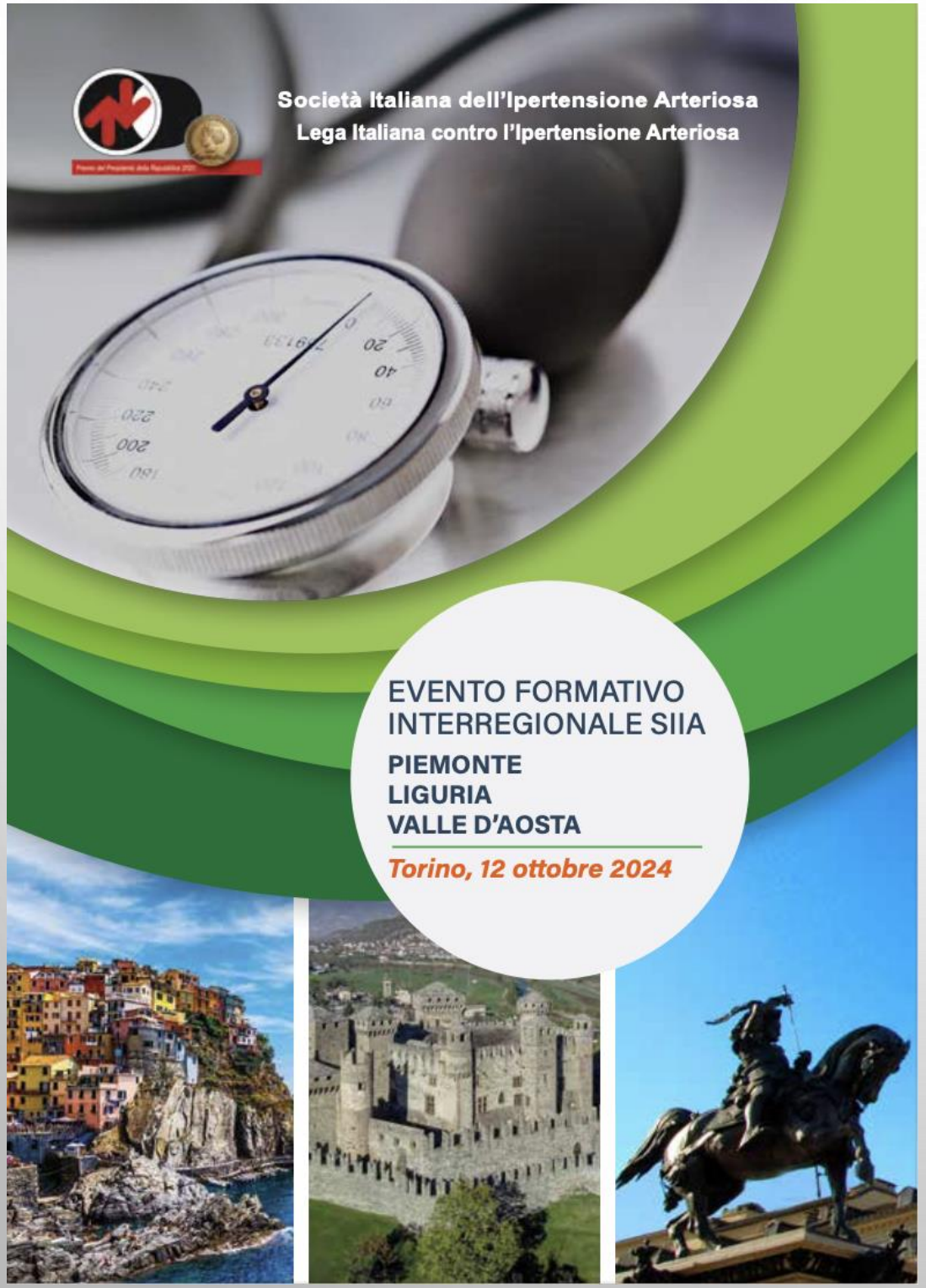


MALNUTRIZIONE ED IPERTENSIONE ARTERIOSA NELL'ANZIANO

MASSIMILIANO UCCELLI

SC MEDICINA – SANREMO (IM)

premesse

fragilità e malnutrizione in Medicina Interna

o

i reparti di Medicina Interna sono chiamati sempre di piu' alla gestione di pazienti affetti da patologie acute sovrapposte ad importante polimorbilità

In tale contesto le problematiche correlate alla fragilità ed alla manutrizione sono sempre maggiori.
La consapevolezza e l'attenzione alle problematiche nutrizionali del paziente ricoverato, seppur in crescita, sono ancora insufficienti.

La SC Medicina Sanremo sta cercando di accrescere, in collaborazione con la SSD Nutrizione territoriale e DCA, il proprio patrimonio di competenze e di strumenti diagnostico-terapeutici al fine di migliorare la qualità dell'assistenza e gli outcome, nell'ottica dell'aumento della qualità dell'assistenza e del contenimento dei costi.

Tavola 1: Ambito territoriale A.S.L.1

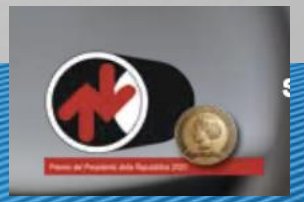
Asl 1
Sistema Sanitario Regione Liguria

	DSS IMPERIESE	DSS SANREMESE	DSS VENTIMIGLIESE	IMPERIA	LIGURIA	ITALIA
Residenti ISTAT	72 062	80 923	55 111	208 096	1 509 227	59 030 133
0-14 anni	10.9%	10.3%	11.5%	10.8%	10.70	12.50
15-64 anni	60.5%	60.5%	60.9%	60.8%	60.40	63.40
≥ 65 anni	28.0%	29.2%	27.6%	28.4%	28.90	24.10
Indice di vecchiaia	256.82	283.17	241.15	262.18	262.3	193.30
Indice di dipendenza strutturale	63.84	65.16	64.11	64.42	65.8	57.60
Indice di natalità	6.07	5.33	6.15	6.00	5.6	6.80
Indice di mortalità	15.46	17.15	16.16	16.30	15.9	12.10
Indice di dipendenza degli anziani	45.95	48.15	45.32	46.6	47.9	38.00

La SC Medicina Sanremo

- è dotata di **44 posti letto** per pazienti acuti, dislocati su due piani
- Il personale è composto da **6 medici, 28 infermieri e 12 oss**
- la **complessità** dei pazienti ricoverati, tipica delle Medicine Interne
- La degenza media (2023) è di 11,5 giorni , con un peso medio DRG di 1,32 e un indice di case-mix di 1,21

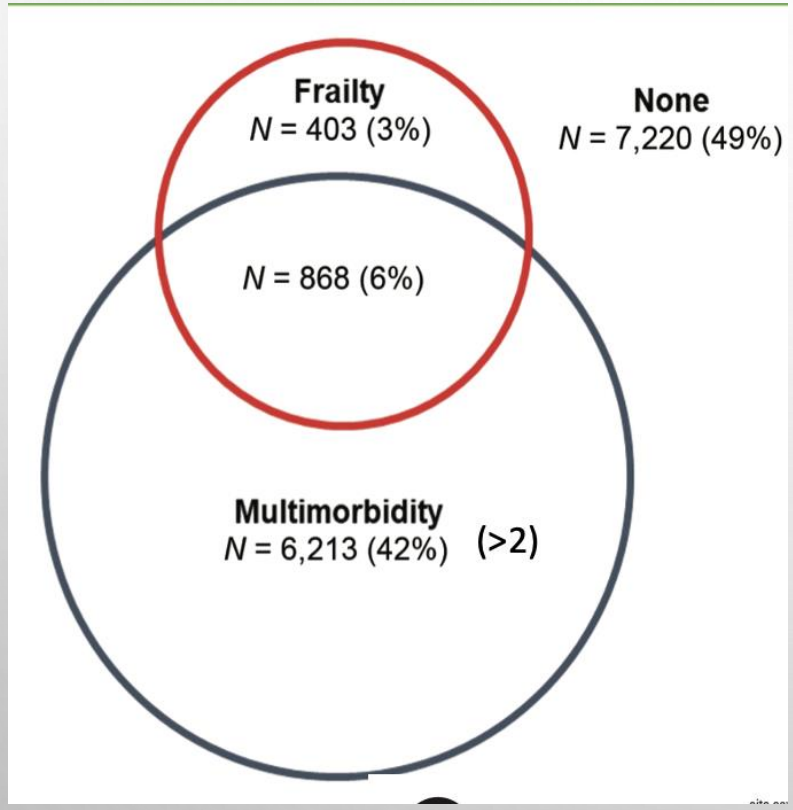
- L'età media dei ricoverati è elevata, con degli indici di comorbilità, fragilità e (CIRS, Charlson, Rockwood…) elevati.
- I pazienti anziani sono pressochè tutti in polifarmacoterapia, non raramente inappropriata all'arrivo in reparto

