La nutrizione dell'anziano nei vari setting assistenziali

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63° CONGRESSO NAZIONALE SIGG

GLI ANZIANI: LE RADICI DA PRESERVARE

ROMA 28 novembre 01 dicembre 2018 Auditorium della Tecnica, Roma

Albert Einstein:

- Un uomo **intelligente** riesce a risolvere **problemi** anche complessi. **L'uomo veramente saggio evita di crearli.**
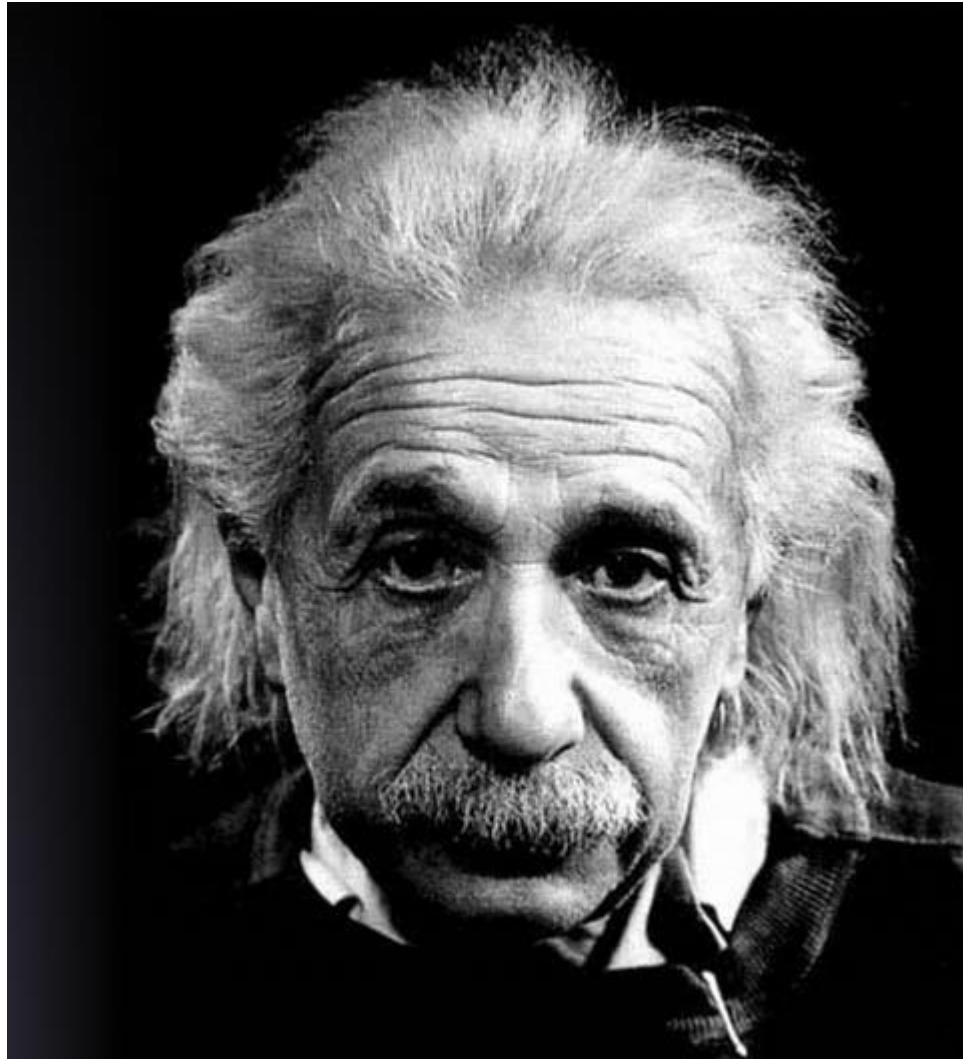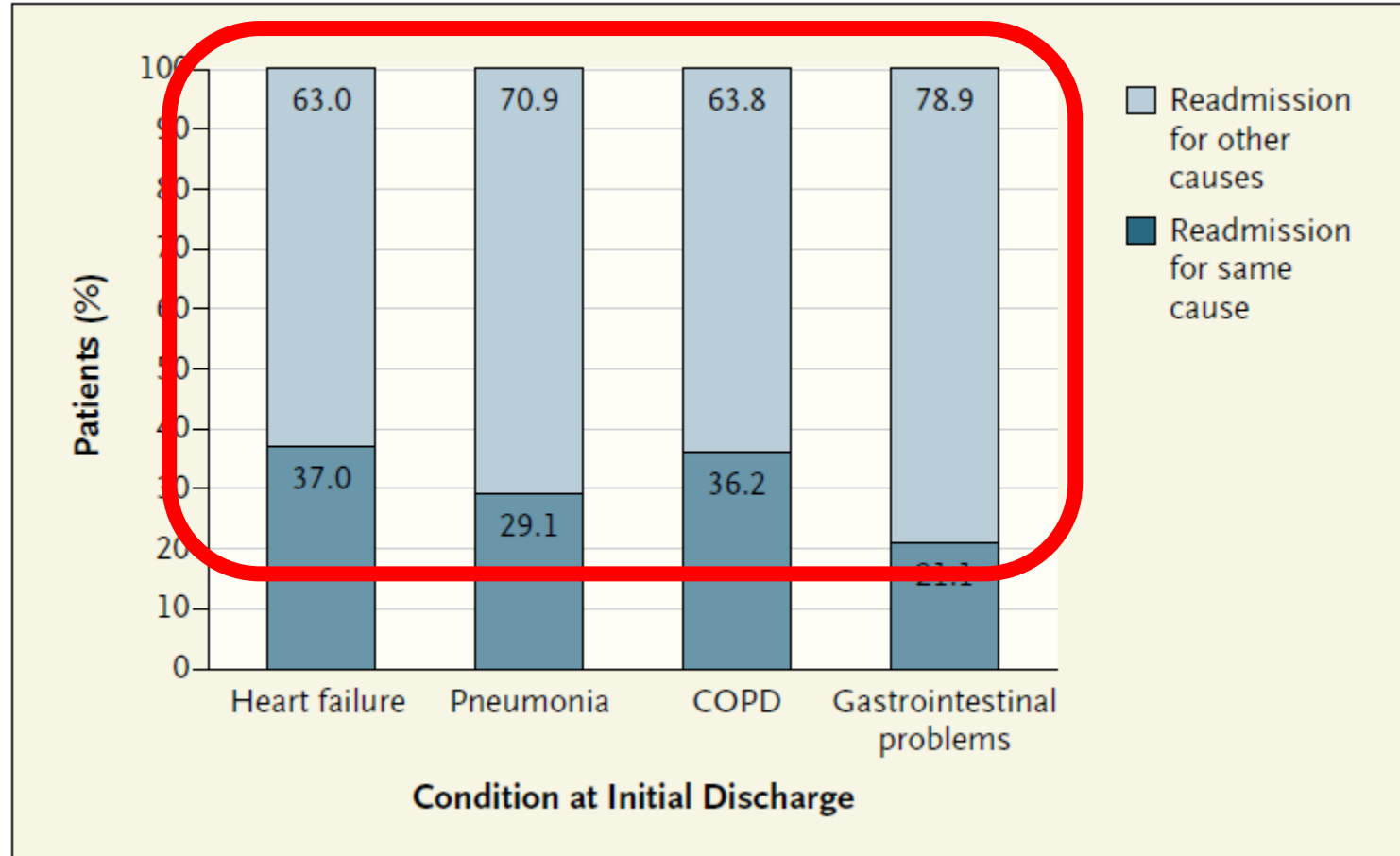
PERSPECTIVE

Post-Hospital Syndrome — An Acquired, Transient Condition of Generalized Risk

Harlan M. Krumholz, M.D.

