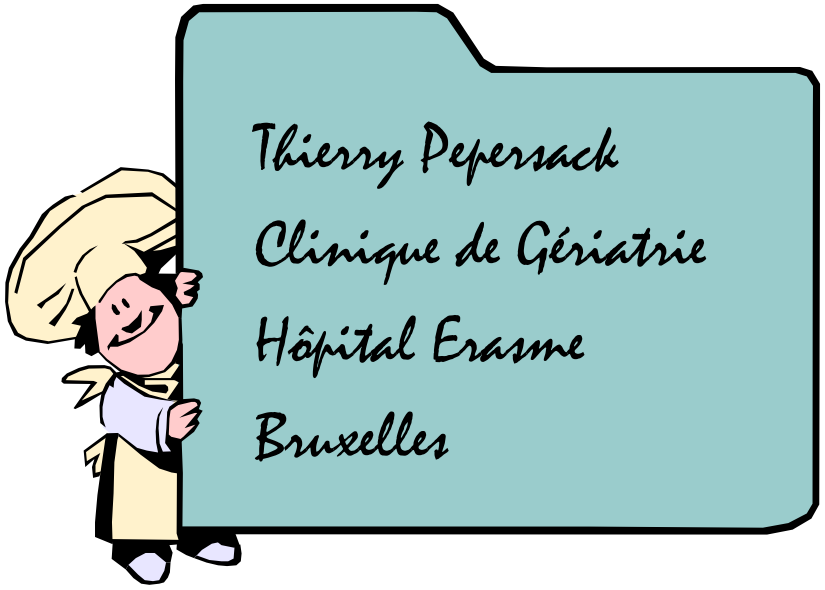
Suivi nutritionnel et intérêt des produits de substitution



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Plan

- Les faits
- La fragilité gériatrique
- prévalence
- Comment détecter une malnutrition?
- Une intervention nutritionnelle est-elle utile (suppléments) ?
- Présentation d ’un cycle de qualité
- Conclusions

Qu ’est-ce qu ’un patient gériatrique ?

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Evaluation Gériatrique Globale

- polymédications
- troubles de la marche et de l'équilibre (Tinetti, up and go)
- troubles cognitifs (MMS, CAM, …)
- dépression (GDS, DSM-IV, Hamilton)
- Douleur (doloplus), sociale (case management), qol
- Environnement, …
- ***Evaluation nutritionnelle ?***

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An Underfeeding Study in Healthy Men and Women Provides Further Evidence of Impaired Regulation of Energy Expenditure in Old Age[1]

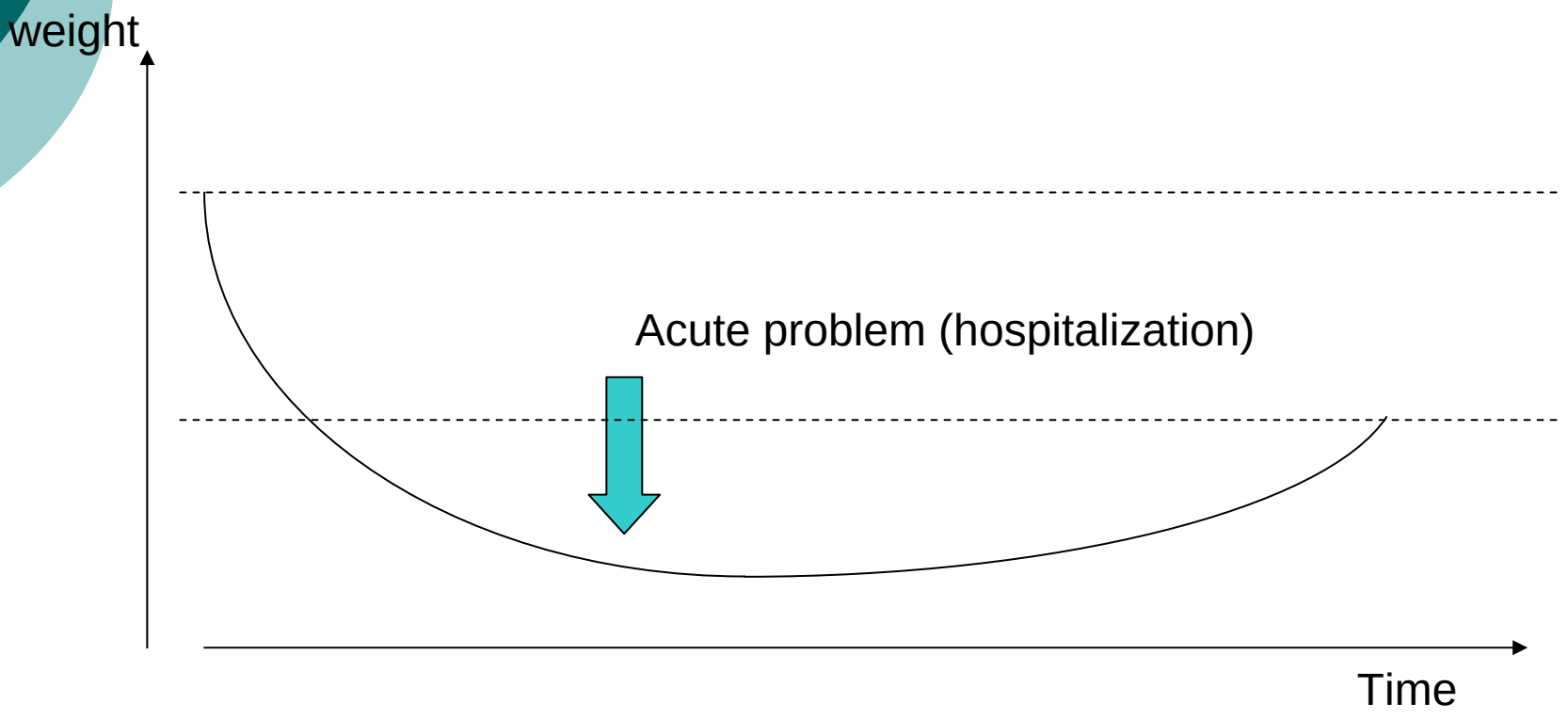
Sai Krupa Das,[2] Julio C. Moriguti,[2,3] Megan A. McCrory, Edward Saltzman, Christopher Mosunic, Andrew S. Greenberg and Susan B. Roberts[4]

The U.S. Department of Agriculture Human Nutrition Research Center on Aging at Tufts University, Boston, MA 02111.

- the responsiveness of energy expenditure to negative energy balance *is attenuated* in old age,
- the hypothesis that mechanisms of *energy regulation are broadly disregulated in old age*.

