STAGING DELL'OBESITÀ E DELLE SUE COMPLICANZE

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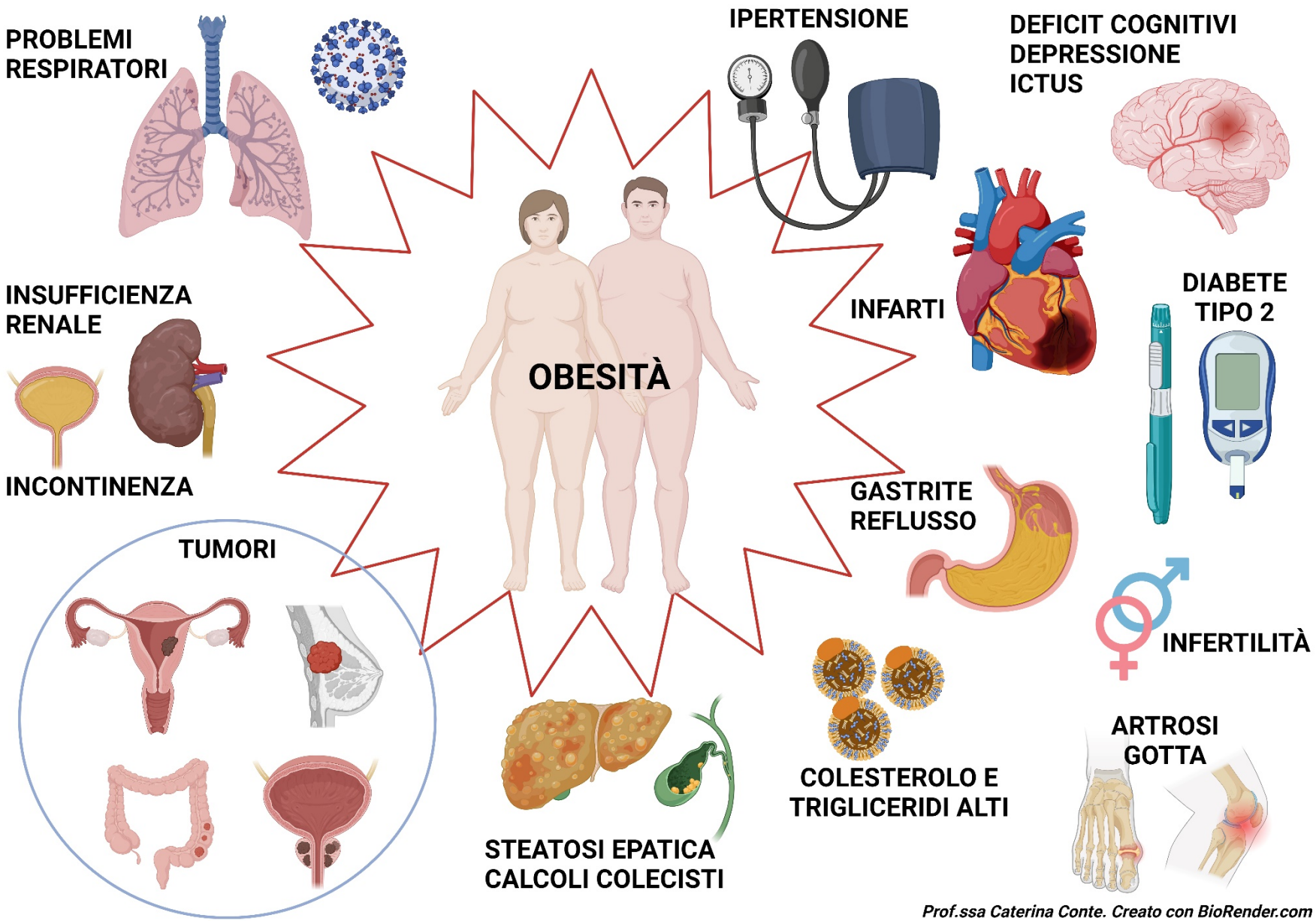
OBESITÀ

- Previously, obesity has been defined primarily by BMI. It is time to **move away from a weight-centric definition and focus on health**.
- Obesity is defined as a prevalent, complex, progressive, and relapsing chronic disease characterized by **abnormal or excessive body fat (adiposity) that impairs health**.
- BMI and waist circumference can be used as screening tools.
- **Diagnosis of obesity should be based on the presence of functional, medical, and/or psychosocial impairments related to the presence of abnormal or excess body fat rather than on anthropometric measures alone**.

Wharton S, et al. CMAJ. 2020;192:E875-E891.

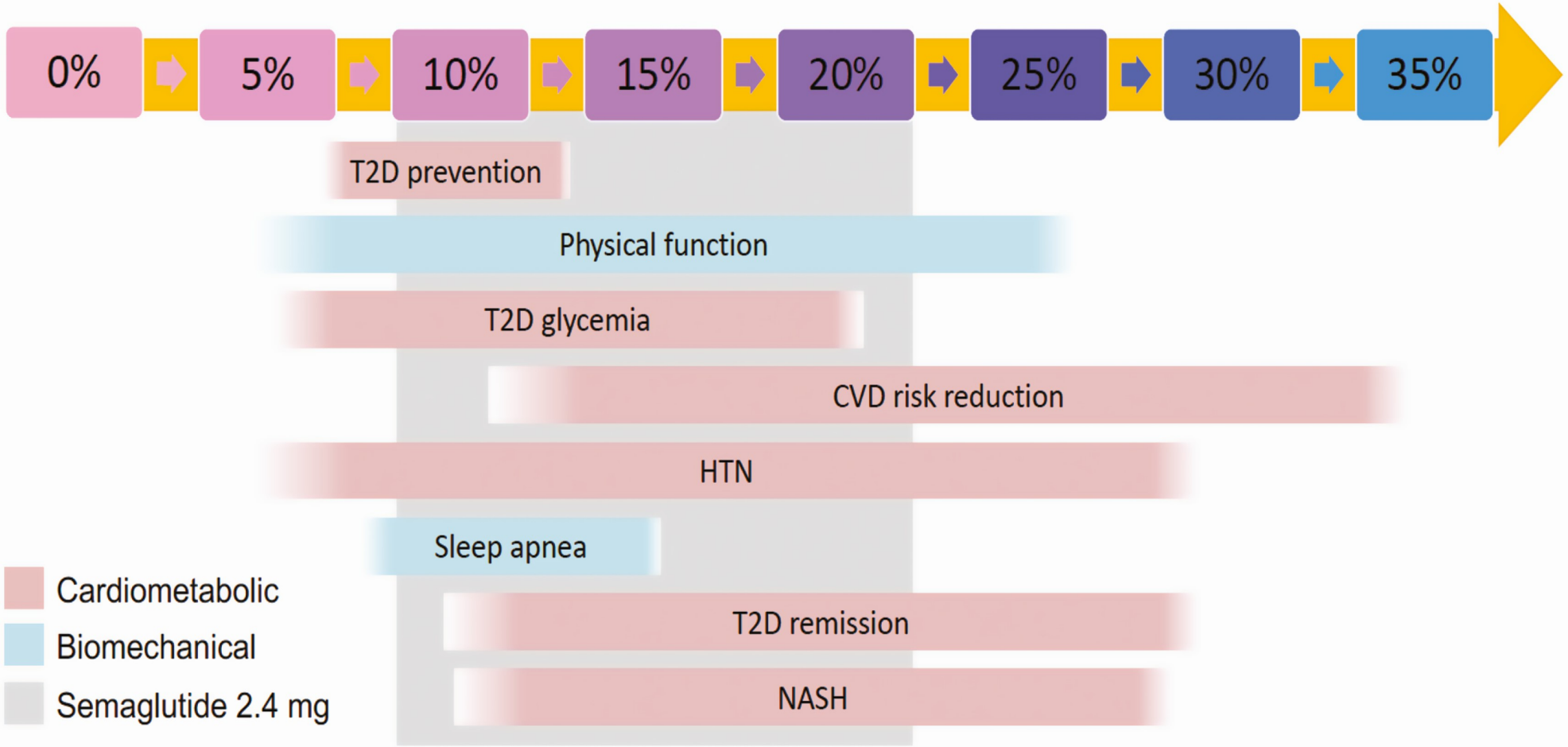
obesity canada

CONOSCERE LE COMPLICANZE DELL'OBESITÀ



Prof.ssa Caterina Conte. Creato con BioRender.com

TRATTARE PER PREVENIRE E TRATTARE LE COMPLICANZE DELL'OBESITÀ



HTN, ipertensione

Garvey WT. J Clin Endocrinol Metab. 2022;107:e1339-e1347.