Proportion of rehospitalizations for causes other than the condition at initial discharge

Proportion of rehospitalizations for causes other than the condition at initial discharge

- Sleep deprivation, disruption of normal circadian rhythm
- **Poor nutrition**
- Pain
- Confrontation of mentally challenging situations
- Drugs that can alter cognition and physical function
- Deconditioning by bed rest or inactivity

Changes with old age

Effects

Sensory impairment
- Decreased sense of taste $\longrightarrow$ Reduced appetite
- Decreased sense of smell $\longrightarrow$ Reduced appetite
- Poor oral health $\longrightarrow$ Difficulty chewing, chronic inflammation, poor quality diet
- Loss of vision and hearing $\longrightarrow$ Decreased ability to purchase and prepare food

Altered energy need $\longrightarrow$ Diet lacking essential nutrients

Decreased physical activity $\longrightarrow$ Progressive depletion of lean body mass and reduced appetite

Sarcopenia $\longrightarrow$ Decreased functional ability, assistance needed with ADLs

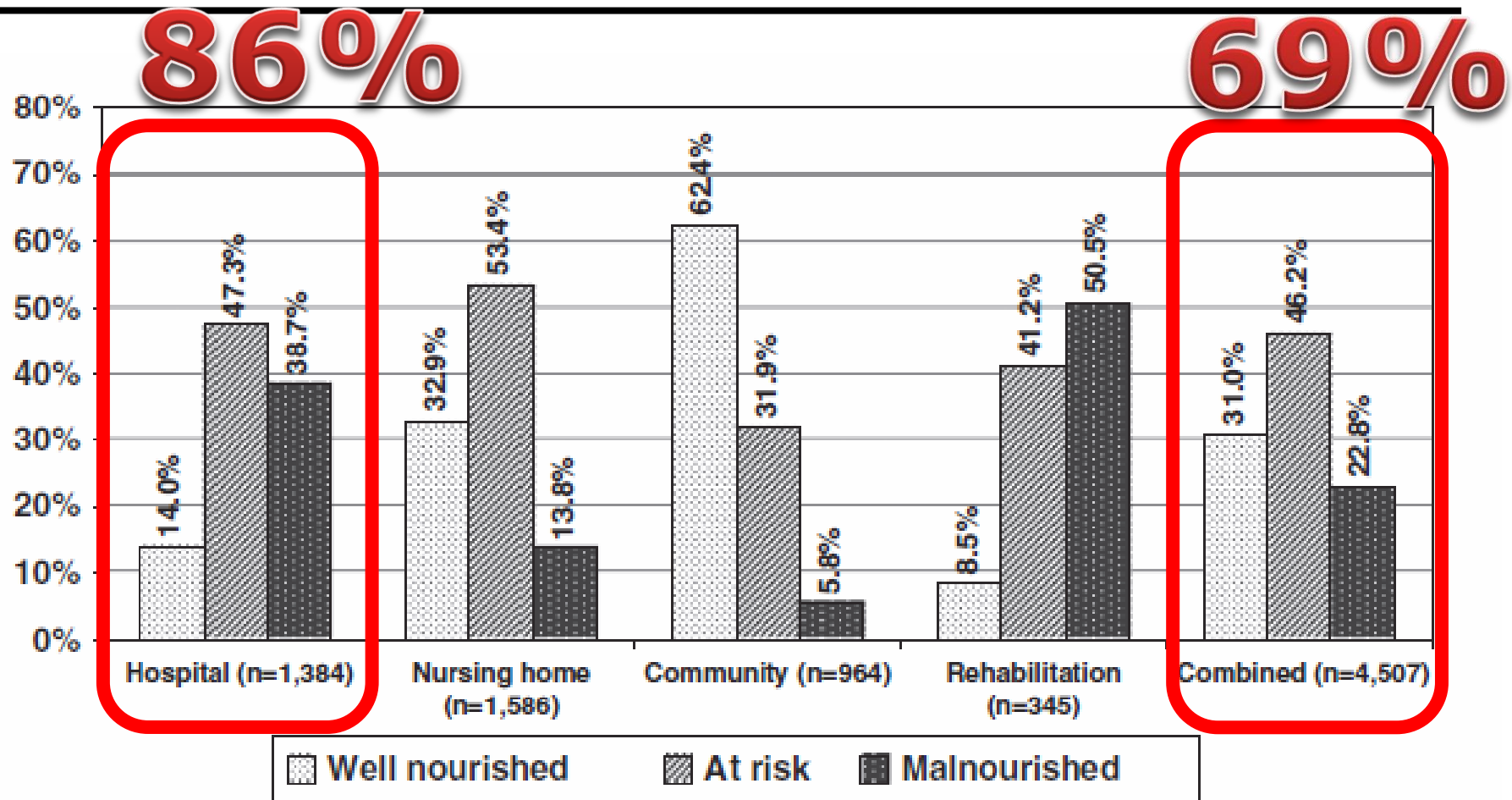Isolation $\longrightarrow$ Decreased appetite

Financial $\longrightarrow$ Limited access to food, poor quality diet

Cumulative Effects $\longrightarrow$ **Progressive Undernutrition**

Frequency of Malnutrition in Older Adults: A Multinational Perspective Using the Mini Nutritional Assessment

86%   **69%**

Chart data:

Setting	Well nourished	At risk	Malnourished
Hospital (n=1,384)	14.0%	47.3%	38.7%
Nursing home (n=1,586)	32.9%	53.4%	13.8%
Community (n=964)	62.4%	31.9%	5.8%
Rehabilitation (n=345)	8.5%	41.2%	50.5%
Combined (n=4,507)	31.0%	46.2%	22.8%

Legend: Well nourished · At risk · Malnourished

Kaiser JAGS 2010

Malnutrition in Hospitalised Older Adults: A Multicentre Observational Study

- 6 Irish hospitals, 606 older adults aged 70+

- **63%** were malnourished or at risk for **M** according with MNA-SF

- **M** was associated with increased LOS, institutionalisation, and in-hospital mortality (all p<.001)

O'Shea E, JNHA 2017

SENILE ANOREXIA IN DIFFERENT GERIATRIC SETTINGS IN ITALY

L.M. DONINI[1], L.J. DOMINGUEZ[2], M. BARBAGALLO[2], C. SAVINA[3], E CASTELLANETA[3],
D. CUCINOTTA[4], A. FIORITO[4], E.M. INELMEN[5], G. SERGI[5], G ENZI[5], C. CANNELLA[1]
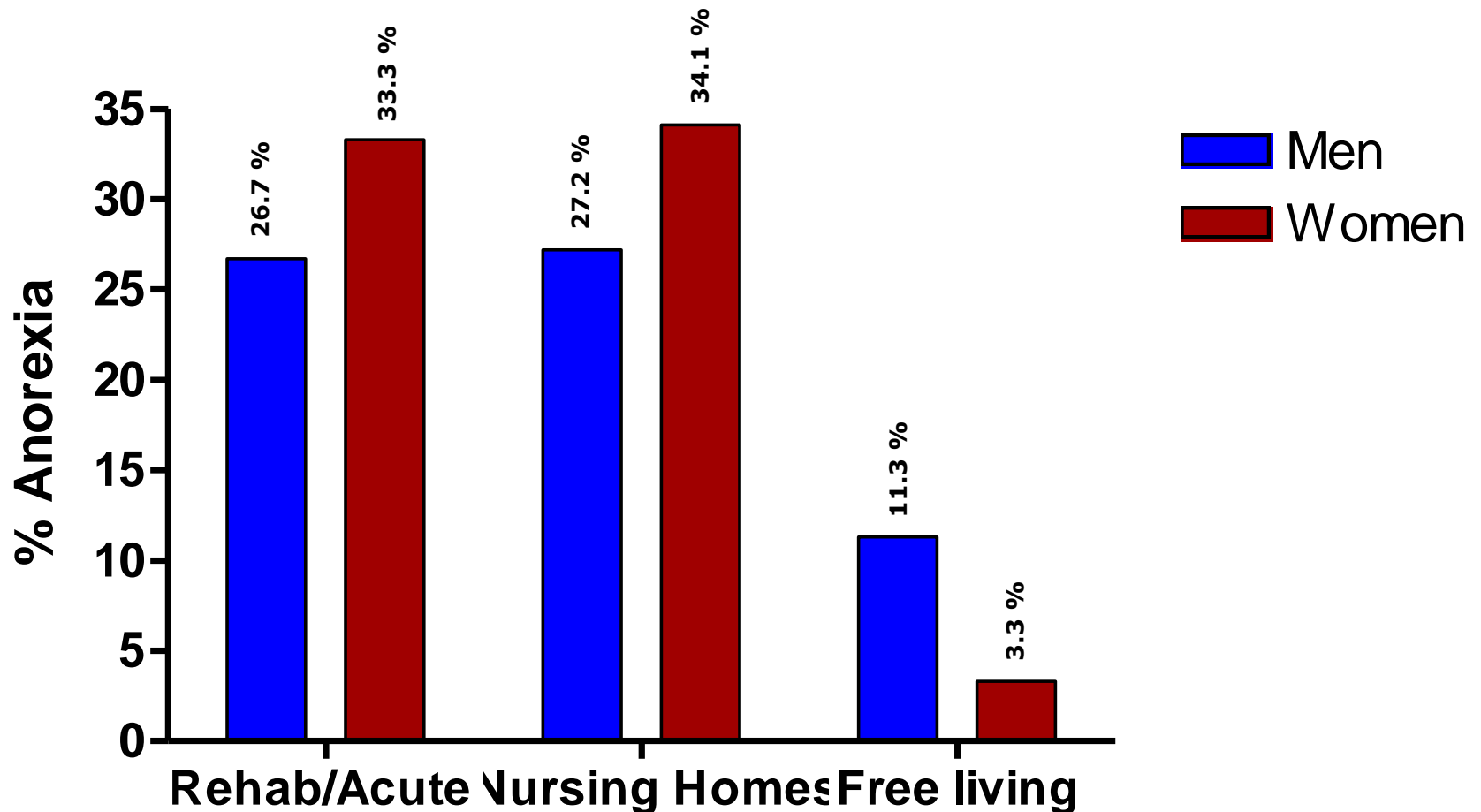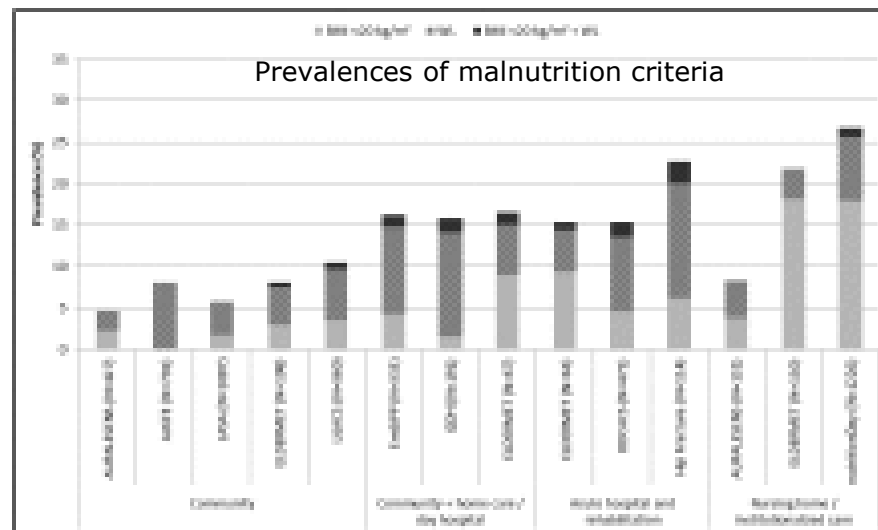
High Variability in the Definition

