SARCOPENIA Y FRAGILIDAD

Alfonso J. Cruz Jentoft

Servicio de Geriatría

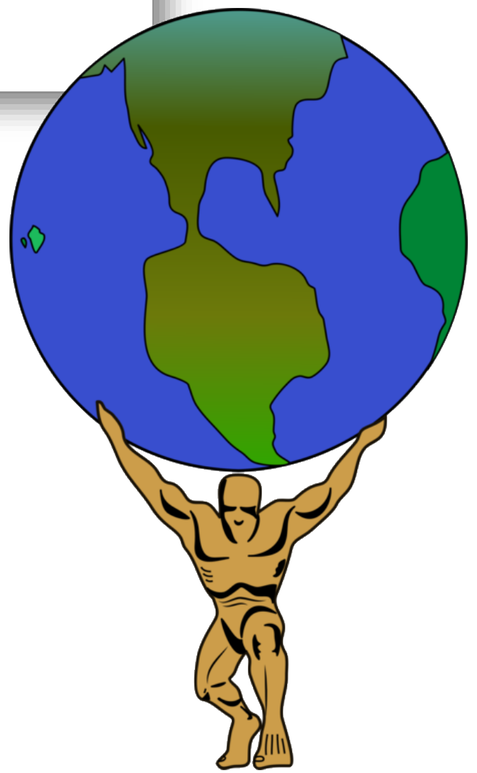
Hospital Universitario Ramón y Cajal (IRICYS), Madrid

Rev Inves Clin. 2016;68:59-67

Frailty and Sarcopenia: The New Geriatric Giants

John E. Morley*

Divisions of Geriatric Medicine and Endocrinology, Saint Louis University School of Medicine, St. Louis, Mo., USA



Sarcopenia

El músculo humano: el órgano olvidado

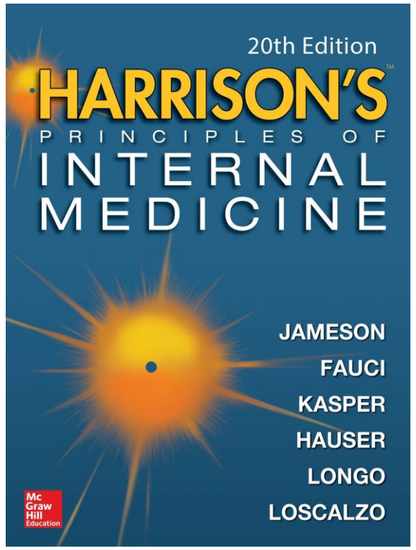
- 600 músculos en el cuerpo humano
- Músculo esquelético: 40-45% de la masa corporal total
- 55% de este músculo está en las piernas
- 50% de las proteínas del cuerpo están en los músculos

➢ movilidad

➢ regulación del metabolismo proteico

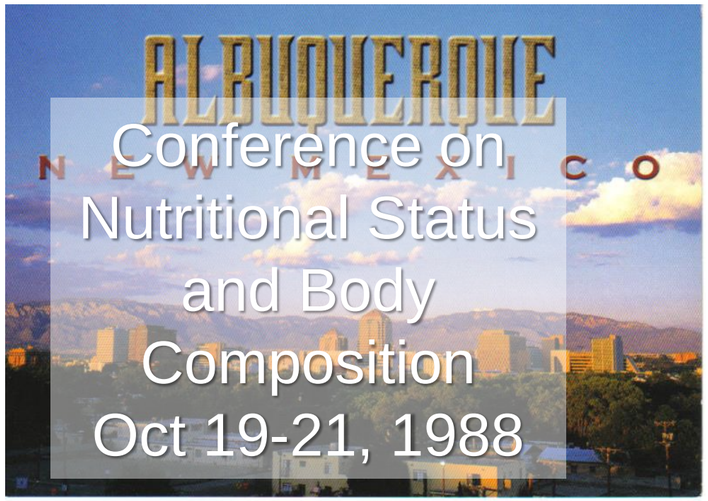
➢ regulación endocrina

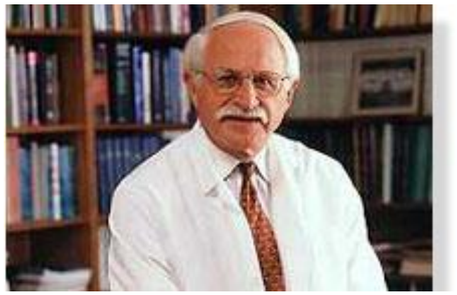
Frontera WR et al. In: Physical Medicine&Rehabilitation. DeLisa JA (ed). LWW 2005



Section 3: Nerve and Muscle Disorders

Sarcopenia: primeros pasos





- “No decline with age is as dramatic or potentially more significant than the decline in lean body mass. In fact, there may be no single feature of age-related decline more striking than the decline in lean body mass in affecting ambulation, mobility, energy intake, overall nutrient intake and status, independence and breathing.”

- “I suggested that if this phenomenon were to be taken seriously, we had to give it a name. I proposed that the name for this phenomenon should be derived from the Greek.”

Age and Ageing 2019; **48:** 16–31
doi: 10.1093/ageing/afy169
Published electronically 24 September 2018

GUIDELINES

Sarcopenia: revised European consensus on definition and diagnosis

Alfonso J. Cruz-Jentoft[1], Gülistan Bahat[2], Jürgen Bauer[3], Yves Boirie[4], Olivier Bruyère[5], Tommy Cederholm[6], Cyrus Cooper[7], Francesco Landi[8], Yves Rolland[9], Avan Aihie Sayer[10], Stéphane M. Schneider[11], Cornel C. Sieber[12], Eva Topinkova[13], Maurits Vandewoude[14], Marjolein Visser[15], Mauro Zamboni[16], Writing Group for the European Working Group on Sarcopenia in Older People 2 (EWGSOP2), and the Extended Group for EWGSOP2

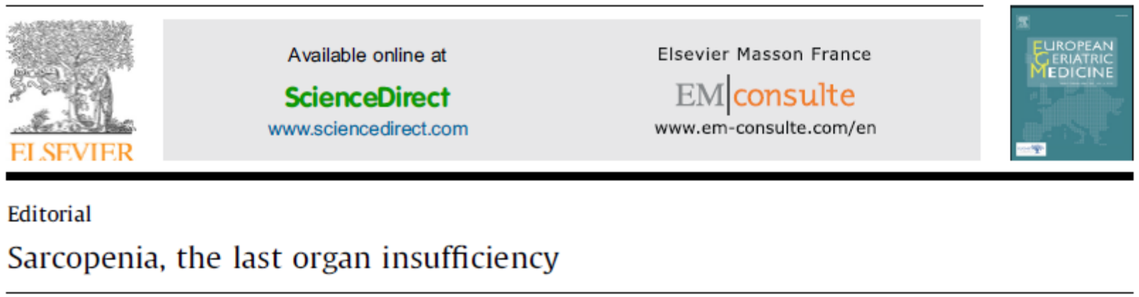
EWGSOP2

Cruz-Jentoft AJ et al. Sarcopenia: revised European consensus on definition and diagnosis. Age Ageing 2019

Concepto de sarcopenia

- La sarcopenia es una enfermedad progresiva y generalizada del músculo esquelético que se asocia con un aumento del riesgo de sufrir consecuencias adversas como fracturas, incapacidad física y mortalidad.

Insuficiencia muscular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EUROPEAN GERIATRIC MEDICINE

Editorial

Sarcopenia, the last organ insufficiency

EWGSOP2

Definición operativa de sarcopenia

BAJA FUERZA MUSCULAR

SARCOPENIA PROBABLE

+

BAJA MASA/ CALIDAD MUSCULAR

SARCOPENIA CIERTA

+

BAJO RENDIMIENTO FÍSICO

SARCOPENIA GRAVE

EWGSOP2

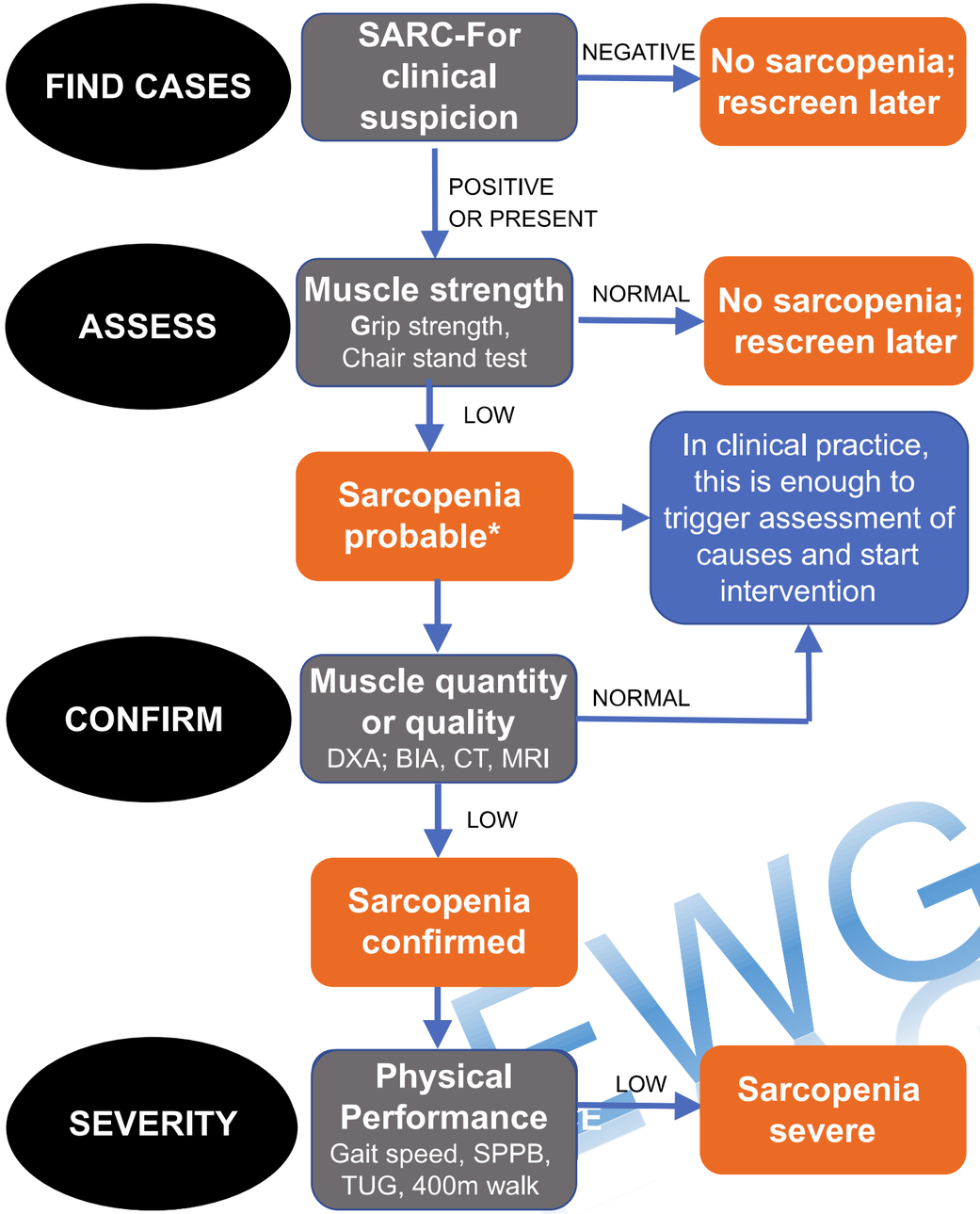


Figure 1. Sarcopenia: EWGSOP2 algorithm for case-finding, making a diagnosis and quantifying severity in practice. The steps of the pathway are represented as Find-Assess-Confirm-Severity or F-A-C-S. *Consider other reasons for low muscle strength (e.g. depression, sroke, balance disorders, peripheral vascular disorders).

