Caratteristiche cliniche dell'obesità metabolicamente sana e del normopeso metabolicamente obeso

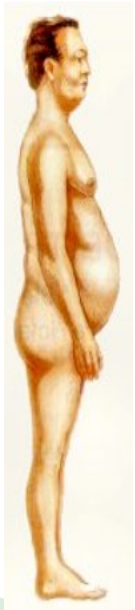
Dott. G. Cammarata

Università degli Studi di Genova

Il Dott. Giuseppe Cammarata dichiara di non aver ricevuto negli ultimi due anni compensi o finanziamenti da aziende farmaceutiche e/o diagnostiche.

Dichiara altresì il proprio impegno ad astenersi, nell’ambito dell’evento, dal nominare, in qualsivoglia modo o forma, aziende farmaceutiche e/o denominazione commerciale e di non fare pubblicità di qualsiasi tipo relativamente a specifici prodotti di interesse sanitario (farmaci, strumenti, dispositivi medico-chirurgici, ecc).

MONW (metabolically obese normal weight)



Marco

Peso 75 kg, altezza 1.75 mt, BMI 24.5 kg/m2, CV 96 cm

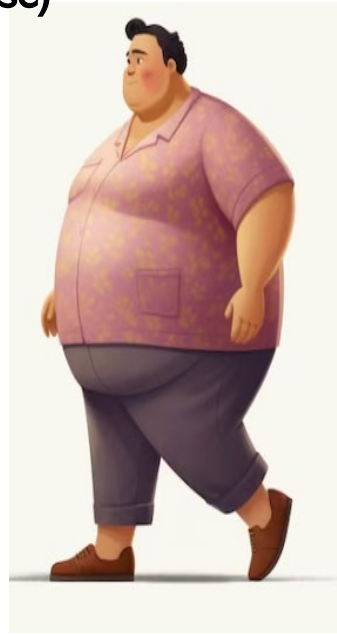
Glicemia: 120
TG 180 mg/dl
HDL 30 mg/dl
PA 135/90 mmHg

MHO (metabolically healthy obese)

Lorenzo

Peso 95 kg, altezza 1.70 mt, BMI 32.6 kg/k2, CV 105 cm

Glicemia 90 mg/dl
TG 150 mg/dl
HDL 45 mg/dl
PA 125/80 mmHg



MHO
(metabolically healthy obese)

Rappresenta una classe di pazienti che pur essendo obeso secondo la definizione classica del BMI (> 30 kg/m2) non presentano alterazioni metaboliche che sono caratteristiche di tale condizione

MONW
(metabolically obese normal weight)

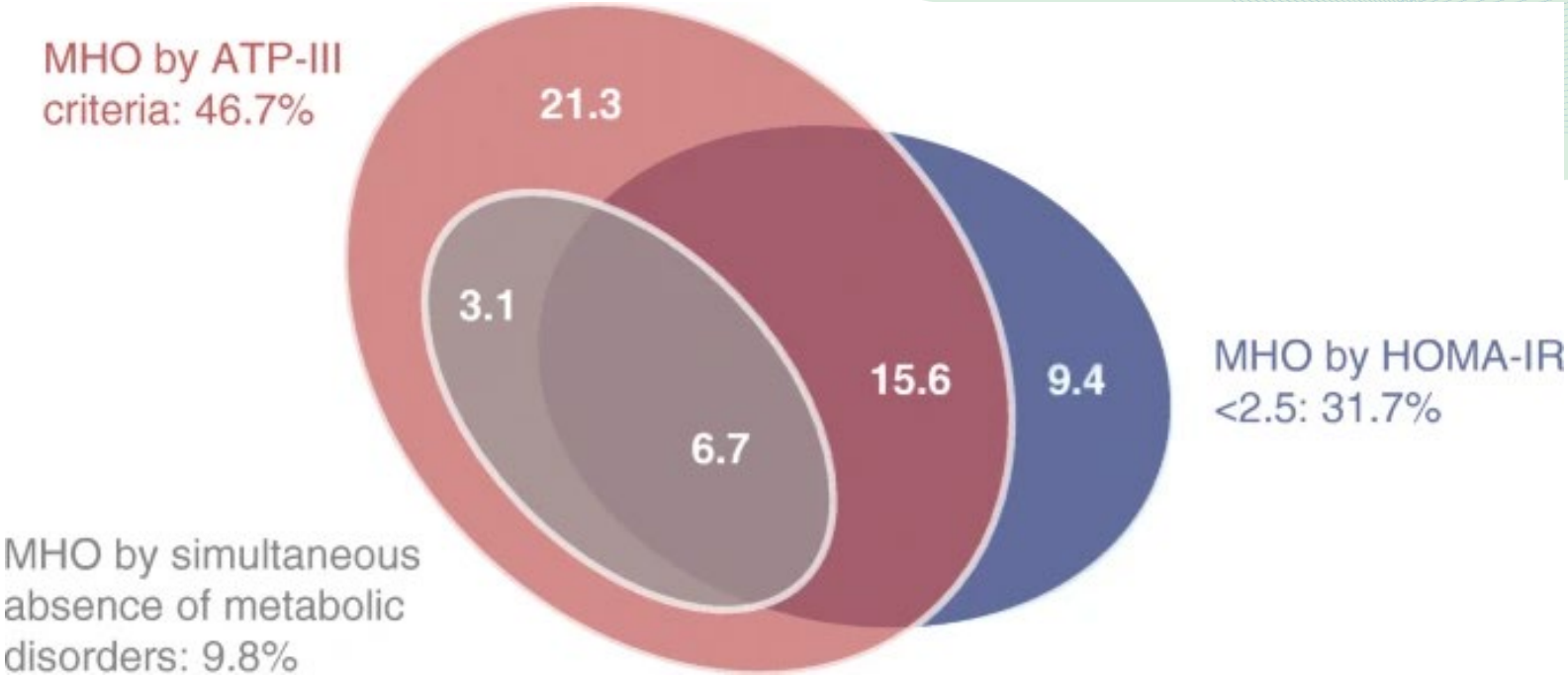
Paziente normopeso con BMI < 25 mg/k2 e con almeno 2 fattori di rischio metabolici (ipertensione, elevati trigliceridi, elevata glicemia a digiuno, basso HDL, HOMA IR > 90°, circonferenza vita)

