

Cancer Screening and Early Detection: the neglected side of cancer control in the workplace



Massimo CRESPI
Fellow Collegium Ramazzini
National Cancer Institute
“Regina Elena”, Roma - Italy



COLLEGIUM RAMAZZINI

DA VENIAM SCRIPTIS QUORUM NON GLORIA NOBIS
CAUSA, SED UTILITAS OFFICIUMQUE FUIT

MISSION

Article I, Section 2

...bridge between the world of scientific discovery and those social and political centers which must act on these discoveries to conserve life and prevent disease

Cancer is not any more a disease
common in affluent societies

or

an epidemic of some specific
cancer localization in under-
developed populations:

“It’s a global health problem”

Cases 10,862,496 Deaths 6,723,887

Incidence and Mortality in Developed and Developing Countries

	Incidence	Mortality
<i>Developed</i>	5,016,114	2,688,472
<i>Developing</i>	5,827,505	4,022,187

Global estimates of fatal work-related-diseases. Hamalainen et al 2007 AJIM 50:28-41 (1)

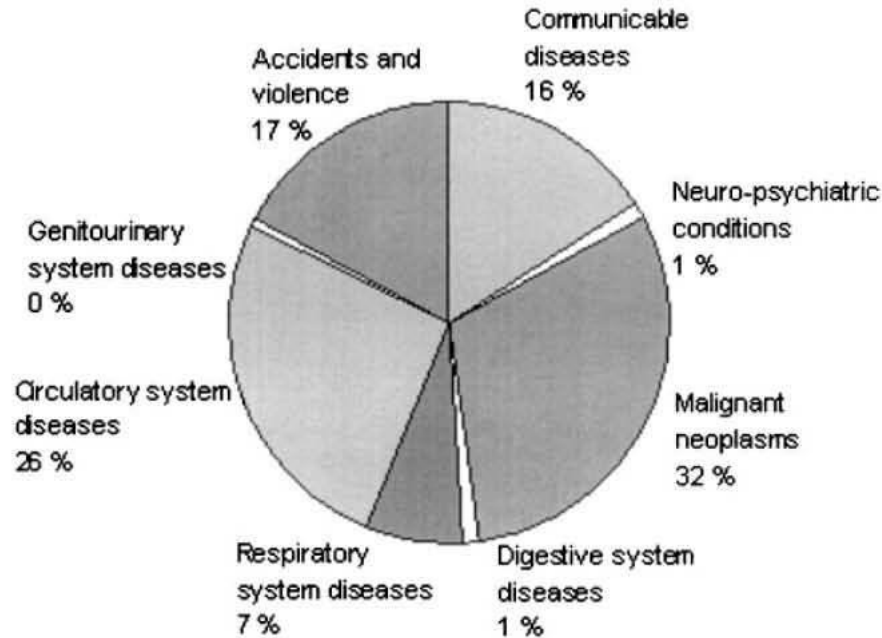


FIGURE 2. Global estimated work-related mortality, by cause.



Collegium Ramazzini and Cancer Prevention

The Collegium has called for prevention of cancer, with success, through **primary prevention** of workplace and environmental exposures to carcinogens, the most effective mean of cancer control



Cancer Prevention and Early Detection in the Workplace (1)

The organized aggregation of large number of people provides a **unique additional opportunity** not only to protect workers against occupational diseases but also the efficient application of **early diagnostic actions,** including **cancer screening**



Cancer Prevention and Early Detection in the Workplace (2)

Crucial is the **informed consent** from workers and the **reponsible cooperation** and **moral obligation** by the employers **in order to avoid any discrimination** as a result of a cancer diagnosis



COLLEGIUM RAMAZZINI

DA VENIAM SCRIPTIS QUORUM NON GLORIA NOBIS
CAUSA, SED UTILITAS OFFICIUMQUE FUIT

STATEMENT

***CANCER PREVENTION, SCREENING
AND EARLY DIAGNOSIS,
THE NEGLECTED SIDE
OF CANCER CONTROL
A Call for Action***



COLLEGIUM RAMAZZINI

DA VENIAM SCRIPTIS QUORUM NON GLORIA NOBIS
CAUSA, SED UTILITAS OFFICIUMQUE FUIT

Working Group

**John C. Bailar, Massimo Crespi (Chair),
Stella de Sabata, Anders Englund, Philip
Landrigan, Steven B. Markowitz, James Melius,
Rengaswamy Sankaranarayanan, Robert A.
Smith (Co-Chair), Morando Soffritti.**

*The Statement has been endorsed by the
Collegium Ramazzini on October 2008*



Aims of the Statement

Review the existing evidence on effectiveness and efficiency of **cancer screenings**, and promote them **within occupational medicine**, as mutual advantages for workers and employers, also in terms of cost/benefit.

Cancer: a multifactorial disease

*“Cancer develops not because of one unique circumstance, whether hereditary or environmental, but out of a **sum total of the goods and bads** of our lives”*

D. Davis

Prevention

Primary prevention

aims to prevent new cases of disease

Environmental

(i.e. pollutants threshold,
occupational exposure etc)

Person directed

Clinical

(i.e.
screening)

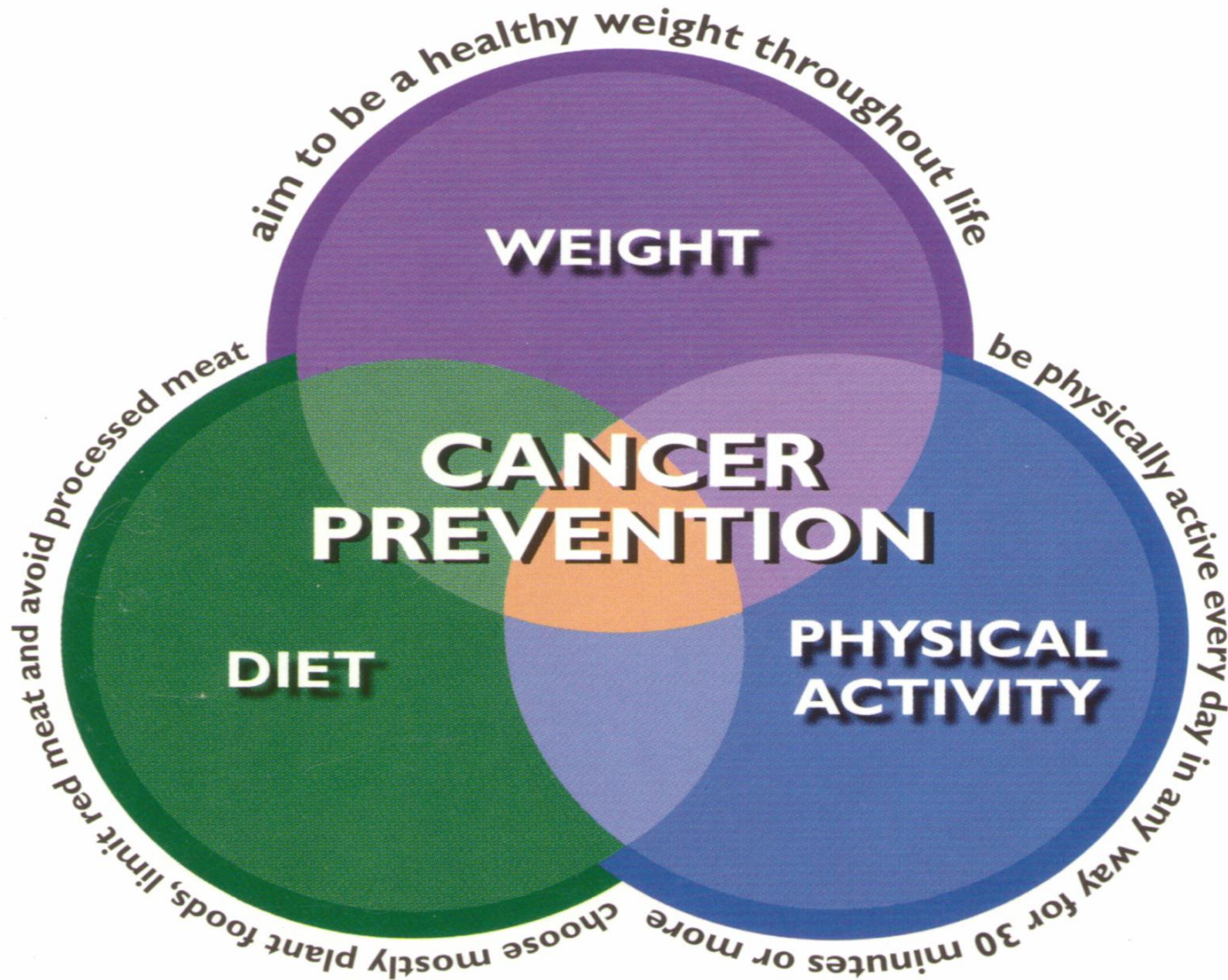
Non-clinical

(alteration of physical
and social environment
i.e. lifestyle, etc)

Secondary and tertiary prevention

Mitigate the effects of an existing disease
(i.e. screening again and early diagnosis)

Cancer Prevention is also Lifestyle !!



Tools available for cancer control

	Prevention	Early Diagnosis	Therapy
Lung	++++	+	+
Oesophagus	+	+	+
Stomach	+	++	+
Colon-rectum	+	+++	++
Breast	+	+++	++
Uterine cervix	+++	+++	+++
Testicle	----	+	++
Skin	++	+++	+++
Lymphoma/leukemia	+	----	++
Prostate	----	++	++
Liver	++++	+	++
Pancreas	----	+	+
Bladder	+	++	++

++++ Optimal

+++ Good

++ Fair

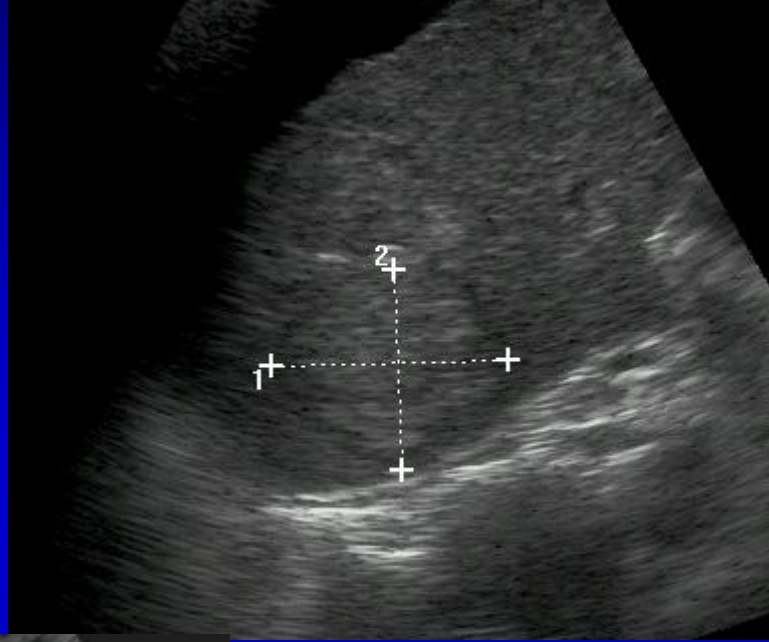
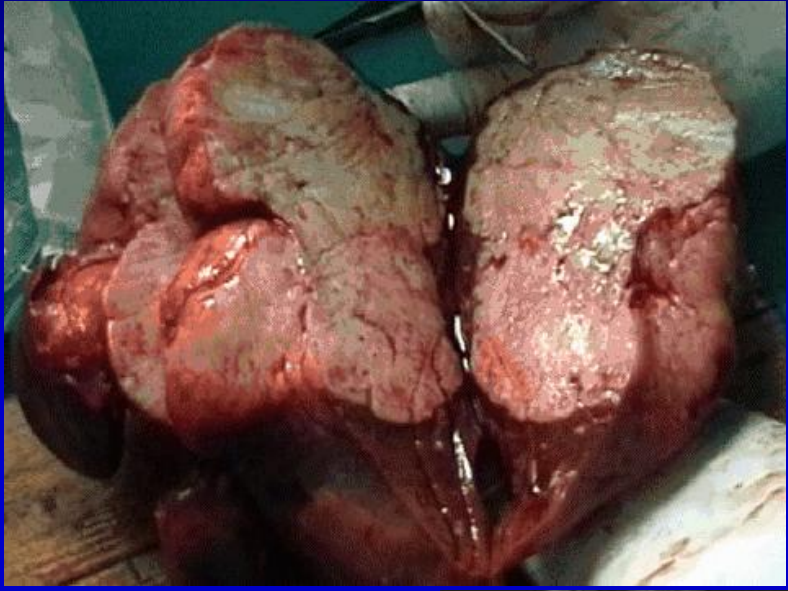
+ Low