Puntos de corte

Test	Puntos de corte en hombres	Puntos de corte en mujeres	Referencias
Puntos de corte EWGSOP2 para definir la baja fuerza muscular			
Fuerza de prensión	<27 kg	<16 kg	Dodds, 2014[26]
Levantarse de la silla	>15 sec for 5 rises		Cesari, 2009[67]
Puntos de corte EWGSOP2 para definir la baja masa muscular			
ASM	< 20 kg	< 15 kg	Studenski, 2014[3]
ASM/height^2	< 7.0 kg/m^2	< 5.5 kg/m^2	Gould, 2014[125]

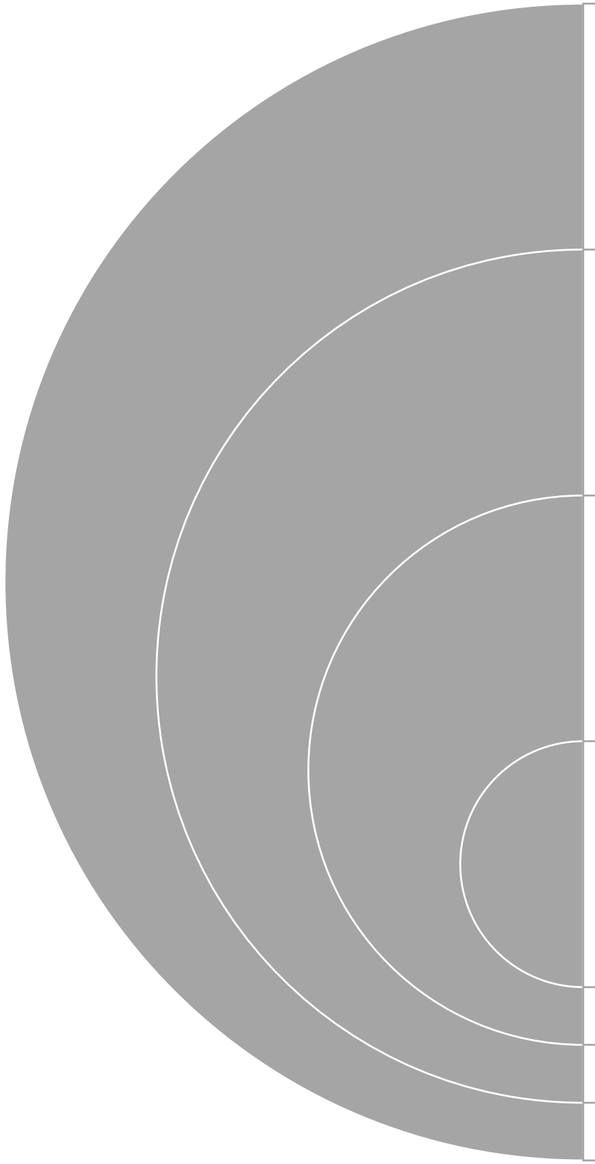
Puntos de corte

Test	Puntos de corte en hombres	Puntos de corte en mujeres	Referencias
Puntos de corte EWGSOP2 para definir el bajo rendimiento físico			
Velocidad de marcha	≤ 0.8 m/s		Cruz-Jentoft, 2010[1] Studenski, 2011[84]
SPPB	≤ 8 puntos		Pavasini, 2016[90] Guralnik, 1995[126]
TUG	≥ 20 s		Bischoff, 2003[127]
400m walk test	No completarlo o tardar ≥ 6 min en hacerlo		Newman, 2006[128]

Sarcopenia aguda y crónica

- Sarcopenia aguda: menos de 6 meses
  - ➢ Normalmente asociada a enfermedad o lesión aguda
- Sarcopenia crónica: dura ≥ 6 meses.
  - ➢ Asociada a enfermedades crónicas o progresivas
- Importancia de medir la sarcopenia a lo largo del tiempo.
- Puede facilitar la intervención precoz.

Categorías de la sarcopenia



Envejecimiento	• Pérdida muscular relacionada con la edad
Enfermedad	• Inflamación (cáncer, enfermedad avanzada de órgano) • Artrosis • Enfermedades neurológicas
Inactividad	• Conducta sedentaria • Incapacidad física
Malnutrición	• Desnutrición o malabsorción • Anorexia por fármacos • Obesidad

Age and Ageing 2019; **48:** 16–31
doi: 10.1093/ageing/afy169
Published electronically 24 September 2018

GUIDELINES

Sarcoper
on defini

ALFONSO J. CRUZ-JE
TOMMY CEDERHOLM
STÉPHANE M. SCHNI
MARJOLEIN VISSER[15],
SARCOPENIA IN OLD

9,716 citations

J Nutr Health Aging. 2019;23(1):105-110

ESTABLISHIN
IN AUSTRALIA AN

J. ZANKER[1,2], D. SCOTT[1,2],
M. GROSSMANN[7], A. HA
J.W.L. KEOGH[15-17], J.R
M. SIM[18], R. VISVANATI
AUSTRALIAN AND NE
TASK F

75 citations

JAMDA 21 (2020) 300–307

ELSEVIER

JAMDA

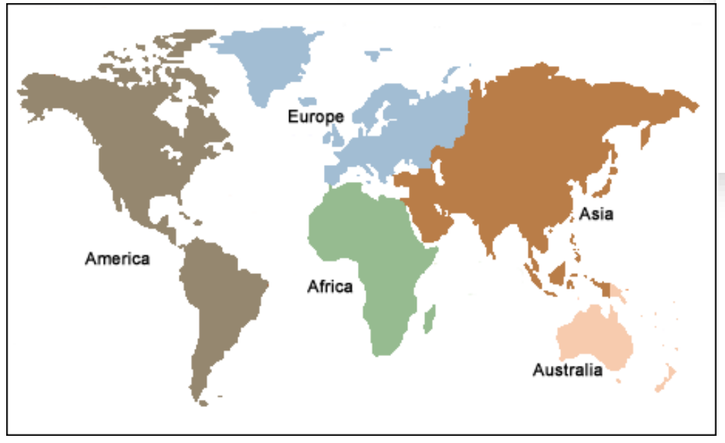
journal homepage: www.jamda.com

Special Article

Asian Working
Sarcopenia Dia

Liang-Kung Chen M
Tung-Wai Auyeung
Hak Chul Jang MD,
Taro Kojima MD, Pl
Sang Yoon Lee MD,
Chih-Kuang Liang M
Li-Ning Peng MD, M
Chang Won Won M
Masahiro Akishita M

3,538 citations



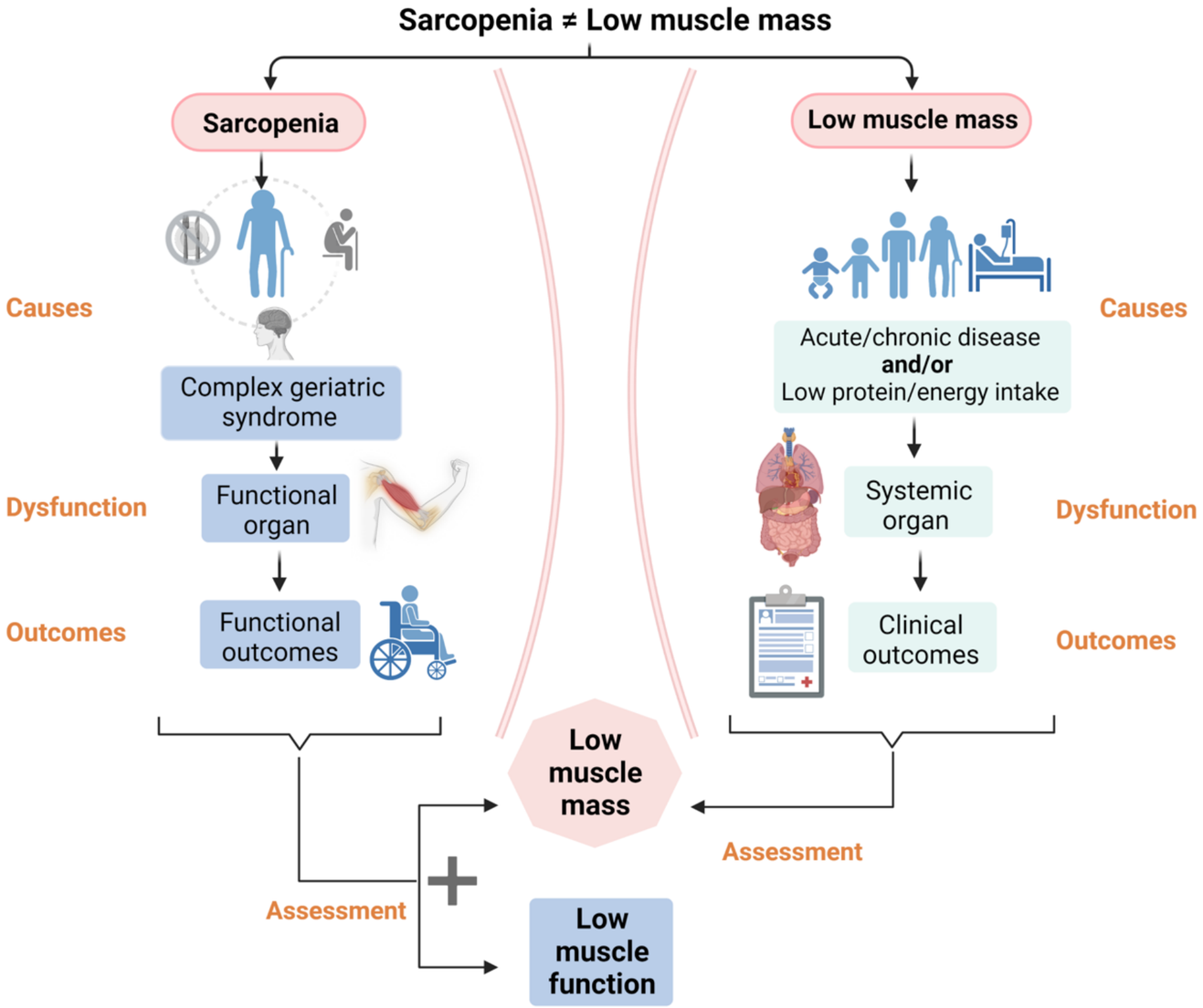
SPECIAL ARTICLE

Sarcopenia Definition: The Position Statements of the Sarcopenia Definition and Outcomes Consortium

