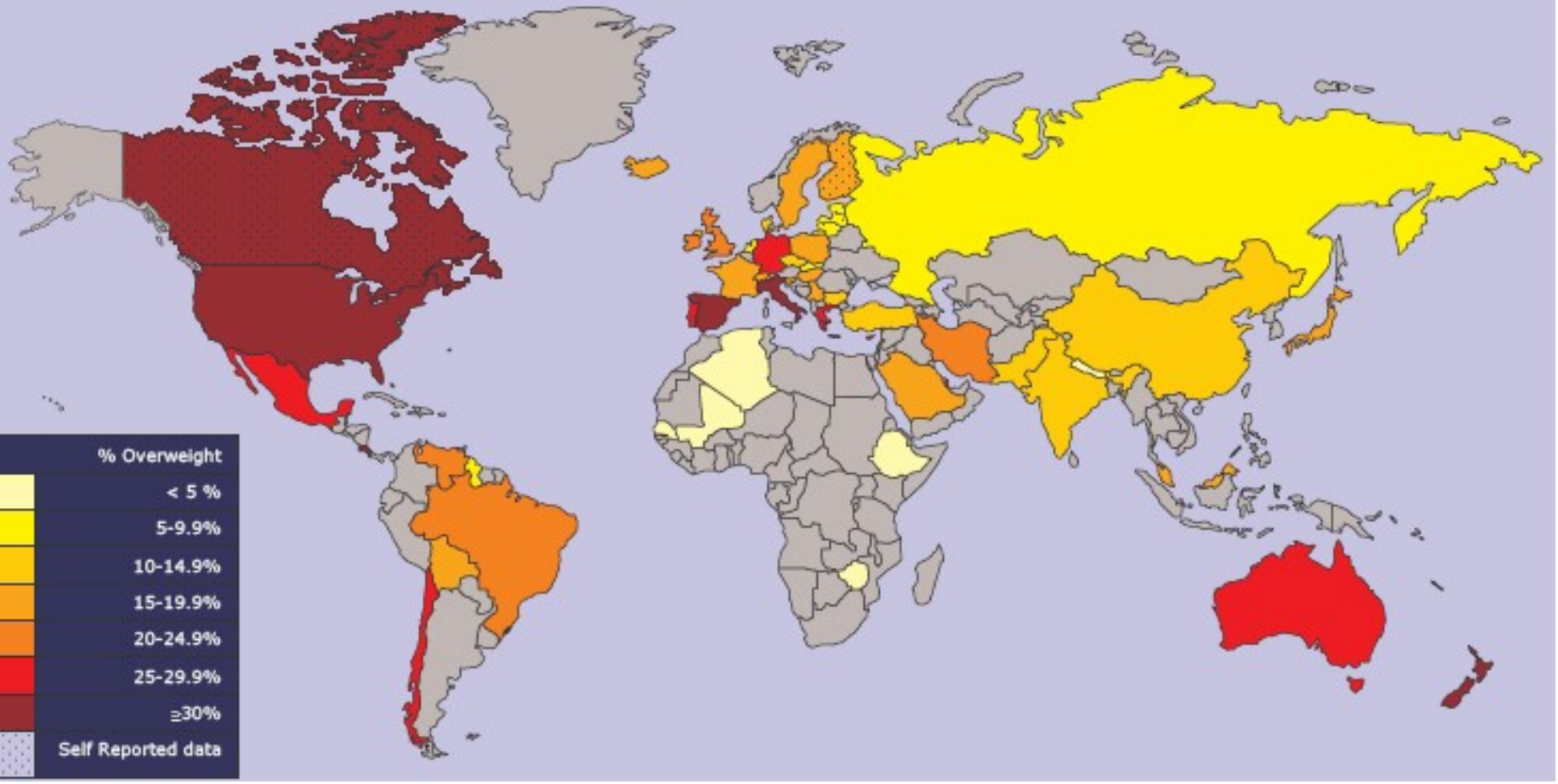
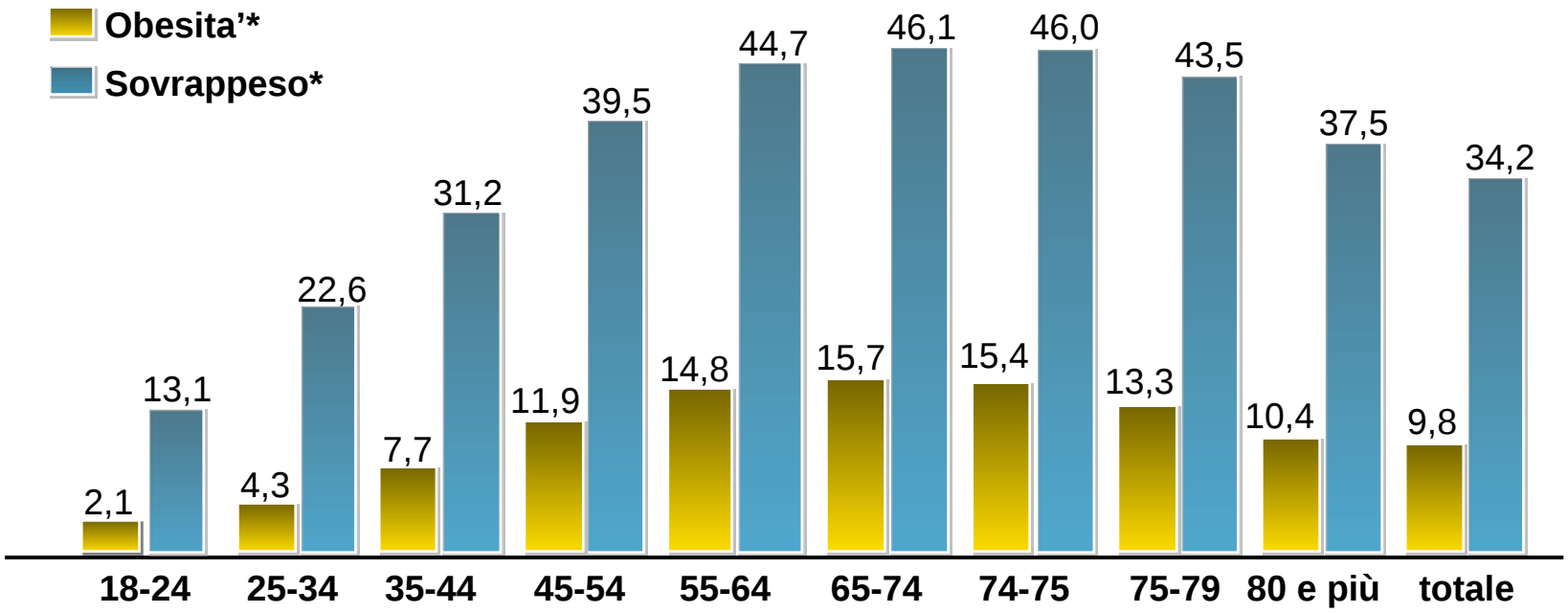
Classificazione degli Stadi Ponderali

	BMI
Sottopeso	<18.5
Normopeso	18.5-24.9
Sovrappeso	25-29.9
Obesità I grado	30-34.9
Obesità II grado	35-39.9
Obesità III grado	>=40

Global Prevalence of Overweight in Boys
2000-2006



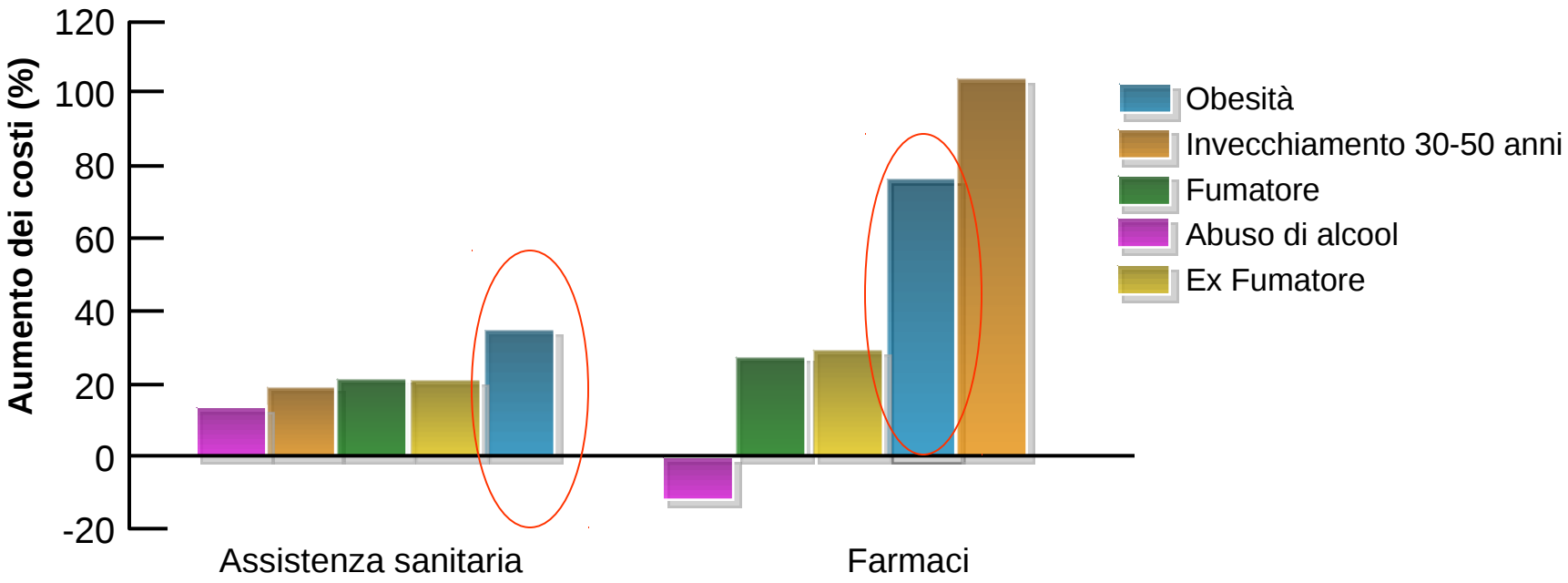
Distribuzione di obesità e sovrappeso in Italia per classi di età



