

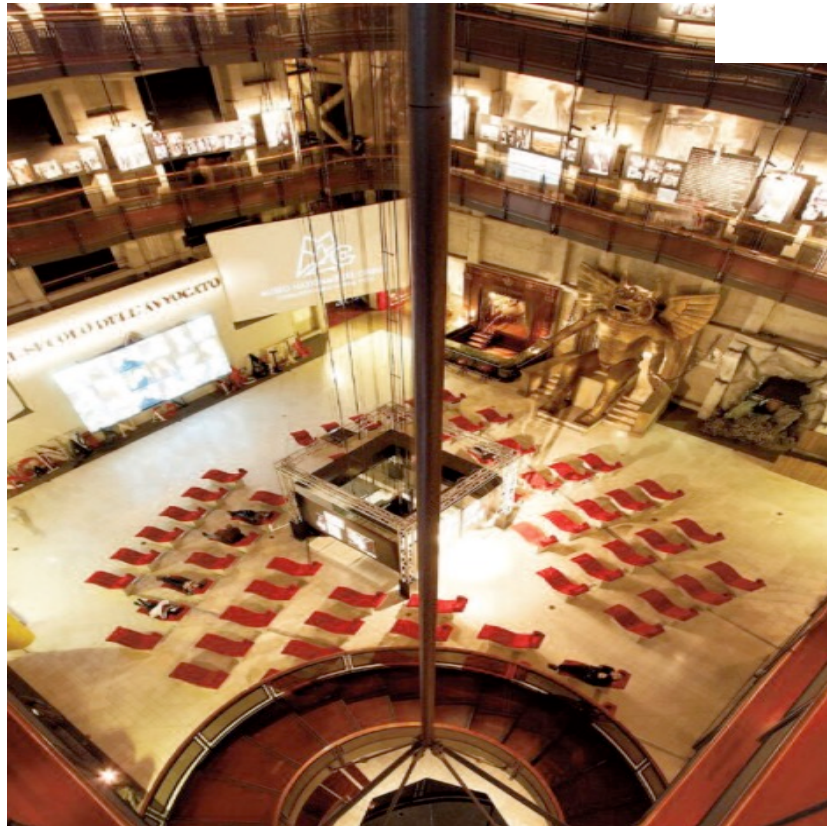
TURIN,
October
25th-27th
2018
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GIORNATE CARDIOLOGICHE TORINESI



15:10 The diet to prevent cancer and cardiovascular diseases: myths and reality ETTA FINOCCHIARO

SC Dietetica e Nutrizione Clinica
Azienda Ospedaliera Città della
Salute e della Scienza di Torino



OBESITA' -INFIAMMAZIONE- CANCRO



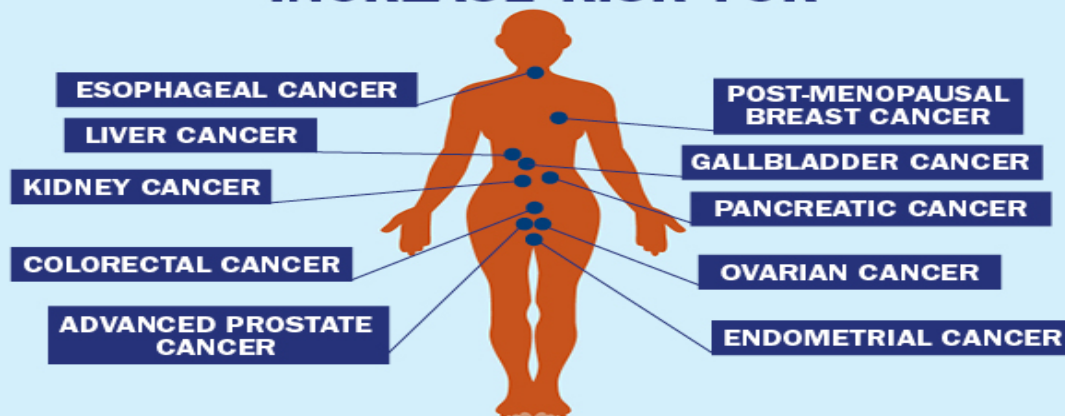
WHAT YOU NEED TO KNOW ABOUT OBESITY AND CANCER



After not smoking,
BEING AT A HEALTHY WEIGHT
Is **THE MOST IMPORTANT THING** you can do
to prevent cancer.



Overweight and obesity INCREASE RISK FOR



AICR ESTIMATES THAT **EXCESS BODY FAT** IS A CAUSE OF APPROXIMATELY

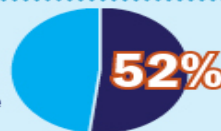
128,200

U.S. CANCER CASES EVERY YEAR.

AND YET...
7 in 10 Americans
are currently
overweight or obese.



AND ...
Only about half of
all Americans
are even aware of the
obesity-cancer link.



PROTECT YOURSELF!

Move More



Eat Smart



For tips on getting to, and staying at, a healthy weight, visit www.aicr.org

1. Cancer Statistics, 2016. CA Cancer J Clin 2016;66:7-30. 2. AICR/WCRF Policy Report and Continuous Update Project reports. 3. US Center for Disease Control and Prevention: Obesity and Overweight. 4. 2015 AICR Cancer Risk Awareness Survey

The evidence is the latest from the Continuous Update Project (CUP), which systematically updates and reviews the research conducted worldwide into cancer risk related to diet, physical activity and body weight. All the evidence gathered is then assessed by a panel of independent scientists who make recommendations for cancer prevention.