Shalender Bhasin, MB, BS,[*] Thomas G. Travison, PhD,[†] Todd M. Manini, PhD,[‡]
Sheena Patel, MS,[§] Karol M. Pencina, PhD,[*] Roger A. Fielding, PhD,[¶] Jay M. Magaziner, PhD,[‖]
Anne B. Newman, MD, MPH,[**] Douglas P. Kiel, MD,[†] Cyrus Cooper, DM, FMedSci,[††]
Jack M. Guralnik, MD, PhD,[‖] Jane A. Cauley, Dr.PH,[**] Hidenori Arai, MD, PhD,[‡‡]
Brian C. Clark, PhD,[§§] Francesco Landi, MD, PhD,[¶¶] Laura A. Schaap, PhD,[‖‖]
Suzette L. Pereira, PhD,[***] Daniel Rooks, PhD,[†††] Jean Woo, MD, PhD,[‡‡‡]
Linda J. Woodhouse, PhD,[§§§] Ellen Binder, MD,[¶¶¶] Todd Brown, MD,[‖‖‖] Michelle Shardell, PhD,[****]
Quian-Li Xue, PhD,[††††] Ralph B. D'Agostino Sr PhD,[‡‡‡‡] Denise Orwig, PhD,[‖]
Greg Gorsicki, PhD,[§§§§] Rosaly Correa-De-Araujo, MD, PhD,[¶¶¶¶] and Peggy M. Cawthon, PhD[§]

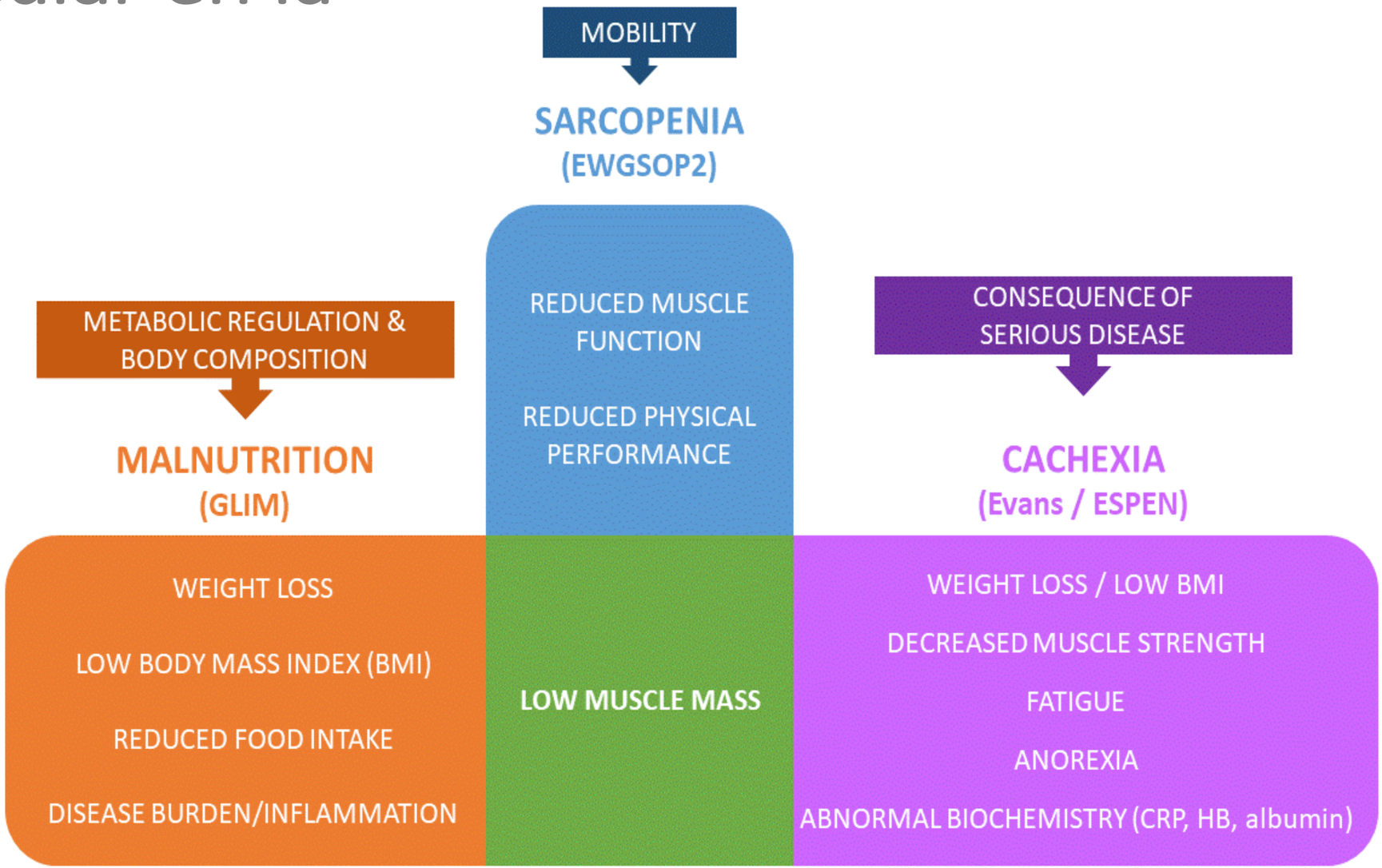
420 citations

Sarcopenia ≠ Low muscle mass



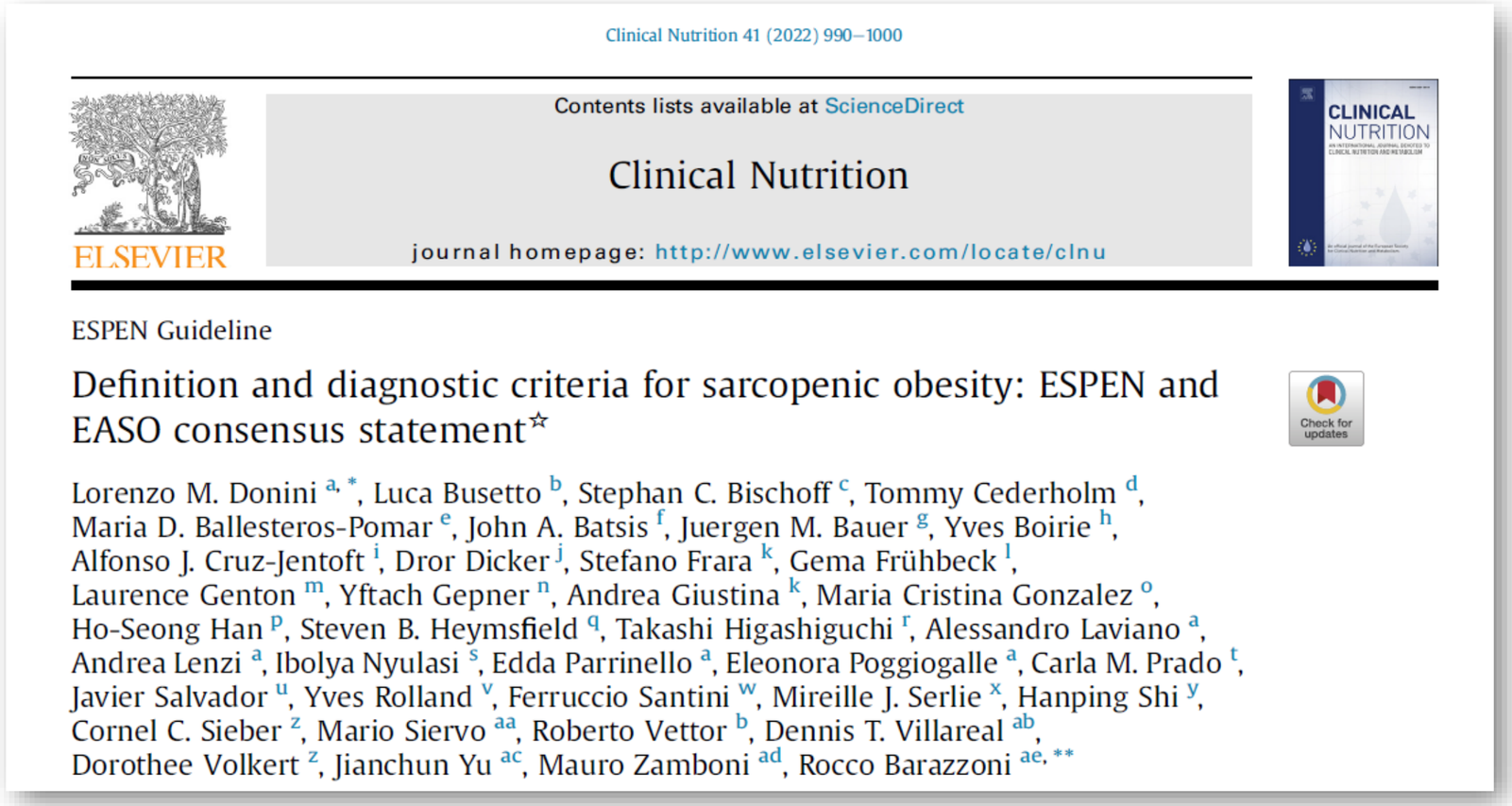
Cruz-Jentoft AJ, Gonzalez MC, Prado CM. Sarcopenia ≠ Low Muscle Mass. Eur Geriatr Med. 2023;14(2):225-228.

La masa muscular en la encrucijada



Sayer AA, Cruz-Jentoft A. Sarcopenia definition, diagnosis and treatment: consensus is growing. Age Ageing. 2022 Oct 6;51(10):afac220.