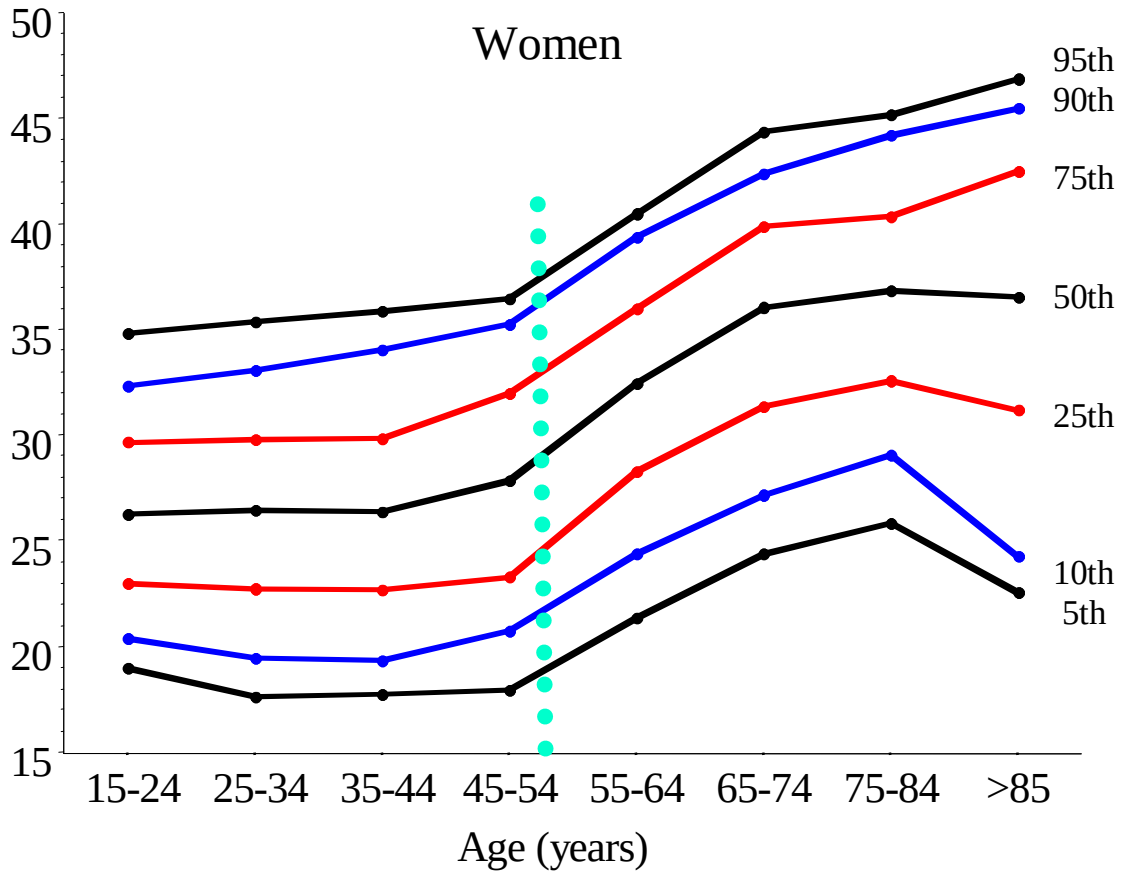
J. Nutr. 131: 1833–1838, 2001

History of malnutrition



Percentiles Percent Fat Mass in 5225 Volunteers

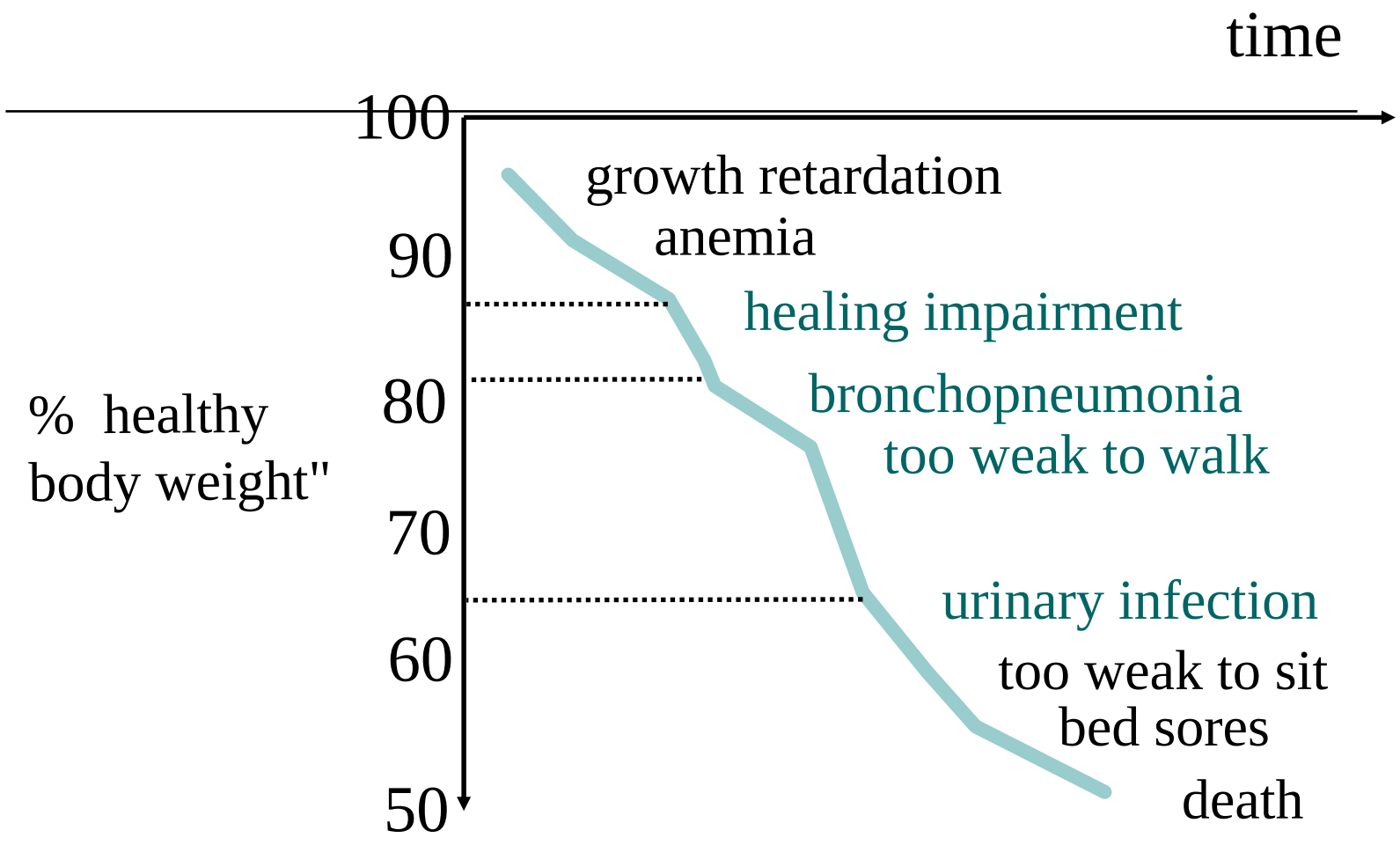
(15 - 98 years, 16.0 - 47.1 kg/m2)