--- None

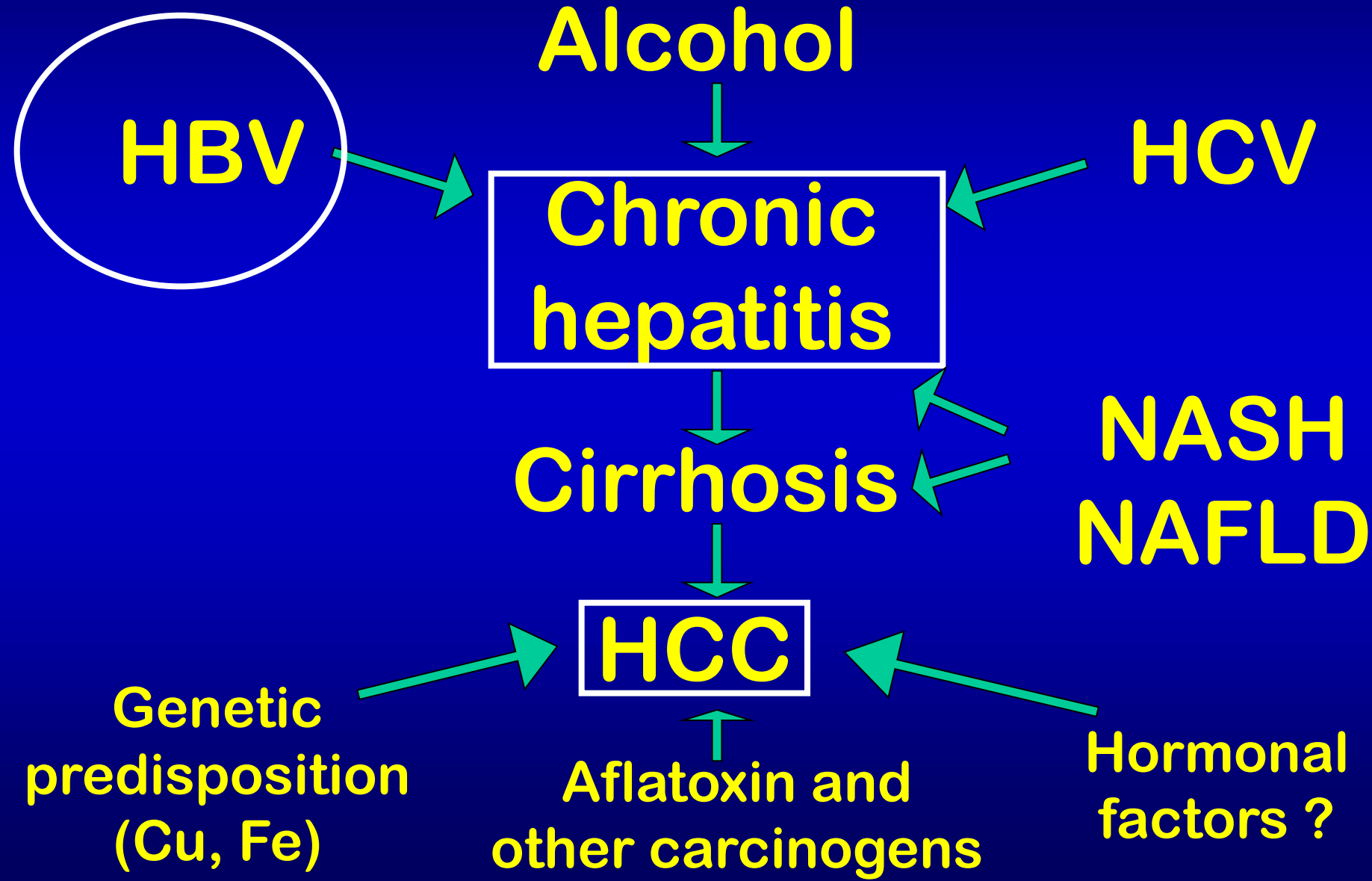
Specific actions for specific cancers

For many cancers, theoretically,
we have the knowledge to
implement primary prevention
but, in the real world, cultural
trends, lifestyle habits or
unavoidable
environmental/occupational
hazards are difficult to eradicate

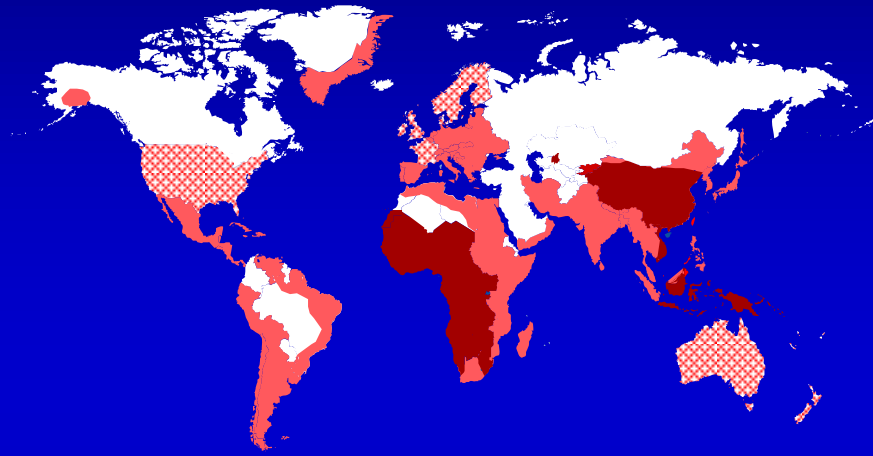
Liver Cancer (HCC)



Etiopathogenesis of HCC

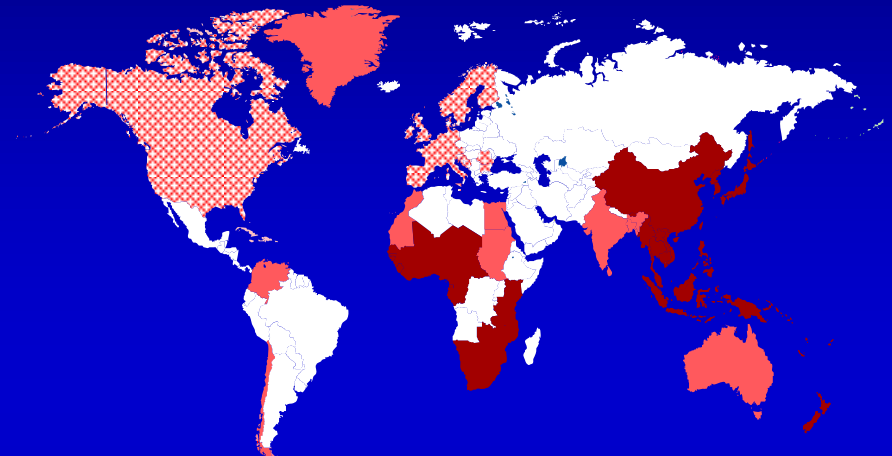
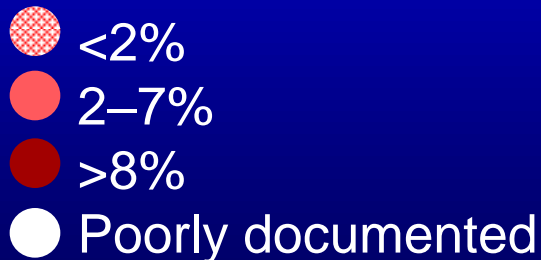


Prevalence of HBV and Incidence of Hepatocellular Carcinoma (HCC)



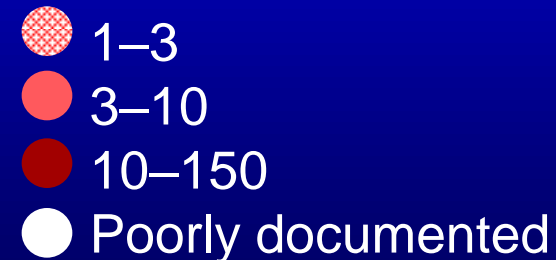
World prevalence of HBV carriers

HBsAg carriers – prevalence



Annual incidence of primary HCC

Cases/100,000 population



Additional risk factors for HCC in affluent societies

- **HCV transmission** in health care and by high risk practices
- **NAFLD** consequent to **obesity**, diabetes in 30 – 40 % of HCC with NO-major risk factors (HBV, HCV, Alcohol)

Incidence of HCC in US from

1.6 to 4.9 x100,000 (1975 – 2005) !!!

- **Prevention** public education, social awareness, **lifestyle.**

Suspected / Recognized hepatocarcinogens in humans

HBV, HCV, Ethanol, Azathioprine, Oral
contraceptives, Plutonium 239, Radium 224,
Thorium 232, Tamoxifen, 2,3,7,8tetrachlorido-
benzo-paradioxin, vinyl-chloride, aflatoxins,
betel, soots, arsenic, dioxin

?!?!?

All this may well explain the increase of HCC in
Westernized societies !!

IARC monographs



Collegium Ramazzini and Cancer Early Detection

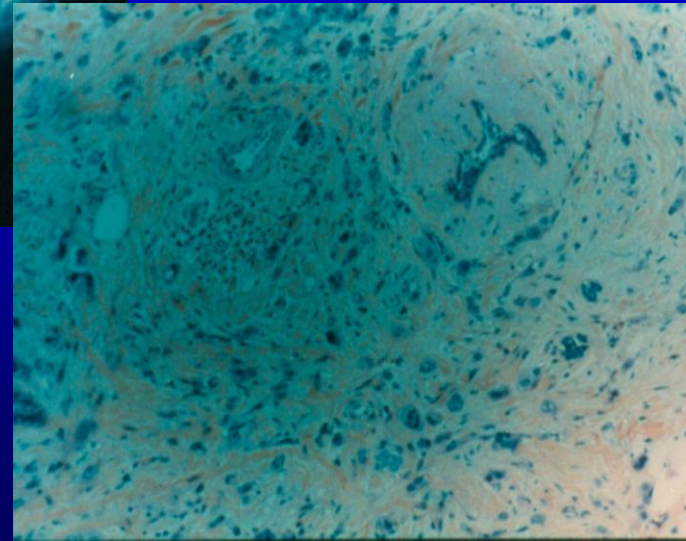
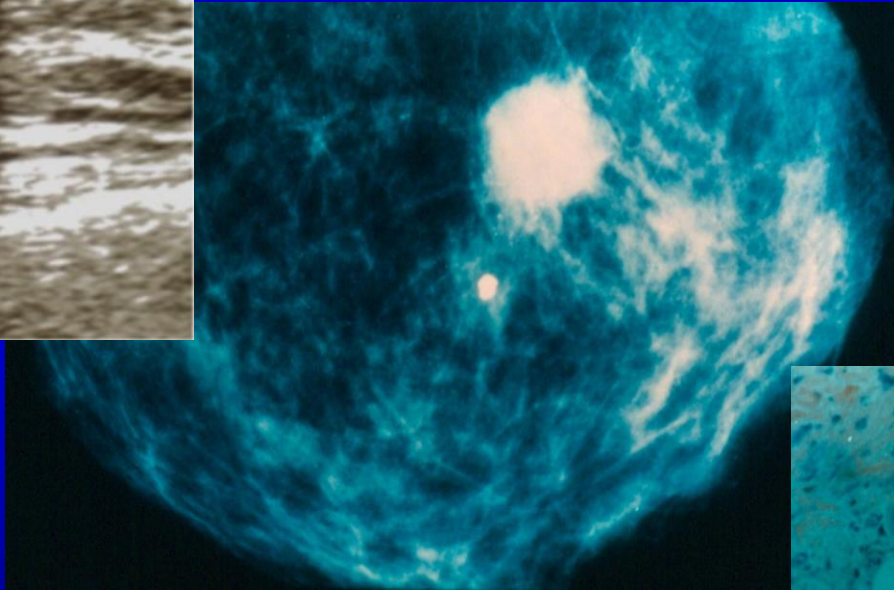
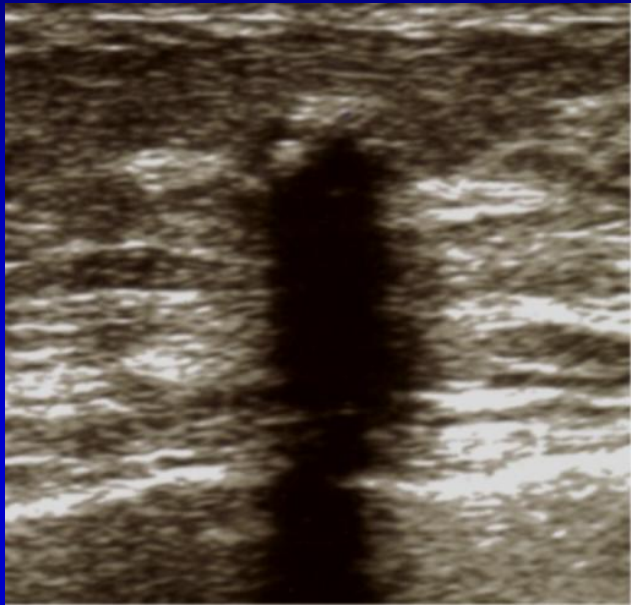
However today knowledge exists to reduce avoidable **morbidity**, **mortality** and the **burden of advanced disease** by proven early detection strategies in the workplace and the general population

Specific actions for specific cancers

While we work on primary prevention, education, legislation trying to get attention by the public and health administrators, we must consider that we have solid data demonstrating the efficacy, for some cancers, of secondary prevention (screening)

*I wish to sort out with you some examples:
Breast and Colon*

Breast Cancer



Breast cancer: possible environmental causative factors responsible for the increase in incidence

“Cocktail effect” by **endocrine disrupting chemicals**

(DDE, PCB, PBDE, Phthalates, etc) from breast feeding, food, cosmetics, **HRT**, acting in critical periods of women’s life

A. Kortenkamp, UK, 2006

Exemple: **HRT** → carcinogen class 1

IARC Monograph #91, 2005

Breast cancer control

Primary prevention

Diet ↗ fruit ↗ vegetable

Protection: by physical activity
physiological /reproductive events

Promotion : ↗ BMI , alcohol, **endocrine**
disrupting chemicals

Secondary prevention +++

screening **mammography** starting age 45 – 50,
self palpation (**BSE**), clinical examination (**BCE**)

Breast self-examination(BSE)

Crucial in teaching women to know and be aware of their breast and to perceive significant changes

Has to be explained by GPs, possibly with some printed or audiovisual support

No real preventive effect but may help in breast cancer downstaging

Any lump discovered needs medical consultation and Rx mammography in selected cases

Clinical Breast Examination (CBE)

Performed biennially in women 40 to 60y is estimated to **reduce mortality** by 16.3% in India, where Rx-Mammographic facilities are scarce and cultural barriers relevant

In addition, CBE rises awareness by doctors and public

Okonkwo QL JNCI 2008

Decrease of advanced Breast Cancer by screening, reflects parallel decrease in mortality

In the Dutch screening the decrease in advanced cancer was -12.1% (1990 – 1997) with parallel decrease in mortality 2y later

Fracheboud J BJC 2004

IARC pooled data show a **-35%** decrease in mortality in age group 50-69y **by screening**

Breast cancer mortality trends in 30 European Countries (1989 – 2006)

Median reduction 19% (from -45.5% Iceland to +16.6 Romania)

But:

Poland	-5.9		Greece	+ 1.4
Slovakia	-1.5	and	Estonia	+ 9.6
Bulgaria	-0.8		Latvia	+ 11.4
Lithuania	-0.7		Romania	+ 16.6

Mortality is indicative of long-term trends

Incidence influenced by lead and length time bias and reflects screening intensity.

