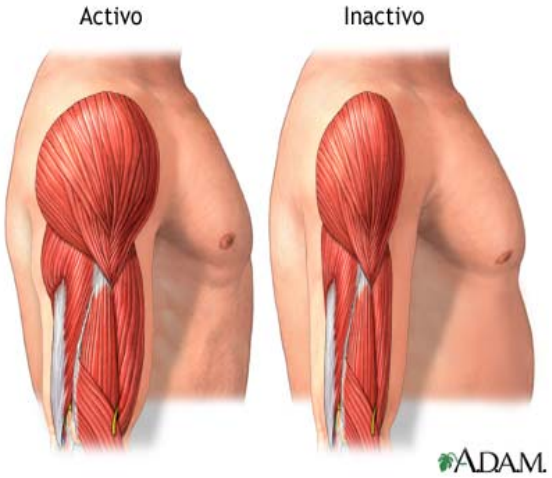




Diferencias entre Sarcopenia y Caquexia

Ana Patricia Navarrete Reyes
Bernardo Hermont Loures Valle
Enrique Dias de Leon Gonzalez
Emilucy Martins Paiva Paradela
Marcelo Carlos Shapira
Roberto Gamarski



"...the shoulders, clavicles, chest and thighs melt away. This illness is fatal..."
—Hippocrates (460–370 BC)

- Hans Baldung Grien
- [Las edades y la muerte.
- Museo del Prado-Madrid]



Caquexia y sarcopenia

- Ambas son condiciones frecuentes en el anciano
- Ambas se asocian a pérdida muscular
- Cambios fisiopatológicos → ¿Sujetos de tratamiento?

J Cachexia Sarcopenia Muscle (2010) 1:9–21

Definiciones

Caquexia

- **Síndrome metabólico complejo** asociado a una enfermedad subyacente y caracterizado por la pérdida de masa muscular con o sin masa grasa (ESPEN SIG).
- Su característica primordial es la pérdida de peso **(rápida)**
- Desenlaces de salud desfavorables

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Sarcopenia

- Síndrome caracterizado por la pérdida progresiva y generalizada de masa muscular y fuerza que acarrea riesgos de desenlaces desfavorables para la salud como discapacidad física, pobre calidad de vida y muerte (EWGSOP).
- Asociado al envejecimiento (no necesariamente)
- Un síndrome geriátrico
  - Prevalencia y multifactoriedad, asociación con otros sx geriátricos
  - Primarios y secundarios

Age and Ageing 2010; **39:** 412–423

Sarcopenia vs caquexia

- **La mayoría de los pacientes con caquexia tienen sarcopenia**
- **La mayoría de los pacientes con sarcopenia no cursan con caquexia**

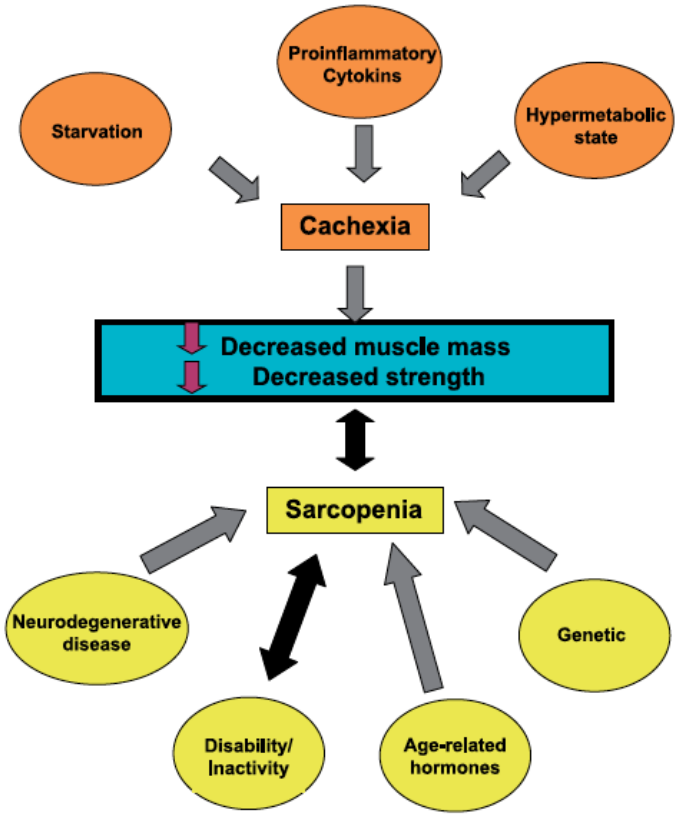


Figure 2 Mechanisms of muscle wasting.