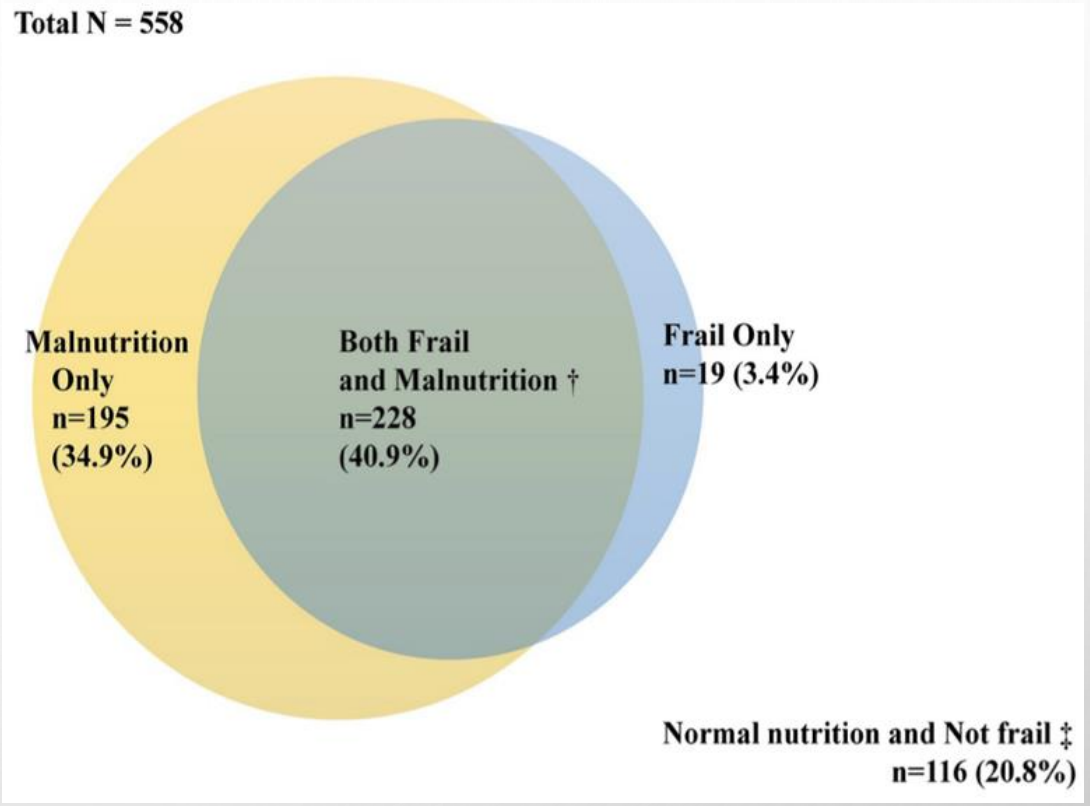


- Gli anziani sono **grandi utilizzatori di cure ospedaliere**
- L'ospedalizzazione negli anziani è fattore di rischio per **perdita delle autonomie**
- L'età avanzata è accompagnata spesso da **condizioni debilitanti predittive di *outcome* negativi**

a) multimorbilità
b) fragilità
c) sarcopenia
d) malnutrizione

a) multimorbilità
b) fragilità
c) sarcopenia
d) malnutrizione





FRAGILITA’

Prevalenza variabile 5-23% - nelle RSA >85%

A) Il paradigma biomedico.

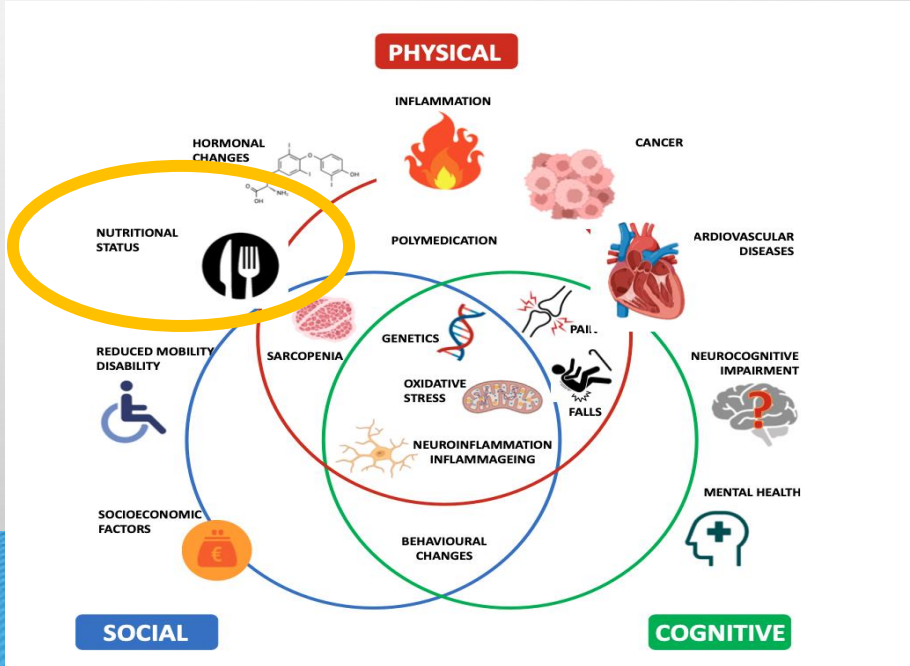
Fried e Coll. (2004)

sindrome fisiologica caratterizzata dalla riduzione delle riserve funzionali e dalla diminuita resistenza agli “stressors” risultante dal declino cumulativo di sistemi fisiologici multipli che causano vulnerabilità e conseguenze avverse

B) Il paradigma bio -psico-sociale.

Gobbens e Coll. (2010)

uno stato dinamico che colpisce un individuo che sperimenta perdite in uno o più domini funzionali (fisico, psichico, sociale), causate dall’influenza di più variabili che aumentano il rischio di risultati avversi per la salute



nutrients

MDPI

Review

Malnutrition in Hospitalized Old Patients: Screening and Diagnosis, Clinical Outcomes, and Management

Francesco Bellanti †, Aurelio lo Buglio †, Stefano Quiete and Gianluigi Vendemiale *

Department of Medical and Surgical Sciences, University of Foggia, Viale Pinto 1, 71122 Foggia, Italy; francesco.bellanti@unifg.it (F.B.); aurelio.lobuglio@unifg.it (A.l.B.); stefanoquiete@gmail.com (S.Q.)
* Correspondence: gianluigi.vendemiale@unifg.it; Tel.: +39-0881-732-321
† These authors contributed equally to the manuscript.

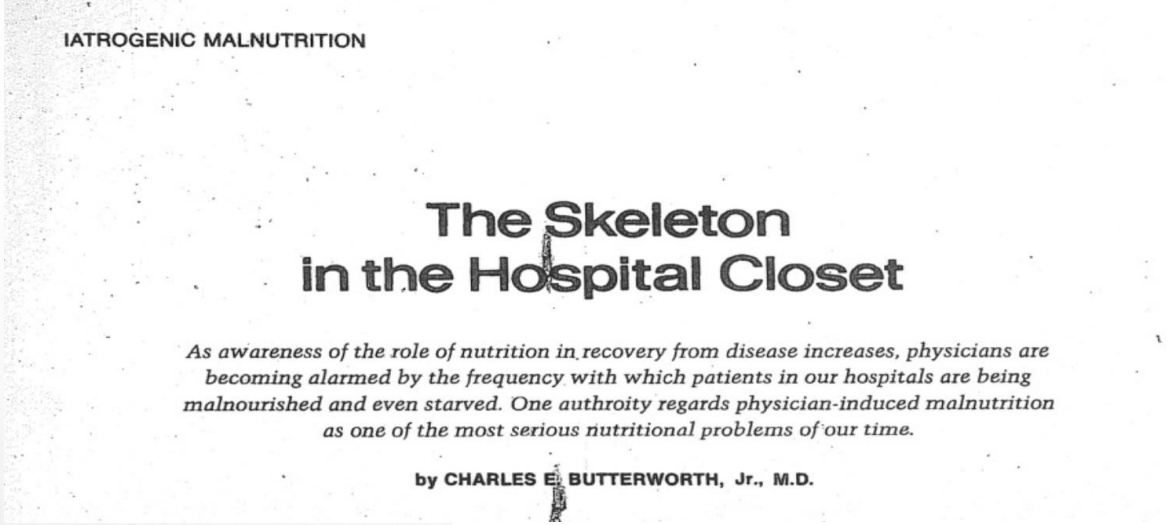
MALNUTRIZIONE (definizione *ESPEN):* « uno stato clinico risultante da riduzione di introito o assorbimento di sostanze nutritive che porta ad un'alterazione della composizione corporea e che conduce ad una **ridotta efficienza fisica e mentale** ed ad un **peggioramento degli outcome correlati a malattia»**

Nutrition, 1974

The Skeleton in the Hospital Closet

As awareness of the role of nutrition in recovery from disease increases, physicians are becoming alarmed by the frequency with which patients in our hospitals are being malnourished and even starved. One authroity regards physician-induced malnutrition as one of the most serious nutritional problems of our time.

by CHARLES E. BUTTERWORTH, Jr., M.D.



IATROGENIC MALNUTRITION

The Skeleton in the Hospital Closet

As awareness of the role of nutrition in recovery from disease increases, physicians are becoming alarmed by the frequency with which patients in our hospitals are being malnourished and even starved. One authroity regards physician-induced malnutrition as one of the most serious nutritional problems of our time.

by CHARLES E. BUTTERWORTH, Jr., M.D.

1974

CAUSE IATROGENE DI MALNUTRIZIONE NEGLI OSPEDALIZZATI (1974)

- **Mancata rilevazione di peso e altezza all'ingresso e durante il ricovero**
- **Mancata misurazione degli introiti alimentari**
- **Utilizzo prolungato di glucosate e fisiologica come nutrizione parenterale**
- Tenere il paziente a digiuno per esami
- **Scarsa conoscenza della composizione dei prodotti nutrizionali**
- Mancato riconoscimento degli aumentati fabbisogni causati dalla malattia
- Procrastinare il supporto nutrizionale finché il paziente è in avanzato stato di deplezione
- Limitata disponibilità di esami per valutare lo stato nutrizionale; scarso utilizzo di quelli disponibili
- Mancata correzione dello stato dentario

Butterworth. The skeleton in the hospital closet, Nutrition, 1974

Nutritional risk screening

A patient screened at risk for malnutrition needs to be **diagnosed with GLIM criteria** and his/her nutritional status assessed.

