

Danish Meat Association

11-12 Oktober 2007

Giver mere protein bedre muskelfunktion, bedre mental funktion og bedre immunfunktion?

- Baggrund
- Validering af metoder
- Projekt: Diogenes
- Speciale: 49 patienter
- Projekt: Protein og funktion



Meta-analysis of N balance to estimate protein requirements

Rand et al. Am J Clin Nutr 2003; 77: 109-127

The protein requirement in healthy adults is defined as the continuing intake of dietary protein that is sufficient to achieve body nitrogen equilibrium (zero balance)...

This method remains the primary approach for determining protein requirements in adults, in large part because there is no validated or accepted alternative.

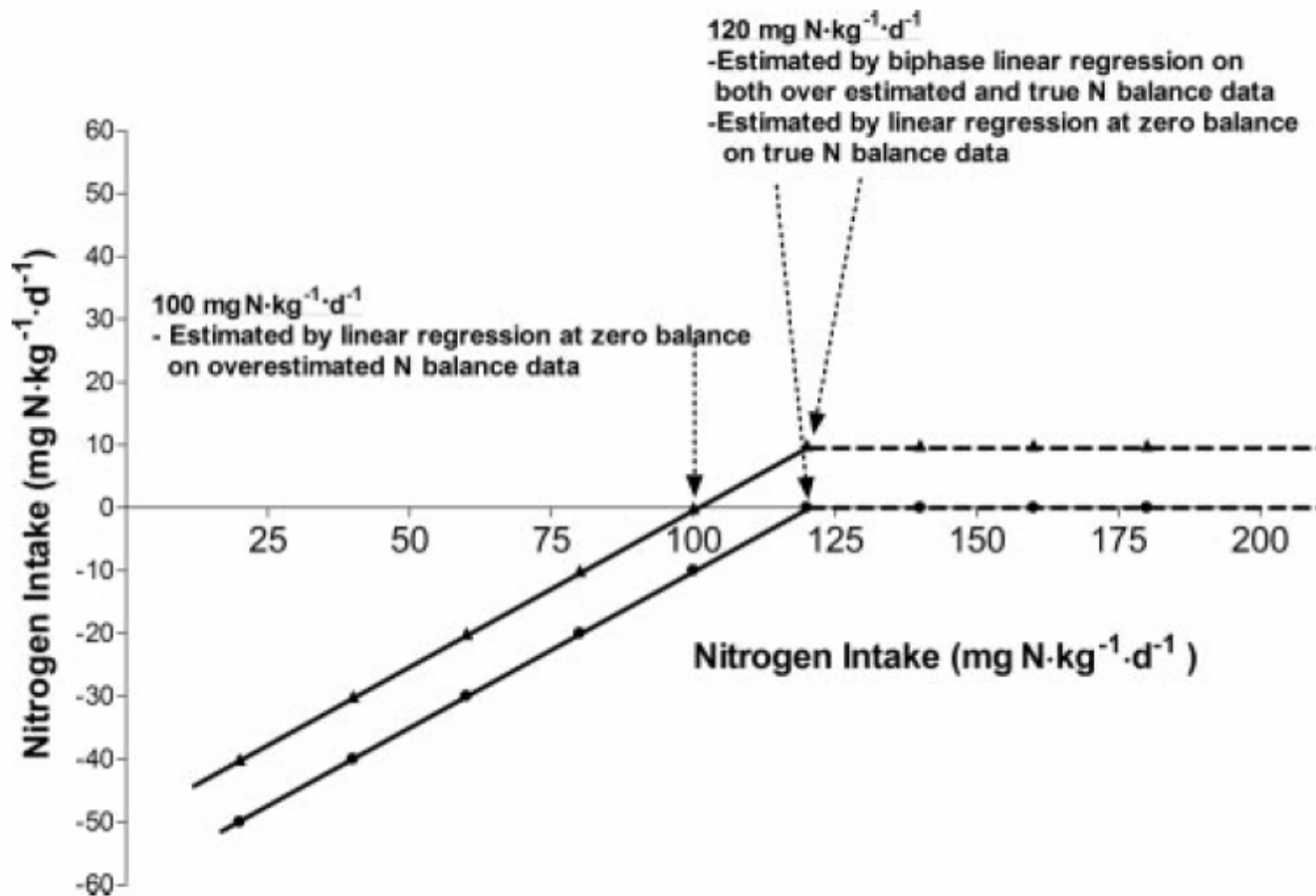


FIGURE 3. Hypothetical example of the relation between various protein intakes and nitrogen balances (true and 10% overestimated). Application of linear regression analysis on both overestimated and true nitrogen balance values resulted in nitrogen requirements of 100 and 120 mg · kg⁻¹ · d⁻¹, respectively (0.63 and 0.75 g · kg⁻¹ · d⁻¹ protein, respectively). Application of biphasic linear regression analysis on both overestimated and true nitrogen balance values resulted in a nitrogen requirement of 120 mg · kg⁻¹ · d⁻¹. Application of linear regression analysis underestimated nitrogen requirements by 20% when the nitrogen balance values were overestimated by 10%.

