Dieta Mediterranea

Modello salutistico per la prevenzione dell'obesità

Fabio Galvano

Dipartimento di Chimica Biologica, Chimica Medica e Biologia Molecolare

Università di Catania

Obesità in Europa*

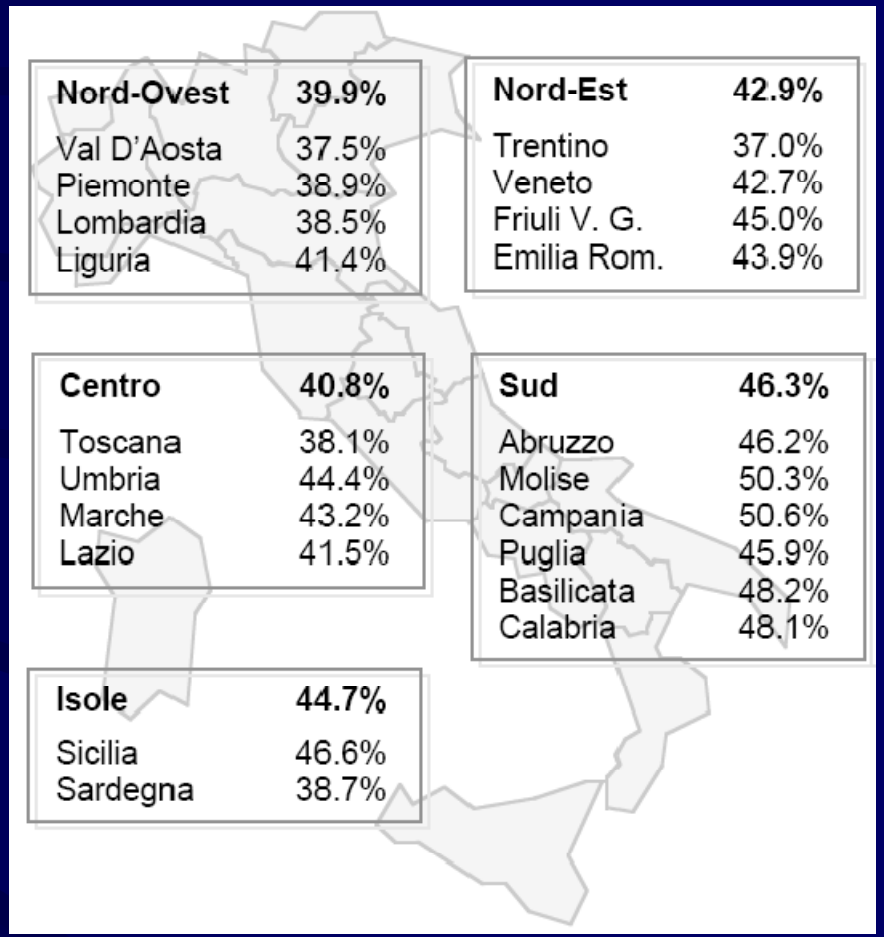
- Il 50% della popolazione è sovrappeso
- Il 20-30% è clinicamente obesa



* Dati OMS (Organizzazione Mondiale della Sanità)

Obesità in Italia#

- Il 33% è in sovrappeso
- Il 9% è clinicamente obeso
- Il 4 % per cento dei bambini è obeso
- Il 20 per cento è in sovrappeso
- La regione con più alto numero di bambini obesi è la Campania (36 %)
- In Sicilia : 26.8%



Dati ISTAT e ISS (Istituto Superiore della Sanità)

