies for colorectal cancer screening.

Conclusion

Screening of average-risk individuals for colorectal cancer is a cost-effective measure, even with less-than-perfect compliance. years offer good value for money in Canada.

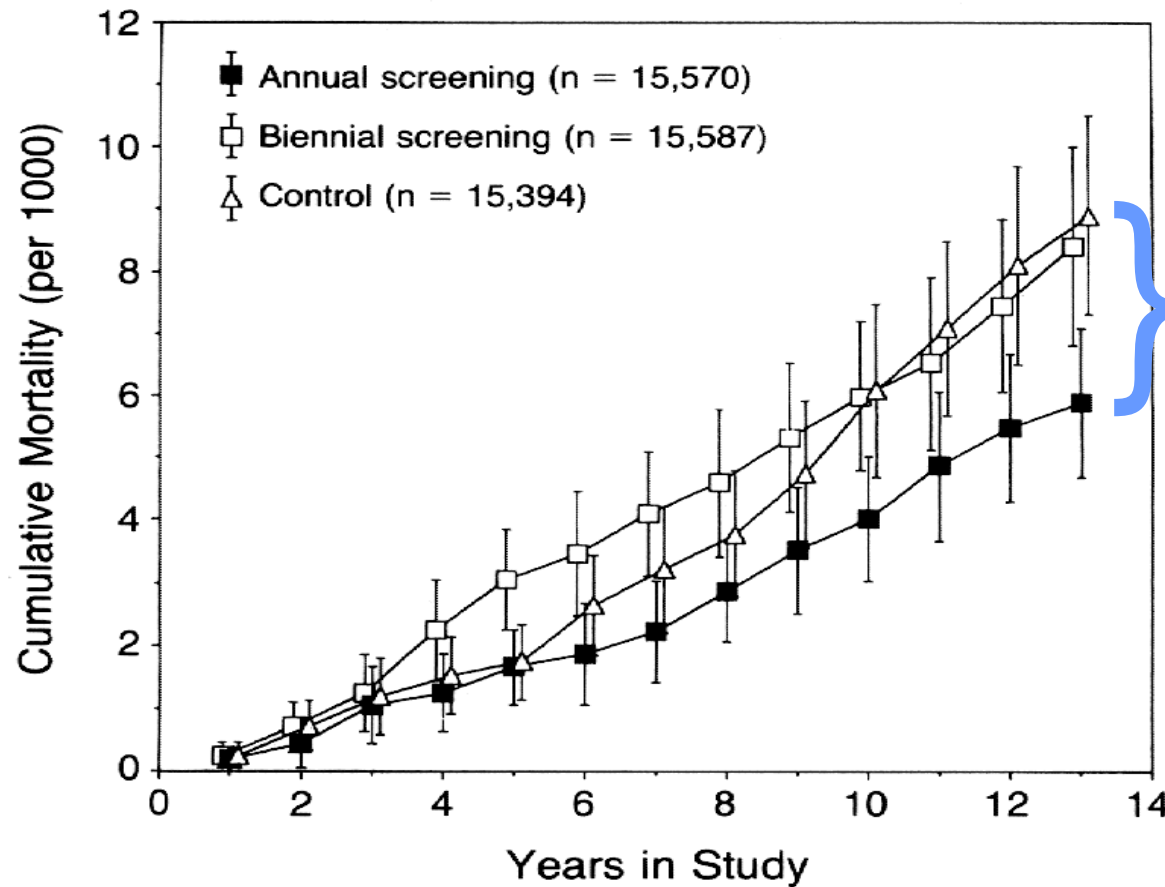


Telford J J et al. CMAJ 2010;182:1307-1313





Annual FOBT Saves Lives!



**33%
reduction**

- 2% of patients with a positive test had cancer.
- Thus, for every patient with cancer, 50 patients were subjected to anxiety and further testing (typically colonoscopy).

Mandel JS et al. N Engl J Med 1993 328:1365-71.





Flexible Sigmoidoscopy

PROS:

- May be done in the office
- Inexpensive, cost-effective
- Mortality from rectal cancer reduced by 60-70% in case-control studies
- Easier bowel preparation, usually done without sedation

CONS:

- Detects only one-half of adenomas
- 40% of cancers arise proximal to splenic flexure
- 75% of proximal cancers have no adenomas distal to splenic flexure
- Often limited by discomfort, poor bowel preparation

Selby et al. N Engl J Med 1992;326:653
Rex et al. Gastrointest Endosc 1999;99:727
Newcomb et al. J Natl Canc Inst 1992;84:1572

Stewart Aust NZ J Surg 1999;69:2
Painter et al. Endoscopy 1999;3:269





Flexible Sigmoidoscopy Misses 50% of Lesions

Colonoscopy comparison studies

- 46-52% of patient with advanced proximal neoplasia (> 1 cm, villous, high-grade dysplasia or cancer)
- had no adenomas distal to the splenic flexure

Lieberman et al. N Engl J Med 2000; 343:162-8.
Imperiale et al. N Engl J Med 2000; 343:169-174.
Α' ΧΕΙΡΟΥΡΓΙΚΗ ΚΛΙΝΙΚΗ ΕΚΠΑ, ΠΓΝΑ ΛΑΙΚΟ