ESPEN Recommended Screening Tools

Malnutrition Universal Screening Tool (MUST)

for adults - mainly in hospital and community settings

Nutritional Risk Screening (NRS-2002)

for adults - mainly in hospital

Mini Nutritional Assessment (MNA)

for older adults - in hospital, community, long term care and rehabilitation

Other Validated Screening Tools

Short Nutritional Assessment Questionnaire (SNAQ)

for adults - for all care settings

Malnutrition Screening Tool (MST)

for adults - mainly in hospital

PREVALENZA DI MALNUTRIZIONE NEI DIVERSI SETTING ASSISTENZIALI

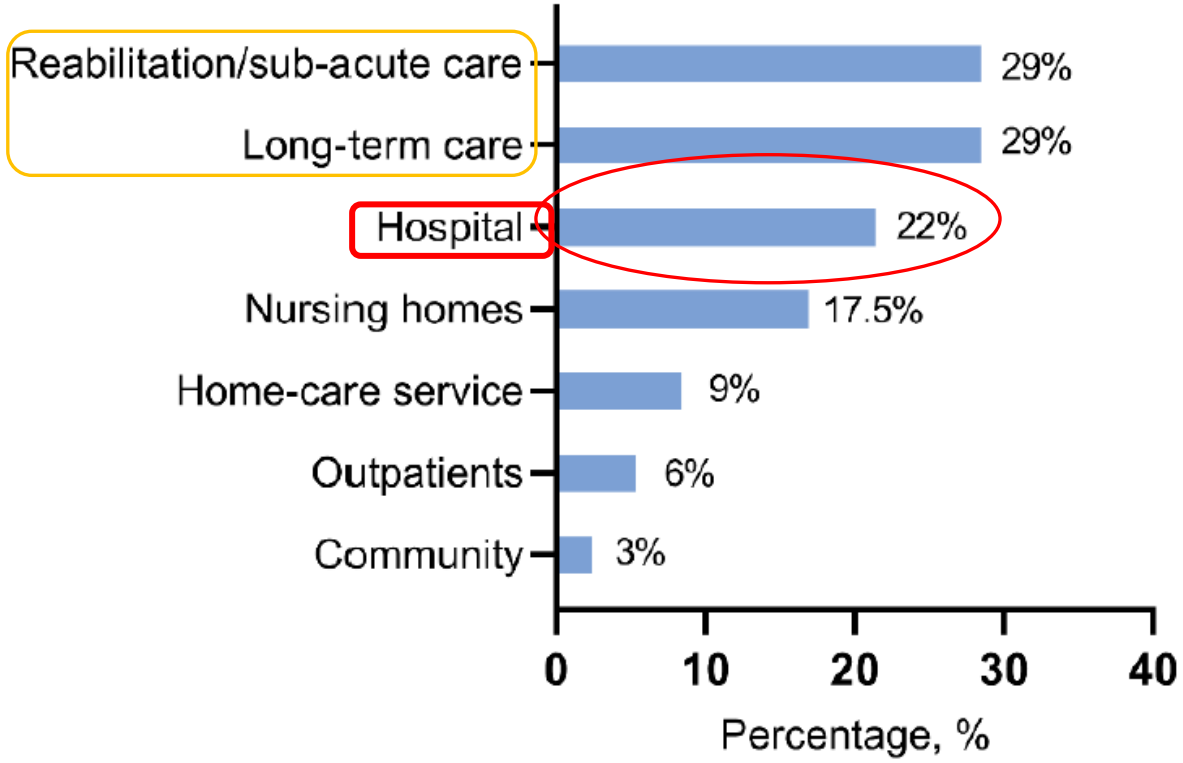


Figure 1. Prevalence of malnutrition based on the setting of care [27].

Aspetti causali e/o correlati a malnutrizione

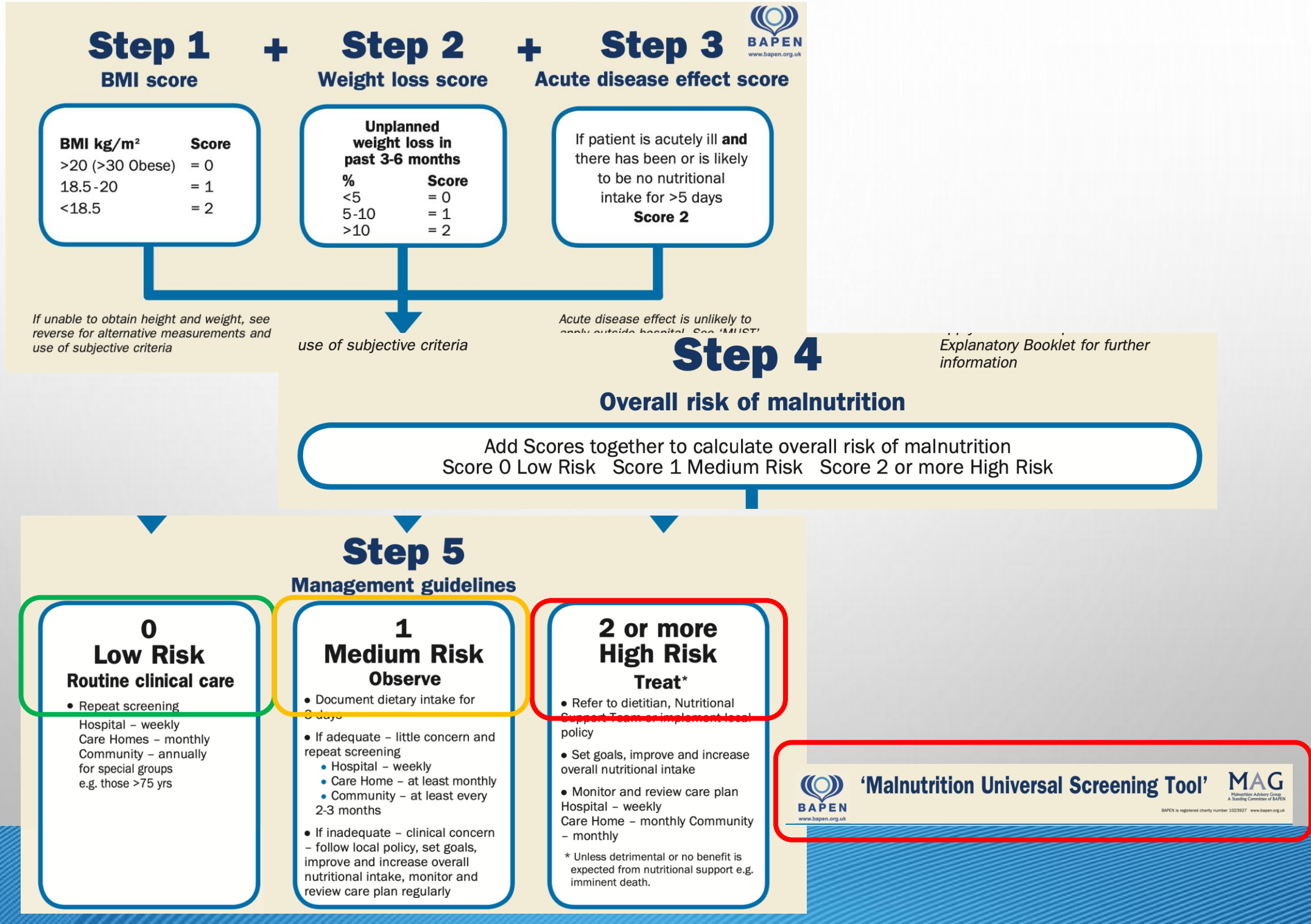
- La malnutrizione nei pazienti ospedalizzati è un problema sempre maggiore
- E' correlato ad invecchiamento della popolazione e al miglioramento delle cure sanitarie
- Maggiori necessità di ospedalizzazione
- **20-50% malnutriti pre-ospedalizzazione**
- Di questi il **49% presenta peggioramento durante un ricovero > 7 gg.**
- **30% dei «non malnutriti» presenterà malnutrizione nel ricovero**.

Progetto valutazione stato nutrizionale Medicina Sanremo-MED2

- Partecipanti: SC Medicina – SSD Nutrizione territoriale e Dca
- 50 pazienti ricoverati presso SC Medicina 2 piano >65 anni
- Screening malnutrizione mediante MUST (Bapen)
- Valutazione esami ematochimici
- Stesura piano di rivalutazione e/o trattamento

ESAMI EMATOCHIMICI RICHIESTI PER LA VALUTAZIONE DELLO STATO NUTRIZIONALE:

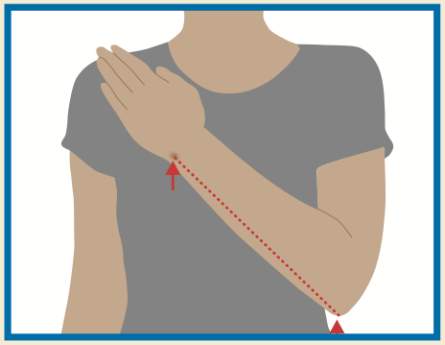
emocromo
azotemia
creatinina
proteine totali
albumina
(prealbumina)
colesterolo totale , LDL, HDL, trigliceridi
vitamina D


Step 1
BMI score
+
Step 2
Weight loss score
+
Step 3
Acute disease effect score
BAPEN
www.bapen.org.uk
BMI kg/m²
Score
>20 (>30 Obese)
= 0
18.5-20
= 1
<18.5
= 2
Unplanned weight loss in past 3-6 months
%
Score
<5
= 0
5-10
= 1
>10
= 2
If patient is acutely ill and there has been or is likely to be no nutritional intake for >5 days
Score 2
If unable to obtain height and weight, see reverse for alternative measurements and use of subjective criteria
use of subjective criteria
Acute disease effect is unlikely to
Explanatory Booklet for further information
Step 4
Overall risk of malnutrition
Add Scores together to calculate overall risk of malnutrition
Score 0 Low Risk Score 1 Medium Risk Score 2 or more High Risk
Step 5
Management guidelines
0
Low Risk
Routine clinical care
• Repeat screening
Hospital – weekly
Care Homes – monthly
Community – annually
for special groups
e.g. those >75 yrs
1
Medium Risk
Observe
• Document dietary intake for
• If adequate – little concern and repeat screening
• Hospital – weekly
• Care Home – at least monthly
• Community – at least every 2-3 months
• If inadequate – clinical concern – follow local policy, set goals, improve and increase overall nutritional intake, monitor and review care plan regularly
2 or more
High Risk
Treat*
• Refer to dietitian, Nutritional policy
• Set goals, improve and increase overall nutritional intake
• Monitor and review care plan
Hospital – weekly
Care Home – monthly Community – monthly
* Unless detrimental or no benefit is expected from nutritional support e.g. imminent death.
BAPEN
www.bapen.org.uk
'Malnutrition Universal Screening Tool'
MAG
Malnutrition Advisory Group
A Standing Committee of BAPEN
BAPEN is registered charity number 1023927 www.bapen.org.uk

Alternative measurements: instructions and tables

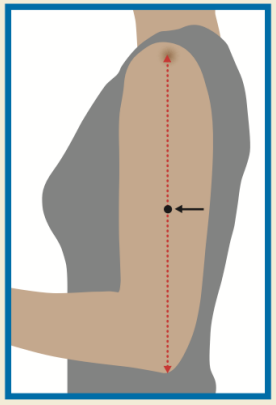
If height cannot be obtained, use length of forearm (ulna) to calculate height using tables b
(See The 'MUST' Explanatory Booklet for details of other alternative measurements (kne demispan) that can also be used to estimate height).