Obesidad sarcopénica: un problema diferente



Clinical Nutrition 41 (2022) 990–1000

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

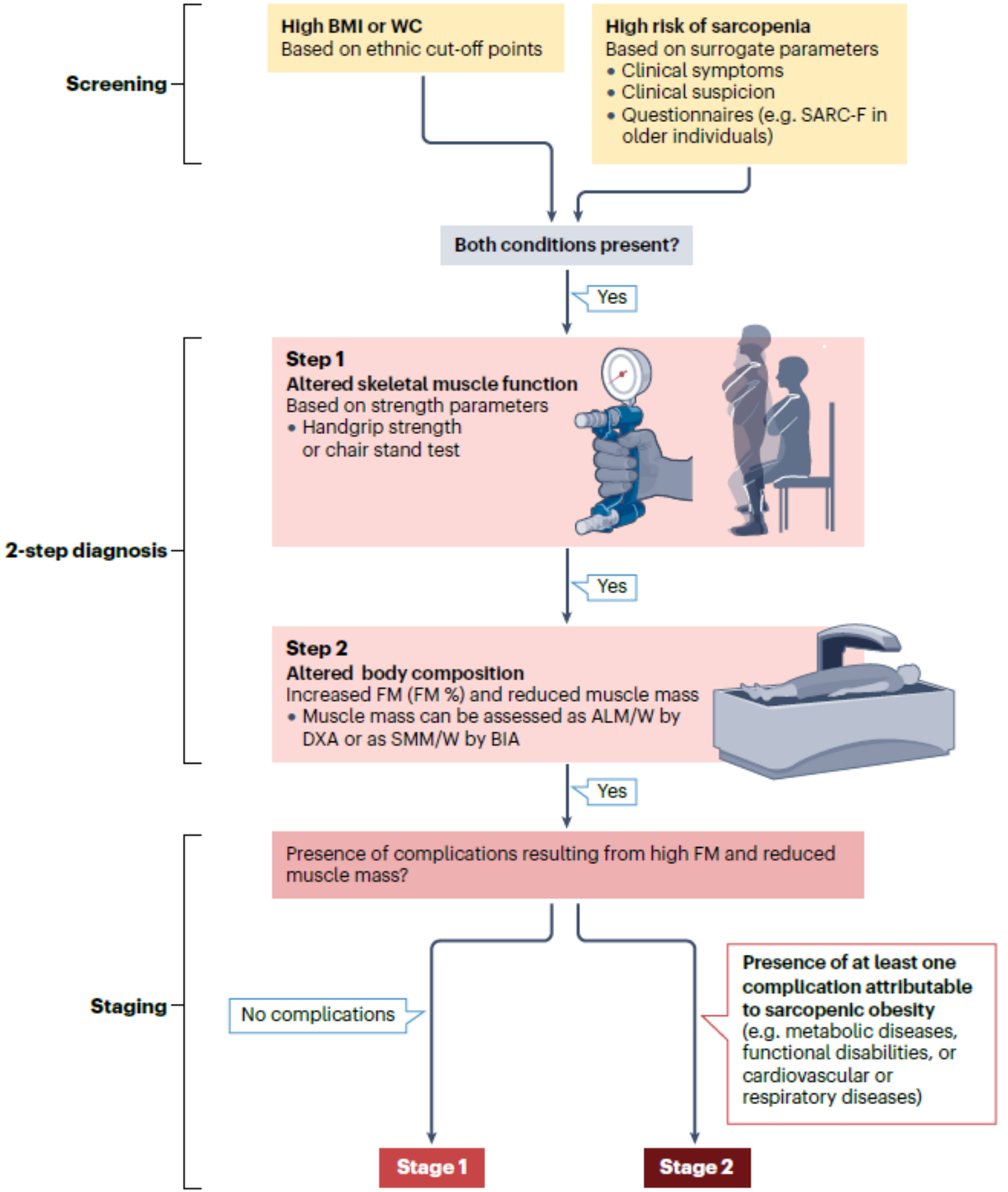
ESPEN Guideline

Definition and diagnostic criteria for sarcopenic obesity: ESPEN and EASO consensus statement☆

Lorenzo M. Donini [a, *], Luca Busetto [b], Stephan C. Bischoff [c], Tommy Cederholm [d], Maria D. Ballesteros-Pomar [e], John A. Batsis [f], Juergen M. Bauer [g], Yves Boirie [h], Alfonso J. Cruz-Jentoft [i], Dror Dicker [j], Stefano Frara [k], Gema Frühbeck [l], Laurence Genton [m], Yftach Gepner [n], Andrea Giustina [k], Maria Cristina Gonzalez [o], Ho-Seong Han [p], Steven B. Heymsfield [q], Takashi Higashiguchi [r], Alessandro Laviano [a], Andrea Lenzi [a], Ibolya Nyulasi [s], Edda Parrinello [a], Eleonora Poggiogalle [a], Carla M. Prado [t], Javier Salvador [u], Yves Rolland [v], Ferruccio Santini [w], Mireille J. Serlie [x], Hanping Shi [y], Cornel C. Sieber [z], Mario Siervo [aa], Roberto Vettor [b], Dennis T. Villareal [ab], Dorothee Volkert [z], Jianchun Yu [ac], Mauro Zamboni [ad], Rocco Barazzoni [ae, **]

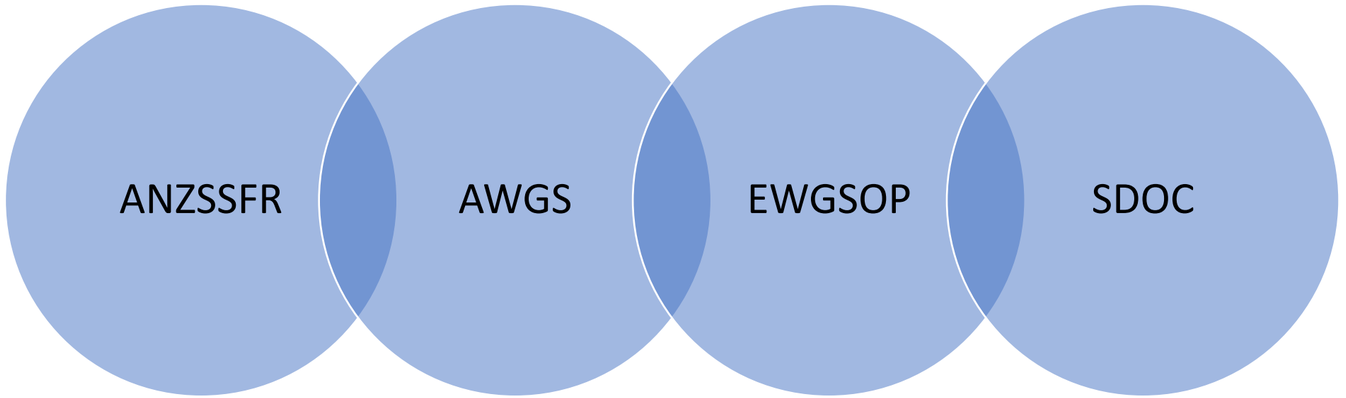
Donini LM, et al. Definition and diagnostic criteria for sarcopenic obesity: ESPEN and EASO consensus statement. Clin Nutr. 2022 Apr;41(4):990-1000.

Definición ESPEN / EASO de obesidad sarcopénica



Donini LM, et al. Definition and diagnostic criteria for sarcopenic obesity: ESPEN and EASO consensus statement. Clin Nutr. 2022 Apr;41(4):990-1000.
Prado CM et al. Sarcopenic obesity in older adults: a clinical overview. Nat Rev Endocrinol (2024).

The GLIS initiative



GLOBAL LEADERSHIP INITIATIVE IN SARCOPENIA
GLIS

AGING IN MOTION
Advancing Research and Treatment of Sarcopenia

AGS Geriatrics Healthcare Professionals
Leading Change. Improving Care for Older Adults.

ASBMR

AFFS Asian Association for Frailty and Sarcopenia

Australian and New Zealand Society for Sarcopenia and Frailty Research

EASO

EuGMS
European Geriatric Medicine Society
Fostering geriatric medicine across Europe

ESCEO

ESPEN
European Society for Clinical Nutrition and Metabolism

International Association of Gerontology and Geriatrics
Founded 1950

International Conference on Frailty & Sarcopenia Research

IOF
International Osteoporosis Foundation

The Gerontological Society of America

SCWD
Society on Sarcopenia, Cachexia & Wasting Disorders

Definición conceptual de sarcopenia

Age and Ageing 2024; **53:** afae052
https://doi.org/10.1093/ageing/afae052

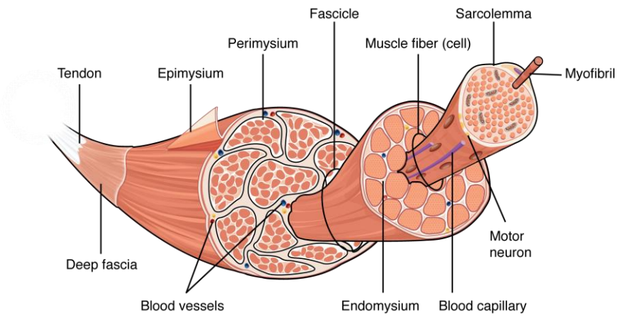
RESEARCH PAPER

The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS)

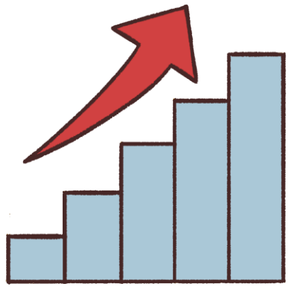
Ben Kirk[1,2,†], Peggy M. Cawthon[3,4,†], Hidenori Arai[5], José A. Ávila-Funes[6,7], Rocco Barazzoni[8], Shalender Bhasin[9], Ellen F. Binder[10], Olivier Bruyere[11,12], Tommy Cederholm[13,14], Liang-Kung Chen[15,16], Cyrus Cooper[17,18], Gustavo Duque[19,20], Roger A. Fielding[21], Jack Guralnik[22], Douglas P. Kiel[23], Francesco Landi[24], Jean-Yves Reginster[25,26], Avan A. Sayer[27], Marjolein Visser[28,29], Stephan von Haehling[30,31], Jean Woo[32], Alfonso J. Cruz-Jentoft[33], The Global Leadership Initiative in Sarcopenia (GLIS) group[‡]