Breast cancer incidence (1990-2002) increased 20 to 48 % in many countries where 5y-surv approached 80% (downst.)

Screening and overdiagnosis

Overdiagnosis and related overtreatments (5 to 30 %) are the drawbacks of screening

Is that a real harm ? or

*The **real risk** is an advanced cancer ?*

Data show that for 2.5 lives/saved by screening there is 1 overdiagnosis

In any case **overdiagnosis impacts on incidence, NOT on mortality** (the real target of screening)

Conclusions for Breast Cancer

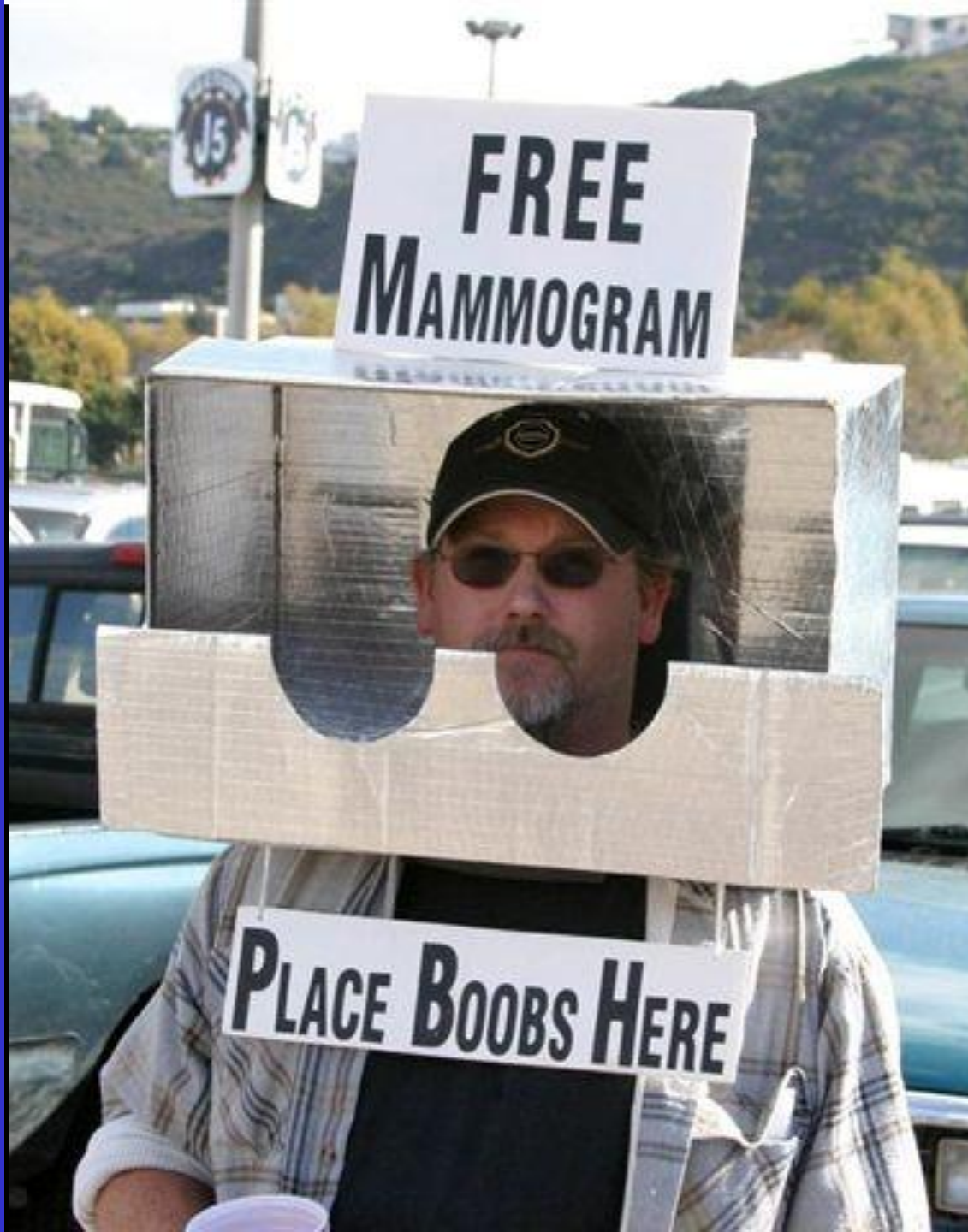
Is a **preventable** tumor

Screening is possible, with good results, **MAMMOGRAPHY** crucial

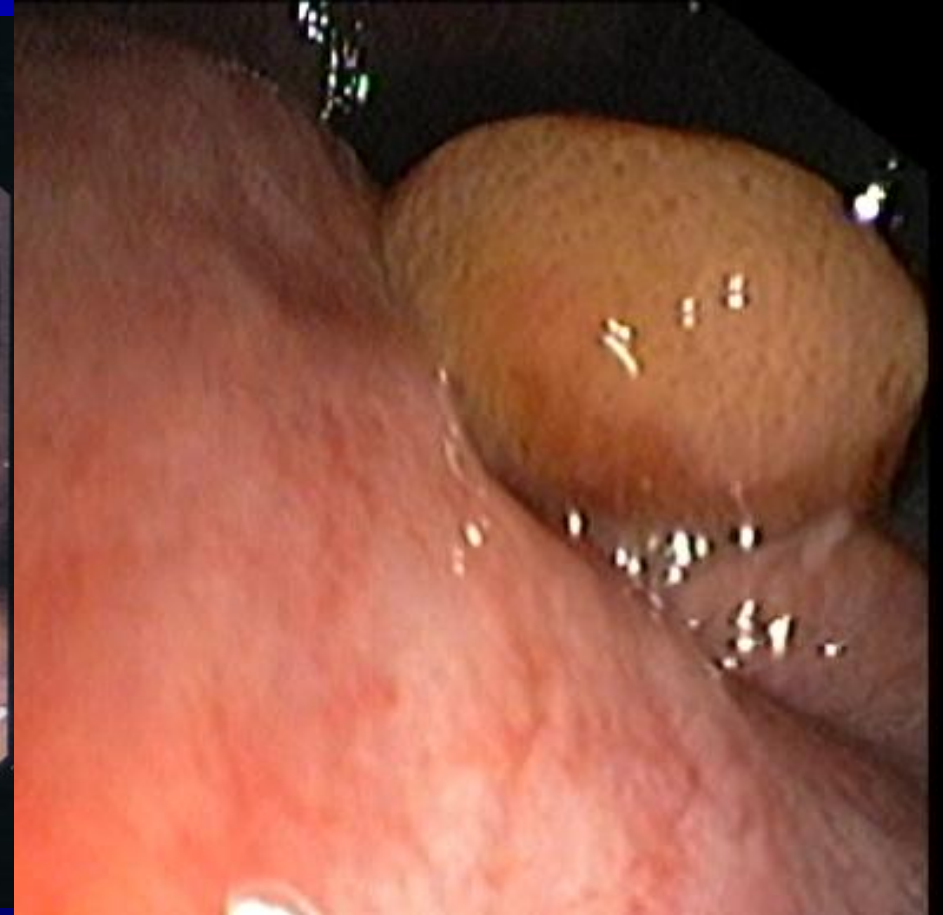
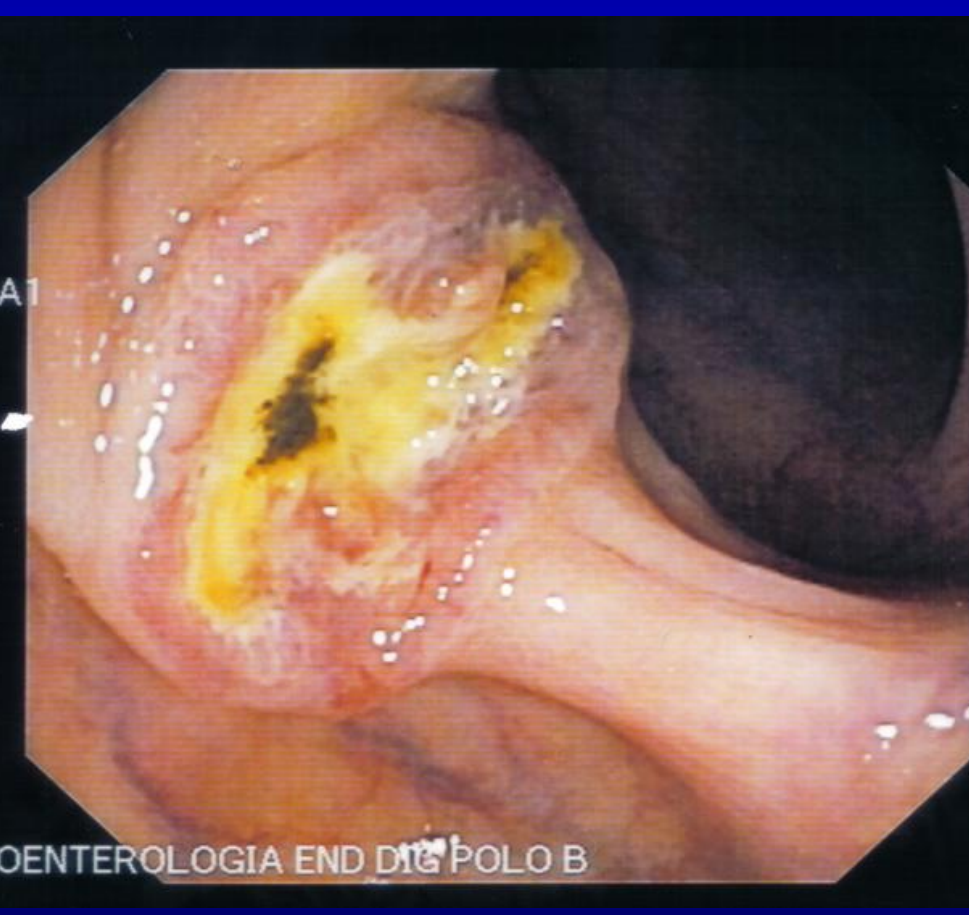
Screening practices have to be extended and available to **all women at risk**

**Breast
Cancer
Screening
YES**

**but with ...
... REAL
Mammography**



Colo-Rectal Cancer



Possible actions for CRC Prevention

<i>Summary of action with level II or III of evidence</i>	
Energy intake	Physical activity
Dietary fat	Fresh fruit and vegetable
Fiber	Calcium
Selenium	Anti-oxidant vitamins
Anti-inflammatory drugs	SCREENING

Level II: *Obtained from at least one properly designed RCT*

Level III: *Obtained from a control trial without randomization,
“ “ cohort or case-control analytic studies,
“ “ multiple time-series with/without the intervention*

