LA SINDROME METABOLICA NEL SOGGETTO ANZIANO: ASPETTI EPIDEMIOLOGICI ED IMPLICAZIONI TERAPEUTICHE

Milano 23 Novembre 2012

SOCIETÀ ITALIANA DI GERONTOLOGIA E GERIATRIA

Aspetti terapeutici della sindrome metabolica

Giovanni Zuliani

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Istituto di Medicina Interna, Gerontologia e Nutrizione Clinica
Università di Ferrara

Quale *Outcome* per la terapia della Sindrome Metabolica nel soggetto anziano ?

- Riduzione della mortalità totale ?
- Riduzione della mortalità cardiovascolare ?
- Riduzione della eventi cardiovascolari ?
- Prevenzione diabete ?
- Miglioramento della qualità della vita ?

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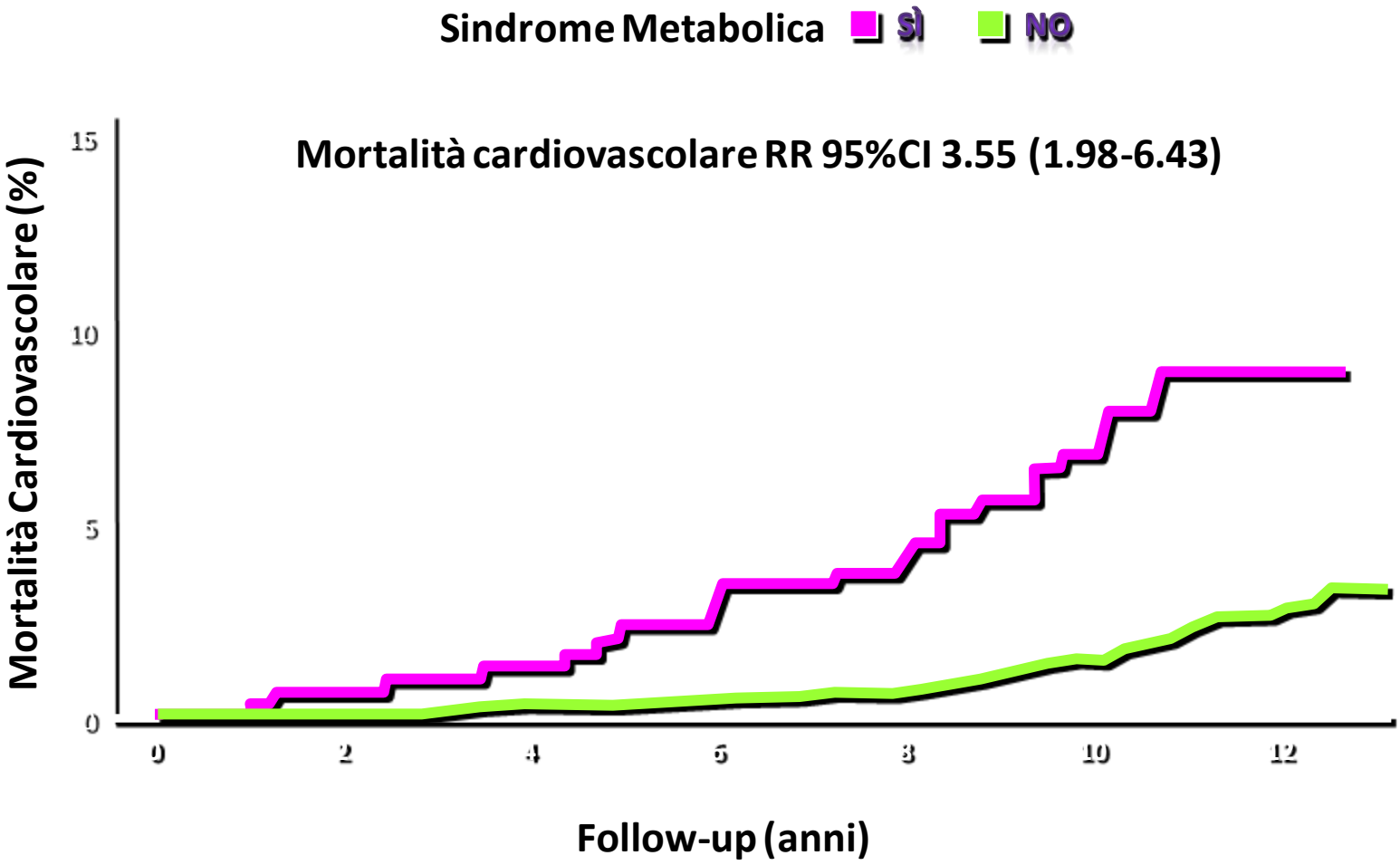
Kuopio Ischemic Heart Disease Risk Factor Study: mortalità cardiovascolare & Sindrome Metabolica



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Lakka HM et al. *JAMA* 2002

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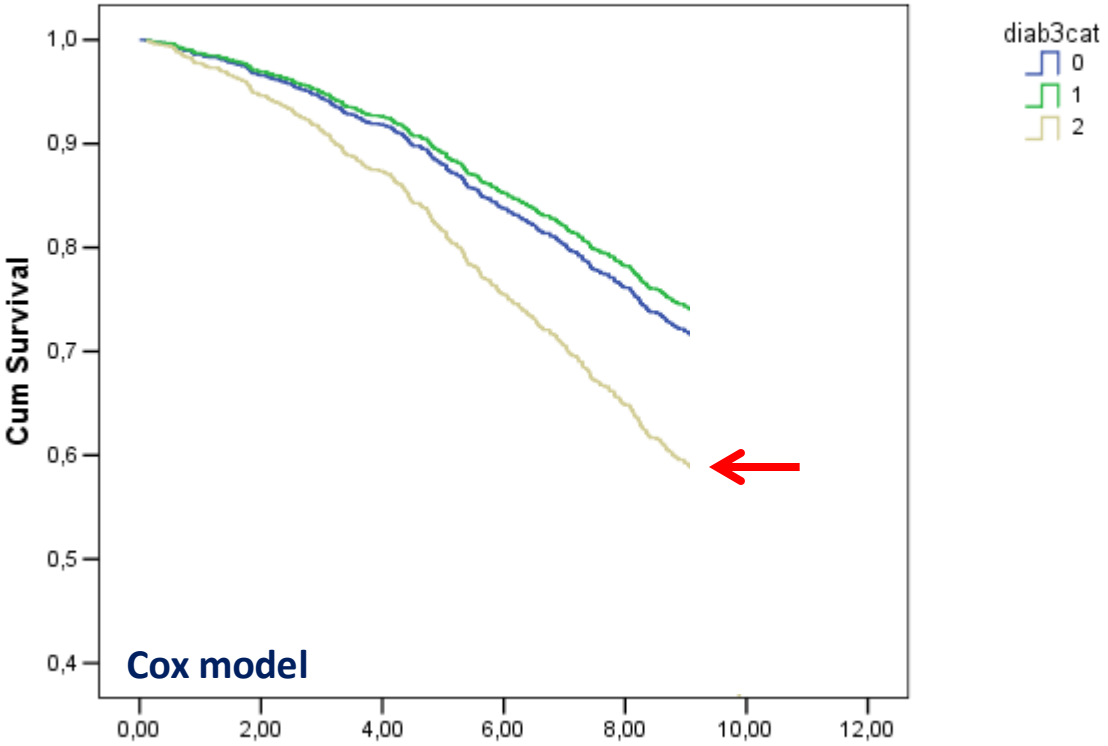
MORTALITA' TOTALE & Diabete mellito

RR: 1.59; IC95%: 1.11-2.26 (Covariate: età, sesso)



G. Zuliani: dati non pubblicati

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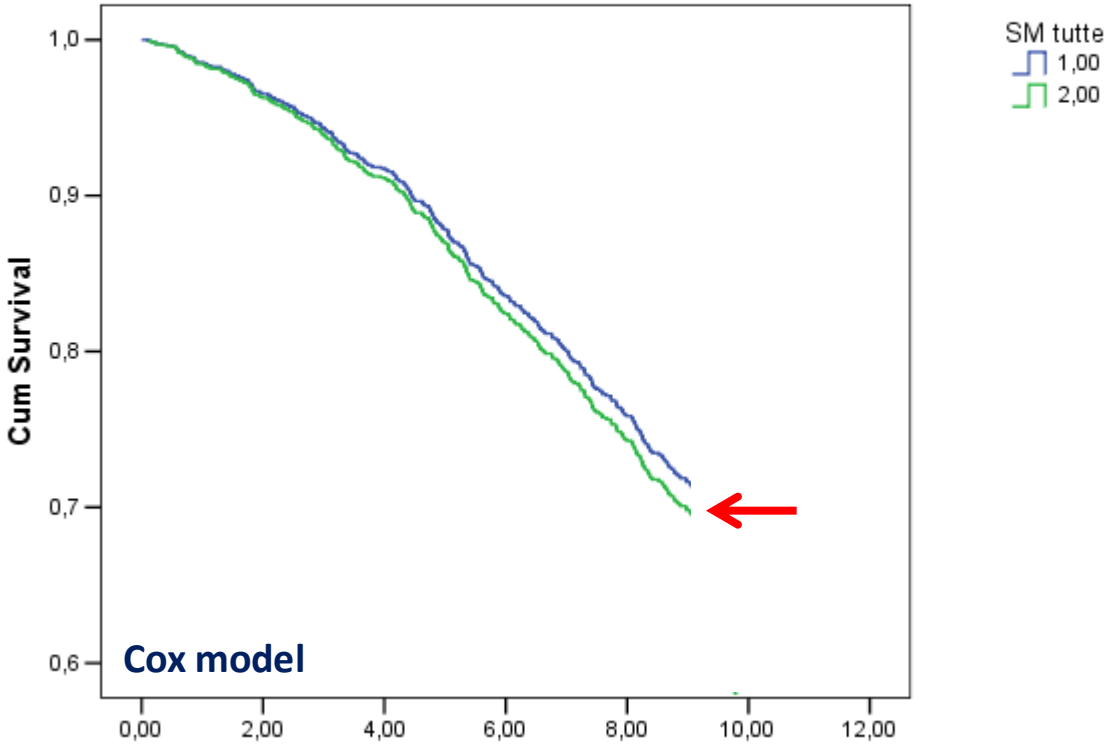
MORTALITA' TOTALE & SM: RR: 1.07; IC95%: 0.86-1.34

