

4th EUROPEAN COLORECTAL CANCER DAYS:

BRNO 2015 – PREVENTION AND SCREENING

29–30 May 2015, Brno, Czech Republic

**COLORECTAL CANCER: A CHALLENGE FOR HEALTHY LIFE STYLE,
SCREENING AND PROPER CARE**

CT Colonography: it is ready for screening ?

Andrea Laghi M.D.

Dept of Radiological Sciences, Oncology and Pathology

“Sapienza”, University of Rome

Polo Pontino – Latina

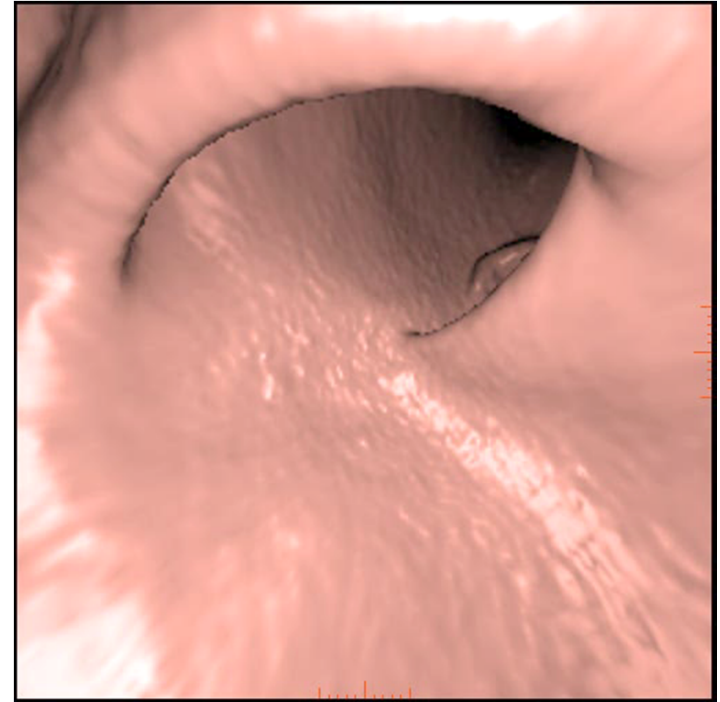
andrea.laghi@uniroma1.it



SAPIENZA
UNIVERSITÀ DI ROMA

CT COLONOGRAPHY IN 2015

- The best radiological test for colon imaging
- Replacement of BE
- Complementary to CS



PATIENT FRIENDLY



They are testing laxatives today...



**REDUCED bowel prep /
laxative-free**

EASY AND FAST

- No **SEDATION**
- Colon distention
(room air/CO₂)
- Two 10s scans
- Overall time, 15 min



CTC AND POPULATION CRC SCREENING

- **EFFICACY**
- **ACCEPTABILITY**
- **SAFETY**
- **COST-EFFECTIVENESS**

CTC AND POPULATION CRC SCREENING

- **EFFICACY**
- ACCEPTABILITY
- SAFETY
- COST-EFFECTIVENESS

CTC: THE EVIDENCES

RCT	Multi-center trials	Single center trials	Meta-analyses	
<div>COCOS</div> <div>SIGGAR</div>	<div>ACRIN</div> <div>IMPACT</div>	<div>Munich</div> <div>Pickhardt</div>	<div>Sosna</div> <div>Mulhall</div> <div>Halligan</div> <div>Rosman</div>	<div>Chaparro</div> <div>Pickhardt</div> <div>De Haan</div> <div>Plumb</div>

- **CTC = CS for CRC and >10 mm polyps**
- **CTC < CS for 6-9 mm polyps**
- **CTC << CS for <6 mm polyps**

CTC: THE EVIDENCES

RCT	Multi-center trials	Single center trials	Meta-analyses	
COCOS SIGGAR	ACRIN IMPACT	Munich Pickhardt	Sosna Mulhall Halligan Rosman	Chaparro Pickhardt De Haan Plumb