Malnutrition in the Nursing Home

- near **20%** of NH had some form of **M**.
- **M** definitions were variable
- Prevalence ranged from **1.5 to 66.5%.**
- Depression, cognitive- functional impairment, and swallowing difficulty were consistently associated with **M**.
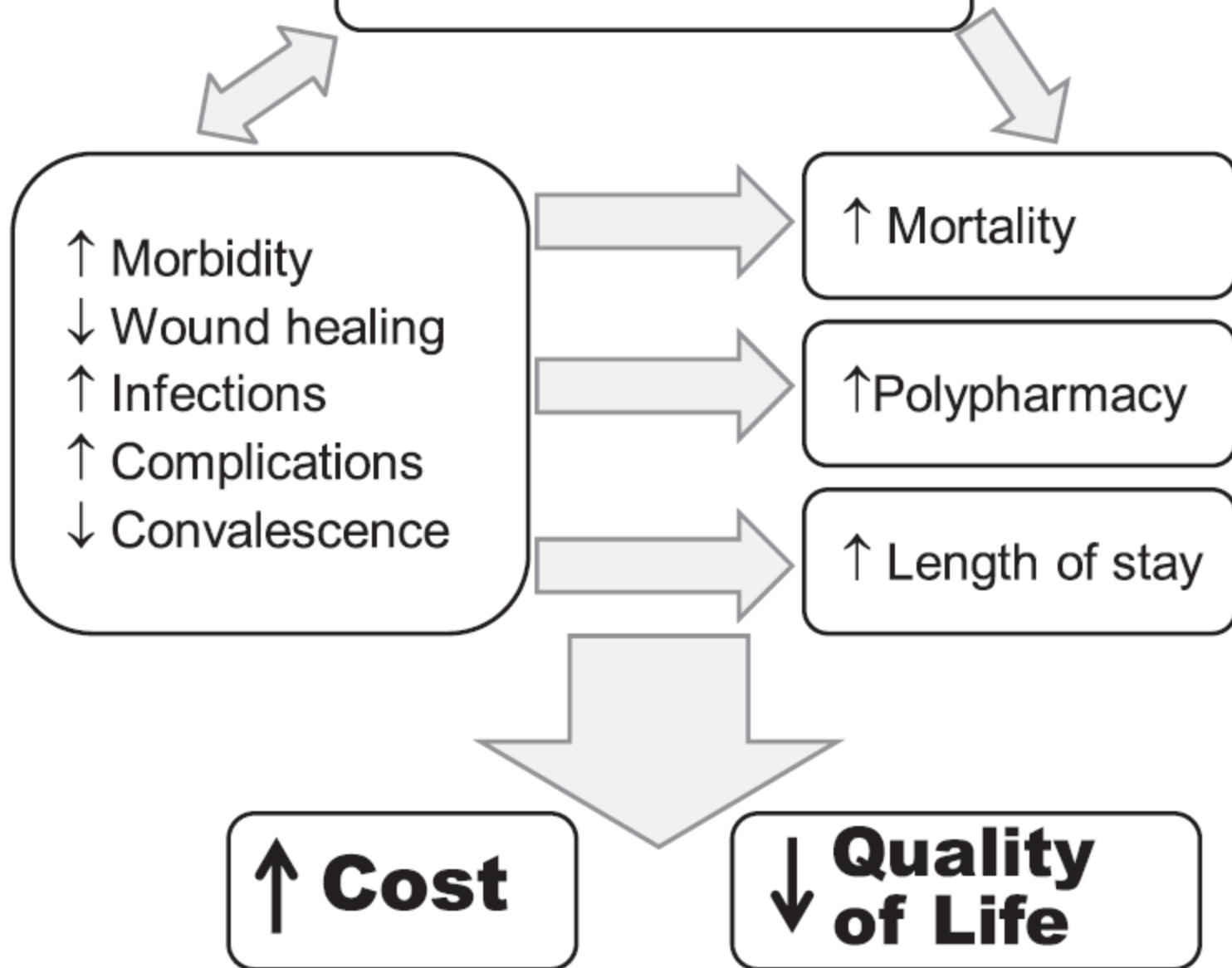- Mortality was significantly associated with **M**.

CONCLUSION: To truly tackle the issue of malnutrition in the NH, a **consistent definition** is needed.