Continent	Age	MHO prevalence
Asia	≥ 18	18–58%
Europe	20–89	10–75%
North America	20–79	6–40%
Oceania	≥ 18	44%
North America	≥ 20	17–32%
Europe/Canada	18–80	12–26%

MHO metabolic healthy obesity

Metabolically healthy obesity and metabolically obese normal weight: a review

Saioa Gómez-Zorita [1,2,3] · Maite Queralt [1] · Maria Angeles Vicente [2,4] · Marcela González [5] · María P. Portillo [1,2,3]



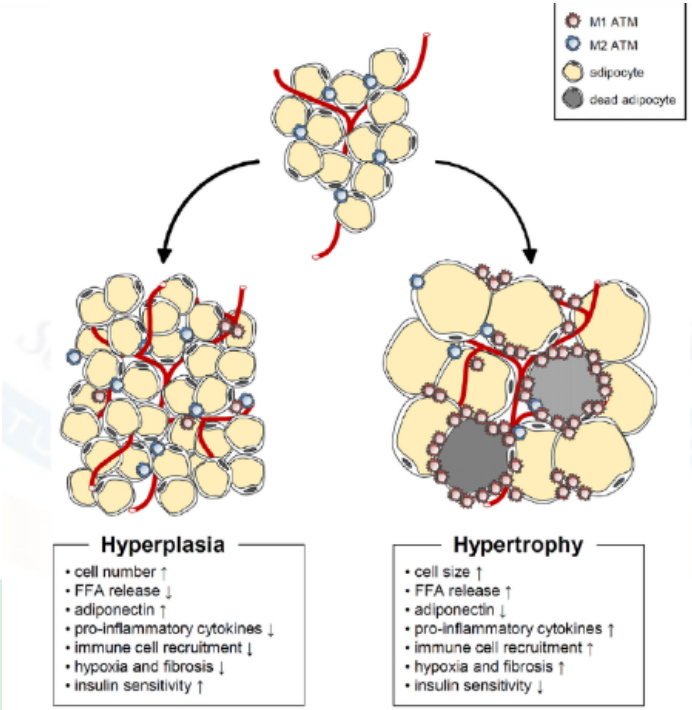
Metabolically healthy obesity and metabolically obese normal weight: a review

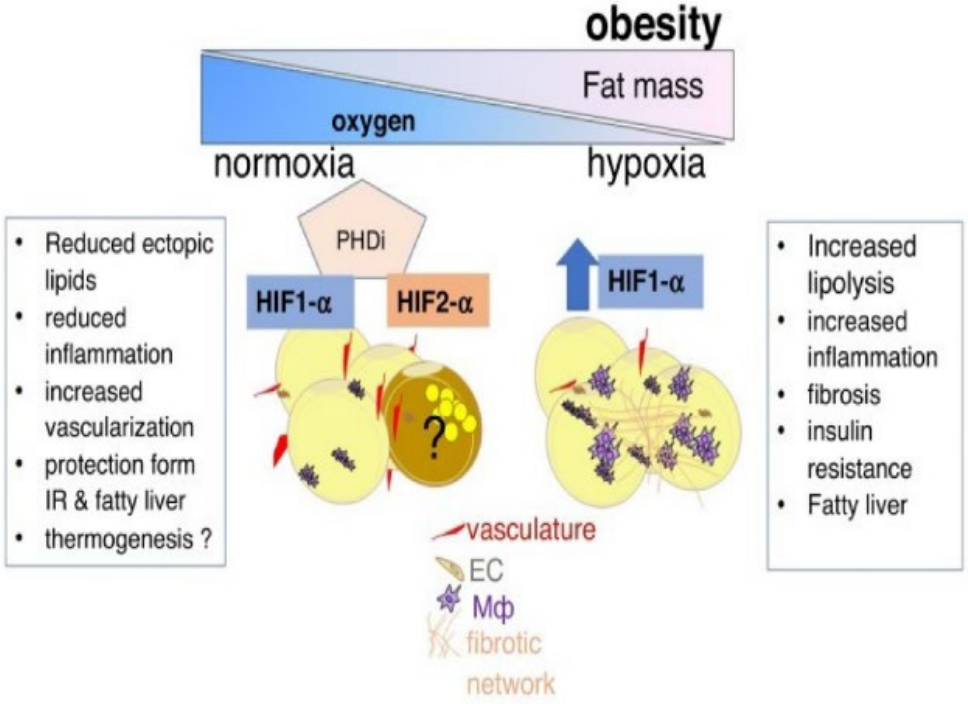
Saioa Gómez-Zorita[1,2,3] · Maite Queralt[1] · Maria Angeles Vicente[2,4] · Marcela González[5] · María P. Portillo[1,2,3]

Quale fattore è in comune nella determinazione della patologia metabolica?

Oltre al peso...

