L'ALIMENTAZIONE NELLA PREVENZIONE E TERAPIA ONCOLOGICA

Associazione Italiana Donne Medico
A.I.D.M.
Sezione di Modena

ALIMENTAZIONE E SALUTE

dalla prevenzione alla terapia

Sabato 29 novembre 2014

Hotel Real Fini Baia del Re

Strada Vignolese 1684

Modena

Dott.ssa Federica Sebastiani
Scuola di Specializzazione Scienza dell'Alimentazione, PhD Oncologia
Università degli Studi di Modena e Reggio Emilia

Le pazienti mi chiedono...

« Dottoressa....ho sentito/ ho letto/ mi hanno detto...»

« che la <u>carne rossa</u> fa venire il tumore...»

« che bisogna mangiare la <u>soia</u>...»

« che non dovrei mangiare la soia...»

« Dottoressa....da quando mi sono ammalata.....»

« non bevo più il <u>latte</u>.....»

« Dottoressa...l'erborista mi ha consigliato...»
« Dottoressa...ma è vero che...»

«per il tumore bisognerebbe usare...

la curcuma
il tè verde
il ganoderma lucidum
il magnesio supremo
l'aloe...
.....»

« Dottoressa...da quando mi hanno detto che fa bene per il tumore...»

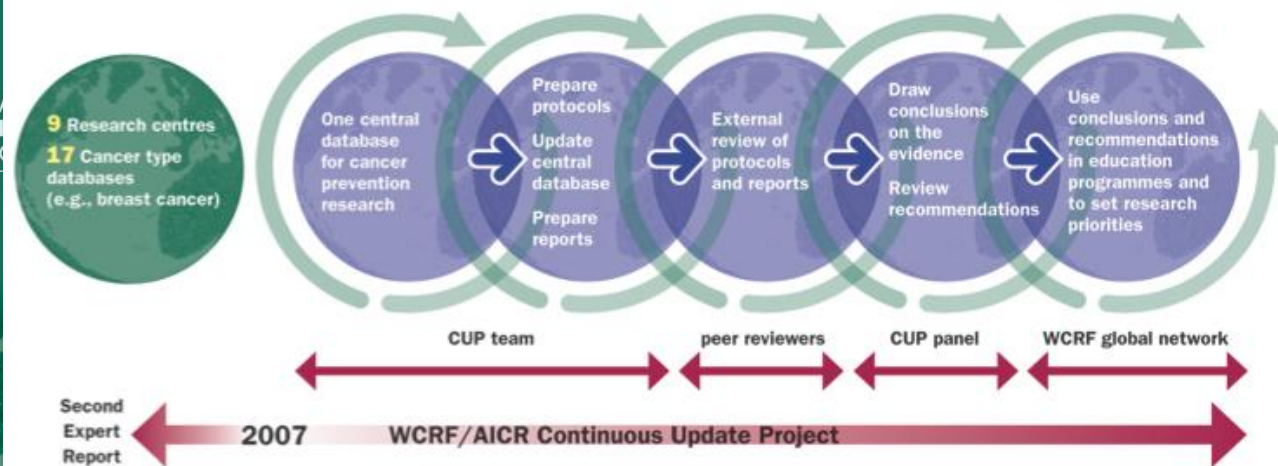« tutte le mattine bevo un bicchiere di acqua con succo di limone e bicarbonato..»

Cosa ci dice la 'scienza'...

REPORTS

Breast cancer ⟶ 2010
Colorectal cancer ⟶ 2011
Pancreatic cancer ⟶ 2012
Endometrial cancer ⟶ 2013
Ovarian cancer ⟶ 2014
Breast cancer survivors ⟶ 2014
Prostate cancer ⟶ 2014

Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective

World
Cancer
Research Fund

American
Institute for
Cancer Research

**Food, Nutrition,
Physical Activity,
and the Prevention
of Cancer:**
a Global Perspective

RECOMMENDATIONS

BODY FATNESS
Be as lean as possible within the
normal range of body weight

PHYSICAL ACTIVITY
Be physically active as part of everyday life

FOODS AND DRINKS THAT PROMOTE WEIGHT GAIN
Limit consumption of energy-dense foods
Avoid sugary drinks

PLANT FOODS
Eat mostly foods of plant origin

ANIMAL FOODS
Limit intake of red meat and avoid processed meat

ALCOHOLIC DRINKS
Limit alcoholic drinks

PRESERVATION, PROCESSING, PREPARATION
Limit consumption of salt
Avoid mouldy cereals (grains) or pulses (legumes)

DIETARY SUPPLEMENTS
Aim to meet nutritional needs through diet alone

BREASTFEEDING
Mothers to breastfeed; children to be breastfed

CANCER SURVIVORS
Follow the recommendations for cancer prevention

MEAT, POULTRY, FISH, EGGS, AND THE RISK OF CANCER

In the judgement of the Panel, the factors listed below modify the risk of cancer. Judgements are graded according to the strength of the evidence.

	DECREASES RISK		INCREASES RISK	
	Exposure	**Cancer site**	**Exposure**	**Cancer site**
Convincing			Red meat[1]	Colorectum
			Processed meat[2]	Colorectum
Probable			Cantonese-style salted fish[3]	Nasopharynx
Limited — suggestive	Fish	Colorectum	Red meat[1]	Oesophagus Lung Pancreas Endometrium
	Foods containing vitamin D[4 7]	Colorectum		
			Processed meat[2]	Oesophagus Lung Stomach Prostate
			Foods containing iron[4 5]	Colorectum
			Smoked foods[6]	Stomach
			Grilled (broiled) or barbecued (charbroiled) animal foods[6]	Stomach
Substantial effect on risk unlikely	None identified			

1　The term 'red meat' refers to beef, pork, lamb, and goat from domesticated animals.
2　The term 'processed meat' refers to meats preserved by smoking, curing, or salting, or addition of chemical preservatives.
3　This style of preparation is characterised by treatment with less salt than typically used, and fermentation during the drying process due to relatively high outdoor temperature and moisture levels. This conclusion does not apply to fish prepared (or salted) by other means.
4　Includes both foods naturally containing the constituent and foods which have the constituent added (see chapter 3.5.3).
5　Although red and processed meats contain iron, the general category of 'foods containing iron' comprises many other foods, including those of plant origin.
6　The evidence is mostly from meats preserved or cooked in these ways.
7　Found mostly in fortified foods and animal foods.

For an explanation of all the terms used in the matrix, please see chapter 3.5.1, the text of this section, and the glossary.