- **CTC > FS** (only left colon)
- **CTC >> FOBT** (cancer only)

CTC AND POPULATION CRC SCREENING

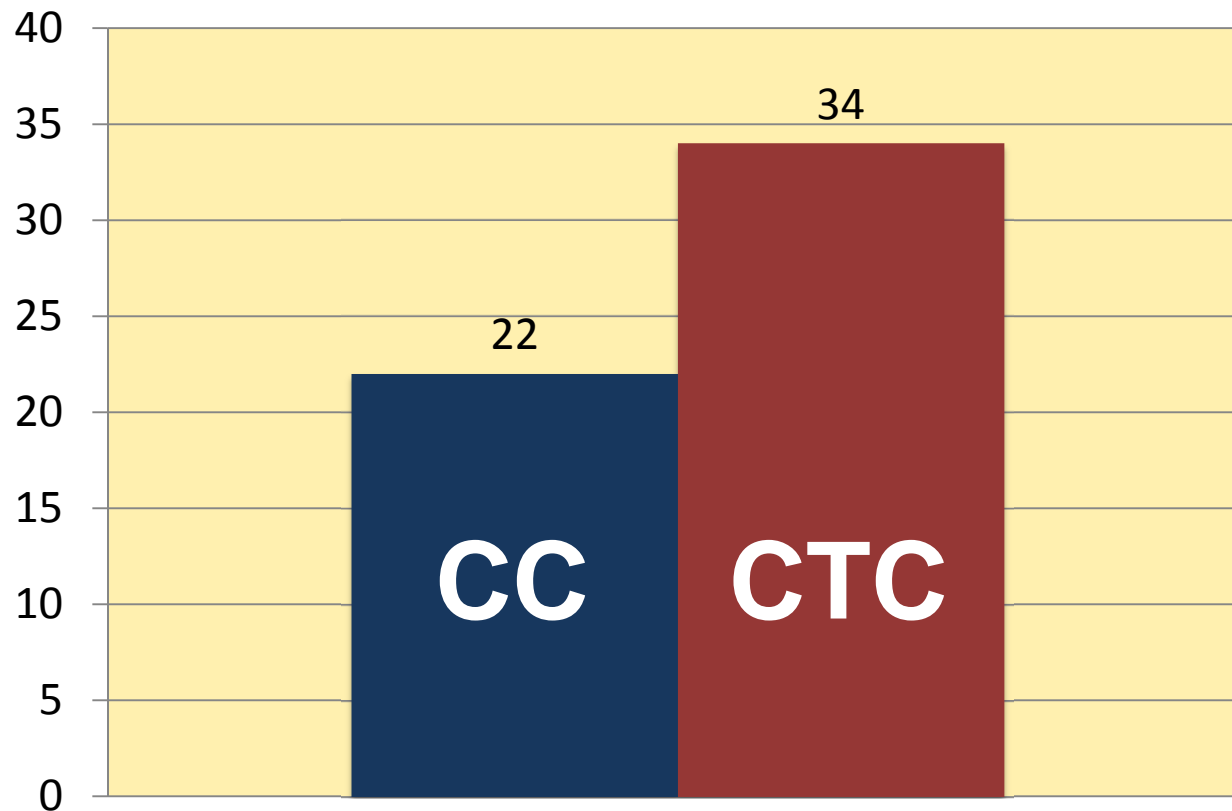
- EFFICACY
- **ACCEPTABILITY**
- SAFETY
- COST-EFFECTIVENESS

CTC: ADHERENCE RATE

Participation and yield of colonoscopy versus non-cathartic CT colonography in population-based screening for colorectal cancer: a randomised controlled trial

Esther M Stoop, Margriet C de Haan*, Thomas R de Wijkerslooth, Patrick M Bossuyt, Marjolein van Ballegooijen, C Yung Nio, Marc J van de Vijver, Katharina Biermann, Maarten Thomeer, Monique E van Leerdam, Paul Fockens, Jaap Stoker, Ernst J Kuipers, Evelien Dekker*

www.thelancet.com/oncology Published online November 15, 2011 DOI:10.1016/S1470-2045(11)70283-2