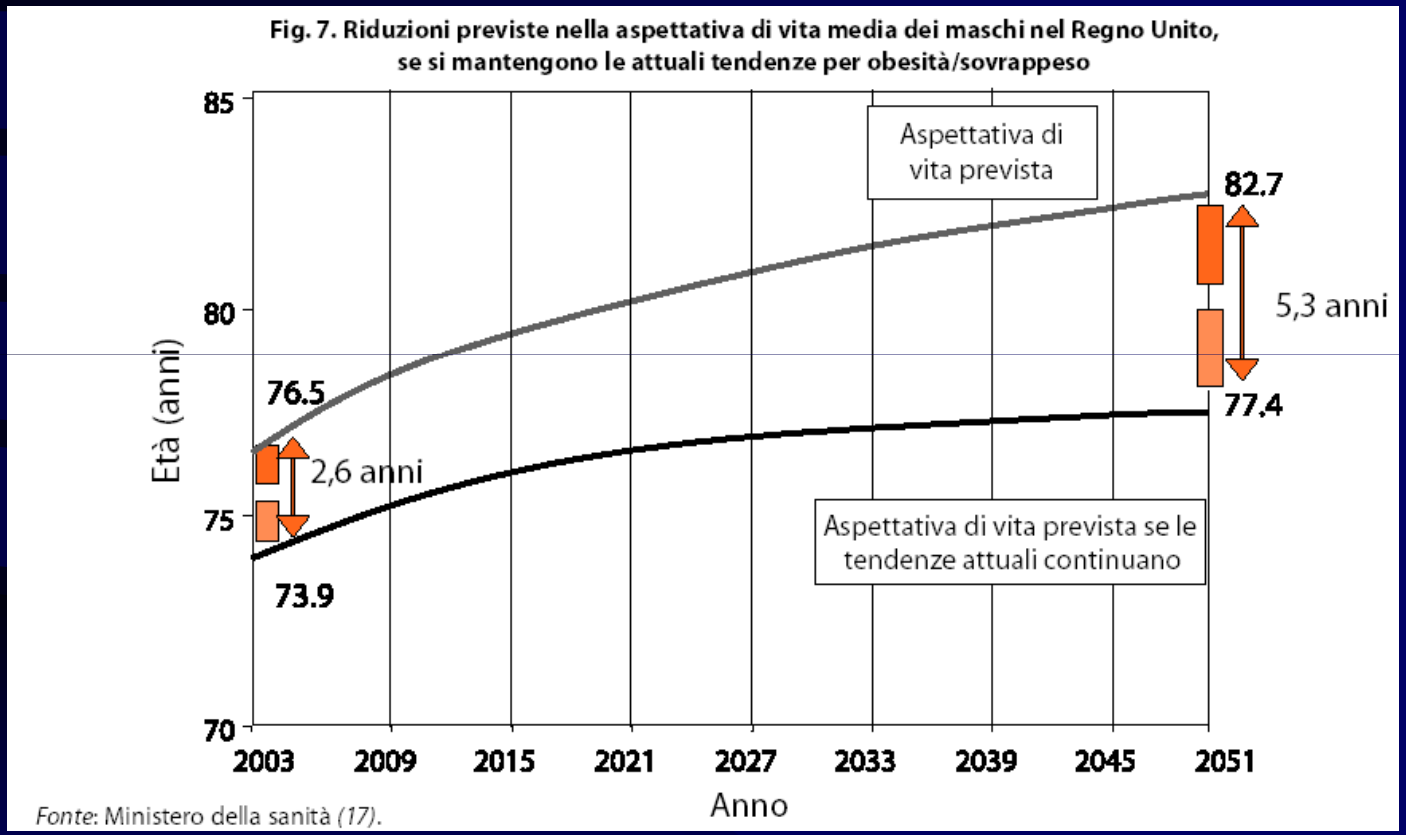
Sovrappeso e obesità
Conseguenze per la salute

Per la prima volta nella storia dell'umanità le generazioni attuali hanno una speranza di vita minore di quella dei genitori



International Congress on Obesity. August 2002

Sovrappeso e obesità
Conseguenze per la salute



Obesità e Sindrome Metabolica

NCEP ATP III: The Metabolic Syndrome

Recommends a diagnosis when ≥3 of these risk factors are present

Risk Factor	Defining Level
Abdominal obesity (Waist circumference)	
Men	>102 cm (>40 in)
Women	>88 cm (>35 in)
TG	≥150 mg/dL (1.7 mmol/L)
HDL-C	
Men	<40 mg/dL (1.0 mmol/L)
Women	<50 mg/dL (1.3 mmol/L)
Blood pressure	≥130/≥85 mmHg
Fasting glucose	≥110 mg/dL (6.0 mmol/L)