Red and Processed Meat and Colorectal Cancer Incidence: Meta-Analysis of Prospective Studies

Doris S. M. Chan[1], Rosa Lau[1], Dagfinn Aune[1], Rui Vieira[1], Darren C. Greenwood[2], Ellen Kampman[3], Teresa Norat[1]*

1 Department of Epidemiology and Biostatistics, School of Public Health, Imperial College London, London, United Kingdom, 2 Biostatistics Unit, Centre for Epidemiology and Biostatistics, University of Leeds, Leeds, United Kingdom, 3 Division of Human Nutrition, Wageningen University, Wageningen, The Netherlands
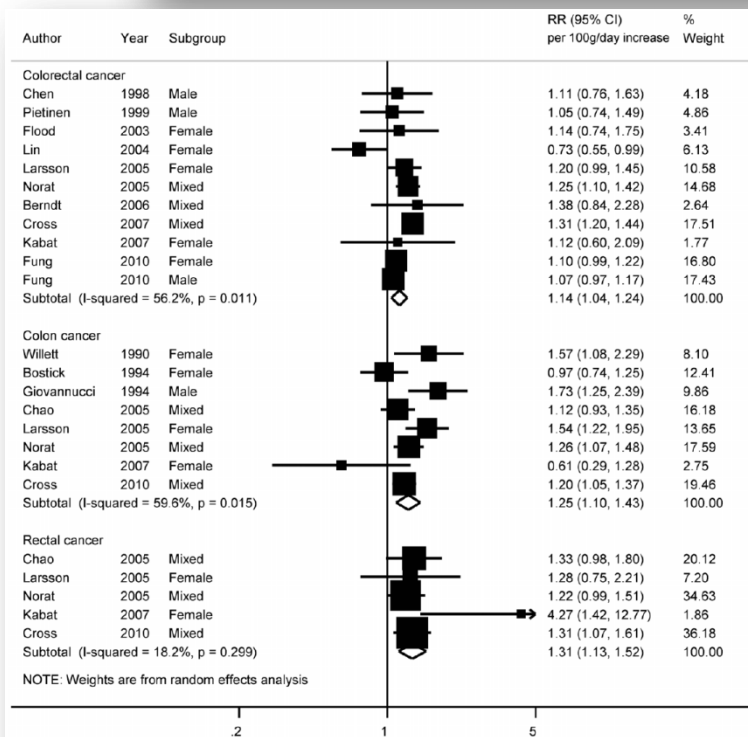
Figure 2. Dose-response meta-analyses of total red and processed meats consumption and the risk of colorectal, colon and rectal cancers. References: Chen, 1998 [51]; Pietinen, 1999 [57]; Flood, 2003 [33]; Lin, 2004 [56]; Larsson, 2005 [34]; Norat, 2005 [50]; Berndt, 2006 [19]; Cross, 2007 [22]; Kabat, 2007 [24]; Fung, 2010 [23]; Willett, 1990 [58]; Bostick, 1994 [52]; Giovannucci, 1994 [55]; Chao, 2005 [54]; Cross, 2010 [21]. doi:10.1371/journal.pone.0020456.g002

High intake of red and processed meat is associated with significant **increased risk** of **colorectal, colon and rectal cancers**.

The overall evidence of prospective studies supports **limiting** red and processed meat consumption as one of the dietary recommendations for the prevention of colorectal cancer.