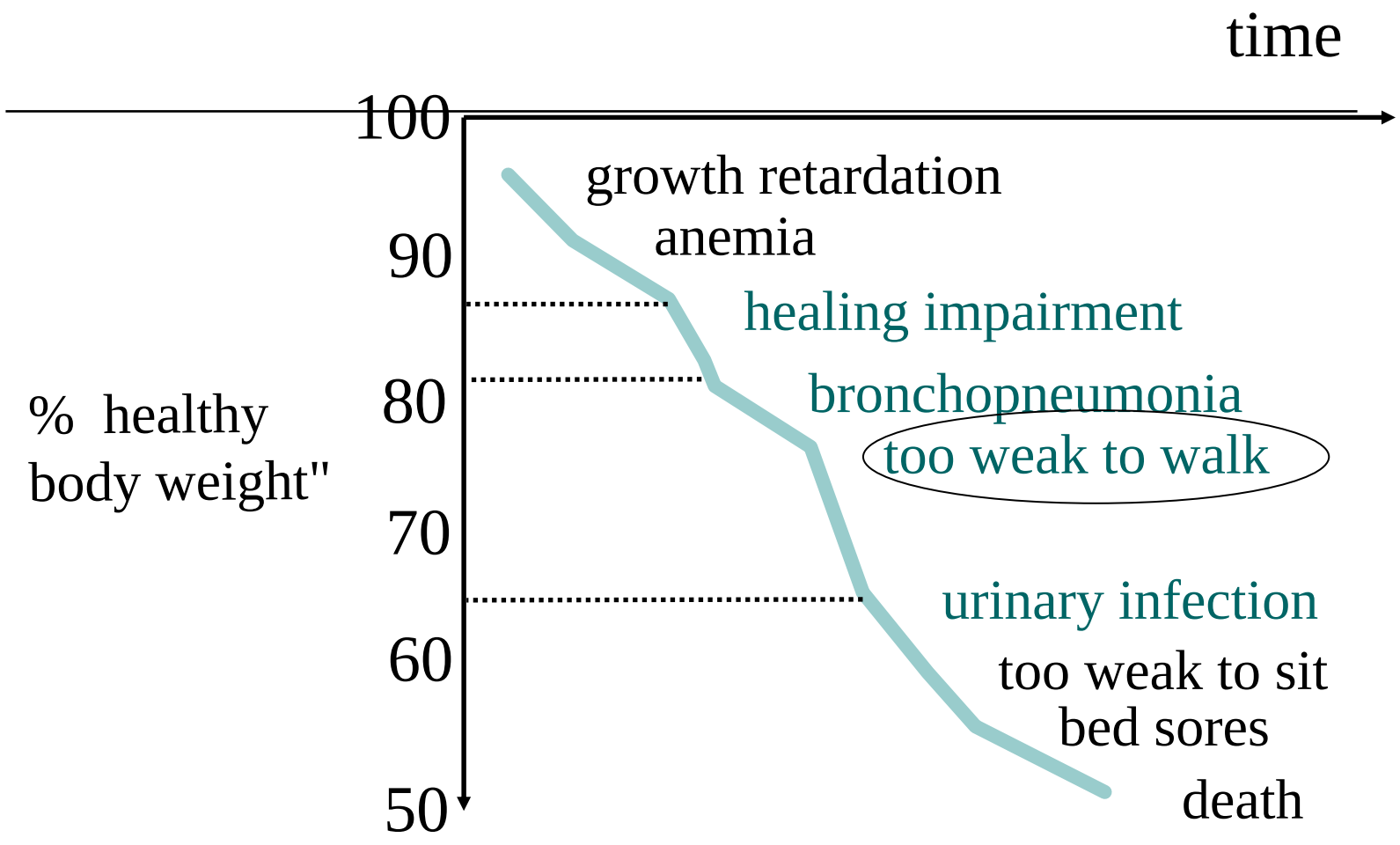
Kyle U. et al. Nutrition 2001, 17:534-541

Weight loss (%)	Protein loss * (%)
5	11.2 - 16.8
10	15.2 - 20.8
15	19.2 - 24.8
20	23.0 - 29.0
25	26.8 - 33.2

* in vivo neutron analysis. Hill G.L. J Parent Enteral Nutr 16, 197-218, 1992



Heymsfield S. B. Ann. Intern. Med. 1979, 90: 63-71



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Comparison of Clinical Features of Hyperthyroidism in Elderly versus Young Patients		
Symptoms and signs	Elderly, ≥ 70 Years (%)	Young, ≤50 Years (%)
Tachycardia	71	96
Fatigue	56	84
Weight loss	50	51
Tremor	44	84
Dyspnea	41	56
Apathy	41	25
Anorexia	32	4
Nervousness	31	84
Hyperactive reflexes	28	96
Weakness	27	61
Depression	24	22
Increased sweating	24	95
Diarrhea	18	43
Muscular atrophy	16	10
Confusion	16	0
Heat intolerance	15	92
Constipation	15	0

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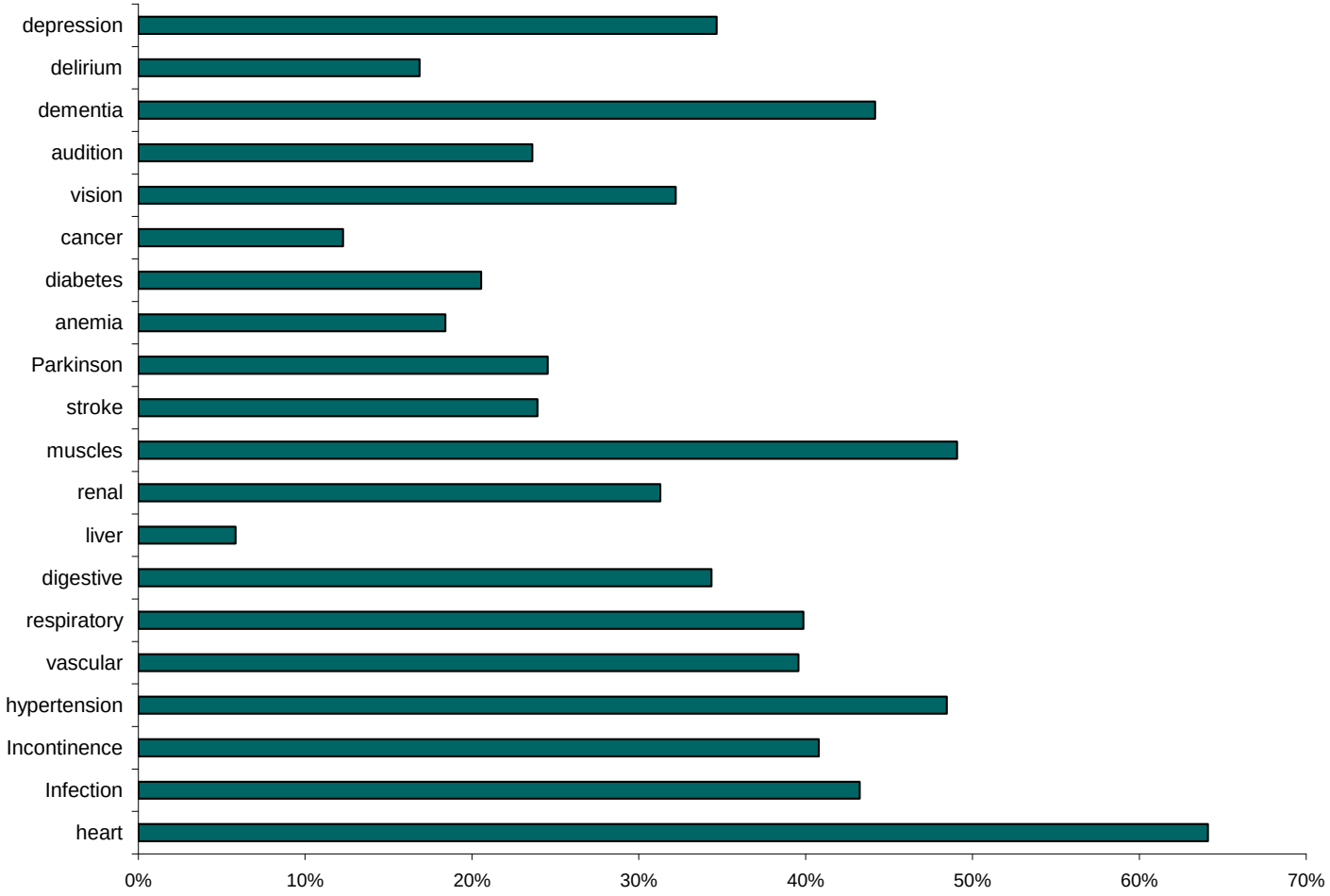
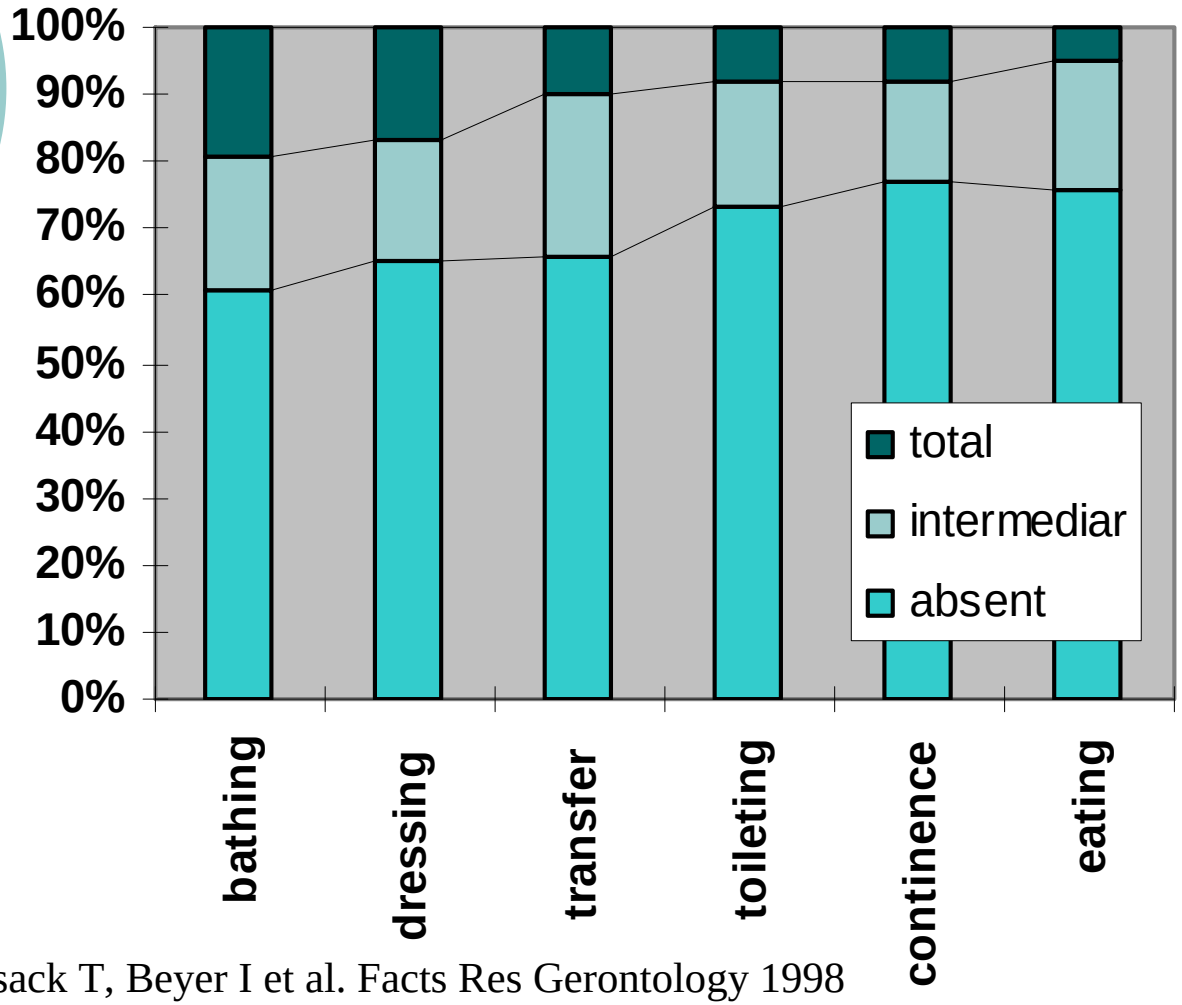
Total comorbidity