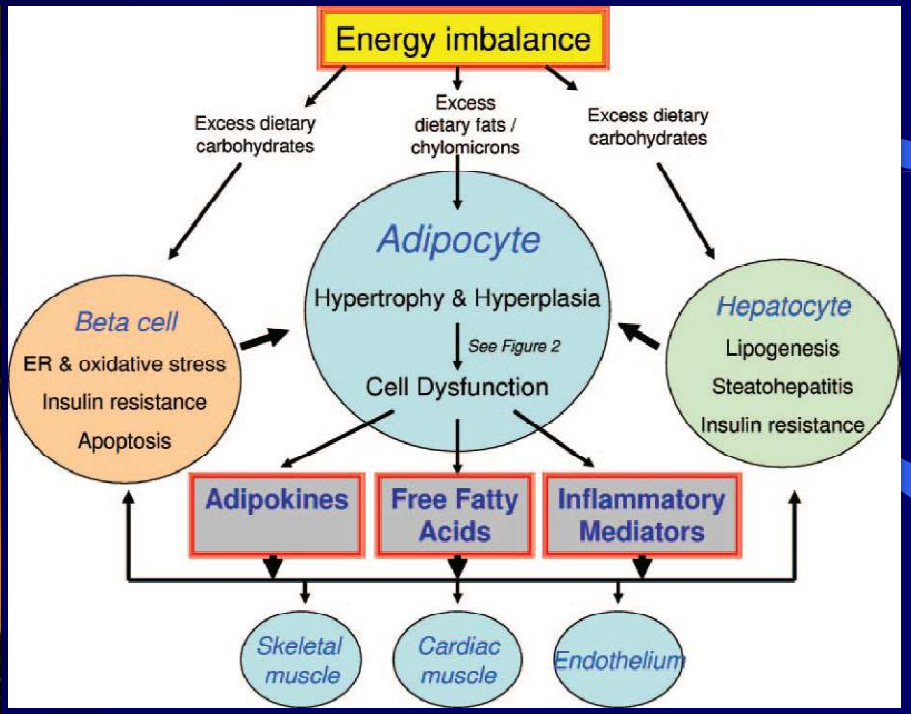


Adapted from NCEP, Adult Treatment Panel III, 2001. *JAMA* 2001:**285**;2486–2497.

The Perfect Storm: Obesity, Adipocyte Dysfunction, and Metabolic Consequences

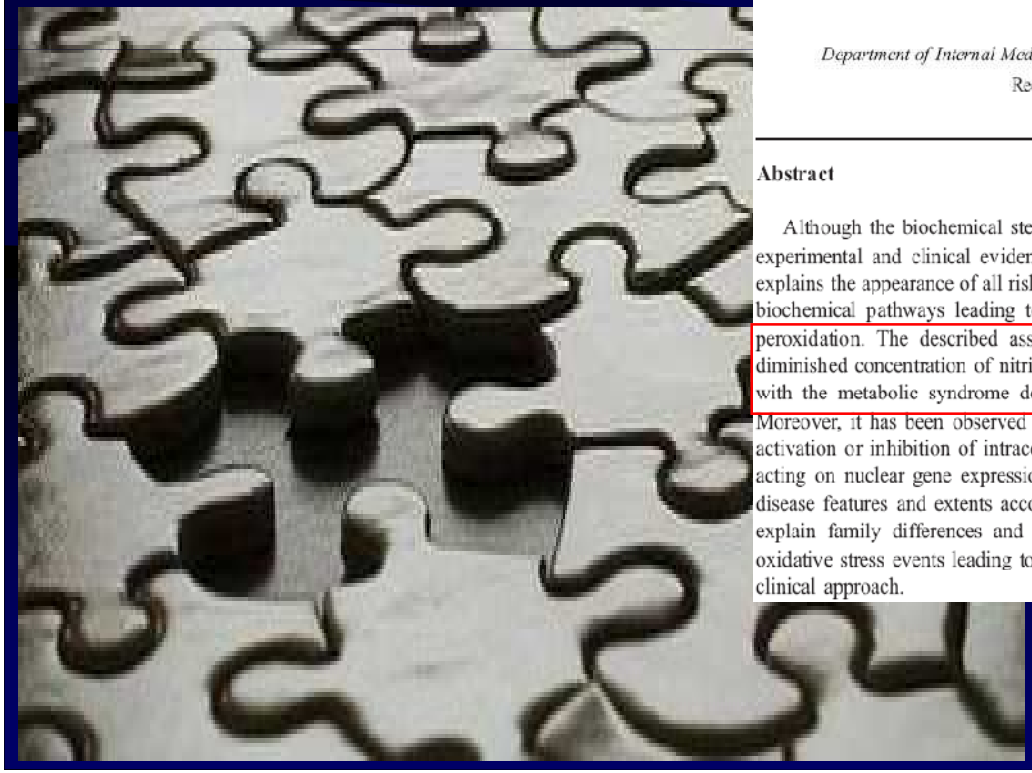
Sarah de Ferranti[1*] and Dariush Mozaffarian[2]