**Per 100 persone dello stesso sesso e classe di età*

ISTAT, 2007

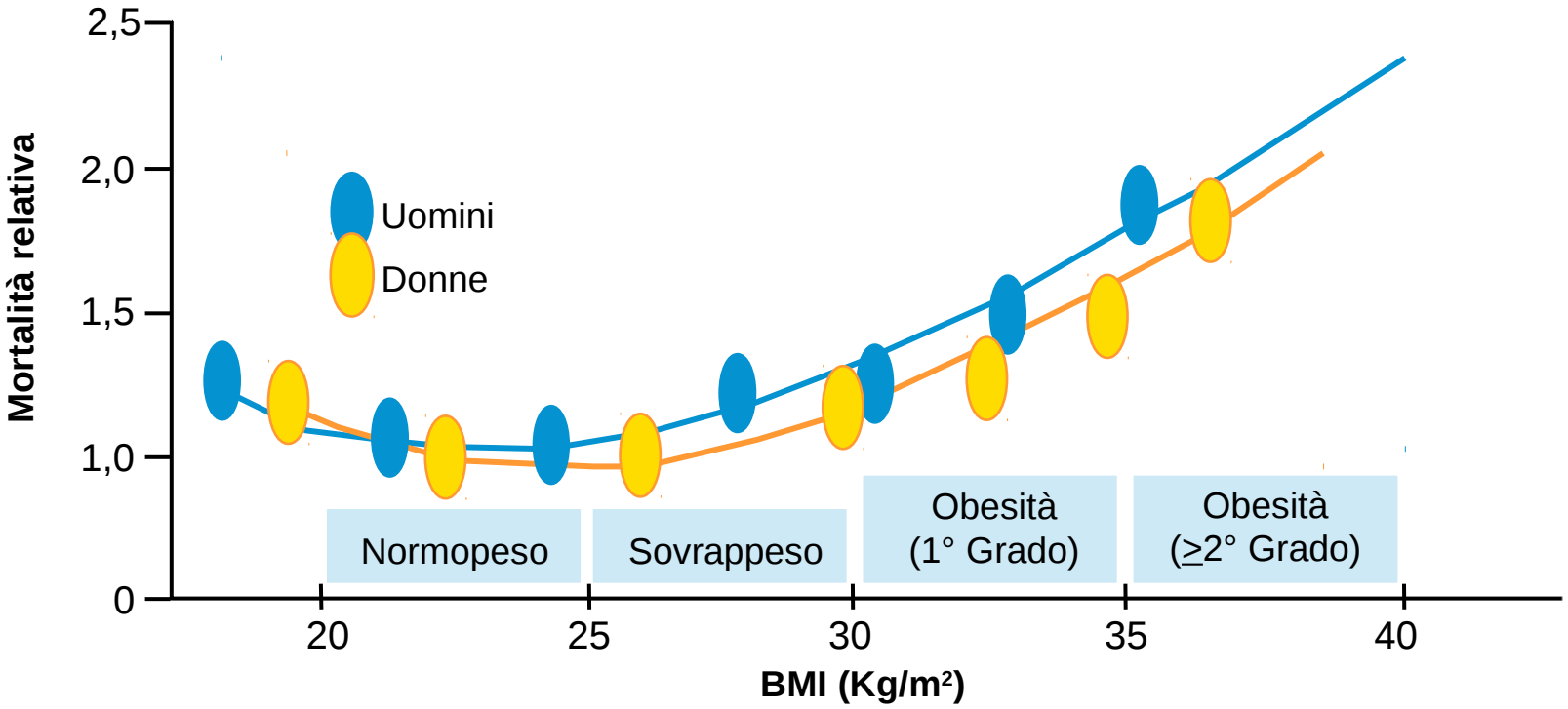
Aumento dei costi di varie condizioni in termini di assistenza e uso di farmaci



I costi di assistenza sanitaria dovuti all'obesità sono superiori a quelli dovuti al fumo e all'abuso di alcool. L'obesità costituisce un significativo onere assistenziale

Sturm R et al. Health Affairs 2004; 23 (2): 199-205

Relazione tra mortalità e BMI



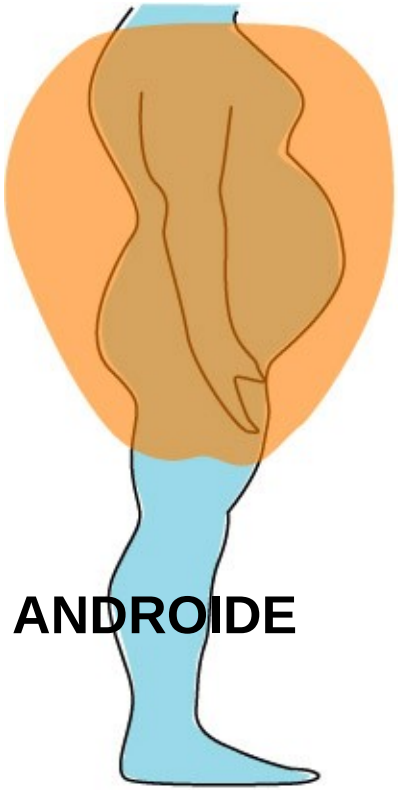
Lew EA. Ann Intern Med 1985; 103: 1024-9

L’obesità si associa a un aumento della morbilità per:

- Ipertensione
- Dislipidemia
- Coronaropatia
- Diabete di tipo 2
- Ictus
- Cancro
  (endometrio, mammella, prostata e colon)
- Calcolosi della colecisti
- Apnea notturna OSAS
- Osteoartrite

NHLBI Obesity Education Initiative, 2000

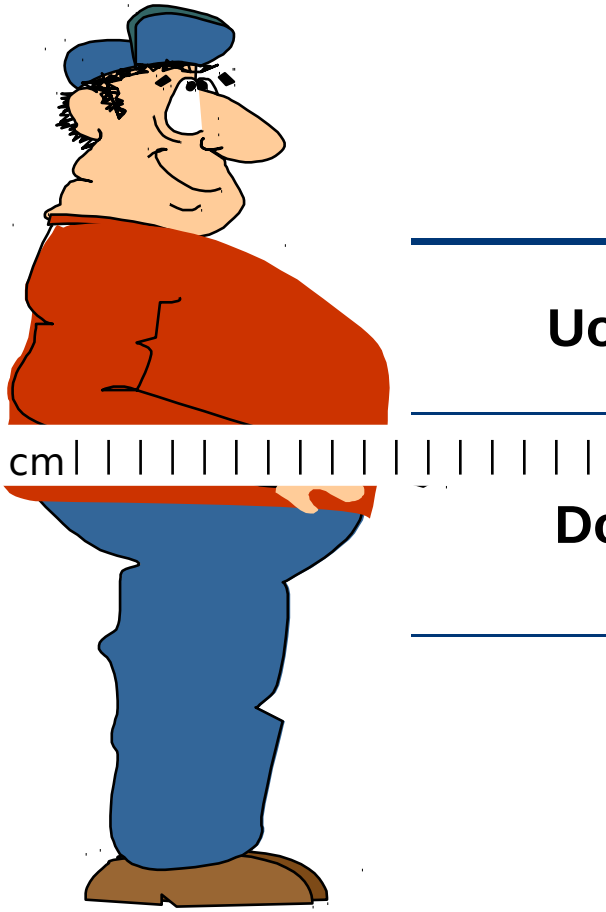
L’entità del rischio cardiovascolare è correlata all’accumulo di grasso viscerale. L’adiposità viscerale è un fattore predittivo indipendente di complicanze metaboliche e cardiovascolari