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

Definición conceptual GLIS de sarcopenia



Enfermedad generalizada del **músculo esquelético**



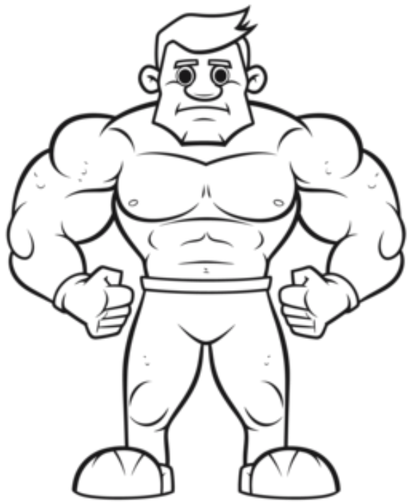
Su prevalencia aumenta con la **edad**

Es potencialmente **reversible**

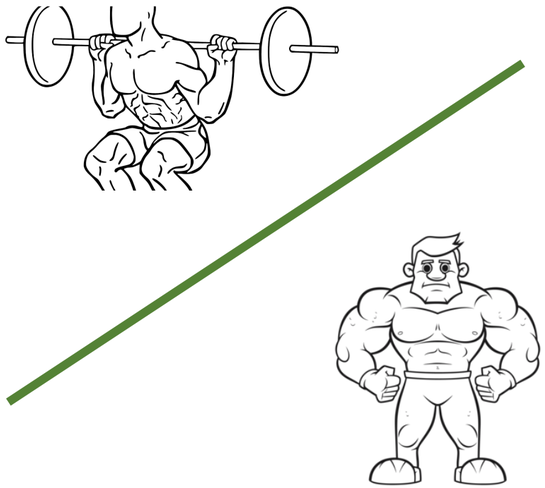
No hubo acuerdo en definir la **gravedad**

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

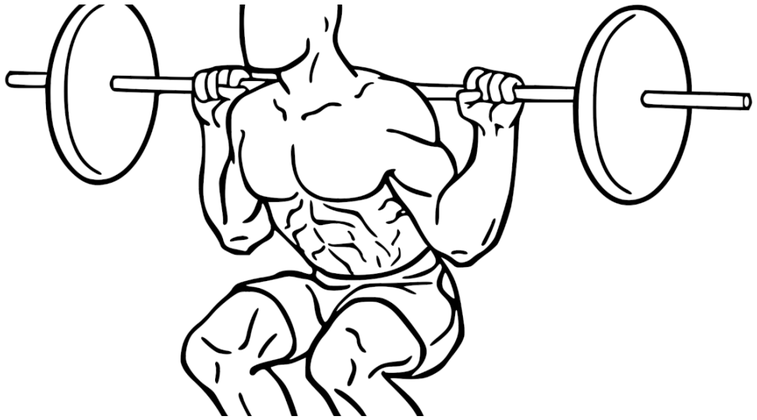
Componentes de la sarcopenia



Masa muscular



Fuerza muscular específica



Fuerza muscular

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

Definición conceptual GLIS de sarcopenia

Consecuencias de la sarcopenia:

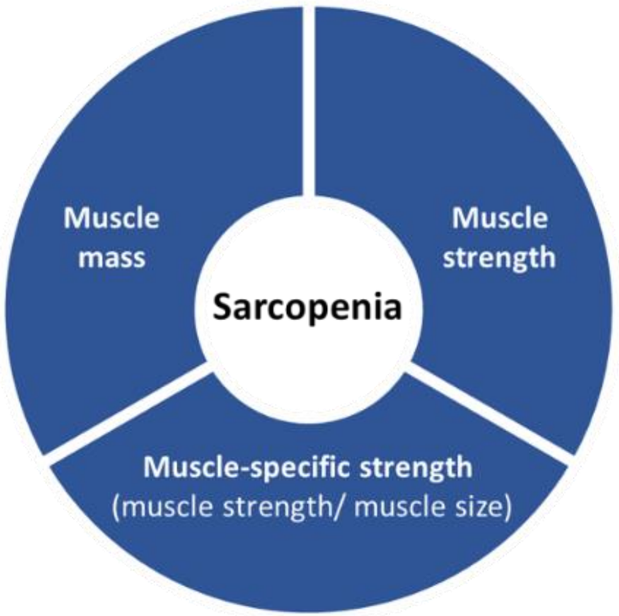
- Deterioro del **rendimiento físico** (*physical performance***)**
- Limitaciones de **movilidad** (caminar, transferencias)
- **Caídas** y fracturas
- Incapacidad de realizar **AVD** básicas o instrumentales
- **Hospitalizaciones**, ingresos en residencias
- Mala **calidad de vida**
- **Mortalidad**

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

Definición conceptual GLIS de sarcopenia: resumen

General Aspects of Sarcopenia

- Disease of skeletal muscle
- Increase with age
- Potentially reversible
- Definition does not depend on age, setting of care, or clinical condition
- Is the same for clinical practice and research

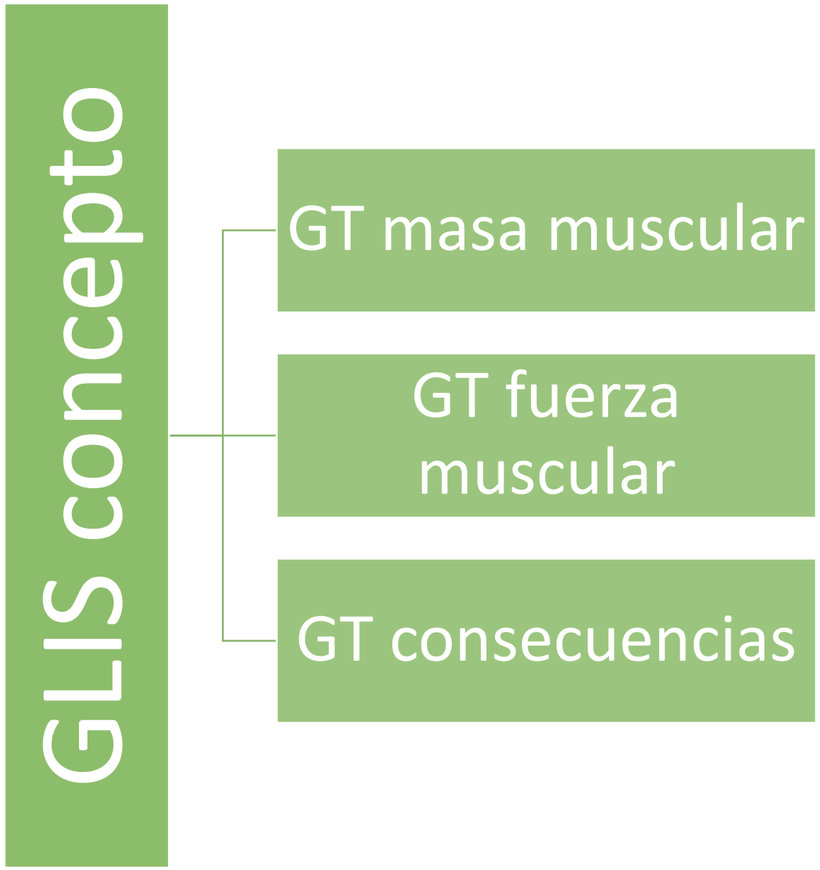


Outcome of Sarcopenia

- Impaired physical performance
- Mobility limitations (walking, transfer chair or bed)
- Falls, fractures, hospitalizations, admissions to nursing homes
- Inability to perform instrumental and basic ADLs
- Poor quality of life
- Mortality

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

GLIS: próximos pasos

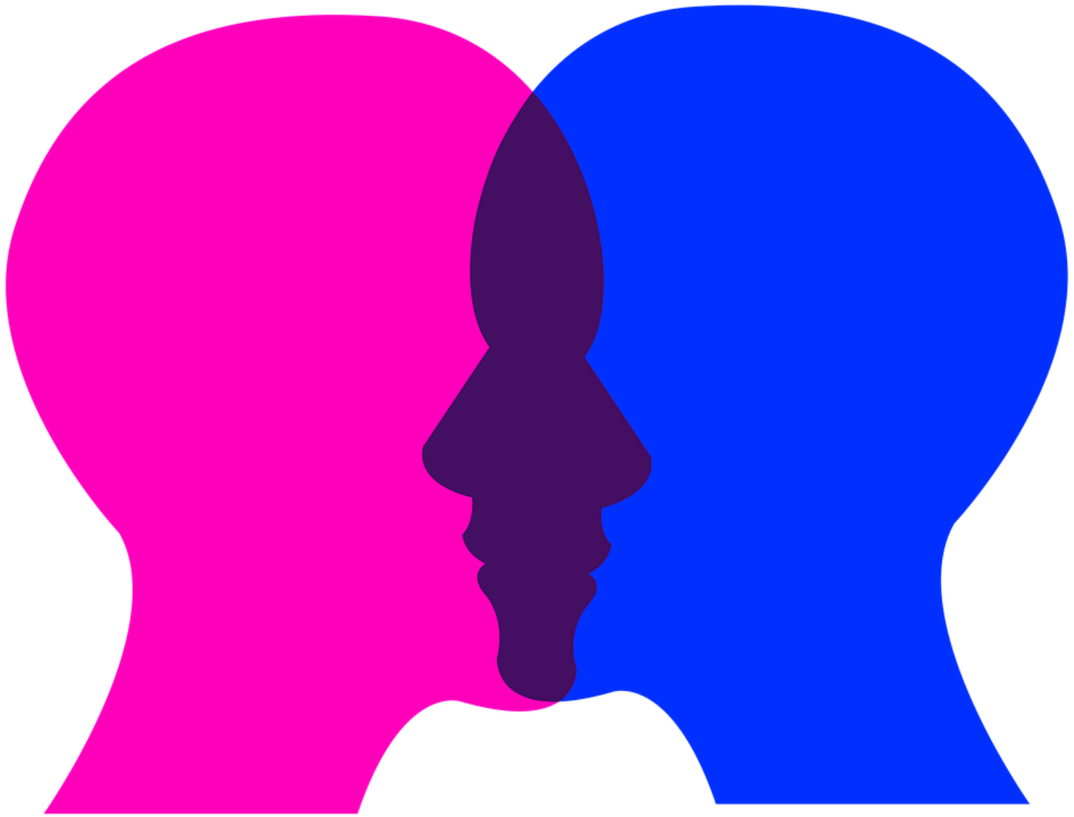


Definición operativa de sarcopenia
Soporte de la OMS (ICD)

Kirk B et al. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3):afae052.