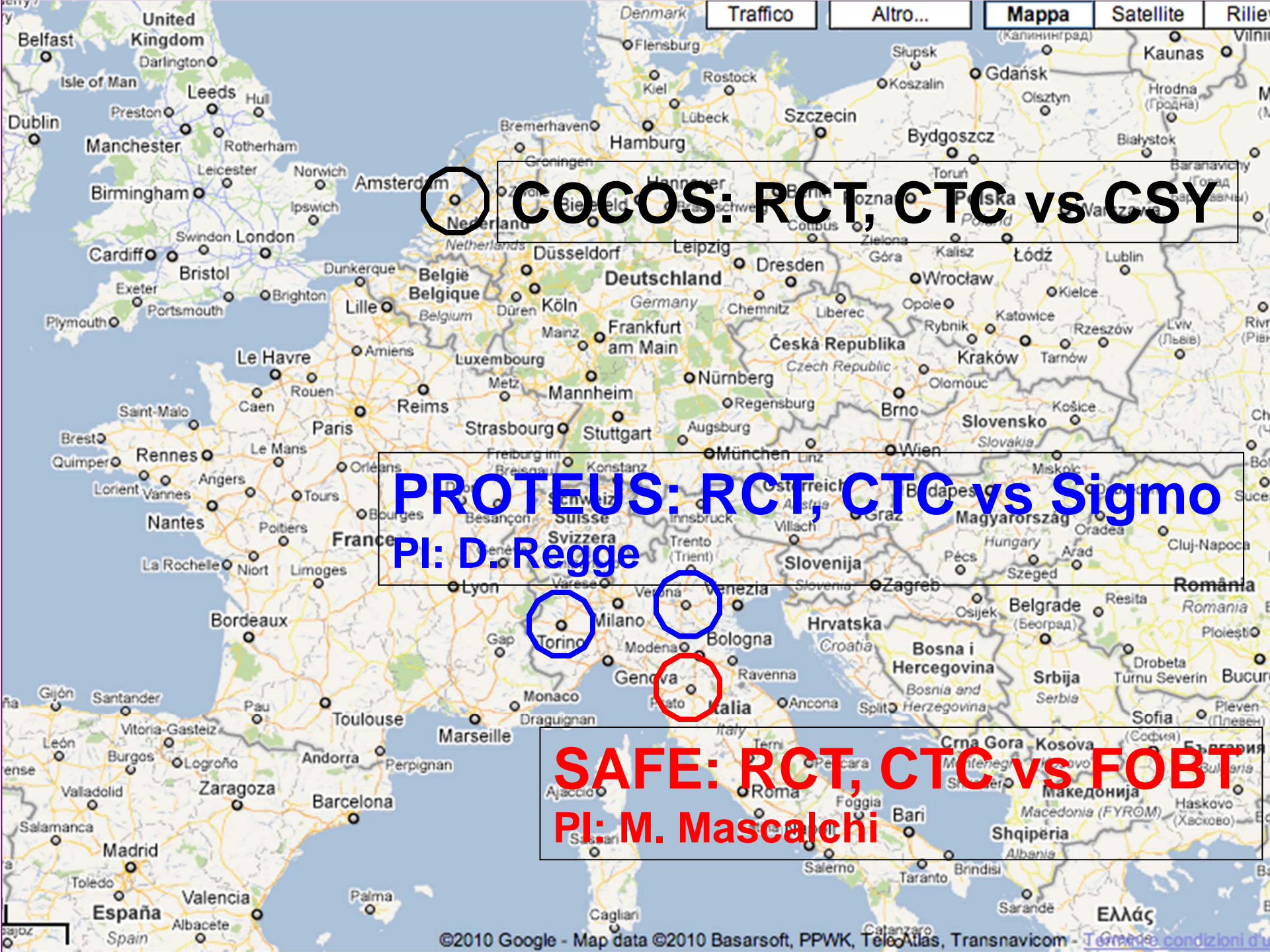
CTC: ADHERENCE RATE

Protéus trial

Results

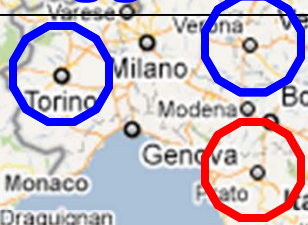
OPEN ISSUES

- “Unfair” comparison between a well-established test and a “new-comer” in a region where population-based CRC screening using FS works
- Further “marketing” of CTC (PCP; public opinion)
- Unexplained higher adherence in males
- Bowel preparation and level of embarrassment in favor of FS



COCOS: RCT, CTC vs CSY

PROTEUS: RCT, CTC vs Sigmo
PI: D.Regge



SAFE: RCT, CTC vs FOBT
PI: M. Mascali

CTC AND POPULATION CRC SCREENING

- EFFICACY
- ACCEPTABILITY
- **SAFETY**
- COST-EFFECTIVENESS

SAFE: PERFORATION

Eur Radiol
DOI 10.1007/s00330-014-3190-1

GASTROINTESTINAL

Perforation rate in CT colonography: a systematic review of the literature and meta-analysis

Davide Bellini • Marco Rengo • Carlo Nicola De Cecco •
Franco Iafrate • Cesare Hassan • Andrea Laghi

**Meta-analysis
>100,000 patients**

CTC, 0.02%	vs	CS, 0.03%
-------------------	-----------	------------------

- CS data are underestimated
- Surgical rate: CTC, 0.008% (1:12,500)
CS, 100%
- NO CTC-related deaths

RADIATION EXPOSURE

- **Current recommendations**

- Reasonably low-dose exam
- Total effective dose: ≈ 5 mSv



2nd ESGAR Consensus Statement on CTC

- Benefits clearly outweigh radiation risks

Risk/benefit: 1:24 / 1:35

Berrington de Gonzalez, AJR, 2010