(Covariate: età, sesso, diabete)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati

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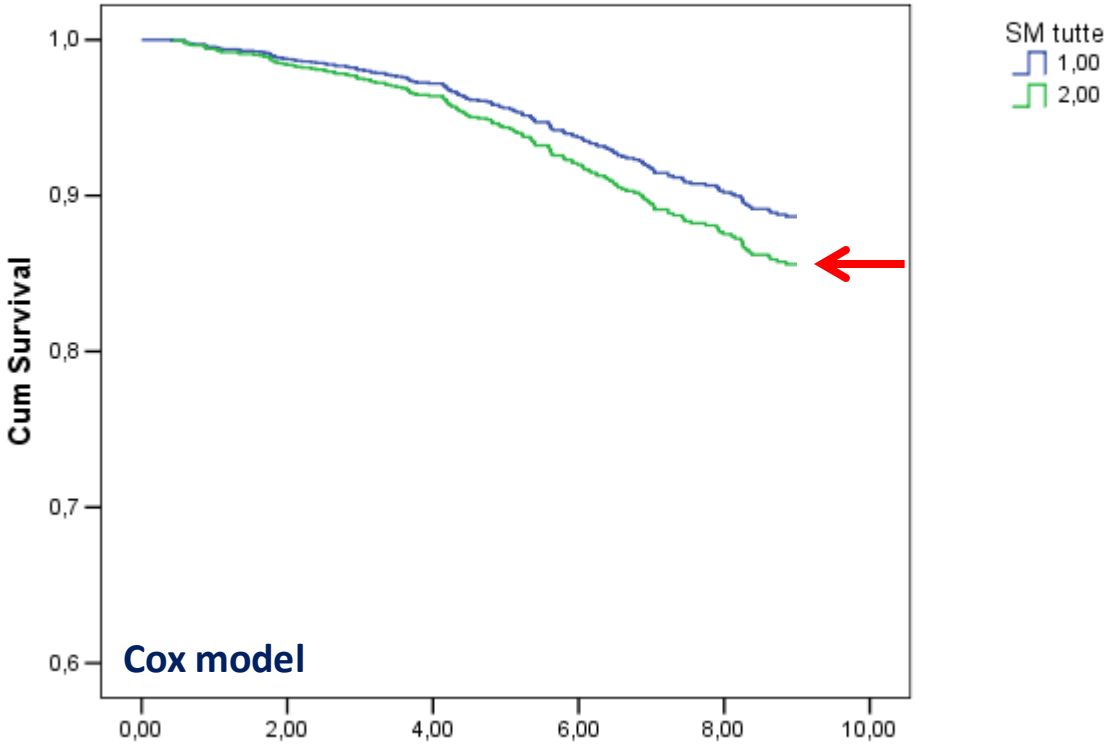
MORTALITA' CARDIOVASCOLARE & SM: RR: 1.29; IC95%: 0.92-1.81

(Covariate: età, sesso, diabete)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati

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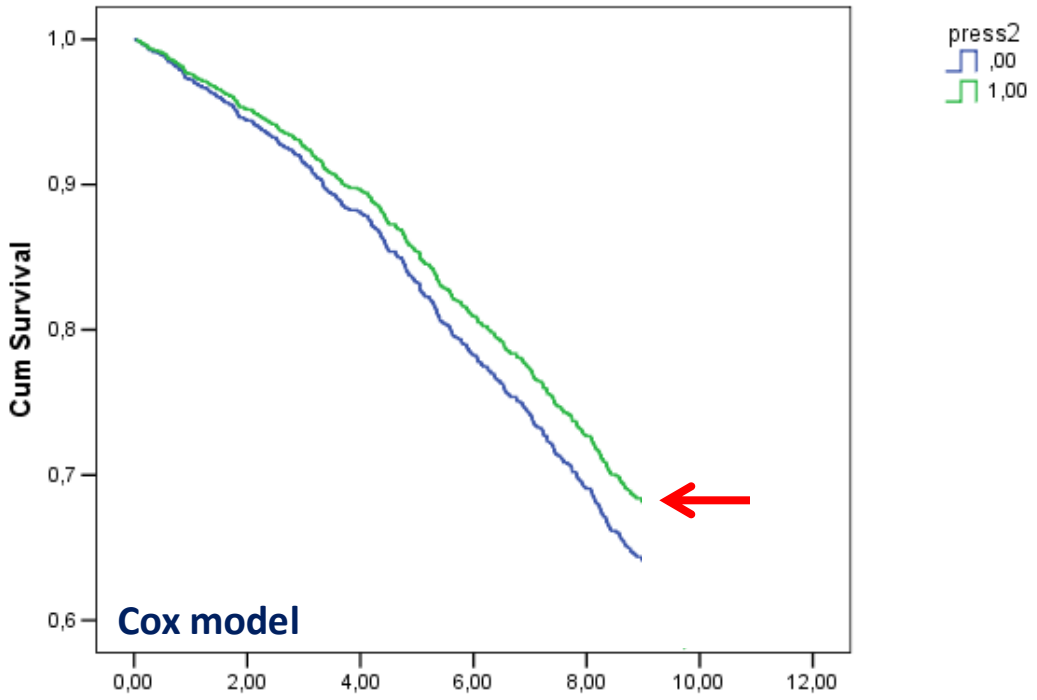
MORTALITA' TOTALE E IPERTENSIONE ARTERIOSA

RR: 0.86; IC95%: 0.64-1.15 (Covariate: età, sesso)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati

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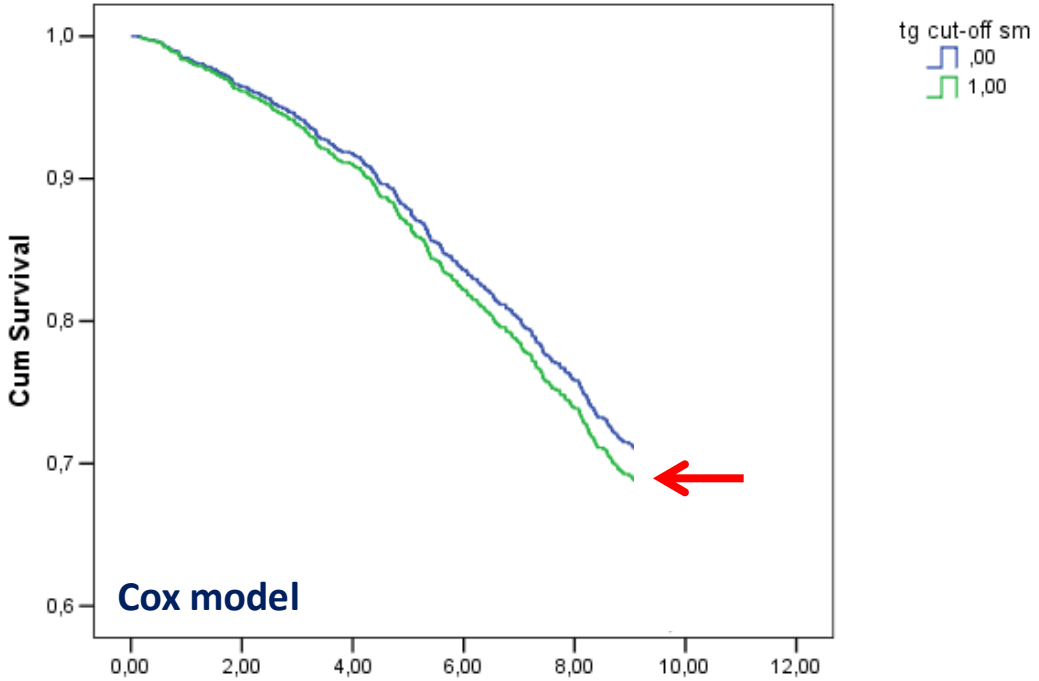
MORTALITA' TOTALE E IPERTRIGLICERIDEMIA

RR: 1.09; IC95%: 0.87-1.37 (Covariate: età, sesso)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati

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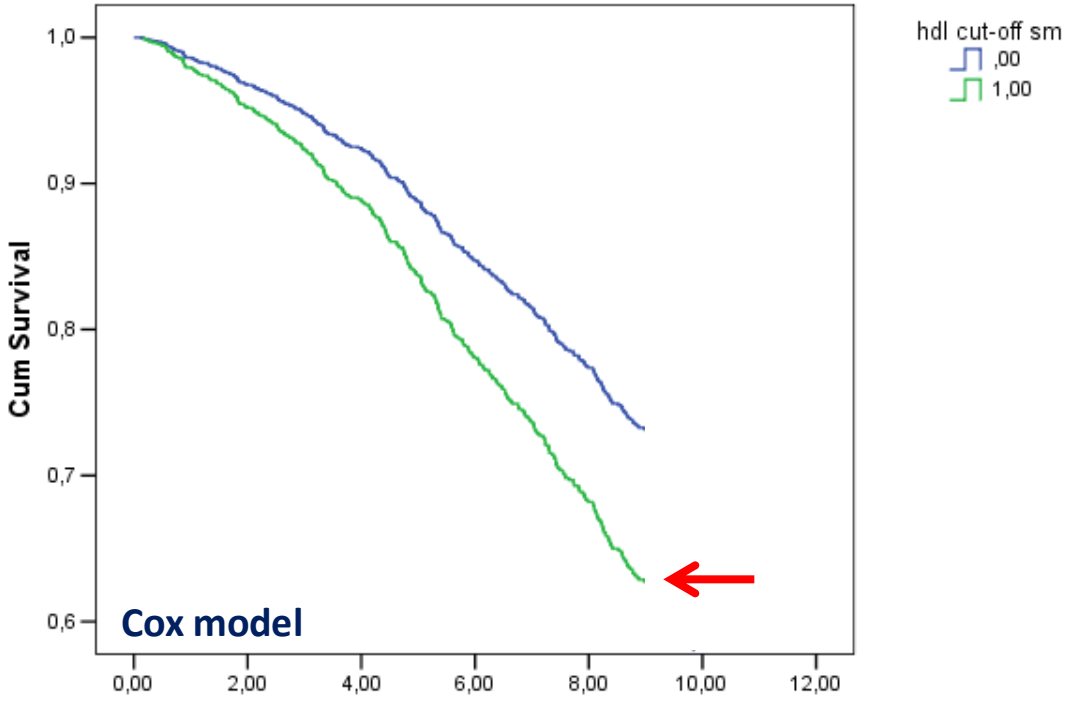
MORTALITA' TOTALE E RIDOTTO COLESTEROLO-HDL