Tratamiento de la sarcopenia

Ejercicio físico

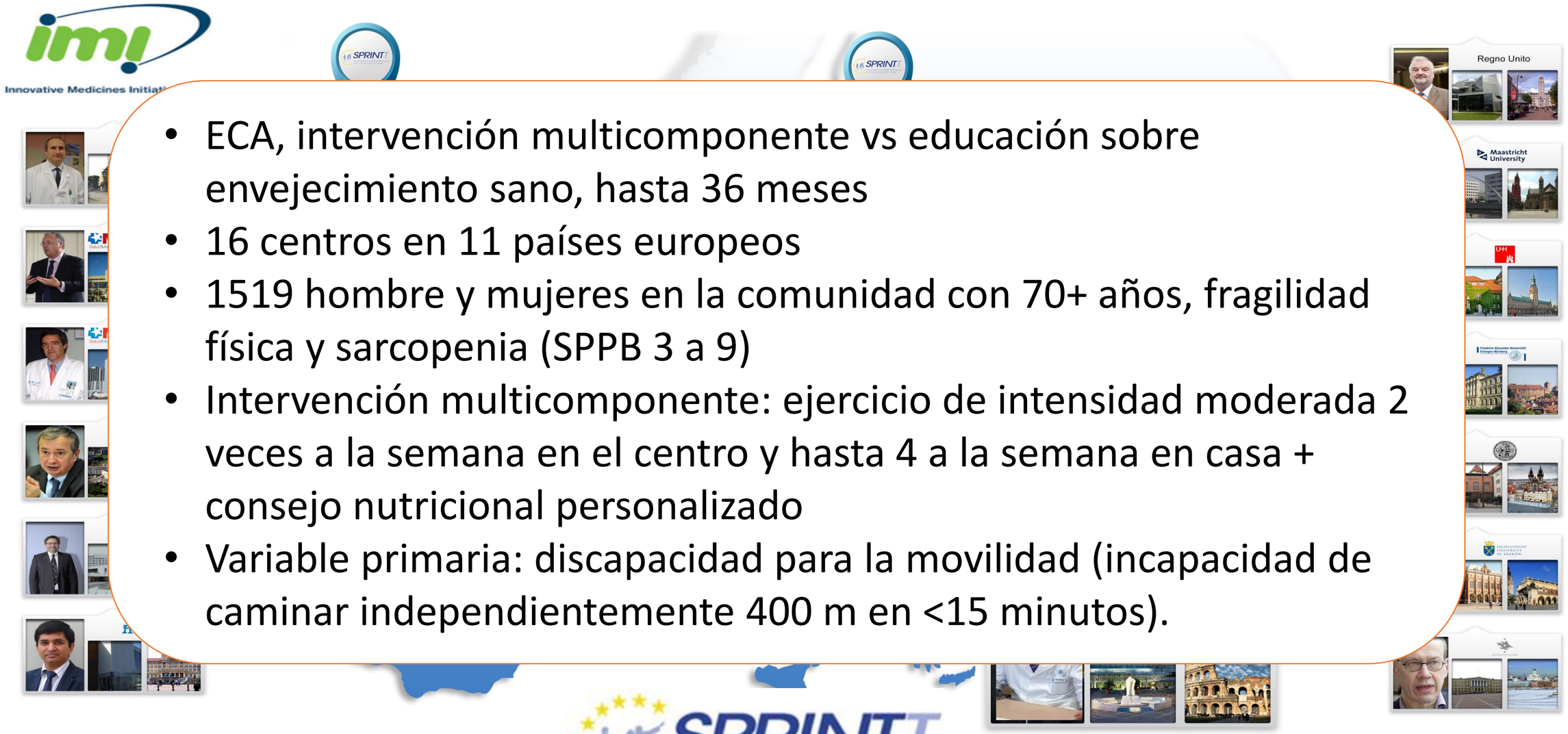


¿Intervención nutricional?

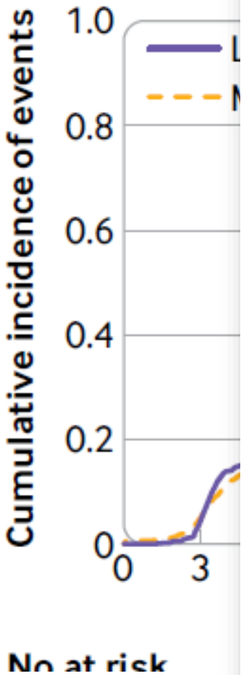
1+1=3

El estudio SPRINTT

- ECA, intervención multicomponente vs educación sobre envejecimiento sano, hasta 36 meses
- 16 centros en 11 países europeos
- 1519 hombre y mujeres en la comunidad con 70+ años, fragilidad física y sarcopenia (SPPB 3 a 9)
- Intervención multicomponente: ejercicio de intensidad moderada 2 veces a la semana en el centro y hasta 4 a la semana en casa + consejo nutricional personalizado
- Variable primaria: discapacidad para la movilidad (incapacidad de caminar independientemente 400 m en <15 minutos).



SPRINTT



Study	No with event/No in group (%) Multicomponent intervention	Lifestyle education	Hazard ratio (95% CI)	Hazard ratio (95% CI)	Interaction P value
Overall	283/605 (46.8)	316/600 (52.7)		0.78 (0.67 to 0.92)	
Sex					
Men	88/171 (51.5)	97/175 (55.4)		0.87 (0.65 to 1.17)	0.38
Women	195/434 (44.9)	219/425 (51.5)		0.75 (0.61 to 0.91)	
Race or ethnicity					
White	253/535 (47.3)	290/526 (55.1)		0.75 (0.63 to 0.90)	0.30
Other	1/7 (14.3)	4/8 (50.0)		0.23 (0.03 to 2.15)	
Age (years)					
<80	115/318 (36.2)	154/336 (45.8)		0.75 (0.59 to 0.96)	0.94
≥80	168/287 (58.5)	162/264 (61.4)		0.76 (0.61 to 0.95)	
History of CVD					
No	54/162 (33.3)	80/177 (45.2)		0.62 (0.44 to 0.89)	0.15
Yes	229/443 (51.7)	236/423 (55.8)		0.84 (0.69 to 1.01)	
History of diabetes					
No	216/474 (45.6)	236/461 (51.2)		0.82 (0.68 to 0.99)	0.40
Yes	67/131 (51.1)	80/139 (57.6)		0.70 (0.50 to 0.97)	
Gait speed (m/s)					
<0.8	226/450 (50.2)	248/444 (55.9)		0.79 (0.66 to 0.95)	0.96
≥0.8	57/155 (36.8)	68/156 (43.6)		0.78 (0.54 to 1.12)	

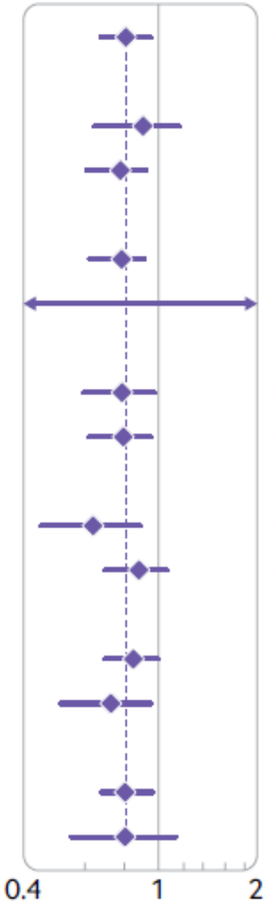


Fig 3 | Prespecified subgroup analyses in participants with baseline short physical performance battery (SPPB) score of 3-7. CVD=cardiovascular disease; CI=confidence interval

Bernabei R, et al; SPRINTT consortium. Multicomponent intervention to prevent mobility disability in frail older adults: randomised controlled trial (SPRINTT project). BMJ. 2022 May 11;377:e068788.

Fragilidad

Concepto de fragilidad

“…he llegado a la certeza de que, por la edad avanzada, ya no tengo fuerzas para ejercer adecuadamente el ministerio petrino.”

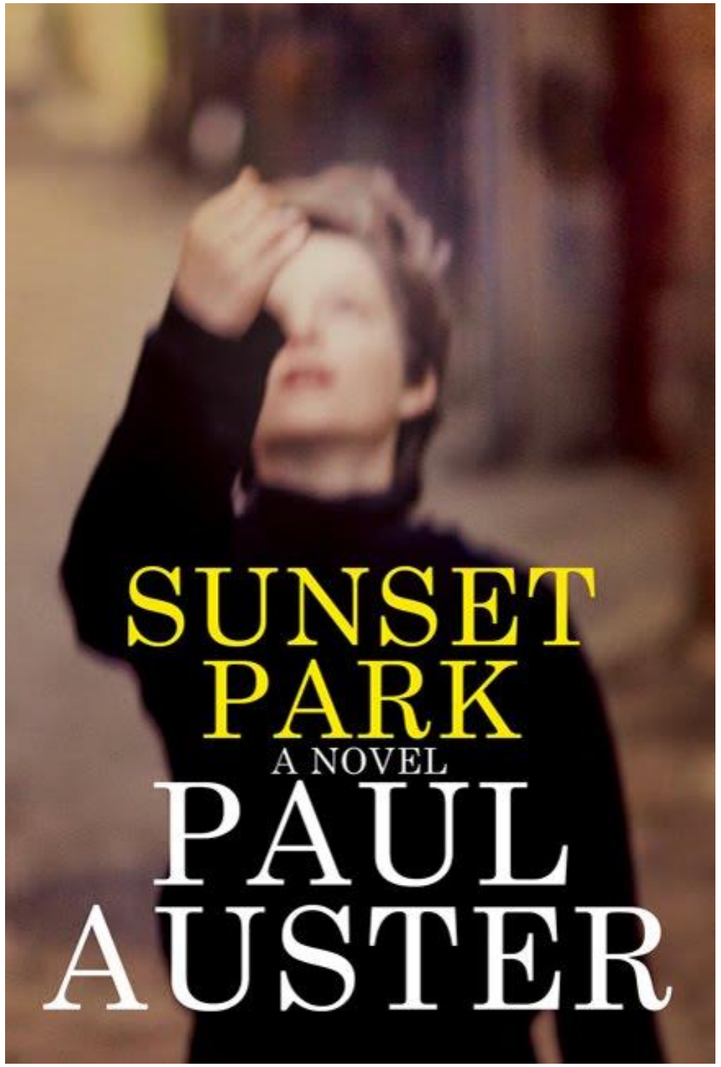
“…es necesario también el vigor tanto del cuerpo como del espíritu, vigor que, en los últimos meses, ha disminuido en mí de tal forma que he de reconocer mi incapacidad para ejercer bien el ministerio que me fue encomendado..”

Concepto de fragilidad

“No nos hacemos más fuertes con el paso de los años. La acumulación de penas y sufrimientos va mermando nuestra capacidad de soportar el dolor, y como el padecimiento y la tristeza son inevitables, incluso un pequeño revés en la edad tardía puede repercutir con la misma fuerza que una gran tragedia cuando éramos jóvenes.”