Clinical Chemistry 2008; 54: 945-955

Stress ossidativo Obesità e Sindrome metabolica



Available online at www.sciencedirect.com
ScienceDirect
ELSEVIER
Journal of Nutritional Biochemistry 19 (2008) 491–504
Journal of Nutritional Biochemistry

REVIEWS: CURRENT TOPICS

Oxidative stress-induced risk factors associated with the metabolic syndrome: a unifying hypothesis☆

Ignazio Grattagliano*, Vincenzo O. Palmieri, Piero Portincasa, Antonio Moschetta, Giuseppe Palasciano

Department of Internal Medicine and Public Medicine, University Medical School of Bari, Clinica Medica "A. Murri," 70124 Bari, Italy

Received 12 April 2007; received in revised form 5 June 2007; accepted 18 June 2007

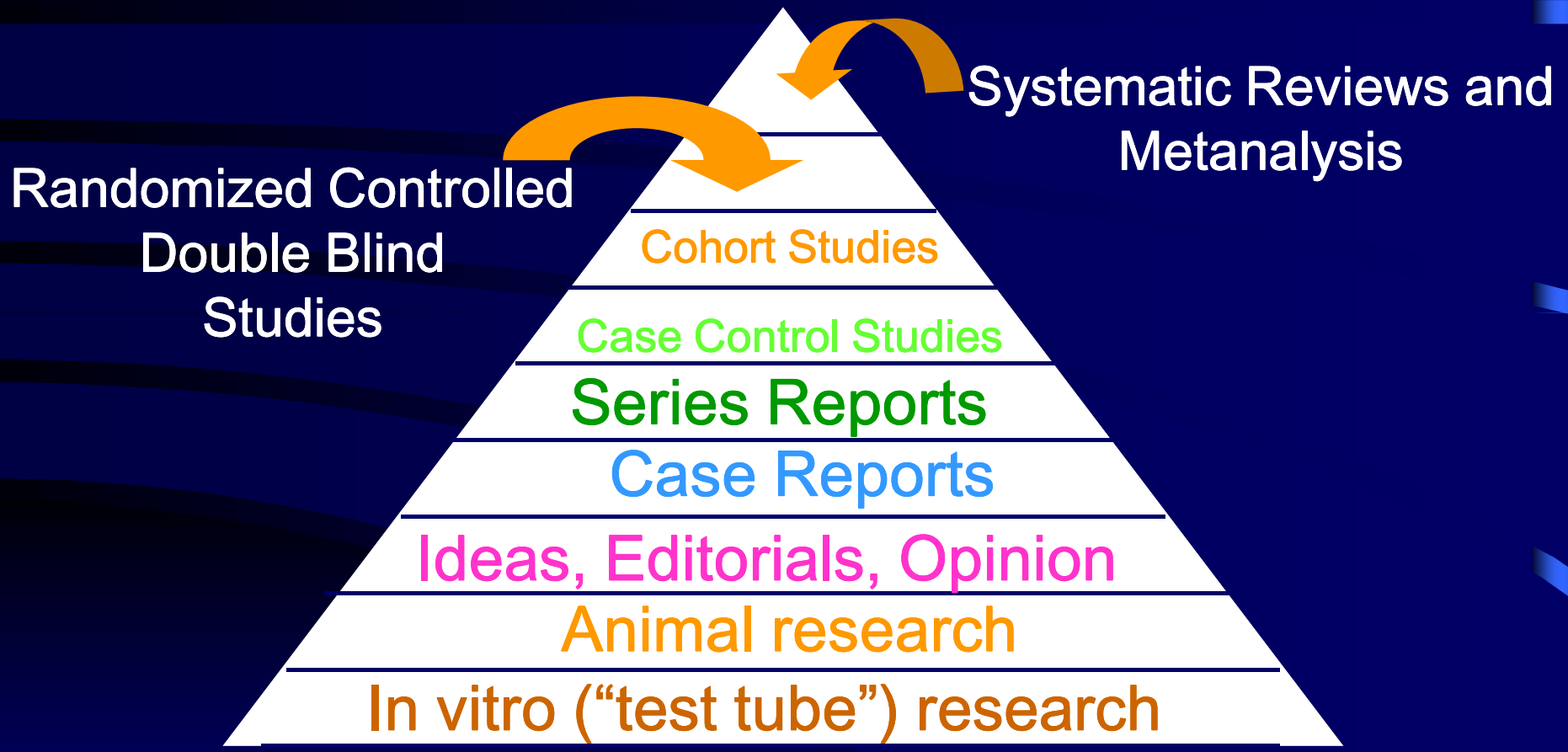
Abstract

Although the biochemical steps linking insulin resistance with the metabolic syndrome have not been completely clarified, mounting experimental and clinical evidence indicate oxidative stress as an attractive candidate for a central pathogenic role since it potentially explains the appearance of all risk factors and supports the clinical manifestations. In fact, metabolic syndrome patients exhibit activation of biochemical pathways leading to increased delivery of reactive oxygen species, decreased antioxidant protection and increased lipid peroxidation. The described associations between increased abdominal fat storage, liver steatosis and systemic oxidative stress, the diminished concentration of nitric oxide derivatives and antioxidant vitamins and the endothelial oxidative damages observed in subjects with the metabolic syndrome definitively support oxidative stress as the common second-level event in a unifying pathogenic view. Moreover, it has been observed that oxidative stress regulates the expression of genes governing lipid and glucose metabolism through activation