FOBT + Flexible Sigmoidoscopy Misses 24% of Lesions

Colonoscopy comparison studies

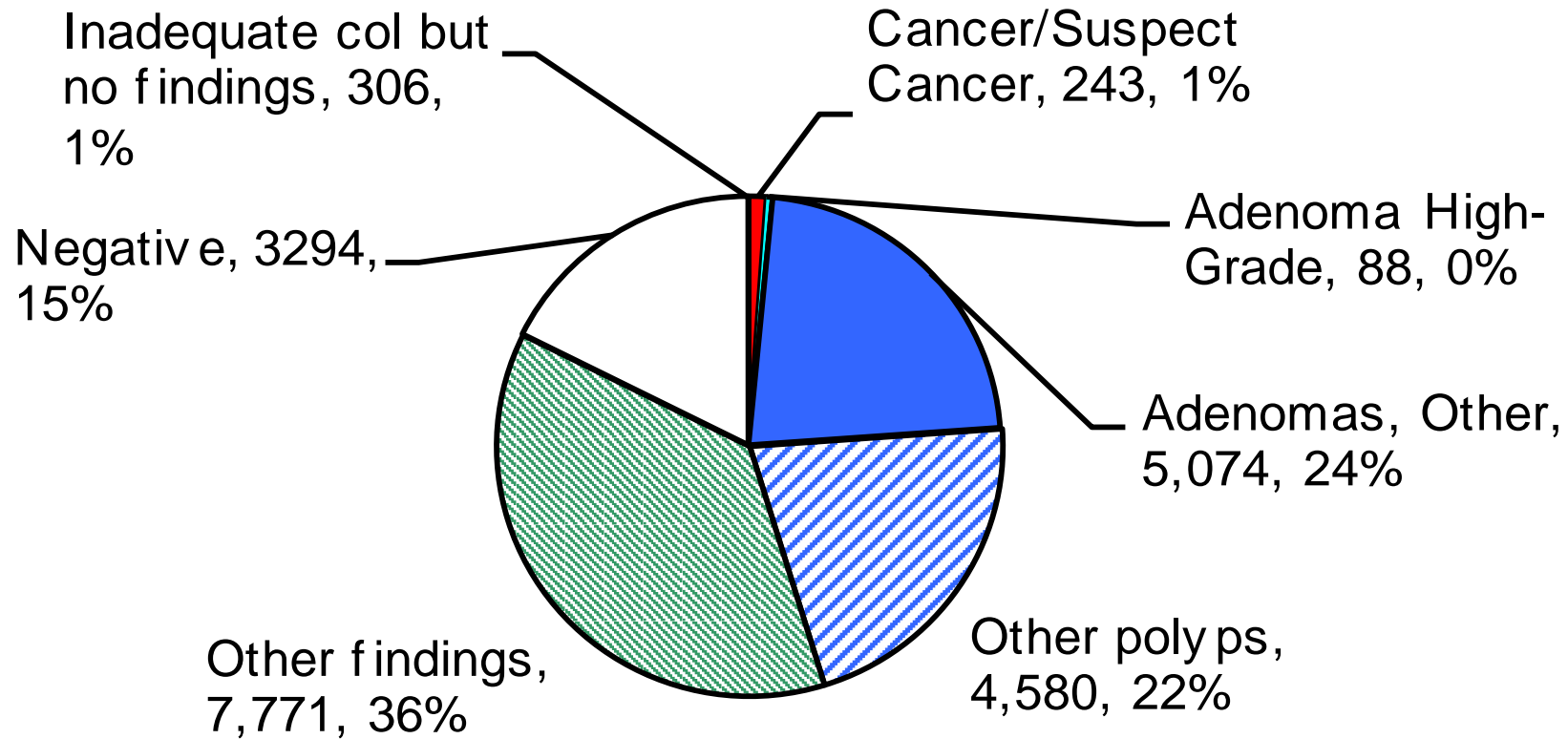
- 24.2% of patient with advanced proximal neoplasia (> 1 cm, villous, high-grade dysplasia or cancer)
- had negative FOBT and no adenomas distal to the splenic flexure.

Lieberman and Weiss. N Engl J Med 2001; 345:555-60.





Results* of 21,356 Colonoscopies Maryland Cigarette Restitution Fund Program Maryland, 2000-December 2012



* Most "advanced" finding on colonoscopy

DHMH, CCPC, Client Database, C-CoP, as of 2/27/2013

Α' ΧΕΙΡΟΥΡΓΙΚΗ ΚΛΙΝΙΚΗ ΕΚΠΑ, ΠΓΝΑ ΛΑΙΚΟ





American Cancer Society recommendations for colorectal cancer early detection



- The American Cancer Society believes that **preventing colorectal cancer** (and not just finding it early) should be a major reason for getting tested.

Beginning at age 50, both men and women at average risk for developing colorectal cancer should use one of the screening tests





ΠΛΗΘΥΣΜΙΑΚΕΣ ΟΜΑΔΕΣ ΕΛΕΓΧΟΥ

Ασυμπτωματικοί ασθενείς γενικού πληθυσμού,
ΑΛΛΑ
χαμηλού κινδύνου

- Ασθενείς < 40 ετών
- Ασθενείς 40-49 ετών
- Ασθενείς > 50 ετών και μέσου κινδύνου





Ασθενείς < 40 ετών



- Στους ασθενείς αυτούς δεν απαιτείται προσυμπτωματικός έλεγχος
 - **παρά μόνον επί επεισοδίου απώλειας ποσότητας ζωηρού ερυθρού αίματος από το ορθό.**
- Στην περίπτωση αυτή, ο ασθενής πρέπει να διερευνάται με
 - **λεπτομερή κλινική εξέταση της περιπρωκτικής περιοχής και πρωκτο- ή ορθο-σκόπηση.**
- Επί απουσίας εμφανούς αιτίας, οι ασθενείς πρέπει να διερευνώνται περαιτέρω με **σιγμοειδοσκόπηση** (μιας και το 67-80% των πολυπόδων του παχέος εντέρου εντοπίζονται περιφερικότερα από την αριστερή κολική καμπή) και **πιθανώς με κολονοσκόπηση.**



Ασθενείς 40-49 ετών



- Στους ασθενείς αυτούς δεν απαιτείται προσυμπτωματικός έλεγχος
 - **παρά μόνον επί επεισοδίου απώλειας ποσότητας ζωηρού ερυθρού αίματος από το ορθό.**
- Στην περίπτωση αυτή, ο ασθενής πρέπει να διερευνάται με λεπτομερή
 - **κλινική εξέταση της περιπρωκτικής περιοχής και πρωκτο- ή ορθοσκόπηση.**
- Επί απουσίας εμφανούς αιτίας,
 - οι ασθενείς πρέπει να διερευνώνται περαιτέρω με **κολονοσκόπηση**, γιατί μπορεί μεν η επίπτωση του καρκίνου να είναι μικρή σε αυτές της ηλικίας, είναι όμως αυξημένη η επίπτωση προκαρκινωματώδων καταστάσεων όπως οι αδενωμάτωδεις πολύποδες οι οποίοι και κατανέμονται με ίση περίπου συχνότητα μεταξύ αριστερού και δεξιού κόλου (55% και 45% αντίστοιχα).





Ασθενείς > 50 ετών και μέσου κινδύνου

Προσυμπτωματικός έλεγχος από την ηλικία των **50 ετών**

- Αναζήτηση λανθάνουσας απώλειας αίματος από το ορθό (fecal occult blood test, FOBT) **Ετησίως**
- Εύκαμπτη σιγμοειδοσκόπηση **Ανά 5ετία**
- Συνδυασμός FOBT και εύκαμπτης σιγμοειδοσκόπηση **Ανά 5ετία**
- Βαριούχος υποκλυσμός διπλής αντίθεσης **Ανά 5ετία**
- Κολonosκόπηση **Ανά 10ετία**



Summary of Recommendations from the U.S. Preventive Services Task Force (USPSTF)



Recommendation Summary

Summary of Recommendations

Population	Recommendation	Grade (What's This?)
Adults, beginning at age 50 years and continuing until age 75 years	The USPSTF recommends screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years. The risks and benefits of these screening methods vary.	A
Adults age 76 to 85 years	The USPSTF recommends against routine screening for colorectal cancer in adults 76 to 85 years of age. There may be considerations that support colorectal cancer screening in an individual patient.	C
Adults older than age 85 years	The USPSTF recommends against screening for colorectal cancer in adults older than age 85 years.	D
Computed Tomographic Colonography and Fecal DNA testing as screening modalities	The USPSTF concludes that the evidence is insufficient to assess the benefits and harms of computed tomographic colonography and fecal DNA testing as screening modalities for colorectal cancer.	I

This topic page summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for colorectal cancer.