Suggested mechanisms for potential health risks of red and processed meat consumption
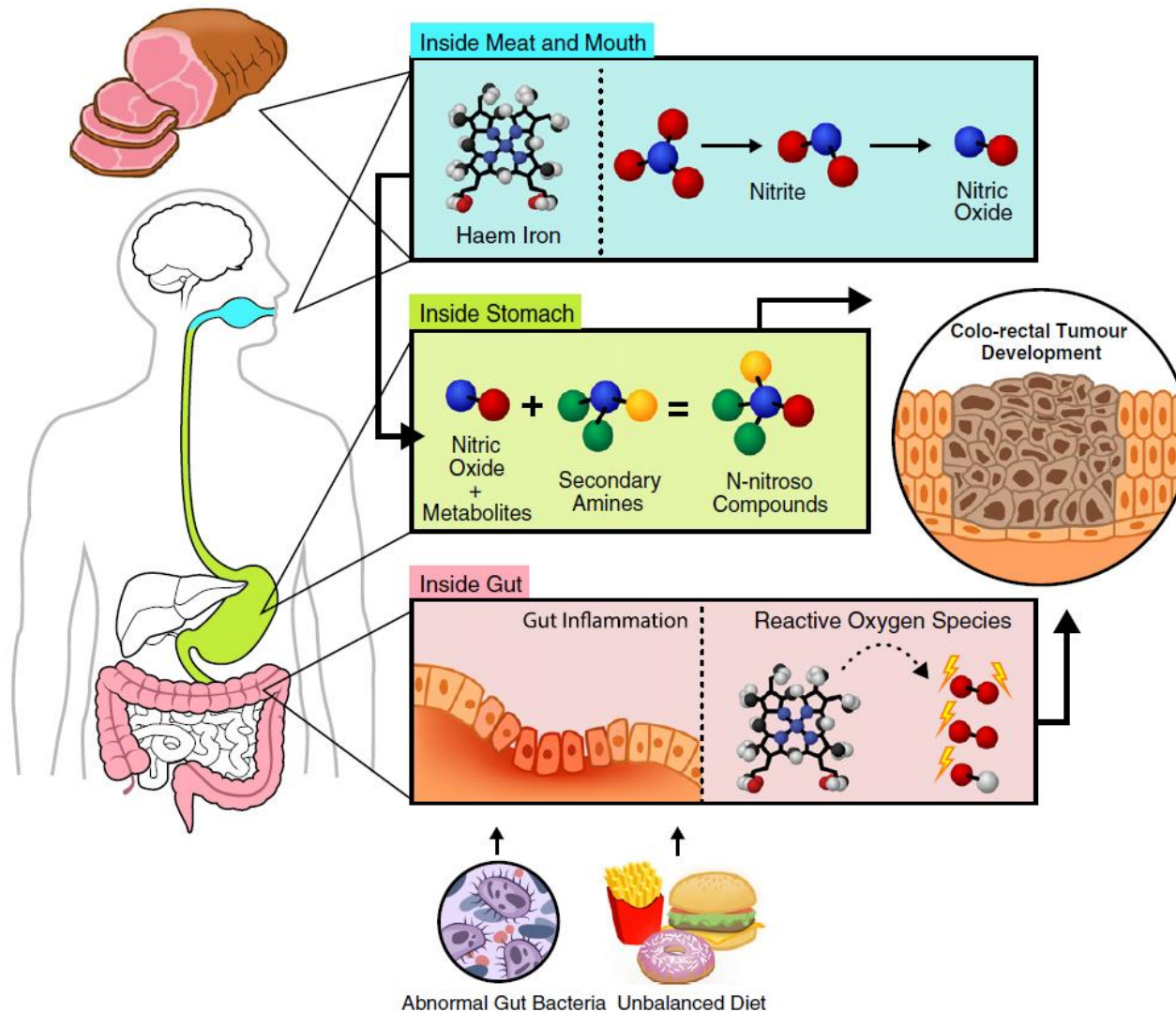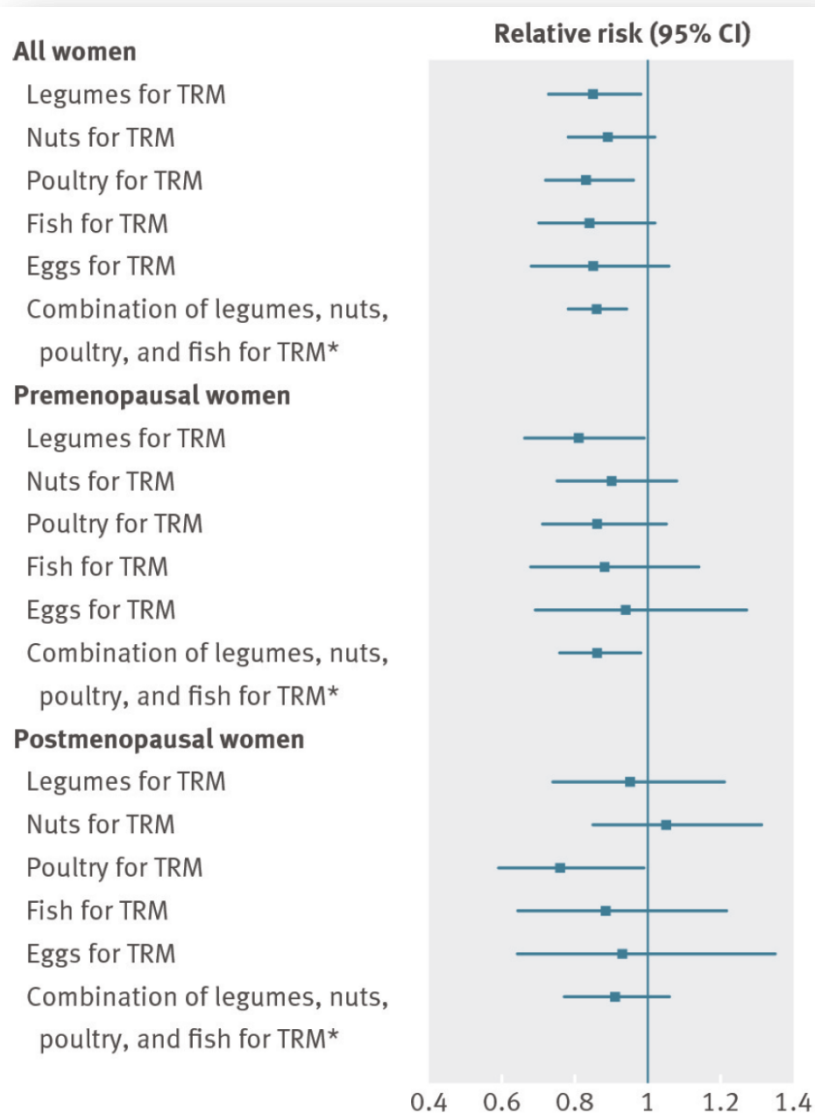
RESEARCH

Dietary protein sources in early adulthood and breast cancer incidence: prospective cohort study

OPEN ACCESS
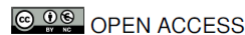
Maryam S Farvid *Takemi fellow, and associate professor*[1][2], Eunyoung Cho *associate professor*[3][4], Wendy Y Chen *assistant professor*[4][5], A Heather Eliassen *assistant professor*[4][6], Walter C Willett *professor*[1][4][6]

Higher intake of total red meat was associated with an **increased risk of breast cancer overall** (RR 1.22, 95% CI 1.06 to 1.40; P=0.01).

However, **higher intakes of poultry, fish, eggs, legumes, and nuts WERE NOT** related to breast cancer overall.

Higher red meat intake in early adulthood may be a risk factor for breast cancer, and **replacing red meat** with a combination of **legumes, poultry, nuts and fish** may reduce the risk of breast cancer.

Relative risk (95% CI)

All women
- Legumes for TRM
- Nuts for TRM
- Poultry for TRM
- Fish for TRM
- Eggs for TRM
- Combination of legumes, nuts, poultry, and fish for TRM*

Premenopausal women
- Legumes for TRM
- Nuts for TRM
- Poultry for TRM
- Fish for TRM
- Eggs for TRM
- Combination of legumes, nuts, poultry, and fish for TRM*

Postmenopausal women
- Legumes for TRM
- Nuts for TRM
- Poultry for TRM
- Fish for TRM
- Eggs for TRM
- Combination of legumes, nuts, poultry, and fish for TRM*

0.4 0.6 0.8 1 1.2 1.4

Multivariable relative risk and 95% confidence intervals for breast cancer associated with substitution of dietary sources of protein for total red meat (TRM) among women in Nurses' Health Study II. Multivariable model was adjusted for variables in footnote of table 2 as well as total red meat (continuous), legumes (continuous), nuts (continuous), poultry (continuous), fish (continuous), eggs (continuous), low fat dairy (continuous), and high fat dairy (continuous). *This model was adjusted for variables in footnote of table 2 as well as total red meat (continuous), sum of legumes, nuts, poultry, and fish intake (continuous), eggs (continuous), low fat dairy (continuous), and high fat dairy (continuous)

- **substituting one serving/day of legumes** for one serving/day of red meat was associated with a **15% lower risk of breast cancer** among all women (0.85, 0.73 to 0.98) and a **19% lower risk** among **premenopausal women** (0.81, 0.66 to 0.99);

- **substituting one serving/day of poultry** for one serving/day of red meat was associated with a **17% lower risk of breast cancer** overall (0.83, 0.72 to 0.96) and a **24% lower risk of postmenopausal** breast cancer (0.76, 0.59 to 0.99).