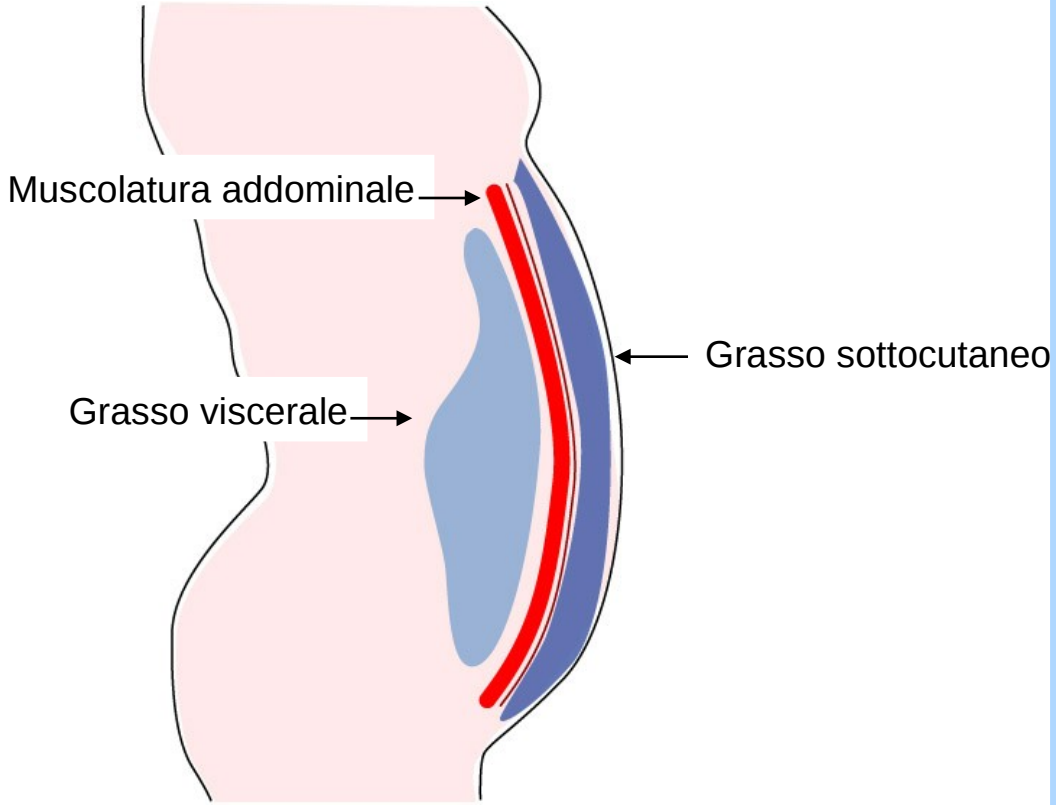
ANDROIDE

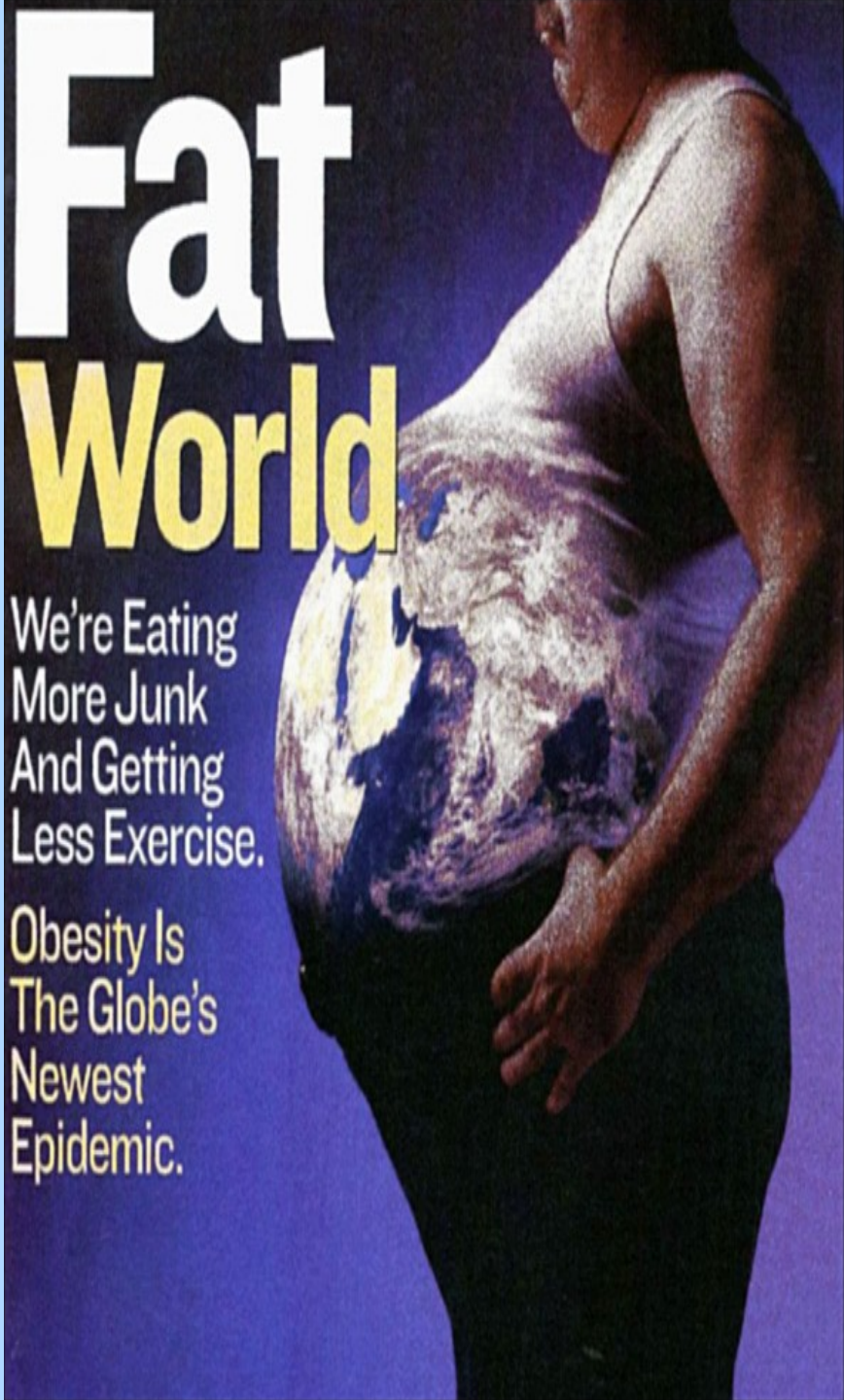
GINOIDE

Waist Circumference



	Circonferenza a vita	Rischio metabolico
Uomini	≥102 cm	**Molto aumentato**
Donne	≥88 cm	**Molto aumentato**


Muscolatura addominale
Grasso sottocutaneo
Grasso viscerale


Fat World
We're Eating More Junk And Getting Less Exercise.
Obesity Is The Globe's Newest Epidemic.

L’obesità viscerale si associa ad un cluster di alterazioni metaboliche

ertrigliceridemia
iduzione colesterolo HDL
umento Apo-B
ncremento di LDL piccole e dense
ttivazione di infiammazione