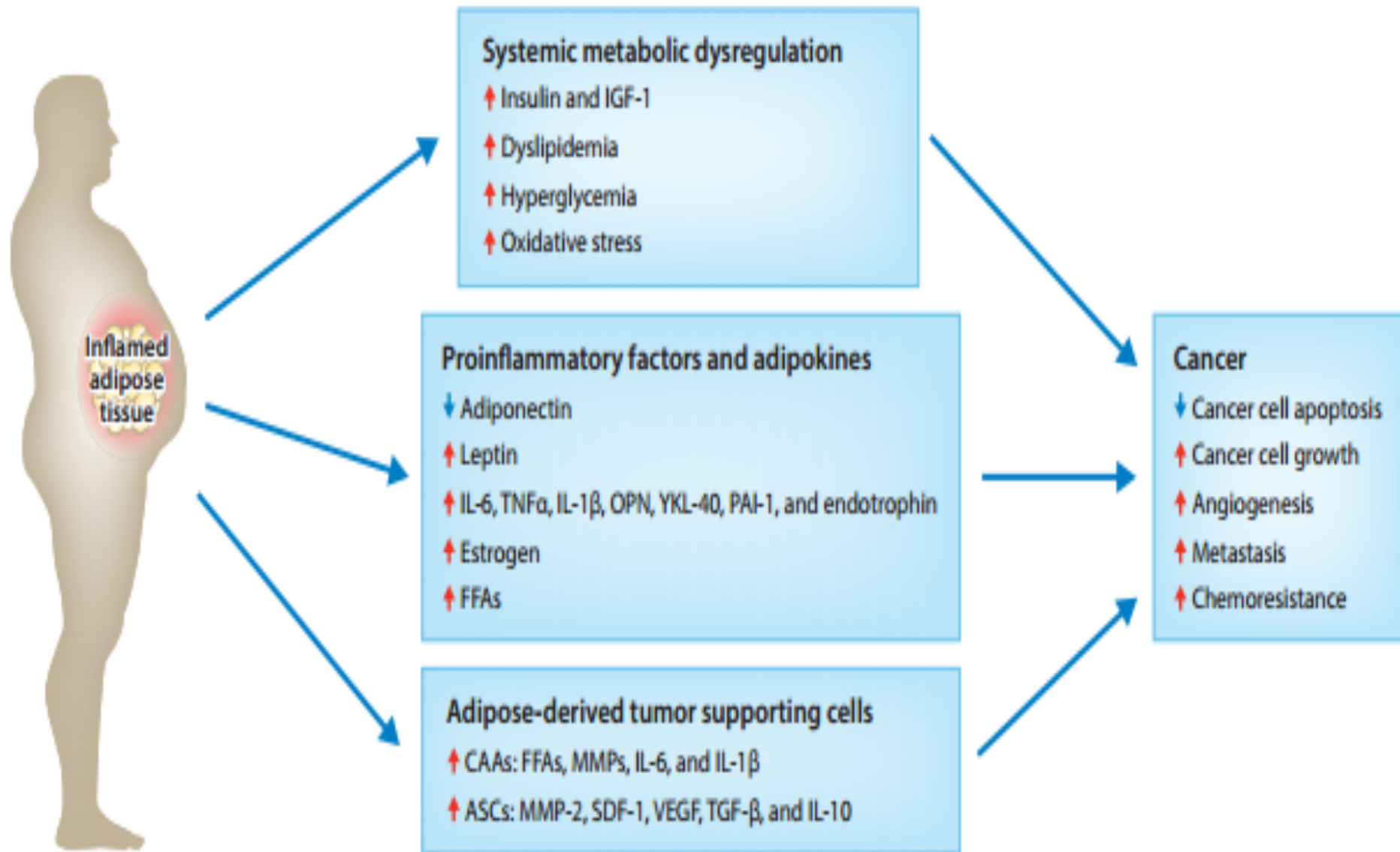


1759 R Street NW, Washington DC
Phone: 202.328.7744 • Email: Communications@aicr.org • www.aicr.org

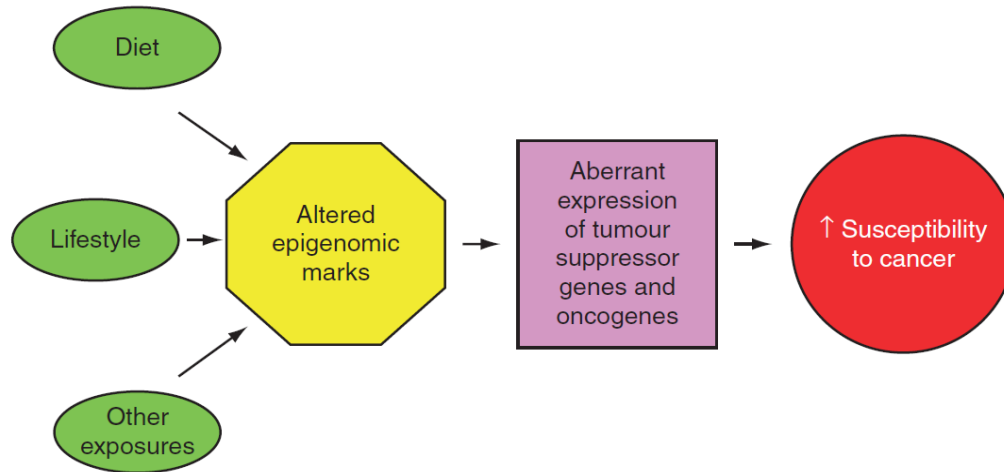


Obesity, Inflammation, and Cancer

Deng T. et al. – Annu Rev Pathol Mech Dis 2016

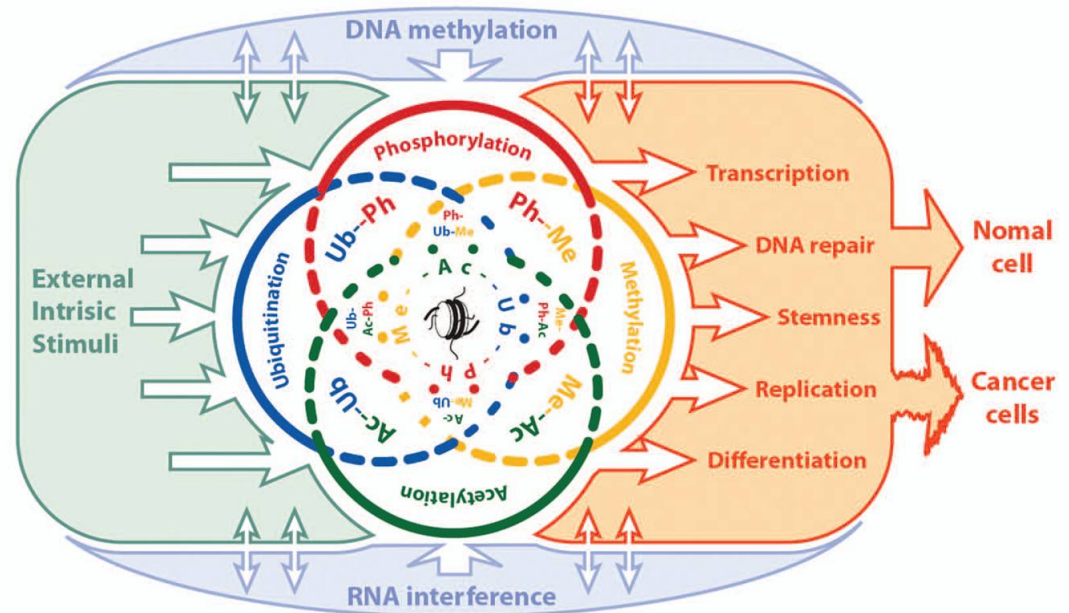


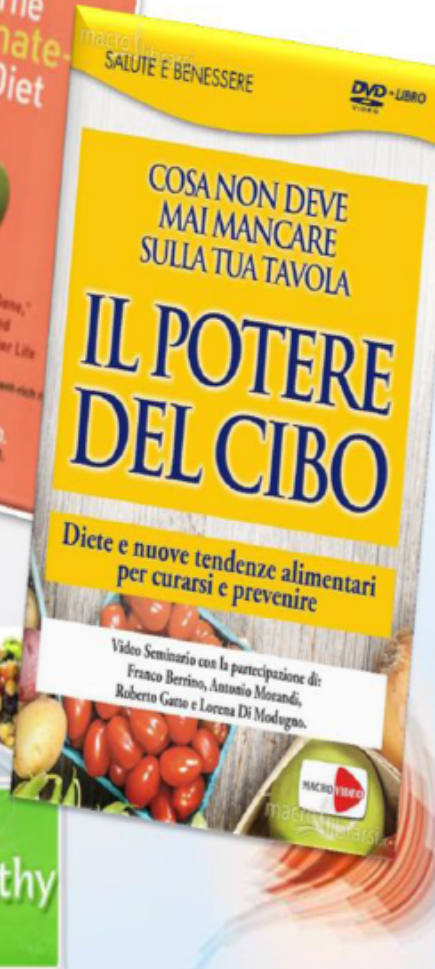
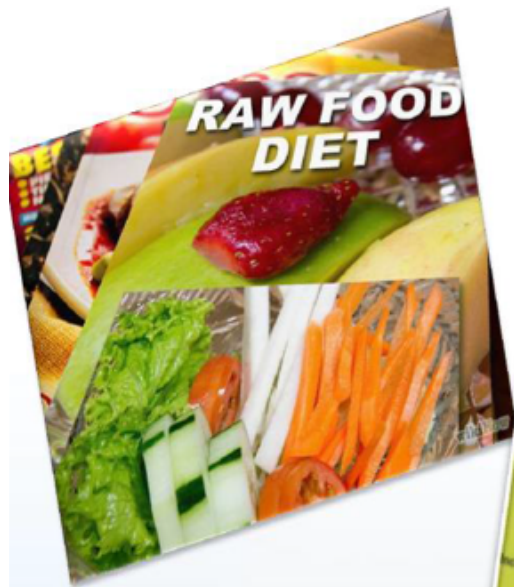
Vero o falso



CANCER EPIGENETICS

Figure 1.1. Overview of potential role of epigenetic modulation by diet







PESCE AZZURRO, SPINACI, ZUCCA, germogli, legumi, cacao puro. Un giovane biochimico della Fondazione per la ricerca sui tumori ha studiato le qualità farmaceutiche e di prevenzione di alcuni alimenti. E in un libro pratico, con tanto di ricette, spiega perché la difesa delle cellule sane inizia a tavola

Vero o falso

I VENTI CIBI CHE GUARISCONO

di CRISTINA LANTONE - Foto di GUIDO CLERICI

Quanti sanno che cosa succede al nostro organismo quando assaporiamo una ribollita toscana? Per molti, è solo un saporito piatto della tradizione fiorentina, invece è un'autentica reazione chimica che, grazie alla presenza di cavolo, con il suo prezioso corredo di vitamina C, vitamina E, potassio, calcio e isotiocianati, interviene a proteggere le pareti dello stomaco, preservandole dalle cellule cancerogene.

L'attenzione verso gli eccipienti con-

tenuti negli alimenti è alla base di studi scientifici che valutano le proprietà molecolari di molti cibi, individuandone le capacità curative e preventive e inaugurando una nuova disciplina, la nutriceutica.

Le ultime tesi in materia sono illustrate da Marco Bianchi, giovane ricercatore di biochimica presso la Fondazione Ifom - Istituto Fire (Fondazione italiana per la ricerca sul cancro) che ha individuato gli alimenti alleati della salute nel libro *I viaggiatori 20, i buoi allevati che si prendono cura di*

noi (Ponte alle Grazie). In frigo e in dispensa non potranno mancare, dunque, quinoa, legumi, alghe, pesce azzurro, frutta secca, spinaci, semi e germogli, olio di semi di lino, melagrana, uva, arance, cavoli, aglio e cipolla, pomodoro, zucca, peperoni, mault d'oca e, per i più golosi, cacao amaro.