Clinical Nutrition (2007) 26, 389–399

Criterios clínicos sarcopenia

Sarcopenia	
EWGSOP[a] (endorsed by ESPEN, IAGG, IANA, and EUGMS); Cruz-Jentoft *et al.* [5•]	(A) Low muscle mass[b] (B) Low muscle strength or poor physical performances[b] Presarcopenia: low muscle mass with normal muscle strength and normal physical performances Severe sarcopenia: low muscle mass with low muscle strength and poor physical performances
ESPEN Special Interest Groups; Muscaritoli *et al.* [4]	(A) Low muscle mass, that is, a percentage of muscle mass ≥2 SD below the mean measured in young adults of the same sex and ethnic background[c] (B) Low gait speed, for example, a walking speed below 0.8 m/s in the 4-m walking test[d]
Panel of experts; Sarcopenia Consensus Conference, Rome 2010	(A) Skeletal muscle mass (indexed to height) of less than two standard deviations less than that of a young adult[e] (B) Gait speed of less than 1 m/s

- Masa muscular
- Fuerza
- Desempeño físico

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Criterios clínicos caquexia

Consensus panel of experts; Evans *et al.* [3]

(A) Weight loss of at least 5%[f] in 12 months or less in the presence of underlying illness[g]
(B) Three of the five criteria:
- Decreased muscle strength[h]
- Fatigue[i]
- Anorexia[j]
- Low fat-free mass index[k]
- Abnormal biochemistry:
  - Increased inflammatory markers (CRP, IL-6)
  - Anemia (Hb <12 g/dl)
  - Low serum albumin (<3.2 g/dl)

Suggested degree of cachexia depending on weight loss within the previous 12 months (or less):
- Mild cachexia if weight loss >5%
- Moderate cachexia if weight loss >10%
- Severe cachexia if weight loss >15%

ESPEN Special Interest Groups; Muscaritoli *et al.* [4]

Precachexia is defined on the basis of the presence of all the following criteria:
- Underlying chronic disease
- Unintentional weight loss ≤5% of usual body weight during the last 6 months
- Chronic or recurrent systemic inflammatory response[l]
- Anorexia or anorexia-related symptoms[m]

Importante para detección temprana

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Componentes de la definición de caquexia por diferentes organizaciones

Table 1. *Terms Included in the Different Definitions*

Condition	EPCRC[2]	SIG-ESPEN[3]	SCWD[4]
Weight loss	+	+	+
Muscle loss	+	+	+
Fat loss	–	+	+/–
Anorexia	+	+	+
Inflammation	+/–	+	+
Insulin resistance	–	+	+
Muscle protein breakdown	–	+	+
Fatigue	–	–	+
Morbidity	+	+	+
Sarcopenia	+	+	+
Starvation	–	–	+
Hypogonadism	–	–	+
Pre-cachexia/staging	–	+	–
Reversion by nutritional support	+	–	–

EPCRC, European Palliative Care Research Collaborative; SIG-ESPEN, Special Interest Group on Cachexia and Anorexia of the European Society for Enteral and Parenteral Nutrition; SCWD, Society for Cachexia and Wasting Disorders.

Review Article

See corresponding CME exam on page 923.

Cachexia: pathophysiology and clinical relevance[1,2]

John E Morley, David R Thomas, and Margaret-Mary G Wilson

The number of persons in the United States with cachexia[1]

Disease	No. with disease	Cachexia	No. needing treatment
		%	
AIDS[2]	900 000	35	315 000
Cancer	1 368 000	30	410 400
COPD	16 000 000	20	3 200 000
Kidney failure	375 000	40	150 000
Rheumatoid arthritis	2 100 000	10	210 000
Heart failure	4 800 000	20	960 000
Nursing home	1 600 000	20	320 000