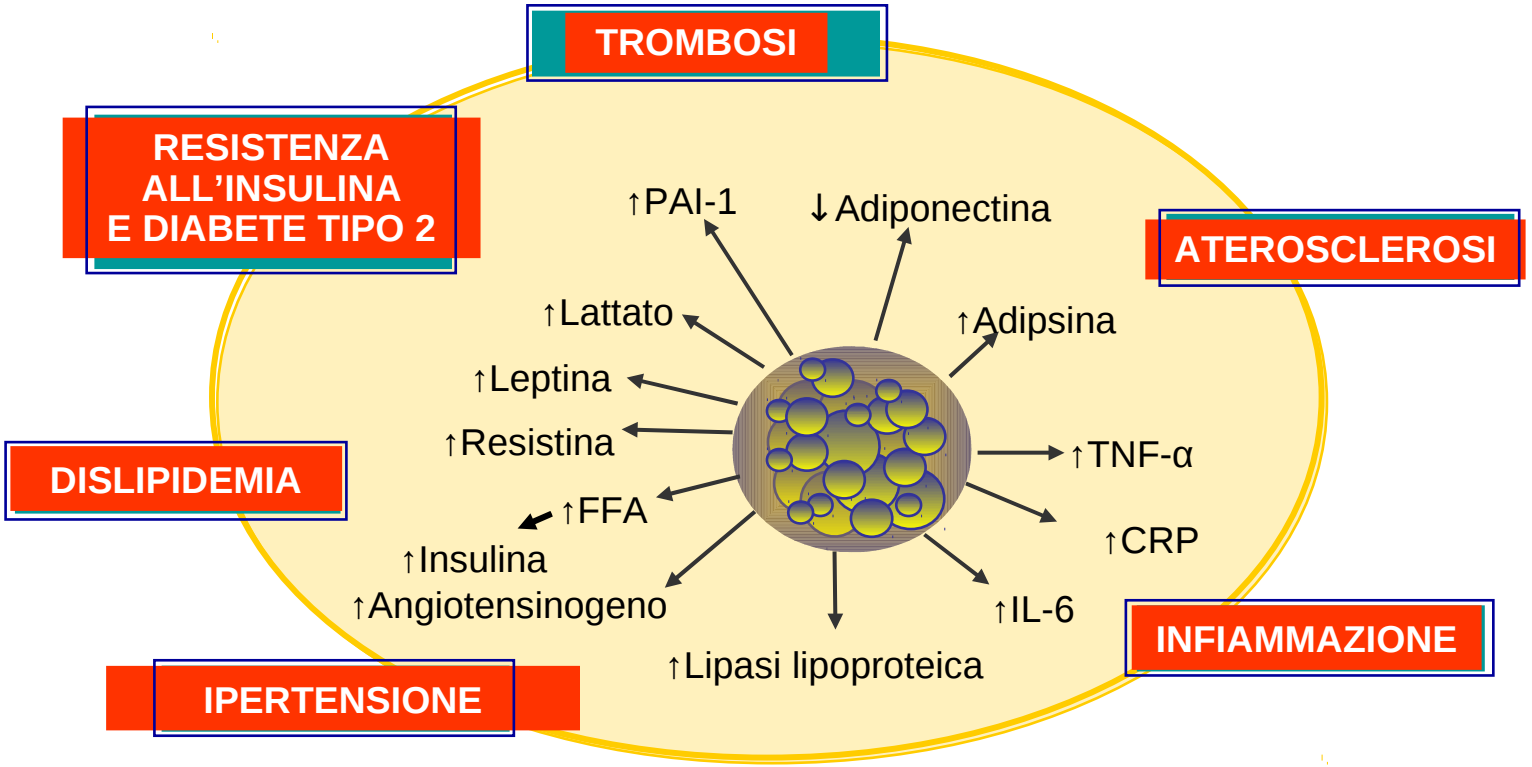
Insulino-resistenza
Iperinsulinemia
Intolleranza al glucosio
Alterata fibrinolisi
Disfunzione endoteliale

IGT/DM tipo 2, ipertensione arteriosa, patologie cardiovascolari

Obesità addominale e rischio cardiovascolare e metabolico

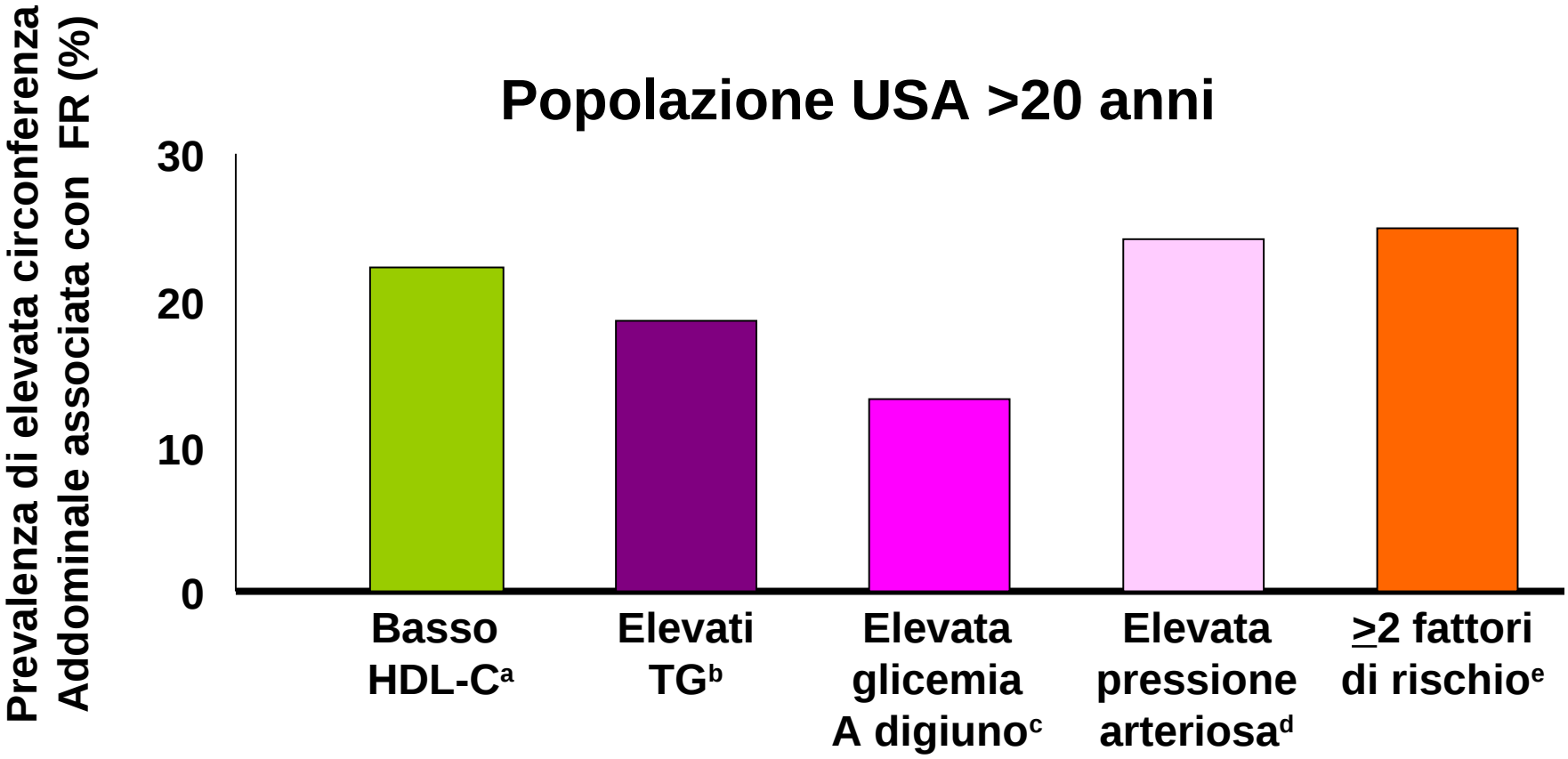
Il tessuto adiposo è un organo endocrino che sintetizza ormoni e sostanze bioattive.

La loro azione biologica è implicata nella patogenesi del danno cardiovascolare



Eckel RH et al. Lancet 2005: 365: 1415-1428

L'elevata circonferenza addominale é associata alla presenza di fattori di rischio cardiovascolari multipli



[a]<40 mg/dL (uomini) o <50 mg/dL (donne); [b]>150 mg/dL; [c]>110 mg/dL; [d]>130/85 mmHg; [e]def. sindrome metabolica NCEP/ATP III

Coorte NHANES 1999–2000;

Rischio di IM nello studio InterHeart

Fattore di rischio	% Controlli	% Casi	OR aggiustato[a]
Lipidi (ApoB/ApoA-1)	20.0	33.5	3.87
Fumatore attivo	26.8	45.2	2.95
Diabete	7.5	18.4	3.08
Ipertensione	21.9	39.0	2.48
Obesità addominale	**33.3**	**46.3**	**2.22**
Psicosociale	-	-	2.51
Consumo quotidiano frutta/verdura	42.4	35.8	0.70
Esercizio fisico	19.3	14.3	0.72
Consumo di alcol	24.5	24.0	0.79

[a]Aggiustato per età, sesso, fumo; [b]vita/fianchi rapporto

Yusuf S et al. Lancet 2004; 364: 937-52

Trattamento dell'Obesità

- Obiettivo del trattamento dell'obesità e del sovrappeso è **raggiungere e mantenere il calo ponderale utile per la riduzione del rischio di mortalità e morbilità** dovuto alle patologie associate

- I protocolli terapeutici prevedono:
  - Dieta ipocalorica
  - Esercizio fisico
  - Interventi psicocomportamentali
  - Terapia farmacologica
  - Eventuale terapia chirurgica

La perdita di peso determina una serie di benefici clinici

ENTITÀ DI CALO PONDERALE	MIGLIORAMENTO CLINICO ATTESO
<5%	Miglioramento del profilo di rischio cardiovascolare
≥5%	Prevenzione del diabete Miglioramento della QoL Miglioramento dei sintomi (es. osteoartrite del ginocchio)
≥10%	Miglioramento delle apnee notturne Miglioramento della funzione respiratoria nel paziente asmatico Riduzione della mortalità