Ma come funziona esattamente la nutriceutica?

Permette di individuare i principi attivi di ogni alimento presente in natura, i cosiddetti eccipienti, che possono essere utilizzati,

SALUTE

24/04/2013 - GLI EFFETTI DEI POLIFENOLI SULLA SALUTE

Con il Mango riduci gli zuccheri nel sangue e il rischio di cancro

Vero o falso?

Le sostanze benefiche contenute nel frutto di mango hanno effetti positivi sulla glicemia e contribuiscono a ridurre l'infiammazione organica, anticamera di molte malattie e anche il cancro

LM&SDP

Il dolce frutto esotico, il Mango, è buono anche per il benessere dell'organismo grazie ai suoi componenti che sono risultati utili nel controllo degli zuccheri nel sangue (o glicemia) e nel ridurre l'infiammazione del corpo, noto fattore di rischio per numerose malattie, tra cui anche il cancro.

Tutto merito della fibra, le vitamine e i Sali minerali contenuti nel frutto – ma anche e soprattutto delle sostanze antiossidanti come i polifenoli.



Il Mango contiene delle sostanze che sono risultate utili nel controllo dei livelli di zuccheri nel sangue, o glicemia.
Foto: ©photoxpress.com/Benko Zsolt

Modello Alimentare Protettivo

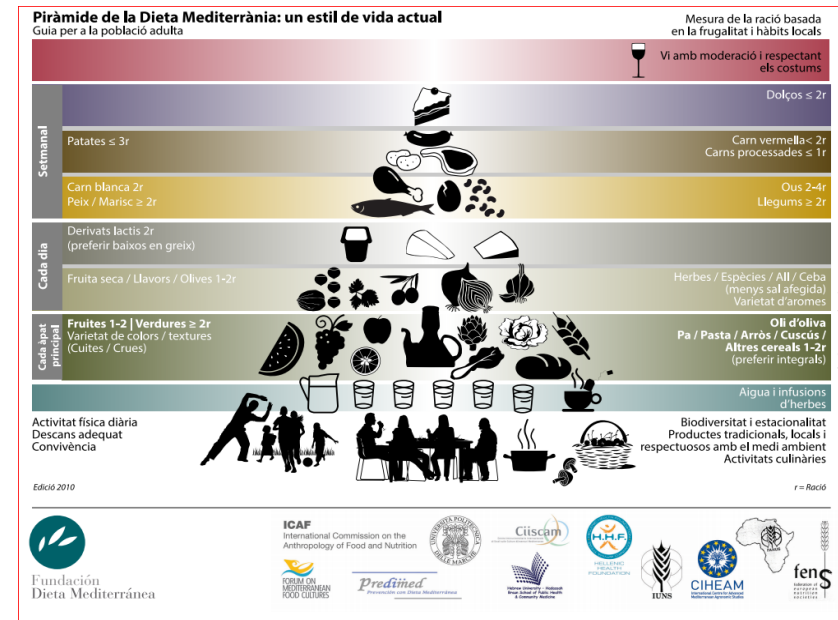
Vero o falso

1. malattie cardiovascolari,
2. tumori e DM2
3. non necessita:

- di integrazioni farmacologiche

DIETA MEDITERRANEA

gold standard fra i modelli alimentari



Serra-Majem L, Roman B & Estruch R Scientific evidence of interventions using the Mediterranean diet: a systematic review. Nutr Rev 2006;64(Suppl. 1):527-547.

Sofi F, Cesari F, Abbate R et al. Adherence to Mediterranean diet and health status: meta-analysis. BMJ 2008;337:a1344.

High Fat Mediterranean Diet

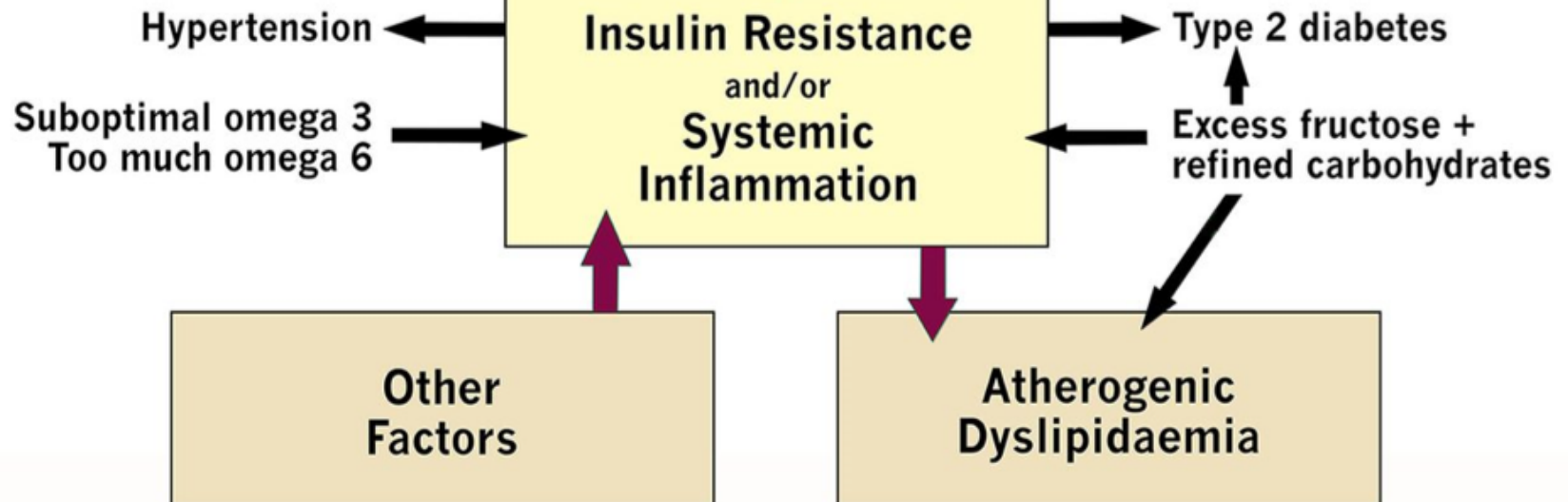
- Vegetables, extra virgin olive oil, nuts, oily fish
- Moderate intake of cheese & yoghurt
- Low in sugar & refined carbohydrates

Vero o falso

- Regular physical activity
(walking 22 minutes/day)
- Stress reduction
(eg. meditation, Yoga)
- Smoking cessation

Coronary
Artery
Plaque

© Vicky Earle



CODICE EUROPEO CONTRO IL CANCRO

12 modi per ridurre il tuo rischio di cancro

- 1 Non fumare. Non consumare nessuna forma di tabacco.
- 2 Rendi la tua casa libera dal fumo. Sostieni le politiche che promuovono un ambiente libero dal fumo sul tuo posto di lavoro.
- 3 Attivati per mantenere un peso sano.
- 4 Svolgi attività fisica ogni giorno. Limita il tempo che trascorri seduto.
- 5 Segui una dieta sana:
 - Consuma molti e vari cereali integrali, legumi, frutta e verdura.
 - Limita i cibi ad elevato contenuto calorico (alimenti ricchi di zuccheri o grassi) ed evita le bevande zuccherate.
 - Evita le carni conservate; limita il consumo di carni rosse e di alimenti ad elevato contenuto di sale.
- 6 Se bevi alcolici di qualsiasi tipo, limitane il consumo. Per prevenire il cancro è meglio evitare di bere alcolici.
- 7 Evita un'eccessiva esposizione al sole, soprattutto per i bambini. Usa protezioni solari. Non usare lettini abbronzanti.
- 8 Osserva scrupolosamente le istruzioni in materia di salute e sicurezza sul posto di lavoro per proteggerti dall'esposizione ad agenti cancerogeni noti.
- 9 Accerta di non essere esposto a concentrazioni naturalmente elevate di radon presenti in casa. Fai in modo di ridurre i livelli elevati di radon.
- 10 Per le donne:
 - L'allattamento al seno riduce il rischio di cancro per la madre. Se puoi, allatta il tuo bambino.
 - La terapia ormonale sostitutiva (TOS) aumenta il rischio di alcuni tipi di cancro. Limita l'uso della TOS.
- 11 Assicurati che i tuoi figli partecipino ai programmi di vaccinazione contro:
 - l'epatite B (per i neonati)
 - il papillomavirus umano (HPV) (per le ragazze).
- 12 Partecipa a programmi organizzati di screening per il cancro:
 - dell'intestino (uomini e donne)
 - del seno (donne)
 - del collo dell'utero (donne).

Il Codice Europeo contro il cancro interessa le azioni che i singoli cittadini possono adottare per contribuire alla prevenzione del cancro che per essere efficace richiede che queste azioni individuali siano sostenute dalle politiche e dagli interventi dei governi.