RADIATION EXPOSURE



- New technology (**ITERATIVE** algorithm)
- Dose exposure lower than natural background

Annual radiation background $\approx 2.5\text{-}3.0$ mSv

CTC (iterative recon) ≈ 1.5 mSv

CTC AND POPULATION CRC SCREENING

- EFFICACY
- ACCEPTABILITY
- SAFETY
- **COST-EFFECTIVENESS**

COST/EFFECTIVENESS OF CTC

CTC	Follow-up Interval	Sensitivity for Cancer, Specificity	Test Costs ^b			
Hassan, 2007 (44)	10 years, all findings	95, 86	97	FSIG, COL	CS	Dominant vs. FSIG, ICER COL vs. CTC: 14,600
Ladabaum, 2004 (53)	10 years, all findings	95, 85	1,037	COL	36,300	Dominated by COL
Pickhardt, 2007 (19)	10 years, findings 6+ mm	95, 86	555	FSIG, COL	5,100	Dominant vs. FSIG, ICER COL vs. CTC: 74,200
Sonnenberg, 2000 (54)	10 years, all findings	80, 95	741	COL	17,800	Dominated by COL
Vijan, 2007 (23)	5 years, all findings	91, 91	707	gFOBT, COL, FSIG, FSIG + gFOBT	10,300–21,800	197,200
Zauber, 2009 (MISCAN) (22)	5 years, findings 6+ mm	84–92, 80–88	522	gFOBT, SENSA, COL, FSIG, FIT, FSIG + gFOBT	9,500–10,200	Dominated by COL, FSIG + gFOBT
Zauber, 2009 (SimCRC) (22)	5 years, findings 6+ mm	84–92, 80–88	522	gFOBT, SENSA, COL, FSIG, FIT, FSIG + gFOBT	3,600–4,200	Dominated by COL, FSIG + gFOBT
Zauber, 2009 (CRC-SPIN) (22)	5 years, findings 6+ mm	84–92, 80–88	522	gFOBT, SENSA, COL, FSIG, FIT, FSIG + gFOBT	1,900–2,100	Dominated by COL, FSIG + gFOBT