Effects of CRC screening as shown by RCTs

Reduction in mortality

beyond lead time and delay time bias

achieved: -15 to -55%

Improved survival

(down-staging)

achieved: up to 65%

Reduction in incidence

by removals of precancerous lesions (polyps)

achieved: up to 70%

5y survival of CRC from Cancer Registries

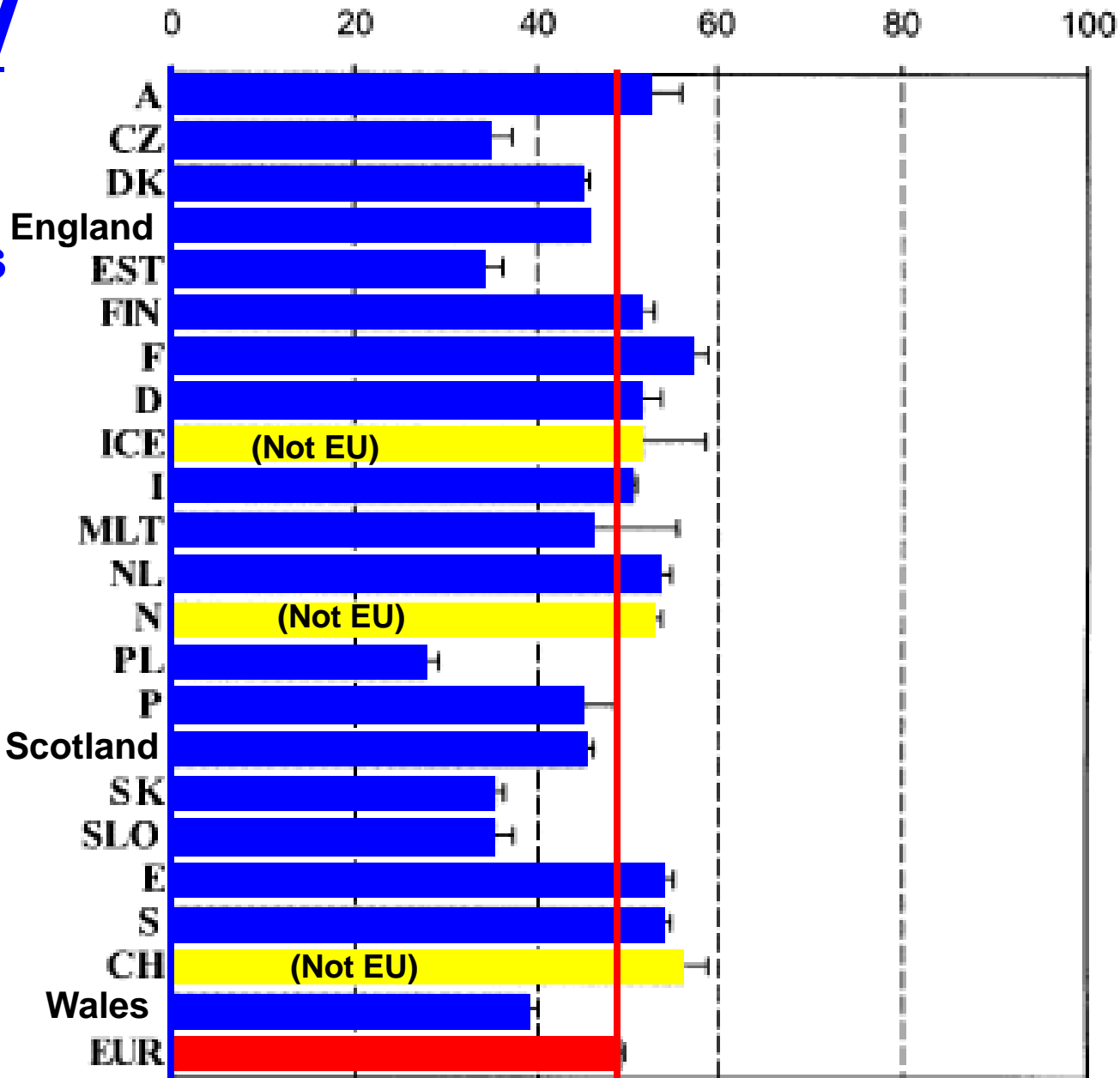


EPICENTRO.ISS.IT

EUROCARE.IT

*Eurocare-3 study
Annals of Oncology
2003 (Suppl. 5) vol. 14*

Age-standardized five-year relative survival (%), persons



In conclusion

Many actions for cancer control may be undertaken

The problem is **TO ACT** ...



Last, but not least...
try to implement the:

COLLEGIUM RAMAZZINI
STATEMENT

***CANCER PREVENTION, SCREENING
AND EARLY DIAGNOSIS,
THE NEGLECTED SIDE
OF CANCER CONTROL***
A Call for Action

**Recent
initiatives
(open to any
country)**

MEDITERRANEAN TASK FORCE FOR CANCER CONTROL (MTCC)

MTCC
Mediterranean

AIMS: unify efforts to eliminate suffering and reduce cancer mortality preventing advanced disease by early diagnosis



Albania



Algeria



Croatia



Cyprus



Egypt



France



Greece



Italy



Jordan



Lebanon



Lybia



Macedonia



Malta



Morocco



Palestine



Portugal



Syria



Slovenia



Spain



Tunisia



Turkey

THIS MESSAGE COMES TO YOU FROM:

Mediterranean Task Force for Cancer Control (MTCC)

An international non profit organization devoted to improving cancer prevention, screening and early detection in countries of the Mediterranean area.
www.mtcc.cinbo.org

CINBO

A Consortium of Italian Universities devoted to Cancer Research
www.cinbo.org

Where in your area

NUTRITION AND CANCER

Nutrition is important because :

1. One third of all cancer is related to unhealthy nutrition and diet.
2. Obesity, a worldwide problem predisposes to cancer.
Remember: cancer prevention starts in childhood. Avoid to over feeding your children: infant obesity predisposes to cancer.
3. Obese women have a 50% greater chance of developing breast or uterus cancer.
4. Obese people have a 30% greater risk of developing large bowel cancer and other tumors.

Make the prevention of cancer more effective: eat properly!

YOUR LIFE IS IN YOUR HANDS

A Mediterranean initiative against cancer



CANCER IS A PREVENTABLE DISEASE

Follow the recommendations on nutrition, diet and healthy personal habits contained in this leaflet

Avoid suffering to you and to your loved ones

RISK OF CANCER RELATED TO NUTRITION AND PERSONAL HABITS

- **MOUTH AND THROAT**
alcohol and smoking
- **ESOPHAGUS**
alcohol and smoking
- **STOMACH**
salt and salty foods
- **PANCREAS**
animal fats, red and processed meats, alcohol, obesity
- **LARGE BOWEL**
red and processed meats, reduced intake of vegetables, obesity
- **LIVER**
food contaminants, alcohol, obesity and Hepatitis Infections
- **BREAST**
obesity, alcohol
- **UTERUS**
obesity

Healthy behaviours

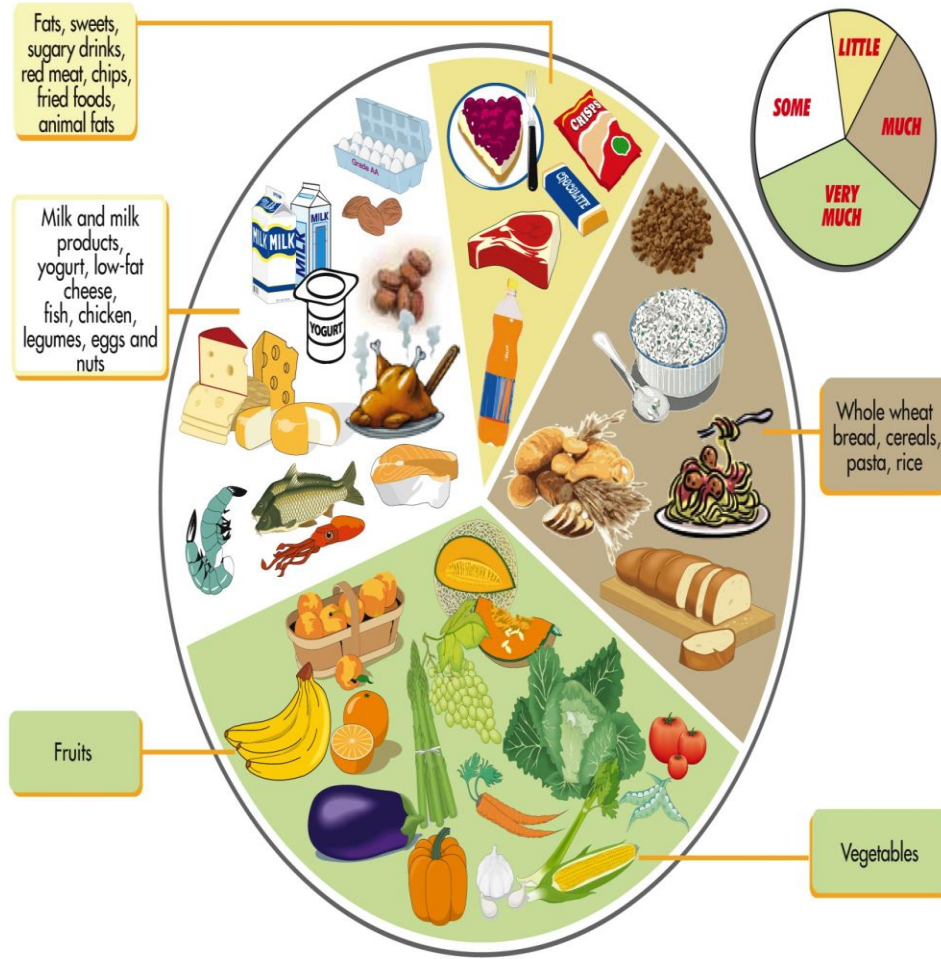
- Do not smoke, stop smoking and avoid that your children start smoking.
- Keep body weight under control by exercising daily with at least 30 minutes of brisk walking or other exercise.

The more the better!

- Mothers! Breast feed your baby: it reduces your risk of breast cancer.
- Eat lots of fresh fruits and vegetables: 5 or more servings daily. They contain fibers and nutrients that prevent cancer.
- Eat cereals (grains, whole wheat bread...), legumes (beans, lentils...), plant foods.
- Use preferentially olive oil. Avoid cooking on high temperature open flammings (barbecue). Season with garlic and spices, they have a protective effect.
- Limit salt and salty foods. They produce harmful substances in the stomach.
- Use low-fat dairy products (yogurt, milk): they contain calcium and also protect against bowel cancer.

FOLLOW THE TRADITIONAL DIET OF THE MEDITERRANEAN COUNTRIES: IT PROTECTS AGAINST CANCER.

Eat daily a combination of the foods shown in the plate



Healthy behaviours

- Limit alcohol consumption, which causes cancer directly.
- Limit the consumption of red meat (beef, pork and lamb) to a few times a week. They contain harmful fats. Instead eat poultry and fish.
- Avoid high-energy processed foods like hamburgers, chips, fried foods: they cause overweight and obesity.
- Store raw and cooked foods, especially vegetables, in the refrigerator.

ALWAYS

Remember to get regular screenings for uterus, breast, large bowel, prostate, mouth and skin cancer.

Remember !! The MEDITERRANEAN DIET also protects against coronary heart disease, stroke and diabetes

Ask your doctor !

كن على علم ببعض الأعراض
المبكرة المنبهة

Take note of few early warnings...

تأخر شفاء جرح أو تقرح في الجلد أو الفم
An ulcer or wound on the skin or mouth not healing promptly

وجود دم في البول أو البراز أو أي منطقة أخرى من الجسم
Presence of blood in urine or stools or from other parts of the body

ورم في الثدي أو نزيف من الحلمة أو أي تورم في أي منطقة من الجسم
A lump in your breast or bloody nipple discharge and any lump elsewhere in the body

صعوبة في البلع أو الشرب
Difficulty in swallowing food and drinks

سعال مستمر أو وجود دم في اللعاب
Persistent cough and/or blood present in sputum

جرح أو عدم شفاء بقع حمراء أو بيضاء في الفم، اللسان أو الشفتين
A sore or unhealing red or white patch in your mouth, tongue and/or lips

في حالة وجود أي من هذه الأعراض،
استعجل باخذ رأي طبيبك.

If any of the above is present,
seek urgently medical advice

حياتك بين يديك

Your life is in your hands



هذه رسالة للحياة

من المبادرة المتوسطية لمحاربة مرض السرطان
A message for life from the
Mediterranean initiative against cancer

السرطان مرض يمكن شفاؤه
تجنب المعاناة لك ولذويك

Cancer is a curable disease

Avoid suffering to you and your beloved ones

بمتابعة بعض النصائح الموجودة على هذا المنشور
Follow the few instructions contained in this leaflet

MTCC
Mediterranean

uicc
member organisation

CINBO

FOBGold® **SENTINEL**
DIAGNOSTICS

ولكن مرض السرطان يمكن تجنبه في بعض
الحالات

But CANCER is also PREVENTABLE

بالإضافة إلى هذه النصائح:

In addition to these few instructions

تجنب التدخين وامنع أبنائك وأقربائك عنه : التدخين يسبب
بسرطان الرئة وعدد كبير من أنواع السرطان، أمراض القلب
والشرايين والجلطة الدماغية.

Avoid smoking and discourage your children and relatives :
smoking is responsible for lung and many other cancers and
heart disease and stroke

تجنب التعرض بكثرة لأشعة الشمس، وخاصة في سن مبكرة.
Avoid excessive unprotected sun exposure, especially in
childhood

تجنب استهلاك المشروبات الكحولية.
Avoid excessive alcohol drinking

اتبع نظاما غذائيا صحيا، مع أكل الفواكه والخضروات بكثرة،
وتقليل اللحوم الحمراء والدهون.
Eat an healthy diet with plenty of fruits and vegetables and less
red meat and fat

قم بانتظام بتمارين رياضية، وتحكم في وزنك : البدانة تزيد من
إمكانية التعرض للعديد من أنواع السرطان.
Get regular physical exercise and control overweight: obesity
increases the risk of many cancers

احصل على التطعيم ضد فيروس الكبد B
Get vaccination against Hepatitis B Virus

كن حذرا من الأخطار المرتبطة بأسلوب عيشك وبمحيط عملك.
Beware of environmental hazards linked to your daily life and
working environment

هذه الرسالة قادمة لك من :

This message comes to you from:

MTCC: فريق العمل المتوسطي لمحاربة داء السرطان
MEDITERRANEAN TASK FORCE FOR CANCER CONTROL
(MTCC)

منظمة دولية غير ربحية مكرسة لتحصين الوقاية من السرطان والفحص
والكشف المبكر في بلدان منطقة البحر الأبيض المتوسط.