Release Date: October 2008





Colorectal cancer screening guidelines





CRC screening guidelines

US Preventive Services Task Force (USPSTF)

- For average-risk adults, screening should begin at age 50 and continue until age 75
- CRC screening in adults 76 to 85 years should be individualized

Test	Time interval
Fecal occult blood test (FOBT)	Annual
Flexible sigmoidoscopy	5 years
Colonoscopy	10 years

Ann Intern Med 2008;149:627-37





CRC screening guidelines

American Cancer Society (ACS) , US Multi-society Task Force on Colorectal Cancer (USMSTF) and the American College of Radiology (ACR)



- Average-risk adult should start screening at age 50

Test	Time interval
Flexible sigmoidoscopy	5 years
Optical colonoscopy	10 years
Double-contrast barium enema	5 years
CT colonography	5 years
Fecal occult blood test (guaiac or immunochemical based)	Annual
Stool DNA test	Uncertain

Ann Intern Med 2012;156:378-386





ΠΛΗΘΥΣΜΙΑΚΕΣ ΟΜΑΔΕΣ ΕΛΕΓΧΟΥ

**Ασυμπτωματικά άτομα του γενικού πληθυσμού,
ΑΛΛΑ
υψηλού κινδύνου ανεξαρτήτως ηλικίας**





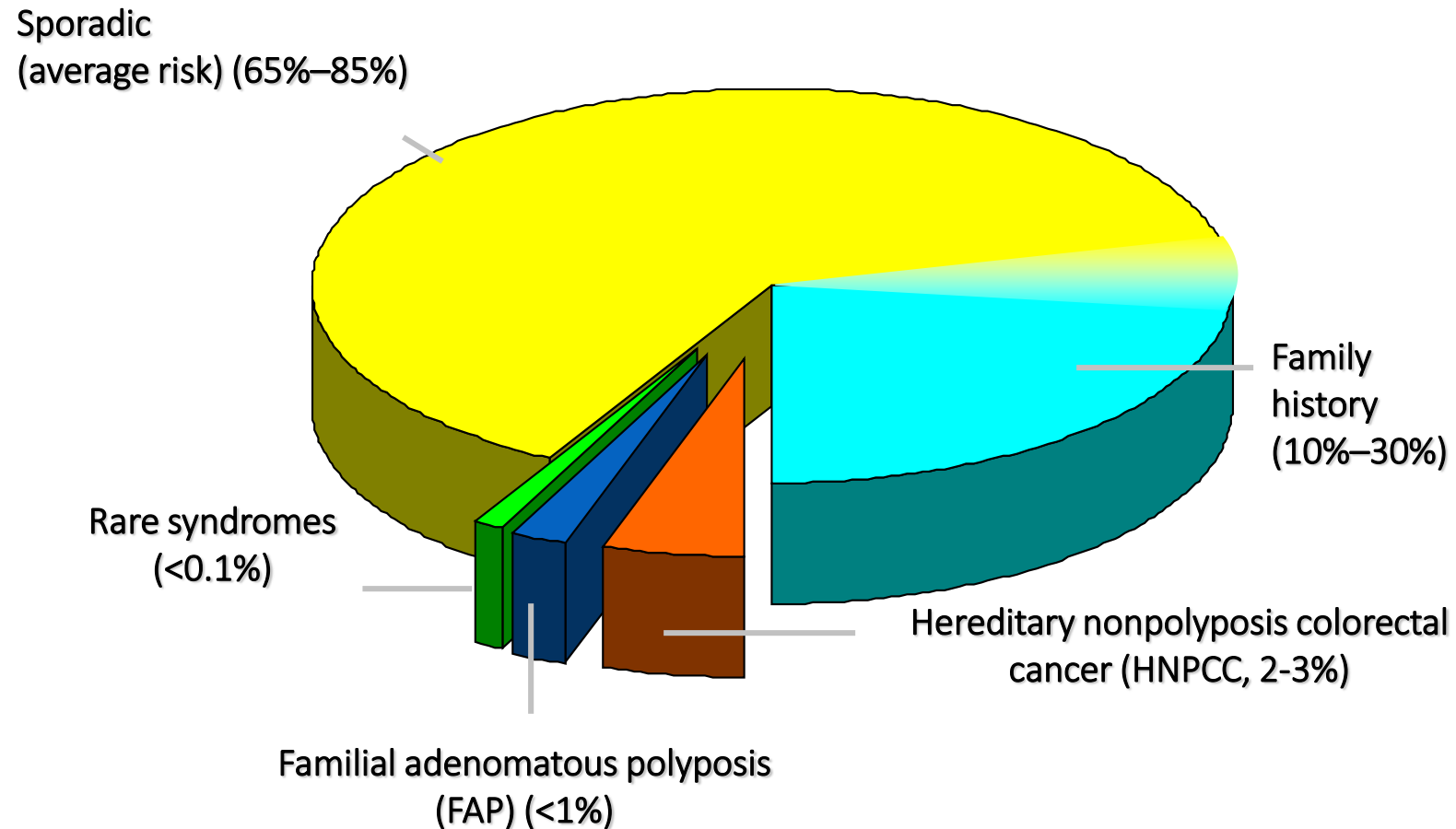
People at increased or high risk

- If you are at an increased or high risk of colorectal cancer, you should begin colorectal cancer screening
 - before age 50 and/or
 - be screened more often.
- **The following conditions make your risk higher than average:**
 - A personal history of colorectal cancer or adenomatous polyps
 - A personal history of inflammatory bowel disease (ulcerative colitis or Crohn's disease)
 - A strong family history of colorectal cancer or polyps (see “Risk factors for colorectal cancer”)
 - A known family history of a hereditary colorectal cancer syndrome such as familial adenomatous polyposis (FAP) or hereditary non-polyposis colon cancer (HNPCC)





Colorectal Cancer Cases by Risk History



<http://www.cancer.gov/cancertopics/pdq/genetics/colorectal/HealthProfessional>





Ασθενείς αυξημένου κινδύνου

- Ασθενείς με έναν 1ου βαθμού συγγενή (γονείς, αδέρφια, παιδιά) με ιστορικό διαγνωσμένου καρκίνου ΠΕ-Ο ή αδενωματώδους πολύποδα σε ηλικία ≥ 60 ετών
- Ή δύο 2ου βαθμού συγγενείς με διαγνωσμένο καρκίνο παχέος εντέρου και ορθού ανεξαρτήτως ηλικίας

**Προσυμπτωματικός έλεγχος
όμοιος με τους ασθενείς
μέσου κινδύνου
(50 ετών)**





Ασθενείς αυξημένου κινδύνου



- Ασθενείς με **τουλάχιστον έναν 1ου βαθμού συγγενή** με ιστορικό διαγνωσμένου καρκίνου ΠΕ-Ο ή αδενωματώδους πολύποδα σε ηλικία < 60 ετών
- Ή **δύο ή περισσότερων 2ου βαθμού συγγενείς** με διαγνωσμένο καρκίνο ΠΕ-Ο

Κολονοσκόπηση ανά 5ετία

- είτε από την ηλικία των **40 ετών**
- είτε **δέκα έτη νωρίτερα** από την ηλικία διάγνωσης του καρκίνου στο νεότερο προσβληθέν μέλος της οικογένειας.