Per saperne di più sul Codice Europeo contro il cancro consulta il sito: <http://cancer-code-europe.iarc.fr>



Tabella 1. Associazioni convincenti (indicate con *) e probabili secondo il WCRF

Organo	Aumento del rischio	Riduzione del rischio
cavo orale, faringe	bevande alcoliche*	vegetali non amidacei frutta alimenti contenenti carotenoidi
stomaco	dieta cantonese bevande alcoliche*	vegetali non amidacei frutta alimenti contenenti carotenoidi alimenti contenenti vitamina C
esofago*	acqua potabile* come integratore*	frutta alimenti contenenti carotenoidi
colon retto	alimenti salati	vegetali non amidacei agliacee frutta
fegato	aflettossine* bevande alcoliche	
pancreas	grasso corporeo* grasso addominale altezza da adulto	
colecisti	grasso corporeo	
colon e retto	carne rossa* carne conservata* bevande alcoliche (uomini* e donne ^o) grasso corporeo* grasso addominale* altezza da adulto*	calcio aglio attività fisica*
mammella (pre menopausa)	bevande alcoliche* altezza da adulta peso elevato alla nascita	allattamento* grasso corporeo
mammella (post menopausa)	bevande alcoliche* grasso corporeo* altezza da adulta* grasso addominale aumento di peso da adulta	allattamento* attività fisica
ovaio	altezza da adulta	
endometrio	grasso corporeo* grasso addominale	attività fisica
cervice uterina		
prostata	dieta ricca di calcio	alimenti contenenti licopene alimenti contenenti selenio selenio
rene	grasso corporeo*	
cute	arsenico nell'acqua potabile	

Pericolosi: grasso viscerale, bevande alcoliche, insaccati, carne

Protettivi: vegetali, frutta, fibre, attività fisica



* per le donne, associazione solo probabile

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European Heart Journal
doi:10.1093/eurheartj/ehw272

ESC/EAS

2016 ESC/EAS Guidelines for the Management of Dyslipidaemias

LINEE GUIDA DIETETICHE PER LA PREVENZIONE DELL'ATEROSCLEROSI
E DELLE MALATTIE CARDIOVASCOLARI

Sane abitudini dietetiche possono aiutare a ridurre tre dei principali fattori di rischio per l'aterosclerosi e le malattie cardiovascolari: l'ipercolesterolemia/iperpipemia, l'ipertensione e l'obesità.

L'American Heart Association elenca 4 punti fondamentali per la strategia dietetica preventiva:

1. seguire una dieta bilanciata
2. controllare il peso corporeo
3. controllare l'ipercolesterolemia
4. controllare l'ipertensione.

Table 13 Dietary recommendations to lower low-density lipoprotein-cholesterol and improve the overall lipoprotein profile

	To be preferred	To be used with moderation	To be chosen occasionally in limited amounts
Cereals	Whole grains	Refined bread, rice and pasta, biscuits, corn flakes	Pastries, muffins, pies, croissants
Vegetables	Raw and cooked vegetables	Potatoes	Vegetables prepared in butter or cream
Legumes	Lentils, beans, fava beans, peas, chickpeas, soybean		
Fruit	Fresh or frozen fruit	Dried fruit, jelly, jam, canned fruit, sorbets, popsicles, fruit juice	
Sweets and sweeteners	Non-caloric sweeteners	Sucrose, honey, chocolate, candies	Cakes, ice creams, fructose, soft drinks
Meat and fish	Lean and oily fish, poultry without skin	Lean cuts of beef, lamb, pork or veal, seafood, shellfish	Sausages, salami, bacon, spare ribs, hot dogs, organ meats
Dairy food and eggs	Skim milk and yogurt	Low-fat milk, low-fat cheese and other milk products, eggs	Regular cheese, cream, whole milk and yogurt
Cooking fat and dressings	Vinegar, mustard, fat-free dressings	Olive oil, non-tropical vegetable oils, soft margarines, salad dressing, mayonnaise, ketchup	Trans fats and hard margarines (better to avoid them), palm and coconut oils, butter, lard, bacon fat
Nuts/seeds		All, unsalted (except coconut)	Coconut
Cooking procedures	Grilling, boiling, steaming	Stir-frying, roasting	Frying

FATS

THE GOOD, THE BAD & THE UGLY

Monounsaturated & Polyunsaturated Fats

- Can lower bad cholesterol levels
- Can lower risk of heart disease & stroke
- Can provide essential fats that your body needs but can't produce itself

SOURCE

Plant-based liquid oils, nuts, seeds and fatty fish

EXAMPLES



Oils (such as canola, olive, peanut, safflower and sesame)



Avocados



Fatty Fish (such as tuna, herring, lake trout, mackerel, salmon and sardines)



Nuts & Seeds (such as flaxseed, sunflower seeds and walnuts)

Saturated Fats

- Can raise bad cholesterol levels
- Can raise good cholesterol levels
- Can increase risk of heart disease & stroke

SOURCE

Most saturated fats come from animal sources, including meat and dairy, and from tropical oils

EXAMPLES



Beef, Pork & Chicken Fat



Butter



Cheese (such as whole milk cheeses)



Tropical Oils (such as coconut, palm kernel and palm oils)

Hydrogenated Oils & *Trans* Fats

- Can raise bad cholesterol levels
- Can lower good cholesterol levels
- Can increase risk of heart disease & stroke
- Can increase risk of type 2 diabetes

SOURCE

Processed foods made with partially hydrogenated oils

EXAMPLES



Partially Hydrogenated Oils



Some Baked Goods



Fried Foods



Stick of Margarine

American Heart Association
Recommendation

Eat a healthy dietary pattern that:

Includes
good fats

Limits
saturated fats

Keeps trans fats as
LOW as possible

David Buckley, MD,
John Muench, MD, MPH,
and Andrew Hamilton, MLS
Oregon Health and Science
University, Portland
J Fam Pract. 2007 January;56(1):46-48

How effective are dietary interventions in lowering lipids in adults with dyslipidemia?

TABLE

Average effect of dietary interventions on serum lipid levels

DIETARY INTERVENTION	AVERAGE CHANGE IN MG/DL OF LIPID LEVELS (% CHANGE)			
	TOTAL CHOLESTEROL	LDL	HDL	TRIGLYCERIDES
Low fat NCEP Step I TF<30%, SF<10%, COL<300 mg)	-24.36* (-10%)	-18.95* (-12%)	-1.55 (-1.5%)	-15.10* (-8%)
NCEP Step II (SF<7%, COL<200 mg)	-31.32* (-7%)	-25.14* (-13%)	-3.48* (-16%)	-16.83* (-8%)
Soy All ISOFLAVONES	-8.51* (-3.77%)	-8.12* (-5.25%)	-1.55* +(+ 3.03%)	-8.86* (-7.27%)
Hypercholesterolemia	-9.67*	-6.96*	+ 3.87*	-7.97*
Fiber (per g/d)	-1.74*	-2.20*	-0.12	+ 0.27
"Portfolio" (NCEP II + SOY, FIBER, ALMOND, STEROLS)	-58.39* (-22.34%)	-51.82* (-29.71%)	3.09 (-6.50%)	18.60 (9.33%)
Mediterranean	-15.47 (-6.06%)	-19.34* (-11.37%)	0 (-12.50%)	-17.71 (0%)

* Statistically significant at $P \leq .05$

DIETA CON
↓ GRASSI
↑ SOIA
↑ FIBRE



PORTA A
↓ COL TOT
↓ LDL
↓ TAG

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Vero o falso



Mediterranean diet and life expectancy; beyond
olive oil, fruits, and vegetables

Miguel A. Martinez-Gonzalez^{a,b} and Nerea Martin-Calvo^{a,b}



KEY POINTS

- The MedDiet represents the gold standard in preventive medicine, probably because of the harmonic combination of many elements with antioxidant and anti-inflammatory properties, which overwhelm any single nutrient or food item.
- Recent studies provide a basis to include heart failure, and not only CHD and stroke, to assess the cardiovascular effects of the MedDiet.
- The PREDIMED study is the first randomized trial showing that an intervention based on changes in the food pattern is able to reduce the risk of breast cancer and to improve cognition.
- The adequate transferability of the MedDiet to non-Mediterranean countries requires us to incorporate olive oil as the main source of fat.
- The PREDIMED-PLUS randomized trial aims to solve the lack of evidence regarding the effect of other aspects of the Mediterranean lifestyle (beyond diet) on health.