RR: 1.49; IC95%: 1.19-1.86 (Covariate: età)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati

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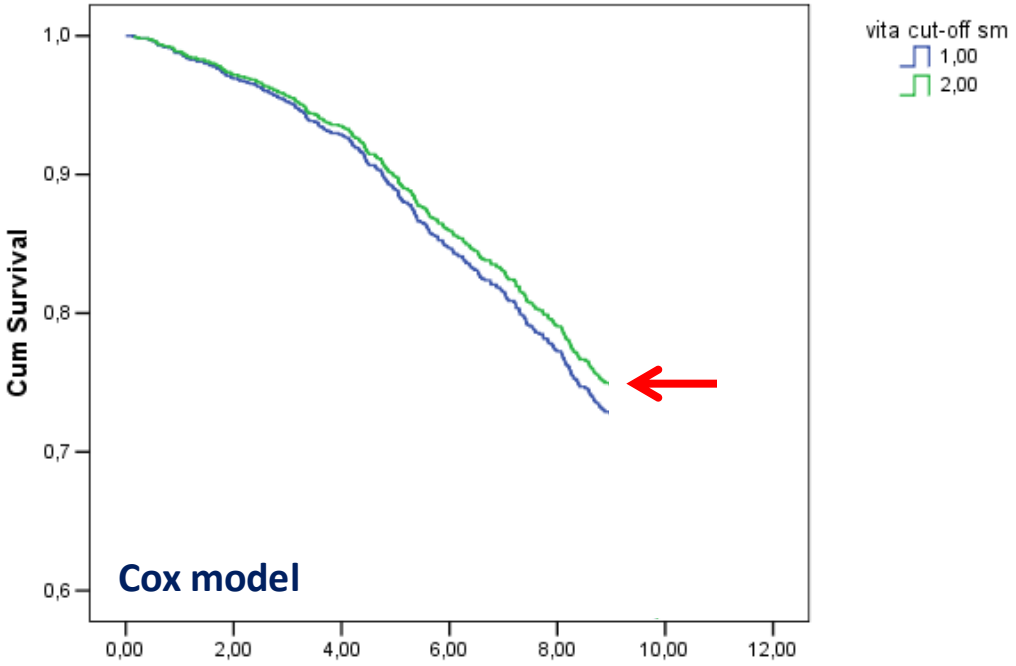
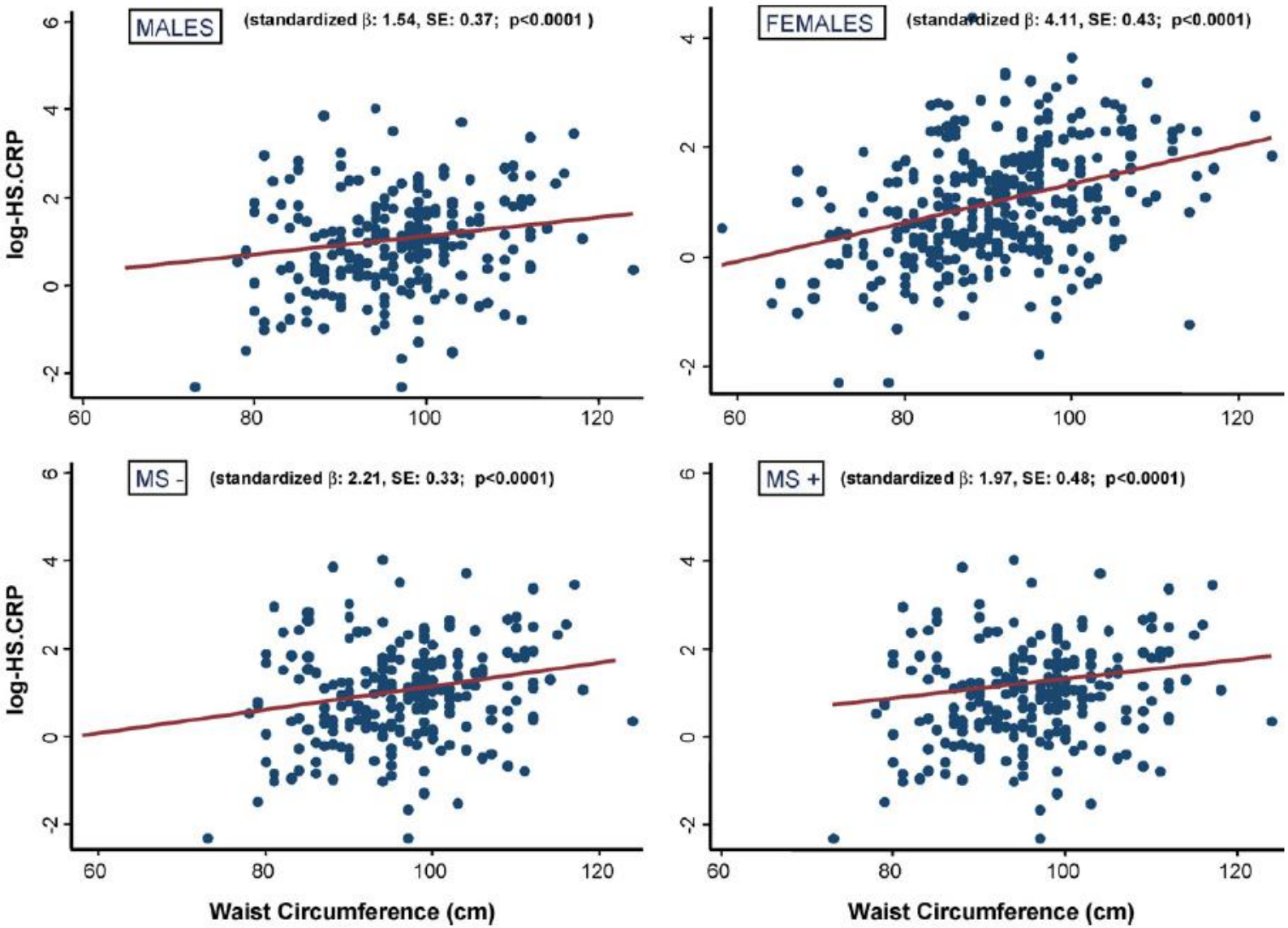
MORTALITA' TOTALE E CIRCONFERENZA VITA

RR: 0.91; IC95%: 0.75-1.13 (Covariate: età)

CRITERI NCEP – ATP III



G. Zuliani: dati non pubblicati



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G. Zuliani et al. Atherosclerosis 2009

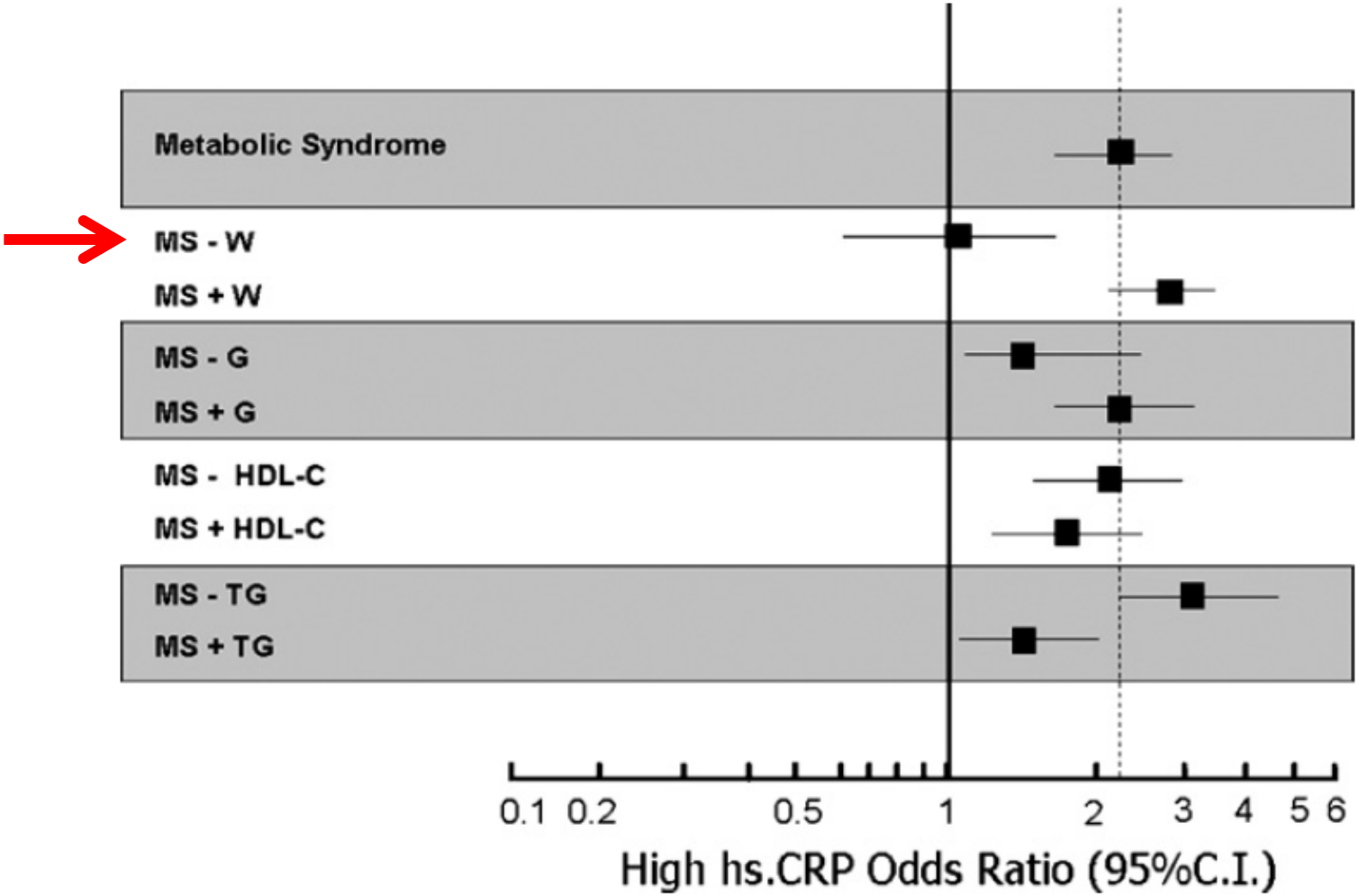

Fig. 1. Age and gender adjusted Odds Ratio (95% CI) for high hs.CRP plasma levels in community dwelling older subjects from the InChianti study with MS, according to absence (–) or presence (+) of single MS components.