An international non profit organization devoted to
improve cancer prevention, screening and early
detection in countries of the Mediterranean area

www.mtcc.cinbo.org

and

CINBO

مجموعة من الجامعات الإيطالية
المخصصة لأبحاث السرطان

a consortium of Italian universities devoted to
Cancer Research

www.cinbo.org

Where in your area

تذكر : إذا تم تشخيص السرطان في حالة مبكرة،
يمكنك تجنب المعاناة والموت

**Remember : if cancer is diagnosed early
you may avoid suffering and death**

أطلع أقربائك وأصدقائك على هذا المنشور.

Share this leaflet with your relatives and friends

الثدي BREAST

كوني على علم بالتغيرات في ثديك : وذلك بالمعاينة والفحص اليدوي بانتظام على الأقل مرة كل شهر لاستشعار أي تغيير جديد في ثديك وخاصة ظهور أي ورم.

Learn to know your breast : inspect and palpate it with your flat open hand at least once a month to feel any new lump

ابتداءً من سن الثلاثين، احصلي على تشخيص سريري عند طبيبك أو ممرضة أو عامل الصحة.

Starting at age 30, get a breast clinical examination by your doctor, health worker or nurse

في حالة وجود ورم مشبوه، احصلي على تشخيص إشعاعي للثدي بواسطة mammographie، هو اختبار بسيط وقليل التكلفة. في جميع الحالات، بعد سن الأربعين، احصلي على هذا التصوير مرة كل سنة.

In case of any suspicious lump get mammography, a simple and painless radiological examination. In any case try to get mammography every 2 years after the age of 40

خذني حذرك في حالة وجود سرطان الثدي عند الأقرباء.
Be particularly aware if you have cases of breast cancer in your relatives

الفم MOUTH

إذا كنت مدخناً أو مستهلكاً لكحول، اسأل طبيبك أو طبيب أسنانك أو العاملين في المجال الصحي لمعاينة فمك

If you are a smoker and alcohol drinker ask your doctor, dentist or health worker for a visual inspection of your mouth

الفم MOUTH

الثدي BREAST

الرحم UTERUS

الرحم UTERUS

احصلي على تحليل مسح عنق الرحم من طبيبك أو ممرضتك أو عامل الصحة.
Get regular cervical smears (pap test) from your doctor or health worker or nurse, starting at age 20

حاولي الحصول على التطعيم ضد فيروس HPV المسؤول عن التهابات عنق الرحم والذي يؤدي لسرطان عنق الرحم.

Try to get vaccination against Papilloma virus, a common infection predisposing to cervical cancer

أبلغني طبيبك عن أي نزيف غير متوقع أو إفرازات مهبلية غير عادية.

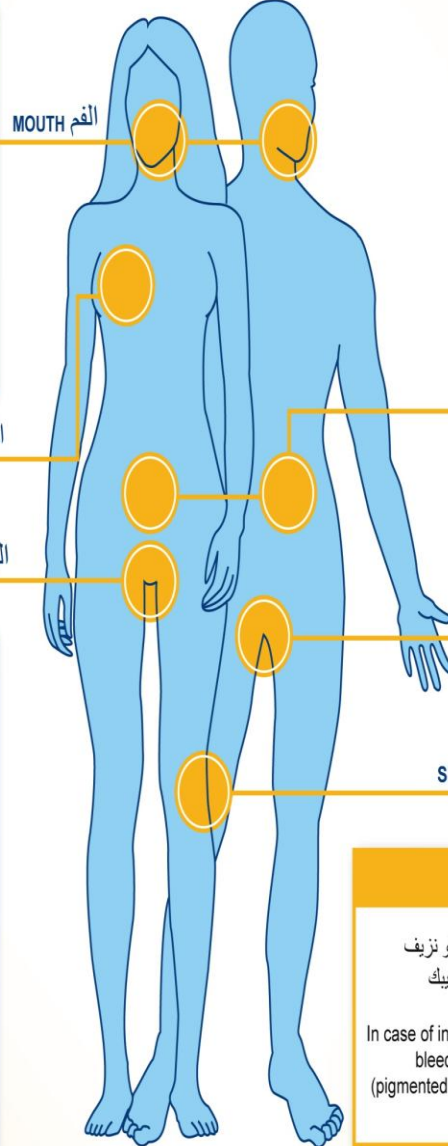
Report to your doctor any unexpected bleeding or spotting from vagina, especially after menopause

أطلبي معاينة بصرية لعنق الرحم من طبيبك أو ممرضة أو عامل الصحة حتى لو لم يكن لديك أية أعراض

Ask for regular vaginal visual inspection by your doctor, nurse or health worker even if you don't have any symptom

ما العمل لتجنب أو الحصول على التشخيص السريع والمبكر لأنواع السرطان الأكثر انتشاراً التي يمكن شفاؤها.

What to do to avoid or get prompt diagnosis of the most frequent curable cancers



الأمعاء (COLON AND RECTUM) INTESTINE

كن حذراً من أي تغيير في الجهاز الهضمي.

Be aware of recent and worsening changes in bowel habits

احصل بانتظار (مرة كل سنة أو سنتين) على اختبار دم في البراز، هو تحليل مخبري بسيط وقليل التكلفة.

Get regular (every one or two years) testing for occult blood in stools, a simple and cheap laboratory test

كن حذراً إذا كان لديك علم بحالات سرطان الأمعاء عند أقاربك.
Be particularly aware if you have cases of intestinal cancer in your relatives

حاول الحصول على فحص للأمعاء بالمنظار بعد سن الخمسين أو قبل ذلك في حالة وجود سرطان الأمعاء عند أقاربك.

Try to get an endoscopic examination of your intestine (colonoscopy) after the age of 50 or earlier in case of this cancer in your relatives

الأمعاء INTESTINE

البروستاتا PROSTATE

البروستاتا PROSTATE

احصل بطريقة منتظمة (سنويًا) على تحليل دموي بالمختبر (PSA) بعد سن الخمسين، هو اختبار بسيط وقليل التكلفة.

Get regular (yearly) testing by prostate specific antigen (PSA) after the age of 50, a simple and cheap laboratory test

اسأل طبيبك لفحص المستقيم عندما تذهب لاستشارة طبية.

Ask your doctor for a rectal digital examination when you go for a medical consultation

كن حذراً أكثر في حالة وجود سرطان البروستاتا في عائلتك.

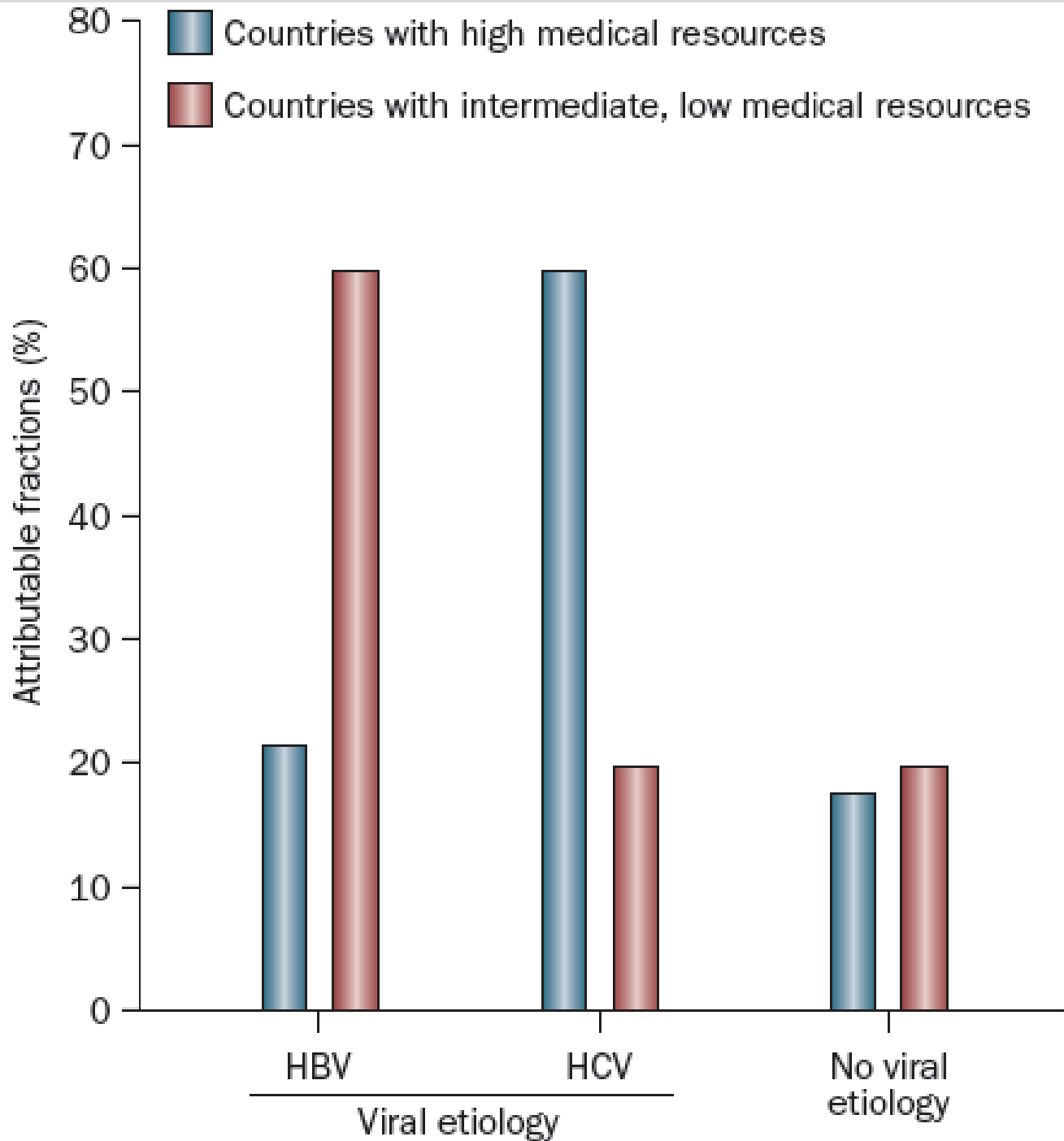
Be aware of prostate cancer in your family

جلد SKIN

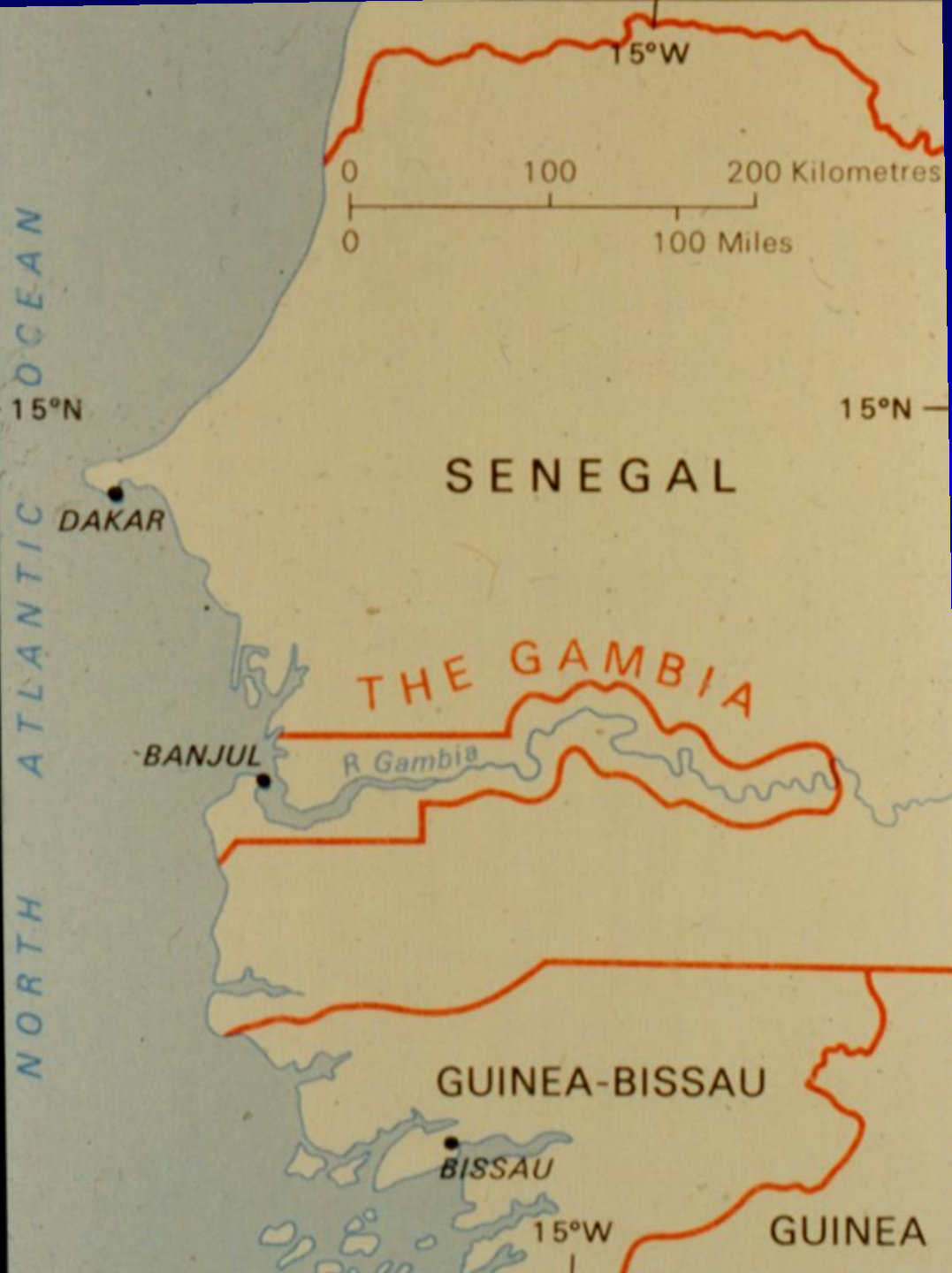
في حالة حدوث زيادة في الحجم أو نزيف منقطع لأي ورم جلدي، استشر طبيبك