or inhibition of intracellular sensors. Diet constituents can modulate redox reactions and the oxidative stress extent, thus also acting on nuclear gene expression. As a consequence of the food–gene interaction, metabolic syndrome patients may express different disease features and extents according to the different pathways activated by oxidative stress-modulated effectors. This view could also explain family differences and interethnic variations in determining risk factor appearance. This review mechanistically focused on oxidative stress events leading to individual disease factor appearance in metabolic syndrome patients and their setting for a more helpful clinical approach.

Obesità e sindrome metabolica

La Dieta mediterranea è un valido modello alimentare di prevenzione?

Evidence Based Medicine



Dieta mediterranea
obesità e sindrome metabolica

Adherence to the Mediterranean diet and risk of metabolic syndrome and its components

N. Babio [a], M. Bulló [a,b], J. Basora [a,b,c], M.A. Martinez-González [b,d], J. Fernández-Ballart [b,e], F. Márquez-Sandoval [a], C. Molina [a,b], J. Salas-Salvadó [a,b,*], on behalf of the Nureta-PREDIMED investigators

- 808 soggetti ad alto rischio cardiovascolare
- Un'elevata aderenza alla dieta mediterranea riduce il rischio di sindrome metabolica
- Olio d'oliva associato con la riduzione del rischio

Nutrition, Metabolism & Cardiovascular Diseases (2009) 19, 563–570

Dieta mediterranea ed obesità

obesity reviews doi: 10.1111/j.1467-789X.2008.00503.x

Obesity and the Mediterranean diet: a systematic review of observational and intervention studies

G. Buckland[1], A. Bach[2,3] and L. Serra-Majem[2,4]

- Review sistematica di 21 studi epidemiologici che evidenziano un'associazione della dieta mediterranea con minore sovrappeso/obesità e maggiore calo ponderale