Fisiopatología

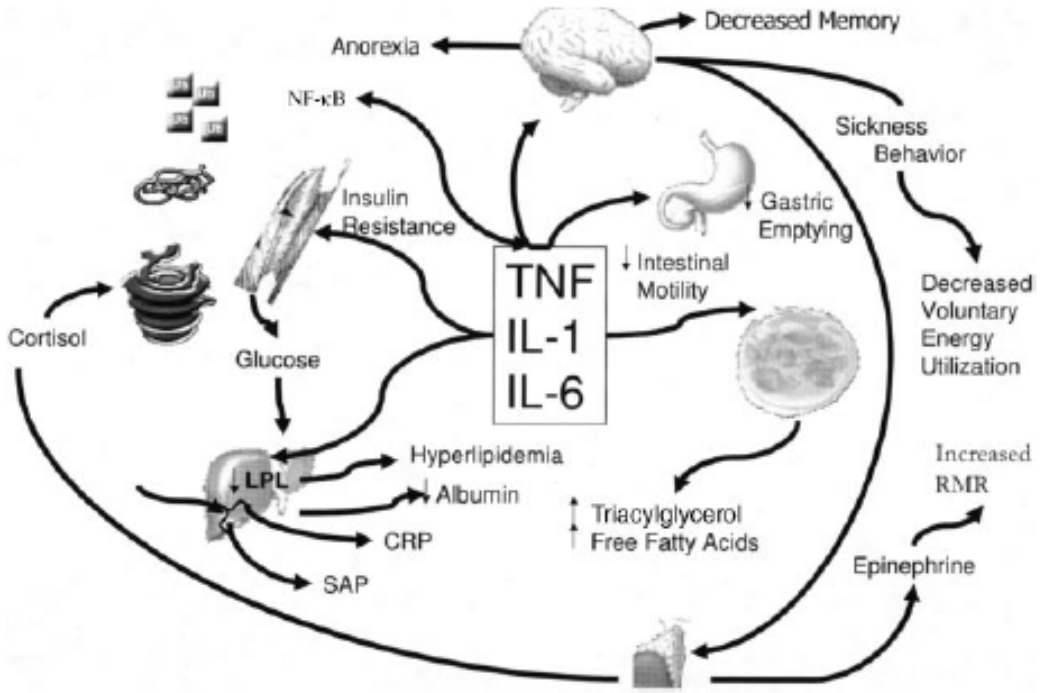


FIGURE 1. The pathophysiologic role of cytokines in the production of cachexia. TNF, tumor necrosis factor; IL-1, interleukin 1; IL-6, interleukin 6; RMR, resting metabolic rate; LPL, lipoprotein lipase; CRP, C-reactive protein; SAP, serum amyloid protein.