Prevalence of malnutrition using harmonized definitions in older adults from different settings – A MaNuEL study
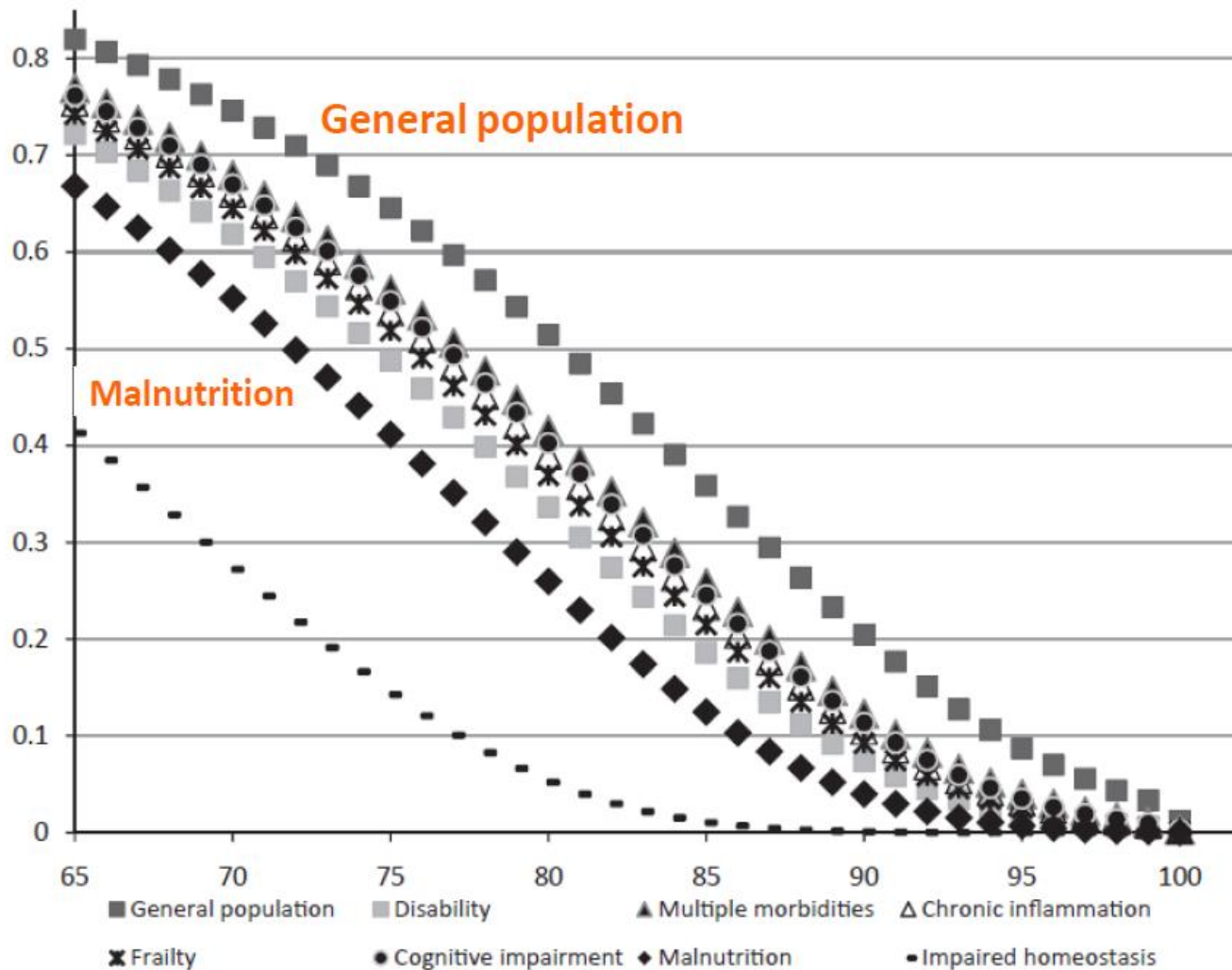
- Malnutrition in the Elderly (**MaNuEL**) Knowledge Hub
- 15 samples, n=5956
- To compare prevalences of M indicators:
  - low BMI (<20 kg/m^2 and age-specific BMI <20),
  - previous weight loss,
  - moderate and severe decrease in food intake,
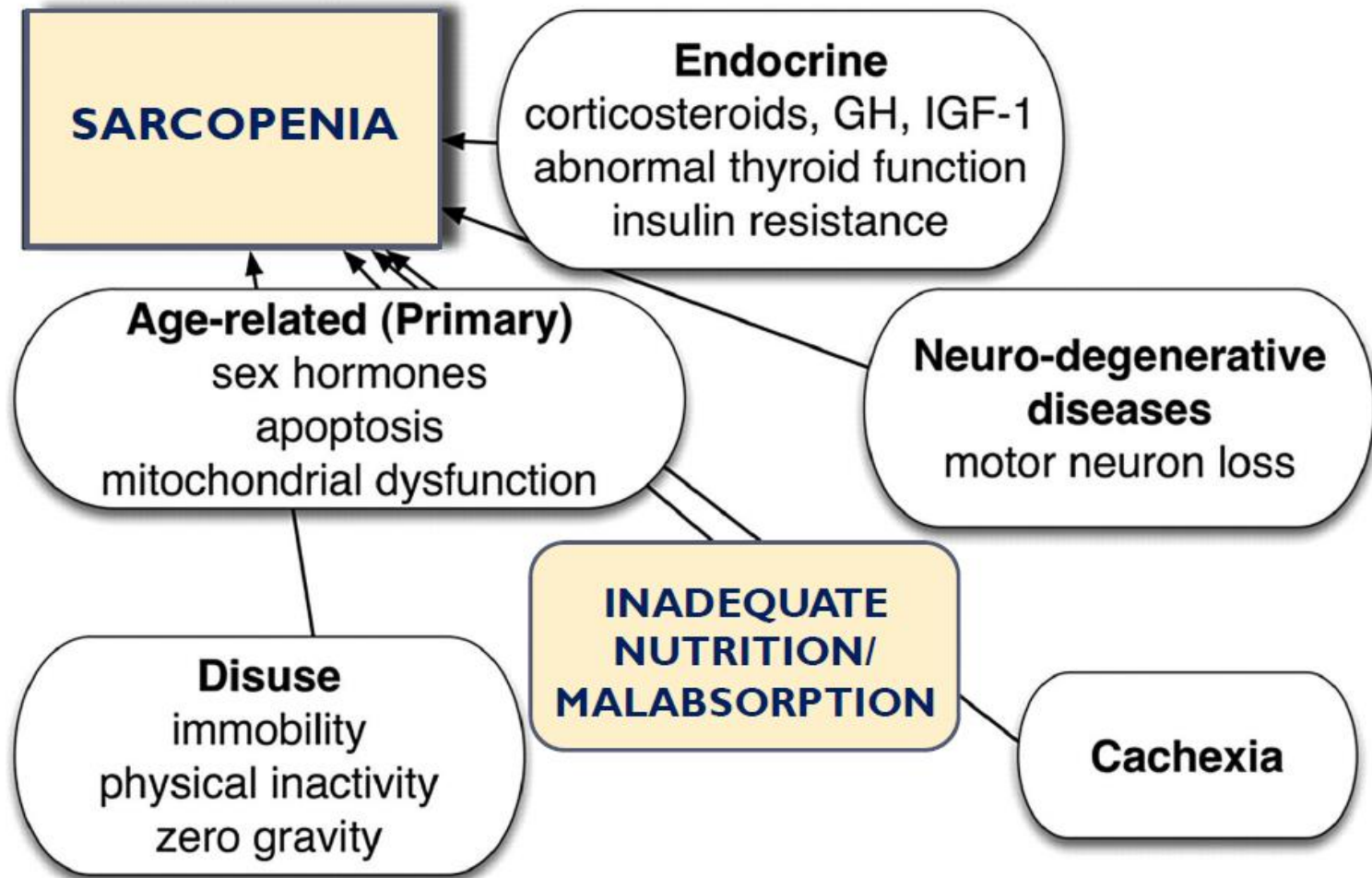 - and combined low BMI and/or WL

Prevalences of malnutrition criteria

Malnutrition

↑ Morbidity
↓ Wound healing
↑ Infections
↑ Complications
↓ Convalescence

↑ Mortality

↑ Polypharmacy

↑ Length of stay

↑ Cost

↓ Quality of Life

Geriatric Syndromes and Survival

Kane R et al J Am Ger Soc 2012;60:896-904

Patogenesi della sarcopenia

Cruz-Jentoft A J et al. Age Ageing 2010;39:412-423

Prevalence and Associated Factors of Sarcopenia in NH:
A Systematic Review and Meta-analysis

- 16 studies, 3585 participants from 129 NH.

- Prevalences EWGSOP- and SMI-defined sarcopenia were 41% and 59%.

- **M** was an independent associated factor of EWGSOP-defined sarcopenia (OR 1.74, 95% CI 1.36-2.2; 3 studies, 718 cases)

Malnutrition Diagnosis during Adult Inpatient Hospitalizations: Collaborative Database of Academic Medical Centers

Prevalence of **M** diagnosis reported in hospitalizations
University Health System Consortium (Vizient) database,
105 institutions, 2014-2015.
ICD code.
5,896,792 hospitalizations
- N=292,754; **5.0%** with **M** diagnosis
  0.9% severe **M** diagnosis
- **M** diagnosis increased (4.0% to 4.9%) from 2014 to 2015 (P<0.01).
- Factors associated with increased diagnosis of **M** diagnosis = higher hospital volume, hospital ranking, and patient satisfaction scores (P<0.01).

Malnutrition Diagnosis during Adult Inpatient Hospitalizations: Collaborative Database of Academic Medical Centers

Conclusion

Missing a malnutrition diagnosis appears to be a **universal** even across academic medical centers.

Quality improvement efforts appear to be needed to improve the identification of malnutrition.