- Problema metodologico: è necessaria una definizione universale di dieta mediterranea per confrontare gli studi

obesity reviews (2008) **9**, 582–593

Dieta mediterranea sindrome metabolica ed obesità

The American Journal of CLINICAL NUTRITION

Mediterranean-style dietary pattern, reduced risk of metabolic syndrome traits, and incidence in the Framingham Offspring Cohort

Marcella E Rumawas, James B Meigs, Johanna T Dwyer, Nicola M McKeown, and Paul F Jacques

- 2730 soggetti del Framingham Heart Study Offspring Cohort

- Associazione della dieta mediterranea con:
  - migliore compenso glicemico e minori livelli d'insulina
  - ↑ HDL e ↓ trigliceridi

Am J Clin Nutr doi: 10.3945/ajcn.2009.27908.

Dieta mediterranea ed obesità

The Journal of Nutrition
Nutritional Epidemiology

Adherence to the Mediterranean Diet Is Associated with Lower Abdominal Adiposity in European Men and Women[1–3]

- Studio multi-centro: 10 nazioni Europee, 497,308 soggetti (70.7% donne), età 25–70.

- Aderenza alla dieta mediterranea associata con riduzione della circonferenza vita

J. Nutr. 139: 1728–1737, 2009.

Dieta mediterranea sindrome metabolica ed obesità: quale meccanismo protettivo?

The American Journal of CLINICAL NUTRITION

Commentary

Are there specific treatments for the metabolic syndrome?[1–3]

Dario Giugliano, Antonio Ceriello, and Katherine Esposito

Conclusioni

La Dieta Mediterranea comprende tutti i desiderabili aspetti ottimali di una dieta: basso tenore di carboidrati semplici, alto tenore in carboidrati complessi e fibre, basso tenore in grassi, principalmente monoinsaturi.

Am J Clin Nutr 2008;87:8–11.

Dieta mediterranea, sindrome metabolica ed obesità: quale meccanismo protettivo?