Ασθενείς αυξημένου κινδύνου



- Ασθενείς με ιστορικό φλεγμονώδους νόσου του εντέρου

Κολonosκόπηση κάθε 1-2 έτη

- είτε μετά από οκτώ έτη από την αρχική διάγνωση της νόσου σε περιπτώσεις πανκολίτιδας
- είτε μετά από δεκαπέντε έτη από την αρχική διάγνωση της νόσου σε περιπτώσεις εντόπισής της στο αριστερό κόλον





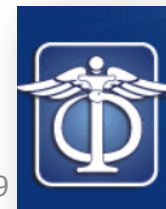
Ασθενείς αυξημένου κινδύνου



Ασθενείς με ιστορικό φλεγμονώδους νόσου του εντέρου

ΕΝΔΕΙΞΕΙΣ ΚΟΛΕΚΤΟΜΗΣ

1. Καρκίνος
2. Υψηλόβαθμη δυσπλασία
3. Πολυεστιακή χαμηλόβαθμη δυσπλασία
4. Ενδοαυλική μάζα
5. Στενωμένη περιοχή





Ασθενείς αυξημένου κινδύνου



Ασθενείς με ιστορικό καρκίνου παχέος εντέρου-ορθού οι οποίοι έχουν υποβληθεί σε ογκολογική κολεκτομή με σκοπό την ίαση

Κολonosκόπηση **ένα έτος** μετά τη χειρουργική επέμβαση.

Εαν αυτή είναι φυσιολογική, τότε η επόμενη Κολonosκόπηση μπορεί να διενεργηθεί **τρία έτη** αργότερα.

Εαν και η δεύτερη Κολonosκόπηση είναι φυσιολογική, τότε περιοδικός κολonosκοπικός έλεγχος **ανά πενταετία**





ΠΛΗΘΥΣΜΙΑΚΕΣ ΟΜΑΔΕΣ ΕΛΕΓΧΟΥ

Ασυμπτωματικά άτομα με γενετική προδιάθεση

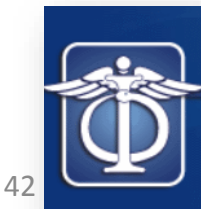
1. Οικογενής πολυποδίαση (FAP)
2. Κληρονομικός μη πολυποδιασικός καρκίνος ΠΕ-Ο (HNPCC)
3. Σύνδρομο Peutz-Jeghers
4. Νεανική πολυποδίαση





Οικογενής πολυποδίαση (FAP)

- Πρόκειται για κληρονομική νόσο, μεταβιβαζόμενη κατά τον αυτοσωματικό κυρίαρχο χαρακτήρα, η οποία ευθύνεται για το **1%** του συνόλου των καρκίνων παχέος εντέρου και ορθού.
- Μετάλλαξη στο **γονίδιο APC** (εδράζεται στο χρωμόσωμα 5q21-q22) ενοχοποιείται για το 80% των περιπτώσεων της νόσου.
- Η έκφραση του γονιδίου οδηγεί στη διάχυτη εμφάνιση πολλαπλών αδενωματοδών πολυπόδων (> 100) παχέος εντέρου και ορθού και σε **100% ανάπτυξη καρκίνου μέχρι την ηλικία των 45 ετών.**
- Ασθενείς με οικογενή πολυποδίαση μπορεί να αναπτύξουν πλήθος καλοηθών και κακοηθών εξω-κολονικών εκδηλώσεων. Ιδιαίτερη σημασία έχουν η ανάπτυξη **ηπατοβλαστώματος** και **καρκίνου του δωδεκαδακτύλου** και της περιοχής **του φύματος του Vater.**
- Σπανιότερες μορφές καρκίνου σχετιζόμενες με FAP αποτελούν ο **καρκίνος του παγκρέατος, των εξωηπατικών χοληφόρων, του θυρεοειδούς αδένος και του ΚΝΣ.**





Οικογενής πολυποδίαση (FAP)

Οι συγγενείς των ασθενών με FAP πρέπει να υποβάλλονται σε :

- Γενετικό έλεγχο (=αναζήτηση APC gene) στην ηλικία των **10-12 ετών**.
- Προσυμπτωματικό έλεγχο με **Κολονοσκόπηση ετησίως αρχίζοντας από την ηλικία των 12 ετών**.
- Η ενδοσκοπική ανάδειξη πολυπόδων αποτελεί **απόλυτη ένδειξη χειρουργικής επέμβασης**.
- Επί μη ανάδειξης πολυπόδων μέχρι την ηλικία των 50 ετών, περιοδικός έλεγχος **όμοιος με τους ασθενείς μέσου κινδύνου** για ανάπτυξη καρκίνου παχέος εντέρου και ορθού





Κληρονομικός μη-πολυποδιασικός καρκίνος HNPCC

- Πρόκειται για κληρονομική νόσο, μεταβιβαζόμενη κατά τον αυτοσωματικό κυρίαρχο χαρακτήρα, η οποία ευθύνεται για το **3-5%** του συνόλου των καρκίνων παχέος εντέρου και ορθού.
- Αιτιολογικά οφείλεται σε **μετάλλαξη σε ένα γονίδιο επισκευής του DNA** και οι ασθενείς οι οποίοι εκφράζουν τη γονιδιακή αυτή ανωμαλία έχουν 70-80% πιθανότητα ανάπτυξης καρκίνου παχέος εντέρου και ορθού κατά τη διάρκεια του βίου τους.
- Κλινικώς πρόκειται για νεόπλασμα αναπτυσσόμενο κυρίως κεντρικότερα της σπληνικής καμπής (σε αντίθεση με τη σποραδική μορφή της νόσου), το οποίο διαγιγνώσκεται κατά την 5η δεκαετία της ζωής (σε αντίθεση με τη σποραδική μορφή η οποία διαγιγνώσκεται κατά την 7η δεκαετία).
- Αναπτύσσονται **πλήθος εξω-κολονικών νεοπλασμάτων**





Κληρονομικός μη-πολυποδιασικός καρκίνος HNPCC

Κριτήρια Amsterdam

Τρεις ή περισσότεροι συγγενείς με ιστολογικά τεκμηριωμένο καρκίνο σχετιζόμενο με HNPCC (π.χ. ΠΕ-Ο, ενδομητρίου, λεπτού εντέρου, νεφρικής πυέλου ή ουρητήρα), εκ των οποίων ο ένας είναι πρώτου βαθμού συγγενής των άλλων δύο.