Fisiopatología

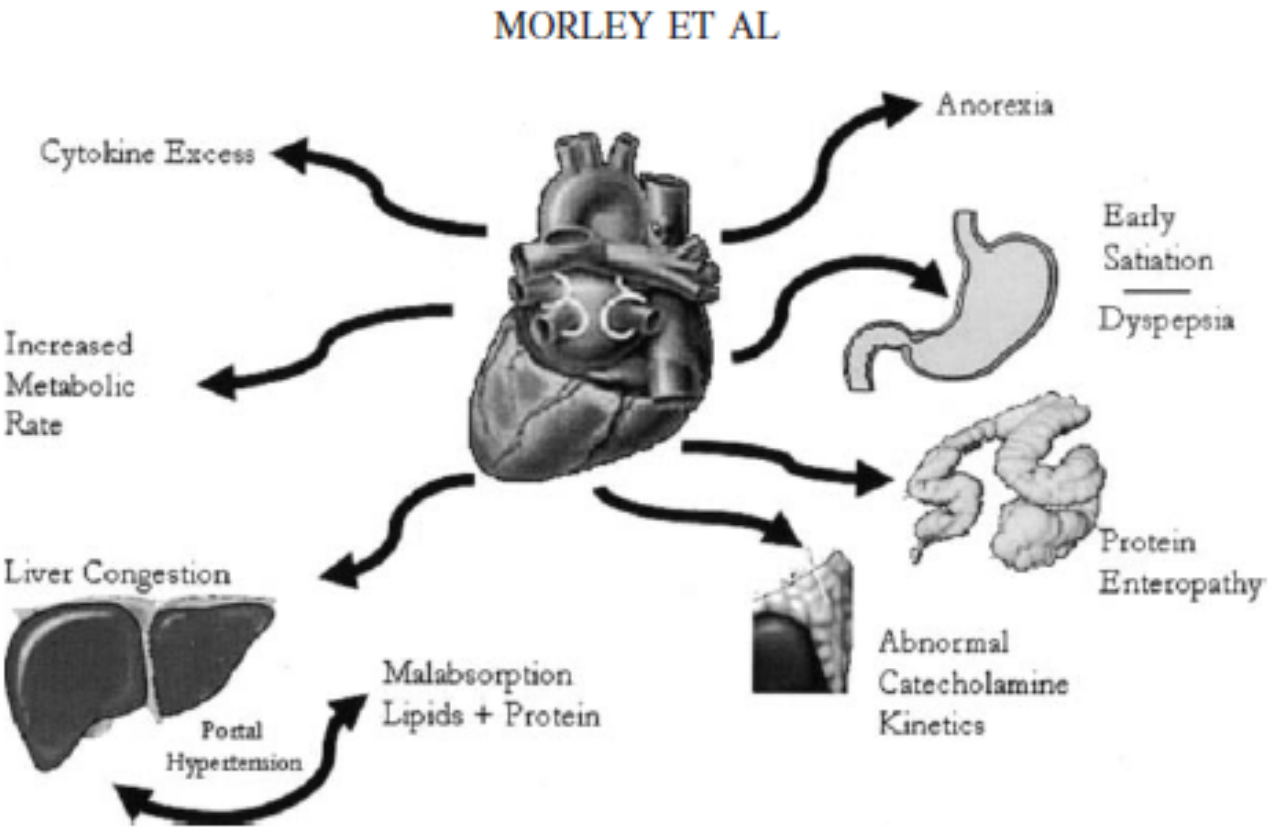


FIGURE 2. The pathophysiology of cardiac cachexia.

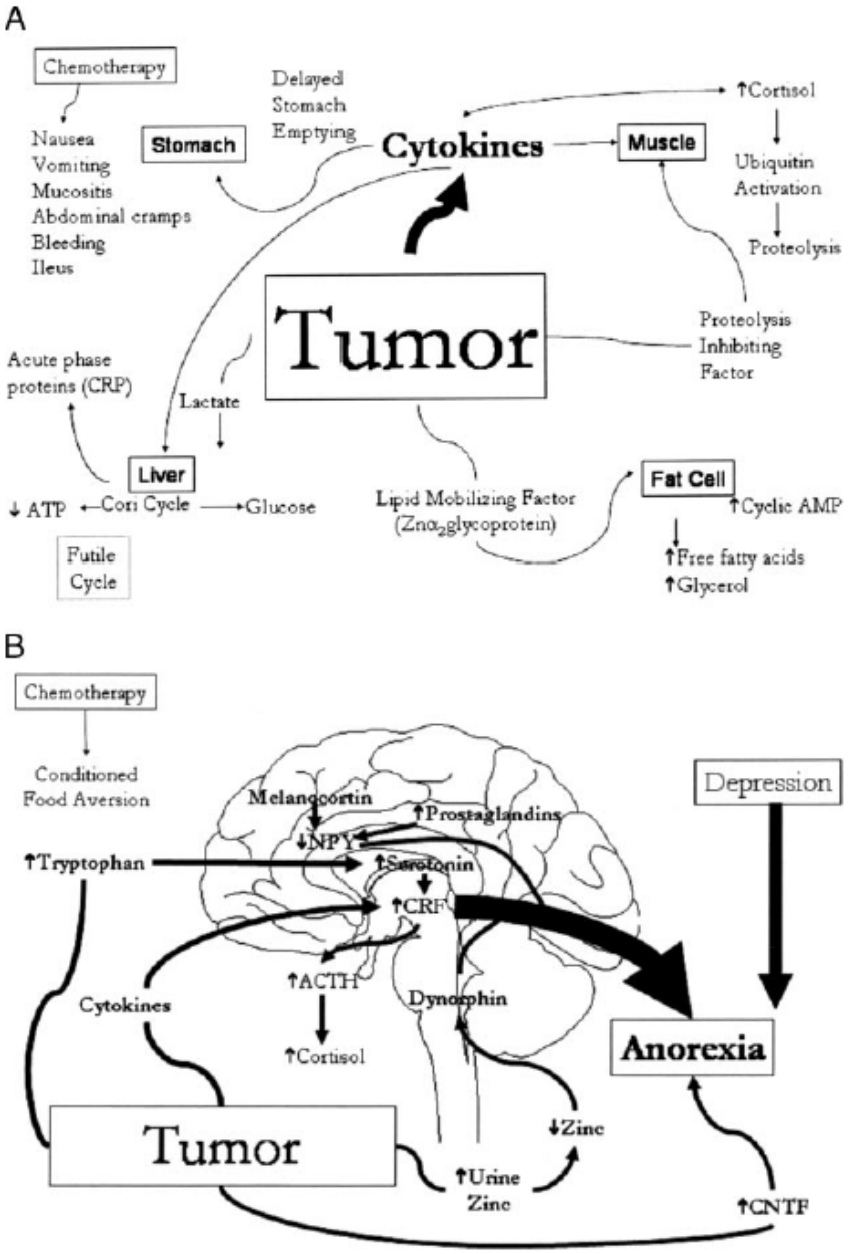


FIGURE 3. The peripheral (A) and central (B) mechanisms producing anorexia-cachexia syndrome in cancer. CRP, C-reactive protein; NPY, neuropeptide ; CRF, chronic renal failure; ACTH, adrenocorticotrophic hormone; CNTF, ciliary neurotrophic factor.