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Guasch-Ferré et al. BMC Medicine 2014, 12:78
<http://www.biomedcentral.com/1741-7015/12/78>



Vero o falso

RESEARCH ARTICLE

Open Access

Olive oil intake and risk of cardiovascular disease and mortality in the PREDIMED Study

Marta Guasch-Ferré^{1,2}, Frank B Hu³, Miguel A Martínez-González^{2,4}, Montserrat Fitó⁵, Mònica Bulló^{1,2}, Ramon Estruch^{2,6}, Emilio Ros^{2,7}, Dolores Corella^{2,8}, Javier Recondo^{2,9}, Enrique Gómez-Gracia^{2,10}, Miquel Fiol¹¹, José Lapetra^{2,12}, Lluís Serra-Majem^{2,13}, Miguel A Muñoz¹⁴, Xavier Pinto^{2,15}, Rosa M Lamuela-Raventós¹⁶, Josep Basora^{1,2}, Pilar Buil-Cosiales^{2,4,17}, José V Sorlí^{2,8}, Valentina Ruiz-Gutiérrez^{2,18}, J Alfredo Martínez¹⁹ and Jordi Salas-Salvadó^{1,2*}

Abstract

Background: It is unknown whether individuals at high cardiovascular risk sustain a benefit in cardiovascular disease from increased olive oil consumption. The aim was to assess the association between total olive oil intake, its varieties (extra virgin and common olive oil) and the risk of cardiovascular disease and mortality in a Mediterranean population at high cardiovascular risk.

Methods: We included 7,216 men and women at high cardiovascular risk, aged 55 to 80 years, from the PREVENCIÓN con Dieta MEDiterránea (PREDIMED) study, a multicenter, randomized, controlled, clinical trial. Participants were randomized to one of three interventions: Mediterranean Diets supplemented with nuts or extra-virgin olive oil, or a control low-fat diet. The present analysis was conducted as an observational prospective cohort study. The median follow-up was 4.8 years. Cardiovascular disease (stroke, myocardial infarction and cardiovascular death) and mortality were ascertained by medical records and National Death Index. Olive oil consumption was evaluated with validated food frequency questionnaires. Multivariate Cox proportional hazards and generalized estimating equations were used to assess the association between baseline and yearly repeated measurements of olive oil intake, cardiovascular disease and mortality.

Results: During follow-up, 277 cardiovascular events and 323 deaths occurred. Participants in the highest energy-adjusted tertile of baseline total olive oil and extra-virgin olive oil consumption had 35% (HR: 0.65; 95% CI: 0.47 to 0.89) and 39% (HR: 0.61; 95% CI: 0.44 to 0.85) cardiovascular disease risk reduction, respectively, compared to the reference. Higher baseline total olive oil consumption was associated with 48% (HR: 0.52; 95% CI: 0.29 to 0.93) reduced risk of cardiovascular mortality. For each 10 g/d increase in extra-virgin olive oil consumption, cardiovascular disease and mortality risk decreased by 10% and 7%, respectively. No significant associations were found for cancer and all-cause mortality. The associations between cardiovascular events and extra virgin olive oil intake were significant in the Mediterranean diet intervention groups and not in the control group.

Conclusions: Olive oil consumption, specifically the extra-virgin variety, is associated with reduced risks of cardiovascular disease and mortality in individuals at high cardiovascular risk.

Trial registration: This study was registered at controlled-trials.com (<http://www.controlled-trials.com/ISRCTN35739639>). International Standard Randomized Controlled Trial Number (ISRCTN): 35739639. Registration date: 5 October 2005.

Keywords: Olive oil, Cardiovascular, Mortality, Mediterranean Diet, PREDIMED



Molecular Mechanisms of Inflammation. Anti-inflammatory benefits of virgin olive oil and the phenolic compound oleocanthal

Lisa Luca and al: CPAN Deakin University Australia

Vero o falso

Chronic inflammation diseases are:

- cardiovascular diseases
- diabetes
- cancer
- neurodegenerative diseases
- degenerative joint diseases

Popular method to deal is the use of non steroidal anti-inflammatory drugs

New investigations concerned with natural methods of inflammatory control are warranted:

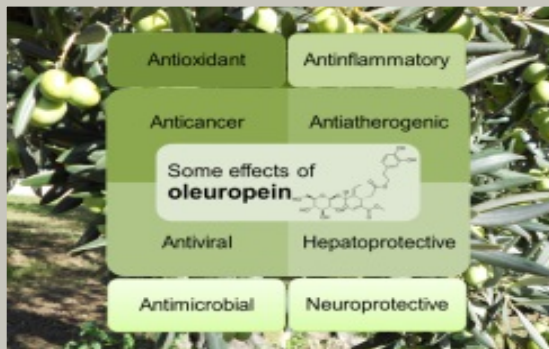


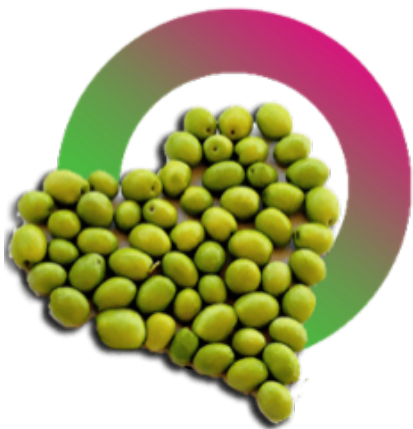
The Mediterranean diet has been shown to confer protection against the chronic diseases through the attenuation of proinflammatory mediators and this has been attributed to the high intake of virgin oil

BIOLOGICAL EFFECTS OF OLEUROPEIN

Table 3. Biological activities and effect(s) of oleuropein.

Activity	Effect(s)	References
Antioxidant	Improvement of radical stability	[14,30]
	ROS scavenging effect	[30]
	Inhibition of oxidation of LDL	[36]
Anti-inflammatory	Inhibition of synthesis of pro-inflammatory cytokines	[39,47]
	Lipoxygenase inhibition	[38]
Anti-tumor	ROS scavenging effect	[56]
	Antiproliferative effect	[66,72]
	Apoptosis induction	[99]
	Anti-migration effect	[62,71]
	Angiogenesis inhibition	[73]
Hepatoprotective	Steatosis reduction	[77]
	Oxidative stress reduction	[76]
Antimicrobial	Bacterial cell membrane damage	[14]
Antiviral	Viral integrase inhibition	[89,90]
	Viral envelope interaction	[87]
Neuroprotective	Oxidative stress reduction	[47]
	Tau fibrillization inhibition	[95]





EVOO

CARDIOVASCULAR PROTECTIONS FROM OLIVE



Vero o falso

1. Polyphenols rich-olive oil and improve lipid profil
2. Having significant HDL cholesterol-raising effects
- 3 It's due to MUFA and polyphenols by promoting reverse cholesterol transport
4. Implicated to improve endothelian functions
5. Reduce markers of inflammation (IL-6, CRP)

Covas MI, Nyyssönen K, Poulsen HE, Kaikkonen J, Zunft HJ, Kiesewetter H, et al. The effect of polyphenols in olive oil on heart disease risk factors: a randomized trial. *Ann Intern Med* 2006;

López-Miranda J, Pérez-Jiménez F, Ros E, De Caterina R, Badimón L, Covas MI, et al. Olive oil and health: summary of the II international conference on olive oil and health consensus report, Jaén and Córdoba (Spain) 2008. *Nutr Metab Cardiovasc*

Hernández Á, Fernández-Castillejo S, Farràs M, Catalán Ú, Subirana I, Montes R, et al. Olive oil polyphenols enhance high-density lipoprotein function in humans: a randomized controlled trial. *Arterioscler Thromb Vasc Biol* 2014; 34: 2115–9.

I Claims

Vero o falso



L'EFSA (Agenzia Europea per la Sicurezza Alimentare)

Tra i bocciati:

- **Le tre porzioni di latte o latticini** al giorno per favorire un peso ottimale nei bambini e negli adolescenti
- **I latticini** che aiutano la salute dei denti
- **Le creme di nocciola zuccherate** come alimento ideale per la colazione di tutti i giorni
- **L'acqua** che depura

I Claims: le bevande “zero zuccheri”



Spesso sono acqua a cui vengono aggiunti
dolcificanti, aromatizzanti, coloranti, ecc.