ANIMAL FOODS

Limit intake of red meat[1] and avoid processed meat[2]

PUBLIC HEALTH GOAL

Population average consumption of red meat
to be no more than 300 g (11 oz) a week,
very little if any of which to be processed

PERSONAL RECOMMENDATION

People who eat red meat[1]
to consume less than 500 g (18 oz) a week,
very little if any to be processed[2]

[1] 'Red meat' refers to beef, pork, lamb, and goat from domesticated animals including that contained in processed foods

[2] 'Processed meat' refers to meat preserved by smoking, curing or salting, or addition of chemical preservatives, including that contained in processed foods

## FOOD, NUTRITION, PHYSICAL ACTIVITY AND CANCERS OF THE COLON AND THE RECTUM 2011

	DECREASES RISK	INCREASES RISK
Convincing	Physical activity[1,2] Foods containing dietary fibre[3]	Red meat[4,5] Processed meat[4,6] Alcoholic drinks (men)[7] Body fatness Abdominal fatness Adult attained height[8]
Probable	Garlic Milk[9] Calcium[10]	Alcoholic drinks (women)[7]
Limited - suggestive	Non-starchy vegetables Fruits Foods containing vitamin D[3,12]	Foods containing iron[3,4] Cheese[11] Foods containing animal fats[3] Foods containing sugars13
Limited - no conclusion	Fish; glycaemic index; folate; vitamin C; vitamin E; selenium; low fat; dietary pattern	
Substantial effect on risk unlikely	None identified	

Dairy products and colorectal cancer risk: a systematic review and meta-analysis of cohort studies

D. Aune[1]*, R. Lau[1], D. S. M. Chan[1], R. Vieira[1], D. C. Greenwood[2], E. Kampman[3] & T. Norat[1]

[1]Department of Epidemiology and Biostatistics, School of Public Health, Imperial College, London; [2]Biostatistics Unit, Centre for Epidemiology and Biostatistics, University of Leeds, Leeds, UK; [3]Division of Human Nutrition, Wageningen University and Research Centre, Wageningen, The Netherlands
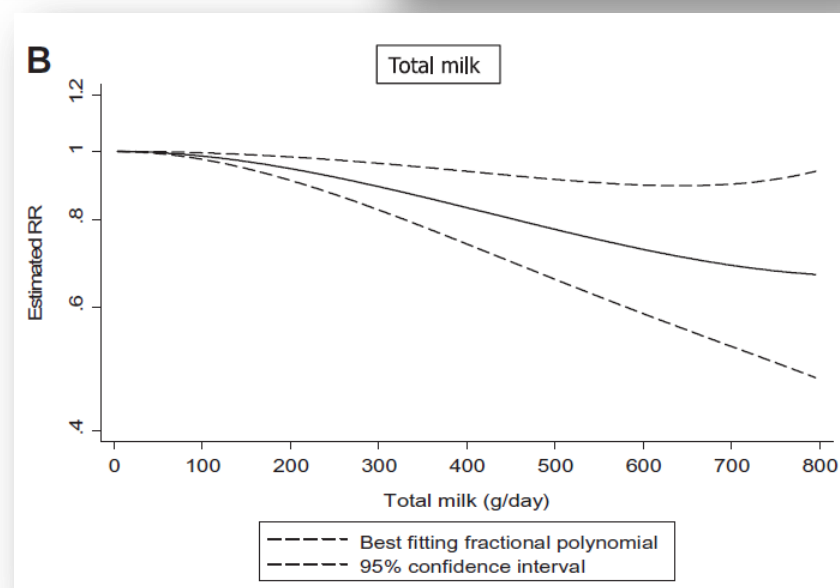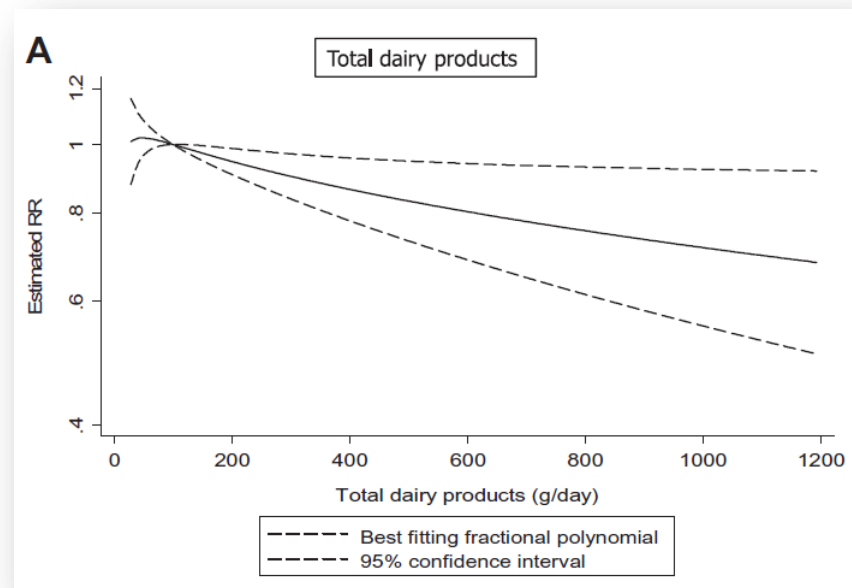
Milk and total dairy products, but not cheese or other dairy products, are associated with a
reduction in colorectal cancer risk.

Consumption of Dairy Products and Colorectal Cancer in the European Prospective Investigation into Cancer and Nutrition (EPIC)

Our results strengthen the evidence for a possible **protective role of dairy products** on colorectal cancer risk.

The inverse associations we observed **did not differ by the fat content** of the dairy products considered.

This association was limited to **dairy sources of calcium only** (HR per 200 mg/day 0.95, 95% CI: 0.91–0.99), with no association observed for non-dairy calcium sources (HR per 200 mg/day 1.00, 95% CI: 0.81–1.24).

CHEMOPREVENTION OF COLON CANCER BY CALCIUM, VITAMIN D AND FOLATE: MOLECULAR MECHANISMS

Sergio A. Lamprecht and Martin Lipkin

Dairy products have been hypothesized to protect against colorectal cancer risk due to their high **calcium content**, which may **bind proinflammatory secondary bile acids** and **ionized fatty acids** and may **reduce cell proliferation** and **promote cell differentiation**.

Calcium, Vitamin D, Dairy Products, and Mortality Among Colorectal Cancer Survivors: The Cancer Prevention Study-II Nutrition Cohort

Baiyu Yang, Marjorie L. McCullough, Susan M. Gapstur, Eric J. Jacobs, Roberd M. Bostick, Veronika Fedirko, W. Dana Flanders, and Peter T. Campbell

Higher postdiagnosis intakes of total calcium and milk may be

associated with **lower risk of death**

among patients with **nonmetastatic colorectal cancer**.