More than 50% of energy-protein malnutrition may go undetected in hospitalized geriatric patients

Muhlethaler 1995

Cachexia, sarcopenia, malnutrition and frailty are overlapping conditions
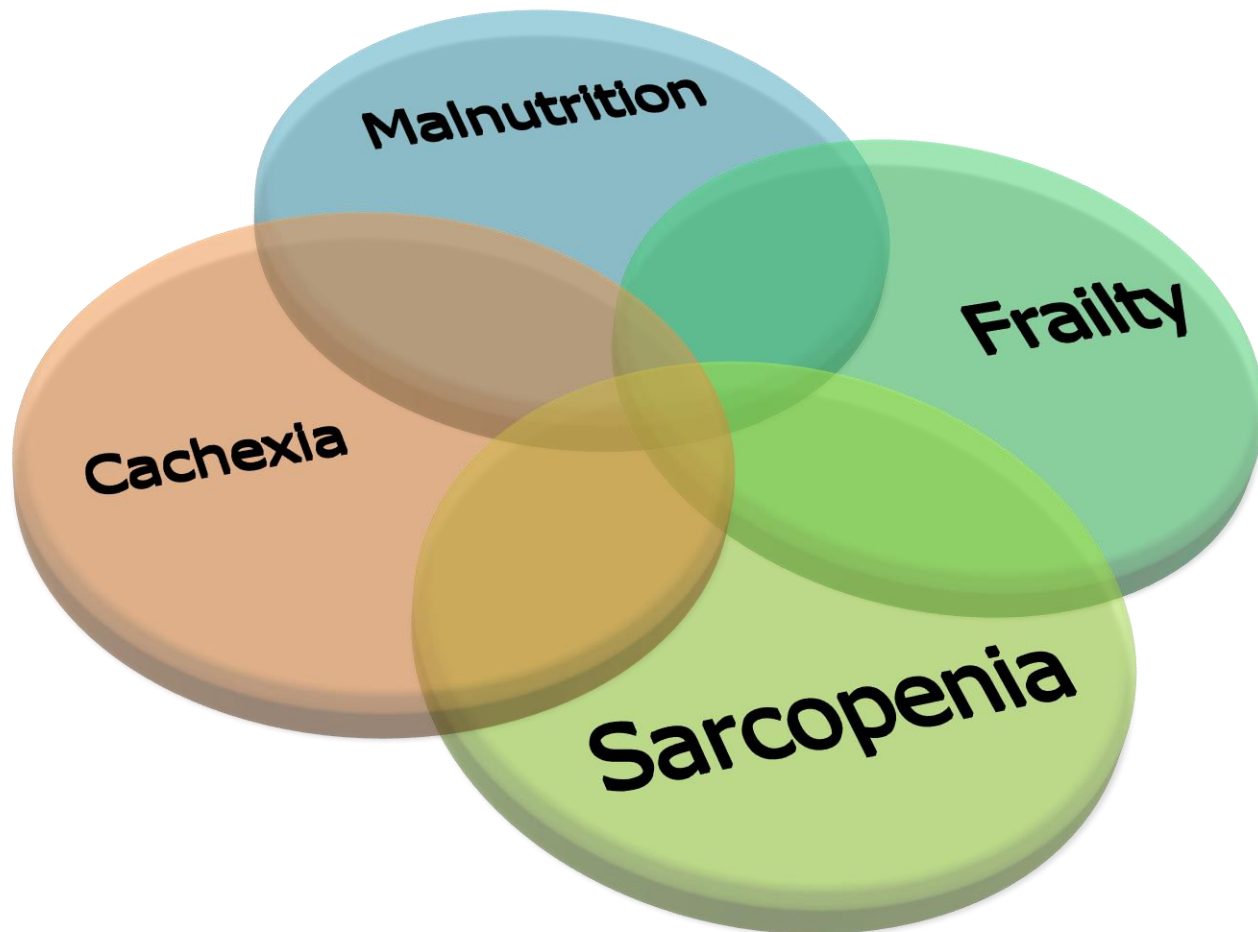
Valutazione dello Stato Nutrizionale

▸ **Misure antropometriche**
  ▸ BMI (<18.5)
  ▸ Calo ponderale involontario
  ▸ Pliche
  ▸ Circonferenza braccio, vita

▸ **Biomarcatori**
  ▸ Albumina plasmatica(< 3.5 g/dl)
  ▸ Linfociti (<1.800/mm^3)
  ▸ Prealmbumina
  ▸ Transferrina

▸ **Valutazione strumentale**
  ▸ BIA
  ▸ Dexa
  ▸ RMN

▸ **Strumenti multidimensionali:**
  MNA
  ▸ Subjective Global Assessment
  ▸ Prognostic Nutritional Index
  ▸ Nutrition Risk Index
  ▸ Prognostic Inflammatory and Nutritional Index

Mini Nutritional Assessment
MNA®

Last name:	First name:	Sex:	Date:

Age:	Weight, kg:	Height, cm:	I.D. Number:

Complete the screen by filling in the boxes with the appropriate numbers.
Add the numbers for the screen. If score is 11 or less, continue with the assessment to gain a Malnutrition Indicator Score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe loss of appetite
1 = moderate loss of appetite
2 = no loss of appetite ☐

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss ☐

C Mobility
0 = bed or chair bound
1 = able to get out of bed/chair but does not go out
2 = goes out ☐

J How many full meals does the patient eat daily?
0 = 1 meal
1 = 2 meals
2 = 3 meals ☐

K Selected consumption markers for protein intake
• At least one serving of dairy products (milk, cheese, yogurt) per day? yes ☐ no ☐
• Two or more servings of legumes or eggs per week? yes ☐ no ☐
• Meat, fish or poultry every day yes ☐ no ☐
0.0 = if 0 or 1 yes
0.5 = if 2 yes
1.0 = if 3 yes ☐.☐

L Consumes two or more servings of fruits or vegetables per day?
0 = no   1 = yes ☐

12 points or greater Normal – not at risk – no need to complete assessment
11 points or below   Possible malnutrition – continue assessment

Assessment

G Lives independently (not in a nursing home or hospital)
0 = no   1 = yes ☐

H Takes more than 3 prescription drugs per day
0 = yes   1 = no ☐

I Pressure sores or skin ulcers
0 = yes   1 = no ☐

0.0 = not as good
0.5 = does not know
1.0 = as good
2.0 = better ☐.☐

Q Mid-arm circumference (MAC) in cm
0.0 = MAC less than 21
0.5 = MAC 21 to 22
1.0 = MAC 22 or greater ☐.☐

R Calf circumference (CC) in cm
0 = CC less than 31   1 = CC 31 or greater ☐

Assessment (max. 16 points) ☐ ☐.☐

Screening score ☐ ☐

Total Assessment (max. 30 points) ☐ ☐.☐

Malnutrition Indicator Score
17 to 23.5 points   at risk of malnutrition ☐
Less than 17 points   malnourished ☐

Ref.: Guigoz Y, Vellas B and Garry P.J. 1994. Mini Nutritional Assessment: A practical assessment tool for grading the nutritional state of elderly patients. *Facts and Research in Gerontology.* Supplement #2:15-59.
Rubenstein LZ, Harker J, Guigoz Y and Vellas B. Comprehensive Geriatric Assessment (CGA) and the MNA: An Overview of CGA, Nutritional Assessment, and Development of a Shortened Version of the MNA. In: "Mini Nutritional Assessment (MNA): Research and Practice in the Elderly". Vellas B, Garry P.J. and Guigoz Y., editors. Nestle Nutrition Workshop Series. Clinical & Performance Programme, vol. 1. Karger, Bâle, in press.

Valutazione dello stato nutrizionale

24-30 da 24 a 30 punti ☐ stato nutrizionale normale
17-23.5 da 17 a 23,5 punti ☐ rischio di malnutrizione
meno 17 punti ☐ cattivo stato nutrizionale

D
I
S
F
A
G
I
A

Nestlé Nutrition Institute

EAT-10: Test per il monitoraggio della capacità deglutitoria

Cognome: **Nome:**   **Data:**

Sesso: **Età:**

Obiettivo:

Il test EAT-10 aiuta a misurare le sue difficoltà di deglutizione.
Può essere importante parlare con il suo medico per stabilire il trattamento adeguato ai suoi sintomi.

A. Istruzioni:

Risponda ad ogni domanda barrando il valore corrispondente all'entità del sintomo.
Consideri che: 0= nessun problema e 4= problema serio.