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G. Zuliani et al. Atherosclerosis 2009

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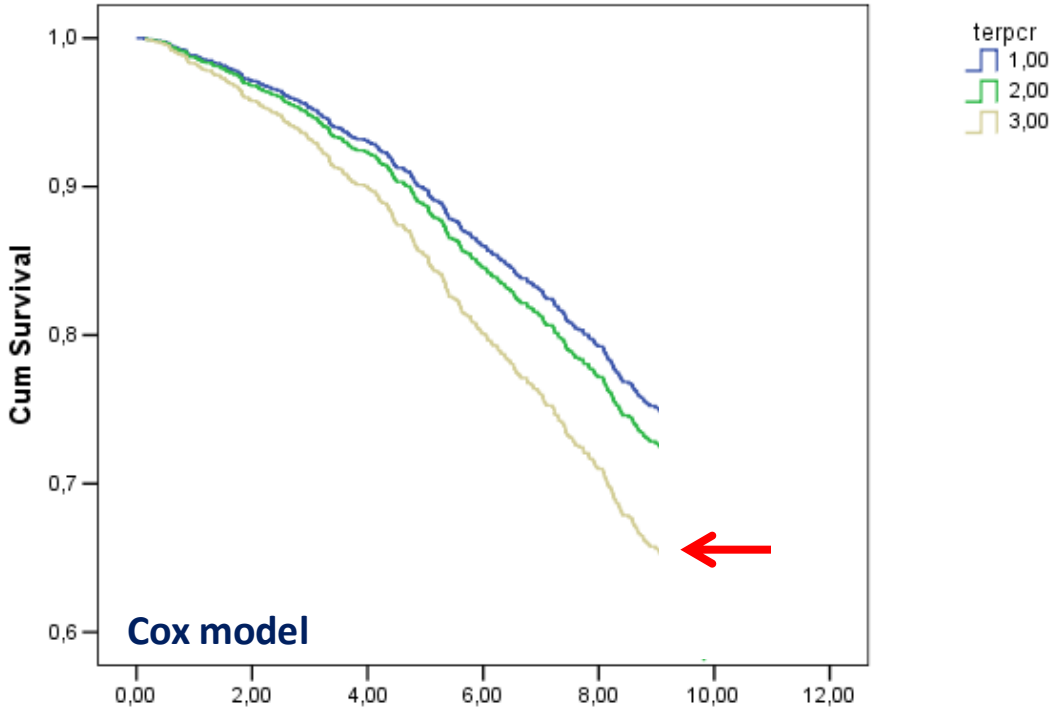
MORTALITA' TOTALE PER TERZILI DI PCR

I vs III: RR: 1.47; IC95%: 1.14-1.90 (Covariate: età, sesso)



G. Zuliani: dati non pubblicati

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Quale *Target* per la terapia della Sindrome Metabolica nel soggetto anziano ?

- Trattamento della Sindrome Metabolica *in toto* (16 fenotipi diversi secondo NCEP ATP III) oppure:
- Controllo pressione arteriosa / glicemia ?
- Riduzione trigliceridemia ?
- Aumento C-HDL ?
- Riduzione valori di PCR ?
- Riduzione insulino-resistenza ?

Quali *Opzioni Terapeutiche* nel soggetto anziano affetto da Sindrome Metabolica ?

- Dieta ?
- Esercizio fisico ?
- Farmaci ?
- Altro ?

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Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association®

AHA/NHLBI Scientific Statement

Diagnosis and Management of the Metabolic Syndrome

An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement

Scott M. Grundy, MD, PhD, Chair; James I. Cleeman, MD, Co-Chair; Stephen R. Daniels, MD, PhD; Karen A. Donato, MS, RD; Robert H. Eckel, MD; Barry A. Franklin, PhD; David J. Gordon, MD, PhD, MPH; Ronald M. Krauss, MD; Peter J. Savage, MD; Sidney C. Smith, Jr, MD; John A. Spertus, MD; Fernando Costa, MD

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Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association

Diagnosis and Management of the Metabolic Syndrome : An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement

Scott M. Grundy, James I. Cleeman, Stephen R. Daniels, Karen A. Donato, Robert H. Eckel, Barry A. Franklin, David J. Gordon, Ronald M. Krauss, Peter J. Savage, Sidney C. Smith, Jr, John A. Spertus and Fernando Costa

Long-Term CVD and Diabetes Prevention: SOLO ANZIANI «GIOVANI» ?

Lifestyle risk factors	Long-term prevention of CVD and prevention (or treatment) of type 2 diabetes mellitus
Abdominal obesity	
Reduce body weight by 7% to 10% during year 1 of therapy. Continue weight loss thereafter to extent possible with goal to ultimately achieve desirable weight (BMI <25 kg/m^2)	Consistently encourage weight maintenance/reduction through appropriate balance of physical activity, caloric intake, and formal behavior-modification programs when indicated to maintain/achieve waist circumference of <40 inches in men and <35 inches in women. Aim initially at slow reduction of ≈7% to 10% from baseline weight. Even small amounts of weight loss are associated with significant health benefits.
Physical inactivity	
Regular moderate-intensity physical activity; at least 30 min of continuous or intermittent (and preferably ≥60 min) 5 d/wk, but preferably daily	In patients with established CVD, assess risk with detailed physical activity history and/or an exercise test, to guide prescription. Encourage 30 to 60 min of moderate-intensity aerobic activity: brisk walking, preferably daily, supplemented by increase in daily lifestyle activities (eg, pedometer step tracking, walking breaks at work, gardening, housework). Longer exercise times can be achieved by accumulating exercise throughout day. Encourage resistance training 2 d/wk. Advise medically supervised programs for high-risk patients (eg, recent acute coronary syndrome or revascularization, CHF).
Atherogenic diet	
Reduced intake of saturated fat, *trans* fat, cholesterol	Recommendations: saturated fat <7% of total calories; reduce *trans* fat; dietary cholesterol <200 mg/dL; total fat 25% to 35% of total calories. Most dietary fat should be unsaturated; simple sugars should be limited.

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Short-term CVD Prevention: TUTTI GLI ANZIANI ?

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association

Diagnosis and Management of the Metabolic Syndrome : An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement

Scott M. Grundy, James I. Cleeman, Stephen R. Daniels, Karen A. Donato, Robert H. Eckel, Barry A. Franklin, David J. Gordon, Ronald M. Krauss, Peter J. Savage, Sidney C. Smith, Jr, John A. Spertus and Fernando Costa

Metabolic risk factors	Shorter-term prevention of CVD or treatment of type 2 diabetes mellitus
Atherogenic dyslipidemia	
Primary target: elevated LDL-C (see Table 4 for details)	Elevated LDL-C (see Table 4 for details)
Secondary target: elevated non-HDL-C	Elevated non-HDL-C
High-risk patients*: <130 mg/dL (3.4 mmol/L) (optional: <100 mg/dL [2.6 mmol/L] for very high-risk patients†)	Follow strategy outlined in Table 4 to achieve goal for LDL-C First option to achieve non-HDL-C goal: Intensify LDL-lowering therapy Second option to achieve non-HDL-C goal: Add fibrate (preferably fenofibrate) or nicotinic acid if non-HDL-C remains relatively high after LDL-lowering drug therapy Give preference to adding fibrate or nicotinic acid in high-risk patients Give preference to avoiding addition of fibrate or nicotinic acid in moderately high-risk or moderate-risk patients All patients: If TG is ≥500 mg/dL, initiate fibrate or nicotinic acid (before LDL-lowering therapy; treat non-HDL-C to goal after TG-lowering therapy)
Moderately high-risk patients‡: <160 mg/dL (4.1 mmol/L)	
Therapeutic option: <130 mg/dL (3.4 mmol/L)	
Moderate-risk patients§: <160 mg/dL (4.1 mmol/L)	
Lower-risk patients‖: <190 mg/dL (4.9 mmol/L)	
Tertiary target: reduced HDL-C	Reduced HDL-C
No specific goal: Raise HDL-C to extent possible with standard therapies for atherogenic dyslipidemia	Maximize lifestyle therapies: weight reduction and increased physical activity Consider adding fibrate or nicotinic acid after LDL-C-lowering drug therapy as outlined for elevated non-HDL-C
Elevated BP	
Reduce BP to at least achieve BP of <140/90 mm Hg (or <130/80 mm Hg if diabetes present). Reduce BP further to extent possible through lifestyle changes.	For BP ≥120/80 mm Hg: Initiate or maintain lifestyle modification in all patients with metabolic syndrome: weight control, increased physical activity, alcohol moderation, sodium reduction, and emphasis on increased consumption of fresh fruits, vegetables, and low-fat dairy products For BP ≥140/90 mm Hg (or ≥130/80 mm Hg for individuals with chronic kidney disease or diabetes): As tolerated, add BP medication as needed to achieve goal BP
Elevated glucose	
For IFG, delay progression to type 2 diabetes mellitus. For diabetes, hemoglobin A_{1C} <7.0%	For IFG, encourage weight reduction and increased physical activity. For type 2 diabetes mellitus, lifestyle therapy, and pharmacotherapy, if necessary, should be used to achieve near-normal HbA1C (<7%). Modify other risk factors and behaviors (eg, abdominal obesity, physical inactivity, elevated BP, lipid abnormalities).
Prothrombotic state	
Reduce thrombotic and fibrinolytic risk factors	High-risk patients: Initiate and continue low-dose aspirin therapy; in patients with ASCVD, consider clopidogrel if aspirin is contraindicated. Moderately high-risk patients: Consider low-dose aspirin prophylaxis
Proinflammatory state	Recommendations: no specific therapies beyond lifestyle therapies

Are there specific treatments for the metabolic syndrome?