INQUADRAMENTO DEL PAZIENTE CON OBESITÀ

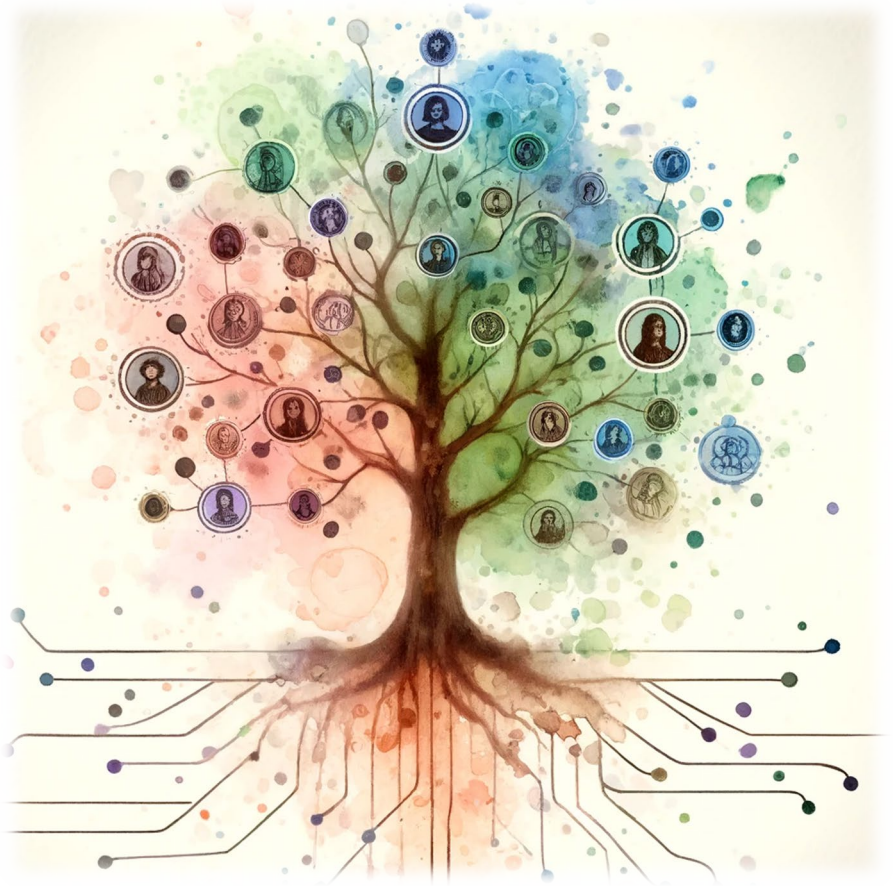
- Anamnesi
- Esame obiettivo
- Esami di laboratorio e strumentali
- Stadiazione

Anamnesi: STORIA DEL PESO

- esordio dell’obesità (eventi scatenanti)
- peso massimo
- peso minimo
- tentativi di calo ponderale (conoscenza principi stile di vita «sano»)

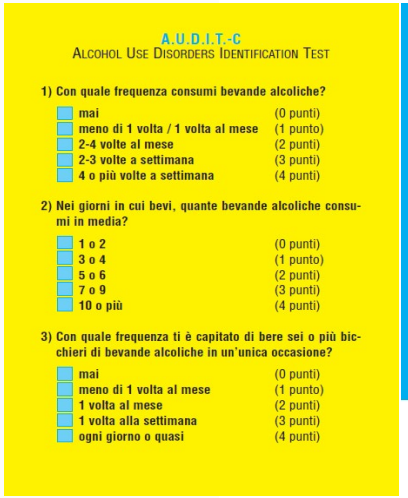
Anamnesi FAMILIARE

- Obesità
- Malattie cardiometaboliche
- Tumori
- …



Anamnesi FISIOLOGICA

- fumo
- alcol (AUDIT-C)



A.U.D.I.T.-C
ALCOHOL USE DISORDERS IDENTIFICATION TEST

1) Con quale frequenza consumi bevande alcoliche?

mai	(0 punti)
meno di 1 volta / 1 volta al mese	(1 punto)
2-4 volte al mese	(2 punti)
2-3 volte a settimana	(3 punti)
4 o più volte a settimana	(4 punti)

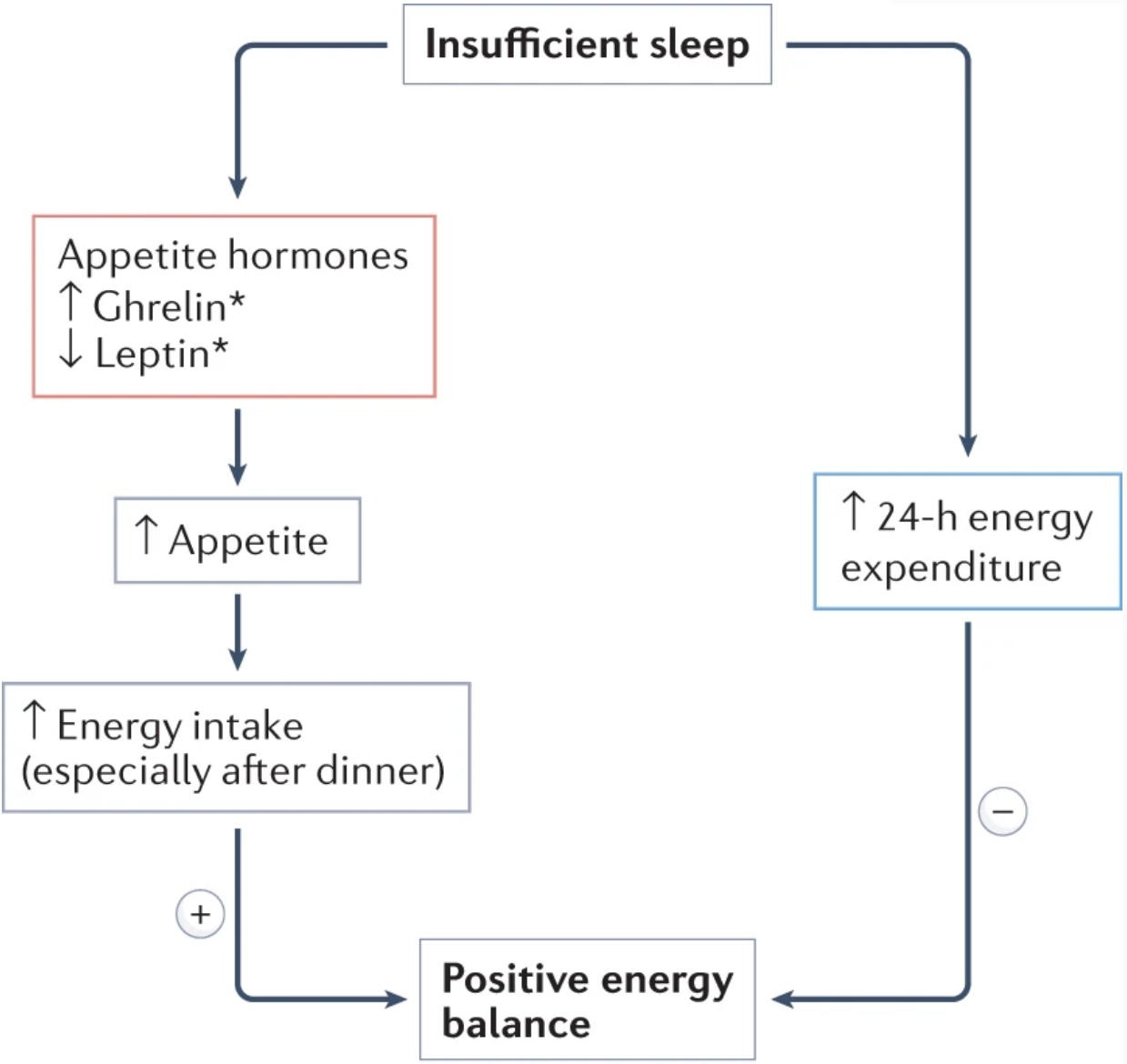
2) Nei giorni in cui bevi, quante bevande alcoliche consumi in media?

1 o 2	(0 punti)
3 o 4	(1 punto)
5 o 6	(2 punti)
7 o 9	(3 punti)
10 o più	(4 punti)