Pepersack on behalf of the College for Geriatrics 2005

ADL dependence of *outpatients* (Katz) N=2588, age:78(9)yr



Pepersack T, Beyer I et al. Facts Res Gerontology 1998

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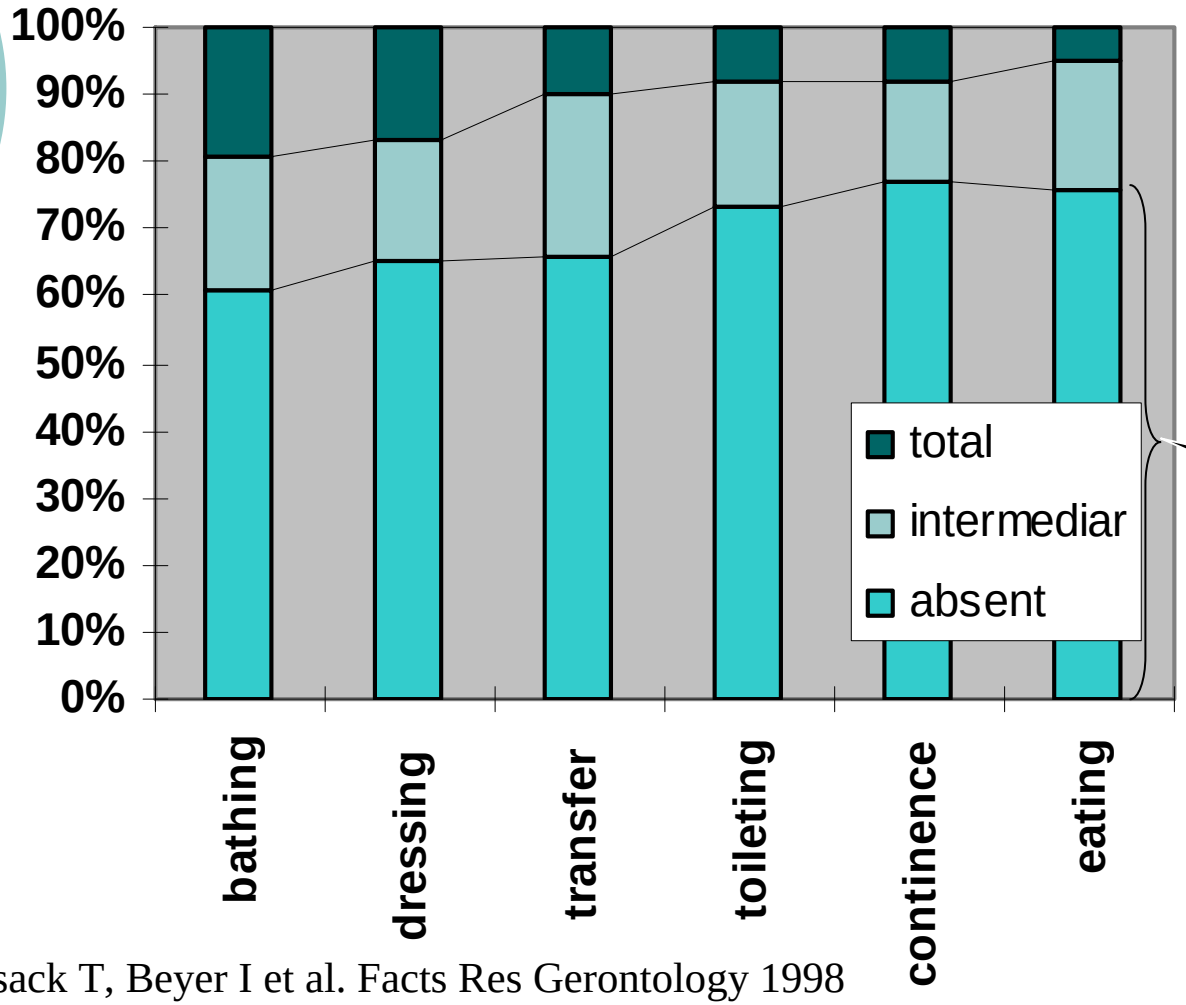
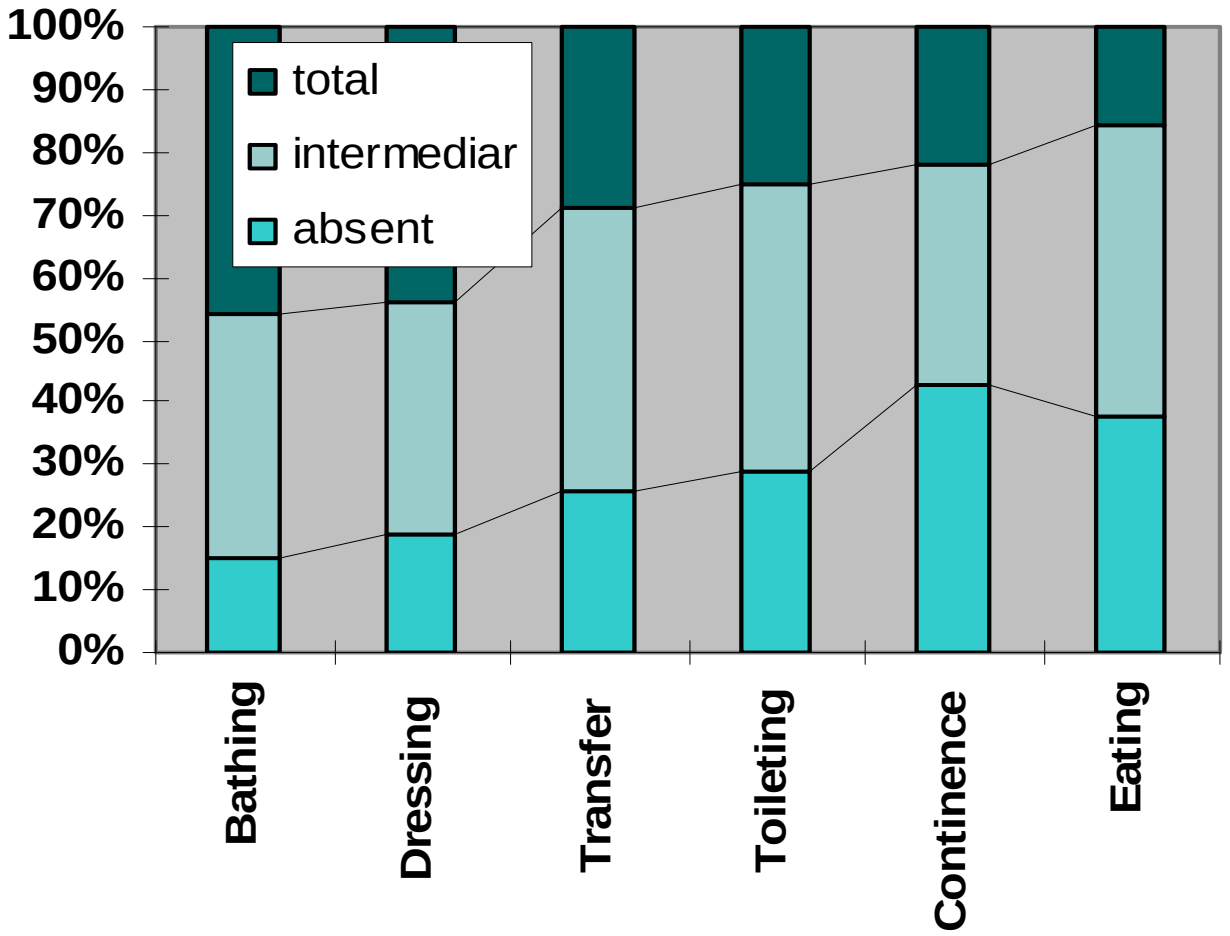