REVIEW

Dairy consumption and risk of breast cancer: a meta-analysis of prospective cohort studies

Jia-Yi Dong · Lijun Zhang · Ka He ·
Li-Qiang Qin
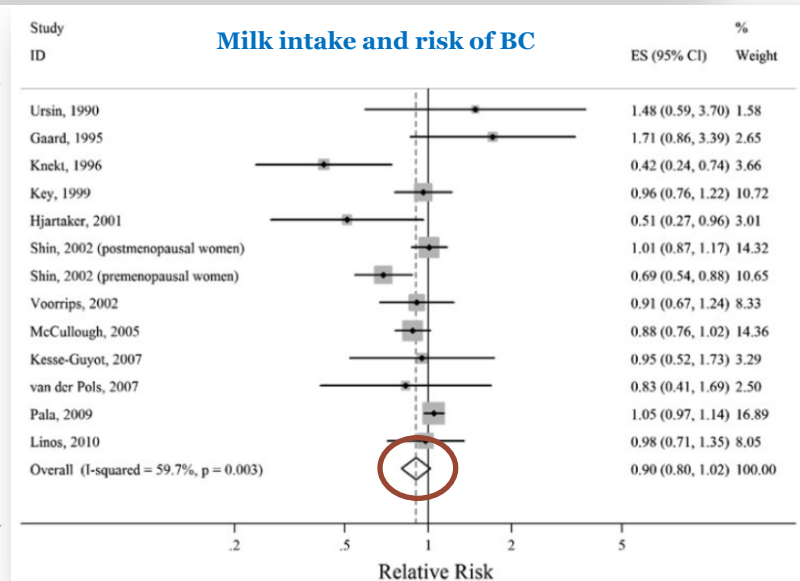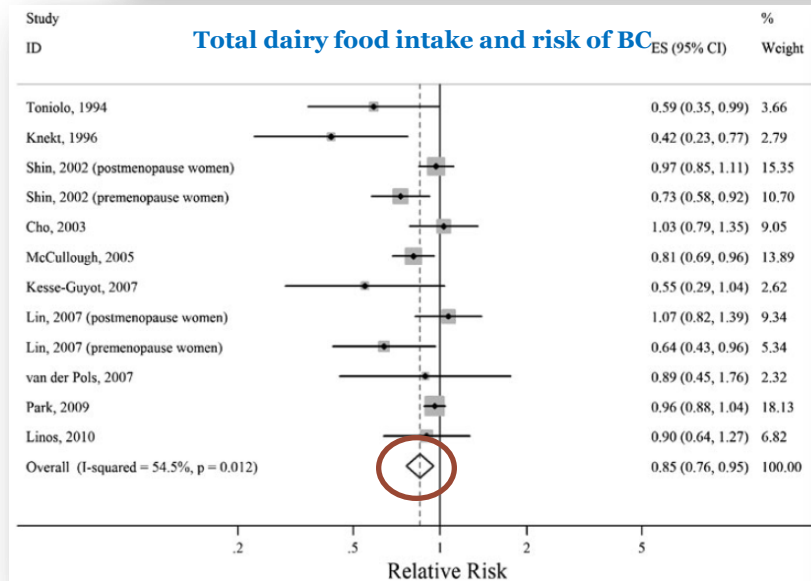
Findings of the present meta-analysis indicate that **increased consumption of total dairy food**, but **not milk**, may be associated with a **reduced risk of breast cancer**.

High- and Low-Fat Dairy Intake, Recurrence, and Mortality After Breast Cancer Diagnosis

Candyce H. Kroenke, Marilyn L. Kwan, Carol Sweeney, Adrienne Castillo, Bette J. Caan

Overall dairy intake was **unrelated** to breast cancer-specific outcomes. **Low-fat dairy** intake was **unrelated** to recurrence or survival.

Those consuming **larger amounts of high-fat dairy** had **higher breast cancer mortality** (≥1.0 servings/day: HR = 1.49, CI = 1.00-2.24, P = .05), higher all-cause mortality (P < .001), and higher non−breast cancer mortality (P.007).

Intake of high-fat dairy, **but not low-fat dairy**, was related to a **higher risk of mortality after breast cancer diagnosis**.
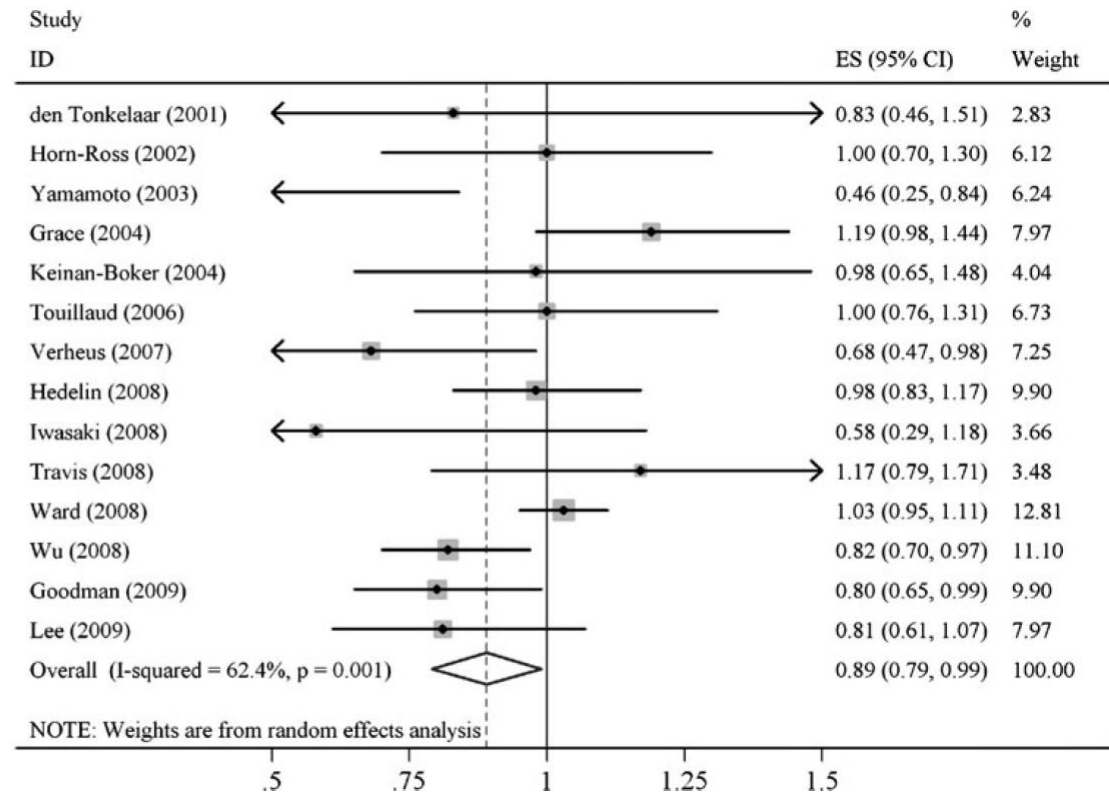
Soy isoflavones consumption and risk of breast cancer incidence or recurrence: a meta-analysis of prospective studies