Finer N. International Journal of Obesity 2002; 26 (Suppl 4): S29-S33

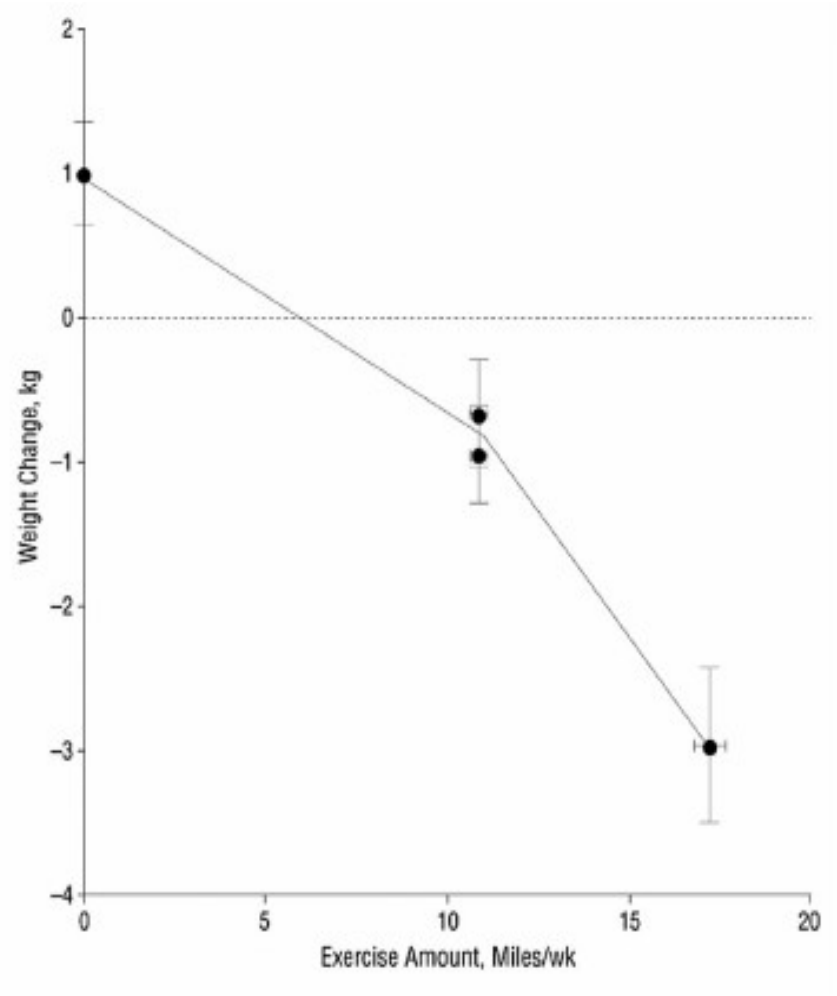
Guide for Selecting Obesity Treatment

	BMI Category (kg/m^2)				
Treatment	25-26.9	27-29.9	30-34.9	35-39.9	≥40
Diet, Exercise, Behavior Tx	+	+	+	+	+
Pharmaco-therapy		With co-morbidities	+	+	+
Surgery				With co-morbidities	+

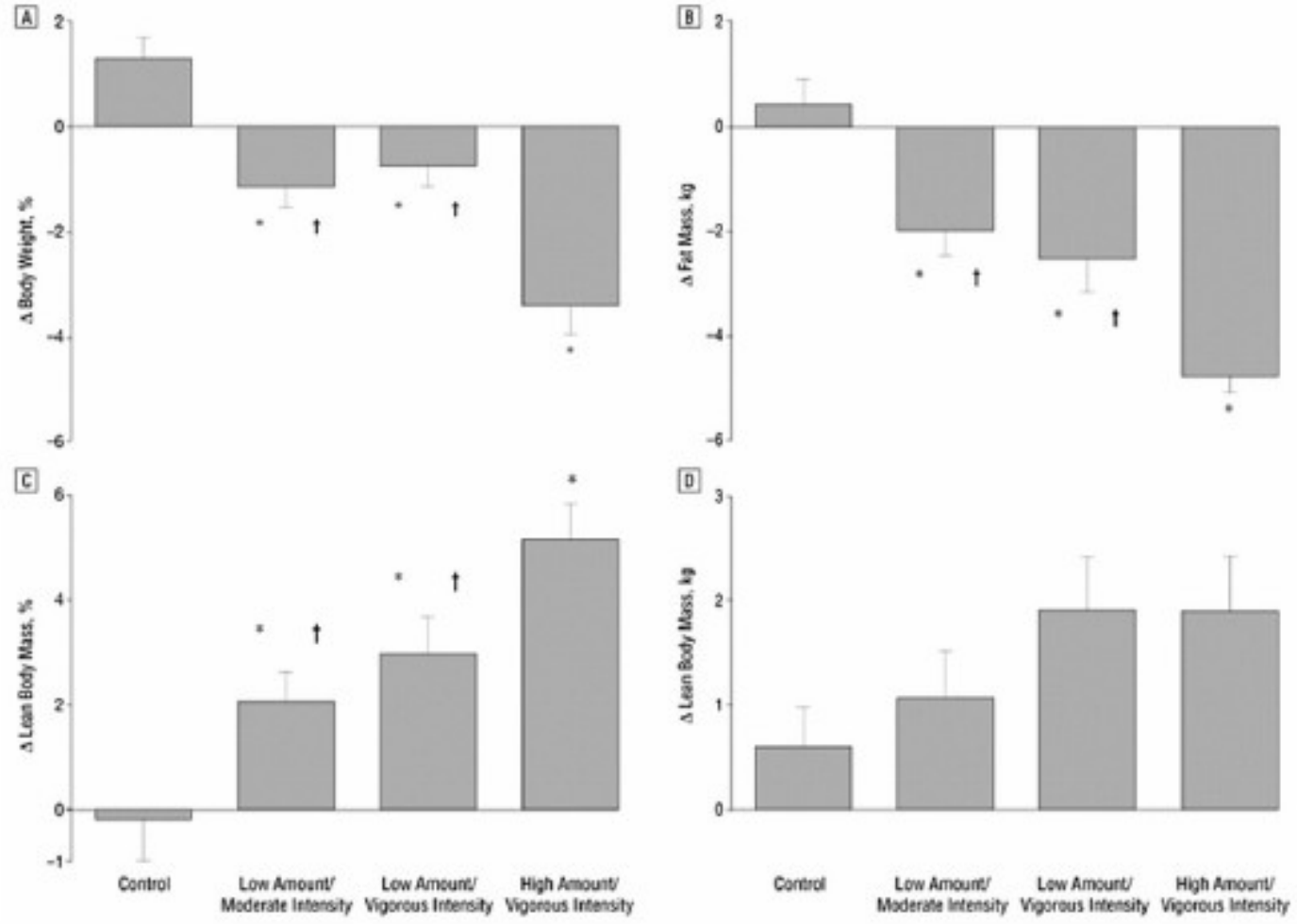
The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. October 2000, NIH Pub. No.00-4084