Estimating height from ulna length



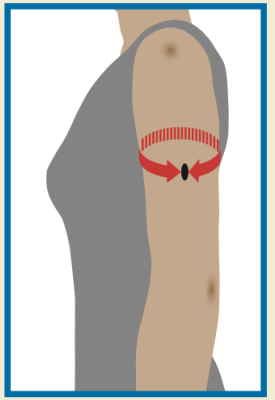
Measure between the point of the elbow (olecranon process) and the midpoint of the prominent bone of the wrist (styloid process) (left side if possible).

Estimating BMI category from mid upper arm circumference (MUAC)



The subject's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body. Measure the distance between the bony protrusion on the shoulder (acromion) and the point of the elbow (olecranon process). Mark the mid-point.

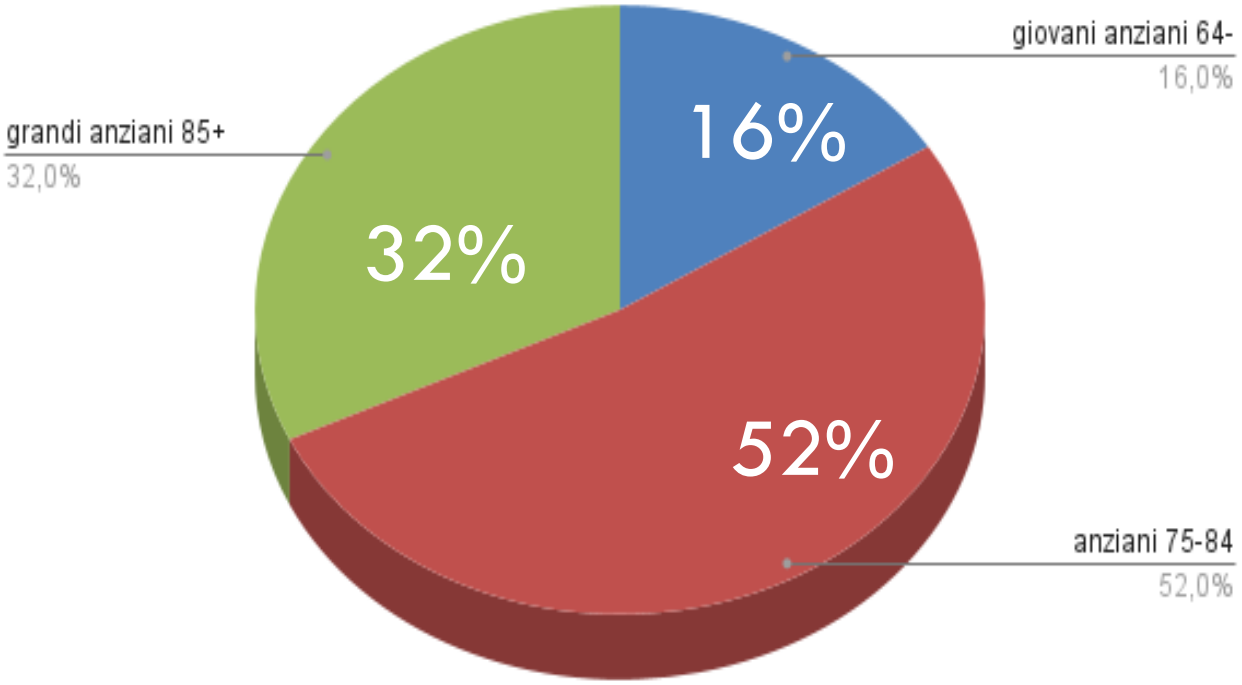
Ask the subject to let arm hang loose and measure around the upper arm at the mid-point, making sure that the tape measure is snug but not tight.



If MUAC is <23.5 cm, BMI is likely to be <20 kg/m^2.
If MUAC is >32.0 cm, BMI is likely to be >30 kg/m^2.

Studio MED 2

Dati raccolti su un periodo di 60 gg



FASCE D'ETA'