1) La difficoltà a deglutire mi ha causato una perdita di peso

0 1 2 3 4

2) La difficoltà a deglutire mi rende difficile pranzare fuori casa

0 1 2 3 4

3) Deglutire i liquidi mi risulta difficoltoso

0 1 2 3 4

4) Deglutire cibi solidi mi risulta difficoltoso

0 1 2 3 4

5) Ho difficoltà a deglutire i medicinali (pillole, compresse, capsule)

0 1 2 3 4

6) Deglutire mi causa dolore

0 1 2 3 4

7) La difficoltà a deglutire mi riduce il piacere del pasto

0 1 2 3 4

8) Quando deglutisco, il cibo mi si ferma in gola

0 1 2 3 4

9) Quando mangio tossisco

0 1 2 3 4

10) Deglutire mi genera ansia

0 1 2 3 4

B. Punteggio:

Sommi i singoli punteggi e scriva il totale nelle caselle.
Punteggio totale (massimo 40 punti)

C. Cosa fare dopo:

Se il suo punteggio totale è pari o maggiore di 3, potrebbe avere problemi a deglutire in modo corretto e sicuro. Le consigliamo di condividere i risultati del test EAT-10 con il suo medico.

Referenze: sono state determinate la validità e l'affidabilità del questionario EAT-10.
Belafsky PC, Mouadeb DA, Rees CJ, Pryor JC, Postma GN, Allen J, Leonard RJ. Validity and reliability of the Eating Assessment Tool (EAT-10). Annals Otology Rhinology & Laryngology 2008; 117(12): 919-924

I deficit nutrizionali più frequenti nell'anziano

- **Proteico-calorica**
- **Vitamina D**
- **Vitamina B12**
- **Acido folico**
- **Vitamina B6**
- **Vitamine Antiossidanti**
- **Zinco**
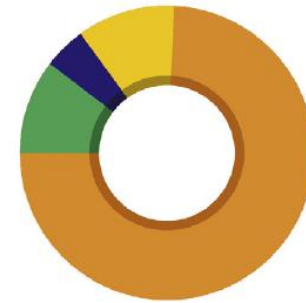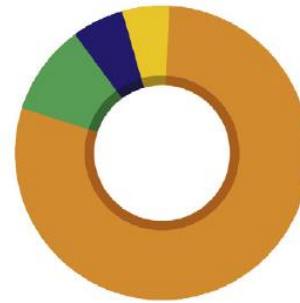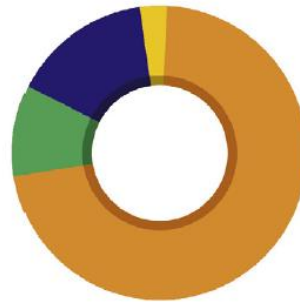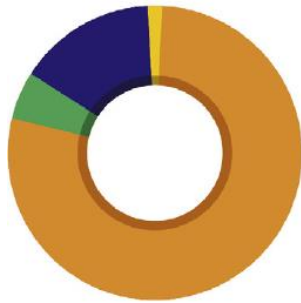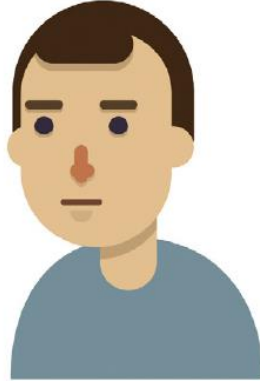- **Calcio**
- **Magnesio**
- **Ferro**
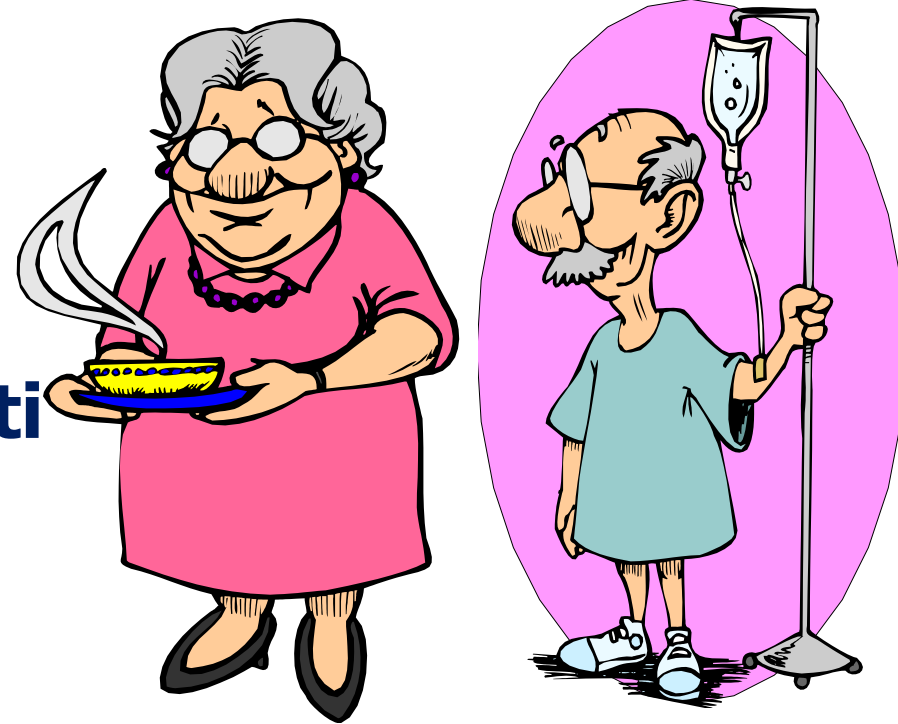
YOUNG   ADULT   ELDERLY   CENTENARIAN

● Bacteroidetes ● Firmicutes ● Actinobacteria ● Proteobacteria

Core microbiome

Subdominant taxa

Firmicutes
Bacteroides
Mucus layer
M
Lamina propria
TLR signals
DCs
Treg
IL-10
Th17
IL-17

Firmicutes ↑   ↓ Bacteroides
Mucus layer
M
TLR signals
Lamina propria
Th17
IL-17
Treg
IL-10