Relazione tra perdita di peso e volume di attività fisica

Slentz,CA Arch Intern Med 2004

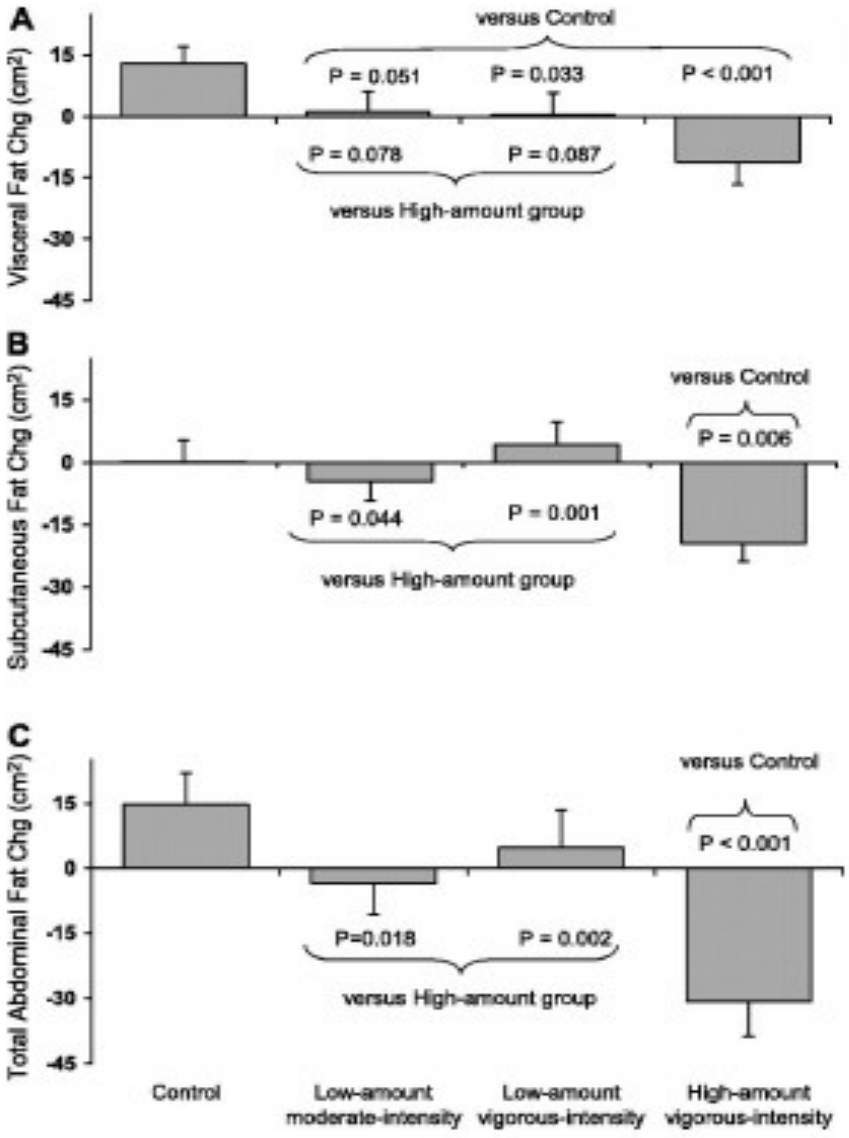


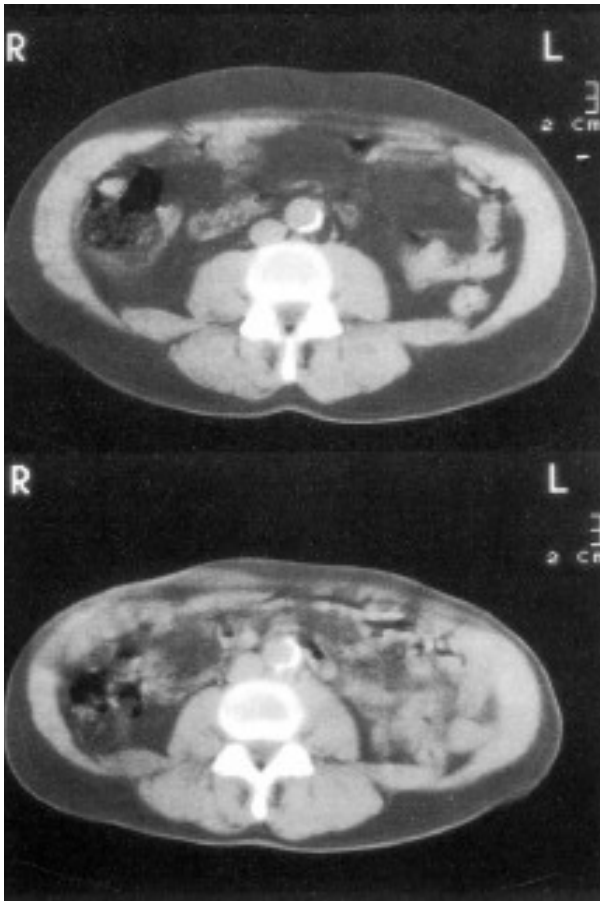
Effetti dell'intensità di esercizio sulla composizione corporea



Slentz,CA Arch Intern Med 2004

Confronto tra 3 differenti programmi di esercizio fisico su Grasso Viscerale, Sottocutaneo e Addominale





Slentz CA, J Appl Physiol 2005

Exercise for overweight or obesity
Cochrane Review

Analysis 3.2. Comparison 3 Exercise + diet versus diet alone, Outcome 2 Change in body mass index (BMI).

Review: Exercise for overweight or obesity

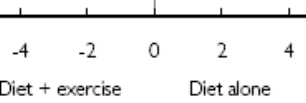
Comparison: 3 Exercise + diet versus diet alone

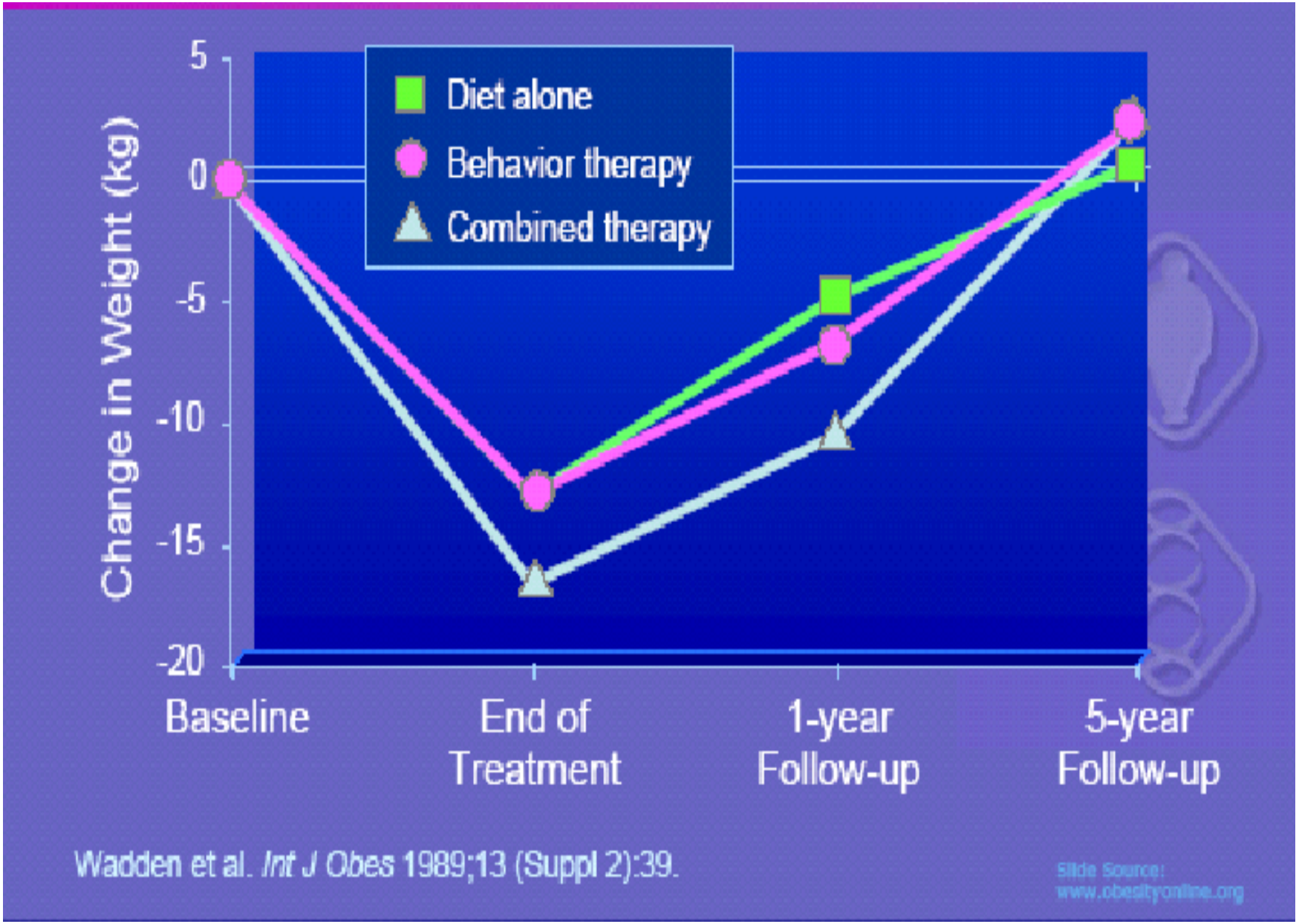
Outcome: 2 Change in body mass index (BMI)

Study or subgroup	Diet + exercise N	Mean(SD)	Diet alone N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Anderssen 1996	65	-2.2 (1.8)	52	-1.6 (1.8)		13.5 %	-0.60 [-1.26, 0.06]
Hellenius 1993	39	-0.6 (1)	40	-0.3 (1)		29.9 %	-0.30 [-0.74, 0.14]
Janssen 2002	25	-4 (1.1)	13	-4 (1.4)		7.6 %	0.0 [-0.87, 0.87]
Kiernan 2001	81	-2.3 (1.8)	71	-1.6 (1.8)		17.7 %	-0.70 [-1.27, -0.13]
Thong 2000	16	-2.4 (0.4)	14	-2.4 (0.8)		27.1 %	0.0 [-0.46, 0.46]
Wing 1998	31	-3.7 (2.6)	35	-3.3 (2.2)		4.2 %	-0.40 [-1.57, 0.77]
Total (95% CI)	**257**		**225**			**100.0 %**	**-0.31 [-0.55, -0.07]**