75% of the subjects able to eat alone

Pepersack T, Beyer I et al. Facts Res Gerontology 1998

ADL dependence of *hospitalized patients* N=655, age: 83(7) yrs



Pepersack T. Arch Public Health 1999

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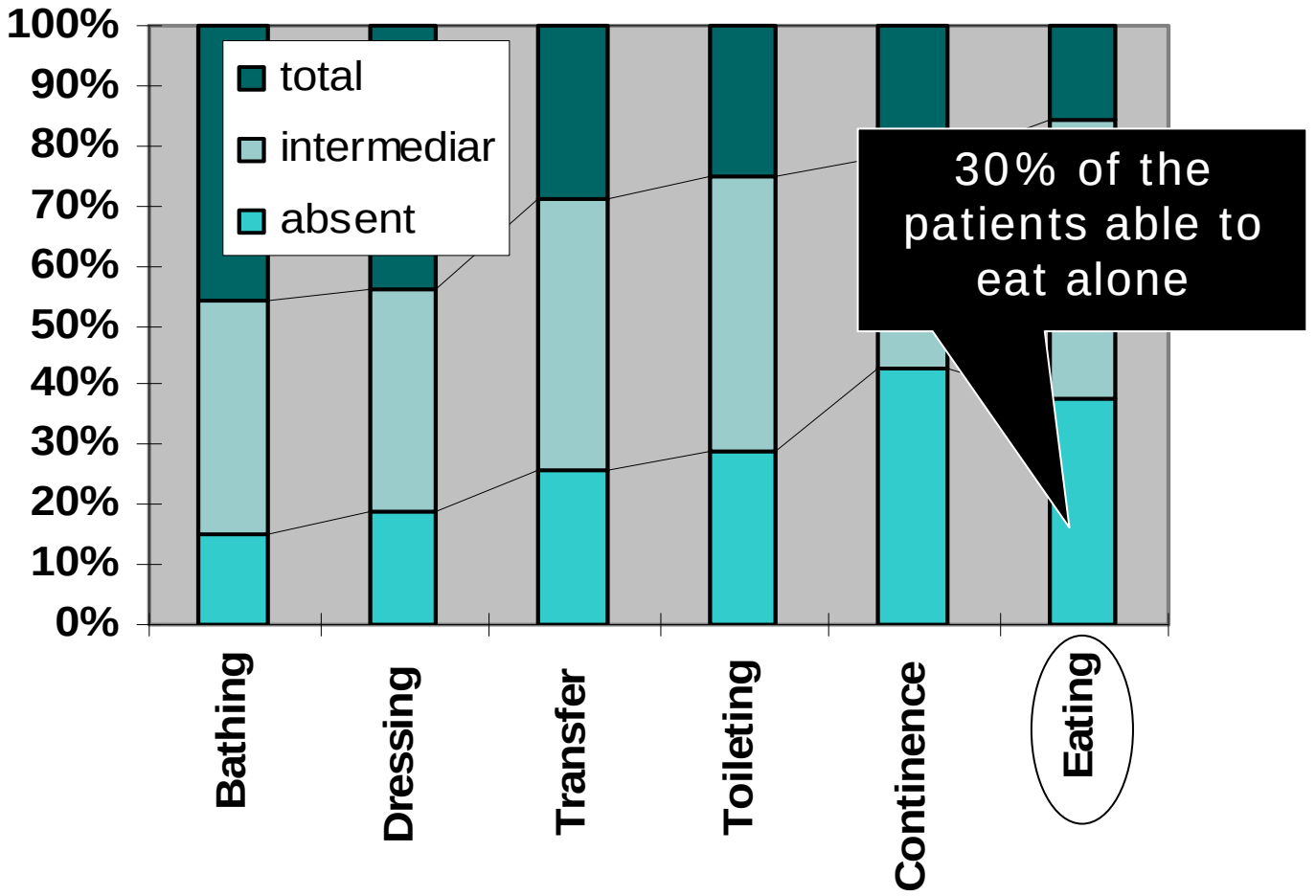
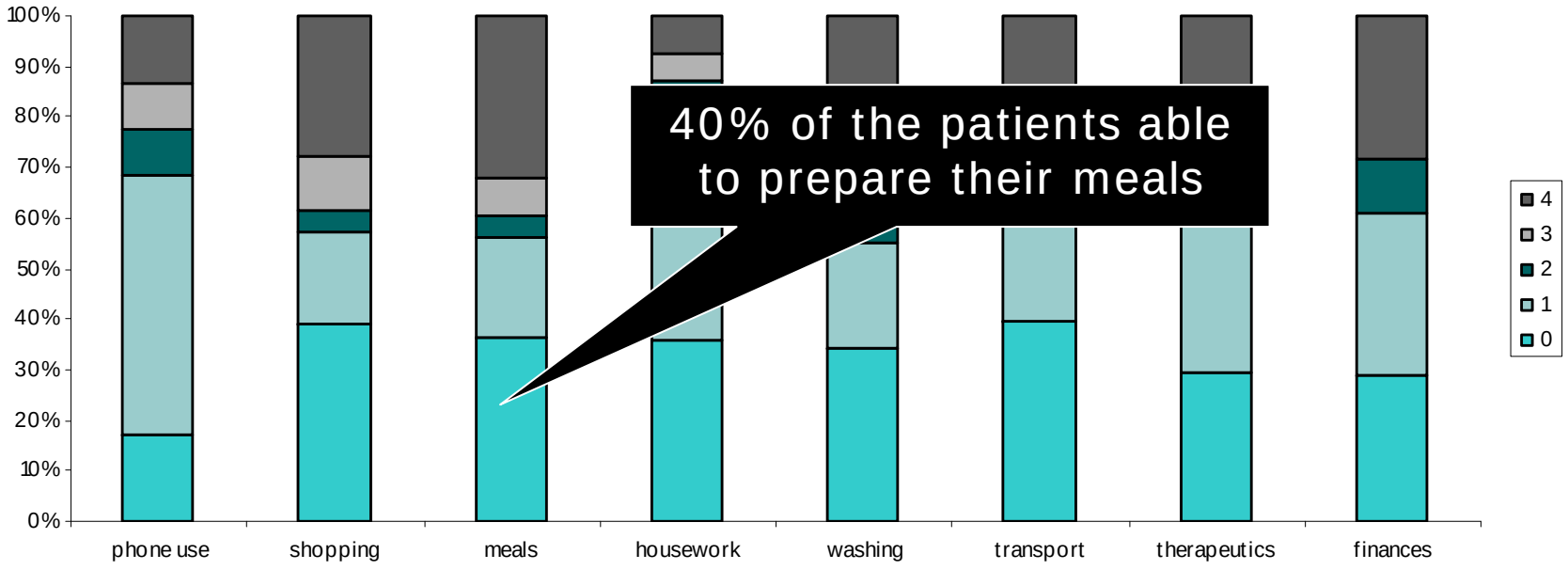