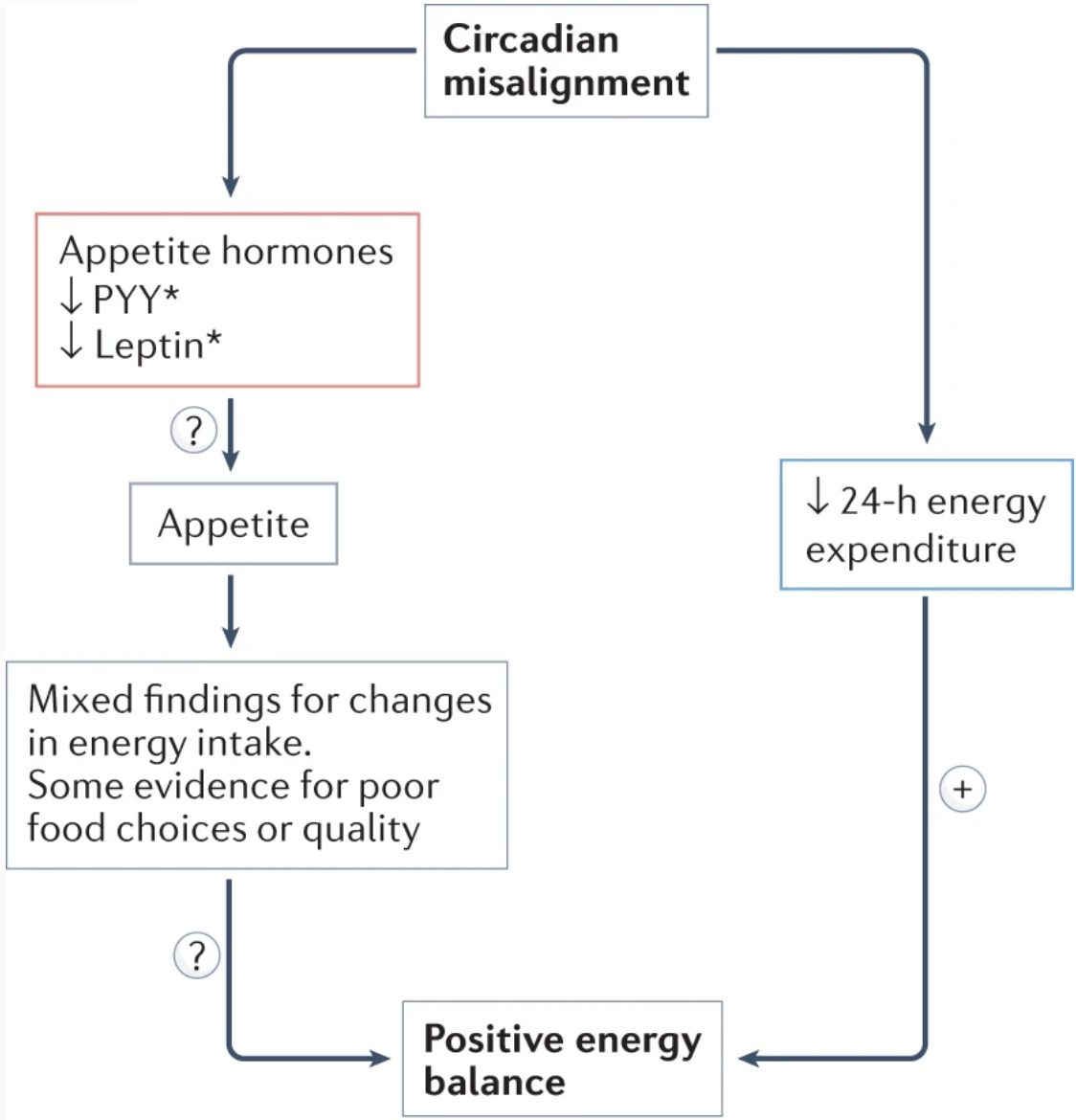
3) Con quale frequenza ti è capitato di bere sei o più bicchieri di bevande alcoliche in un'unica occasione?

mai	(0 punti)
meno di 1 volta al mese	(1 punto)
1 volta al mese	(2 punti)
1 volta alla settimana	(3 punti)
ogni giorno o quasi	(4 punti)

- alimentare
- attività fisica
- alvo, diuresi, digestione…
- sonno



*When energy intake controlled; opposite effects when energy intake ad libitum

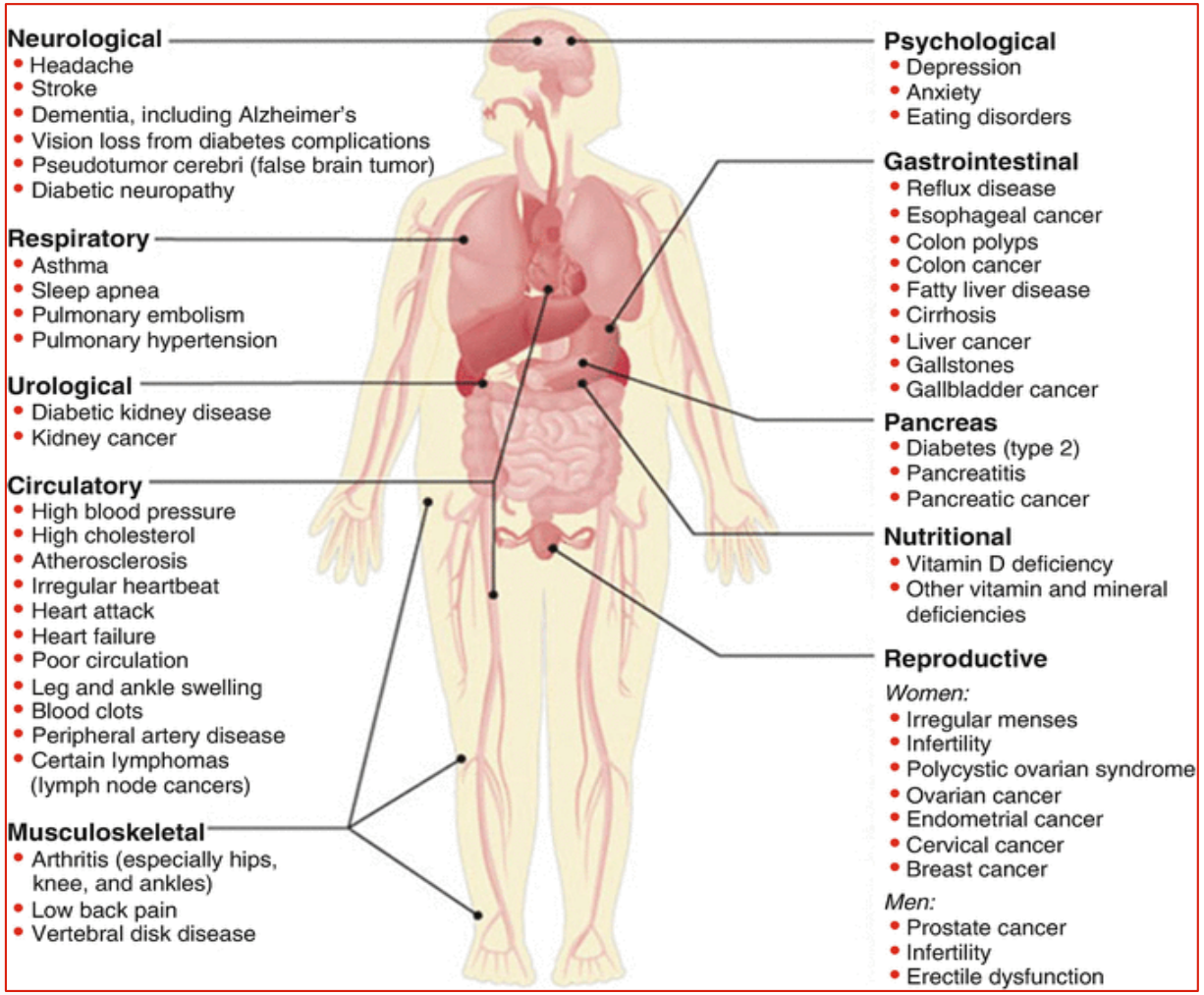


*When energy intake controlled

Chaput JP, et al. at Rev Endocrinol . 2023;19:82-97

Anamnesi PATOLOGICA

- cardiovascolare
- respiratorio
- gastrointestinale
- osteoarticolare
- genitourinario
- cute
- stato di salute mentale



- Quali sono i problemi principali?
- Qual è l'obiettivo di calo ponderale per migliorarli?

Anamnesi FARMACOLOGICA

- Antidepressivi (amitriptilina, nortriptilina, citalopram..)
- Antipsicotici (litio, clozapina, quietiapina, aloperidolo…)
- Anti-diabete (tiazolizinedioni, sulfoniluree, insulina)
- Agonisti α_2-adrenergici (clonidina)
- Agonisti β_2-adrenergici (atenololo)
- Steroidi

Masood B, Moorthy M. Clin Med (Lond . 2023;23:284-291

Anamnesi SOCIALE

- conviventi
- discriminazione razziale
- stato socioeconomico
- area/quartiere di residenza
- infrastrutture (strade pedonali, collegamenti, trasporti pubblici, spazi verdi...)
- esposizione al cibo (disponibilità/accessibilità)
- fattori psico-sociali (stress, solitudine...)

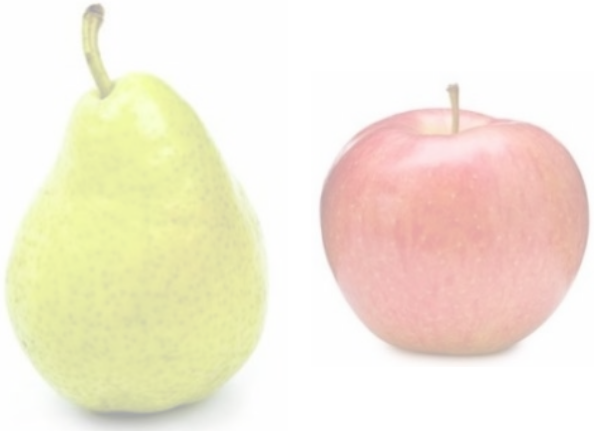
Baez AW, et al. Prog Cardiovasc Dis . 2023:78:17-26

Esame obiettivo

- **Peso, altezza,** circonferenza vita e fianchi
- Mani
- Occhi
- Collo (circ.)
- Cuore
- Torace
- Addome
- Arti inferiori
- Pressione Arteriosa

Body Mass Index - BMI (kg/m^2)

< 18.5	=	Sottopeso
18.5 - 24.9	=	Normopeso
25.0 - 29.9	=	Sovrappeso
30.0 - 34.9	=	Obesità classe I
35.0 - 39.9	=	Obesità classe II
≥ 40	=	Obesità classe III