ADIPOSOPATIA



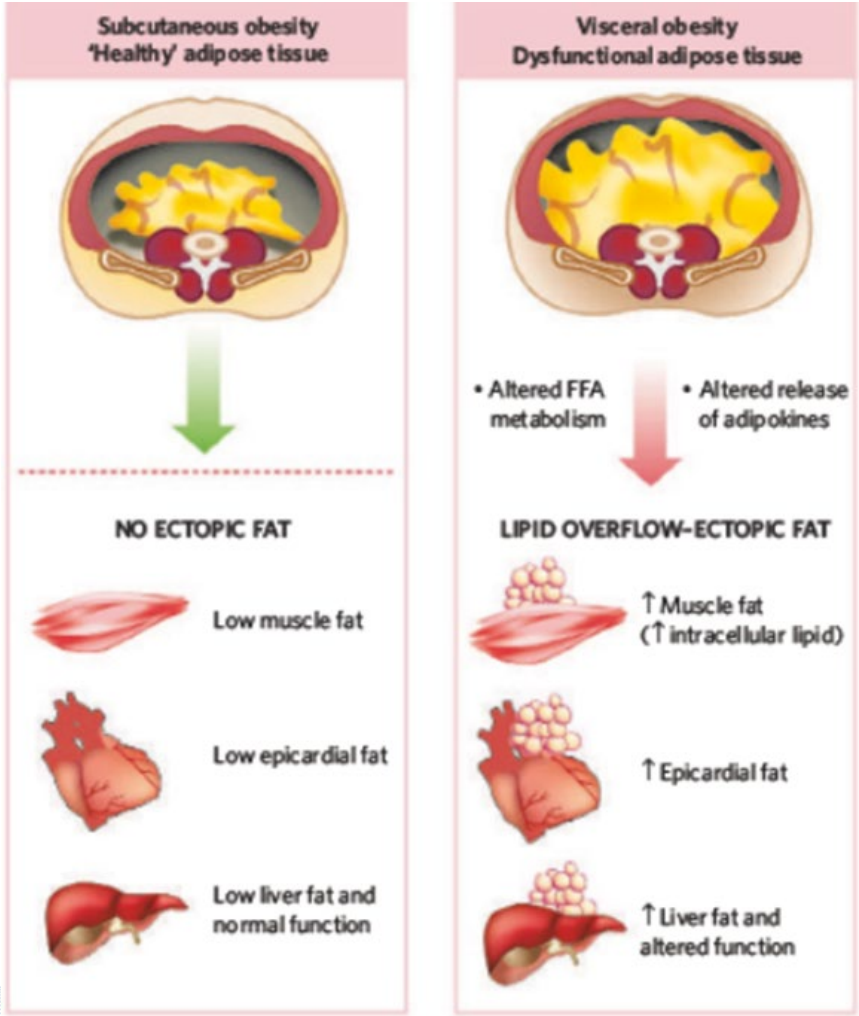


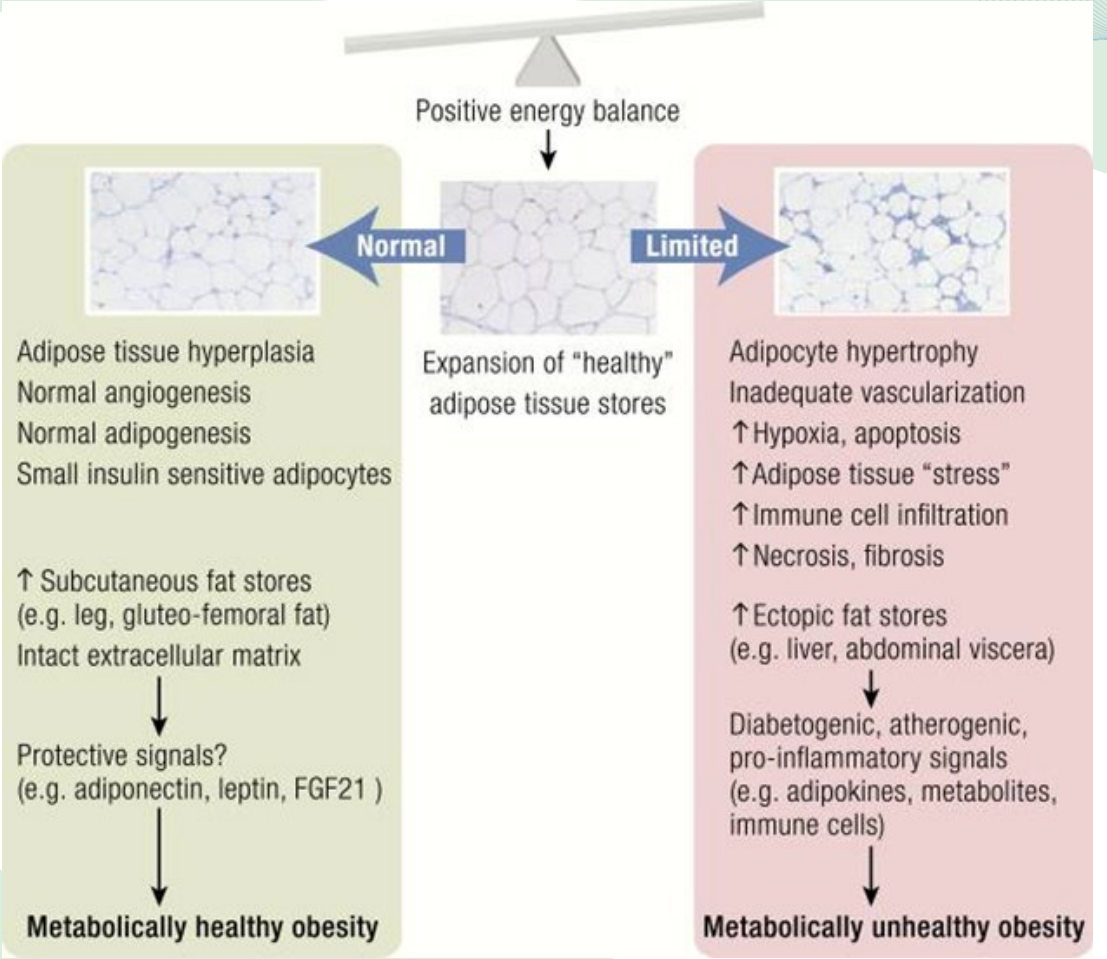
TESSUTO ADIPOSO ECTOPICO

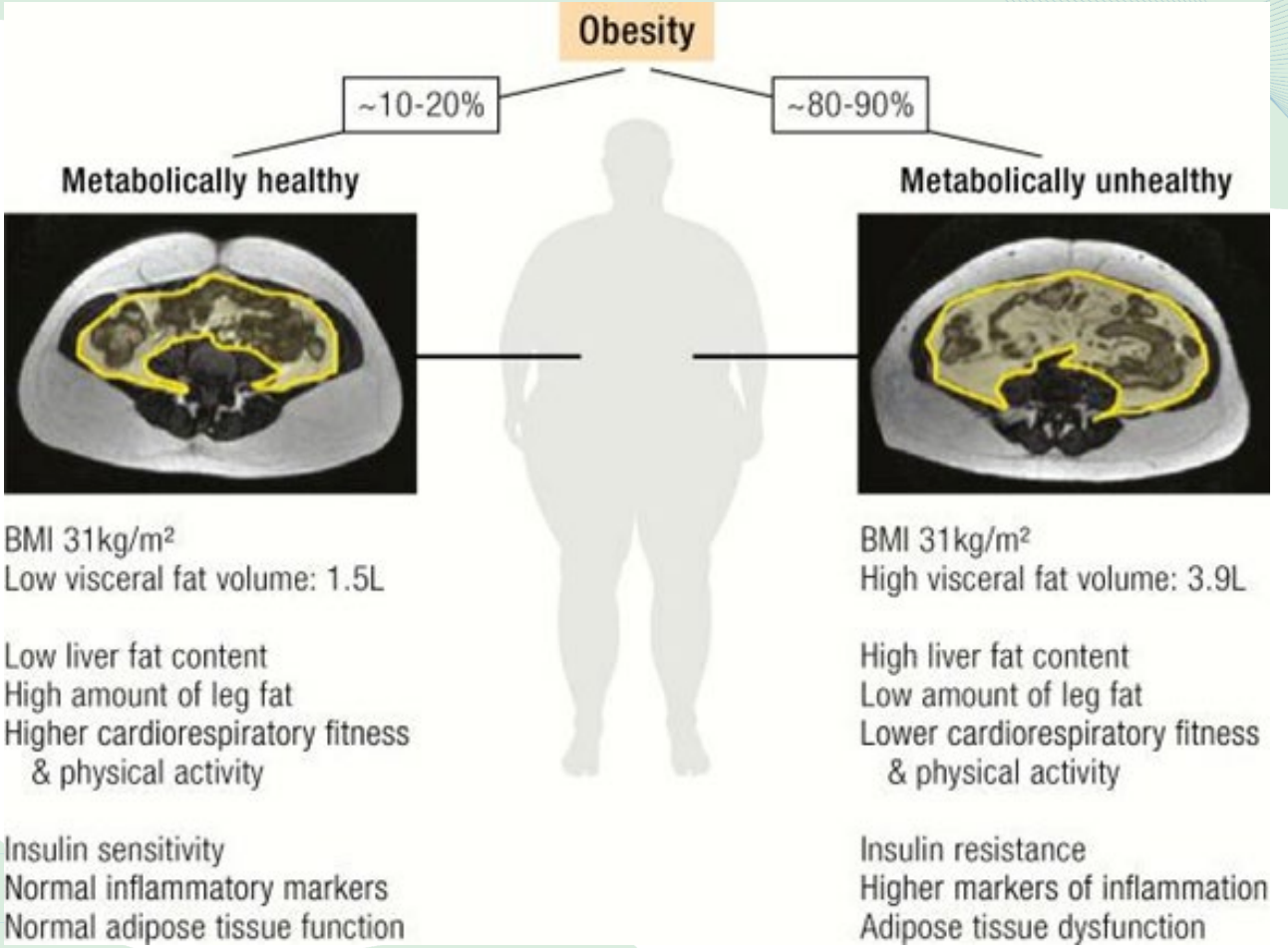
Abdominal obesity and metabolic syndrome

Jean-Pierre Després & Isabelle Lemieux

Nature **444**, 881–887 (2006) | Cite this article




Positive energy balance
Normal
Limited
Expansion of "healthy" adipose tissue stores
Adipose tissue hyperplasia
Normal angiogenesis
Normal adipogenesis
Small insulin sensitive adipocytes
↑ Subcutaneous fat stores (e.g. leg, gluteo-femoral fat)
Intact extracellular matrix
Protective signals? (e.g. adiponectin, leptin, FGF21)
Metabolically healthy obesity
Adipocyte hypertrophy
Inadequate vascularization
↑ Hypoxia, apoptosis
↑ Adipose tissue "stress"
↑ Immune cell infiltration
↑ Necrosis, fibrosis
↑ Ectopic fat stores (e.g. liver, abdominal viscera)
Diabetogenic, atherogenic, pro-inflammatory signals (e.g. adipokines, metabolites, immune cells)
Metabolically unhealthy obesity


Obesity
~10-20%
~80-90%
Metabolically healthy
Metabolically unhealthy
BMI 31kg/m²
Low visceral fat volume: 1.5L
Low liver fat content
High amount of leg fat
Higher cardiorespiratory fitness & physical activity
Insulin sensitivity
Normal inflammatory markers
Normal adipose tissue function
BMI 31kg/m²
High visceral fat volume: 3.9L
High liver fat content
Low amount of leg fat
Lower cardiorespiratory fitness & physical activity
Insulin resistance
Higher markers of inflammation
Adipose tissue dysfunction

Chi trattare?