giovani anziani 64-74 : 8

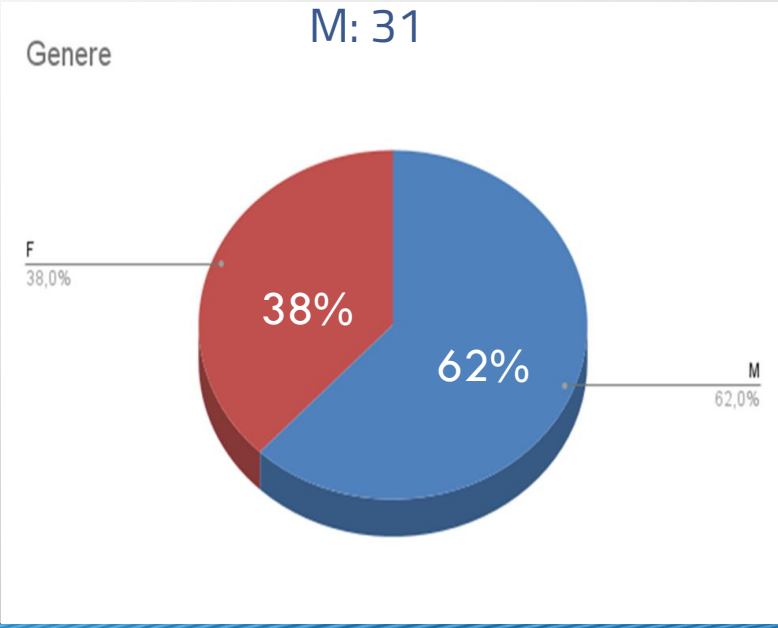
anziani 75-84: 26

grandi anziani >85: 16

GENERE

F: 19

M: 31



Studio MED 2

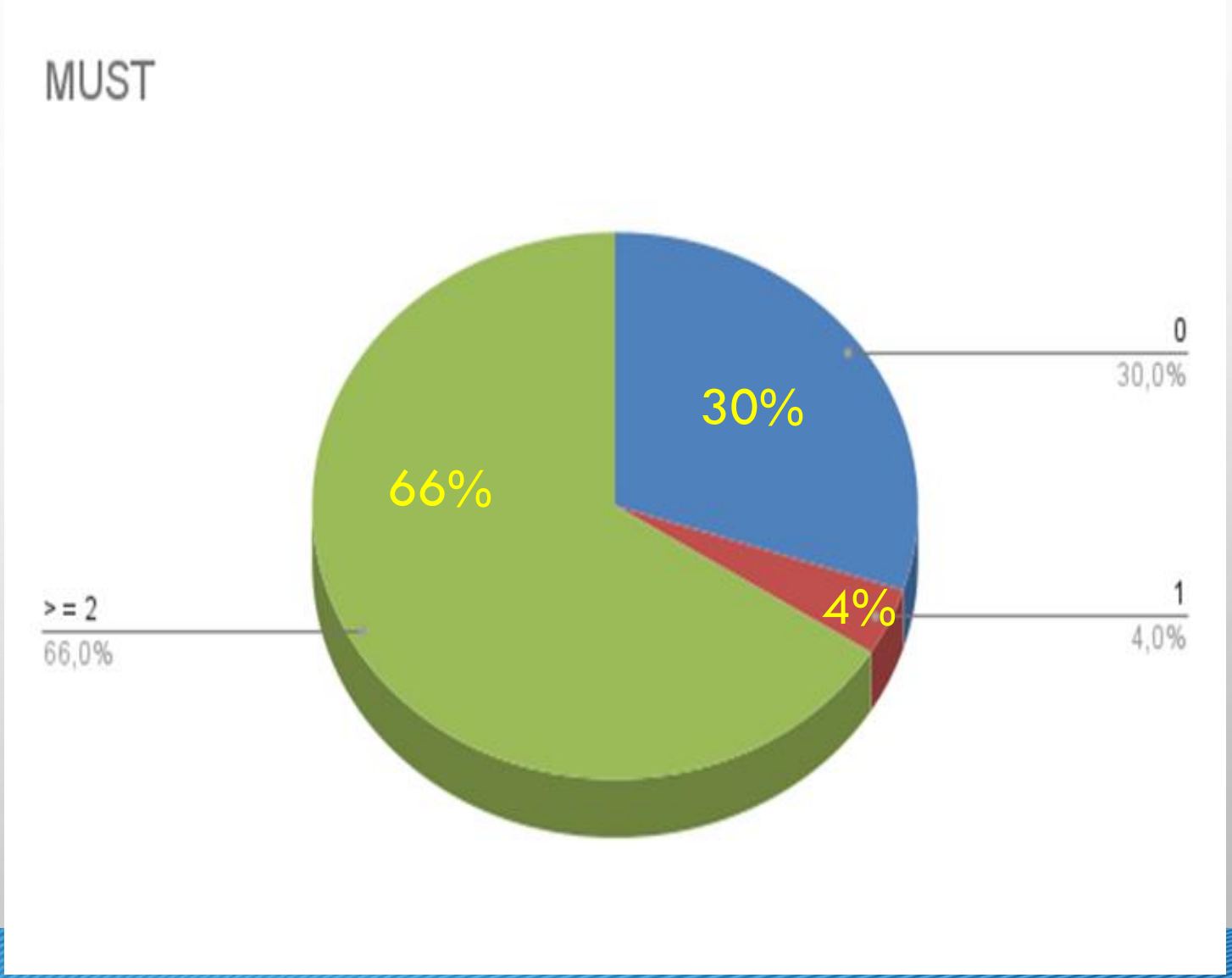
Dati raccolti su un periodo di due mesi

PUNTEGGIO MUST

0 → 15 pz

1 → 2 pz

>/= 2 → 33 pz



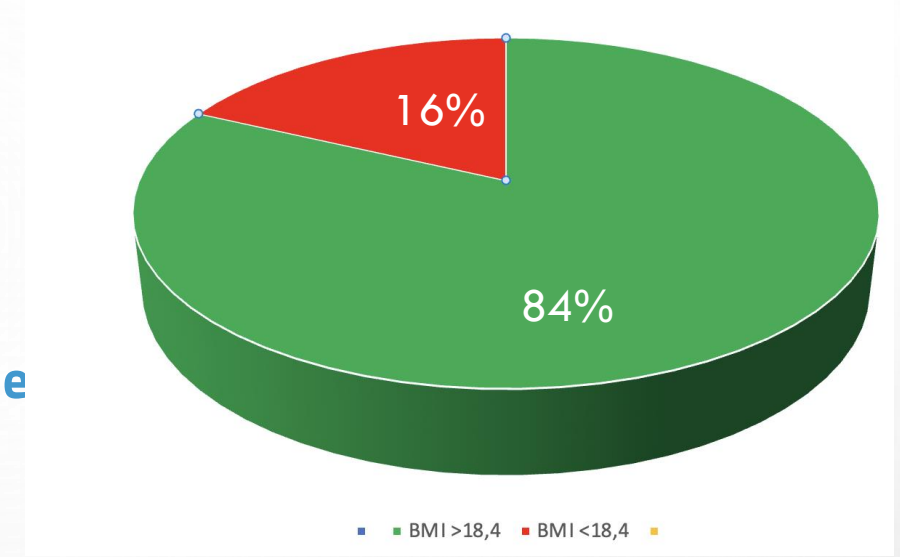
BMI

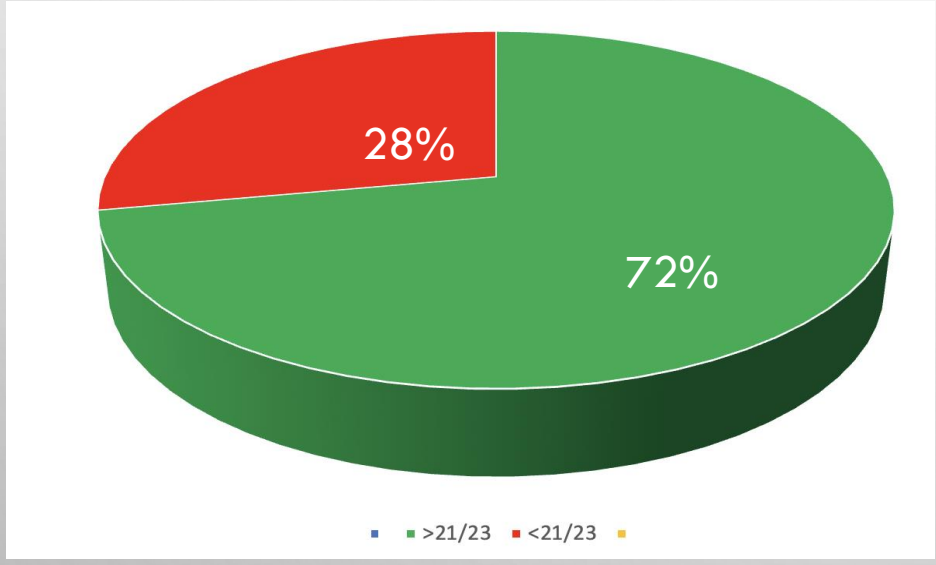
BMI medio

F: 21,48

M: 23,03

BMI inferiore a 18,4 : 8 pz. pari a 16 % del totale





CIRCONFERENZA BRACCIO

F inferiore a 21 cm → 6

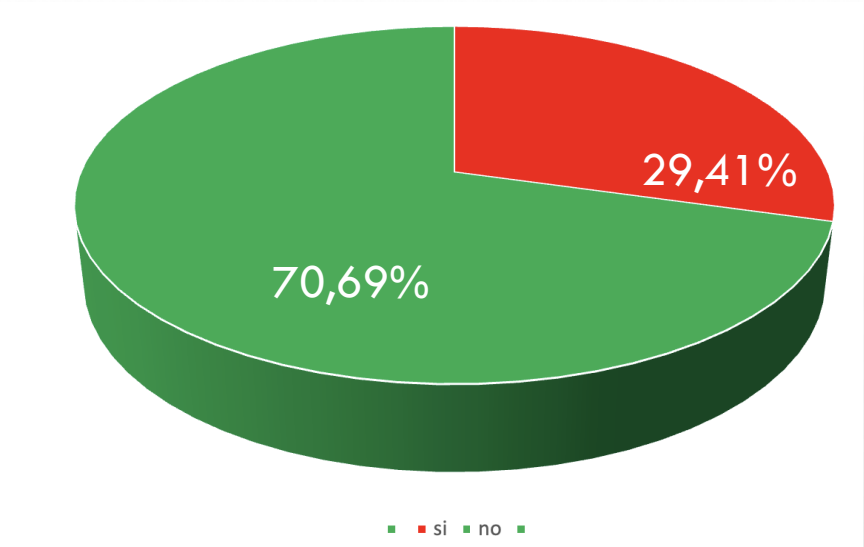
M inferiore a 23 cm → 8

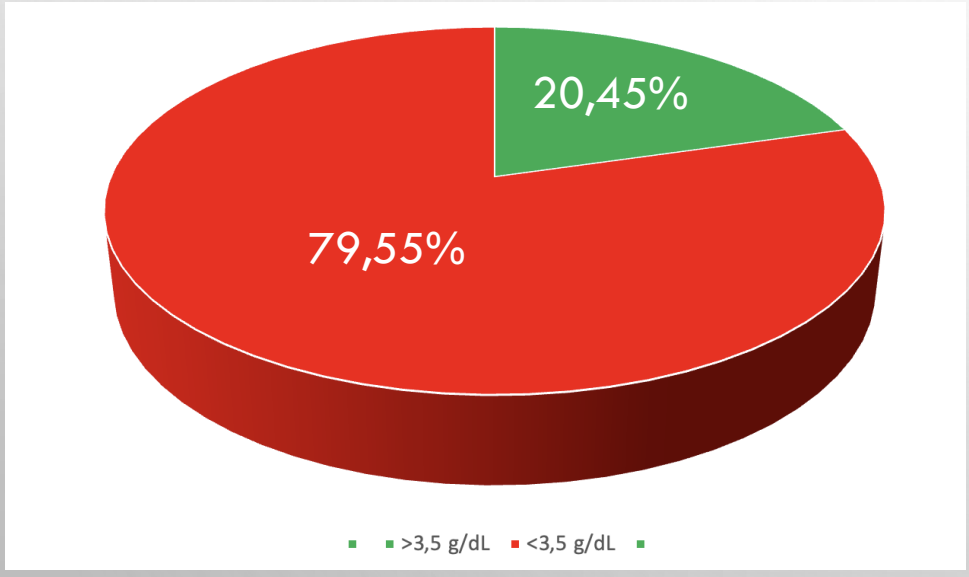
Pari al 28% del totale

CALO PONDERALE

Calo ponderale >=5 % : 10 pz su 34 di cui abbiamo il dato

Pari al 29,41%





ALBUMINA

di 44 pazienti abbiamo albumina

di cui 35 sotto soglia 3,5

pari al 79.55%

MUST

MUST score	%	Alb (g/dL)	PAS	PAD	FC	Creatinina (mg/dL)	Colesterolo tot (mg/dL)	BMI	Farmaci Anti ipertensivi
0	30	3,7	142	77	78	0.95	209	23,4	2,6
1	4	2,9	131	76	81	1,22	201	21,4	1,6
>/=2	66	2,6	126	73	80	1,23	164	20,1	1,5

66%

CONUT

CONUT score	%	Alb (g/dL)	PAS	PAD	Creat (mg/dL)	Colesterolo tot (mg/dL)	BMI	Farmaci Antiipertensivi
0-2 (normal)	12	3,8	147	78	0.99	213	23,7	2,9
3-4 (mild)	21	3,2	134	77	1,23	196	22,6	2,3
5-8 (moderate-high)	51	2,9	131	72	1,17	164	20,9	1,6
9-12 (marked high)	16	2,2	121	71	1,52	125	19,7	1,3

67%

1948

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 137, No. 18 — CHICAGO, ILLINOIS — AUGUST 28, 1948

DRASTIC FOOD RESTRICTION

Effect on Cardiovascular Dynamics in Normotensive and Hypertensive Conditions

JOSEF BROZEK, Ph.D.
CARLETON B. CHAPMAN, M.D.
AND
ANCEL KEYS, Ph.D.
Minneapolis

Since the first description of essential hypertension by von Basch [1] in 1874 there has been a constant

It is perhaps not entirely fortuitous that renewed enthusiasm for dietary limitation as a means of treating hypertension should follow so closely on the heels of a global war. With conditions of famine prevailing in so many parts of the world, many opportunities for studying the effects of starvation on hypertensive disease have arisen. Wherever it has been possible to make sufficient observations on populations living under conditions of starvation and drastic food restriction, much highly pertinent information has accrued. Supplementing such contributions is a mass of data obtained from a study of experimental drastic food

malnutrizione e la pressione arteriosa?