Pepersack T. Arch Public Health 1999

2005 College's project: IADL (Lawton)

from lowest (0) to highest dependence (4)



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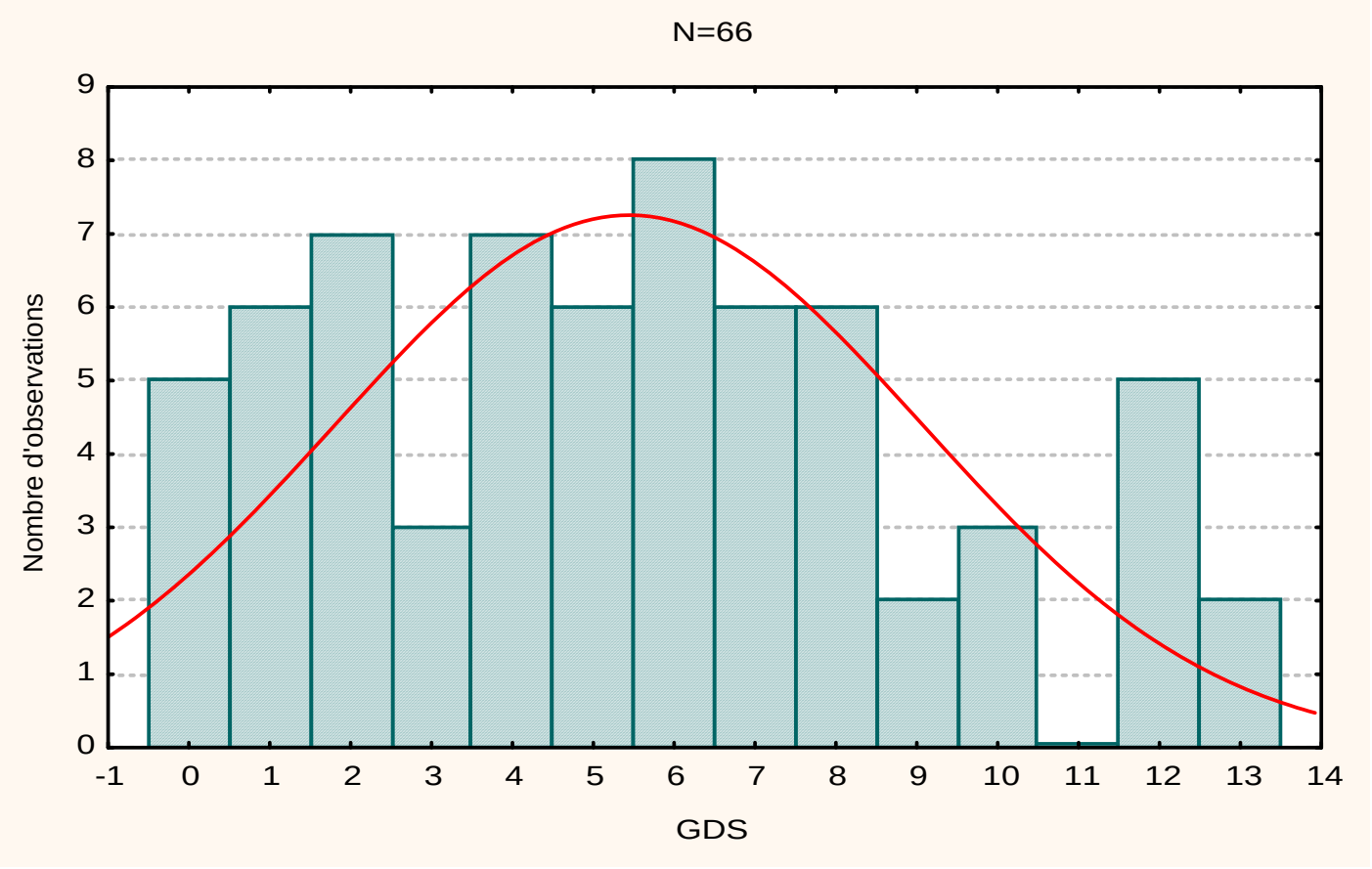
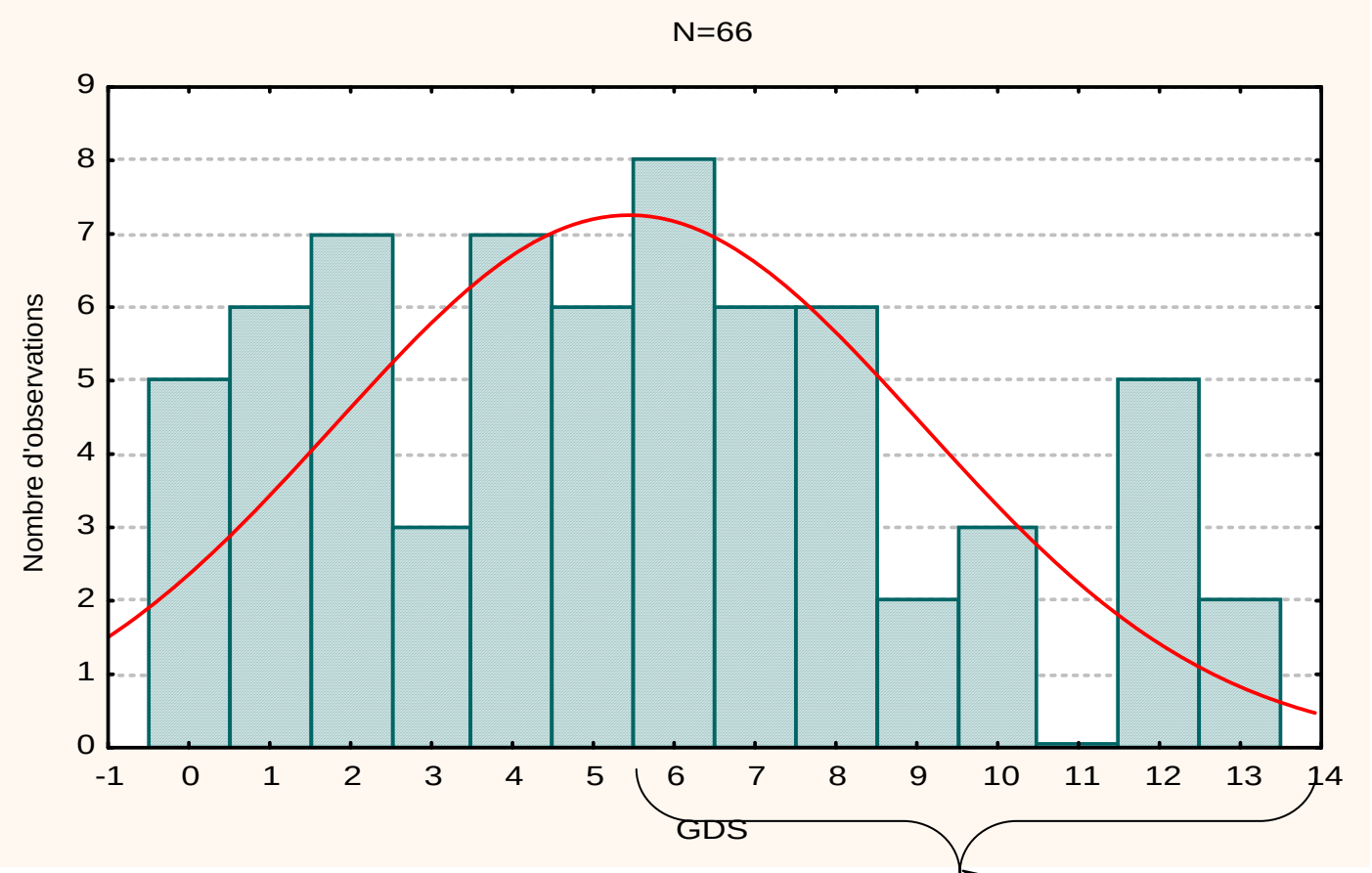
Dépression