CTC dominated by CC, FSIG + gFOBT

COST/EFFECTIVENESS OF CTC

Eur Radiol (2013) 23:897–907
DOI 10.1007/s00330-012-2689-6

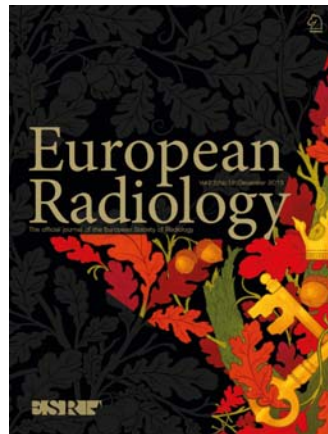
GASTROINTESTINAL

Unit costs in population-based colorectal cancer screening using CT colonography performed in university hospitals in The Netherlands

M. C. de Haan • M. Thomeer • J. Stoker • E. Dekker •
E. J. Kuipers • M. van Ballegooijen

- Dutch costs of CT-screening were **substantially lower** than cost assumptions used in published cost-effectiveness analyses on CTC screening
- Average costs per participant: €169.40
- Math models need to be re-calculated

CTC and SCREENING in 2015



Eur Radiol
DOI 10.1007/s00330-014-3435-z

GUIDELINE

Clinical indications for computed tomographic colonography: European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastrointestinal and Abdominal Radiology (ESGAR) Guideline



Cristiano Spada • Jaap Stoker • Onofre Alarcon • Federico Barbaro • Davide Bellini • Michael Bretthauer • Margriet C. De Haan • Jean-Marc Dumonceau • Monika Ferlitsch • Steve Halligan • Emma Helbren • Mikael Hellstrom • Ernst J. Kuipers • Philippe Lefere • Thomas Mang • Emanuele Neri • Lucio Petruzzello • Andrew Plumb • Daniele Regge • Stuart A. Taylor • Cesare Hassan • Andrea Laghi

Guideline

Clinical indications for computed tomographic colonography: European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastrointestinal and Abdominal Radiology (ESGAR) Guideline



Authors

Cristiano Spada¹, Jaap Stoker², Onofre Alarcon³, Federico Barbaro¹, Davide Bellini⁴, Michael Bretthauer⁵, Margriet C. De Haan⁶, Jean-Marc Dumonceau⁶, Monika Ferlitsch⁷, Steve Halligan⁸, Emma Helbren⁹, Mikael Hellstrom⁹, Ernst J. Kuipers¹⁰, Philippe Lefere¹¹, Thomas Mang¹², Emanuele Neri¹³, Lucio Petruzzello¹, Andrew Plumb⁸, Daniele Regge¹⁴, Stuart A. Taylor⁸, Cesare Hassan¹, Andrea Laghi¹

Institutions

Institutions are listed at the end of article.



ESGE – ESGAR CTC GUIDELINES



ESGE/ESGAR do not recommend CTC as a primary test for population screening or in subjects with a first-degree positive family history (EL: Moderate ; RG: Weak)



ESGE – ESGAR CTC GUIDELINES



ESGE/ESGAR ...**suggest (CTC) as a CRC screening test on an individual basis** providing the screeners are adequately informed about test characteristics, benefits and risks. (EL: Moderate ; RG: Weak)



2008

Prevention & Early Detection



Register | Sign In ▶

[My Planner](#)

Colon and rectal cancer

Beginning at age 50, both men and women at *average risk* for developing colorectal cancer should use one of the screening tests below. The tests that are designed to find both early cancer and polyps are preferred if these tests are available to you and you are willing to have one of these more invasive tests. Talk to your doctor about which test is best for you.