ΚΑΙ

Εμφάνιση καρκίνου παχέος εντέρου και ορθού σε τουλάχιστον **2 γενεές**.

ΚΑΙ

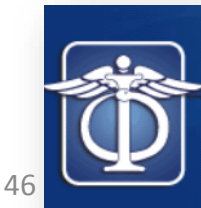
Μία ή περισσότερες περιπτώσεις των προαναφερθέντων καρκίνων διαγνώσθηκαν **πριν από την ηλικία των 50 ετών**.





Κληρονομικός μη-πολυποδιασικός καρκίνος HNPCC

- Μέλη οικογενειών οι οποίες πληρούν τα κριτήρια Amsterdam θα πρέπει να υποβάλλονται σε **γενετικό έλεγχο**.
- Γενετική δοκιμασία εκλογής αποτελεί η αναζήτηση της **microsatellite instability (MSI)** η οποία είναι θετική στο 90% των περιπτώσεων HNPCC αλλά μόνο στο 15% της σποραδικής μορφής της νόσου.
- Όλοι οι συγγενείς θα πρέπει να υποβάλλονται σε **Κολονοσκόπηση** κάθε 1-2 έτη αρχίζοντας από την ηλικία των 25 ετών ή 5 έτη νωρίτερα από την ηλικία του νεώτερου προσβληθέντος μέλους της οικογένειας (οποιοδήποτε συνέβει πρώτο) και ετησίως μετά την ηλικία των 40 ετών





Κληρονομικός μη-πολυποδιασικός καρκίνος HNPCC

Καρκίνος έσω γεννητικών οργάνων θήλεος

1. αμφίχειρη γυναικολογική εξέταση
2. τεστ Παπανικολάου
3. βιοψία ενδομητρίου
4. διακολπικό υπερηχογράφημα

Καρκίνος του ουροποιητικού συστήματος

1. γενική ούρων
2. κυτταρολογική ούρων
3. υπερηχογράφημα
4. κυστεοσκόπηση

Καρκίνος στομάχου και χοληφόρων

1. ενδοσκόπηση ανωτέρου πεπτικού
2. κυτταρολογική εξέταση από τον αυλό στομάχου και 12δακτύλου
3. έλεγχος ηπατικών ενζύμων
4. υπερηχογράφημα ήπατος-χοληφόρων-παγκρέατος

**Ανά 2ετία
αρχίζοντας από την ηλικία
των 20-25 ετών**





American Cancer Society Guidelines on Screening and Surveillance for the Early Detection of Colorectal Adenomas and Cancer in People at Increased Risk or at High Risk

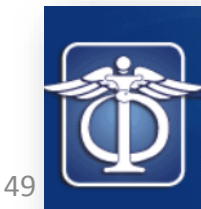




INCREASED RISK – Patients With a History of Polyps on Prior Colonoscopy



Risk Category	Age to Begin	Recommended Test(s)	Comment
People with small rectal hyperplastic polyps	Same as those at average risk	Colonoscopy , or other screening options at same intervals as for those at average risk	Those with hyperplastic polyposis syndrome are at increased risk for adenomatous polyps and cancer and should have more intensive follow-up.
People with 1 or 2 small (less than 1 cm) tubular adenomas with low-grade dysplasia	5 to 10 years after the polyps are removed	Colonoscopy	Time between tests should be based on other factors such as prior colonoscopy findings, family history, and patient and doctor preferences.
People with 3 to 10 adenomas, or a large (1 cm +) adenoma, or any adenomas with high-grade dysplasia or villous features	3 years after the polyps are removed	Colonoscopy	Adenomas must have been completely removed. If colonoscopy is normal or shows only 1 or 2 small tubular adenomas with low-grade dysplasia, future colonoscopies can be done every 5 years.
People with more than 10 adenomas on a single exam	Within 3 years after the polyps are removed	Colonoscopy	Doctor should consider possibility of genetic syndrome (such as FAP or HNPCC).
People with sessile adenomas that are removed in pieces	2 to 6 months after adenoma removal	Colonoscopy	If entire adenoma has been removed, further testing should be based on doctor's judgment.

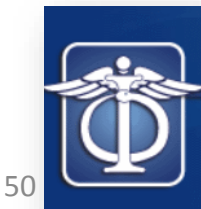




INCREASED RISK – Patients With Colorectal Cancer



Risk Category	Age to Begin	Recommended Test(s)	Comment
People diagnosed with colon or rectal cancer	At time of colorectal surgery, or can be 3 to 6 months later if person doesn't have cancer spread that can't be removed	Colonoscopy to view entire colon and remove all polyps	If the tumor presses on the colon/rectum and prevents colonoscopy, CT colonoscopy (with IV contrast) or DCBE may be done to look at the rest of the colon.
People who have had colon or rectal cancer removed by surgery	Within 1 year after cancer resection (or 1 year after colonoscopy to make sure the rest of the colon/rectum was clear)	Colonoscopy	If normal, repeat exam in 3 years . If normal then, repeat exam every 5 years . Time between tests may be shorter if polyps are found or there is reason to suspect HNPCC. After low anterior resection for rectal cancer, exams of the rectum may be done every 3 to 6 months for the first 2 to 3 years to look for signs of recurrence.





INCREASED RISK – Patients With a Family History



Risk Category	Age to Begin	Recommended Test(s)	Comment
Colorectal cancer or adenomatous polyps in any first-degree relative before age 60, or in 2 or more first-degree relatives at any age (if not a hereditary syndrome).	Age 40, or 10 years before the youngest case in the immediate family, whichever is earlier	Colonoscopy	Every 5 years.
Colorectal cancer or adenomatous polyps in any first-degree relative aged 60 or older, or in at least 2 second-degree relatives at any age	Age 40	Same options as for those at average risk.	Same intervals as for those at average risk.





HIGH RISK



Risk Category	Age to Begin	Recommended Test(s)	Comment
Familial adenomatous polyposis (FAP) diagnosed by genetic testing, or suspected FAP without genetic testing	Age 10 to 12	Yearly flexible sigmoidoscopy to look for signs of FAP; counseling to consider genetic testing if it hasn't been done	If genetic test is positive, removal of colon (colectomy) should be considered.
Hereditary non-polyposis colon cancer (HNPCC), or at increased risk of HNPCC based on family history without genetic testing	Age 20 to 25 years, or 10 years before the youngest case in the immediate family	Colonoscopy every 1 to 2 years; counseling to consider genetic testing if it hasn't been done	Genetic testing should be offered to first-degree relatives of people found to have HNPCC mutations by genetic tests. It should also be offered if 1 of the first 3 of the modified Bethesda criteria is met
Inflammatory bowel disease (IBD): -Chronic ulcerative colitis -Crohn's disease	Cancer risk begins to be significant 8 years after the onset of pancolitis (involvement of entire large intestine), or 12-15 years after the onset of left-sided colitis	Colonoscopy every 1 to 2 years with biopsies for dysplasia	These people are best referred to a center with experience in the surveillance and management of inflammatory bowel disease.