Circonferenza vita: un parametro vitale

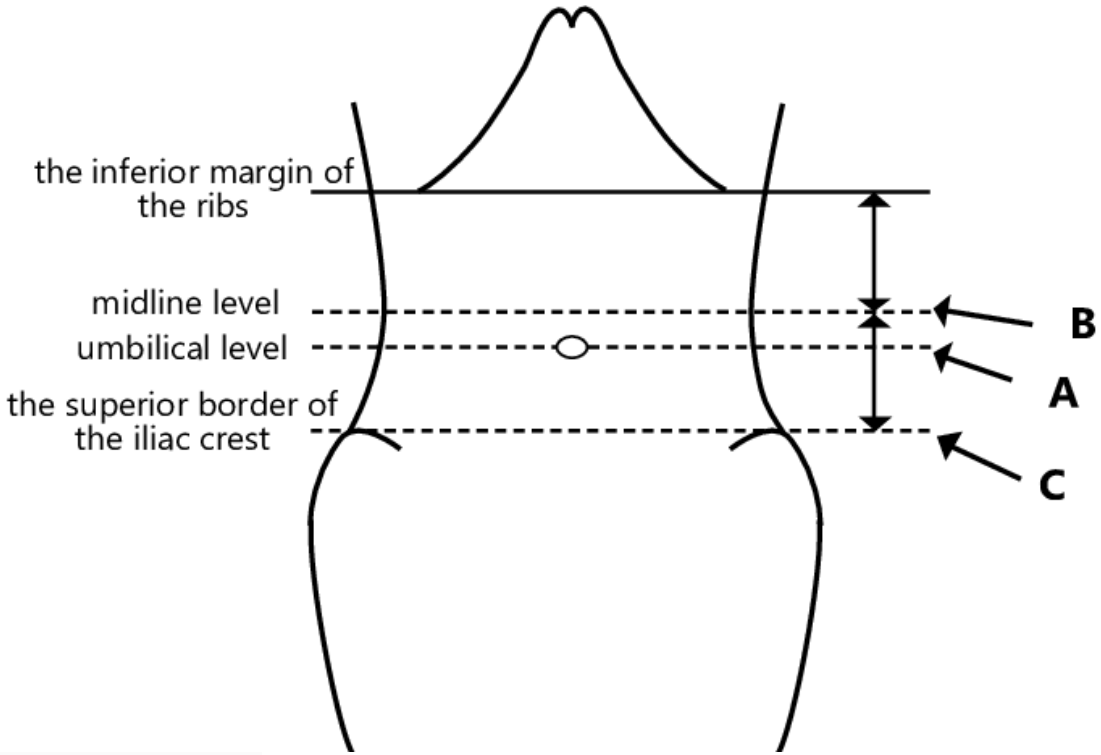
CONSENSUS STATEMENT

OPEN

Waist circumference as a vital sign in clinical practice: a Consensus Statement from the IAS and ICCR Working Group on Visceral Obesity

Robert Ross[1], Ian J. Neeland[2], Shizuya Yamashita[3], Iris Shai[4], Jaap Seidell[5], Paolo Magni[6,7], Raul D. Santos[8,9], Benoit Arsenault[2,10], Ada Cuevas[11], Frank B. Hu[12], Bruce A. Griffin[13], Alberto Zambon[14], Philip Barter[15], Jean-Charles Fruchart[16], Robert H. Eckel[17], Yuji Matsuzawa[18] and Jean-Pierre Després[10,19]*

Abstract | Despite decades of unequivocal evidence that waist circumference provides both independent and additive information to BMI for predicting morbidity and risk of death, this measurement is not routinely obtained in clinical practice. This Consensus Statement proposes that measurements of waist circumference afford practitioners with an important opportunity to improve the management and health of patients. We argue that BMI alone is not sufficient to properly assess or manage the cardiometabolic risk associated with increased adiposity in adults and provide a thorough review of the evidence that will empower health practitioners and professional societies to routinely include waist circumference in the evaluation and management of patients with overweight or obesity. We recommend that decreases in waist circumference are a critically important treatment target for reducing adverse health risks for both men and women. Moreover, we describe evidence that clinically relevant reductions in waist circumference can be achieved by routine, moderate-intensity exercise and/or dietary interventions. We identify gaps in the knowledge, including the refinement of waist circumference threshold values for a given BMI category, to optimize obesity risk stratification across age, sex and ethnicity. We recommend that health professionals are trained to properly perform this simple measurement and consider it as an important 'vital sign' in clinical practice.



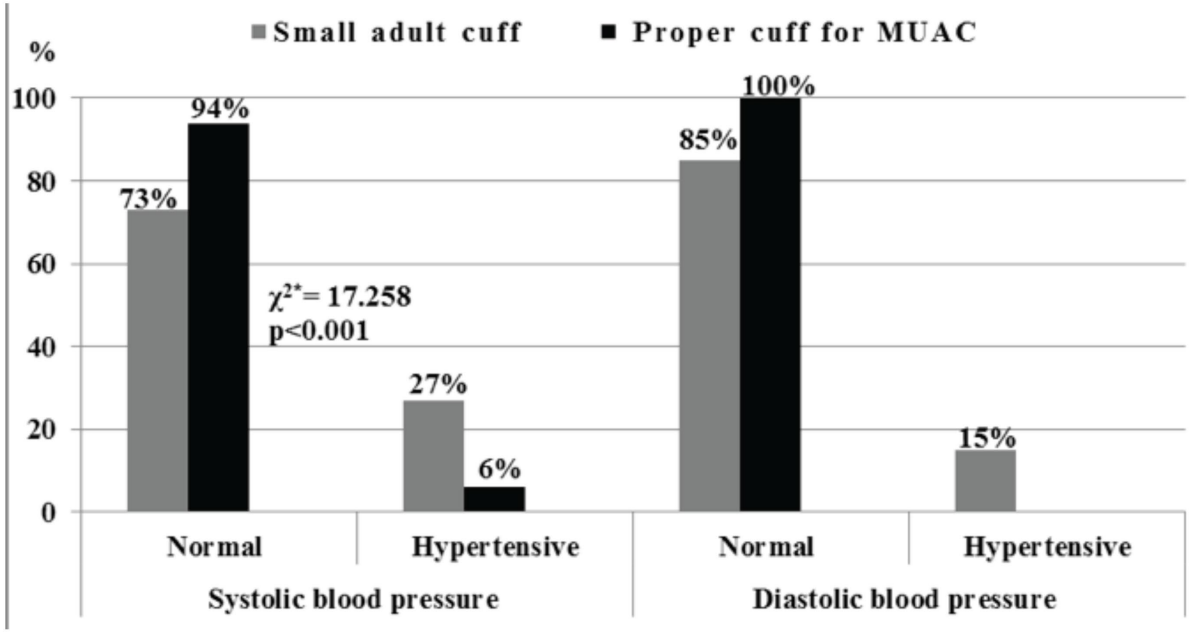
Ross R, et al. Nat Rev Endocrinol . 2020;16:177-189

Esame obiettivo

- Peso, altezza, circonferenza vita e fianchi,
- **Mani**
- **Occhi**
- **Collo** (circ.)
- Cuore
- Torace
- Addome
- Arti inferiori
- **Pressione Arteriosa**

Esame obiettivo

- Pressione Arteriosa (bracciale adeguato)



* Pearson Chi-square test

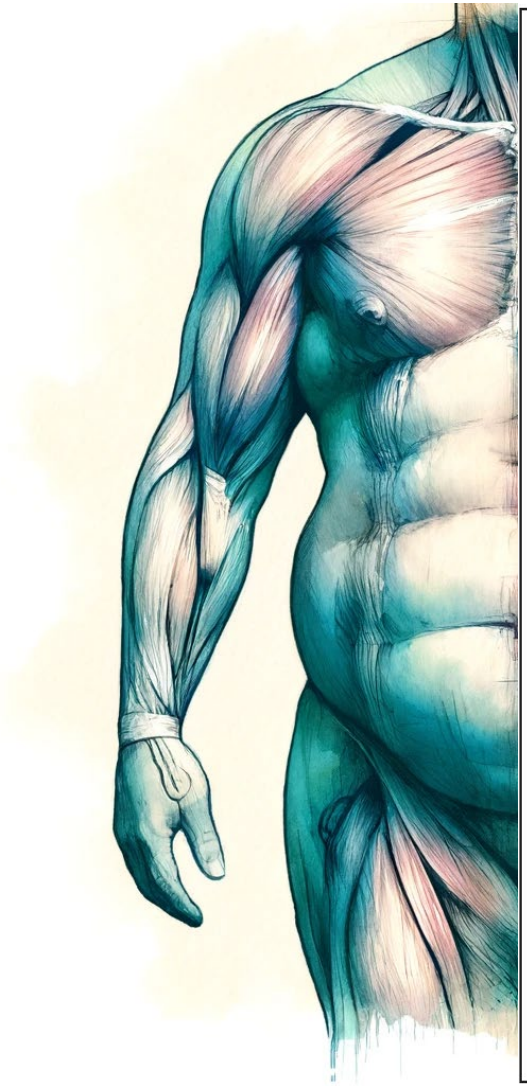
Category	Systolic (mmHg)		Diastolic (mmHg)
Optimal	<120	and	<80
Normal	120–129	and	80–84
High-normal	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	160–179	and/or	100–109
Grade 3 hypertension	≥180	and/or	≥110
Isolated systolic hypertension[a]	≥140	and	<90
Isolated diastolic hypertension[a]	<140	and	≥90

Yüksel S, et al. Florence Nightingale J Nurs . 2020;28(2):205-212.