Aspartame, saccarina, ciclamati, acesulfame, sucralosio, mannitolo...,
possono:

- ⊙ incidere sul funzionamento di alcuni ormoni (insulina, leptina ecc)
- ⊙ sui livelli di trigliceridi circolanti (fruttosio)
- ⊙ avere effetti lassativi (....olo)
- ⊙ ridurre gli effetti di alcuni farmaci (sucralosio)
- ⊙ alterare la flora batterica intestinale (sucralosio)
- ⊙ modificare la secrezione ormonale

Danneggiano il
microbiota

Vero o falso

I Claims: l'illusione dei cibi "light"



Birra	Analcolica Light	vol $< 1,2^\circ$ $3^\circ < \text{vol} < 8^\circ$
Formaggio	Magro Light	Circa 20% Tra 20% ed il 35%
Burro	A ridotto tenore di grassi A basso tenore di grassi	Tra 60-62% Tra 39-41%
Margarina	A ridotto tenore di grassi A basso tenore di grassi	Tra 60-62% Tra 40-42%



METABOLIC SYNDROME

by the Numbers

100
mg

Una glicemia a digiuno ≥ 100 mg/dL è un fattore di

Una circonferenza addominale > 102 cm per gli uomini e > 88 cm nelle donne è un segno visibile di s.metabolica



Affects
40%
of people over
60 years old

Combinazione di almeno 3
fra i seguenti criteri:
obesità addominale,
iperglicemia, iper-TG,
ipertensione, bassi livelli di
colesterolo HDL



Un calo ponderale del
3-5% può ridurre il
rischio metabolico



Circa il **85%** dei soggetti
con DMT2 hanno anche la
sindrome metabolica

35"

40"

Blood pressure of
130/85 mmHg
or higher is a metabolic risk factor

Livelli di colesterolo HDL
 < 50 mg/dL per la donna e
 < 40 mg/dL per l'uomo
concorrono ad aumentare il
rischio



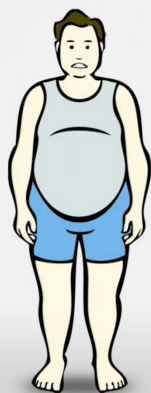
40 mg/dL

50 mg/dL

Triglyceride level of
150 mg/dL
or higher is a metabolic
risk factor



THE METABOLIC SYNDROME



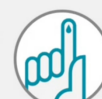
HEART DISEASE



LIPID PROBLEMS



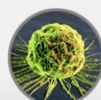
HYPERTENSION



TYPE 2 DIABETES



DEMENTIA



CANCER



POLYCYSTIC
OVARIAN
SYNDROME



NON-ALCOHOLIC
FATTY LIVER
DISEASE

Vero o falso

THE **METABOLIC** SYNDROME DIET



Pesce ed omega-3:
(salmone e pesce azzurro,
frutta secca a guscio e semi)



Vegetali: broccoli e verdura a foglia. L'avocado, in particolare, ha dimostrato benefici clinici (91)



Cereali Integrali: cibi ad elevata quantità di fibre e con basso indice glicemico sono ottimali soprattutto per il mantenimento del peso ed il controllo del diabete



Frutta:
consumare frutta preferendo quella a medio-basso contenuto zuccherino



Legumi:
ottima fonte proteica, soprattutto in abbinamento ai cereali, e di carboidrati a basso i.g. e fibre

ALIMENTI DA EVITARE



Carni processate: ricche di grassi saturi, sale e conservanti potenzialmente nocivi



Dolcificanti Artificiali:
aumenterebbero il rischio di s.metabolica e DMT2 (93)



Bevande zuccherate: uno studio del 2009 (92) riporta che un consumo giornaliero di tali bevande aumenta il rischio del 36% per la s.metabolica e del 67% per il DMT2



Grassi Trans: evitare cibi raffinati contenenti grassi idrogenati



Carboidrati e zuccheri raffinati: entrambi fattori di rischio dietetici



Alcolici:
assolutamente da limitare

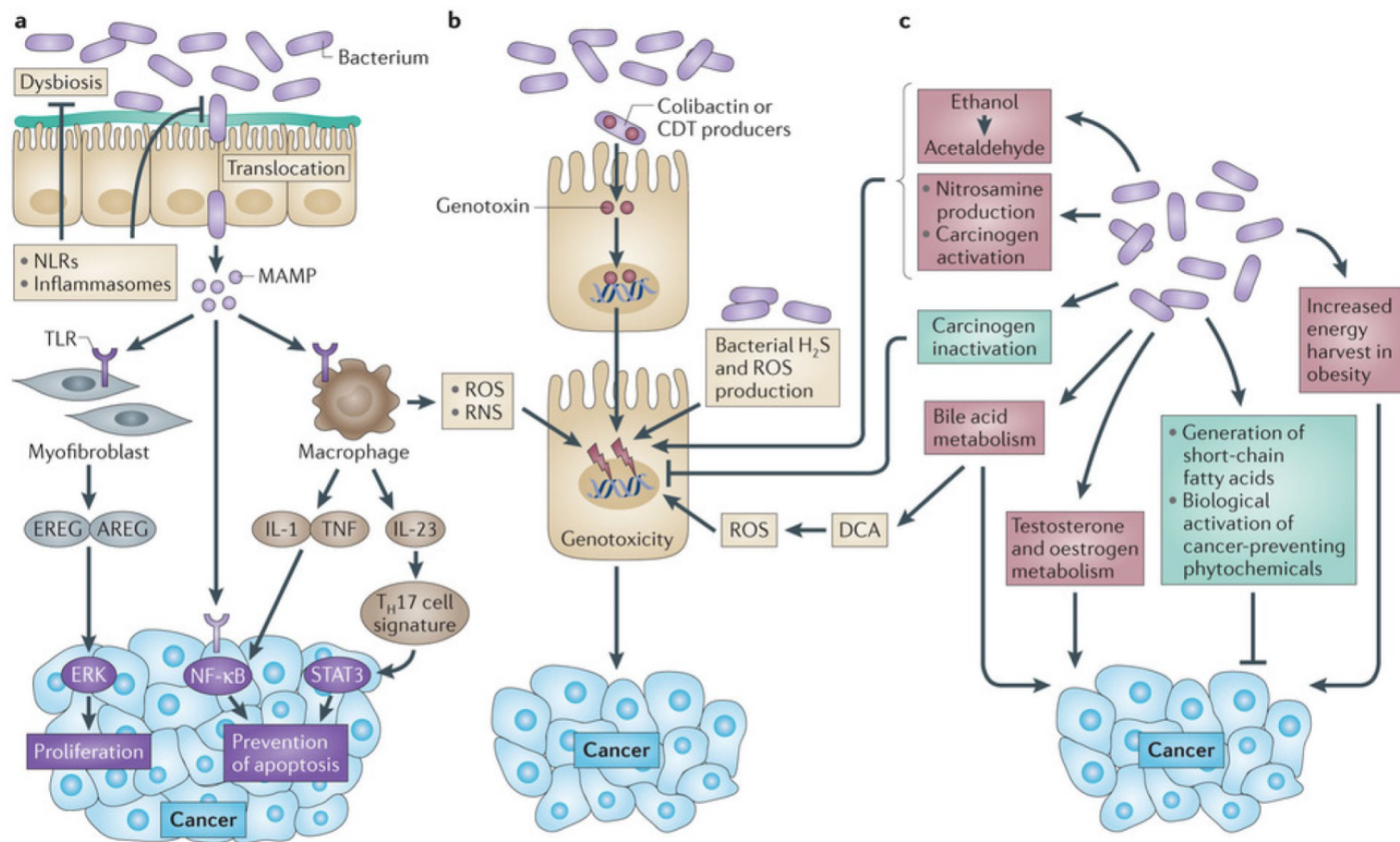
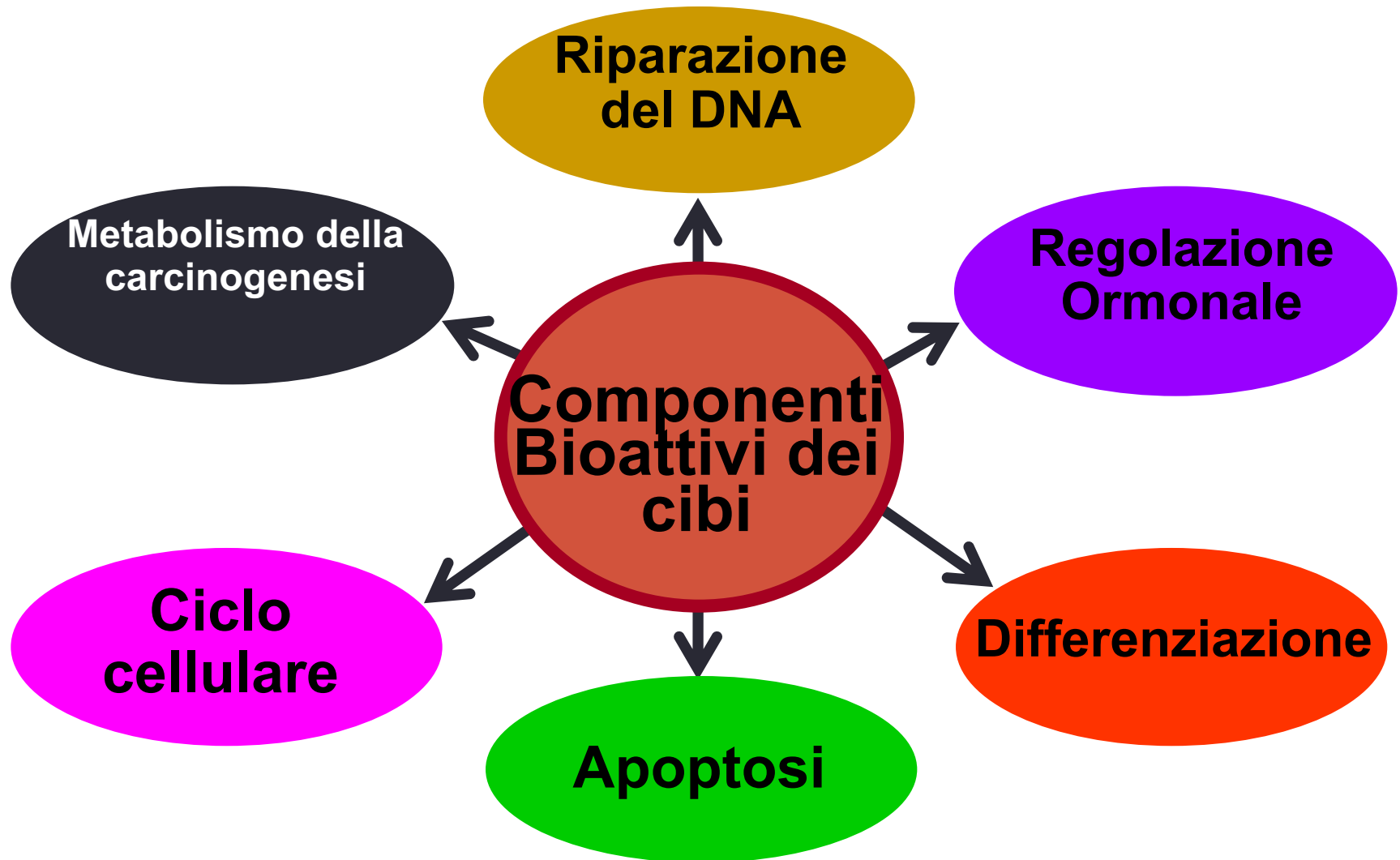