La malnutrizione e' un significativo fattore prognostico negativo per molte malattie cardiovascolari (CHF, IMA, FA…)
Induce infiammazione cronica ed accelera l'aterosclerosi
Favorisce il declino della funzione renale (…)

Hypertension Research (2024) 47:2589–2591
https://doi.org/10.1038/s41440-024-01751-2

COMMENT

2024

Malnutrition is one of new risk factors in patients with hypertension: the message form Fukushima Cohort Study

Daisuke Kanda[1] · Mitsuru Ohishi[1]

Keywords Hypertension · Malnutrition · Kidney events

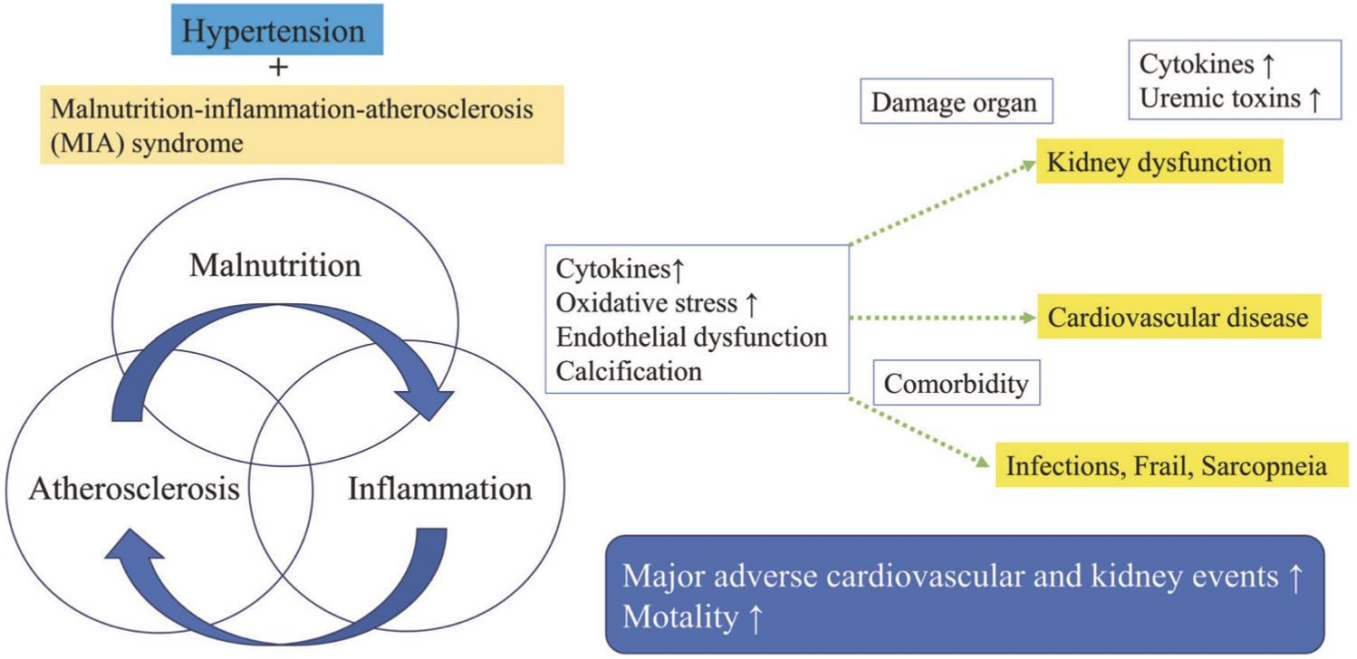


Fig. 1 Correlation between hypertension, malnutrition-inflammation-atherosclerosis (MIA) syndrome, and major adverse events

BMJ Open

Controlling Nutritional Status (CONUT) score as a predictor of all-cause mortality in elderly hypertensive patients: a prospective follow-up study

CONUT

Xiaonan Sun,[1] Leiming Luo,[1] Xiaoqian Z

Strengths and limitations of this study

- This was a study including 336 hypertensive patients over 80 years combined with diagnosed cardiovascular disease.
- It is the first study to explore the relationship between the nutritional status based on Controlling Nutritional Status or Geriatric Nutritional Risk Index on admission and all-cause death in such very elderly hypertensive patients.
- This study was a single-centre study that included a relatively small number of patients.
- Follow-up studies were performed for only 90 days.

Table 1 Screening tool for Controlling Nutritional Status

Parameter	Requirements	Score
Albumin (g/L)	≥35	0
	30–34	2
	25–29	4
	<25	6
Total lymphocyte count (/mL)	≥1600	0
	1200–1599	1
	800–1199	2
	<800	3
Total cholesterol (mmol/L)	≥4.65	0
	3.62–4.64	1
	2.58–3.61	2
	<2.58	3

Dysnutritional states: normal 0–1; mild 2–4; moderate 5–8; severe 9–12.

Open Access Research

BMJ Open

Controlling Nutritional Status (CONUT) score as a predictor of all-cause mortality in elderly hypertensive patients: a prospective follow-up study

Xiaonan Sun,[1] Leiming Luo,[1] Xiaoqian Zhao,[2] Ping Ye[1]

CONUT

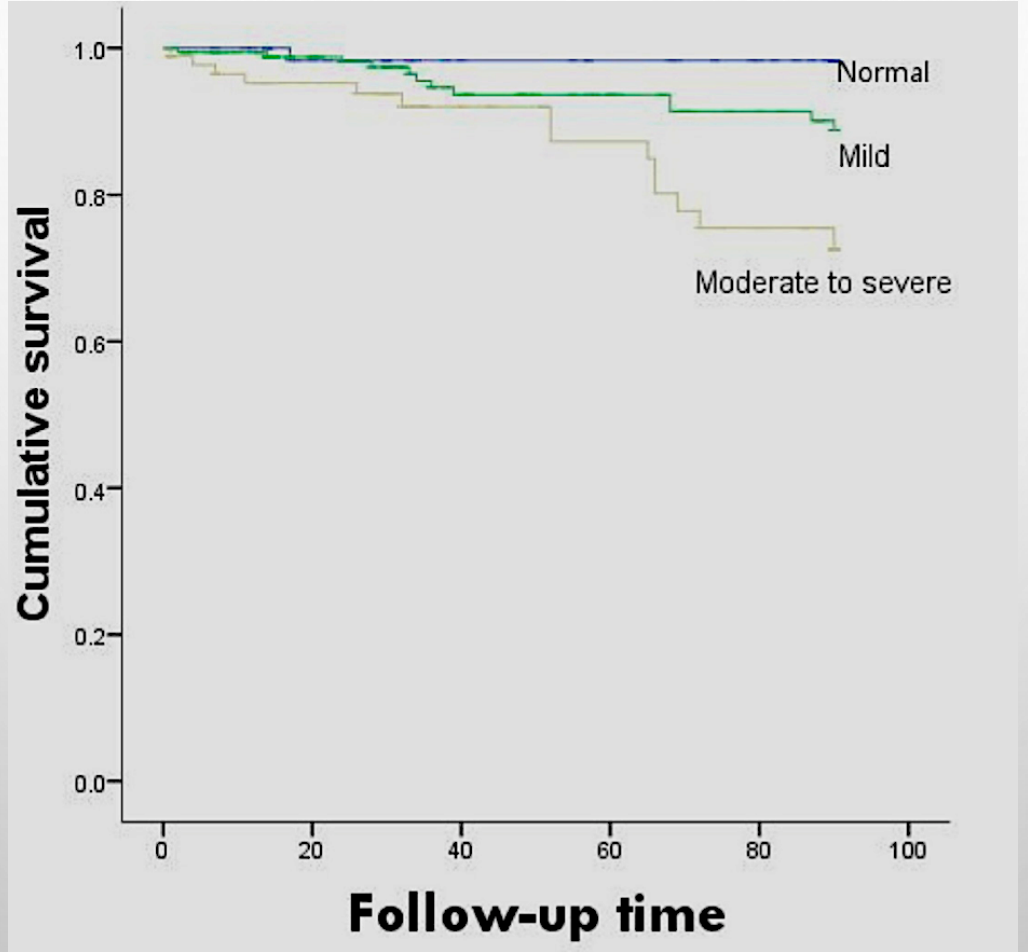
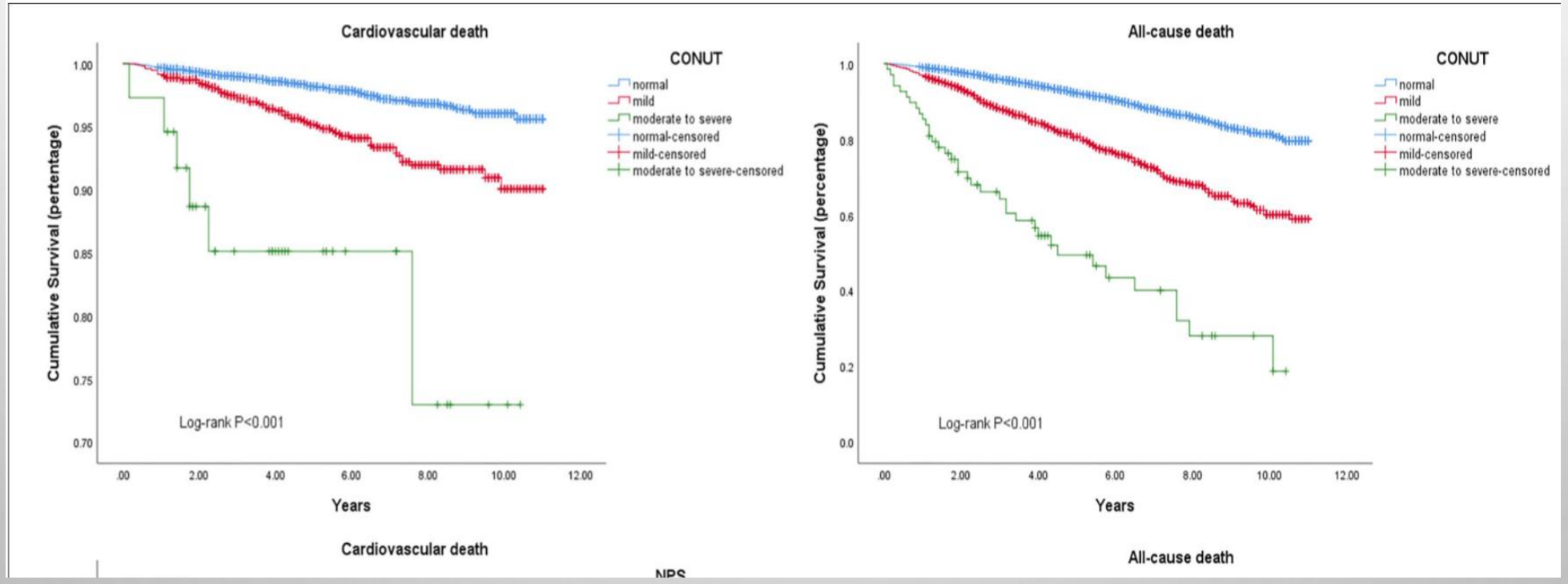


Figure 2 Kaplan-Meier survival curves for Controlling Nutritional Status.