ESH Hypertension guidelines. J Hypertens. 2023;41:1874-2071

Esame obiettivo

Obesità Sarcopenica



SCREENING

- High **BMI or WC** (based on ethnic cut-points)
- **Surrogate parameters for sarcopenia** [clinical symptoms, clinical suspicion or questionnaires (e.g. SARC-F in older subjects)]

***Both conditions** must be present to proceed with the diagnostic process.*

DIAGNOSIS

*It will be performed in **two steps:***

1. ALTERED SKELETAL MUSCLE FUNCTIONAL PARAMETERS considering **strength** (HGS, chair stand test)

If muscle functional parameters suggest the presence of SO, the diagnostic process will continue considering body composition.

2. ALTERED BODY COMPOSITION: increased FM (FM%) and **reduced muscle mass** assessed as ALM/W by DXA or as SMM/W by BIA

*Both **altered body composition** and **altered skeletal muscle functional parameters** should be present to assess the presence of SO.*

STAGING

A two-level STAGING should be performed, based on the presence of complications **resulting from high FM and low ASMM,** to better mirror the progression/severity of SO:

- **STAGE I: NO complications**
- **STAGE II: presence of at least one complication attributable to SO** (e.g. metabolic diseases, functional disabilities, cardiovascular and respiratory diseases).

Donini LM, et al. Obes Facts. 2022;15:321-335.

VALUTAZIONE OS NELLA PRATICA CLINICA

Composizione corporea con BIA o DXA

Misurazione della forza con dinamometro idraulico o test sit-to-stand

Esami di laboratorio

- Glicemia (IFG [≥100], IGT [2h ≥140], DM)
- HbA1c (<6%, 6-6,49%, ≥6,5%)
- Profilo lipidico
- Funzione epatica (→ FLI) +/- ecografia addome
- Elettroliti
- Funzione renale
- Indici di flogosi (PCR, ferritina)
- Emocromo con formula
- Uricemia
- Funzione tiroidea
- Deficit nutrizionali: Vit. D, B12, ferro, folati

Recommendations for lipid analyses for cardiovascular disease risk estimation

Recommendations	Class[a]	Level[b]
TC is to be used for the estimation of total CV risk by means of the SCORE system.	I	C
HDL-C analysis is recommended to further refine risk estimation using the online SCORE system.	I	C
LDL-C analysis is recommended as the primary lipid analysis method for screening, diagnosis, and management.	I	C
TG analysis is recommended as part of the routine lipid analysis process.	I	C
Non-HDL-C evaluation is recommended for risk assessment, particularly in people with high TG levels, DM, obesity, or very low LDL-C levels.	I	C
ApoB analysis is recommended for risk assessment, particularly in people with high TG levels, DM, obesity, metabolic syndrome, or very low LDL-C levels. It can be used as an alternative to LDL-C, if available, as the primary measurement for screening, diagnosis, and management, and may be preferred over non-HDL-C in people with high TG levels, DM, obesity, or very low LDL-C levels.	I	C
Lp(a) measurement should be considered at least once in each adult person's lifetime to identify those with very high inherited Lp(a) levels >180 mg/dL (>430 nmol/L) who may have a lifetime risk of ASCVD equivalent to the risk associated with heterozygous familial hypercholesterolaemia.	IIa	C
Lp(a) should be considered in selected patients with a family history of premature CVD, and for reclassification in people who are borderline between moderate and high-risk.	IIa	C

ESC/EAS Dyslipidaemia guidelines, 2019

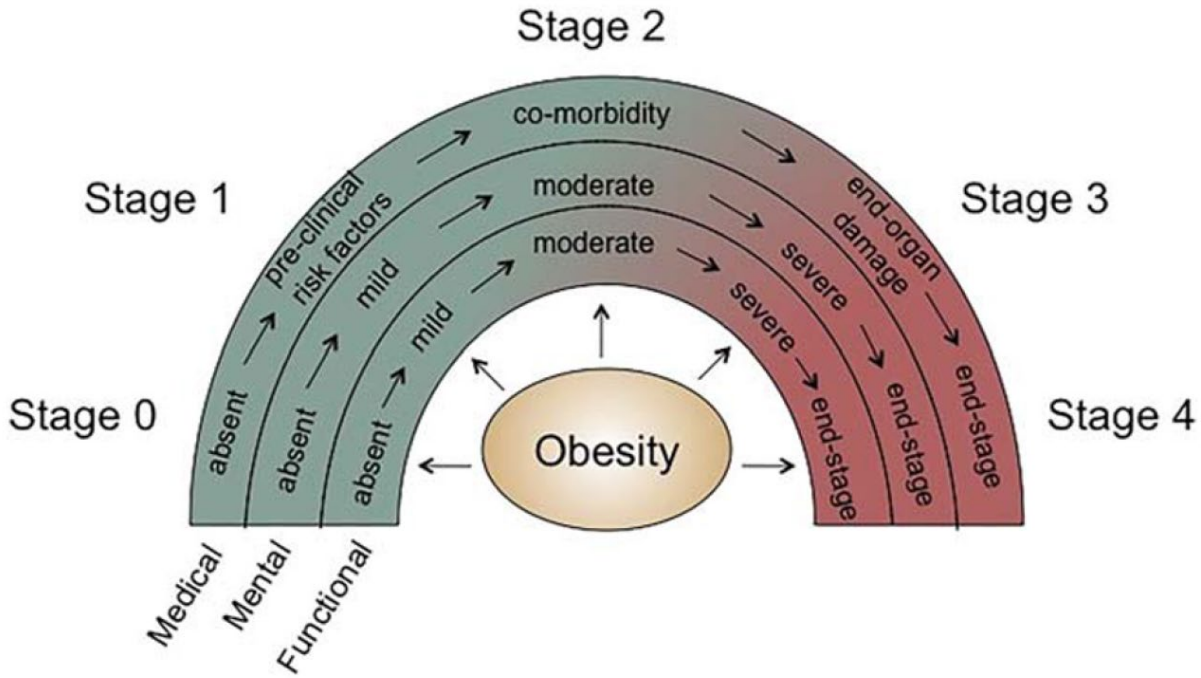
Esami strumentali

- Ecografia addome
- Valutazione cardiovascolare
- Polisonnografia (STOP – BANG)

Snoring	Russa rumorosamente tanto da essere sentito attraverso una porta chiusa?	SI	NO
Tiredness	Si sente spesso stanco, affaticato e assonnato durante il giorno?	SI	NO
Observed apnea	Le sono mai stati osservati/segnalati episodi di apnea durante il sonno?	SI	NO
Pressure	Soffre di ipertensione arteriosa, anche trattata?	SI	NO
Body mass index	BMI > 35 kg/m²	SI	NO
Age	Ha più di 50 anni?	SI	NO
Neck circumference	Circonferenza collo > 41 cm per le donne e > 43 cm per gli uomini	SI	NO
Gender	Genere maschile?	SI	NO

Punteggio	Rischio
0-2	Basso
3-4	Intermedio
5-8	Alto

STADIAZIONE DELL'OBESITÀ



EOSS: EDMONTON OBESITY STAGING SYSTEM - *Staging Tool*

STAGE 0

- **NO** sign of obesity-related risk factors
- **NO** physical symptoms
- **NO** psychological symptoms
- **NO** functional limitations

Case Example:
Physically active female with a BMI of 32 kg/m^2, no risk factors, no physical symptoms, no self-esteem issues, and no functional limitations.

Class I, Stage 0 Obesity

EOSS Score

WHO Obesity Classfication

STAGE 1

- Patient has obesity-related **SUBCLINICAL** risk factors
  (borderline hypertension, impaired fasting glucose, elevated liver enzymes, etc.)
  - *OR* -
- **MILD** physical symptoms - patient currently not requiring medical treatment for comorbidities
  (dyspnea on moderate exertion, occasional aches/pains, fatigue, etc.) - *OR* -
- **MILD** obesity-related psychological symptoms and/or mild impairment of well-being
  (quality of life not impacted)

Case Example:
38 year old female with a BMI of 59.2 kg/m^2, borderline hypertension, mild lower back pain, and knee pain. Patient does not require any medical intervention.

Class III, Stage 1 Obesity

WHO CLASSIFICATION OF WEIGHT STATUS (**BMI kg/m^2**)

Obese Class I ..... 30 - 34.9
Obese Class II ..... 35 - 39.9
Obese Class III ..... ≥40

Stage 0 / Stage 1 Obesity

Patient ***does not meet clinical criteria for admission*** at this time.
Please refer to primary care for further preventative treatment options.