MHO

- L’obesità intesa come eccesso ponderale rappresenta in maniera indipendente un maggiore rischio di mortalità

- Tenere conto di tutte le complicanze dell’obesità non solo metaboliche (osteoarticolari, OSAS, stigma…)

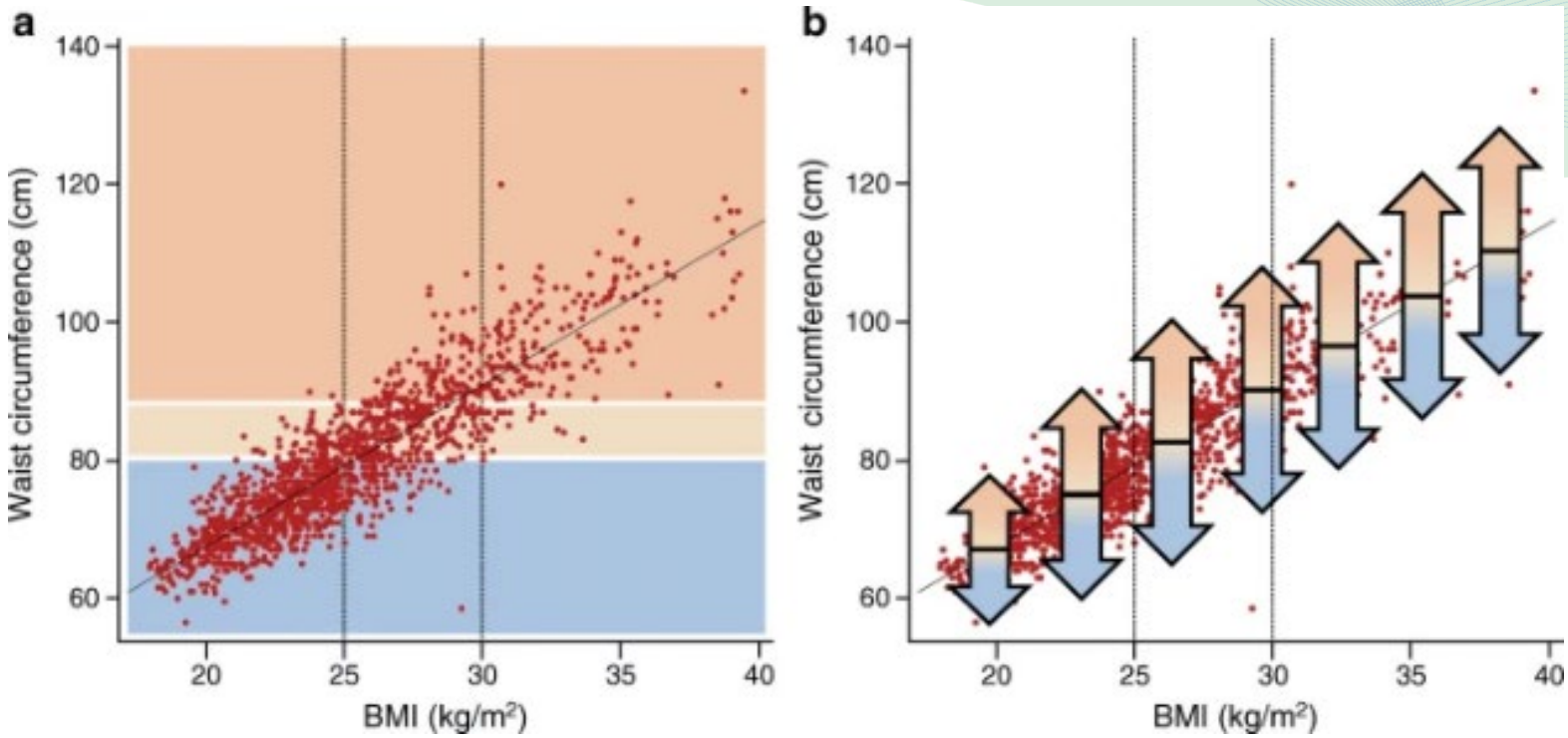
- Maggiore probabilità di evoluzione verso una obesità non sana nel tempo

Author	Study	Definition of metabolic health	Follow-up time	Findings for the MHO phenotype
Appleton et al, 2013 [29]	North West Adelaide Health Study	Absence of the metabolic syndrome	~8 years	Transition to MUHO: 31%
Soriguer et al, 2013 [37]	Pizarra Study	Absence of the metabolic syndrome and/or insulin resistance	6 years	Transition to MUHO: 37%
Achilike et al, 2015 [28]	San Antonio Heart Study	Absence of the metabolic syndrome, including insulin resistance	~8 years	Transition to MUHO: 48%
Bell et al, 2015 [30]	Whitehall II Study	Absence of the metabolic syndrome, including insulin resistance	5, 10, 15 and 20 years	Transition to MUHO: 32% at 5 years; 41% at 10 years; 35% at 15 years; 52% at 20 years
Lee et al, 2015 [33]	Chungju Metabolic Disease Cohort	In the lower 3 quartiles for fasting glucose and triacylglycerol indexes	4 years	Transition to MUHO: 15%
Hamer et al, 2015 [34]	English Longitudinal Study of Ageing	Absence of the metabolic syndrome, including inflammation	8 years	Transition to MUHO: 45%
Hwang et al, 2015 [39]	Japanese American Community Diabetes Study	Absence of the metabolic syndrome	10 years	Transition to MUHO[a]: 65%
Kim et al, 2016 [32]	Korean Genome Epidemiology Study	Absence of the metabolic syndrome	10 years	Transition to MUHO[a]: 45%
Kabat et al, 2017 [31]	Women's Health Initiative	Absence of the metabolic syndrome	6 years	Transition to metabolically unhealthy phenotypes: 34%
Eckel et al, 2018 [13]	Nurses' Health Study	Absence of diabetes, hypertension and hypercholesterolaemia	10, 20 and 30 years	Transition to metabolically unhealthy phenotypes: 57% at 10 years; 84% at 20 years; 94% at 30 years
Mongraw-Chaffin et al, 2018 [35]	Multi-Ethnic Study of Atherosclerosis	Absence of the metabolic syndrome	10 years	Transition to MUHO: 48%