Dario Giugliano, Antonio Ceriello, and Katherine Esposito

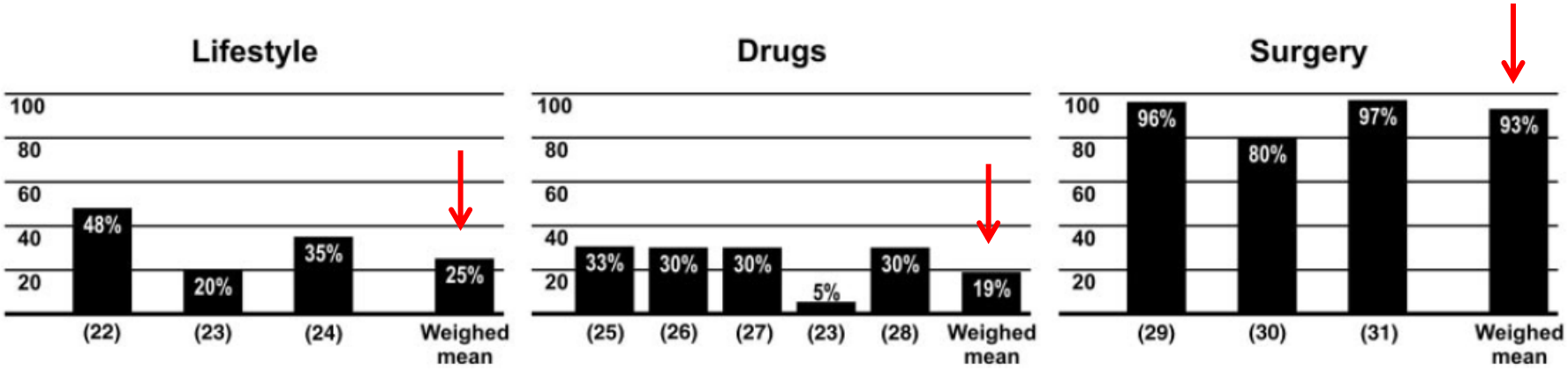

FIGURE 2. Resolution of the metabolic syndrome according to treatment. The numbers within or above the columns represent the percentage resolution after treatment; the numbers below the columns in parentheses indicate the number of studies in the reference list.

5 studies based on drug therapy: 3 with rimonabant, 1 with metformin, and 1 with rosiglitazone

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Am J Clin Nutr 2008; 87:8 –11

Are there specific treatments for the metabolic syndrome?

Dario Giugliano, Antonio Ceriello, and Katherine Esposito

"In theory, the ideal diet should target many, if not all, the dietary components thought to influence the cardiometabolic risk, including all types of fat (saturated, polyunsaturated, monounsaturated, and trans fats), fiber, fish, carbohydrates, and proteins.

Although there is no such "all-inclusive" diet yet, it seems plausible that a ***Mediterranean-style diet*** *has most of the desired attributes, including a lower content of refined carbohydrates, a high content of fiber, a moderate content of fat (mostly unsaturated), and a moderate-to-high content of vegetable proteins".*

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Am J Clin Nutr 2008; 87:8 –11

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Review Article

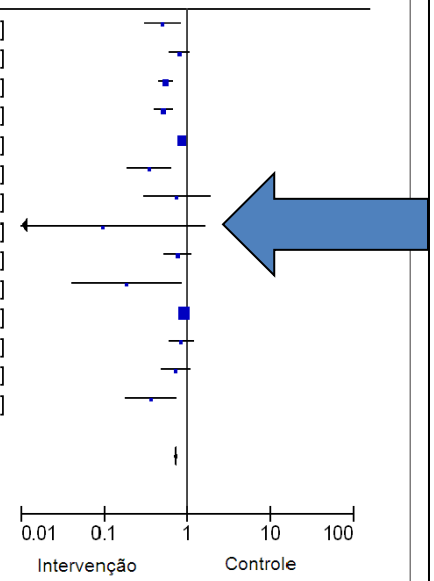
Nutritional Interventions in Metabolic Syndrome A Systematic Review

Leila Sicupira Carneiro de Souza Leão, Milena Miranda de Moraes, Giulia Xavier de Carvalho, Rosalina Jorge Koifman

Universidade Federal do Estado do Rio de Janeiro, FIOCRUZ / Escola Nacional de Saúde Pública, Rio de Janeiro, RJ – Brasil

Study	Intervention Events	Total	Control Events	Total	Weight	Relative Risk M-H, Fixed, 95% CI
Andersen 2007	14	43	22	34	3.2%	0.50 [0.31, 0.83]
Azadbakht 2005	25	38	31	38	4.0%	0.81 [0.61, 1.06]
Bo 2007	59	119	109	120	14.1%	0.55 [0.45, 0.66]
Esposito 2004	40	90	78	90	10.1%	0.51 [0.40, 0.66]
Illane Parikka 2008	154	196	174	190	23.0%	0.86 [0.79, 0.93]
Konig 2008	7	22	8	8	1.6%	0.35 [0.19, 0.63]
Kukkonen 2005	4	10	7	13	0.8%	0.74 [0.30, 1.85]
Mutungi 2007	0	11	3	7	0.5%	0.10 [0.01, 1.61]
Muzio 2007	23	50	30	50	3.9%	0.77 [0.53, 1.12]
Okura 2007	2	38	6	21	1.0%	0.18 [0.04, 0.83]
Salas-Salvado 2008	225	250	245	250	31.8%	0.92 [0.88, 0.96]
Seshadri 2004	14	19	15	17	2.1%	0.84 [0.61, 1.15]
Stewart 2005	13	22	18	22	2.3%	0.72 [0.48, 1.08]
VillaReal 2006	5	15	9	9	1.5%	0.36 [0.18, 0.72]

Relative Risk M-H, Fixed, 95% CI



Note: Katcher 2008 was excluded for failing to provide enough data for relative risk calculation

the systematic review and relevant measures of association.

Leão et al
Nutritional interventions in metabolic syndrome

Review Article

Conclusion

Even taking into account factors that limited this systematic review, it can be concluded that scientific literature supports the beneficial effects of low-calorie diet associated with physical exercise, reinforcing the importance of changing lifestyle in the management of MS.

The Review of DIABETIC STUDIES

REVIEW

Diet, Exercise and the Metabolic Syndrome

Christos Pitsavos[1], Demosthenes Panagiotakos[2], Michael Weinem[3] and Christodoulos Stefanadis[1]

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The Review of Diabetic Studies
Vol. 3 · No. 3 · 2006

Table 1. Summary of selected studies evaluating dietary habits in relation to the metabolic syndrome or associated conditions

Study	Design	Sample and gender	Outcome
Panagiotakos *et al.* [14]	Cross-sectional	3,042 men and women	Decreased risk of having the metabolic syndrome due to Mediterranean diet
Keys *et al.* [20]	Prospective FU: 15 yr	11,579 men	Increased risk of CHD mortality due to saturated fat Decreased CHD risk due to monounsaturated fat
Trichopoulou *et al.* [21]	Prospective FU: 5 yr	182 elderly men and women	Reduced risk of mortality due to Mediterranean diet
De Lorgeril *et al.* [26]	Randomized clinical trial	605 myocardial infarction survivors	Reduced risk of CHD mortality due to Mediterranean diet
Martinez-Gonzalez *et al.* [26]	Case-control FU: 14 yr	171 myocardial infarction patients and 171 controls	Reduced risk of CHD risk due to Mediterranean diet
Trichopoulou *et al.* [28]	Prospective FU: 44 mo	22,043 men and women	Reduced risk of CHD mortality due to Mediterranean diet

nature publishing group

ARTICLES
INTERVENTION AND PREVENTION

Effect of the Mediterranean Diet With and Without Weight Loss on Markers of Inflammation in Men With Metabolic Syndrome

Caroline Richard[1], Patrick Couture[1,2], Sophie Desroches[1] and Benoît Lamarche[1]