Jia-Yi Dong · Li-Qiang Qin

Fig. 1 Meta-analysis of studies examining association between soy isoflavones consumption and risk of breast cancer incidence

Study ID		ES (95% CI)	% Weight
den Tonkelaar (2001)		0.83 (0.46, 1.51)	2.83
Horn-Ross (2002)		1.00 (0.70, 1.30)	6.12
Yamamoto (2003)		0.46 (0.25, 0.84)	6.24
Grace (2004)		1.19 (0.98, 1.44)	7.97
Keinan-Boker (2004)		0.98 (0.65, 1.48)	4.04
Touillaud (2006)		1.00 (0.76, 1.31)	6.73
Verheus (2007)		0.68 (0.47, 0.98)	7.25
Hedelin (2008)		0.98 (0.83, 1.17)	9.90
Iwasaki (2008)		0.58 (0.29, 1.18)	3.66
Travis (2008)		1.17 (0.79, 1.71)	3.48
Ward (2008)		1.03 (0.95, 1.11)	12.81
Wu (2008)		0.82 (0.70, 0.97)	11.10
Goodman (2009)		0.80 (0.65, 0.99)	9.90
Lee (2009)		0.81 (0.61, 1.07)	7.97
Overall (I-squared = 62.4%, p = 0.001)		0.89 (0.79, 0.99)	100.00

NOTE: Weights are from random effects analysis

Soy isoflavones consumption was inversely associated with risk of **breast cancer incidence** (RR = 0.89, 95% CI: 0.79–0.99).

The protective effect of soy was **only** observed among studies conducted in **Asian populations** (RR = 0.76, 95% CI: 0.65–0.86) but not in Western populations (RR = 0.97, 95% CI: 0.87–1.06).

Soy, Red Clover, and Isoflavones and Breast Cancer: A Systematic Review

Heidi Fritz[1], Dugald Seely[1,2,3*], Gillian Flower[1], Becky Skidmore[2], Rochelle Fernandes[1,4], Sarah Vadeboncoeur[1], Deborah Kennedy[1,5], Kieran Cooley[1,5], Raimond Wong[6], Stephen Sagar[6], Elham Sabri[2], Dean Fergusson[2]
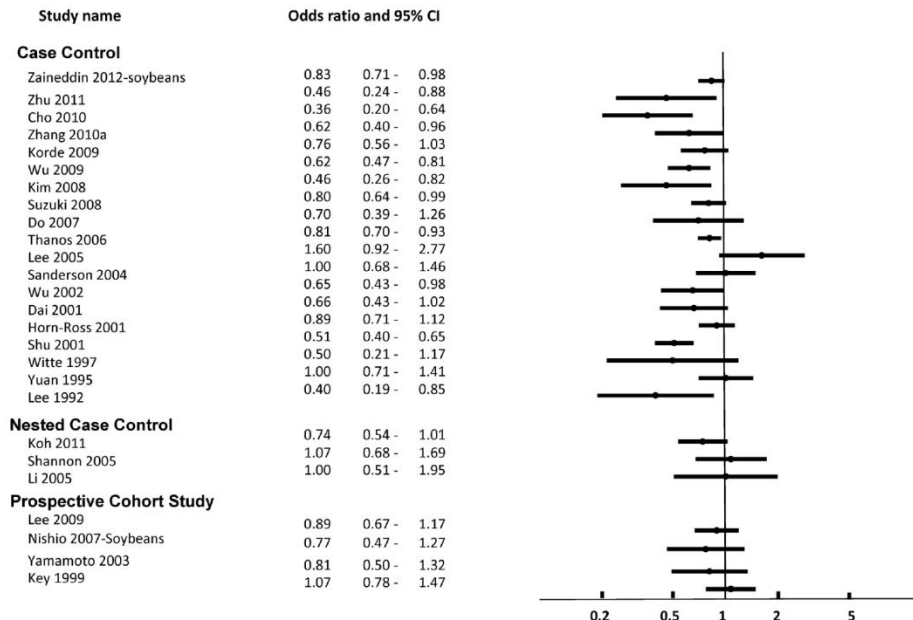
Figure 2. Risk of Breast Cancer Associated with Intake of Soy Food or Soy Protein.
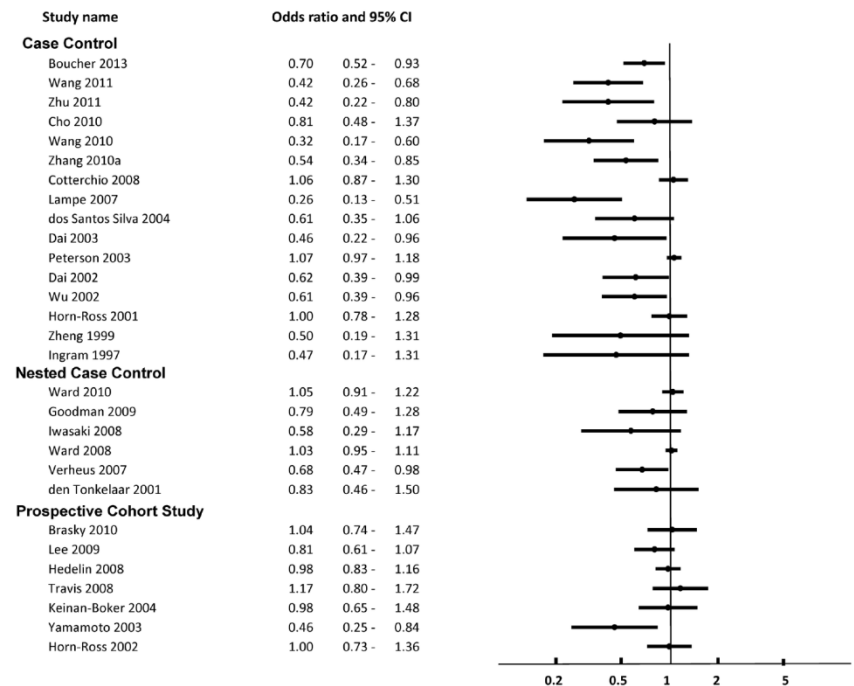doi: 10.1371/journal.pone.0081968.g002