STAGE 2

- Patient has **ESTABLISHED** obesity-related comorbidities requiring medical intervention
  (HTN, Type 2 Diabetes, sleep apnea, PCOS, osteoarthritis, reflux disease) - *OR* -
- **MODERATE** obesity-related psychological symptoms
  (depression, eating disorders, anxiety disorder) - *OR* -
- **MODERATE** functional limitations in daily activities
  (quality of life is beginning to be impacted)

Case Example:
32 year old male with a BMI of 36 kg/m^2 who has primary hypertension and obstructive sleep apnea.

Class II, Stage 2 Obesity

STAGE 3

- Patient has **significant** obesity-related end-organ damage (myocardial infarction, heart failure, diabetic complications, incapacitating osteoarthritis) - *OR* -
- **SIGNIFICANT** obesity-related psychological symptoms
  (major depression, suicide ideation) - *OR* -
- **SIGNIFICANT** functional limitations
  (eg: unable to work or complete routine activities, reduced mobility)
- **SIGNIFICANT** impairment of well-being
  (quality of life is significantly impacted)

Case Example:
49 year old female with a BMI of 67 kg/m^2 diagnosed with sleep apnea, CV disease, GERD, and suffered from stroke. Patient's mobility is significantly limited due to osteoarthritis and gout.

Class III, Stage 3 Obesity

STAGE 4

- **SEVERE** (potential end stage) from obesity-related comorbidities - *OR* -
- **SEVERELY** disabling psychological symptoms - *OR* -
- **SEVERE** functional limitations

Case Example:
45 year old female with a BMI of 54 kg/m^2 who is in a wheel chair because of disabling arthritis, severe hyperpnea, and anxiety disorder.

Class III, Stage 4 Obesity

Alberta Health Services

UNIVERSITY OF ALBERTA

Sharma AM & Kushner RF, *Int J Obes* 2009

EOSS: EDMONTON OBESITY STAGING SYSTEM - *Staging Tool*

EOSS stage	Conceptual EOSS definition (Sharma and Kushner, 2009) [1]	Study operational definition
0	No apparent obesity-related risk factors, physical symptoms, psychopathology, functional limitations, and/or impairments of well-being	No EOSS factors reported
1	Presence of obesity-related subclinical risk factors, mild physical symptoms, mild psychopathology, mild functional limitations, and/or impairment of well-being	Any of the following: (i) Glucose $\geq$ 5.6 mmol/L (ii) Cholesterol $\geq$ 5.2 mmol/L (iii) Triglycerides $\geq$ 1.7 mmol/L (iv) HDL $\leq$ 1.6 mmol/L (v) LDL $\geq$ 3.3 mmol/L (vi) SBP $\geq$ 130 mmHg (vii) DBP $\geq$ 85 mmHg

Canning KG, et al. J Obes . 2015:2015:619734

EOSS: EDMONTON OBESITY STAGING SYSTEM - *Staging Tool*

2	Presence of established obesity-related chronic disease, moderate limitations in activities of daily living, and/or well-being	Any of the following: (i) Glucose ≥ 6.9 mmol/L (ii) Diagnosed type 2 diabetes or type 2 diabetes medication (iii) Cholesterol ≥ 6.2 mmol/L (iv) Diagnosed hypercholesterolaemia (v) Triglycerides ≥ 2.2 mmol/L (vi) HDL ≤ 1.0 mmol/L (vii) LDL ≥ 4.1 mmol/L (viii) Diagnosed hyperlipidaemia or hyperlipidaemia medication (ix) SBP ≥ 140 mmHg (x) DBP ≥ 90 mmHg (xi) Diagnosed hypertension or hypertension medication (xii) Sleep apnea (xiii) Gout (xiv) Arthritis (xv) Anxiety (xvi) Atherosclerosis (xvii) Fatty liver (xviii) Congestive heart failure medication (xix) Blood thinner medication (xx) Depression

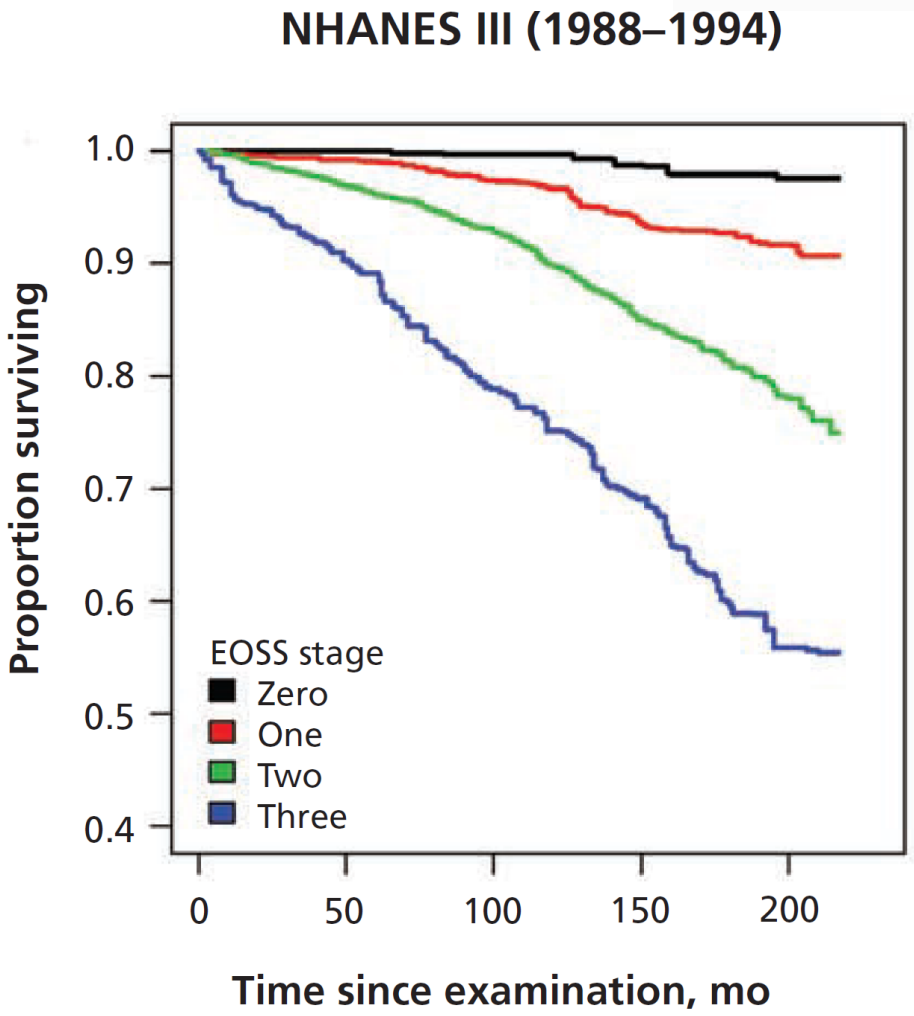
Canning KG, et al. J Obes . 2015:2015:619734

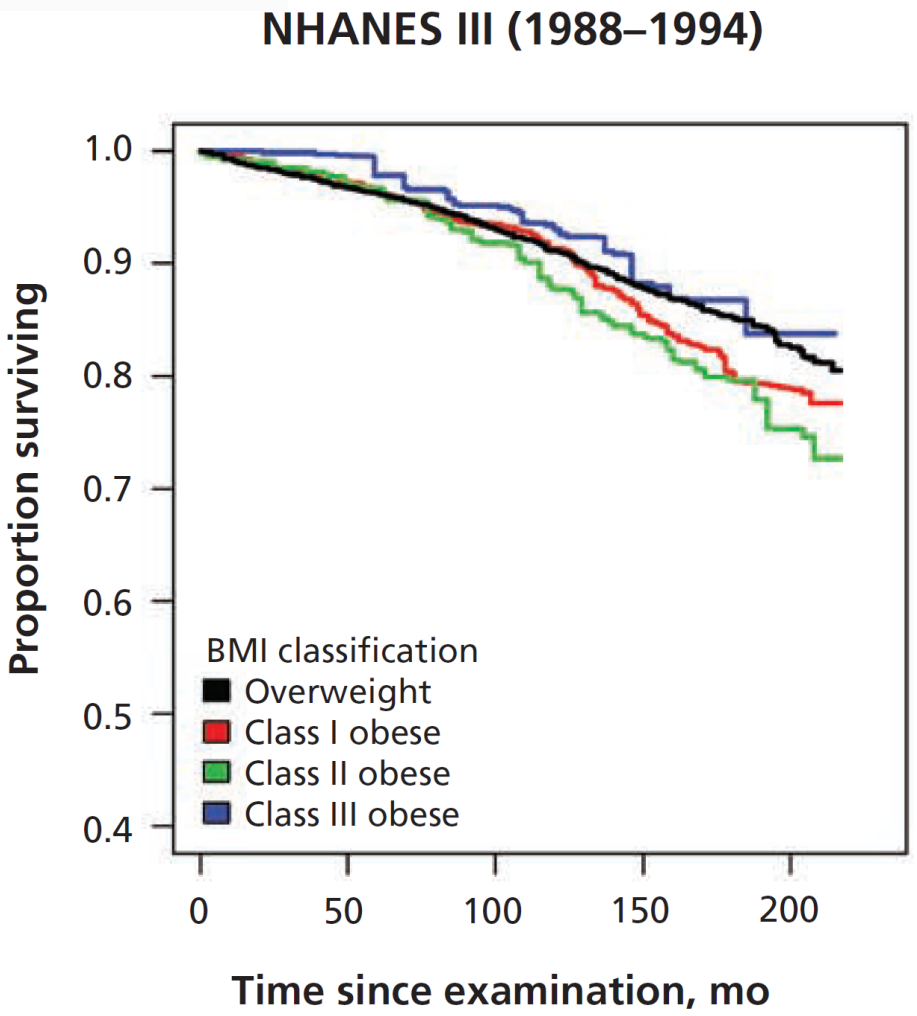
EOSS: EDMONTON OBESITY STAGING SYSTEM - *Staging Tool*