Tests that find polyps and cancer

- flexible sigmoidoscopy every 5 years*
- colonoscopy every 10 years
- double contrast barium enema every 5 years*
- CT colonography (virtual colonoscopy) every 5 years*

Tests that mainly find cancer

- fecal occult blood test (FOBT) every year*,**
- fecal immunochemical test (FIT) every year*
- stool DNA test (sDNA), interval uncertain*

Americ the Ea

The following
people at av
any specific

People who
different scre
screened m
should see t

Cancer-re

For people a
checkup shc
and gender,
skin, lymph
(non-cancer

Special test:

▼ [Prevention and Early Detection](#)

[Prevention](#)

[Early Detection](#)

[Stories of Hope](#)

[Tobacco and Cancer](#)

[Great American
Smokeout](#)

[Food and Fitness](#)

[Great American
Health Check](#)

[Great American Eat
Right Challenge](#)

[Environmental
Carcinogens](#)

2010

Special Issue: The D

TIM

CNN.com / insidepolitics

SEARCH GO

[MAIN PAGE](#)

[WORLD](#)

[U.S.](#)

[WEATHER](#)

[BUSINESS](#)

[SPORTS](#)

[POLITICS](#)

[LAW](#)

[SCI-TECH](#)

[SPACE](#)

[HEALTH](#)

[ENTERTAINMENT](#)

[TRAVEL](#)

[EDUCATION](#)

[IN-DEPTH](#)

Bush to have colonoscopy under anesthesia

June 28, 2002 Posted: 10:16 PM EDT (0216 GMT)



From John King
CNN Washington Bureau

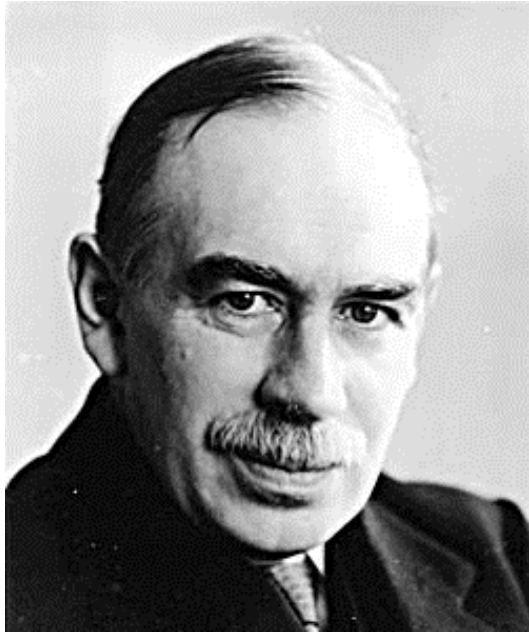
WASHINGTON (CNN) -- President Bush Saturday will undergo a colonoscopy -- a diagnostic examination to check for early signs of colon cancer -- and will transfer power to Vice President Dick Cheney during the procedure.

logy

phy)

N, Marci
n chief,
lorectal
: (CMS)
or many

CONCLUSIONS



***When the facts change,
I change my opinion.
And you, sir?***

***John Maynard Keynes,
Economist (1883-1946)***



European Code Against Cancer

12 WAYS TO REDUCE YOUR CANCER RISK

You are here: **12 ways** / Screening / Bowel cancer screening / What is bowel cancer scre...

[Print the Code](#)

Questions & Answers



Tobacco



Second-hand smoke



Healthy body weight

- Breast cancer (women)
- Cervical cancer (women).

What is bowel cancer screening?

Screening aims to detect bowel cancer (or conditions that can lead to bowel cancer) at an early stage, when there is a good chance that treatment will be successful. There are two methods of screening for bowel cancer:

1. A test to detect traces of blood in your faeces – the faecal occult blood test.
2. An examination of the inside of the bowel by a procedure called flexible sigmoidoscopy or colonoscopy.