Heterogeneity: $Chi^2 = 4.76$, df = 5 (P = 0.45); $I^2 = 0.0\%$

Test for overall effect: Z = 2.53 (P = 0.011)

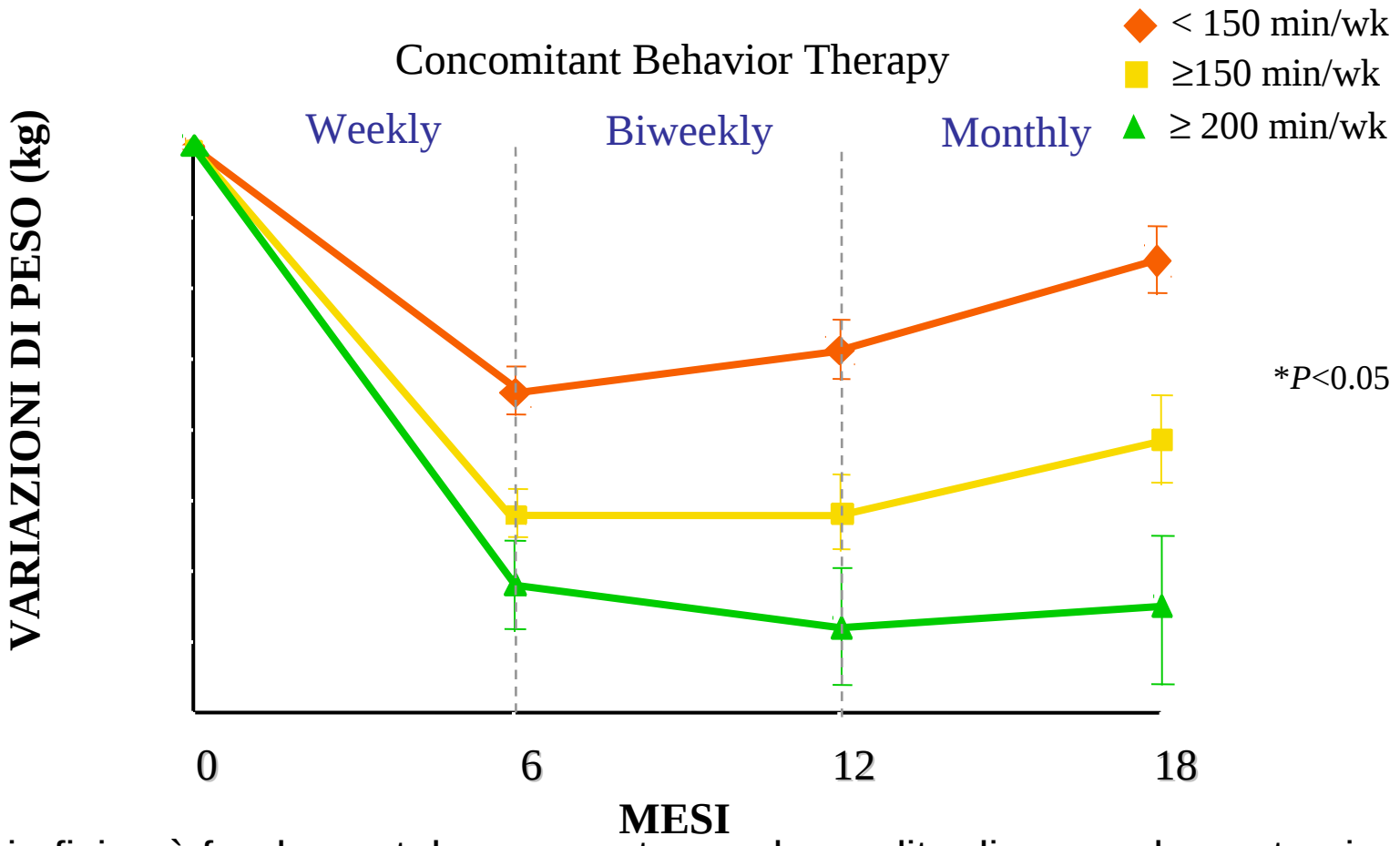




Wadden et al. *Int J Obes* 1989;13 (Suppl 2):39.

Percentuale del cambiamento di peso rispetto alla durata dell'esercizio

Jakicic at al, JAMA 2003



Esercizio fisico è fondamentale per mantenere la perdita di peso a lungo temine

How much physical activity is needed to minimize weight gain in previously obese women?[1–3]

Dale A Schoeller, Kathyjo Shay, and Robert F Kushner

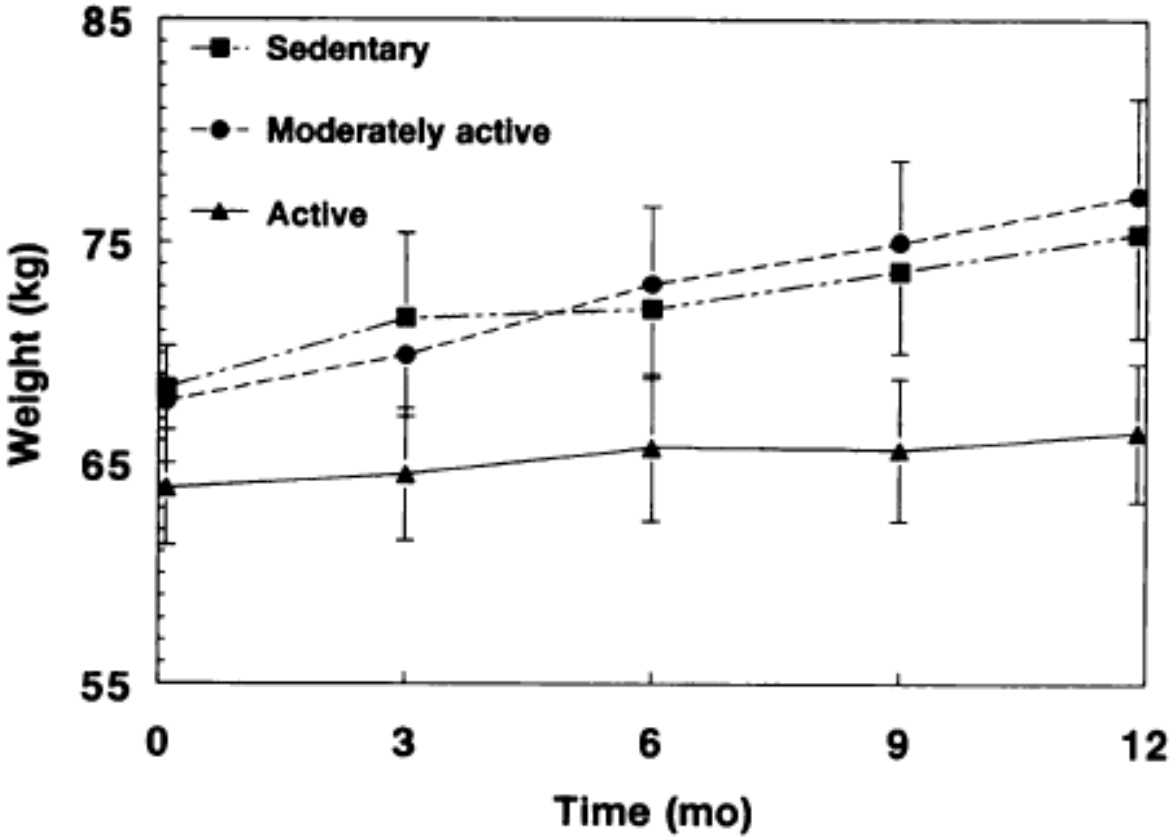


FIGURE 1. Mean (± SEM) body weights in three groups of previously obese women in the year after completion of weight loss. Time-group interaction, ANOVA, and post hoc *t* testing indicated that increases in weight were less in active women (TEE:RMR > 1.75).