SOCIETÀ ITALIANA DI GERONTOLOGIA E GERIATRIA

Obesity (2012) doi:10.1038/oby.2012.148

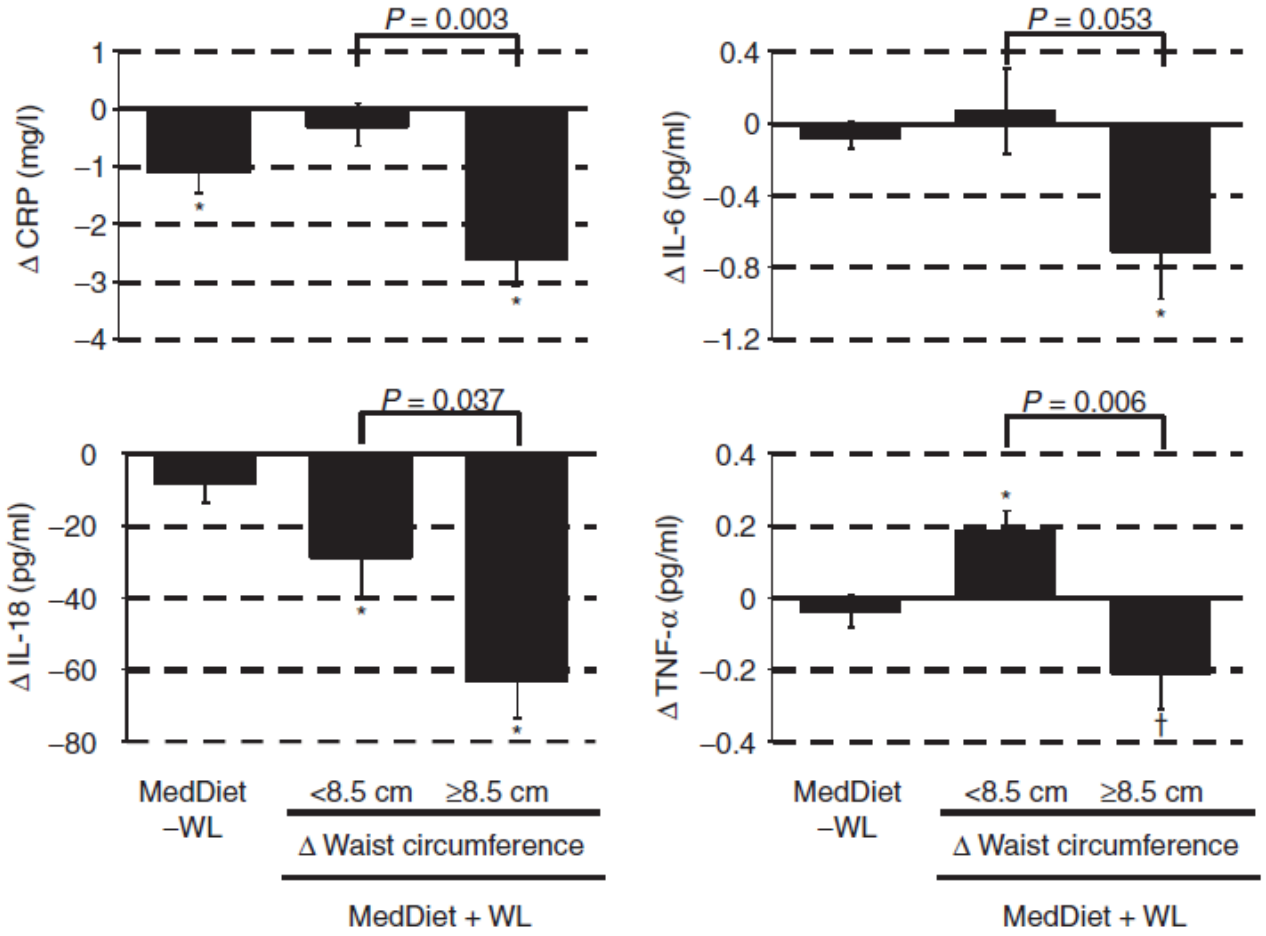

Figure 2 Relative changes from the control diet in CRP concentrations according to the magnitude of change in waist circumference (≥ or<8.5 cm) after weight loss. Statistically significant change compared with the control diet, $^{*}P < 0.05$, $^{\dagger}P = 0.073$. MedDiet – WL: in the absence of weight loss. MedDiet + WL: with weight loss. CRP, C-reactive protein; IL, interleukin; TNF-α, tumor necrosis factor-α; WL, weight loss.

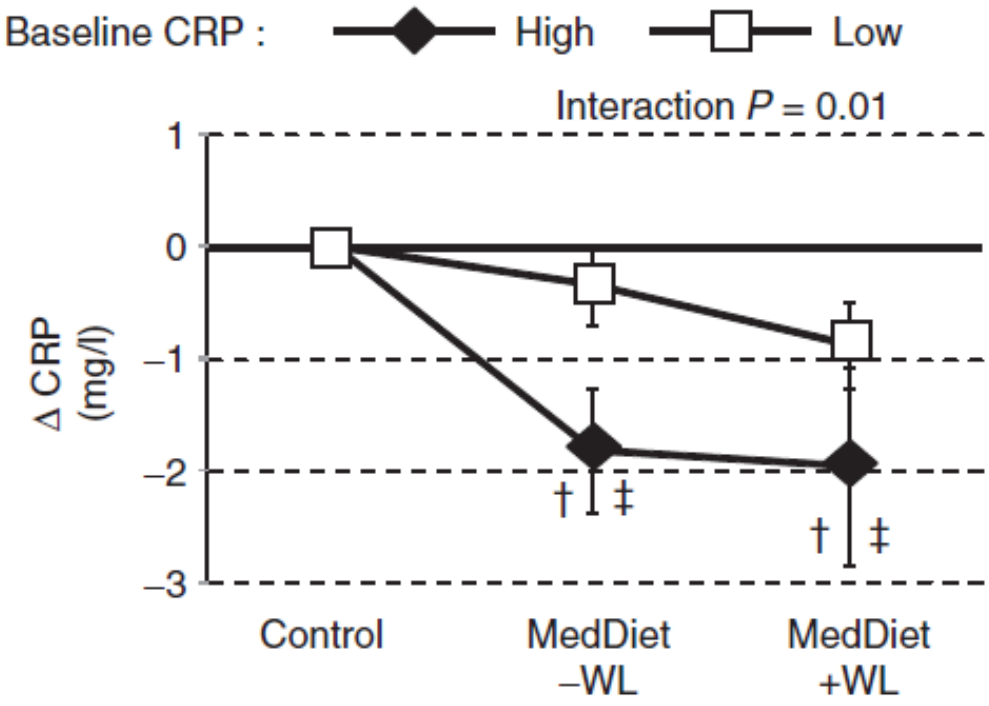

Figure 3 Plasma CRP response to the MedDiet with (+WL) and without weight loss (–WL) according to initial values of CRP. The median value of CRP (3.84 mg/l) measured after the control diet was used to categorize individuals with high or low levels. Statistically significant change compared with the control diet, †$P < 0.05$. Statistically significant change compared with the low CRP group, ‡$P < 0.05$. CRP, C-reactive protein; WL, weight loss.

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Obesity (2012) doi:10.1038/oby.2012.148

Table 2. Summary of studies evaluating physical activity in relation to the metabolic syndrome or associated conditions

Study	Design	Sample and gender	Outcome
Ford *et al.*, 1991 [36]	Prospective FU: 2 yr	492 diabetic men and women	Decreased risk of CHD mortality due to any type physical activity
Kohl *et al.*, 1992 [37]	Prospective FU: 8.2 yr	8,715 men	Decreased risk of mortality in diabetics due to leisure type of physical activity
Da Qing IGT and Diabetes Study, 1997 [63]	Prospective FU: 6 yr	577 men and women with IGT	Decreased risk of developing T2DM due to physical activity and diet
Malmo Preventive Trial, 1998 [62]	Prospective FU: 12 yr	288 men and women with IGT	Decreased risk of developing T2DM due to physical activity and diet
Wein *et al.*, 1999 [64]	Prospective FU: 6 yr	200 men and women with IGT	Decreased risk of developing T2DM due to physical activity and diet
Wei *et al.*, 2000 [38]	Prospective FU: 12 yr	1,263 diabetic men	Decreased risk of mortality due to leisure type of physical activity
Hu *et al.*, 2001 [39]	Prospective FU: 14 yr	5,125 diabetic women	Reduced CVD risk due to leisure type of physical activity
Batty *et al.*, 2002 [40]	Prospective FU: 25 yr	352 diabetic men	Reduced risk of CHD and CVD mortality due to leisure type of physical activity
Tanasescu *et al.*, 2003 [41]	Prospective FU: 14 yr	2,803 diabetic men	Reduced risk of CHD, and CVD mortality and morbidity due to any type of physical activity
Finnish Diabetes Prevention Study, 2001 [42]	Prospective FU: 3.2 yr	522 men and women	Reduced risk of diabetes due to physical activity and diet
Diabetes Prevention Program, 2002 [43]	Prospective FU: 2.8 yr	3,234 obese men and women	Reduced risk of diabetes due to physical activity and diet
Panagiotakos *et al.*, 2004 [14]	Cross-sectional	2,282 men and women	Reduced odds of metabolic syndrome due to any type of physical activity

ded both exercise and diet advice. IGT: impaired glucose tolerance. CHD: coronary heart disease. CVD: cardiovascular disease. FU:

Variable	Aerobic exercise	W. resistance exercise
Glucose metabolism		
Glucose tolerance	↓↓	↓↓
Insulin sensibility	↑↑	↑↑
Seric lipids		
HDL cholesterol	↑↔	↑↔
LDL cholesterol	↓↔	↓↔
Blood pressure in rest		
Systolic	↓↔	↔
Diastolic	↓↔	↓↔
Body composition		
% of fat	↓↓	↓
Body mass free of fat	↔	↑↑
Basal metabolism	↑	↑↑
Muscular strength	↔	↑↑↑
Aerobic capacity		
$\dot{V}O_{2max}$	↑↑↑	↑↔
Time of maximal or submaximal aerobic exercise	↑↑↑	↑↑

↑ = increase on values; ↓ = reduction on values; ↔ = unchanged values; ↑ or ↓ = small effect; ↑↑ or ↓↓ = intermediate effect; ↑↑↑ or ↓↓↓ = large effect; HDL cholesterol = high-density cholesterol; LDL cholesterol = low-density cholesterol.