In case of increase in size or intermittent bleeding from a skin mole or wart (pigmented lesions), seek doctor advice

fine



Etiology by level of medical resources



The Gambia Hepatitis Intervention Study (GHIS)

IARC Lyon, France

MRC Unit in The
Gambia

Gambian Government

Italian Cooperation
with 5 Million\$

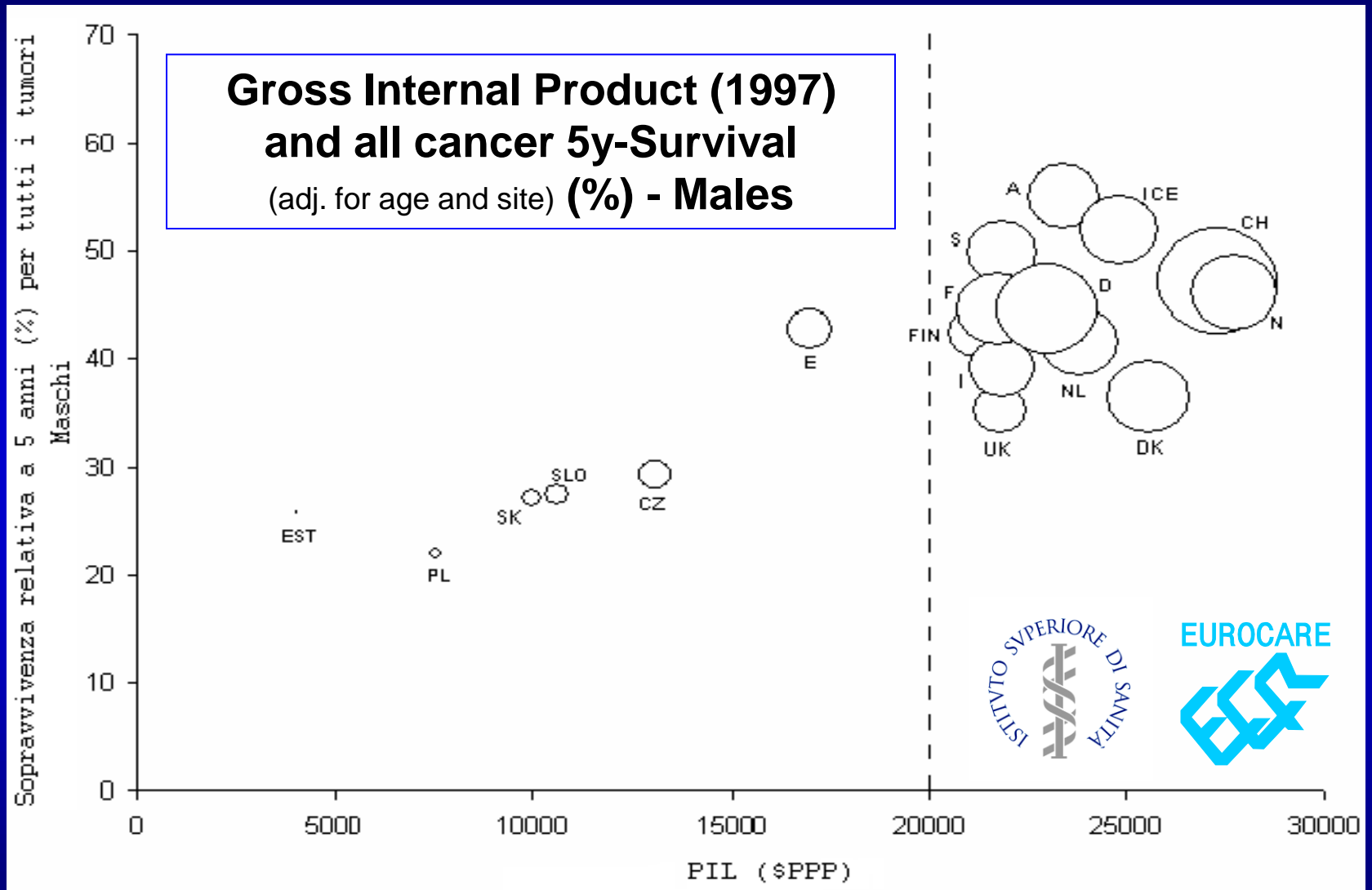
GHS: aims of the project

- **introduce hepatitis B Vaccine** into the Expanded Program of Immunization (EPI) in the Gambia and
- evaluate the **efficiency of the vaccination** in preventing chronic liver damage and HCC

GHS: waiting for vaccination of newborns



Money investments in health are crucial !



Disks area is proportional to National Health Expenditure (\$ PPP) of the country

\$ PPP: Parity Purchasing Power per capita (US \$) - From: OECD 2002 for GIP and NHE; EURO CARE-3 for survival

Gastric cancer

Primary prevention (spontaneous) +++

Infection H.pylori: the REAL causative factor ?

Diet: more fruit & vegetable, less salt
(preventable by diet 66 to 75%)

Secondary prevention

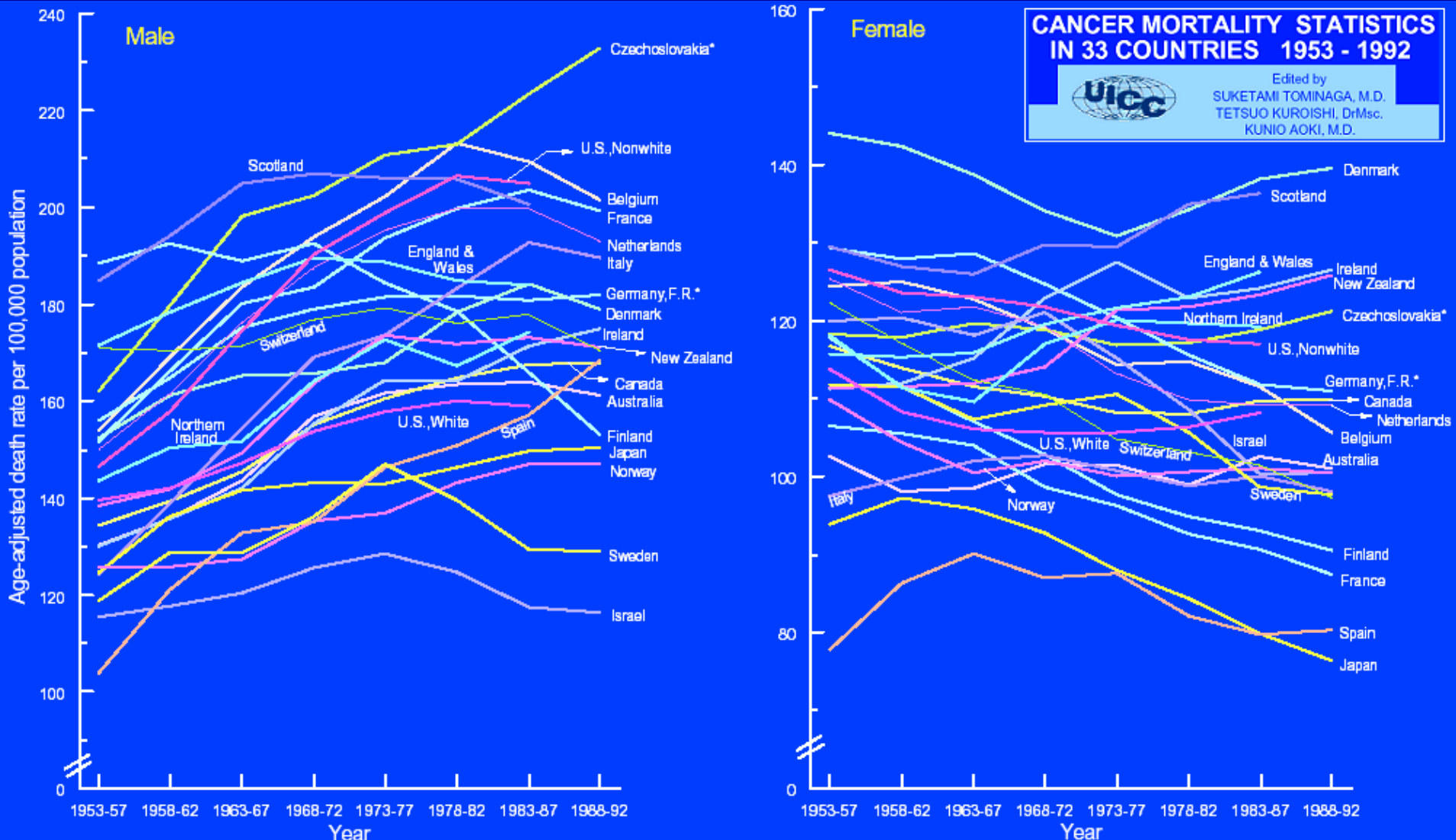
Mass screening only in Japan (High incid.)

Opportunistic screening elsewhere +++
(real cost/benefit debatable)

Remember!

If cancer is diagnosed early
you may avoid suffering and death

Cancer burden is unevenly distributed but overall mainly on the rise



Hepato-Cellular Carcinoma (HCC)

About 800,000 deaths/year for liver **cirrhosis**

748,000 new cases/year
and 696,000 deaths/year for **HCC**

OR for HCC in HBV/HCV infected subjects is 22, but up to 175 when double infection

A world epidemic

80 % in developing countries,

55 % of those in China.



**The Gambia
Hepatitis
Intervention Study
(GHIS)**

**Vaccination of
newborns**

World heaviest countries as average Kg/person in age 15y and older

<u>Country</u>	Kg
US	82
Kuwait	77
Qatar	77
Croatia	76
UAE	75
Egypt	74
World average	62

**Lifestyle is
important too!!**

The problem is also money !

Overviews taking into account some variables (such as race, socioeconomic status, access to health care, etc.)

**suggest that equal access to
preventive/diagnostic services and
treatments**

yield equal outcomes

Again the problem is money !

equal access

yields equal outcomes

Colon cancer survival at 5y (%)

About 60 in N America, Japan and Australia, but:

US	61.0 whites	51.0 blacks
Canada	56.1 men	58.7 women
Japan	63 men	57.1 women
Australia	57.8 both sexes	
Europe	28.8 Poland	57 Spain
UK	43.5 men	44.1 women

Effects of screening

When screening is efficient, the short term perceivable effect is reduction in incidence of advanced diseases, whereas the long term efficacy is reduction in mortality and increased survival

Breast cancer survival at 5y

More than 80% in N American and some N European countries, but:

US 84.7 whites 70.9% blacks

73.1% in 24 European countries (pooled data) but:

82.2 Sweden 57.9 Slovakia

Hepato-Cellular Carcinoma (HCC)

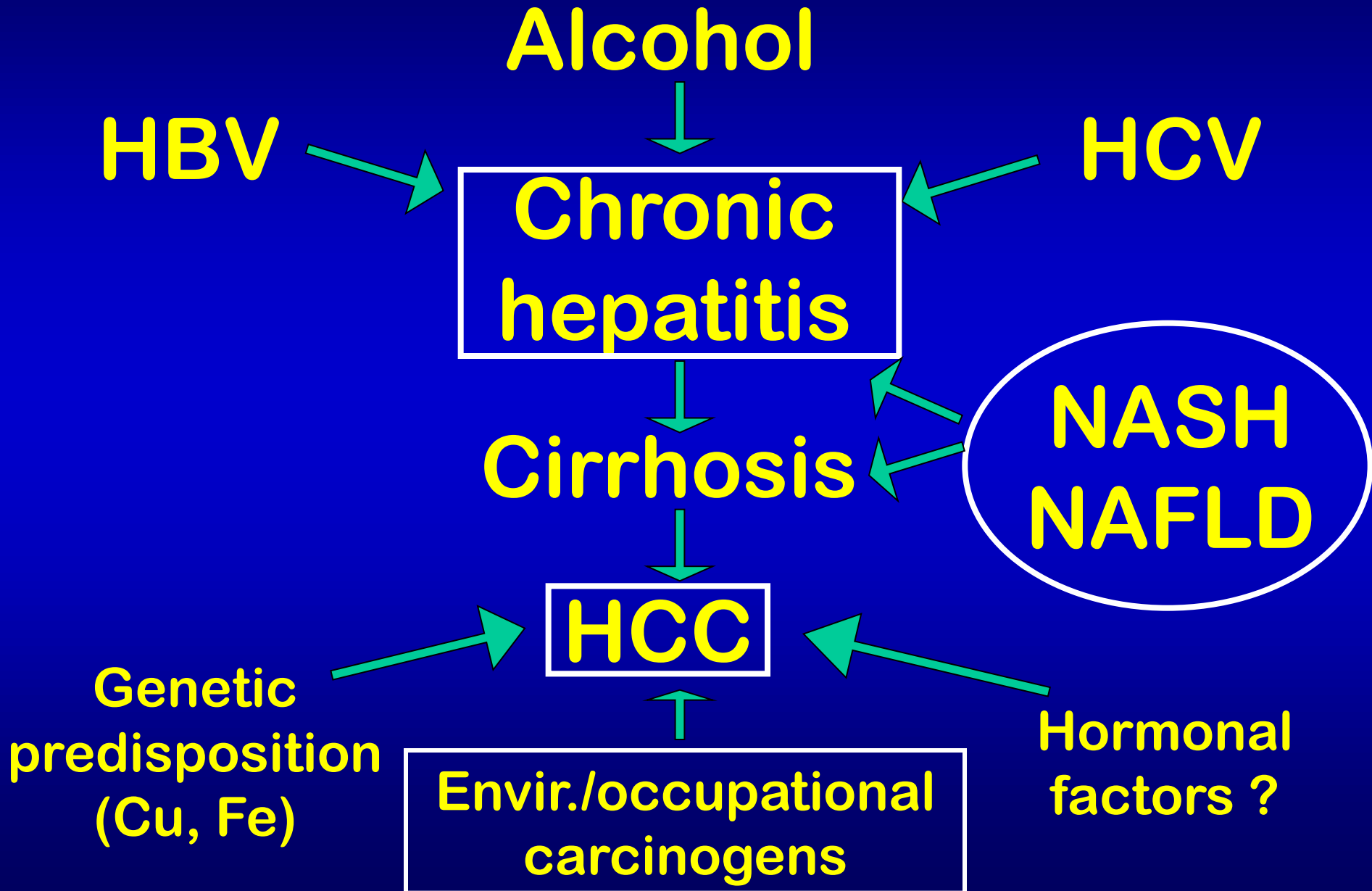
A second step of Chronic hepatitis, but ...