3	Established end-organ damage, significant psychopathology, significant functional limitations, and/or impairment of well-being	Any of the following: (i) Angina (ii) Heart attack (iii) Heart failure (iv) Thrombosis (v) Coronary artery disease (vi) Coronary obstructive pulmonary disease (vii) Dyspnea (viii) Exercise dyspnea (ix) Coronary artery bypass surgery (x) Stroke
4	Severe (potentially end-stage) disabilities from obesity-related chronic diseases, disabling psychopathology, functional limitations, and/or impairment of well-being	No data on these factors available to evaluate this stage

Canning KG, et al. J Obes . 2015:2015:619734

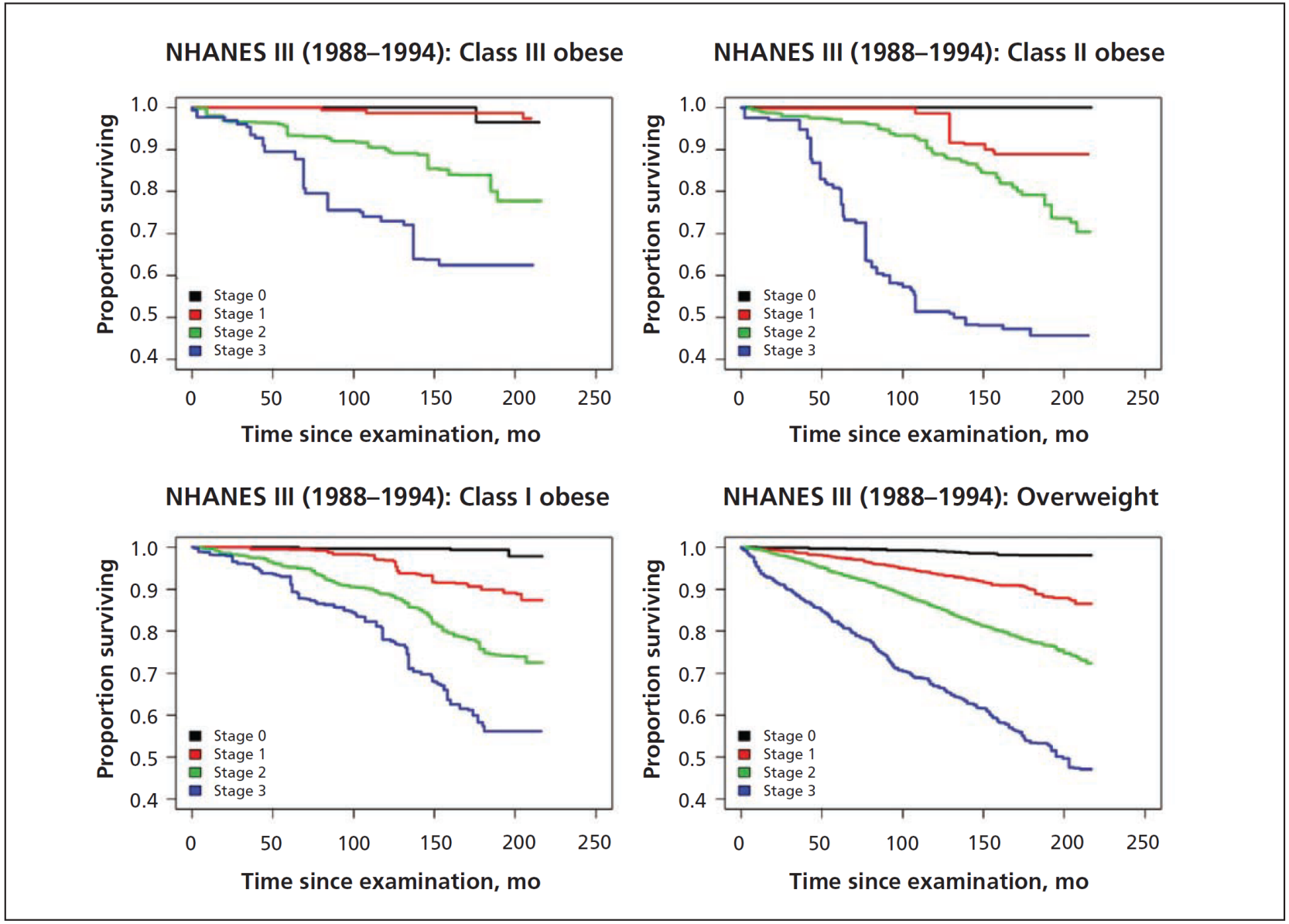
Mortalità da qualsiasi causa: EOSS vs BMI





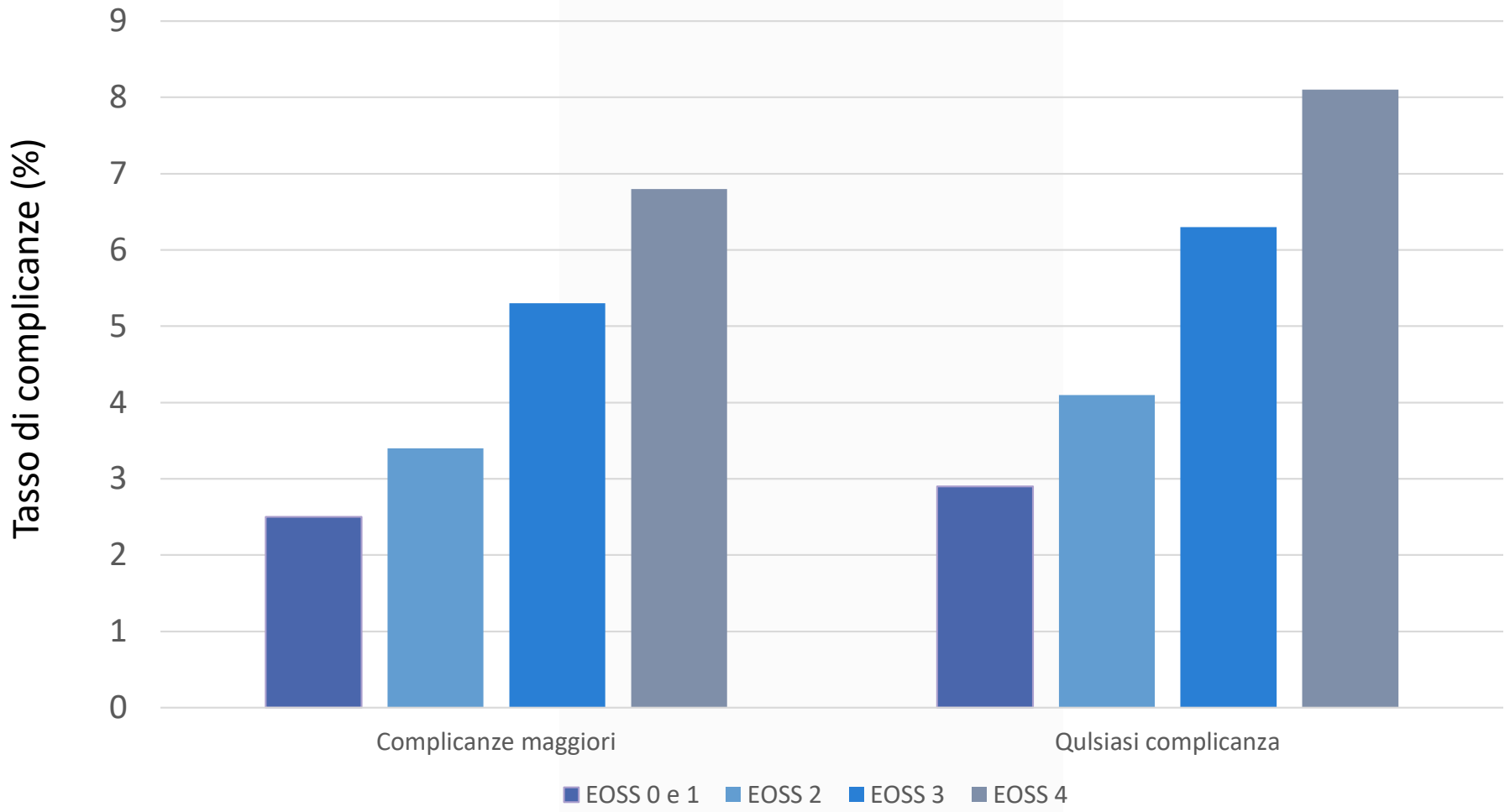
Padwal RS, et al. CMAJ . 2011;183(14):E1059-66