Jirillo, Immun Ageing 2013
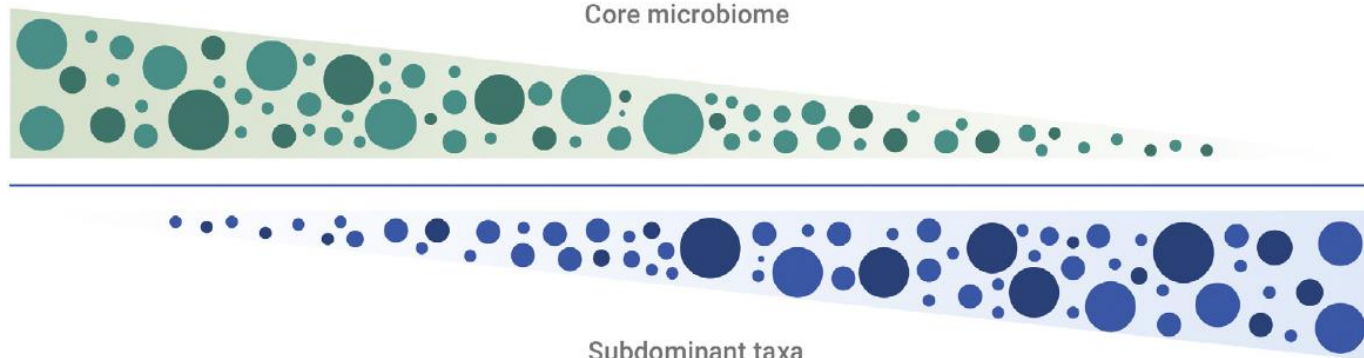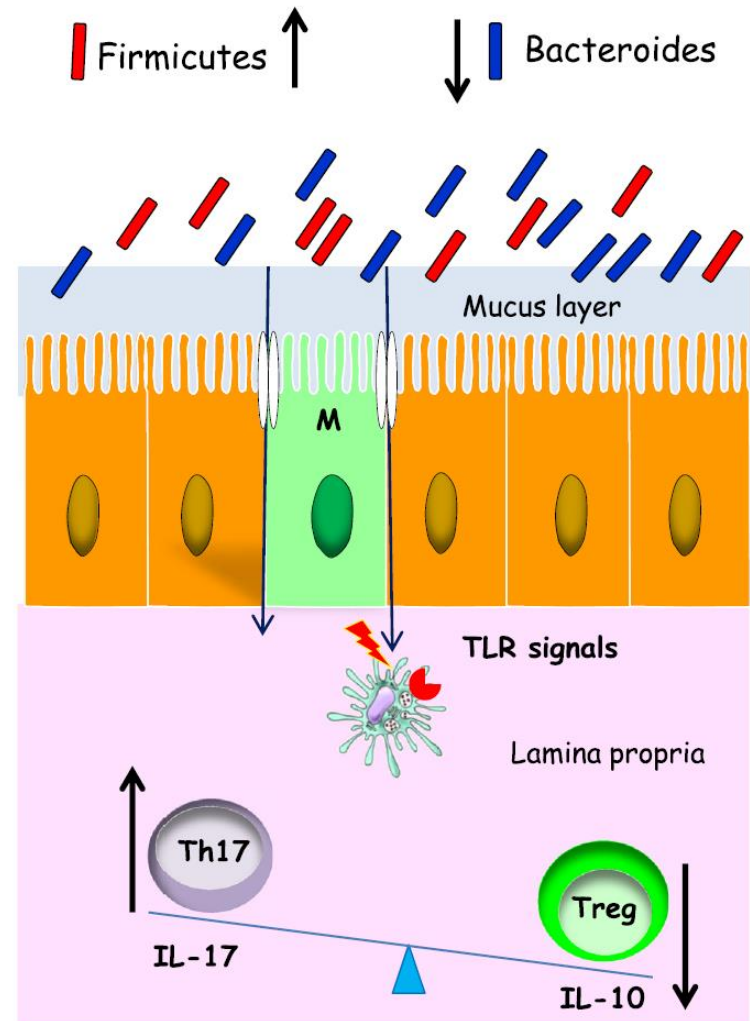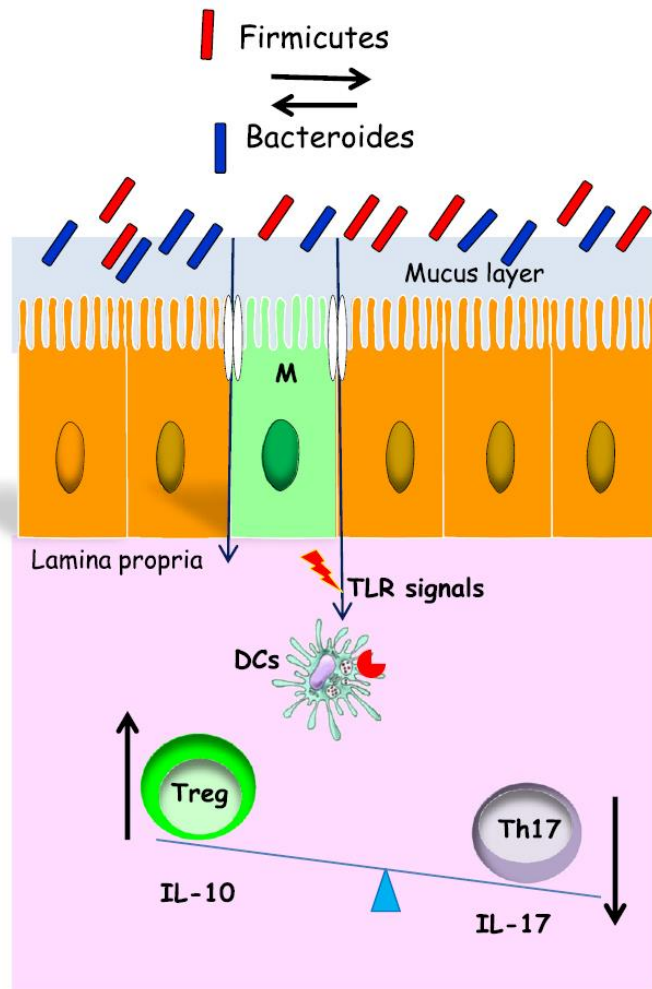
Effectiveness and efficacy of nutritional therapy

Effectiveness and efficacy of nutritional therapy: A systematic review following Cochrane methodology

Q1 - Is malnutrition an independent predictive factor for readmission within 30 d from hospital discharge?
R - 6 of 15 observational studies Yes, 9 No.

Q2 - Does nutritional therapy reduce the risk of readmission within 30 d from hospital discharge?
R – 9 RCTs and 2 MA gave non-conclusive results.

Muscaritoli M, et al Clin Nutr 2017

**Effectiveness and efficacy of nutritional therapy:
A systematic review following Cochrane methodology**

Q3 - Is nutritional therapy cost-effective/does it reduce costs in hospitalized patients?
R - Economic benefit and cost-effectiveness consistent in 16 studies for hospitalized patients.

Q4 - Is nutritional therapy cost effective/does it reduce costs in outpatients?
R – Heterogeneous and limited data on out-patients indicated cost-benefits in some selected sub-groups.

Original Study

Prevalence and Determinants of Poor Food Intake of Residents Living in Long-Term Care

Heather H. Keller PhD, RD [a,*], Natalie Carrier PhD, RD [b], Susan E. Slaughter PhD, RN [c], Christina Lengyel PhD, RD [d], Catriona M. Steele PhD, SLP [e,f], Lisa Duizer PhD [g], Jill Morrison MSc [h], K. Stephen Brown PhD [i], Habib Chaudhury PhD [j], Minn N. Yoon PhD [k], Alison M. Duncan PhD, RD [l], Veronique Boscart RN, PhD [m], George Heckman MD, MSc, FRCPC [a], Lita Villalon PhD, FDC, RD [b]

- E and P intake in LTC, prevalence and association of covariates with food intake
- 32 NH from 4 provinces in Canada. N=628, 86.3 y
- 3-d weighed food intake to measure E and P intake
- Diagnoses, medications, and diet prescription
- MNA-SF, **oral health** and dysphagia risk
- **Mealtime Relational Care Checklist**: interaction with staff
- **Dining Environment Audit Protocol**
- **Mealtime Scan:** mealtime experience and ambiance
- **Person Directed Care questionnaire:** features of the home and food services

Keller HH, JAMDA. 2017;18:941-947

- E intake= 1571.9 $\pm$ 411.9 kcal; P 58.4 $\pm$ 18 g/d.
- Requiring eating assistance was negatively associated with E and P intake.
- Male, higher MNA-SF, and dementia care unit (all w more assistance) were positively associated with E and P intake.
- E intake was + associated with person-centered care practices.
- P intake was + associated with more dietitian time.

Keller HH, JAMDA. 2017;18:941-947

Conclusion:

First study to consider resident, unit, staff, and home variables associated with food intake.
Interventions focused on pureed food, restorative dining, eating assistance, and person-centered care practices may support improved food intake and should be the target for further research.

Keller HH, JAMDA. 2017;18:941-947

JAMDA

Original Study

Effects of a Home-Based and Volunteer-Administered Physical Training, Nutritional, and Social Support Program on Malnutrition and Frailty in Older Persons: A Randomized Controlled Trial

Eva Luger MSc [a],*, Thomas Ernst Dorner MD [a], Sandra Haider MSc [a], Ali Kapan MSc [a], Christian Lackinger PhD [b], Karin Schindler PhD [c]

[a] Institute of Social Medicine, Centre for Public Health, Medical University of Vienna, Vienna, Austria
[b] Department for Health Promotion and Prevention, SPORTUNION Austria, Vienna, Austria
[c] Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria

- RCT, home-based physical training and nutritional intervention program and social support intervention on nutritional and frailty status in the community.

- Mean 83 y, frail and prefrail, PTN n=39, social support n=41. Twice a week.

- 6 strength exercises and discussion of nutrition-related aspects.

- MNA and frailty status (SHARE-FI) at baseline and after 12 weeks.

- Improvements in MNA score (1.54 points, P=.004) and SHARE-FI score (0.71, P <.001) PTN group.

- Impaired nutritional status decreased by 25% in PTN group and by 23% in SoSu group.

- Frailty decreased by 17% in the PTN group and by 16% in the SoSu group.