MONW

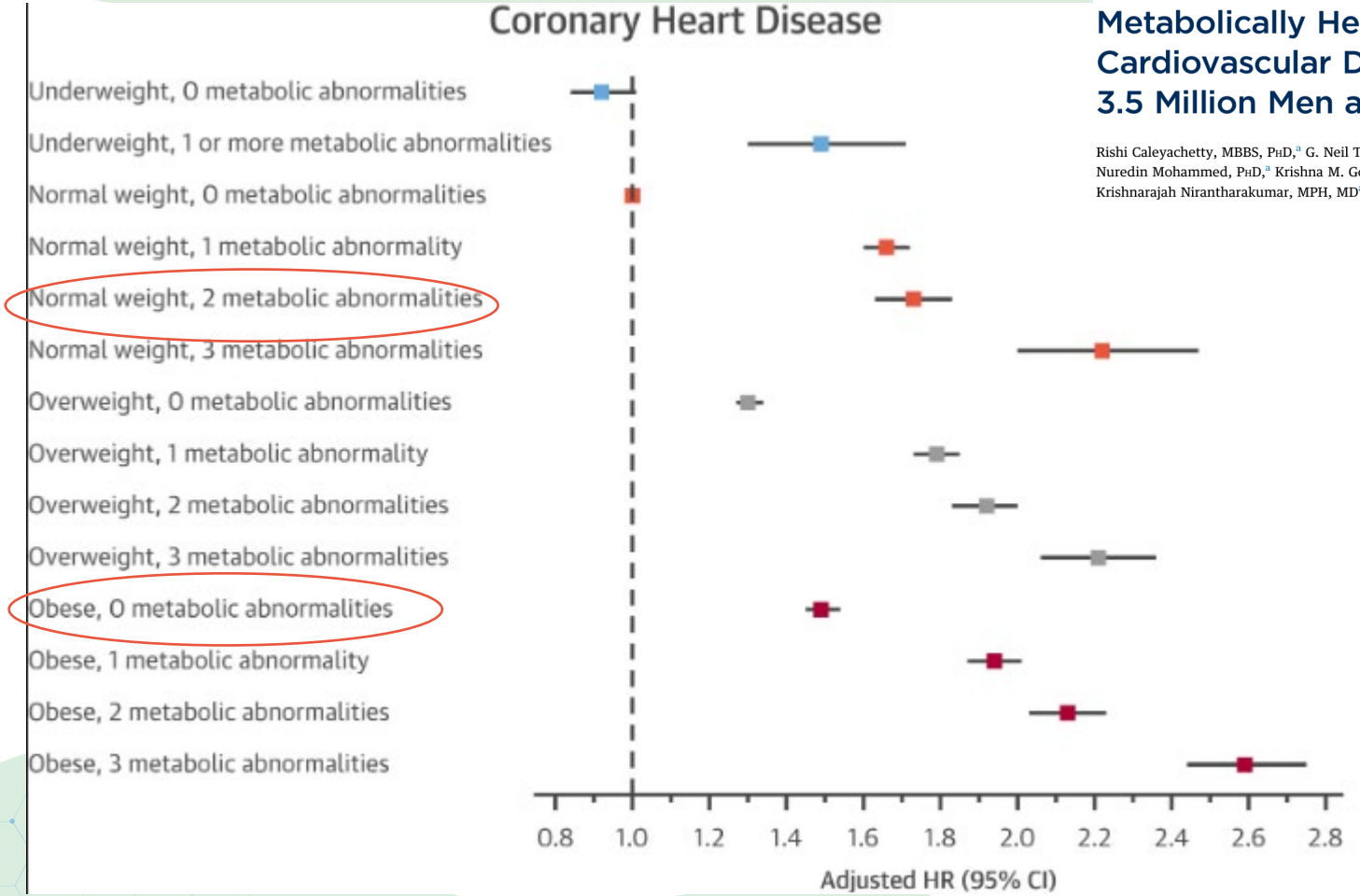
- Curare le varie alterazioni metaboliche (glicemia, pressione, dislipidemia...)

- Anche una minima alterazione del rapporto CV/altezza correla con maggiore rischio cardiovascolare



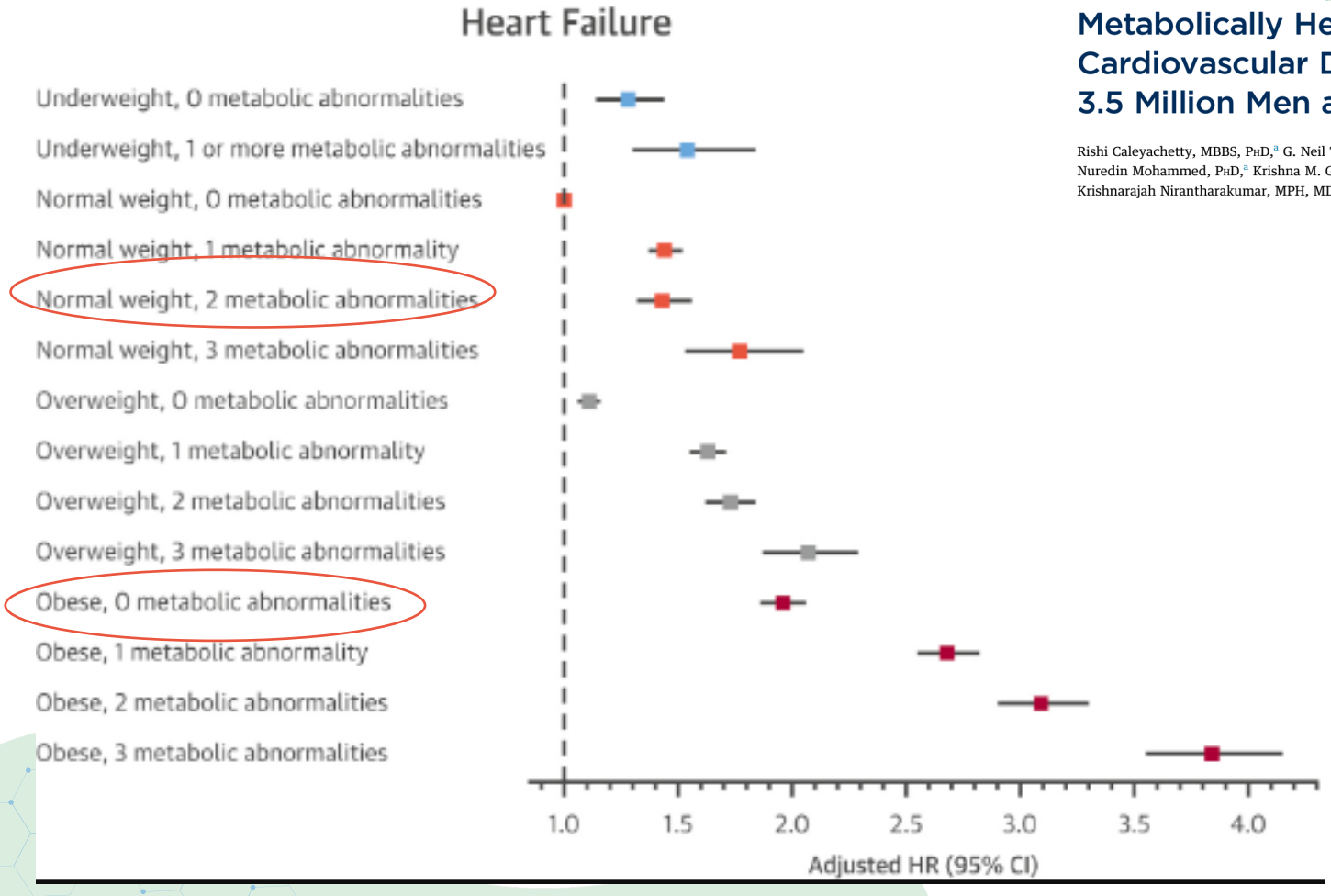
Metabolic health in normal-weight and obese individuals