Accommodation, not adaptation, to 8 weeks' inadequate protein intake.

2N=12. Castaneda et al. Am J Clin Nutr 1995; 62: 30-39

	Low Prot	Control
Intake, g/kg per d	0.47	0.91
Balance, g/kg per d	-0.03	0.01
LBM-DEXA, kg	41 → 39 ¹⁾	38 → 40
Skin test, n antigens	3.0 → 1.5 ¹⁾	1.7 → 2.5
Muscle relaxation rate	12 → 9 ¹⁾	12 → 10
F ₁₀ /F ₅₀	29 → 48 ¹⁾	35 → 30
¹⁾ Sign ≠ base-line		

3 months' AA supplementation in healthy elderly

(12 g: leu, ileu, val, lys, cys, his, thr, met, phe, tyr, try)

Scognamiglio et al. Gerontology 2005; 51:302-308

(2N = 95. Age: 75 yrs. BMI: 27. Usual intake: 1700 Kcal, 62 g protein.

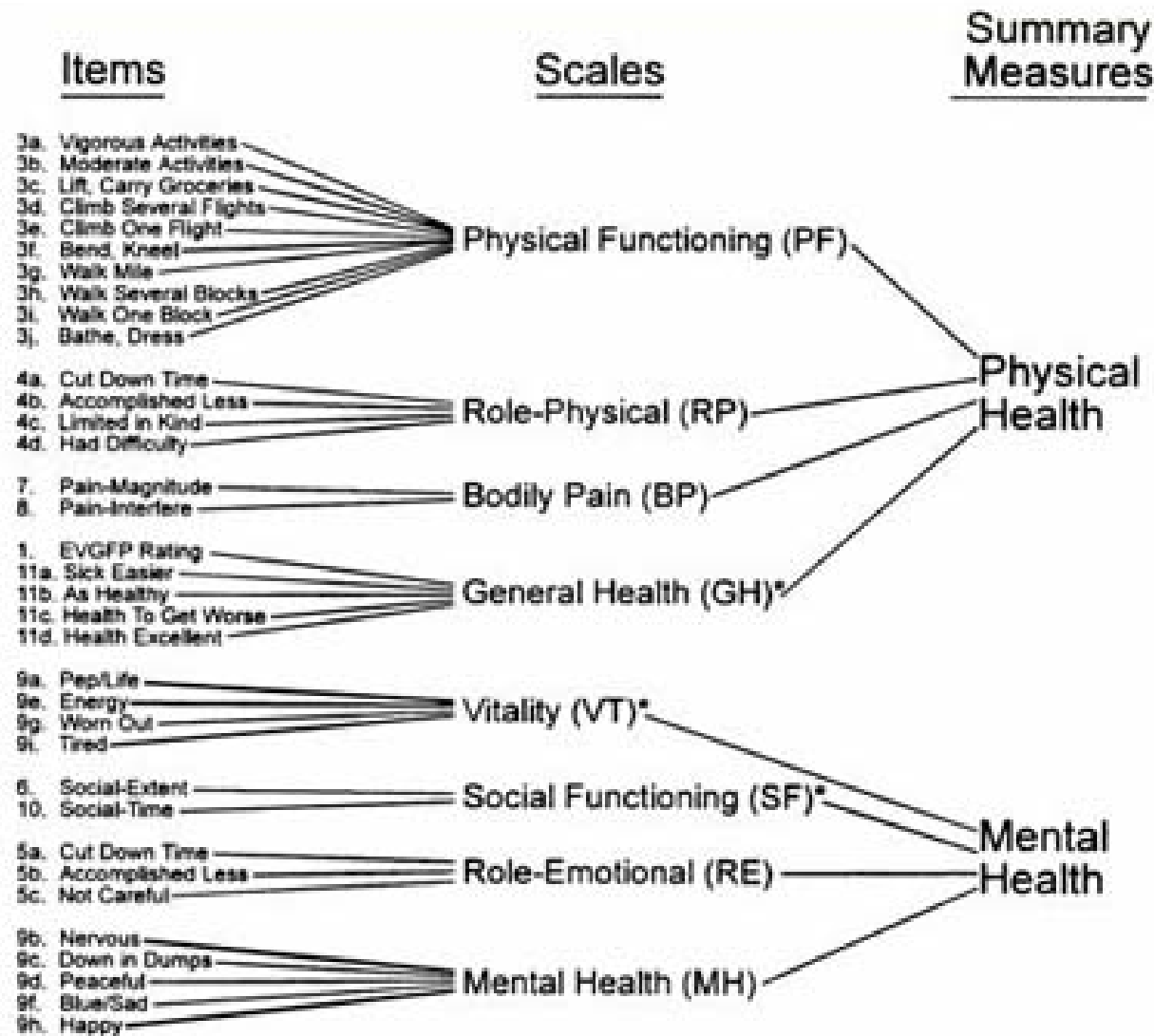
	Control	AA
Max handgrip, kg	14 → 14	15 → 20 ¹⁾
LV ejection fraction, exercise ^{*)}	56 → 56	55 → 67 ²⁾
6 min walking, m	212 → 212	215 → 269 ¹⁾
Questionnaire, walking stairs, score	73 → 72	72 → 98 ¹⁾

^{*)} 3 min at 40% of Max handgrip

¹⁾ P<0.001 ²⁾ P<0.01

SF-36[®] Measurement Model

Hvad skal vi måle?