Pepersack T, Bastan M. Prévalence de la dépression et caractéristiques du patient gériatrique déprimé. In: L'Année Gérontologique 2001, vol. 15 p. 103-114.Serdi Edition, Paris.

Depression



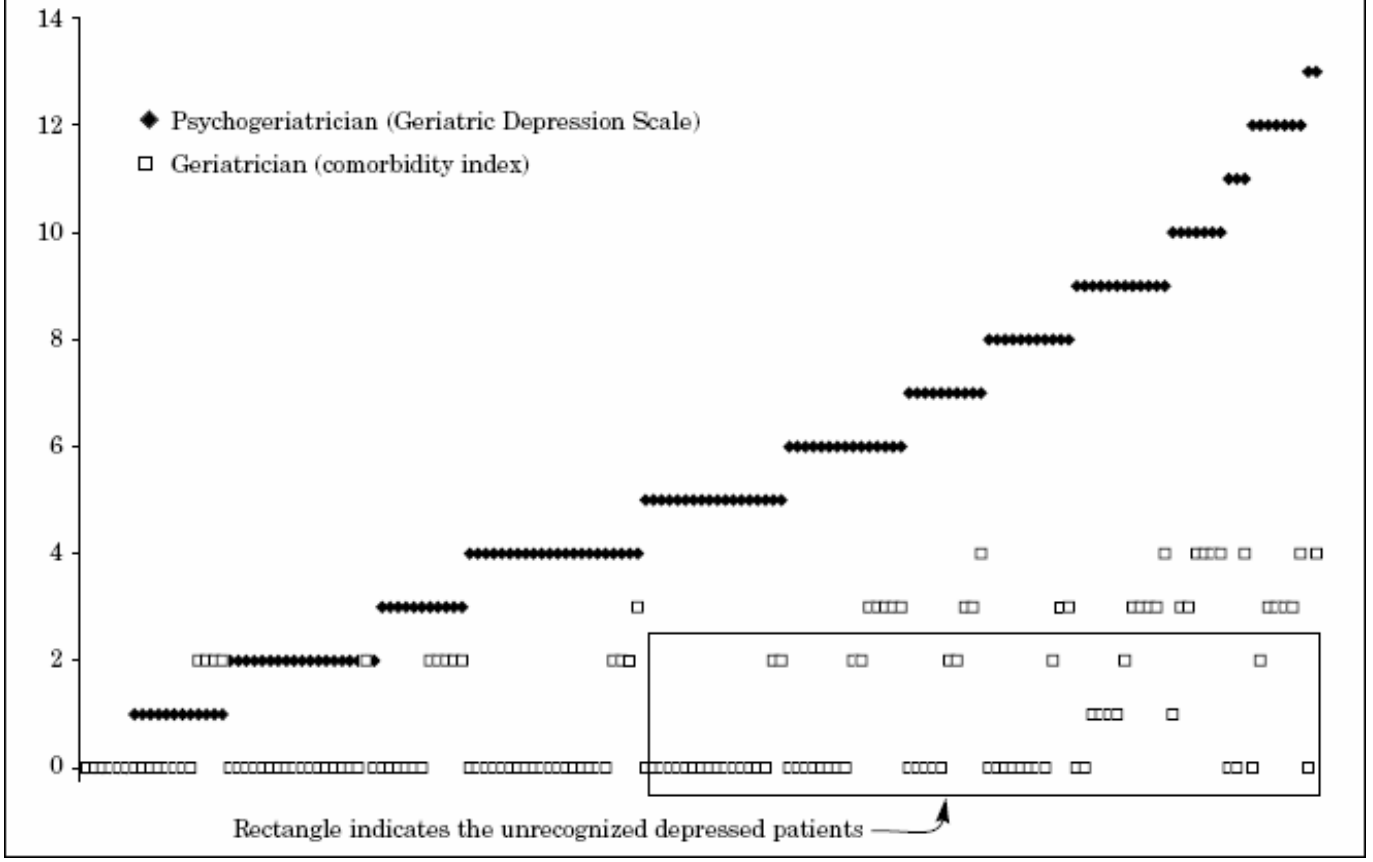
Pepersack T, Bastan M. Prévalence de la dépression et caractéristiques du
In: L'Année Gérontologique 2001, vol. 15 p. 103-114.Serdi Edition, Paris.

45% of patients at risk of depression

Correlates of Unrecognized Depression Among Hospitalized Geriatric Patients

THIERRY PEPERSACK MD, PhD
SANDRA DE BREUCKER, MD
YVES-PATRICK NKODO MEKONGO, Ps
ANNE ROGIERS, MD
INGO BEYER, MD

Figure 3. Ranked values of scores on the Geriatric Depression Scale and the depression item of the comorbidity index in 155 hospitalized geriatric patients



Journal of Psychiatric Practice 2006;12:160–167

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Prevalence of malnutrition in hospitalized patients

	year	N=	%
Kyle	2005	1707	51
Pichard	2004	996	46
Wyszynski	2003	1000	48
Waitzberg	2001	4000	48
Kyle	2001	995	38
McWhirter	1994	300	45
McWhirter	1994	300	45
Coats	1993	228	38
Larsson	1993	382	29
Reilly	1988	365	59
Robinson	1987	100	56
Bistrian	1980	251	44
Σ		10858	46

Malnutrition protéique et calorique
A l ’hôpital

- 35 à 40% des admissions
- «sous diagnostiquée»
- carences alimentaires, maladies hépatiques ou digestives, cancers, maladies chroniques
- augmente mortalité, morbidité
- augmente durée d’hospitalisation

Busby et al. N Engl J Med 1991

Prevalence of malnutrition in acute geriatric units

	year	N=	%
Pepersack	2005	1139	30-60*
Wyszynski	2003	466	50-76**
Kyle	2002	172	61
Σ		1177	

**60% at risk and 30% presenting overt malnutrition*

*** >60 y: 50; > 70 y: 53, > 80 y: 77 %*

Prevalence of malnutrition in LTC institutions

	Year	N=	%
Shaver	1980	115	85%
Pinchocofsky-Devin	1987	227	52%
Silver	1988	130	23%
Thomas	1991	61	54%
Larson	1991	501	29%
Nelson	1993	100	39%
Wright	1993	309	51%
Abbasi	1993	2811	28%
Morley	1994	185	15%
Blaum	1995	6832	10%
Σ		11971	