Matthias B. Schulze [1,2,3]



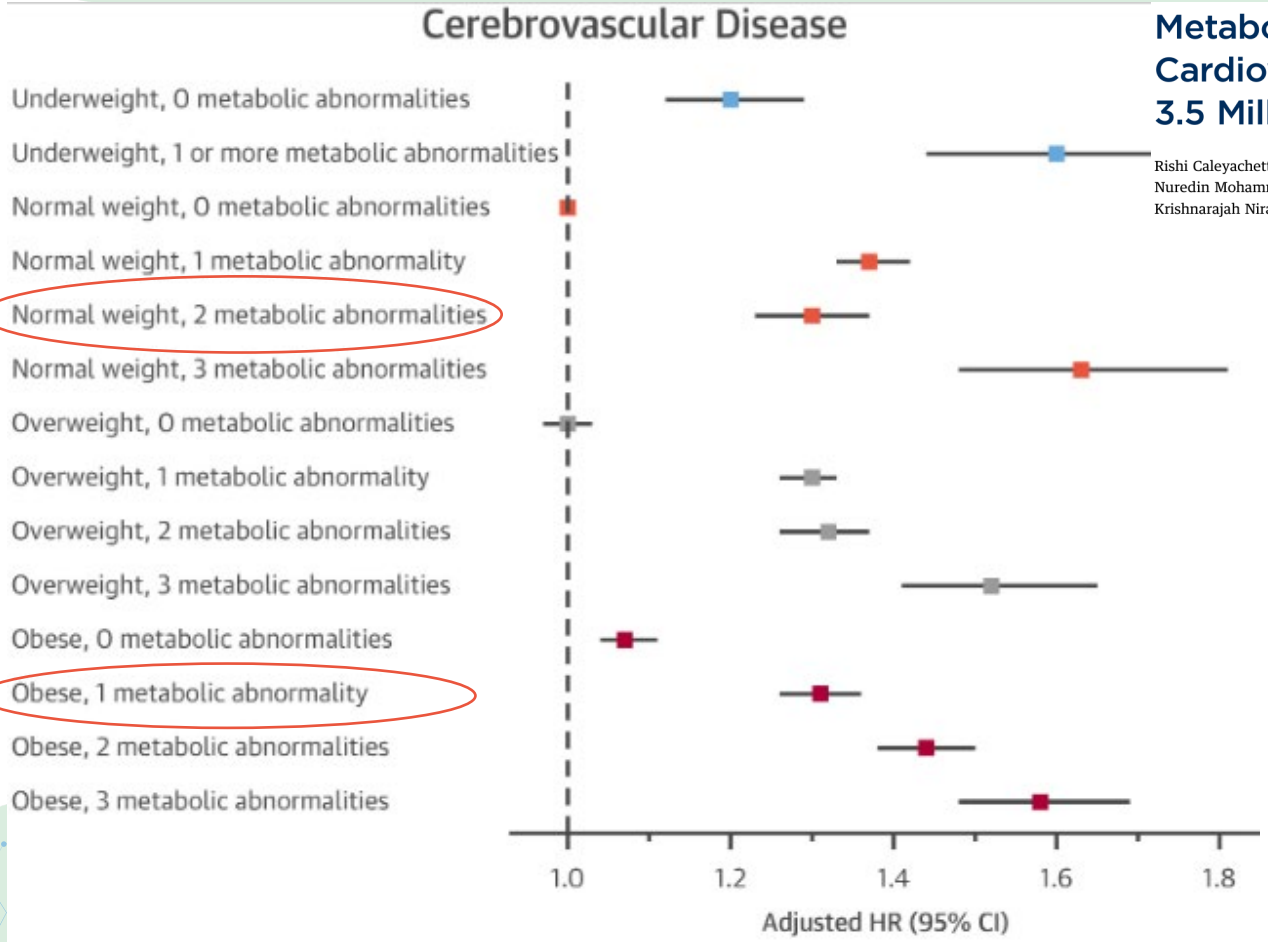
Metabolically Healthy Obese and Incident Cardiovascular Disease Events Among 3.5 Million Men and Women

Rishi Caleyachetty, MBBS, PhD,[a] G. Neil Thomas, PhD,[a] Konstantinos A. Toulis, MD, PhD,[a,b] Nuredin Mohammed, PhD,[a] Krishna M. Gokhale, MSc,[a] Kumarendran Balachandran, MBBS, MD,[a,c] Krishnarajah Nirantharakumar, MPH, MD[a]