Acromegaly

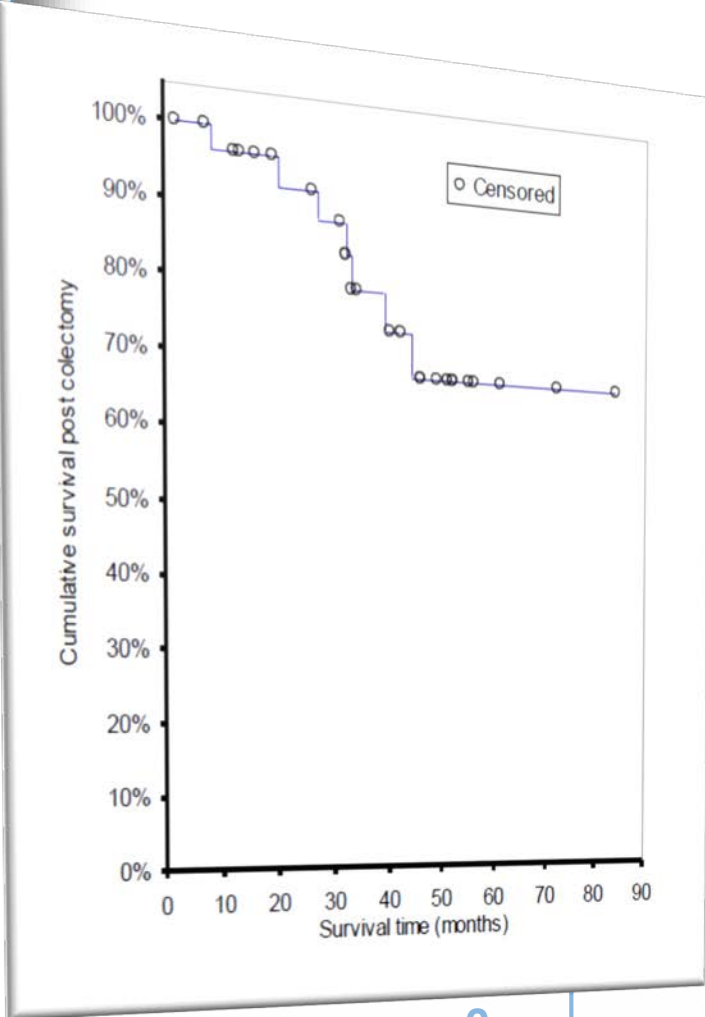
Guidelines published by the British Society of Gastroenterology recommend colonoscopic screening

- beginning at 40 years of age and
- repeated every 5 years if the initial colonoscopy has shown no polyps.
- If polyps are found further timing of colonoscopy depends on polyp number and histology.
- Other investigators feel that these guidelines are too restrictive based on their estimate of only a 2-fold increased risk compared with the normal population.





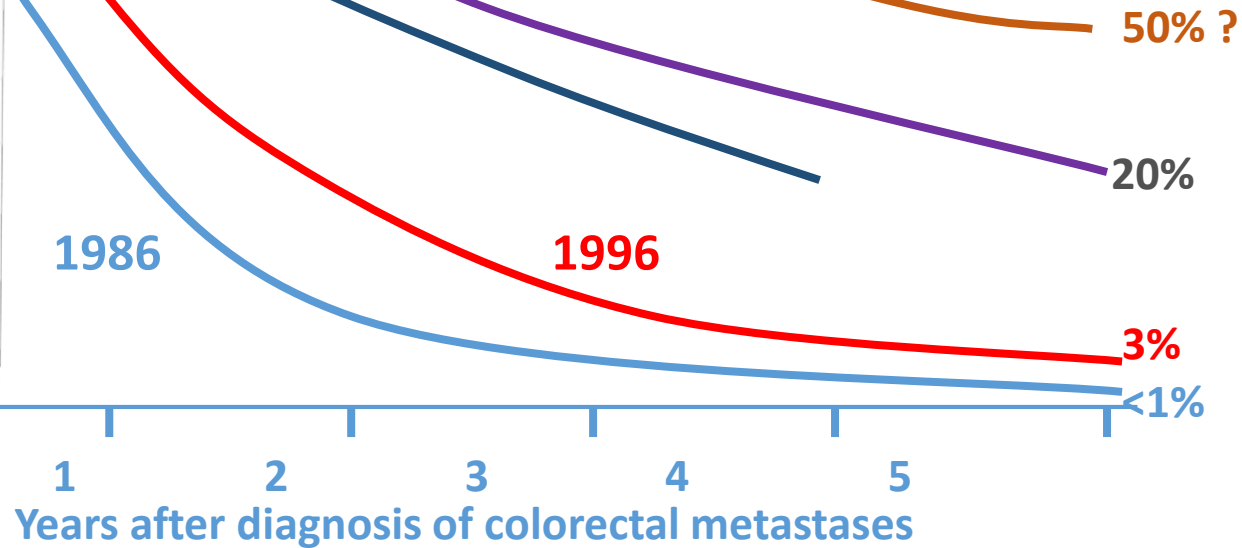
Overall survival in advanced colorectal cancer in 2016?



2006 chemotherapy
Median survival 24 months

2006 overall
Median survival 30 months
5 year survival 20 %

2016?
5 year survival 50 % ?