Figure 3. Risk of Breast Cancer Associated with Intake of Soy Isoflavones.
doi: 10.1371/journal.pone.0081968.g003
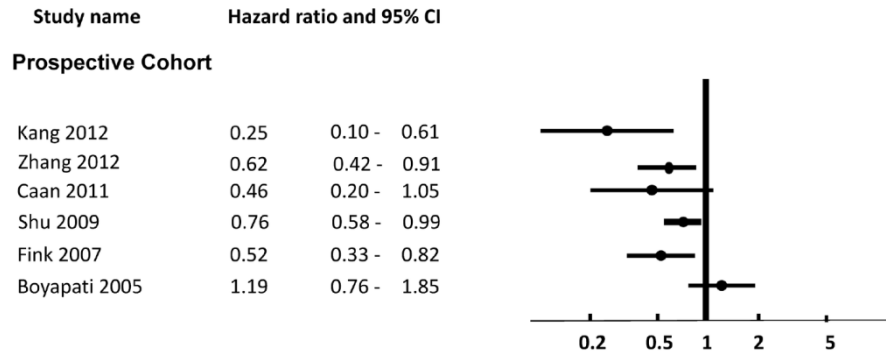
Risk of Mortality

Study name	Hazard ratio and 95% CI	
Prospective Cohort		
Kang 2012	0.25	0.10 - 0.61
Zhang 2012	0.62	0.42 - 0.91
Caan 2011	0.46	0.20 - 1.05
Shu 2009	0.76	0.58 - 0.99
Fink 2007	0.52	0.33 - 0.82
Boyapati 2005	1.19	0.76 - 1.85

Figure 4. Risk of Mortality Associated with Intake of Soy Protein or Isoflavones.
doi: 10.1371/journal.pone.0081968.g004

Soy intake consistent with a traditional Japanese diet (**2-3 servings daily, containing 25-50mg isoflavones**) appears **safe** for breast cancer survivors.

There is **NO clear evidence of harm**, better evidence confirming safety is required **before use of high dose** (≥100mg) isoflavones can be recommended for **breast cancer patients**.

Research is needed to more clearly identify **possible subgroups of women** that may differentially benefit from soy or not, based on **receptor status and/or use of anti-estrogen therapy**.

In the meantime, since the overall effect of soy, if any, appears to be protective for both breast cancer incidence and recurrence, **MODERATE soy consumption** appears to be **safe** and possibly beneficial for most women.

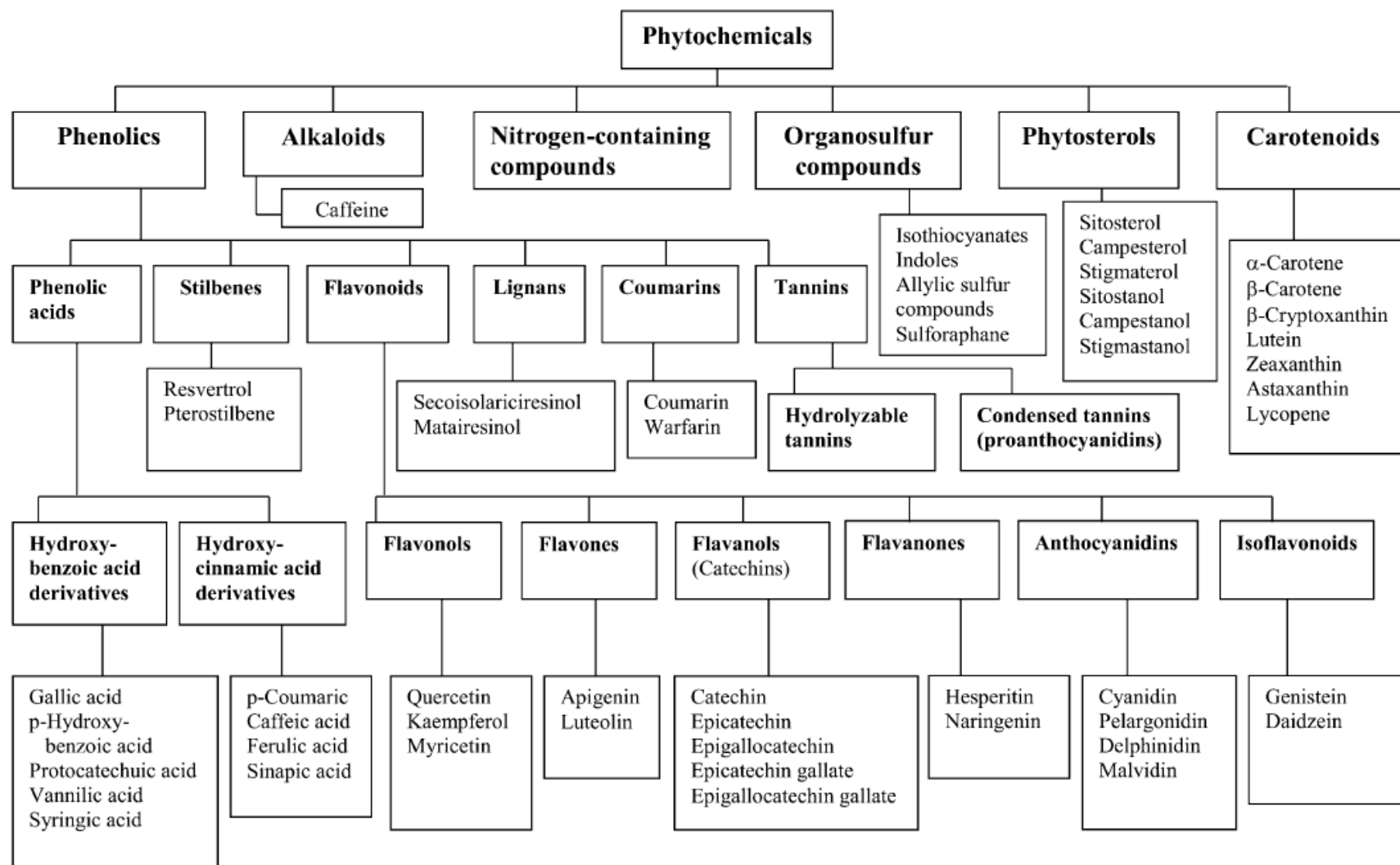# Cosa ci dirà la 'scienza'... *forse*

Figure 1 Classification of dietary phytochemicals. Adapted from Reference 2 with permission.

There are several **naturally occurring dietary food components** that are under investigation for their **efficacy against some types of cancer** and are demonstrating potential usefulness against these diseases.