Mortalità da qualsiasi causa: EOSS per classe di BMI



Padwal RS, et al. CMAJ . 2011;183(14):E1059-66

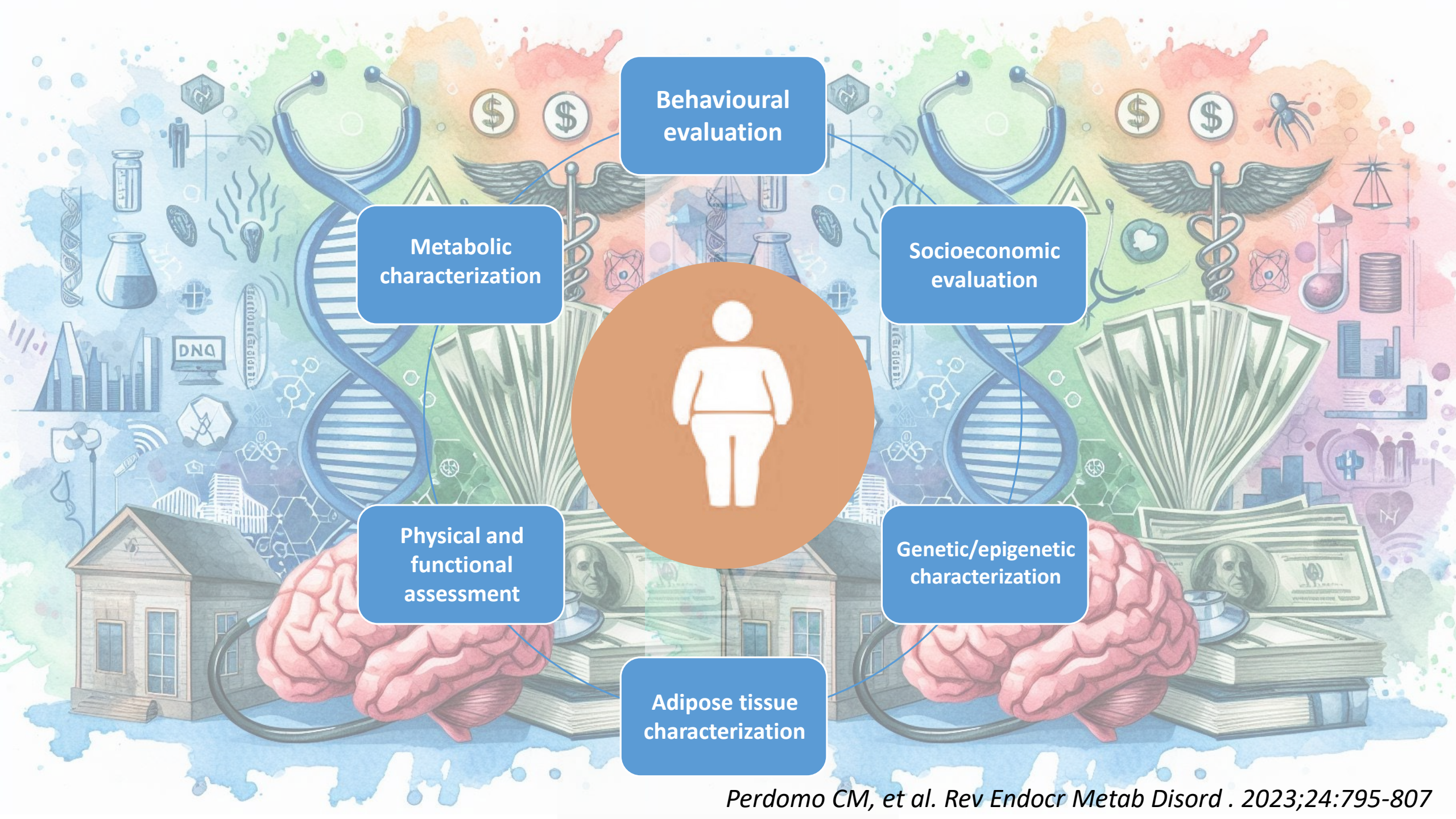
EOSS e complicanze nella chirurgia bariatrica (SG o RYGB)



Skulsky SL, et al, Surg Endosc . 2021 Dec;35(12):7163-7173


WRAP
UP

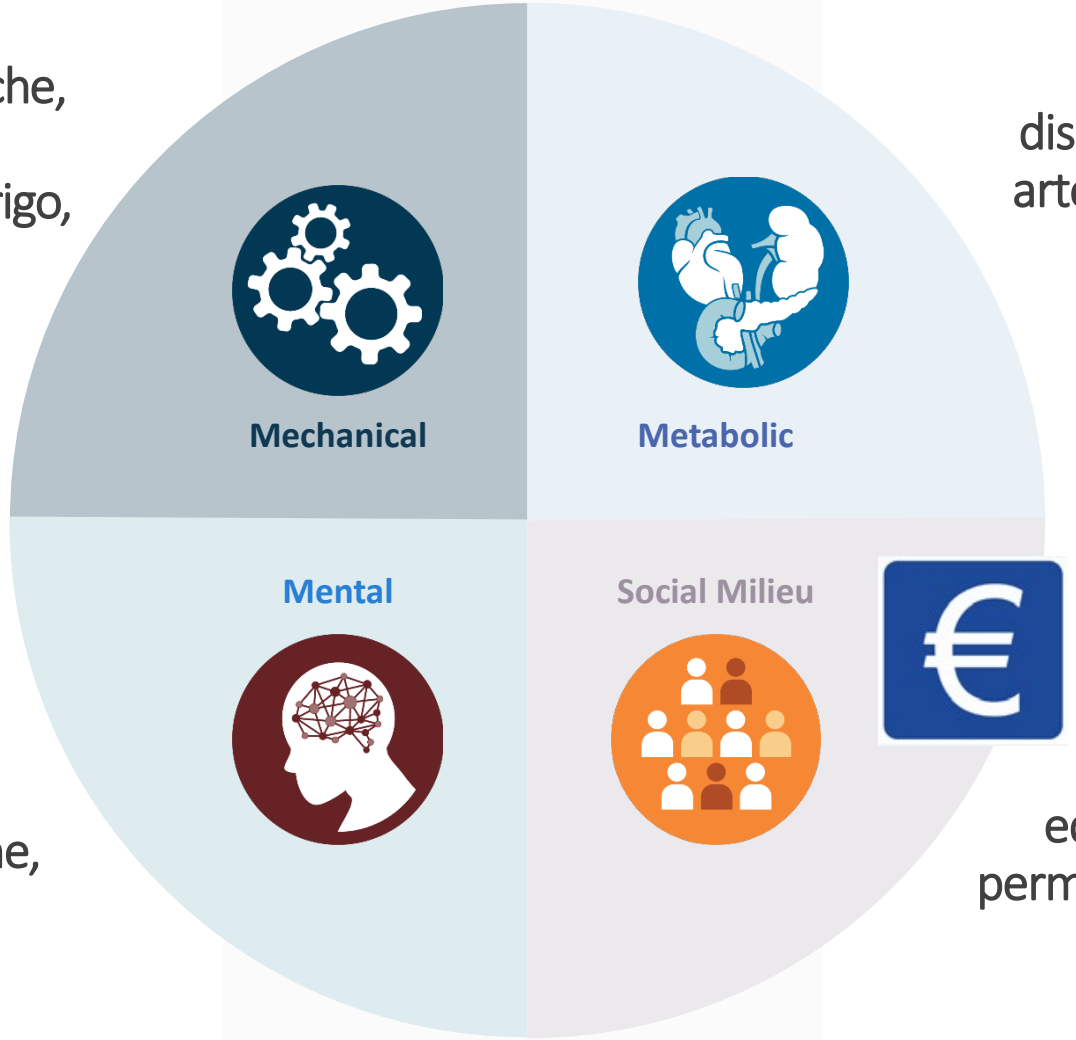
Stage 0
Stage 1
Stage 2
Stage 3
Stage 4
No clinical risk factors
Subclinical risk factors
Established disease
Severe disease
End-stage disease
Medical
Mental
Functional
Obesity staging using EOSS



Perdomo CM, et al. Rev Endocr Metab Disord . 2023;24:795-807

VALUTAZIONE DELLA PERSONA CON OBESITÀ – LE 4 (O 5) M

Patologie muscolo-scheletriche, dolore cronico, OSA, MRGE, incontinenza urinaria, intertrigo, trombosi, fascite plantare, pseudotumor cerebri



DM2, iperinsulinemia, dislipidemia, ipertensione arteriosa, gotta, colelitiasi, MASLD, PCOS, ipotiroidismo, tumori associati all'obesità

Umore, depressione, DCA, ansia, personalità, capacità cognitive, deficit di attenzione, qualità del sonno, traumi, dipendenze

Assicurazione sanitaria, impatto dell'obesità sui guadagni, educazione, impiego, possibilità di permettersi una dieta sana, accesso a programmi e farmaci per il calo ponderale

Sharma AM. Obes Rev. 2010;11:808-809; Wharton S, et al. CMAJ. 2020;192:E875-E891; Perdomo CM, et al. Rev Endocr Metab Disord . 2023;24:795-807


S.I.C.OB.
XXXII CONGRESSO
NAZIONALE SICOB
23 - 25 MAGGIO 2024
GIARDINI
NAXOS

Grazie