Figure 3. Mechanisms by which the bacterial microbiome modulates carcinogenesis. The microbiota promotes carcinogenesis through different mechanisms. **A** | Dysbiosis and inflammation induced by MAMP activating TLR and other PPR (e.g. NLR). **B** | Detrimental effects are mediated by bacterial toxins such as colibactin and CDT: Cytolethal Distending Toxin, ROS, Reactive Nitrogen Species and H₂S. **C** | Metabolic actions activating toxins such as acetaldehydes and nitrosamines. The microbiota mediates preventive effects (in green) through inactivation of carcinogens and production of SCFA: short chain fatty acids; such as butyrate and propionate. From Schwabe RF, Jobin C. *Nature Reviews Cancer* 2013;13:800-12. With permission from Macmillan Publishers Ltd.

La dieta può influenzare eventi genetici e epigenetici associati con numerosi processi di sviluppo del cancro



Antioxidant Intake and Antitumor Therapy: Toward Nutritional Recommendations for Optimal Results

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Antonia Aránega,¹ and Fernando Rodríguez-Serrano¹

Oxidative Medicine and Cellular Longevity

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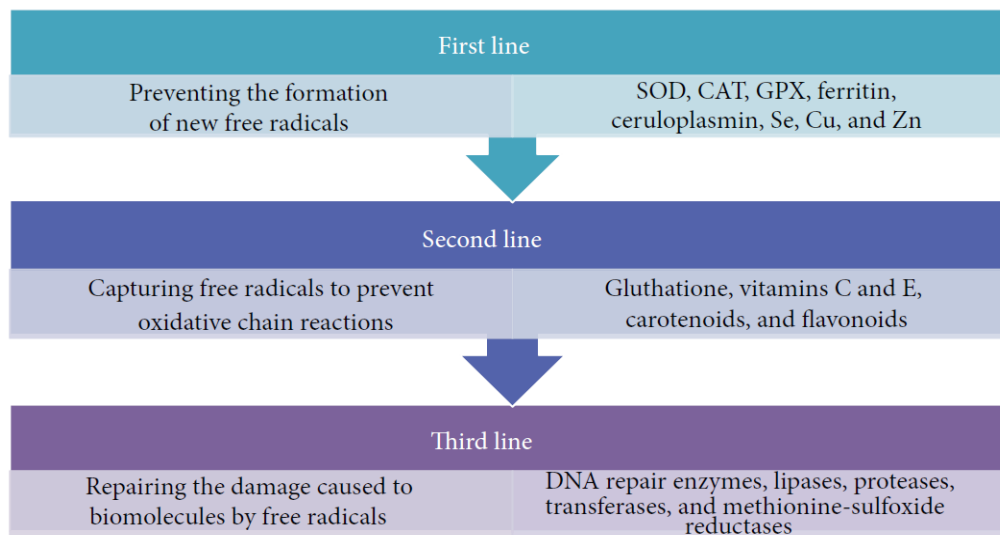


FIGURE 2: The antioxidant defense. The human antioxidant defense is composed of exogenous and endogenous antioxidants that can be classified into three different lines regarding their mechanism of action. The first line prevents the formation of new free radicals and includes SOD, CAT, GPX, ferritin, ceruloplasmin, Se, Cu, and Zn. The second line captures free radicals to prevent the oxidative chain reactions and includes glutathione, vitamins C and E, carotenoids, and flavonoids. The third line repairs the damage caused to biomolecules by free radicals and includes DNA repair enzymes, lipases, proteases, transferases, and methionine-sulfoxide reductases [19–21].

Classificazione degli antiossidanti naturali

TABLE 1: Classification of biologically relevant exogenous antioxidants and their natural sources [13, 41].

Exogenous antioxidants	Sources
Vitamins and derivatives	
Vitamin C	Berries, citrus fruits, some vegetables (peppers, cabbage), pulses, and some herbs and spices
Vitamin E	Seeds, vegetable oils, peanuts, nuts, and some fruits
Vitamin K	Green leafy vegetables, some herbs and spices
Carotenoids	
β -Carotene	Many vegetables (spinach, carrots, pumpkins, and red pepper) and fruits (mango, apricots, and peaches)
Lycopene	Tomatoes, ketchup, and watermelon
Polyphenols	
Flavonoids	
Quercetin	Fruits (apples, citrus), onions, parsley tea, red wine, and green leafy vegetables
Catechins	Green tea, cocoa, and berries
Proanthocyanidins	Many fruits and vegetables, nuts, seeds, cocoa, and some medicinal herbs
Genistein and daidzein	Soy
Hesperetin	Citrus fruits
Resveratrol	Red grapes, red wine, peanuts, and berries
Phenolic acids	
Caffeic and chlorogenic acids	Coffee
Ferulic acid	Cereals, seeds, citrus fruits, and some vegetables

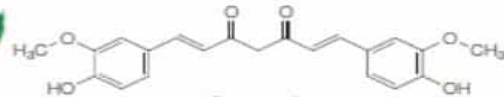
TABLE 2: Antioxidants and antitumor therapy: (a) clinical evidence, (b) preclinical evidence.