Hvordan skal vi måle?

Bed-side measurements



Lene Holm Jakobsen
Janice Sorensen

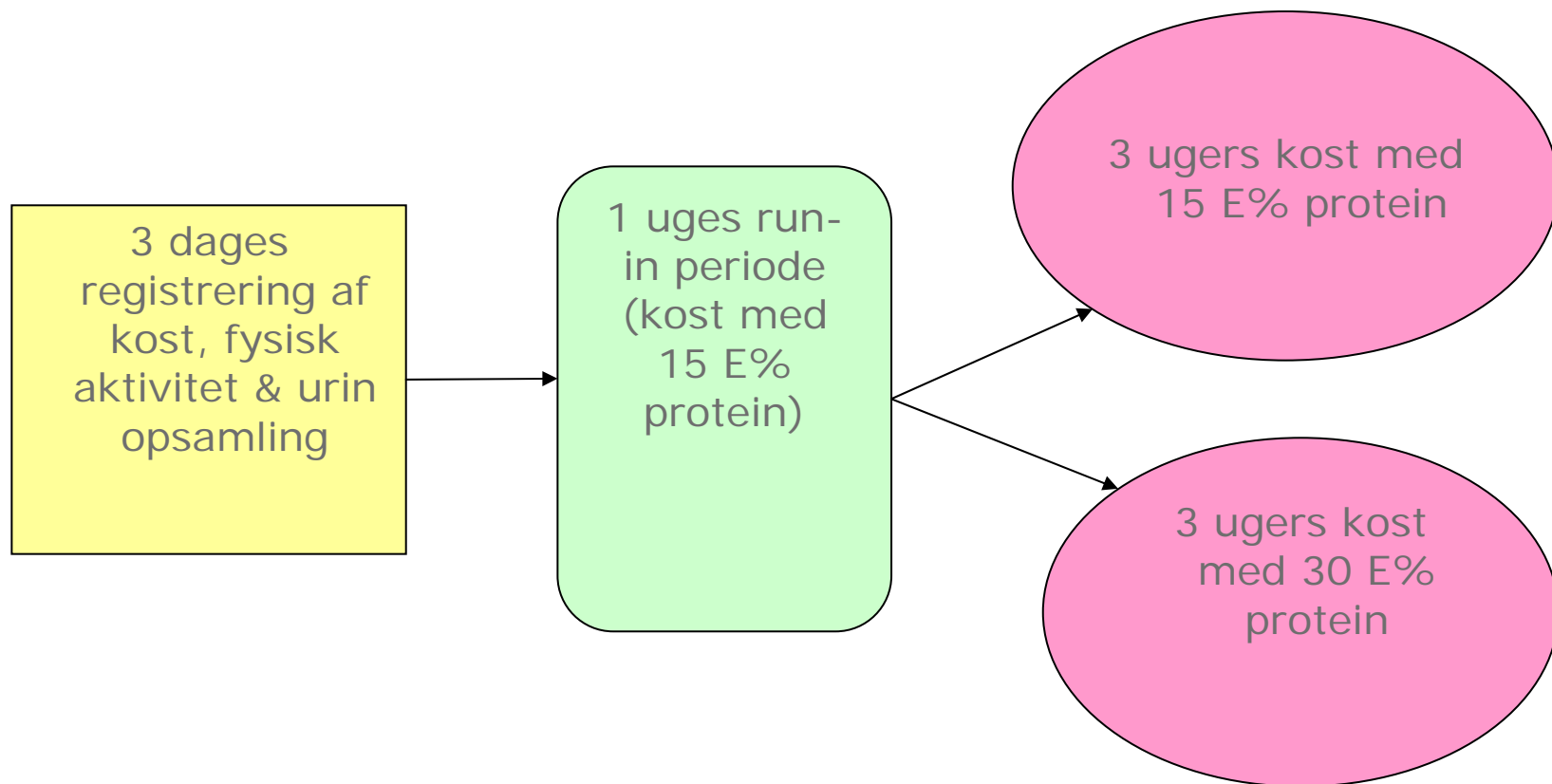
- Upublicerede originaldata kan desværre ikke offentliggøres her

Protein & Function

Studieoversigt

Forsøgspersoner:

Raske, normalt BMI, let-moderat fysisk aktivitet



Protein & Function: variabler

	Forundersøgelse	Run-in	Intervention			
Visit nr.	2	3	8	13	18	23
Vægt	x	x	x	x	x	x
Blodtryk	x		x			x
Skema: Fysisk Aktivitet	x		x			x
Kostregistrering	x					
Blodprøver			x			x
Urinopsamling 3 dage	x		x			x
Håndgribestyrke			x			x
Timed Get Up and Go			x			x
Reaktionstid			x			x
Addenbrooke Cognitive Examination			x			x
SF-36			x			x
Impedans			x			x

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- Det håber vi



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