Aflatoxins are potent direct liver carcinogens and greatly increase the risk in infected subjects

Occupational/environmental carcinogens in Western countries : a major risk

Other (Schistosoma, Dioxin ?)

Etiopathogenesis of HCC



H. pylori and Gastric Cancer (GC)

Hypothesis: Hp infection is the main cause of GC, supported by (casual) epidemiological associations

Action pursued (promoted by the “fat cats” of the pharma/technological industry):

test and treat strategy for the 2-3 billion subjects infected worldwide (~150 USD per case) but

recurrence of infection ~40%, with adverse reactions and appearance of widespread resistance to antibiotics

Role of H.pylori

An overrated risk ?



Hp is just a promoter of gastric inflammation, leading in a minority of cases to atrophy and intestinal metaplasia (precancerous conditions).

The same is true for the subsequent progression to cancer, where Hp seems not to be a cofactor in the latest steps of gastric carcinogenesis.

The **(lost)** battle against the assumption
H. pylori → gastric cancer
where “*conflict of interests*” is the rule
and not the exception

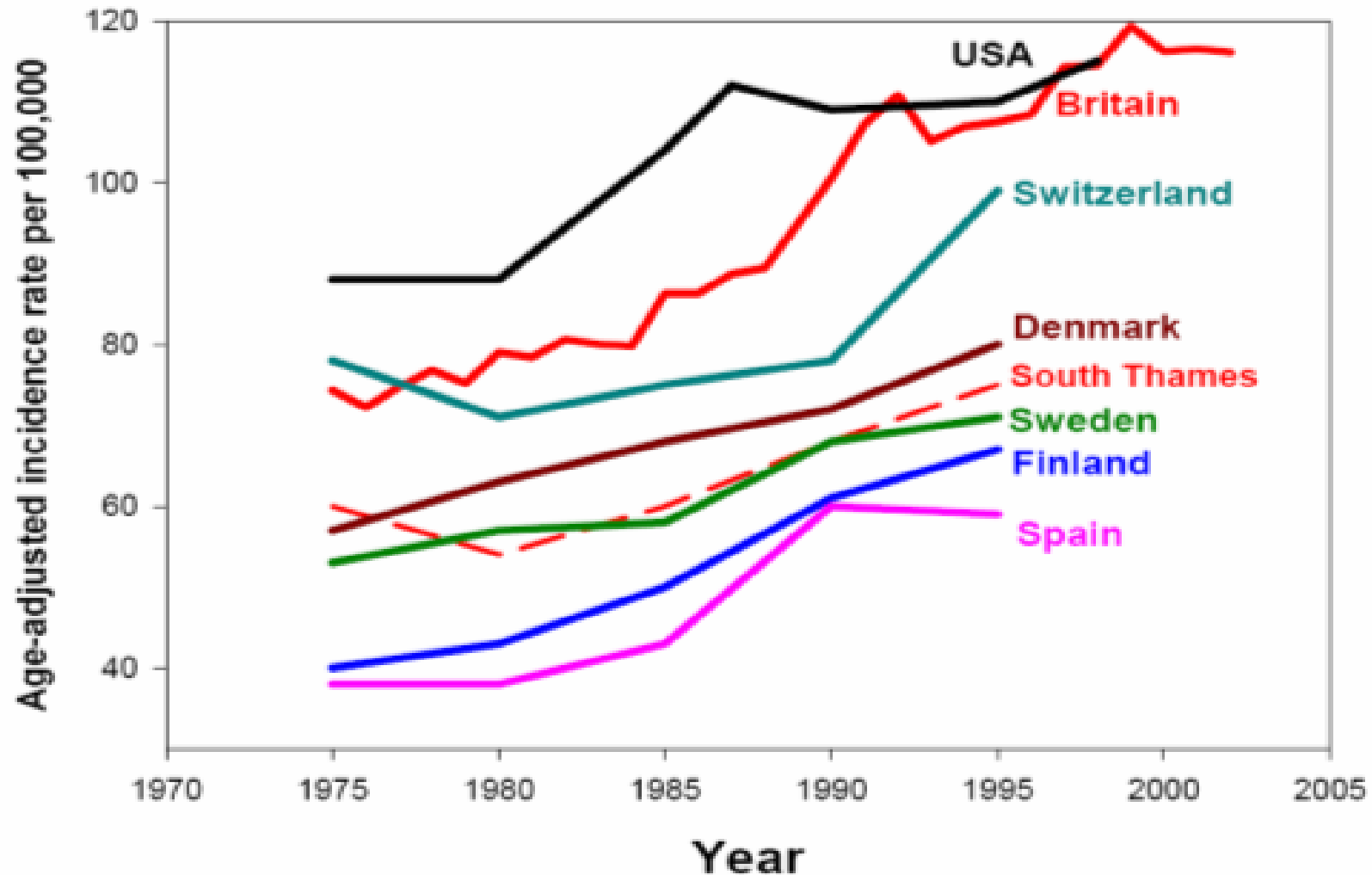
Scand J Gastroenterol 1996; 31: 1041-1046

CURRENT OPINION

Helicobacter pylori and gastric cancer: an
overrated risk?

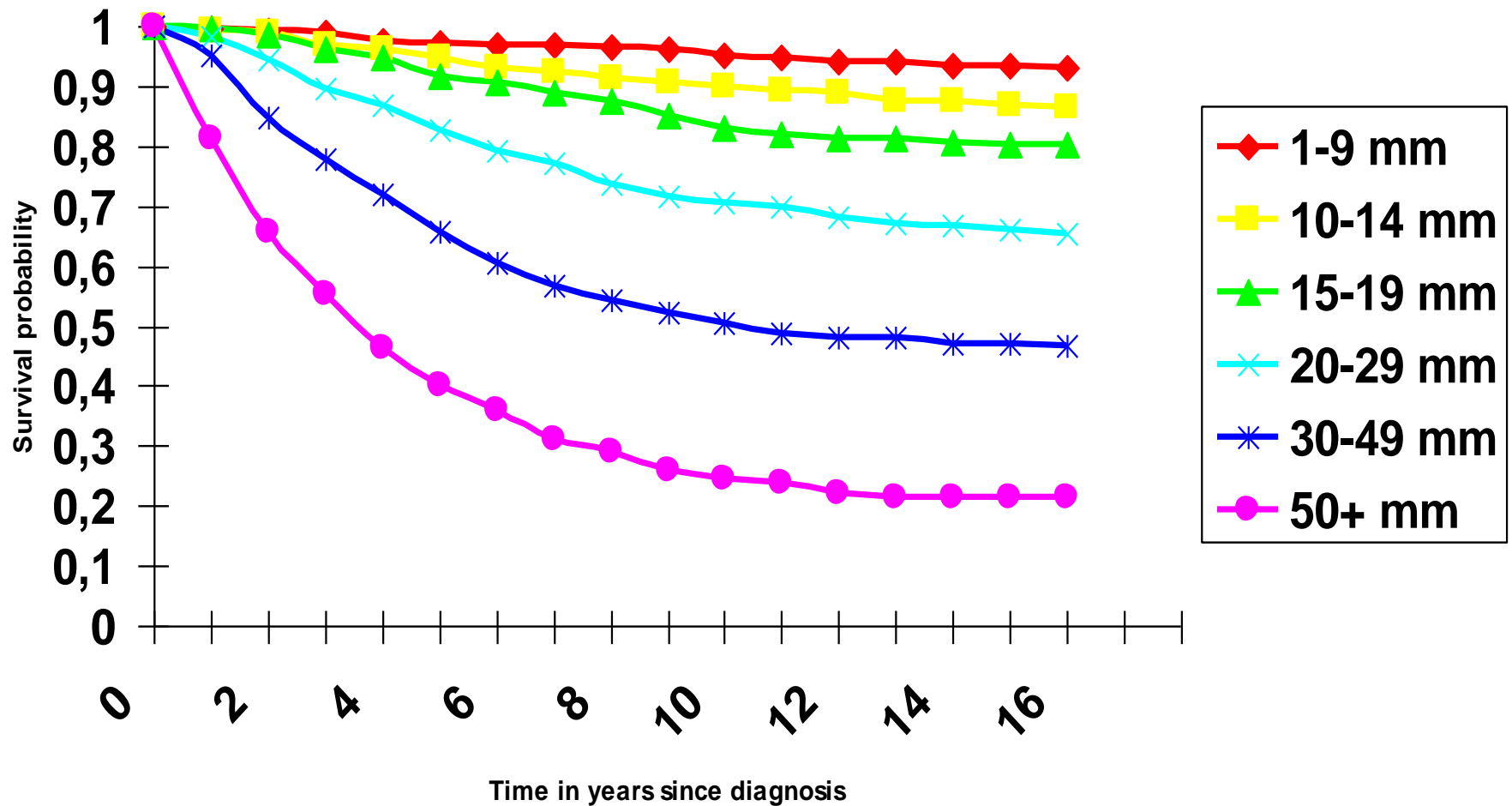
Massimo Crespi, Francesco Citarda
Regina Elena National Cancer Institute Rome, Italy

Trends in Breast Cancer Incidence

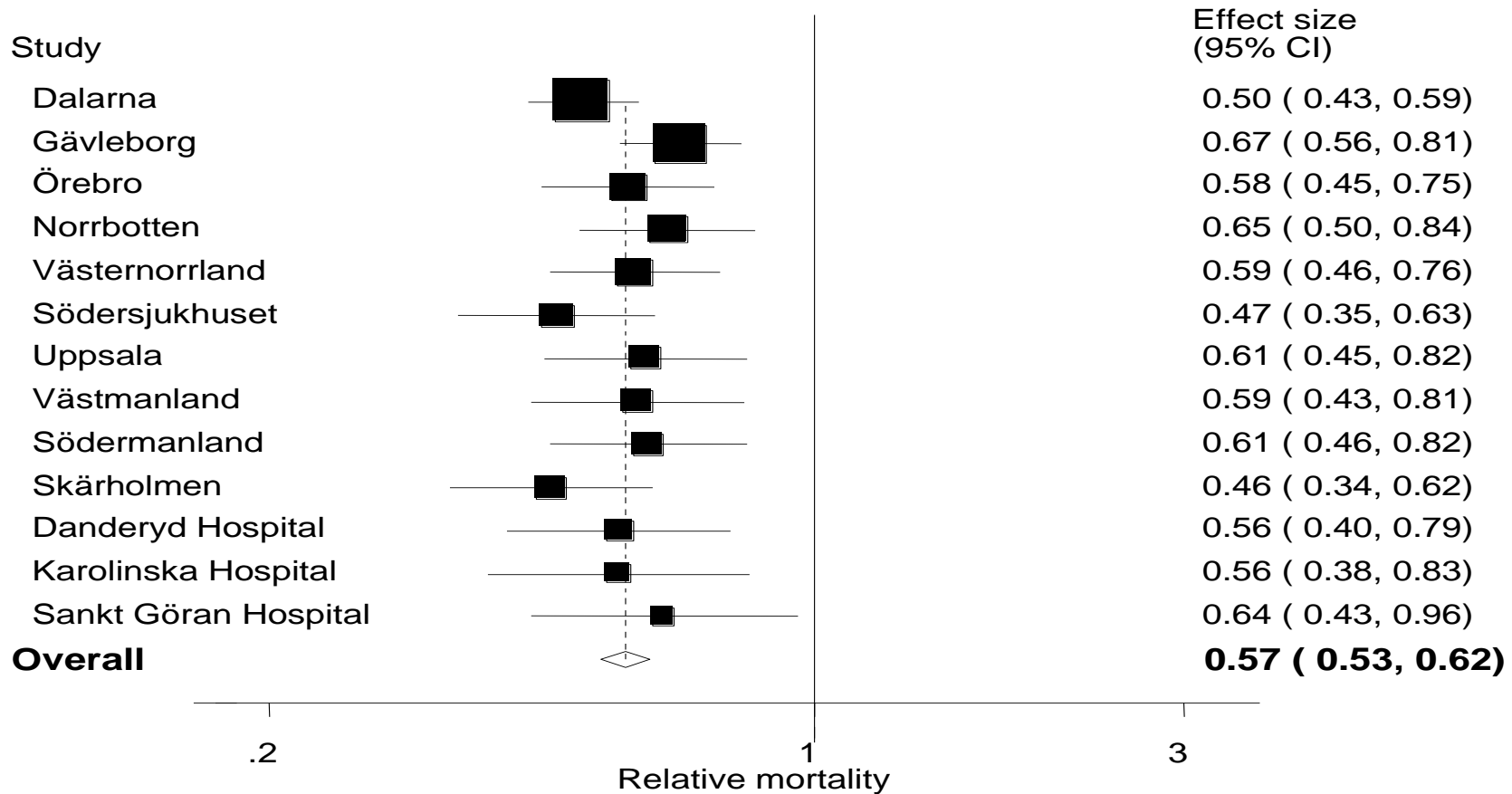


All data from¹, except data for Britain are taken from Cancer Research UK
<http://info.cancerresearchuk.org/cancerstats/types/breast/incidence/#source1>