(a)			
Clinical evidence			
Treatment	Disease	Results	Reference
High dose of vitamins C and E + radiotherapy	HNSCC	Improve adverse effects but decrease effectiveness of the treatment	[116, 117]
Normal dose of vitamins C, E and β -carotene + cisplatin + radiation	Cervical cancer	Decrease oxidative damage, improve muscle strength, and less fatigue	
EGCG + radiotherapy	Breast cancer	Decrease the levels of angiogenic factors and HGF	
Uncaria tomentosa + FAC	Breast cancer	Decrease the adverse effects without interfering with the efficacy of treatment	
NAC and vitamin E + vincristine, doxorubicin, cytosine arabinoside, cyclophosphamide, and 6-mercaptopurine + radiation	ALL	Decrease the incidence of toxic hepatitis Decrease the requirement of blood and platelet transfusions during treatment	[121]
Melatonin + cisplatin plus etoposide or cisplatin plus gemcitabine	NSCLC	Increase the rate of tumor regression and greater two-year survival rate	[122]
Melatonin + oxaliplatin and 5-FU	Gastrointestinal cancer		
Melatonin in combination with chemotherapy	Advanced NSCLC	Decrease the side effects with no better rates of survival	[123]
HNSCC: head and neck squamous cell carcinoma; ALL: acute lymphoblastic leukemia; NSCLC: non-small-cell lung carcinoma.			
(b)			
Preclinical evidence			
Treatment	Experimental model	Results	Reference
Curcumin + radiotherapy	SCC1, SCC-9, A431, and KB of HNSCC	Increase the antitumor effect of radiation	[124]
EGCG + radiotherapy	Tumor cervical cells (HeLa), multiple myeloma (IM-9), and leukemic (K-562)	Decrease cell proliferation Increase apoptosis and necrosis	[125]
Melatonin + radiotherapy	CD2-F1 mice	Increase the survival of animals	[126]
NAC + doxorubicin	Model of heart failure in Japanese white rabbits	Decrease apoptosis in cardiomyocytes	[127]
Vitamin C + doxorubicin	Cell lines of chronic myelogenous leukemia (K562) and lymphoma (RL) Mice with RL cell xenografts	Increase the resistance to treatment Larger tumors in mice	[128]
Suppression of Prdx + doxorubicin	MCF-7 human breast tumor cells	Increase the apoptotic effect of the drug	[129]
EGCG + doxorubicin	Colorectal tumor cells (BEL-7404/DOX)	Increase cell death and the sensitivity to the drug	[130]
Resveratrol + paclitaxel	Human breast tumor cells	Decrease the antitumor action of the drug	[131]
Nitroxide + docetaxel or doxorubicin	Mice with breast tumor cells xenografts	Decrease the side effects without interfering with the efficacy of treatment	[132]
Quercetin + cisplatin or 5-FU, taxol, or pirarubicin	Ovarian tumor cells (C13* and SKOV3)	High concentrations of quercetin: proapoptotic effect Low concentrations of quercetin: decrease the damage caused by ROS	[133]
Quercetin at low doses + cisplatin, 5-FU, taxol, or pirarubicin	Athymic nude mice with ovarian tumor cells (C13*) xenografts	Inefficiency in the treatment	[133]
High dose of vitamins A, E and selenium + cisplatin	Tumor cells of colon (COLO-205-GFP) induced in mice	Significant lower growth of tumors compared to the control tumors	[134]
Curcumin + cisplatin	Liver tumor cells (HA22T/VGH) HNSCC tumor cells (CAL27, UMSCC)	Increase the cytotoxic effect of the drug	[135] [136]
NAC before or up to 1 hour after the drug + cisplatin	Human ovarian carcinoma cells(SKOV3), human SCLC tumor cells (B.5 LX-1), human glioblastoma cells (U87), and rat Rat1 fibroblasts	Blocks the proapoptotic effect of the drug	[137]
NAC before or up to 1 hour after the drug + cisplatin	Human ovarian carcinoma cells(SKOV3), human SCLC tumor cells (B.5 LX-1), human glioblastoma cells (U87), and rat Rat1 fibroblasts	Blocks the proapoptotic effect of the drug	[137]

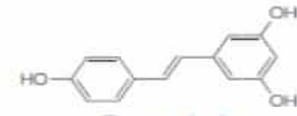
Vero o falso

Composti bioattivi negli alimenti

Turmeric

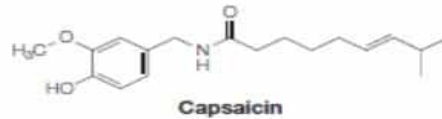


Grapes

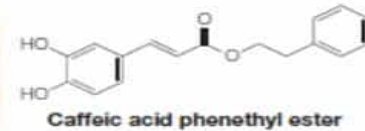


Resveratrol

Chilli peppers

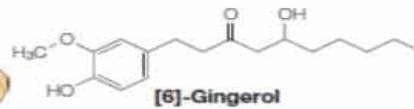


Honey



Caffeic acid phenethyl ester

Ginger



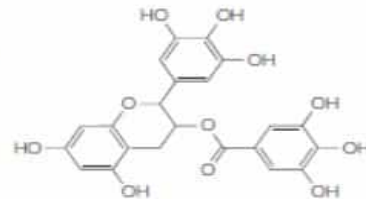
[6]-Gingerol

Garlic



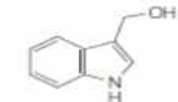
Diallyl sulphide

Green tea



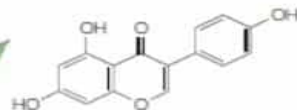
Epigallocatechin-3-gallate

Cabbage



Indole-3-carbinol

Soybeans



Genistein

Broccoli



Sulphoraphane

Tomatoes



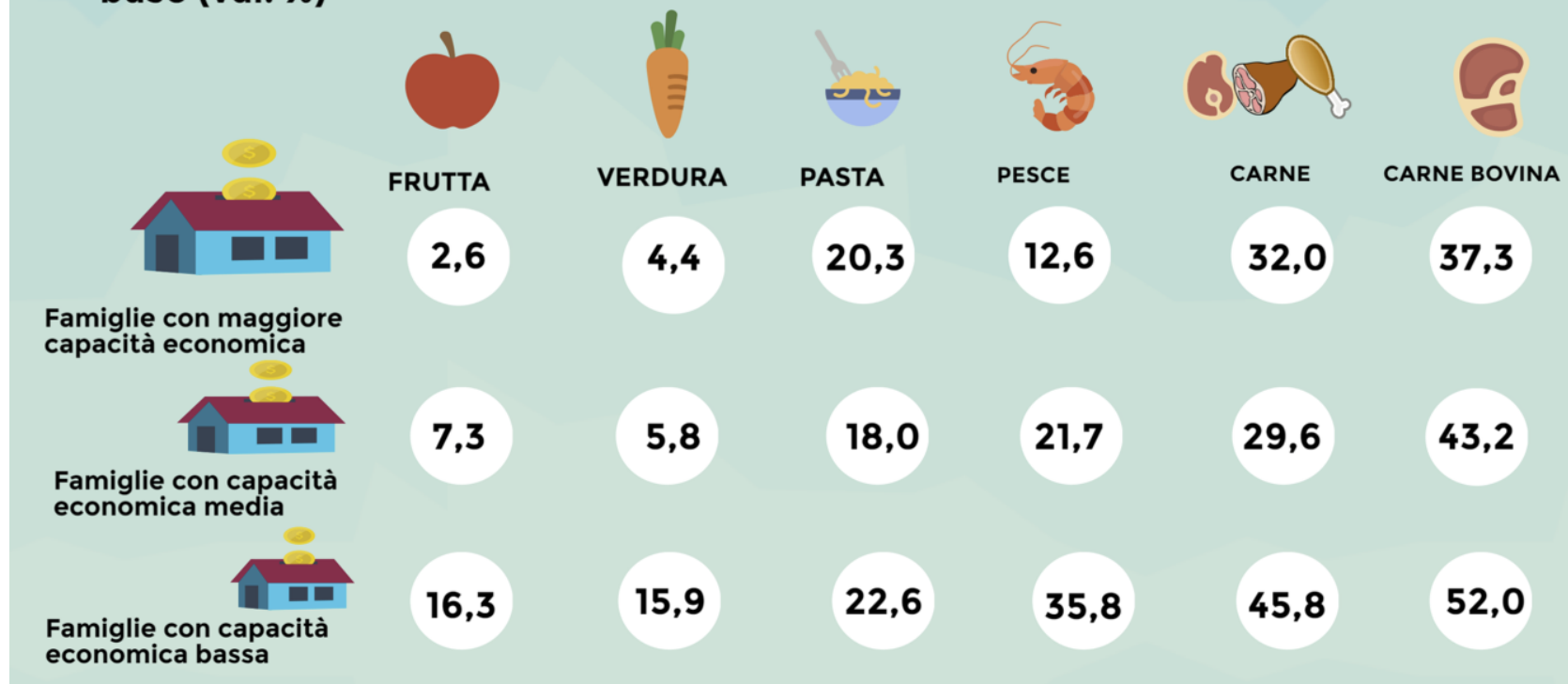
Lycopene

PREVENZIONE MALATTIA CARDIOVASCOLARE/OBESITA'/CANCRO

Gli studi epidemiologici mettono in evidenza di:

- evitare il sovrappeso o normalizzare il peso corporeo
- ridurre l'intake calorico di grassi al di sotto del 30%
- consumare un sufficiente apporto di vitamine minerali e micronutrienti: più frutta e verdura, meno carne, più pesce e cibi ricchi di calcio

2016: Famiglie che, nell'ultimo anno, hanno ridotto il consumo di alcuni alimenti base (val. %)



Fonte Censis, "Gli Italiani a tavola, cosa sta cambiando" 2016

Il ruolo delle variazioni genetiche e sviluppo dell'epigenetica

Approfondire le ricerche sul ruolo della dieta nella prevenzione del cancro

La ricerca e l'aumento delle conoscenze servirà a capire meglio l'impatto della dieta e le variazioni individuali (epigenetica) riveleranno nuove strade per la prevenzione.

Inoltre ulteriori studi sul microbiota serviranno a modificare l'omeostasi del quadro microbico e ridurre la tossicità di alcuni batteri, l'infiammazione le vie mitogenetiche e di antiapoptosi

TURIN,
October
25th-27th
2018
Starhotels
Majestic

GIORNATE CARDIOLOGICHE TORINESI



GRAZIE PER L'ATTENZIONE



ETTA FINOCCHIARO