Paul Auster 2010

Sunset Park

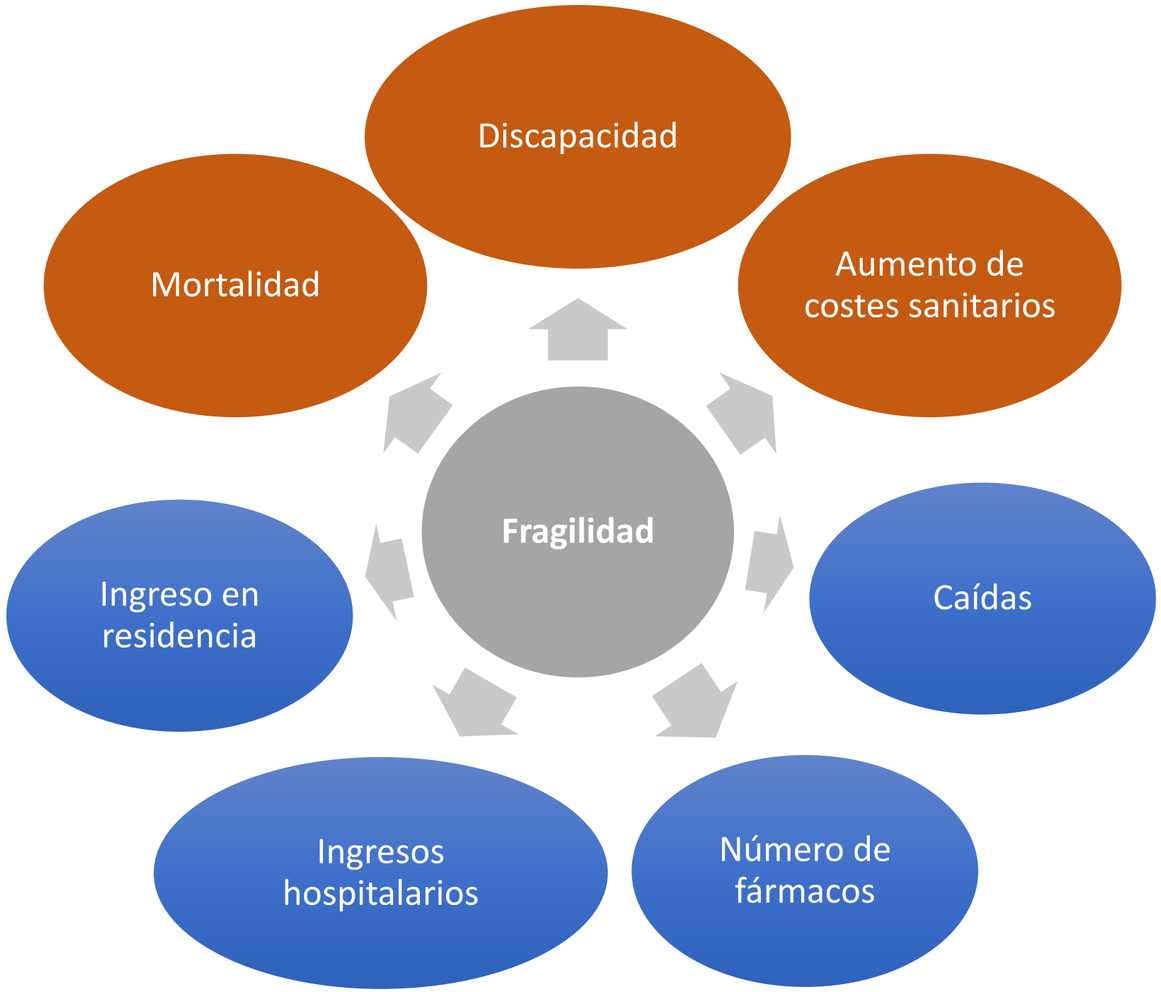


Definición de fragilidad

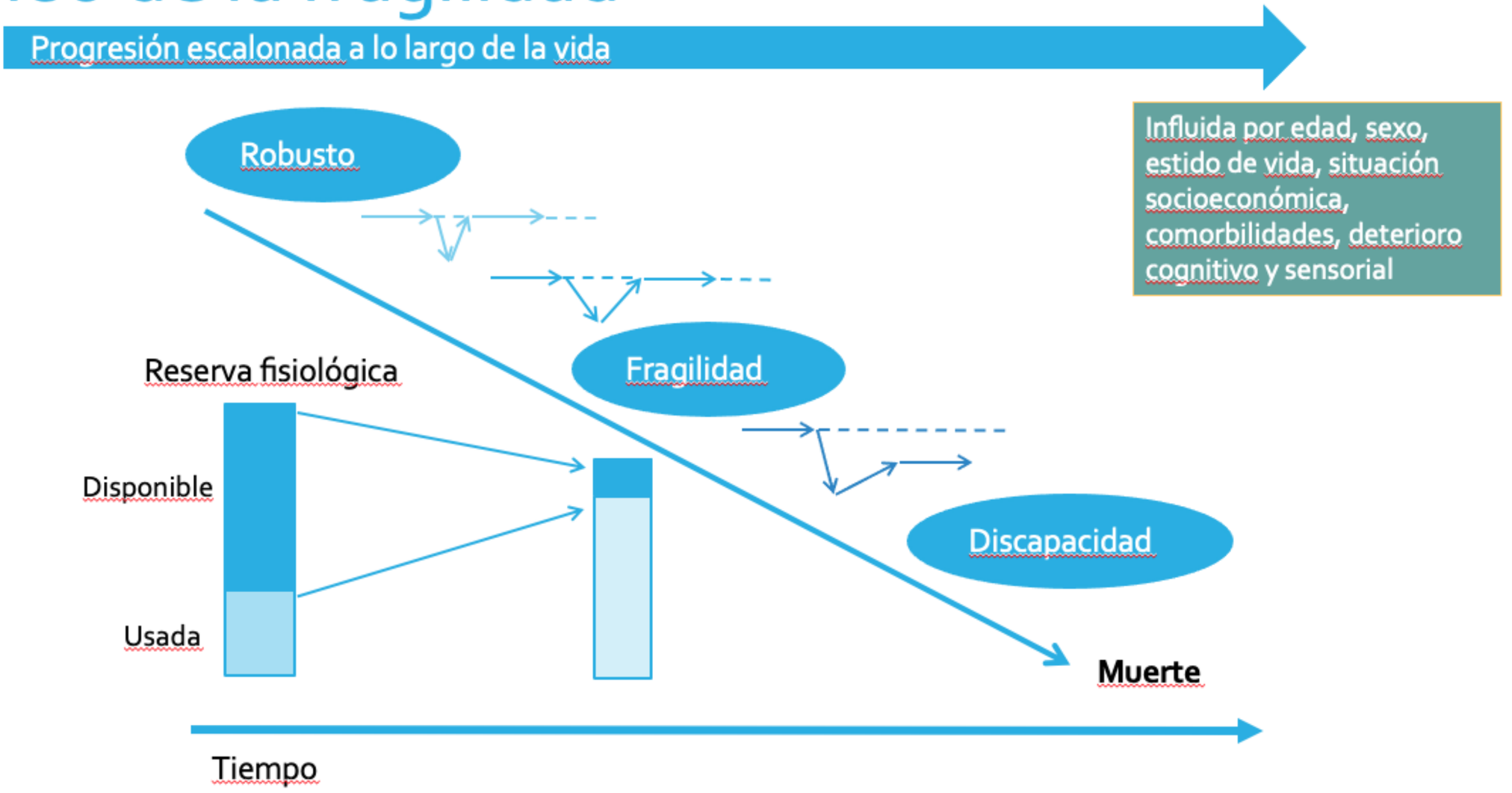
- Síndrome biológico de disminución de las reservas y la resistencia a los estresores, consecuencia de la acumulación de deterioros en múltiples sistemas fisiológicos, que causa vulnerabilidad a resultados adversos.
- Distingue fragilidad de discapacidad.

Fried LP, Tangen CM, Walston J, et al. Frailty in older adults: evidence for a phenotype. J Gerontol A Biol Sci Med Sci. 2001;56:M146-156.

La fragilidad predice resultados negativos



Curso de la fragilidad



Fenotipo de la fragilidad física

- Pérdida de peso no intencionada
- Agotamiento rápido
- Debilidad
- Velocidad de marcha lenta
- Bajo nivel de actividad física

Robust:	no criteria present
Pre-frailty:	1-2 criteria present
Frailty	≥ 3 criteria present

Fried LP, Tangen CM, Walston J, et al. Frailty in older adults: evidence for a phenotype. J Gerontol A Biol Sci Med Sci. 2001;56:M146-156.

Índice de fragilidad (Rockwood)

- Tasa de déficits en un número finito de variables binarias (al menos 20)
- 0 a 1
- Más de 0,7 suele ser incompatible con la vida
- Se puede construir de muchas maneras, incluso con bases de datos

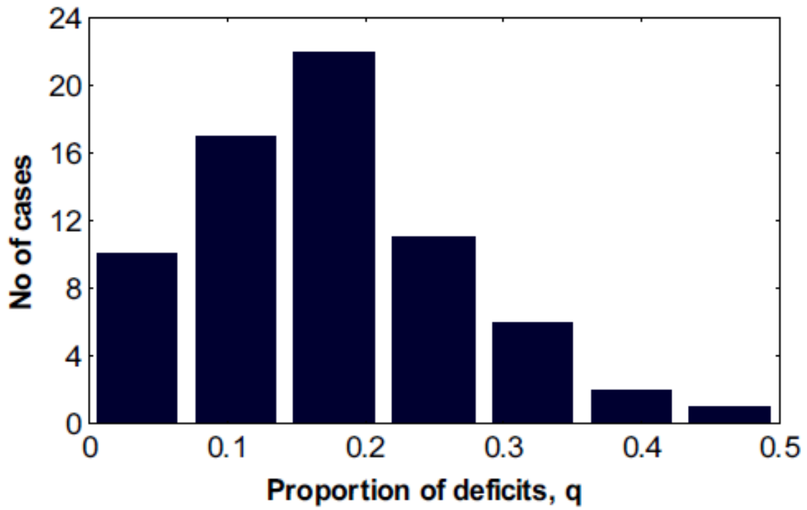


Figure 2
The distribution of the frailty index at chronological age 77 suggests varying levels of fitness and frailty, even in those with no cognitive impairment.

Mitnitski AB, Graham JE, Mogilner AJ, Rockwood K. Frailty, fitness and late-life mortality in relation to chronological and biological age. BMC Geriatr. 2002 Feb 27;2:1.

Clinical Frailty Scale

Clinical Frailty Scale

1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.

3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.

4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.

5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9 Terminally Ill – Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia,** recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia,** they cannot do personal care without help.