Table 2

Effects on Nutritional and Frailty Status After 12 Weeks

Scores	Group	Baseline Mean (SD)	P^*	12 Weeks Mean (SD)	P^*	Change Relative (%)	Within-Subject Effect Mean (95% CI)	$P^\dagger$	Between-Subject Effect ß (95% CI)	$P^\ddagger$
MNA-LF, points[§]	PTN	23.7 (3.4)	.940	25.2 (3.2)	.492	7.6	1.54 (0.51–2.56)	.004	0.27 (−1.13 to 1.67)	.700
	SoSu	24.2 (3.2)		25.1 (3.6)		5.4	0.98 (−0.27 to 2.22)	.121	0	
SHARE-FI, DFS[‖]	PTN	3.0 (1.1)	.297	2.3 (1.2)	.655	−21.8	−0.71 (−1.07 to −0.35)	<.001	−0.30 (−0.75 to 0.15)	.187
	SoSu	2.8 (1.0)		2.4 (1.3)		−13.7	−0.35 (−0.66 to −0.04)	.027	0	

Conclusion: Intervention conducted by nonprofessionals is feasible and can help to tackle malnutrition and frailty in older persons living at home, potentially preventing health risks and relieving isolation and loneliness.
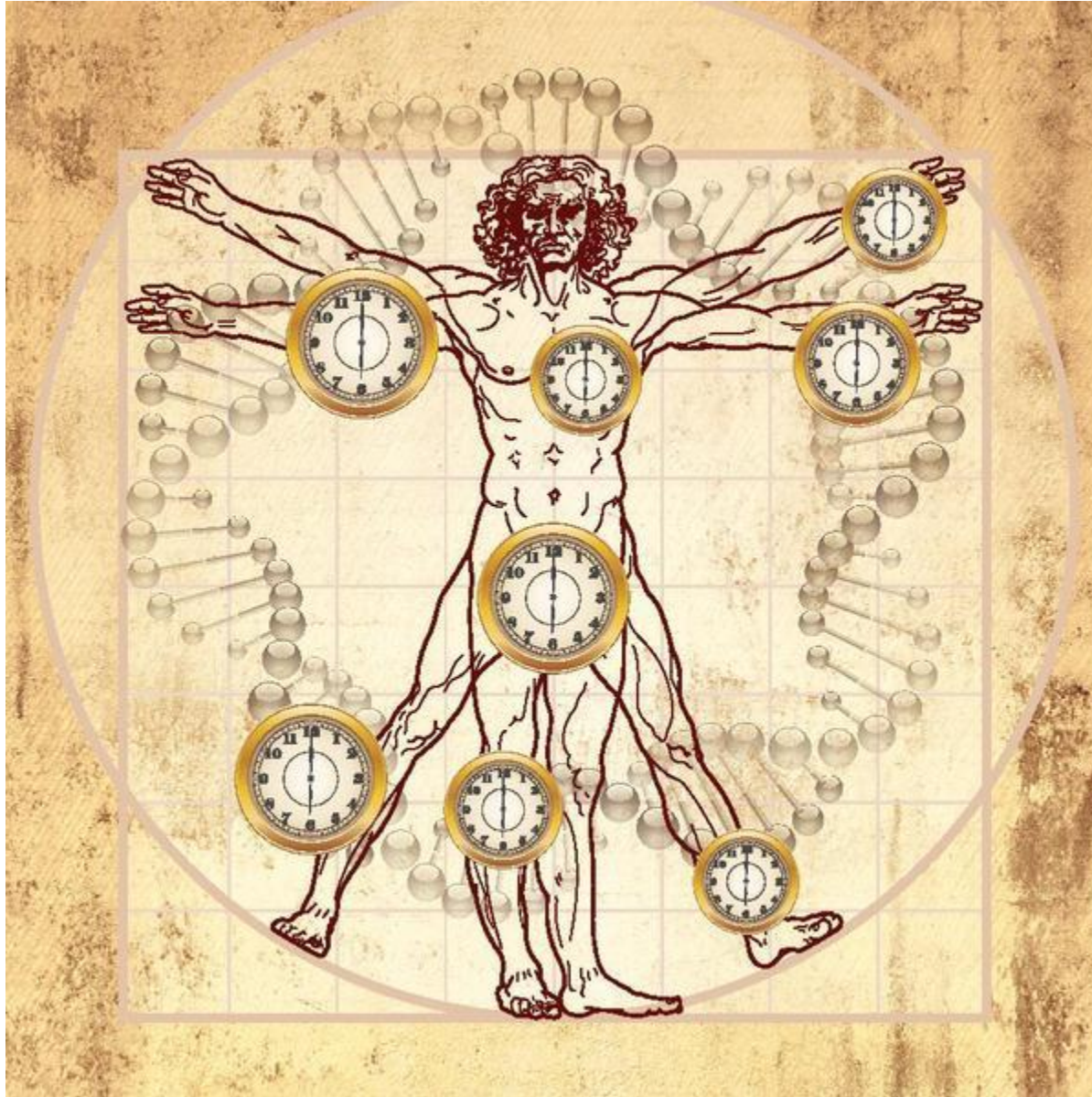
DIETA MEDITERRANEA

Si vive meglio e di più!

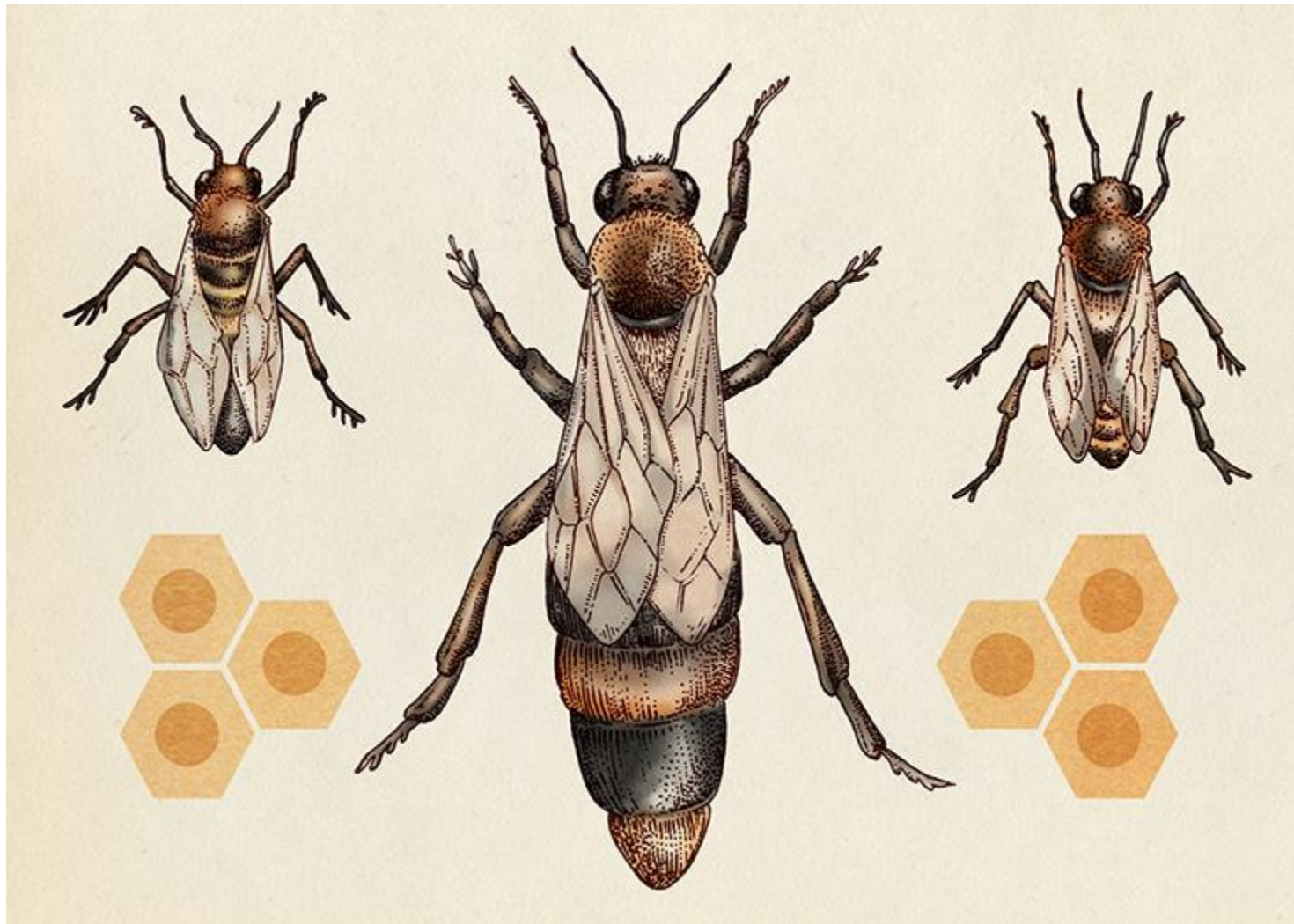# Epigenetic clock, Horvath's clock, or DNA methylation age

Age prediction method based on 353 epigenetic markers on the DNA

6 weeks   2 years

ROYAL TREATMENT: The only difference between the queen and the worker is their diet!

Da ricordare....

❑ Un corretto assessment nutrizionale è cruciale in tutti i setting geriatrici perché la **M** è frequente e sotto-diagnosticata

❑ La sarcopenia è una complicanza funzionale molto rilevante della **M** nell'anziano

❑ Per prevenire la iponutrizione è necessaria una identificazione precoce e la implementazione di interventi nutrizionali corretti

❑ La valutazione nutrizionale fa parte della Valutazione Multidimensionale Geriatrica

Patch Adams

Grazie per la cortese attenzione