

Protein-Energy Malnutrition Definition

Merck Manual Professional Edition

Protein-energy undernutrition (PEU), previously called protein-energy malnutrition, is an energy deficit due to chronic deficiency of all macronutrients. It commonly includes deficiencies of many micronutrients. PEU can be sudden and total (starvation) or gradual. Severity ranges from subclinical deficiencies to obvious wasting (with edema, hair loss, and skin atrophy) to starvation. Multiple organ systems are often impaired. Diagnosis usually involves laboratory testing, including serum albumin. Treatment consists of correcting fluid and electrolyte deficits with IV solutions, then gradually replenishing nutrients, orally if possible.

TABLE 3

Values Commonly Used to Grade the Severity of Protein-Energy Undernutrition				
Measurement	Normal	Mild Undernutrition	Moderate Undernutrition	Severe Undernutrition
Normal weight (%)	90–110	85–90	75–85	< 75
Body mass index	19–24*	18–18.9	16–17.9	< 16
Serum albumin (g/dL)	3.5–5.0	3.1–3.4	2.4–3.0	< 2.4
Serum transferrin (mg/dL)	220–400	201–219	150–200	< 150
Total lymphocyte count (per mm ³)	2000–3500	1501–1999	800–1500	< 800
Delayed hypersensitivity index†	2	2	1	0

*In the elderly, BMI < 21 may increase mortality risk.

†Delayed hypersensitivity index uses a common antigen (e.g., one derived from *Candida* sp or *Trichophyton* sp) to quantitate the amount of induration elicited by skin testing. Induration is graded: 0 = < 0.5 cm, 1 = 0.5–0.9 cm, 2 = ≥ 1.0 cm.

Last full review/revision June 2007 by John E. Morley, MB, BCh. Content last modified June 2007

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Available at: <http://www.merck.com/mmpe/sec01/ch002/ch002b.html#BABHIFIJ>. Accessed June 2007.

ICD-9 Codes that cause the resident to be coded on the MDS into at High Risk for PU Development:

260	Kwashiorkor – a syndrome usually in children
261	Nutritional marasmus (children) (Malnutrition codes are used for all age groups; Coding Clinic, 4th quarter 1992, p. 25)
262	Other severe, protein-calorie malnutrition
263.0	Malnutrition of moderate degree
263.1	Malnutrition of mild degree
263.2	Arrested development following protein-calorie malnutrition
263.8	Other protein-calorie malnutrition (specified, but not listed above 260-263.2)
263.9	Unspecified protein-calorie malnutrition, Dystrophy due to malnutrition, Malnutrition (calorie) NOS

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