International Journal of Obesity (2006) 30, 391–399

0307-0565/06 $30.00
www.nature.com/ijo

REVIEW

The definition of weight maintenance

J Stevens[1,2], KP Truesdale[2], JE McClain[1] and J Cai[3]

[1]*Department of Nutrition, School of Public Health, University of North Carolina, Chapel Hill, NC, USA;* [2]*Department of Epidemiology, School of Public Health, University of North Carolina, Chapel Hill, NC, USA and* [3]*Department of Biostatistics, School of Public Health, University of North Carolina, Chapel Hill, NC, USA*

There is currently no consensus on the definition of weight maintenance in adults. Issues to consider in setting a standard definition include expert opinion, precedents set in previous studies, public health and clinical applications, comparability across body sizes, measurement error, normal weight fluctuations and biologic relevance. To be useful, this definition should indicate an amount of change less than is clinically relevant, but more than expected from measurement error or fluctuations in fluid balance under normal conditions. It is an advantage for the definition to be graded by body size and to be easily understood by the public as well as scientists. Taking all these factors into consideration, the authors recommend that long-term weight maintenance in adults be defined as a weight change of <3% of body weight.
International Journal of Obesity (2006) **30**, 391–399. doi:10.1038/sj.ijo.0803175; published online 22 November 2005

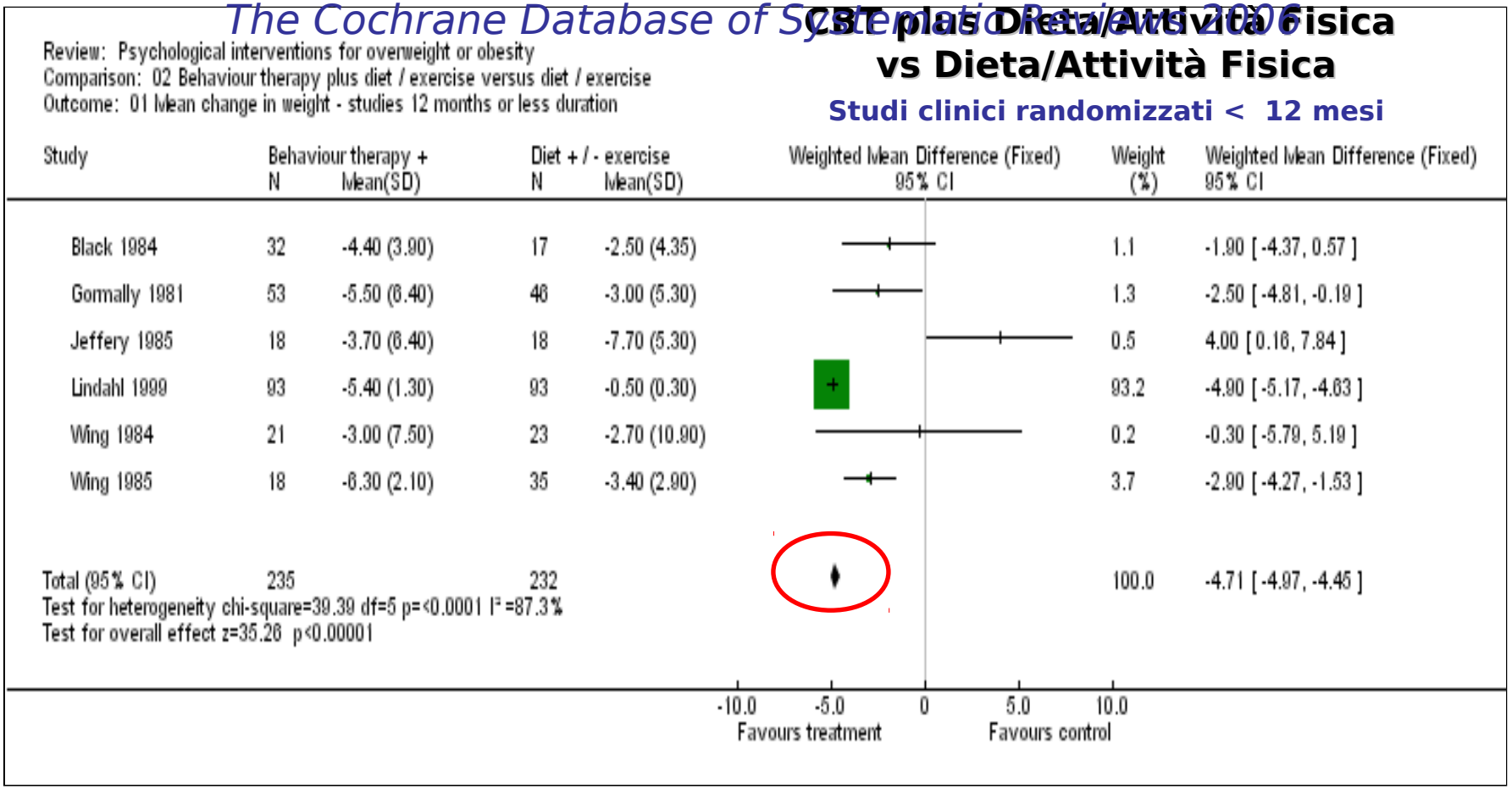
Psychological interventions for overweight or obesity

K Shaw, P O'Rourke, C Del Mar, J Kenardy

The Cochrane Database of Systematic Reviews 2006

CBT plus Dieta/Attività Fisica vs Dieta/Attività Fisica

Studi clinici randomizzati < 12 mesi



The Cochrane Database of Systematic Reviews 2005;Issue 2

Lifestyle Modification

Modificazione del Comportamento

Robert Wood Johnson Foundation Data 2003

Obesity - Exercise Prescription

ACSM's guideline for exercise testing and prescription. Seventh Edition

- The needs and goals of the obese subject must be individually matched with the proper exercise program to achieve long-term managment;
- Primary mode should be large muscle group aerobic activities.

FREQUENZA	5 -7 volte settimana
DURATA	45 – 60 minuti
INTENSITA'	40-60% HRR,eventuale progressione 50-75% HRR
VOLUME	Mantenimento 150 minuti settimanali nella fase iniziale Mantenimento Ottimale >=2000 kcal*week^{-1} (200-300 minuti)

Special Considerations

- Obese individuals are at increased risk for orthopedic injury, and its may require that the intensity of exercise be mantained at or below the intensity recommended for improvement of CR fitness

- Obese individuals have an increased risk of hyperthermia during exercise

- Equipment modifications may be necessary (i.e. wide seats on cycle ergometers)

Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults

AMERICAN COLLEGE of SPORTS MEDICINE

POSITION STAND

MEDICINE & SCIENCE IN SPORTS & EXERCISE®

- **PA to prevent weight gain.**

  PA of 150 to 250 min*wk^{-1} with an energy equivalent of 1200 to 2000 kcal*wk^{-1} will prevent weight gain greater than 3% in most adults

- **PA for weight loss.**

  PA < 150 min*wk^{-1} promotes minimal weight loss,

  PA > 150 min*wk^{-1} results in modest weight loss of about 2–3 kg, PA > 225–420 min*wk^{-1} results in 5- to 7.5-kg weight loss, and a dose–response exists.

- **PA for weight maintenance after weight loss.**

  Some studies support the value of about 200- to 300-min*wk^{-1} PA during weight maintenance to reduce weight regain after weight loss, and it seems that ‘‘more is better.’’

  However, there are no correctly designed, adequately powered, energy balance studies to provide evidence for the amount of PA to prevent weight regain after weight loss.

- **Lifestyle PA is an ambiguous term and must be carefully defined to evaluate the literature.** Given this limitation, it seems lifestyle PA may be useful to counter the small energy imbalance responsible for obesity in most adults.

AMERICAN COLLEGE of SPORTS MEDICINE

POSITION STAND

Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults

- **PA and diet restriction.**

  PA will increase weight loss if diet restriction is modest but not if diet restriction is severe

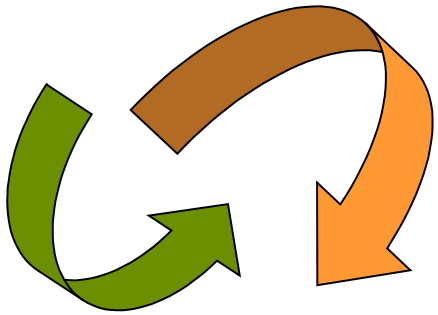
- **Resistance training (RT) for weight loss.**

  Research evidence does not support RT as effective for weight loss with or without diet restriction. There is limited evidence that RT promotes gain or maintenance of lean mass and loss of body fat during energy restriction and there is some evidence RT improves chronic disease risk factors (i.e., HDL-C, LDL-C, insulin, blood pressure).

Predisposizione al cambiamento e Barriere percepite alla pratica di attività fisica.

Principali ostacoli a praticare uno stile di vita attivo per un soggetto obeso:

- Presenza di gravi problemi fisici
- Mancanza di Tempo
- Stanchezza
- Scarsa attitudine verso il movimento
- Vergogna di mostrare il proprio corpo
- Depressione
- Pensieri disfunzionali:
  - Sono troppo stanco
  - Non ho tempo
  - Sono troppo grasso
  - Sono vecchio
  - Lo farò domani
  - Non c'è nessuno che mi tenga i bambini
  - Sono troppo depresso



Cooper Z et al. Cognitive-behavioral treatment of obesity. Guilford press:New York, 2003

Usare uno strumento di monitoraggio (diario, contapassi)

Coinvolgere amici, parenti

Pianificare la giornta in modo da arrivare a compiere 10000 passi

Usare attrezzature sportive (cyclette, tapis roulant, cardiofrequanzimentro)

Usare stimoli positivi (palestra, personal trainer)

Avere obiettivi a breve termine

Ricompense

Tratto da: Dalle Grave R. Perdere e Mantenere il peso perduto. 2007