Prevalence and Prognostic Significance of Malnutrition in Hypertensive Patients in a Community Setting

*Zhi-wen Yang[1,2], Xue-biao Wei[2,3], Bing-qi Fu[1,2], Ji-yan Chen[2] and Dan-qing Yu[2]**



Obesity, malnutrition, and the prevalence and outcome of hypertension: Evidence from the National Health and Nutrition Examination Survey

Heng-Zhi Zhang[1,2*†], Yi-Han Wang[1,2†], Ying-Li
Shu-Yu Wang[2], Jin-Yu Sun[4], Lu-Lu Chen[5], Shu
Ying Sun[1*]

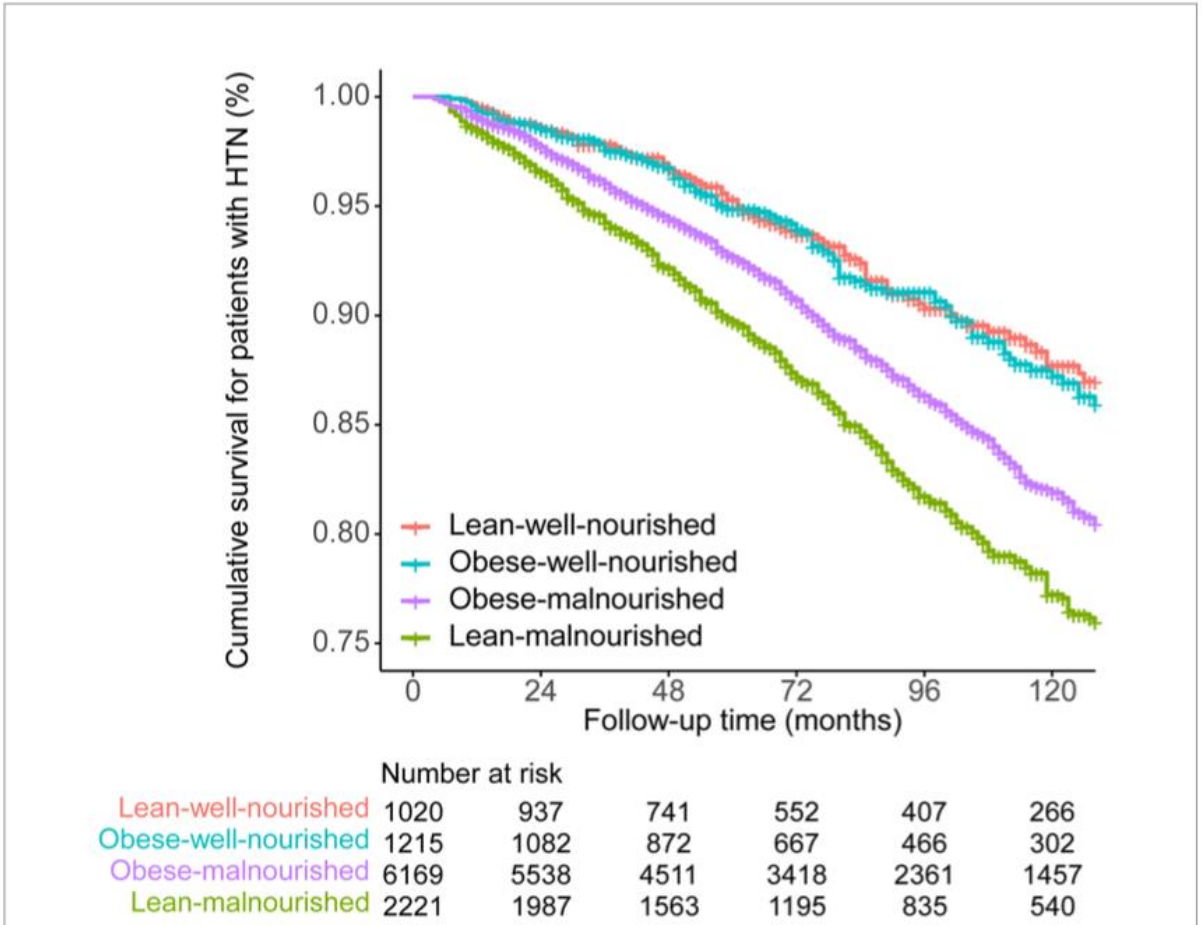
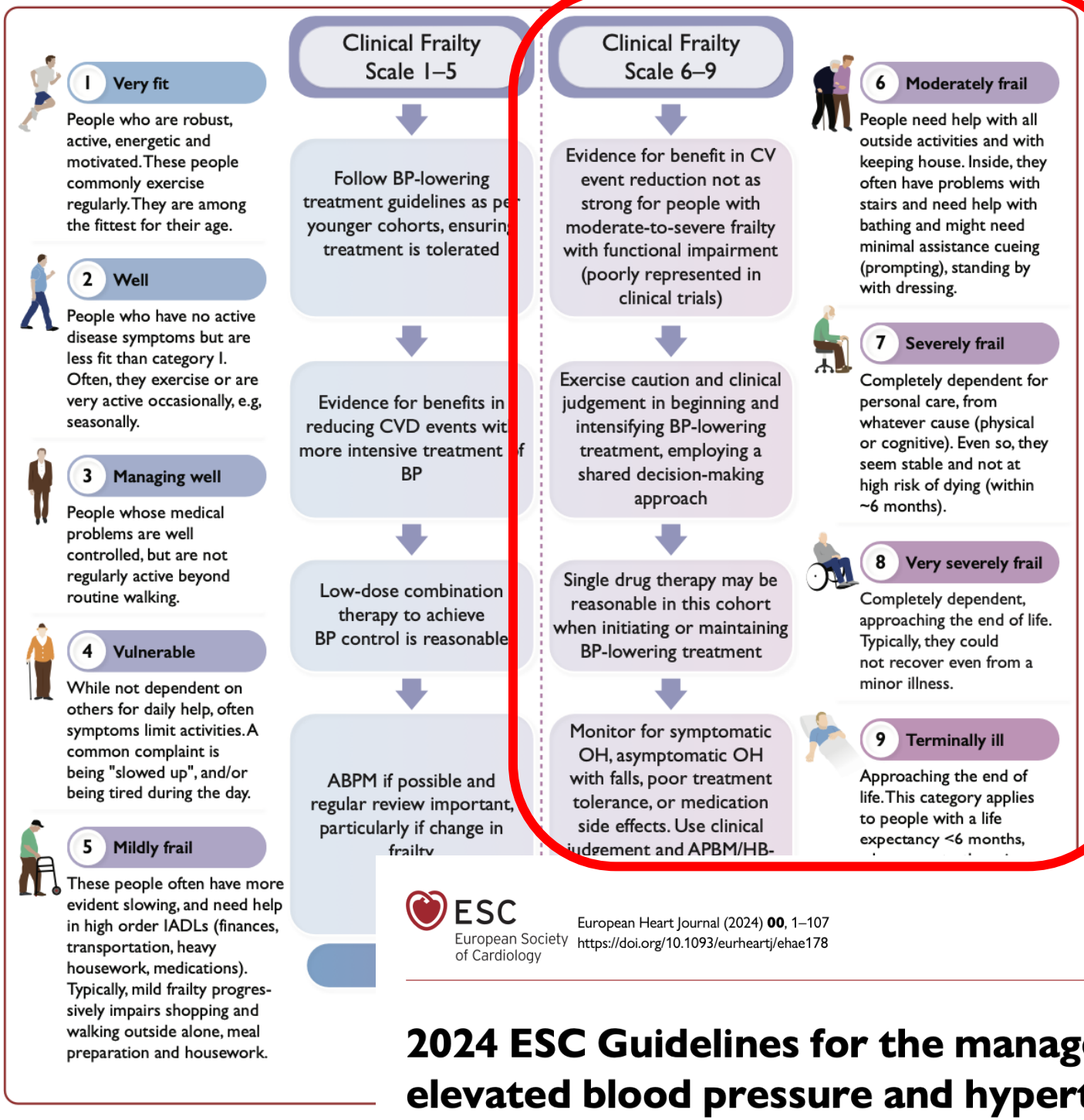


FIGURE 1
Kaplan–Meier survival curve of the four groups divided by obesity and nutrition status.