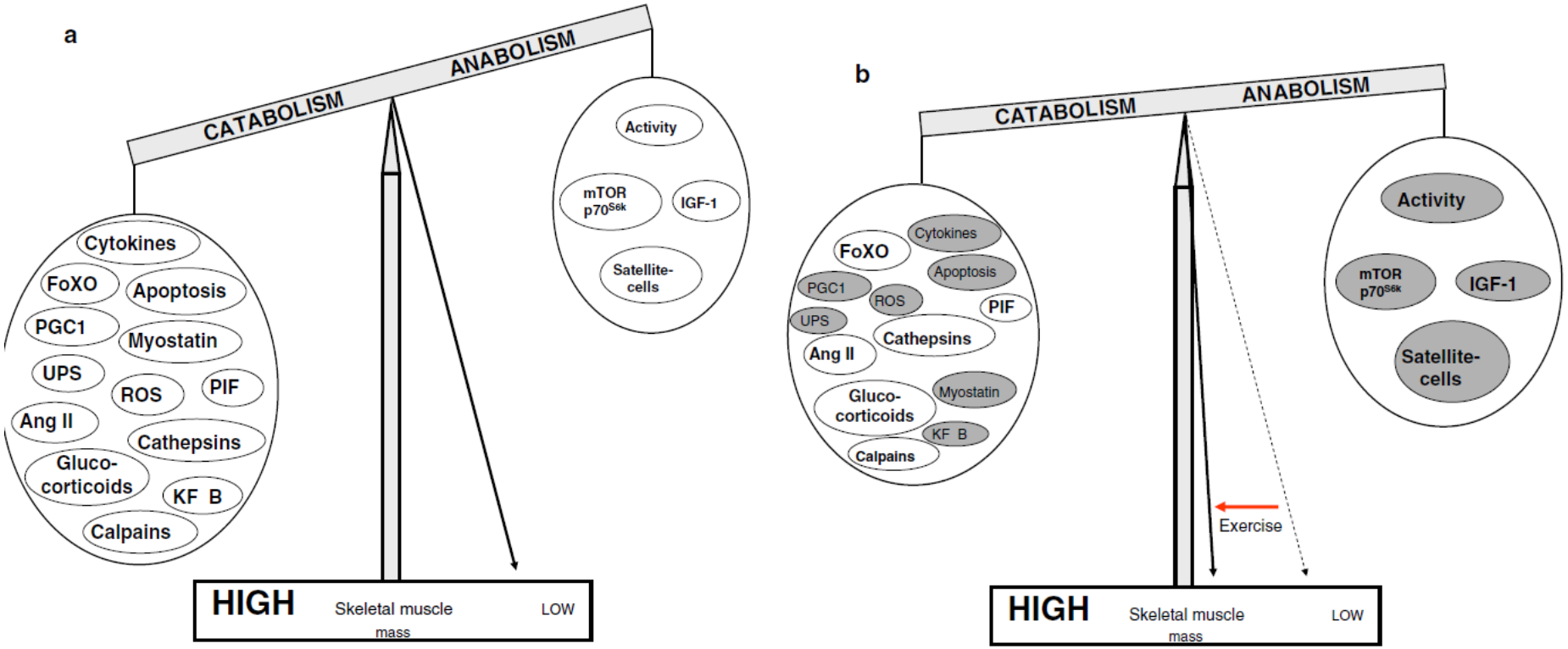
Comparación – consecuencias metabólicas

Comparison of the metabolic consequences of inactivity/sarcopenia to cachexia

Metabolic condition	Inactivity/ sarcopenia	Cachexia
Muscle protein synthesis	Increased	Increased
Muscle protein degradation	No change	Increased
Muscle mass, strength, and function	Decreased	Decreased
Fat mass	Increased	Decreased
Basal metabolic rate and total energy expenditure	Decreased	Increased
Inflammation	No change	Increased
Insulin resistance	Increased	Increased

Am J Clin Nutr 2010;91(suppl):1123S–7S.

Skeletal muscle wasting in cachexia and sarcopenia: molecular pathophysiology and impact of exercise training



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Conclusiones

- Existen definiciones operativas
- Difícil diferenciar estas entidades en la práctica clínica porque pueden coexistir
  - Disminución de ingesta, inactividad, alteraciones hormonales
  - Se sobrelapan en múltiples condiciones crónicas
  - Se sobrelapan en mecanismos