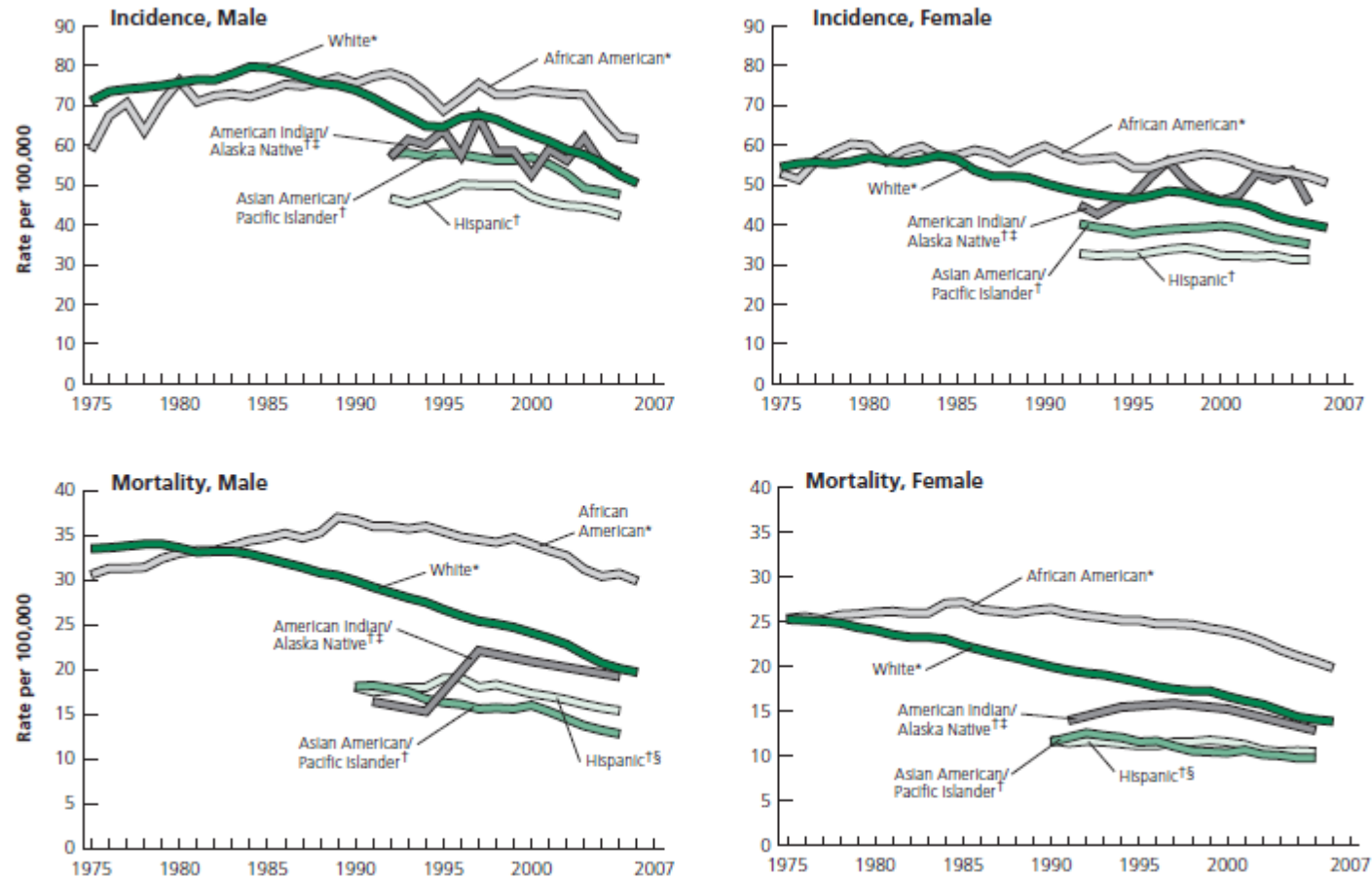
CRC screening Barriers

- **Cost and lack of access to health care**
- Physician variability regarding screening recommendations
- Poor transmission of the benefits and risks of not getting screened
- Personal barriers
- Fear, embarrassment, distrust of the medical community



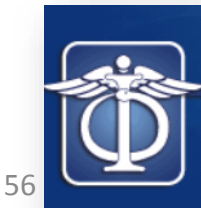


Figure 4. Trends in Colorectal Cancer Incidence and Mortality Rates by Race/Ethnicity and Sex, 1975-2007



Rates are per 100,000 and age adjusted to the 2000 US standard population. *Rates are two-year moving averages. †Rates are three-year moving averages. ‡Rates are based on Contract Health Service Delivery Areas; mortality rates are for fixed time intervals: 1990-1992, 1993-1995, 1996-1998, 1999-2002, and 2003-2007. §Due to incomplete data, rates exclude deaths from Connecticut, District of Columbia, Louisiana, Maine, Maryland, Minnesota, Mississippi, New Hampshire, New York, North Dakota, Oklahoma, Vermont, and Virginia.
Sources: Incidence - Surveillance, Epidemiology, and End Results (SEER) Program; Mortality - National Center for Health Statistics, Centers for Disease Control and Prevention, as provided by the SEER Program, National Cancer Institute.

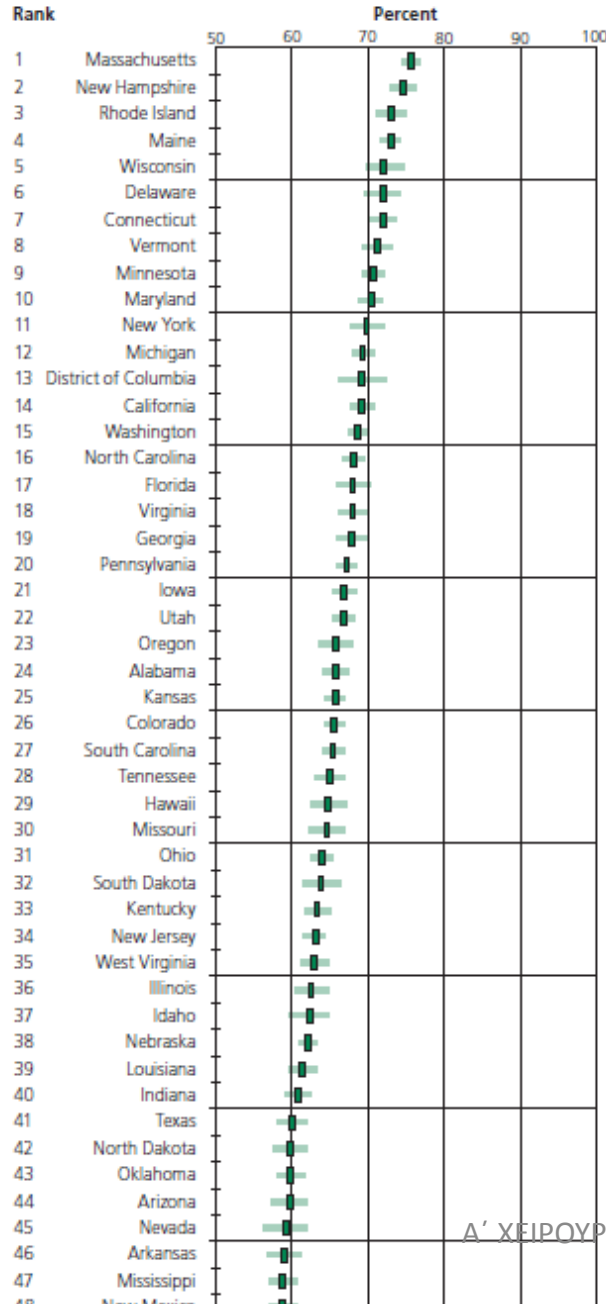
American Cancer Society. Colorectal Cancer Facts and Figures. 2011-2013
Atlanta: American Cancer Society. 2011