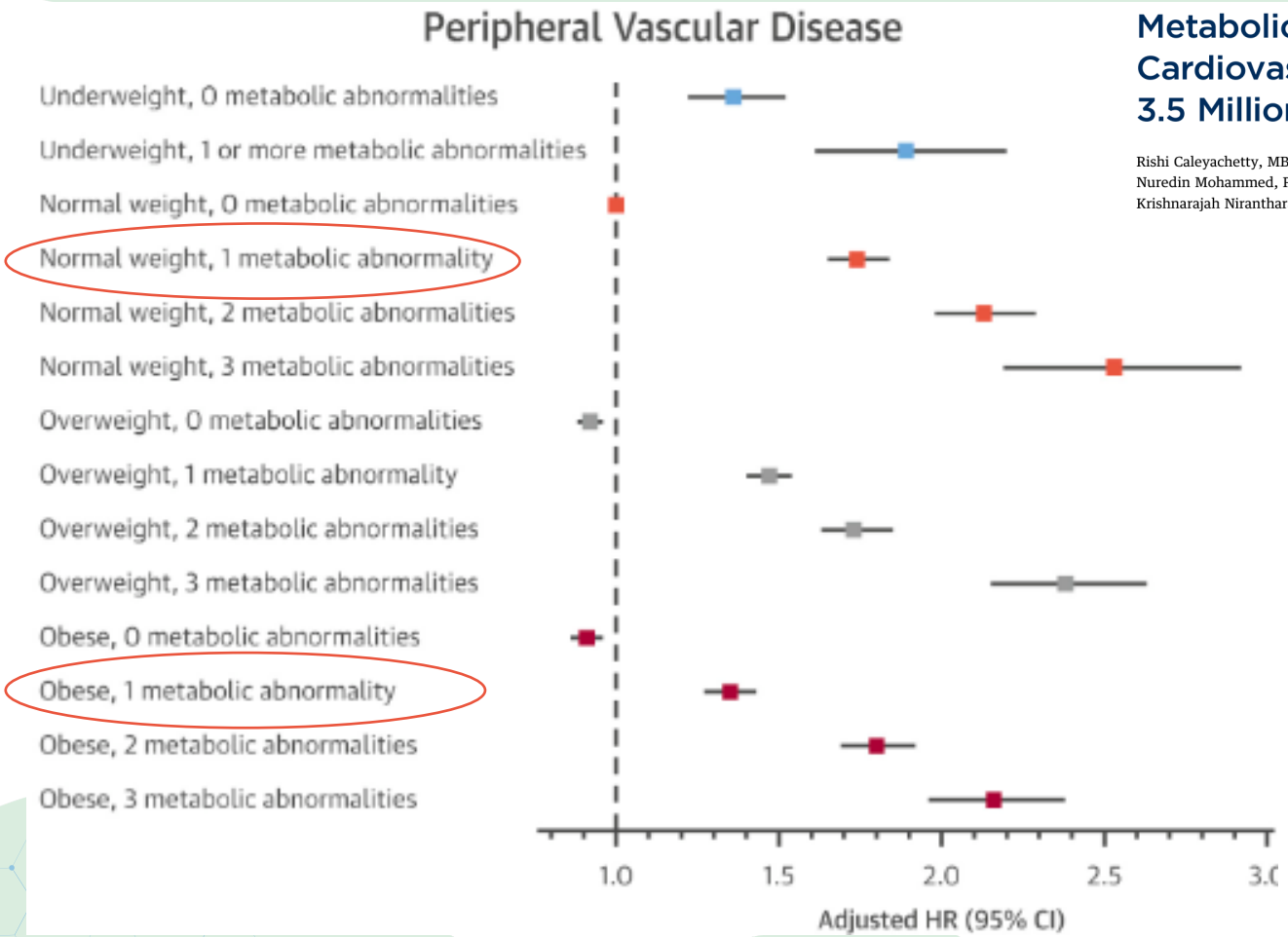
Metabolically Healthy Obese and Incident Cardiovascular Disease Events Among 3.5 Million Men and Women

Rishi Caleyachetty, MBBS, PhD,[a] G. Neil Thomas, PhD,[a] Konstantinos A. Toulis, MD, PhD,[a,b] Nuredin Mohammed, PhD,[a] Krishna M. Gokhale, MSc,[a] Kumarendran Balachandran, MBBS, MD,[a,c] Krishnarajah Nirantharakumar, MPH, MD[a]



Metabolically Healthy Obese and Incident Cardiovascular Disease Events Among 3.5 Million Men and Women

Rishi Caleyachetty, MBBS, PhD,[a] G. Neil Thomas, PhD,[a] Konstantinos A. Toulis, MD, PhD,[a,b] Nuredin Mohammed, PhD,[a] Krishna M. Gokhale, MSc,[a] Kumarendran Balachandran, MBBS, MD,[a,c] Krishnarajah Nirantharakumar, MPH, MD[a]



Metabolically Healthy Obese and Incident Cardiovascular Disease Events Among 3.5 Million Men and Women

Rishi Caleyachetty, MBBS, PhD,[a] G. Neil Thomas, PhD,[a] Konstantinos A. Toulis, MD, PhD,[a,b] Nuredin Mohammed, PhD,[a] Krishna M. Gokhale, MSc,[a] Kumarendran Balachandran, MBBS, MD,[a,c] Krishnarajah Nirantharakumar, MPH, MD[a]

Conclusioni

Il solo BMI non è sufficiente per la valutazione del rischio metabolico

Bisogna tenere conto della composizione corporea (utilizzo di BIA, circonferenza vita, rapporto cv/altezza …)

Valutare altre comorbidità presenti oltre le alterazioni metaboliche

Ottimizzare il profilo di rischio e ridurre gli outcome del paziente con o senza eccesso ponderale

Grazie per l’attenzione!