ESC European Society of Cardiology
European Heart Journal (2024) **00**, 1–107
https://doi.org/10.1093/eurheartj/ehae178

ESC GUIDELINES

2024 ESC Guidelines for the management of elevated blood pressure and hypertension

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BLOOD PRESSURE MONITORING AND MANAGEMENT (J COCKCROFT, SECTION EDITOR)

Strategies for Identifying Patients for Deprescribing of Blood Pressure Medications in Routine Practice: An Evidence Review

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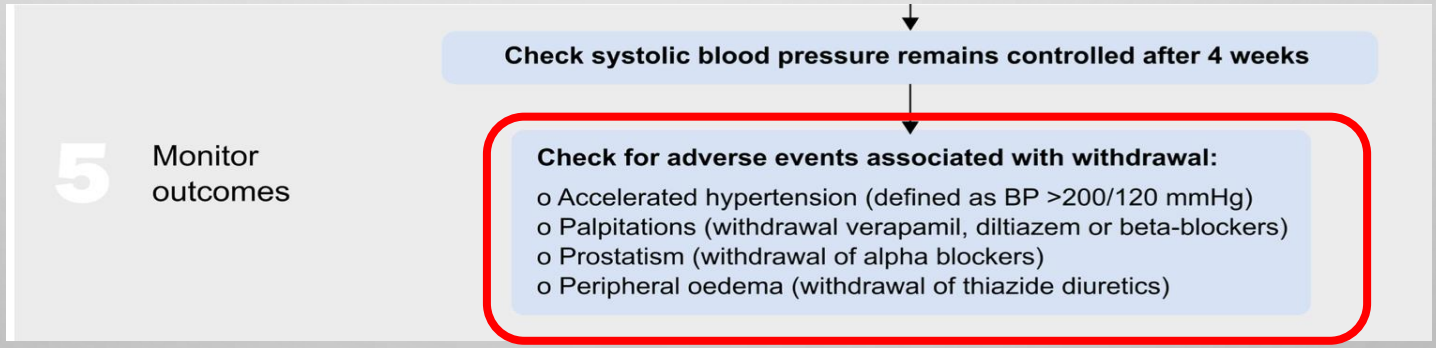
Severe frailty	Frailty refers to a state of increased vulnerability and decreased physiological reserve. Frail individuals are more prone to serious adverse medication effects, such as falls, which can result in hospitalisation and reduced independence in this population.
Combination of risk factors	Some patients may have a combination of risk factors, such as older age, multiple chronic conditions, impaired organ function, and polypharmacy. These individuals are particularly susceptible to adverse events, but in routine clinical practice, it is difficult to identify such patients in a systematic manner.



Advancing age

Dementia

Chronic kidney disease

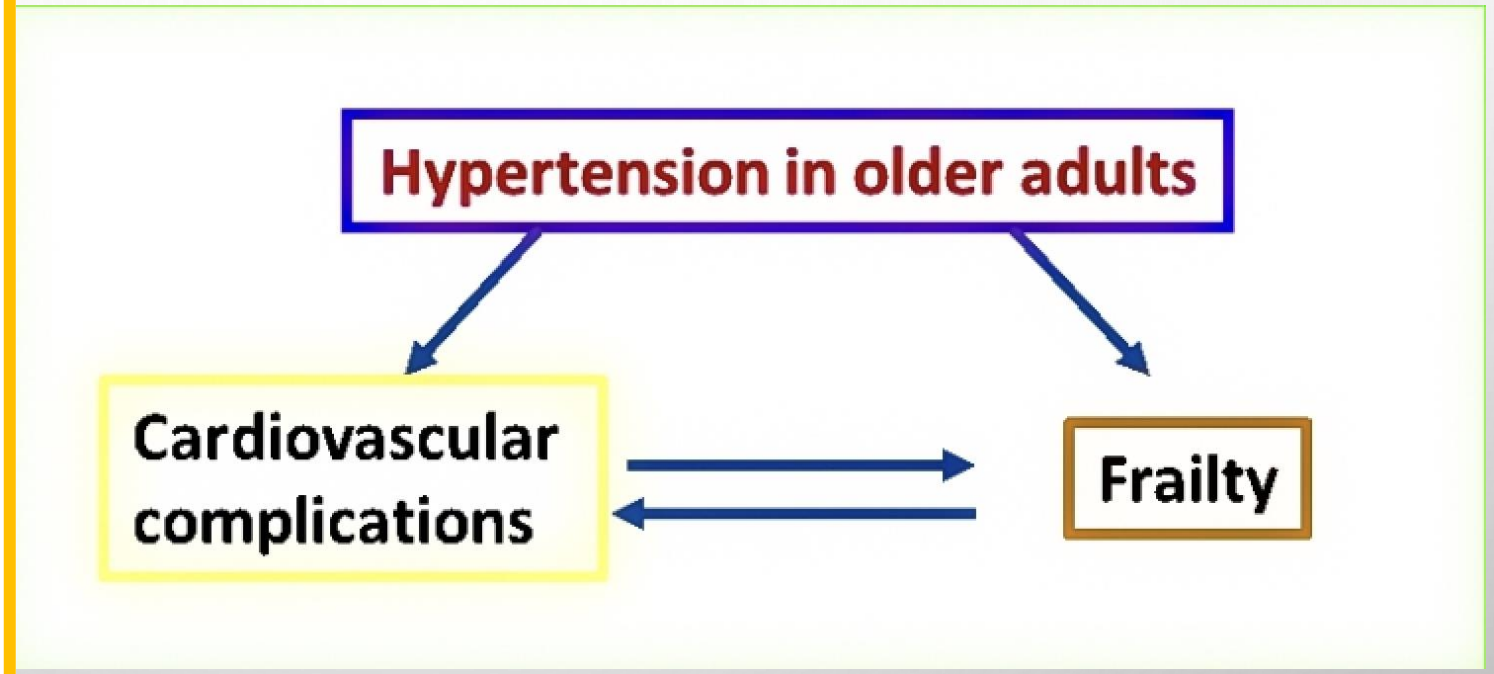
History of adverse events

Low blood pressure

Polypharmacy

Severe frailty

Combination of risk factors



SINERGIE E COLLABORAZIONE NELLA GESTIONE

MEDICI E INFERMIERI DI REPARTO

SERVIZIO NUTRIZIONE

MEDICI E INFERMIERI DI REPARTO E SERVIZIO NUTRIZIONE

AZIENDE

LOGOPEDISTA

FARMACIA OSP

SERVIZIO MENSA

PICC TEAM

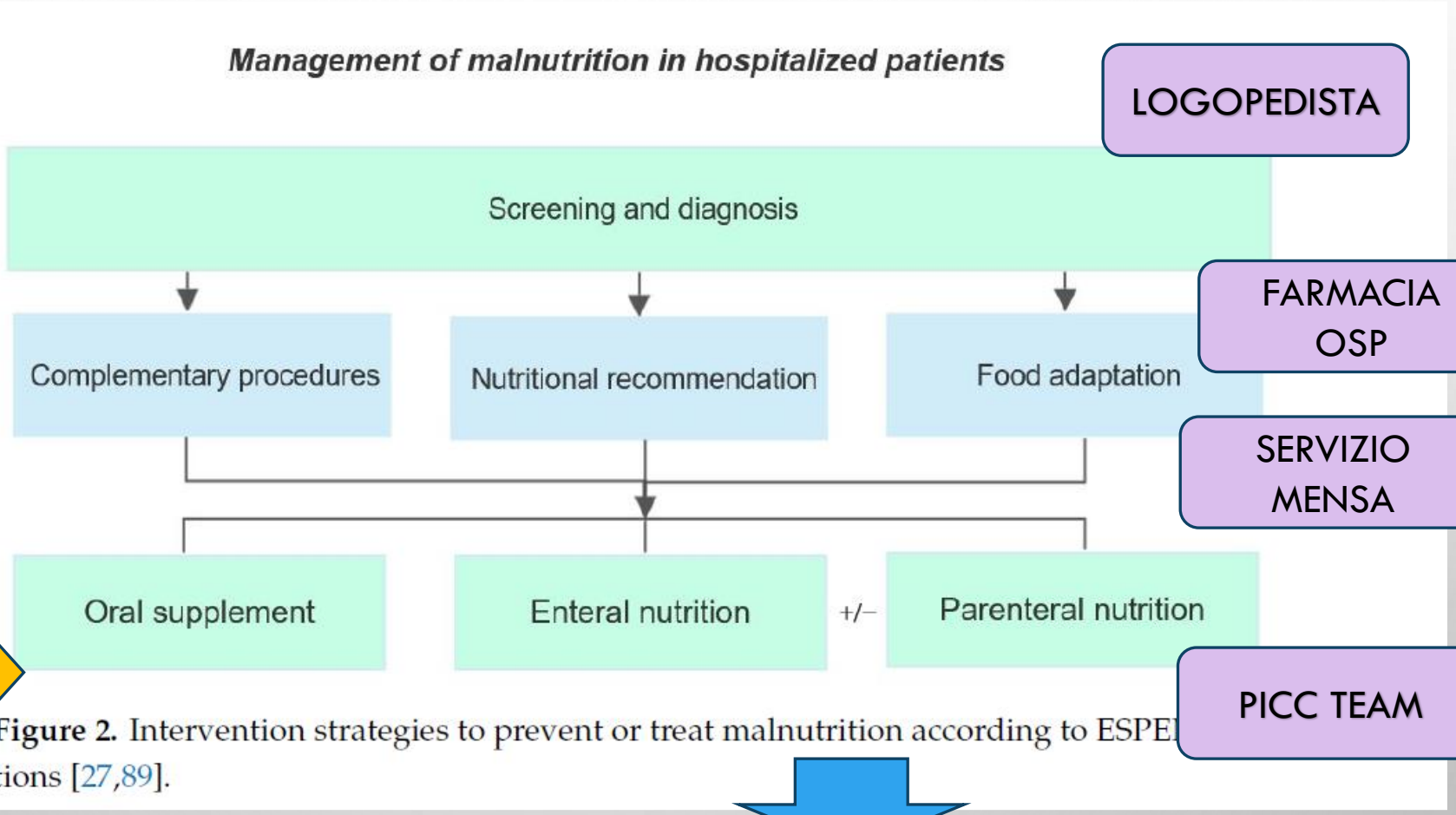


Figure 2. Intervention strategies to prevent or treat malnutrition according to ESPE
tions [27,89].

TERRITORIO

Grazie per l’attenzio

Sanremo notturna