Ri

Figure 10. Colorectal Cancer Screening*
Prevalence among Adults Age 50 Years and
Older by State, 2012



well educated vs. not,
vs. Europeans

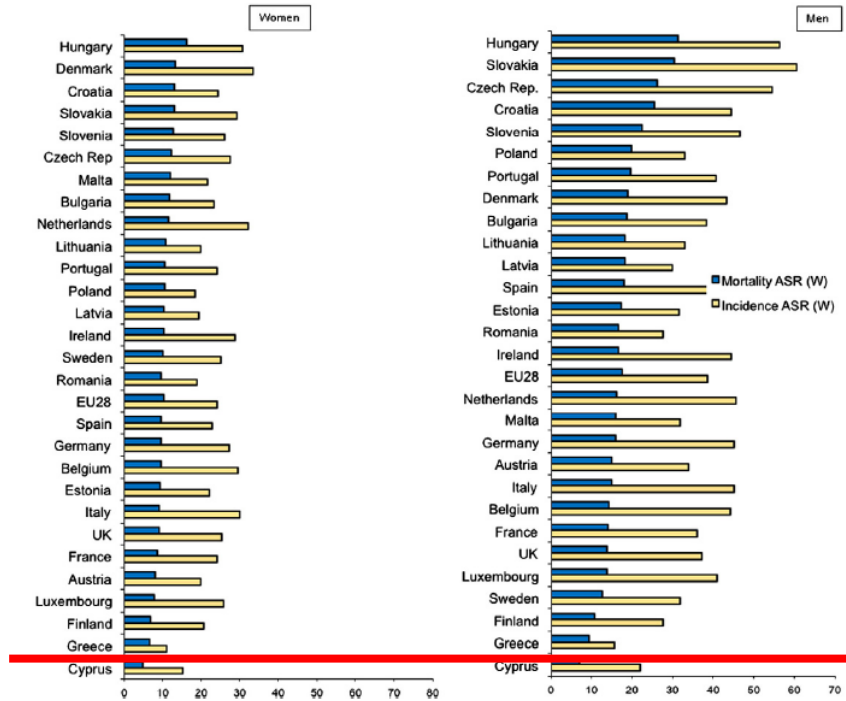


Fig. 1. Colorectal cancer: mortality and incidence in women (left) and men (right) in EU28 as of July 2013. Adapted from: Ferlay J, Shin HR, Bray F, Forman D, Mathers C and Parkin DM. GLOBOCAN 2008 v2.0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer; 2010. Available from <http://globocan.iarc.fr>. Last accessed April 10, 2013. ASR-W: world age-standardized rates per 100,000.





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21/12/2014

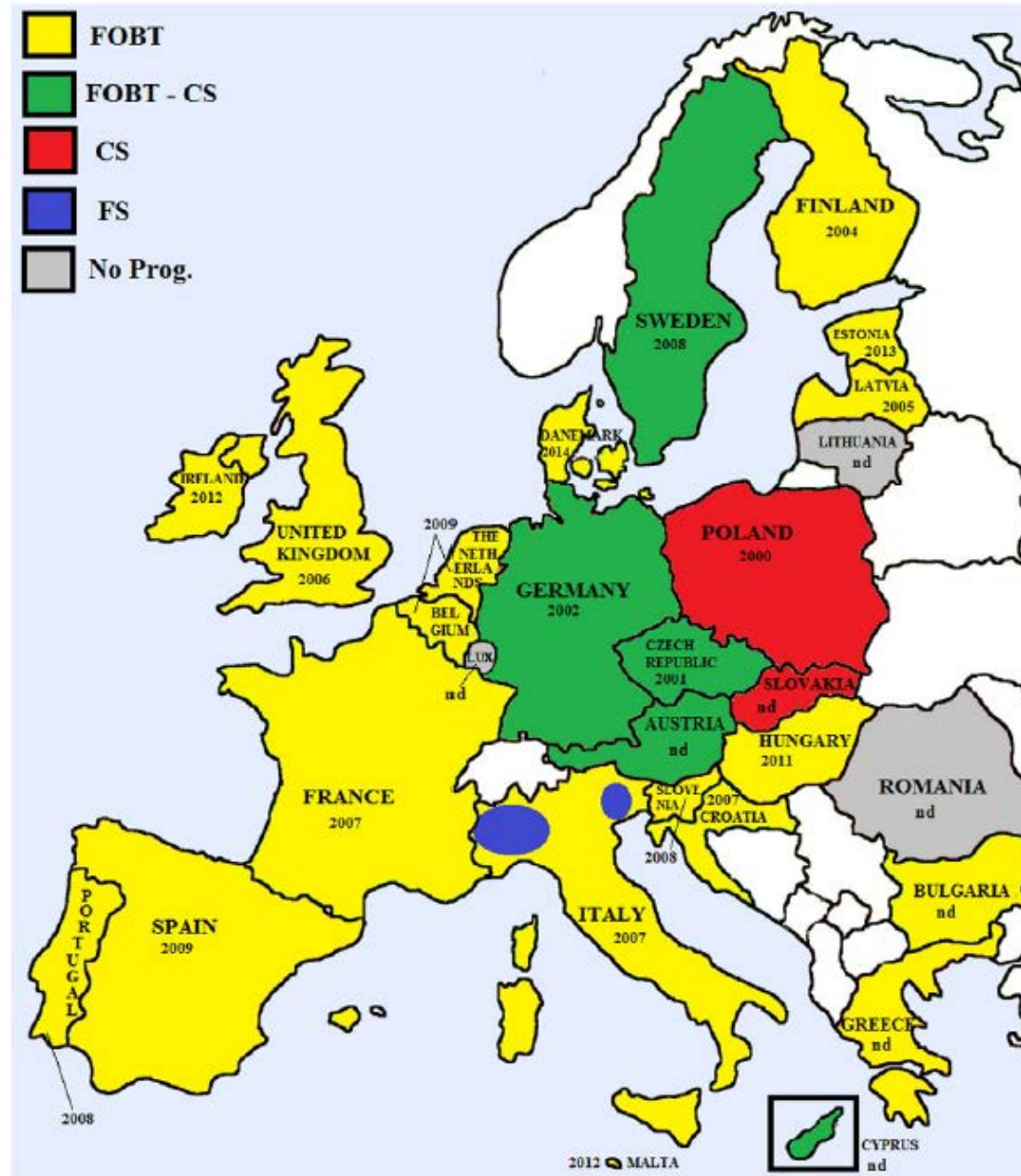


Fig. 2. Distribution of Colorectal Cancer Screening Programs in EU28 in 2013, screening strategy adopted and starting year. nd: starting year not available.



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Summary

- Colorectal Cancer is a common, yet preventable disease
- Colorectal Cancer mortality has declined over the past 3 decades largely due to increased screening
- Disproportionately higher cancer incidence and mortality rates in minority populations may be directly related to barriers to screening
- Identifying these barriers is key to improved outcomes