BMJ

BMJ 2012;345:e4624 doi: 10.1136/bmj.e4624 (Published 12 July 2012)

PRACTICE

GUIDELINES

Risk identification and interventions to prevent type 2 diabetes in adults at high risk: summary of NICE guidance

Hilary Chatterton *technical analyst*[1], Tricia Younger *associate director*[2], Alastair Fischer *technical adviser-health economics*[2], Kamlesh Khunti *professor of primary care diabetes and vascular medicine*[3], on behalf of the Programme Development Group

Intensive lifestyle change programmes for people at high risk

- Offer a quality assured intensive **Programme of Lifestyle Change** that is culturally sensitive and has ongoing tailored support. The programmes should be aimed at encouraging people to:

- Undertake a minimum of 150 minutes of "moderate intensity" physical activity a week
- Gradually lose weight to reach and maintain a BMI within the healthy range
- Increase consumption of whole grains, vegetables, and other foods that are high in dietary fibre
- Reduce the total amount of fat in their diet
- Eat less saturated fat

- These programmes may be delivered to groups of **10-15 people** who meet at least **eight times over 9-18 months**. [*Based on high quality systematic reviews and evidence from randomised controlled trials and follow-up studies*]

- Participants should have at least **16 hours of contact time within a group**, on a one to one basis, or using a mixture of both approaches. [*Based on high quality evidence from randomised controlled trials and follow-up studies*]

BMJ summary of NICE guidance

Intensive lifestyle change programmes for people at high risk

- **Offer follow-up sessions at regular intervals** (for example, every three months) for at least two years after the initial intervention period. For those attending group programmes, larger group sizes may be feasible for these maintenance sessions. [*Based on high quality systematic reviews and evidence from randomised controlled trials and follow-up studies*]

- **Use behavioural change techniques to support lifestyle change.** Prompt participants to set achievable and personally relevant short term and long term goals. For example, a realistic initial target, which would help reduce the risk of type 2 diabetes and provide other health benefits, would be for participants to lose 5-10% of their weight in one year. [*Based on high quality systematic reviews and analyses of randomised controlled trials*]

- **Offer people with a BMI of 30 or more** (27.5 or more if South Asian or Chinese) a **structured weight loss programme** as part of, or a supplement to, the intensive programme of lifestyle change. [*Based on high quality systematic reviews, analyses of randomised controlled trials, and the experience and opinion of the PDG*]

Metformin

- Offer standard release metformin to support lifestyle change for adults who are at high risk and:
  - Whose fasting plasma glucose or **HbA1c** shows they are still progressing towards type 2 diabetes **despite participation in an intensive programme of lifestyle change,** or
  - Who are **unable to participate in such programmes because of a disability or for medical reasons.** *[Based on high quality evidence from randomised controlled trials]*

- Continue to offer **advice on diet and physical activity** along with support to achieve their lifestyle and weight loss goals. *[Based on high quality evidence from randomised controlled trials]*

- Start with a low dose (**500 mg once daily**) and then increase gradually as tolerated to 1500-2000 mg daily. If the person is intolerant of standard metformin consider using modified release metformin. *[Based on the experience and opinion of the PDG]*

- Prescribe metformin **for 6-12 months initially**. Monitor fasting plasma glucose or HbA1c at three monthly intervals and stop the drug if no effect is seen. *[Based on the experience and opinion of the PDG]*

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INSUFFICIENZA RENALE
INSUFFICIENZA EPATICA
(RISCHIO DI ACIDOSI)

BMJ summary of NICE guidance

Obesity Facts
The European Journal of Obesity

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Review Article

Prevalence, Pathophysiology, Health Consequences and Treatment Options of Obesity in the Elderly: A Guideline

Elisabeth M.H. Mathus-Vliegen[a] on behalf of the Obesity Management Task Force (OMTF) of the European Association for the Study of Obesity (EASO); members: Arnaud Basdevant[b] Nick Finer[c] Vojtech Hainer[d] Hans Hauner[e] Dragan Micic[f] Maximo Maislos[g] Gabriela Roman[h] Yves Schutz[i] Constantine Tsigos[j] Hermann Toplak[k] Volkan Yumuk[l] Barbara Zahorska-Markiewicz[m]

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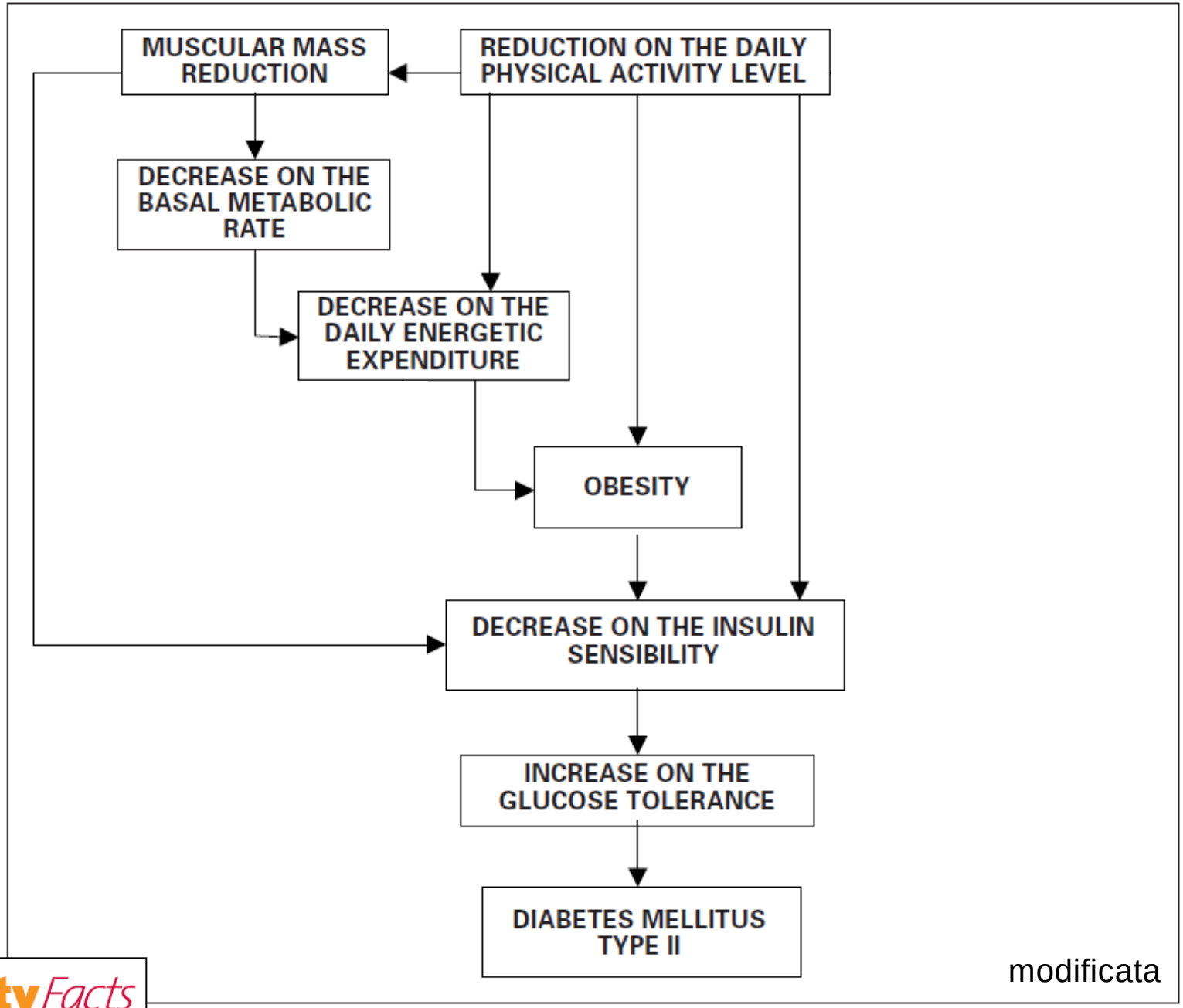

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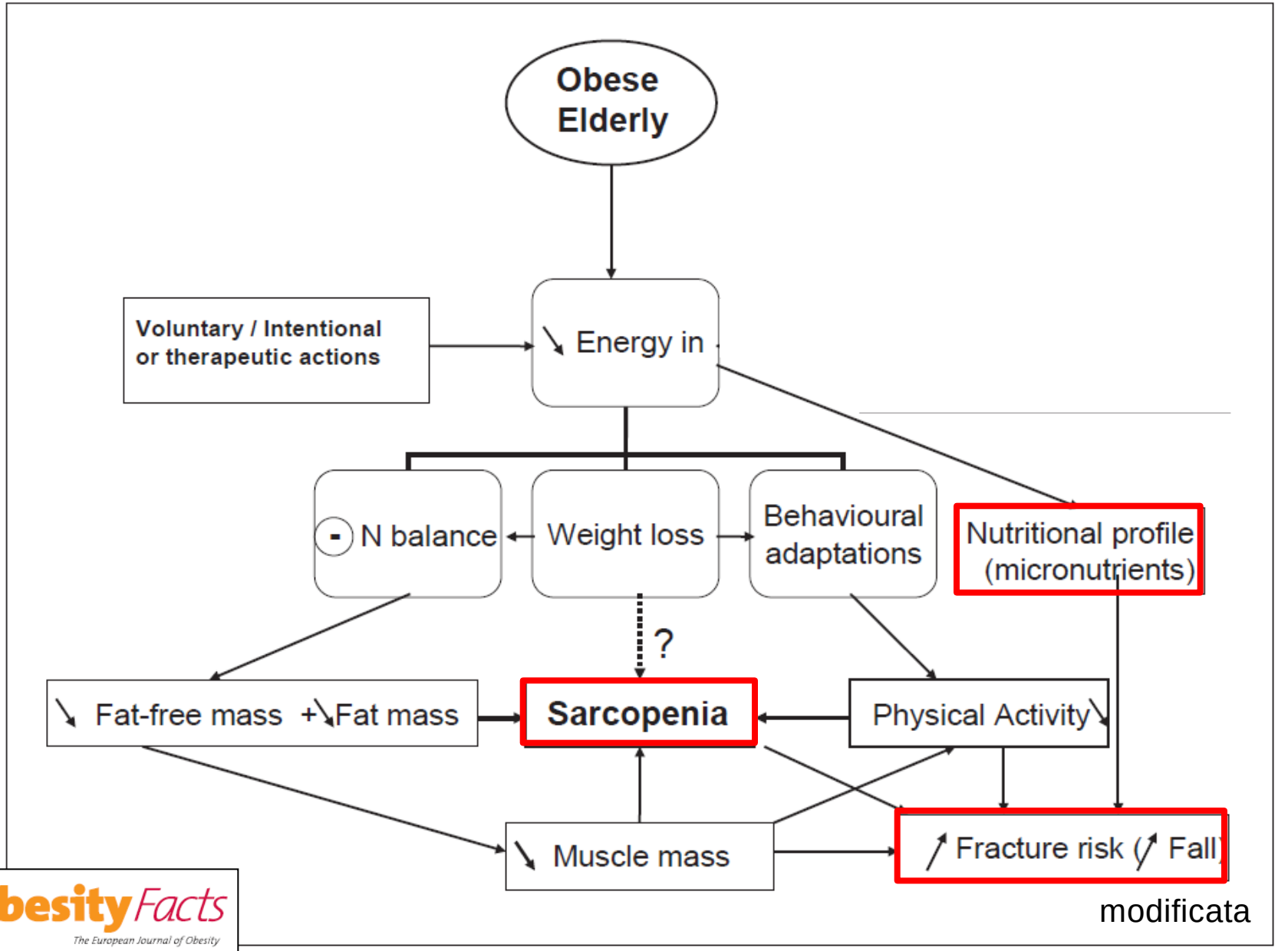
Obesity Facts
The European Journal of Obesity