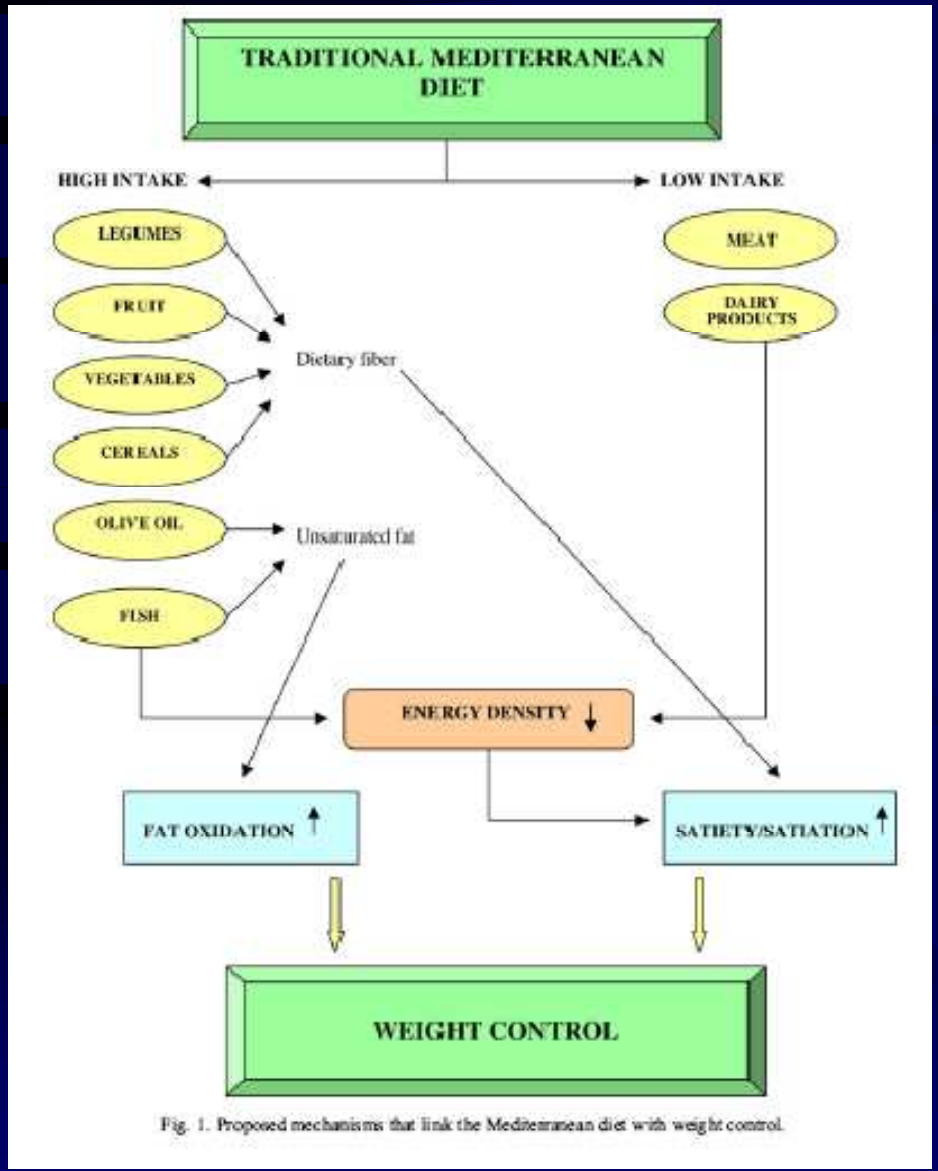


Fig. 1. Proposed mechanisms that link the Mediterranean diet with weight control.

Journal of Nutritional Biochemistry 18 (2007) 149–160

REVIEWS: CURRENT TOPICS

Protective mechanisms of the Mediterranean diet in obesity and type 2 diabetes

Helmut Schröder*

Dieta Mediterranea

- Cosa è la Dieta Mediterranea?
  - *antiche* abitudini alimentari delle popolazioni dei Paesi del Bacino del Mediterraneo
- Legumi, cereali integrali, pesce, frutta e verdure sono alla base della dieta mediterranea
- L'olio di oliva è il condimento ideale e principale, mentre sono scarsamente presenti il burro e altri grassi animali e vegetali





Olio Extra Vergine di Oliva
Cardine della dieta mediterranea

Acido Oleico

- C18:1 ~80% del totale ac. Grassi

Polifenoli

Composti minori (tirosolo, idrossitirosolo, secoiridoidi)

- Contribuiscono alle caratteristiche organolettiche (pungente, amaro)
- Conferiscono stabilità dell'olio anche alle alte temperature
- Prevengono l'irrancidimento
- Spiccate proprietà antiossidanti e antinfiammatorie

Olio Extra Vergine di Oliva

Un moderato consumo è associato con:

- Riduzione di obesità, diabete II e sindrome metabolica (***Schröder J. Nutr. Biochem. 2007 18:149-160***)
- Riduzione della pressione sistolica ***(Bondia-Pos et al. 2007 J Nutr. 18:149-60)***
- Riduzione colesterolo, LDL e trigliceridi ***(Carluccio et al. 2007 Mol. Nutr. Food Res. 51:1225-1234. Cicerale et al. 2009 Crit. Rev. Food Sci. Nutr. 49:218-236.***
- Aumento HDL ***(Gilmeno et al. Br J Nutr. 2007 98:1243-50)***
- Aumento dell'ossidazione postprandiale e della termogenesi indotta ***(Kien et al. 2005 Am. J. Clin. Nutr. 82:320-326; Soares et al. 2004 Br. J. Nutr. 91:245–252)***

Acido Oleico e funzione endoteliale

Mol. Nutr. Food Res. 2007, *51*, 1249 – 1259 DOI 10.1002/mnfr.200600307

Review

Olive oil and the haemostatic system

Jose Lopez-Miranda, Javier Delgado-Lista, Pablo Perez-Martinez, Yolanda Jimenez-Gómez, Francisco Fuentes, Juan Ruano and Carmen Marin