Rockwood K, Song X, MacKnight C et a. A global clinical measure of fitness and frailty in elderly people. CMAJ. 2005 Aug 30;173(5):489-95.

Sarcopenia y fragilidad física

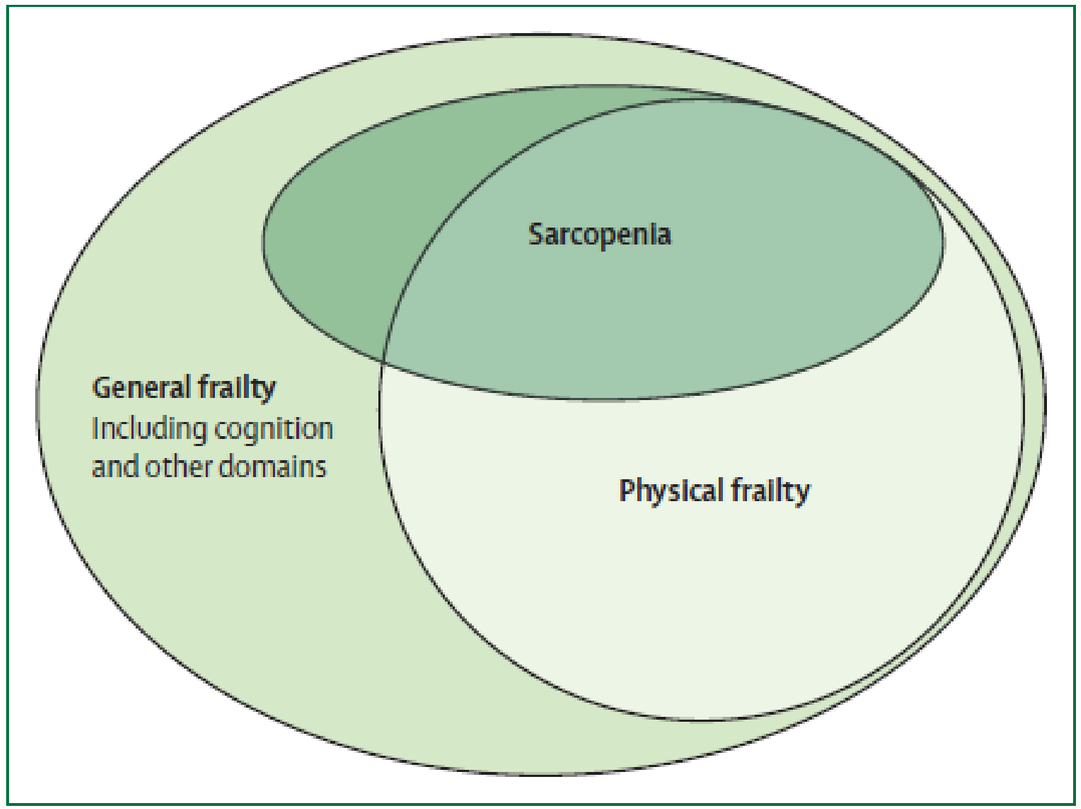
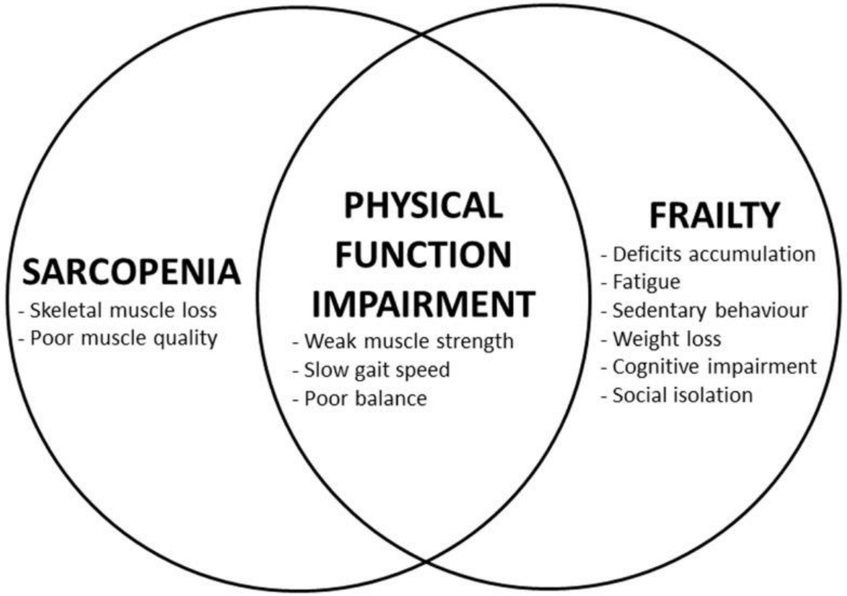


Figure 3: Schematic diagram showing the diagnostic overlap between sarcopenia and physical or general frailty



Cruz-Jentoft AJ, Sayer AA. Sarcopenia. Lancet 2019

Cesari M, Landi F, Vellas B, Bernabei R, Marzetti E. Sarcopenia and physical frailty: two sides of the same coin. Front Aging Neurosci. 2014;6:192.

Clinical utility of the concept of intrinsic capacity

An Introduction

Dr Islene Araujo de Carvalho
Senior Policy and Strategy Adviser, Ageing and Life Course

World Health Organization

Image credit: bieshutterb / Getty Images / iStock

Recommendations for managing declines in intrinsic capacity in older people

Improve musculoskeletal function, mobility and vitality

1. **Multimodal exercise, including progressive strength resistance training** and other exercise components (balance, flexibility and aerobic training) should be recommended for older people with declining physical capacity, measured by gait speed, grip strength and other physical performance measures
2. **Oral supplemental nutrition with dietary advice** should be recommended for older people affected by undernutrition

Loss of muscle mass and strength, reduced flexibility, and problems with balance can all impair mobility. Nutritional status can also be affected negatively by physiological changes that can accompany ageing, in turn with an impact on vitality and mobility. Interventions that improve nutrition and encourage physical exercise, when integrated into care plans and delivered together, can slow, stop or reverse declines in intrinsic capacity.

Maintain sensory capacity

3. Older people should receive **routine screening for visual impairment** in the primary care setting, and timely provision of comprehensive eye care
4. **Screening followed by provision of hearing aids** should be offered to older people for timely identification and management of hearing loss

Ageing is often associated with loss of hearing and/or vision that limits mobility, social participation and engagement, and can increase the risk of falls. Sensory problems could easily be addressed by simple and affordable strategies such as the provision of corrective glasses and hearing aids, cataract surgery and environmental adaptations.

Prevent severe cognitive impairment and promote psychological well-being

5. **Cognitive stimulation** can be offered to older people with cognitive impairment, with or without a formal diagnosis of dementia
6. Older adults who are experiencing depressive symptoms can be offered **brief, structured psychological interventions**, in accordance with WHO mhGAP intervention guidelines delivered by health care professionals with a good understanding of mental health care for older adults

Cognitive impairment and psychological difficulties very often occur together. They impact on people's abilities to manage daily life activities such as finances and shopping and on their social functioning. Cognitive stimulation therapy, which is a programme of differently themed activities, and brief psychological interventions, are critical to preventing significant losses of mental capacity and preventing care-dependency in older age.

Manage age-associated conditions such as urinary incontinence

7. **Prompted voiding** for the management of urinary incontinence can be offered for older people with cognitive impairment
8. **Pelvic floor muscle training**, alone or combined with bladder control strategies and self-monitoring, should be recommended for older women with urinary incontinence (urge, stress or mixed)

Urinary incontinence – involuntary leakage of urine – affects about a third of older people worldwide. The psychosocial implications of incontinence include loss of self-esteem, restricted social and sexual activities, and depression. Pelvic floor muscle training strengthens the muscles supporting the urethra and augments its closure, and is effective in managing urge leakage.

Prevent falls

9. **Medication review and withdrawal** (of unnecessary or harmful medication) can be recommended for older people at risk of falls
10. **Multimodal exercise** (balance, strength, flexibility and functional training) should be recommended for older people at risk of falls
11. **Action on hazards** – following a specialist's assessment, home modifications to remove environmental hazards that could cause falls should be recommended for older people at risk of falls
12. **Multifactorial interventions** integrating assessment with individually tailored interventions can be recommended to reduce the risk and incidence of falls among older people

Falls are the leading cause of hospitalization and injury-related death in older people. Falls are due to a combination of environmental factors (loose rugs, clutter, poor lighting, etc) and individual factors (organ-system abnormalities that affect postural control). Exercise, physical therapy, home-hazard assessments and adaptations, and withdrawal of psychotropic medications, where necessary, all reduce older people's risk of falls.

Support caregivers

13. **Psychological intervention, training and support** should be offered to family members and other informal caregivers of care-dependent older people, particularly but not exclusively when the need for care is complex and extensive and/or there is significant caregiver strain

Caregivers of people with severe declines in intrinsic capacity are at a higher risk of experiencing psychological distress and depression themselves. Caregiving stress or burden has a profound impact on the physical, emotional and economic status of women and other unpaid caregivers. A needs assessment and access to psychosocial support and training should be offered to caregivers experiencing stress.

Para saber más…

Seminar

THE LANCET

Sarcopenia

Alfonso J Cruz-Jentoft, Avan A Sayer

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Servicio de Geriatría, Hospital Universitario Ramón y Cajal

Sarcopenia is a progressive and generalised skeletal muscle disorder involving the accelerated loss of muscle mass and function that is associated with increased adverse outcomes including falls, functional decline, frailty, and mortality. It occurs commonly as an age-related process in older people, influenced not only by contemporaneous risk factors, but also by genetic and lifestyle factors operating across the life course. It can also occur in mid-life in association with a range of conditions. Sarcopenia has become the focus of intense research aiming to translate current knowledge about its pathophysiology into improved diagnosis and treatment, with particular interest in the development of biomarkers, nutritional interventions, and drugs to augment the beneficial effects of resistance exercise. Designing effective preventive strategies that people can apply during their lifetime is of primary concern. Diagnosis, treatment, and prevention of sarcopenia is likely to become part of routine clinical practice.

nature reviews disease primers

https://doi.org/10.1038/s41572-024-00550-w

Primer

Check for updates

Sarcopenia

Avan A. Sayer[1,2], Rachel Cooper[1,2], Hidenori Arai[3], Peggy M. Cawthon[4,5], Marie-Josiane Ntsama Essomba[6], Roger A. Fielding[7], Miranda D. Grounds[8], Miles D. Witham[1,2] & Alfonso J. Cruz-Jentoft[9]

MEDICINA CLINICA

EDITORIAL

Definir y comprender la fragilidad

Beatriz Montero Errasquin, Alfonso J. Cruz Jentoft