Despite **promising results in preclinical settings**, applicability of chemoprevention to human for any cancer has met with limited success largely due to **inefficient systemic delivery and bioavailability** of promising chemopreventive agents.

It was envisioned that **nanoparticle-mediated delivery** could be useful to limit the perceived toxicity and **enhance the bioavailability of the chemopreventive agents** and introduced the concept of **'nanochemoprevention',** where nanotechnology was incorporated for the enhancement of chemopreventive efficacy of agents.
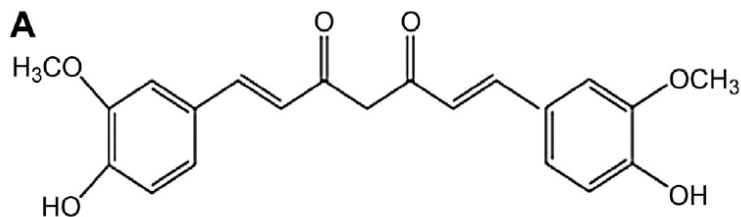
Curcumin nanoformulations: A review of pharmaceutical properties and preclinical studies and clinical data related to cancer treatment

Ornchuma Naksuriya [a,b], Siriporn Okonogi [a], Raymond M. Schiffelers [c], Wim E. Hennink [b,*]

[a] Department of Pharmaceutical Sciences, Faculty of Pharmacy, Chiang Mai University, Suthep Rd, Mueang, Chiang Mai 50200, Thailand
[b] Department of Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, Universiteitsweg 99, Utrecht 3805 TB, The Netherlands
[c] Department of Clinical Chemistry and Hematology, University Medical Center Utrecht, Utrecht, The Netherlands

In vivo models highlight the potential of **curcumin nanoformulations** due to **the greater bioavailability** (after their oral administration) and targeting. So far, the emphasis of these nanoformulations is particularly **on treatment of cancer**, but some studies have shown that the formulations have also potential for the treatment of **other chronic and life-threatening diseases** including Alzheimer, diabetes, infections, as well as different liver, kidney and cardiovascular diseases.

Extensive human clinical trials have to be conducted to establish their **safety**, especially after chronic and repeated use, and **effectiveness** for treatment of cancer and others diseases.

RECOMMENDATION 8

DIETARY SUPPLEMENTS

**Aim to meet nutritional needs
through diet alone[1]**

PUBLIC HEALTH GOAL

Maximise the proportion of the population achieving
nutritional adequacy without dietary supplements

PERSONAL RECOMMENDATION

Dietary supplements are not recommended
for cancer prevention

[1] This may not always be feasible. In some situations of illness or dietary
inadequacy, supplements may be valuable

Fanta-scienza...?

Marketing-scienza.. ?

R2

La scienza

Uno studio svedese condotto su 61 mila donne mette in evidenza le criticità di uno degli alimenti più usati. Ma c'è chi lo assolve e lo difende: "È prezioso per tutta la vita"

Latte

Da toccasana a minaccia
"Troppo può far male"

ALIMENTAZIONE E TUMORI

Tecnologia&Scienza
Come Fare
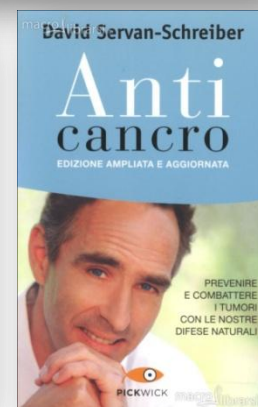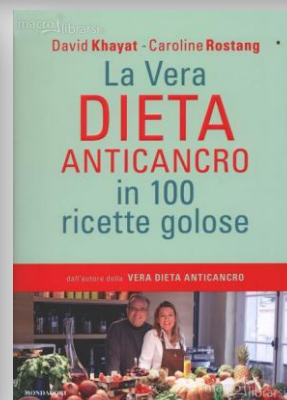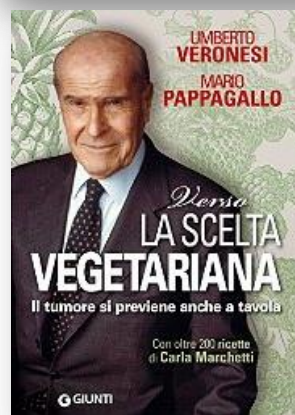Prodotti
Sicurezza Web
VideoGiochi
Mondo Mac
Software

SCIENZA & TECNOLOGIA

🖨 **Stampa questo articolo** ✉

Uno studio durato dieci anni su oltre 500mila cittadini europei
Il risultato: le possibilità di un tumore sono un terzo più alte

E' allarme per la carne rossa
può causare il cancro all'intestino
Il consumo di pesce ha invece una funzione protettiva

ROMA - Pessime notizie per gli amanti di bistecca e prosciutto. Secondo uno studio europeo su alimentazione e cancro, infatti, c'è uno stretto legame tra la carne rossa e il tumore all'intestino.

E' questo il risultato di un'indagine dello "European Prospective Investigation into Cancer and Nutrition" su oltre 500mila cittadini europei. Una ricerca lunga dieci anni

UMBERTO **VERONESI**
MARIO **PAPPAGALLO**

Verso
LA SCELTA
VEGETARIANA
Il tumore si previene anche a tavola

Con oltre 200 ricette di Carla Marchetti

GIUNTI

David **Khayat** - Caroline **Rostang**

La Vera
DIETA
ANTICANCRO
in 100
ricette golose

dall'autore della **VERA DIETA ANTICANCRO**

David Servan-Schreiber

Anti
cancro
EDIZIONE AMPLIATA E AGGIORNATA

PREVENIRE
E COMBATTERE
I TUMORI
CON LE NOSTRE
DIFESE NATURALI

PICKWICK

S'ha da resistere alla vecchiezza e da compensare i suoi difetti con le cure;   s'ha da aver riguardo della salute, da far moderato esercizio,   da usar tanto di cibo e di bevanda,   che si ristorino le forze, non le si opprimano.
(Cicerone)

Se ti mancano i medici, ti giovino queste tre medicine: mente lieta, quiete e dieta giusta.
(Scuola medica Salernitana, 1100 d.C.)

Ci vorrebbe un po' di saggezza...

alimentare

Rendi minore il tuo peso, non essere ghiotto;
sappi che la tomba si apre per te tre volte più facilmente che per gli altri.
(Shakespeare, Enrico IV)

Se fossimo in grado di fornire a ciascuno la giusta dose di nutrimento e di esercizio fisico, né in difetto né in eccesso, avremmo trovato la strada per la salute.
(Ippocrate - 460-477 a.C)

Grazie per l'attenzione!