Survival of 2294 invasive breast cancer patients by size of tumor, Swedish Two-County Trial of breast cancer screening



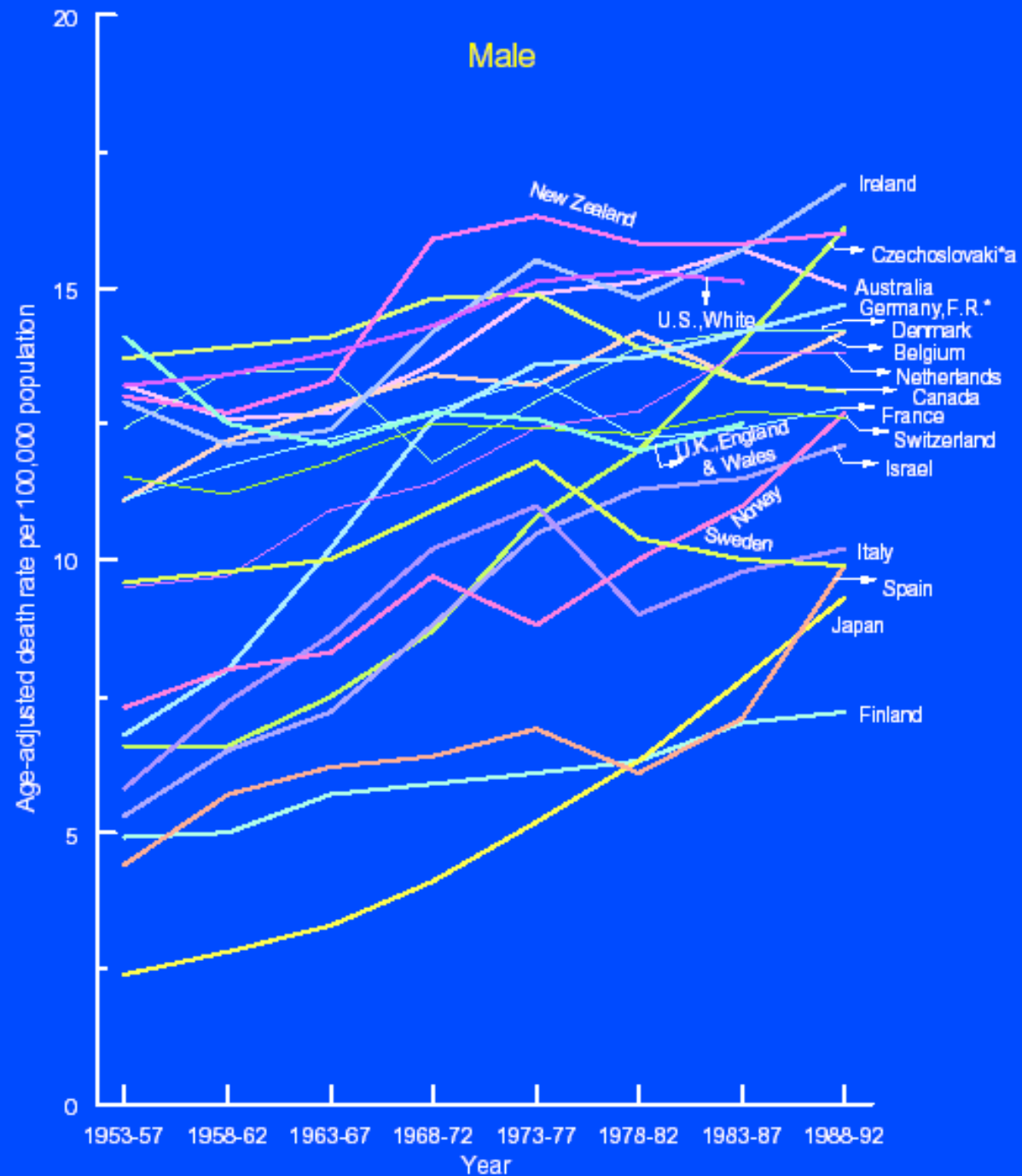
Relative Risk of Incidence Based Breast Cancer Mortality in Screened women in the Screening Epoch vs. the Pre-Screening Epoch, 13 Swedish Counties, 1958-2001* Swedish Organised Service Screening Evaluation Group (SOSSEG)



- Overall effect size = 43% fewer deaths.
- Effect size ranges from 33% to 54% lower mort. in women exposed to screening

Trends in Colon Cancer Mortality

Tominaga et al. UICC



Gastric cancer

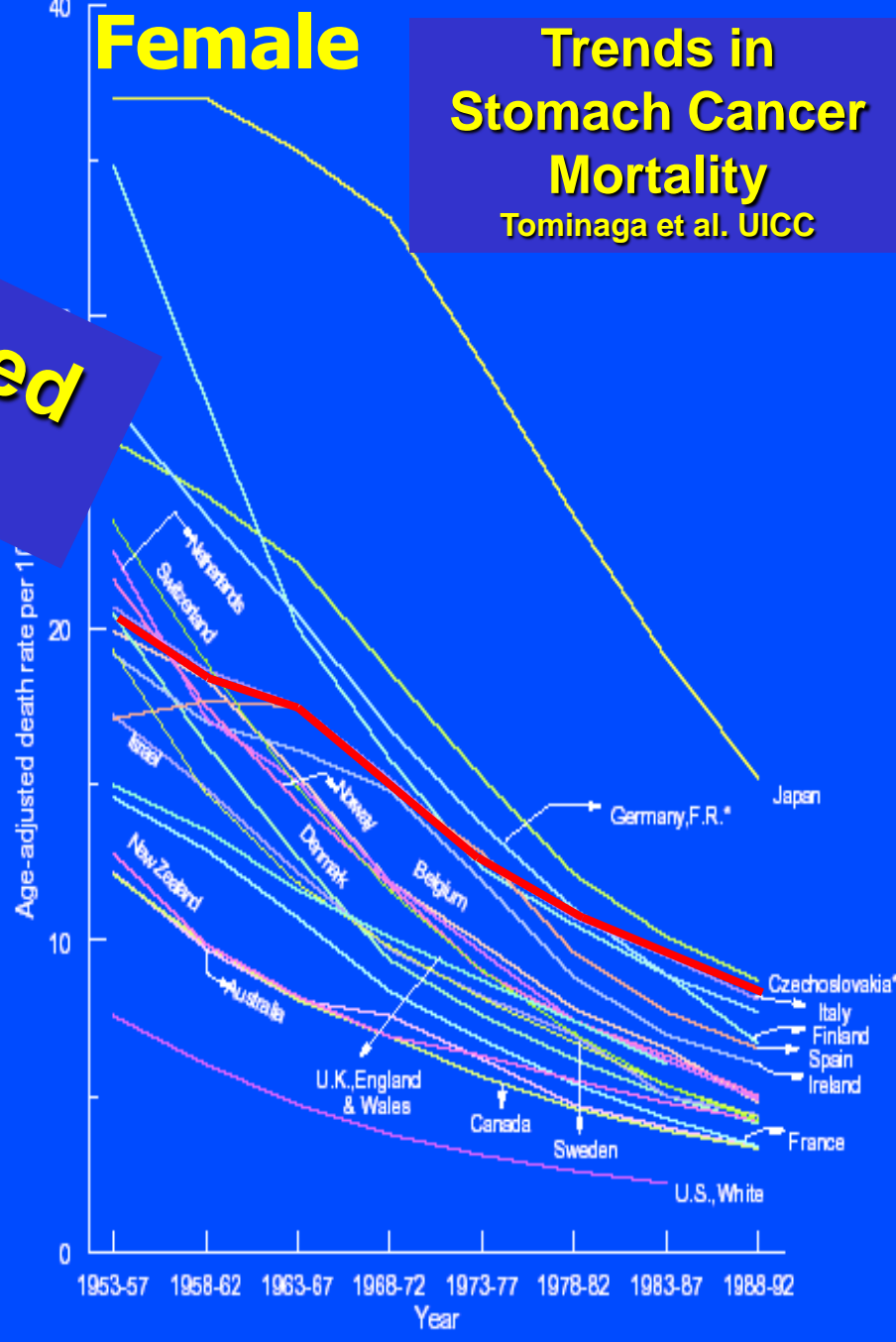
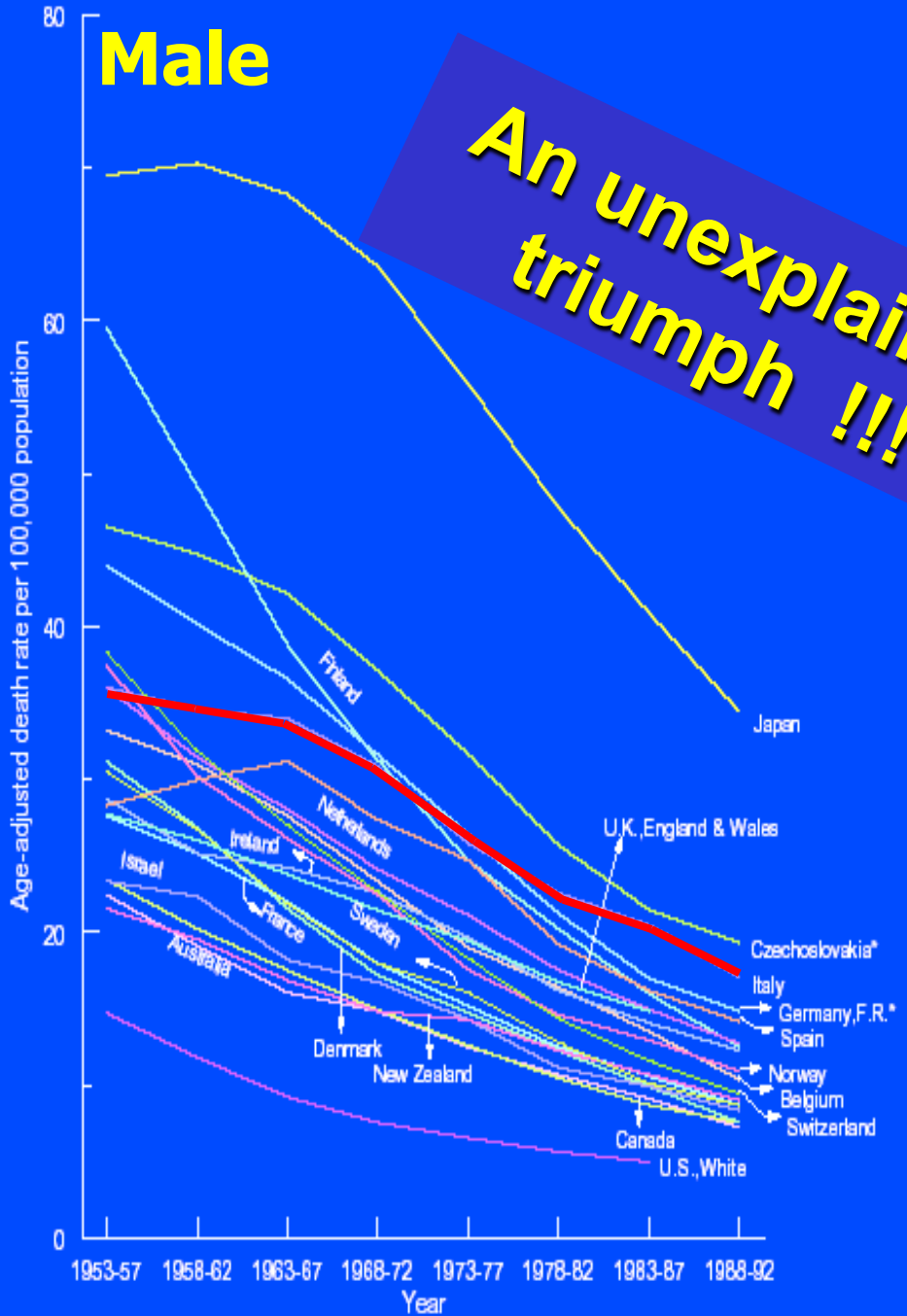


Male

Female

Trends in Stomach Cancer Mortality
Tominaga et al. UICC

An unexplained triumph !!!





WWF for Panda (and H.pylori ?)