Potenziali effetti negativi della perdita di peso nell'anziano



Potenziali benefici e rischi nella perdita di peso nell'anziano

Benefits	Risks
Reduced risk for developing type 2 diabetes in subjects with impaired glucose tolerance	Potentially increased mortality risk with unintentional weight loss and less with intentional weight loss
Improved glycaemic, lipid and blood pressure control, reduced cardiovascular risk	Loss of muscle mass (sarcopenia) if not combined with regular exercise
Possibly reduced mortality risk from cardiovascular disease with intentional weight loss	Loss of mineral bone density, osteoporosis, and increased risk of fractures
Improved respiratory function and obstructive sleep apnoea control	Increased risk of specific protein and vitamin deficiencies
Improved functional capacity and ability of activities of daily living, reduced musculoskeletal co-morbidities	Increased risk of gallstone formation and cholecystitis (only in rapid weight loss)
Improved depressive symptoms, sense of well-being and quality of life	

Obesity Facts
The European Journal of Obesity

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Farmaci potenzialmente associati a incremento ponderale nell'anziano

Medication group	Medication causing weight gain	Alternative medication
Treatment for diabetes	sulfonylureas thiazolidinediones meglitines insulin	α-glucosidase inhibitor metformin DDP-4 inhibitors GLP-1 receptor agonists
Antidepressants	tricyclic antidepressants mono-amine oxidase inhibitors selective serotonine reuptake inhibitors (paroxetine)	fluoxetine sertraline
Antipsychotics	clozapine risperidon olanzapine	no alternatives
Anticonvulsants	valproic acid carbamazepine	topiramate
Antihypertensive drugs	β-blockers	ACE inhibitors

Obesity Facts
The European Journal of Obesity

Body composition and mortality risk in later life

Fredrik Toss[1,2,3], Peder Wiklund[1,2,3], Peter Nordström[1,2], Anna Nordström[1,3]

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[2]Geriatric Medicine – Department of Community Medicine and Rehabilitation, Umeå, Sweden
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Abstract

Background: body mass index is used widely to define overweight and obesity. Both high and low body mass indices are associated with increased mortality risk during middle age, but the relationship is less clear in later life. Thus, studies on the relationships between other aspects of body composition and mortality among older subjects are needed.
Objective: to investigate associations between different aspects of body composition and mortality in older people.
Methods: the study population comprised 921 participants aged ≥65 years who underwent dual-energy X-ray (DXA) absorptiometric examination at the Sports Medicine Unit, Umeå University. The main reason for admission was clinical suspicion of osteoporosis. Total, abdominal and gynoid fat masses and lean body mass were measured by DXA absorptiometry at baseline, and the cohort was followed (mean duration, 9.2 years) for mortality events.
Results: during follow-up, 397 participants died. Lean mass was associated negatively with mortality in men and women ($P < 0.001$). Total fat mass showed a U-shaped association with mortality in men ($P < 0.01$) and a negative association in women ($P < 0.01$). A higher ratio of abdominal to gynoid fat mass increased mortality risk in women ($P = 0.04$), but not in men ($P = 0.91$).
Conclusions: lean mass is associated strongly with survival in older subjects. Greater fat mass is protective in older women, whereas very low or very high fat mass increases the risk of death in men. Further research is needed to better understand the mechanisms underlying these associations.

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Review

A systematic review of body fat distribution and mortality in older people

Su-Hsin Chang*, Tracey S. Beason, Jean M. Hunleth, Graham A. Colditz

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ABSTRACT

We conducted a systematic review investigating body fat distribution in older adults and its association with morbidity and mortality. Our search yielded 2702 citations. Following three levels of screening, 25 studies were selected to evaluate the association between body fat distribution and comorbidity, and 17 studies were used in the mortality analysis. Most of the selected studies in our analyses used anthropometric measures, e.g., body mass index (BMI), waist circumference, and waist–hip ratio; relatively few studies used direct measures, such as body fat/lean mass, and percentage body fat. Studies reported inconsistent findings regarding the strongest predictor(s) of morbidity and mortality. However, the majority of studies suggested that BMI per se was not the most appropriate predictor of morbidity and mortality in the elderly because of its inability to discern or detect age-related body fat redistribution. In addition, studies using BMI found that the optimal BMI range for the lowest mortality in the elderly was overweight ($25\,kg/m^2 \leq BMI < 30\,kg/m^2$) or mildly obese ($30\,kg/m^2 \leq BMI < 35\,kg/m^2$). Our findings suggest that the current clinical guidelines, recommending that overweight and obesity are major risk factors for increased morbidity and mortality are not applicable to this population. Therefore, the central message of this review is to advise the government to establish new guidelines specifically for this population, using a combination of body fat distribution measurements, and to certify that these guidelines will not be applied to inappropriate populations.

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Guest Editorial

Insulin Resistance and Aging: A Cause or a Protective Response?

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«… Because insulin resistance is an evolutionary conserved mechanism, it is possible that while insulin resistance is associated with harmful effects, it is also a primarily protective mechanism against some dangerous threat to life homeostasis … In mammalians, in the face of increased nutrient availability, insulin resistance may be necessary to limit glucose uptake in muscle cells where glycogen and lipid stores are already saturated. Indeed, further "fuel" provision to muscle mitochondria may clutter an already dysfunctional electron transportation chain and increase reactive oxygen species production that could be viewed as a powerful antioxidant mechanism …"

Rapporto rischio/beneficio nel trattamento della SM nella popolazione geriatrica

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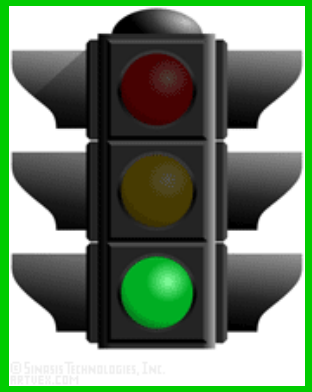
ANZIANO		
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Rapporto rischio/beneficio nel trattamento della SM nella popolazione geriatrica

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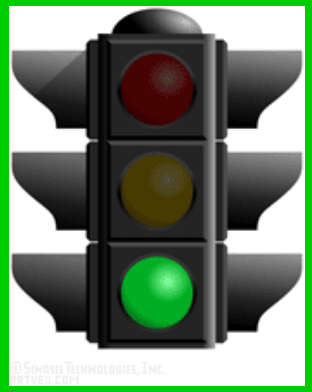
ANZIANO		
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Rapporto rischio/beneficio nel trattamento della SM nella popolazione geriatrica

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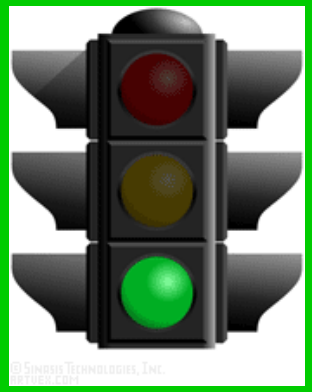
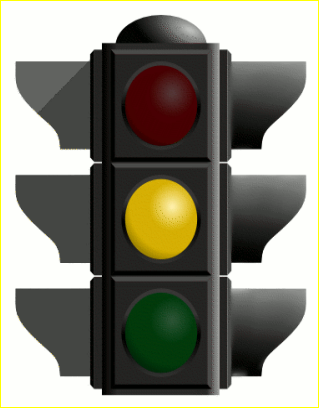
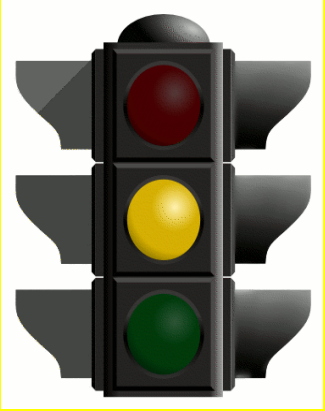
ANZIANO		
GRANDE VECCHIO		

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Aspetti terapeutici della sindrome metabolica: tentativo di conclusioni

- Il significato prognostico della SM può essere diverso nel soggetto anziano rispetto all'adulto; vi è inoltre maggiore eterogeneità inter-individuale. E' fondamentale valutare il rapporto rischio/beneficio nel singolo soggetto (condizioni generali di salute, comorbidità, spettanza di vita).
- Oltre al controllo farmacologico dei singoli fattori di rischio, dieta mediterranea, riduzione/controllo del tessuto adiposo addominale, attività fisica moderata aerobica (e in casi ben selezionati: metformina) possono costituire i cardini del trattamento della SM.
- Estrema cautela deve essere posta nel prescrivere una dieta ipocalorica e una riduzione del peso corporeo nell'anziano.

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CASTELLO SFORZESCO, MILANO

CASTELLO ESTENSE, FERRARA

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