MUFA hanno effetti positivi su vari fattori emostatici che favoriscono coagulazione e aggregazione delle piastrine: Fattore VII, fibrinogeno, trombossani, plasminogeno

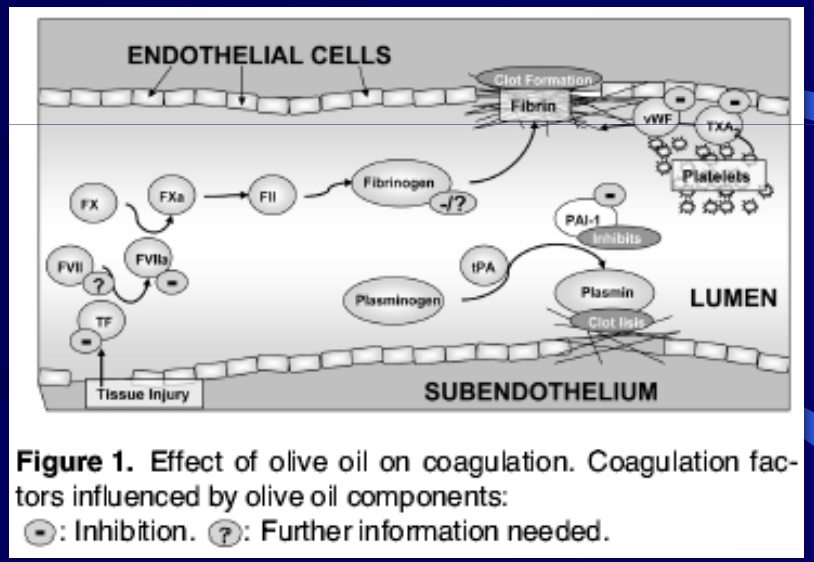


Figure 1. Effect of olive oil on coagulation. Coagulation factors influenced by olive oil components:
⊖: Inhibition. (?): Further information needed.



Mol. Nutr. Food Res. 2007, 51, 1249 – 1259

Acido oleico, Polifenoli, infiammazione e stress ossidativo

• Riduzione dell'ossidazione dell'LDL *(Masella et al. J Nutr. 2004 134:785-91.*

•Riduzione delle citochine proinfiammatorie TNF-α, IL-1, IL-6 *(Vassiliou et al. Lipids Health Dis. 2009; Jiménez-Gómez et al. Atherosclerosis 2009)*

• Inibizione delle ciclossigenasi COX-1 e COX-2 *(Beauchamp et al. Nature. 437:45-46.2005)*



U.S. Food and Drug Administration

FDA News

FOR IMMEDIATE RELEASE
P04-100
November 1, 2004

Media Inquiries: 301-827-6242
Consumer Inquiries: 888-INFO-FDA

FDA Allows Qualified Health Claim to Decrease Risk of Coronary Heart Disease

The Food and Drug Administration (FDA) today announced the availability of a qualified health claim for monounsaturated fat from olive oil and reduced risk of coronary heart disease (CHD).

CONCLUSIONI
Dieta Mediterranea
Patrimonio Culturale dell'Umanità

The Mediterranean diet is officially candidate to become UNESCO heritage

The preservation of Mediterranean agricultural productions, is a priority for Italy

12-03-2008



Rome - **It has been officially presented in Barcelona the nomination of the Mediterranean diet as UNESCO Intangible Cultural Heritage. The application** will be drawn up collectively by Italy, Spain, Greece and Morocco, through working groups that will investigate the different cultural, historical, food and social reasons as well as productivity and landscape aspects that justify it's admission by the UN. The dossier will be closely examined by UNESCO, which, by the end of 2009, will reveal his decisions.

E' necessaria una universale definizione di dieta mediterranea

L'autentica dieta mediterranea ed uno stile di vita adeguato sicuramente prevengono l'insorgenza dell'obesità e delle patologie ad essa correlate

Il paese di Cuccagna
Pieter Bruegel (1525-1569)



"Gli animali si nutrono, l'uomo mangia
e solo l'uomo intelligente sa mangiare"

Anthelme Brillat-Savarin (1755-1826)