Pepersack T. Nutritional approach in long term geriatric institution. Rev Med Brux 2001

Malnutrition protéique et calorique
En institution

Ref.:	Année	n	Prévalence	Durée	Objectif
54	1980	115	MPE 85% IMC 43%	6 mois	48% décès résidents anergiques
55	1987	227	MPE 52%		
1	1988	130	BMI 23% Alb basse 8%	1 an	Mortalité non associée à IMC
3	1991	61	MPE 54%	2 mois	Mortalité associée à MPE Amélioration chez seulement 63%
56	1991	501	MPE 29%		
57	1993	100	MPE 39%		
58	1993	309	51% ont 5% de perte de poids	6 mois	Mortalité accrue (15% vs 12%)
59	1993	2811	Perte de poids 11% Alb basse 28%		
44	1994	185	15% ont 5% de perte de poids	6 mois	Dépression première cause de perte de poids
18	1995	6832	10% ont 5% de perte de poids IMC 25%		Ingestats faibles, dépendance AVJ, dépression: facteurs prédicteurs de malnutrition

Pepersack T. Nutritional approach in long term geriatric institution. Rev Med Brux 2001

Economic impact of malnutrition in 771 hospitalized patients

		Protein-depleted (<80% normal)	Well-nourished	*p*
All	771	5519 ± 300	3372 ± 138	*0.001*
Medecine	365	2945 ± 242	1783 ± 124	*0.0001*
Surgery	406	7335 ± 513	4579 ± 182	*0.001*
		in US$		

Reilly J.J. et al. J Parent Enteral Nutr 12(4), 371-376, 1988

Mécanismes

Condition médicale	Mécanisme			
	Métabolisme accru	Anorexie	Troubles de déglutition	Malabsorption
Cardiopathie	X	X		X
Cancer	X	X	X	X
Pneumopathie	X	X		X
Infection(s)		X		X
AIDS	X	X	X	X
Tuberculose	X	X		
Candidiase oesophagienne		X	X	
Alcoolisme	X	X		X
Arthrite rheumatoïde	X	X	X	X
Pathologie voies biliaires		X		
Syndromes malabsorption				X
Hyper/Hyperpara-thyroïdie	X	X		
Maladie de Parkinson	X			
Tremblements essentiels	X			

The « meals-on-wheels approach »

- Medicaments
- Emotions
- Anorexia
- Late life paranoia
- Swallowing (déglutition)
- Oral problems
- No money
- Wandering, (comportements)
- Hyperthyroidie, HPT1
- Entry (malabsorption)
- Eating problems (fiche)
- Low salts, low chol diets (régimes)
- Shopping

Morley 1994

« Frigotherapy… »

Médicaments fréquemment prescrits en institutions de longs séjours gériatriques et dont l'anorexie est un des effets secondaires prépondérant

Médicaments	
Amlodipine	Ciprofloxacine
Cisapride	Œstrogène conjugué
Digoxine	Enalparil
Fentanyl	Furosemide
L-thyroxine	Analgesiques narcotiques
Nifedepine	Omeprazole
Paroxétine	Phenytoïne
Postasium	Ranitidine HCl
Risperidone	Sertraline HCl
Adapté selon : Guide to preferred drugs in long-term care and American Society of Consultant Pharmacist Report	

Conditions associées à la perte du goût

Condition	**Mécanisme / commentaire**
Paralysie de Bell	72% recouvre le goût en 12 à 14 j
Crohn	Déficience en Zn
Cirrhose	
Cancer	
Dépression	Apport en Zn diminué ?
Diabète avec atteinte SNA	Hypogueuzie pour sucres
Gingivite	Dysgueusie pour le sel
Influenza	
Hypovitaminose B12	Langue dépapillée
Parkinson	
Sjögren	Hypogueusie et xérostomie
Déficience en Zn	

Conditions associées à la perte de l'odorat

Condition	Pourcentage	Déficit de l'odorat
Rhinite allergique ou virale	31	Anosmie
Maladie d'Alzheimer	>90	Anosmie
Age avancé	5 à 50	Anosmie
Influenza	31	Anosmie
Psychose de Korsakoff		Anosmie
Malnutrition, Déficience en Zn		Hyposmie ou Anosmie
Polype nasal		Anosmie
Parkinson	>70	Hyposmie ou Anosmie
Paget avec atteinte maxillaire		Anosmie
Maladie de Pick		Hyposmie ou Anosmie
Shy-Drager		Anosmie
Sjögren	33	Hyposmie ou Anosmie

Comment détecter une malnutrition?

Comment dépister MPC ?

- Mesures anthropométriques
- Echelles de risque nutritionnel
  - *Nutritional Screening questionnaire*
  - *MNA,*
  - *Nursing Nutritional checklist*
  - *MUST*
  - *snaq*
- Biologie:
  - *Préalbumine*

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Categories of BMI for identifying risk of chronic PEM in adults

BMI	Weight category	Interpretation
<18.5	Underweight	Chronic malnutrition probable
18.5-20	Underweight	Chronic malnutrition probable
20-25	Desirable weight	Chronic malnutrition unlikely (low risk)
25-30	Overweight	↑ risk of complications associated with chronic overnutrition
>30	Obese	Moderate (30-35), High (35-40), very high risk (>40) of obesity-related complications

Anthropometric cut-off values that include body mass index for detecting underweight or undernutrition in adults

Anthropometric criteria	Recommended/type of study using criteria	Reference
BMI < 17.0	Elderly	Wilson, Morley 1988
BMI < 17.5	International classification for anorexia nervosa	WHO 1992
BMI < 18.0	Nursing home	Lowik et al 1992
BMI < 18.5	Community and hospital	Elia 2000, Kelly et al 2000
BMI < 19.0	Community and hospital	*Dietary Guidelines for Americans* 1995, Nightingale et al 1996
BMI < 20	Community and hospital	Jallut et al 1990, Vlaming et al 1999
BMI < 20	Hospital and community studies	McWhirter Pennington 1994, Edington 1996, 1999
BMI < 21	Elderly in hospital	Incalzi et al 1996
BMI < 22	Free-living elders (>70y)	Posner et al 1994
BMI < 23.5	Community and hospital	Potter 1998, 2001
BMI < 24 (and other criteria)	Community	Gray-Donald 1995
BMI < 24 (and other criteria)	Recipents of “meals on wheels”	Coulston et al 1996

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Nutrition Screening Questionnaire†

	Yes
I have an illness or condition that made me change the kind or amount of food I eat	2
I eat fewer than two meals per day	3
I eat few fruits and vegetables, or milk products	2
I have three or more drinks of beer, liquor, or wine almost every day	2
I have tooth or mouth problems that make it hard for me to eat	2
I don't always have enough money to buy the food I need	4
I eat alone most of the time	1
I take three or more different prescribed or over-the-counter drugs per day	1
Without wanting to, I have lost or gained 10 pounds in the past six months	2
I am not always physically able to shop, cook, or feed myself	2

Total score:		
	0-2	No problem
	3-5	Moderate risk
	6+	High risk

†Adapted from Lipschitz, DA, Ham, RJ, White, JV, Am Fam Physician 1992; 45:601.

Comment dépister MPC ?

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- Echelles de risque nutritionnel
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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

☐

D Has suffered psychological stress or acute disease in the past 3 months
- 0 = yes
- 2 = no

☐

E Neuropsychological problems
- 0 = severe dementia or depression
- 1 = mild dementia
- 2 = no psychological problems

☐

F Body Mass Index (BMI) (weight in kg) / (height in m)^2
- 0 = BMI less than 19
- 1 = BMI 19 to less than 21
- 2 = BMI 21 to less than 23
- 3 = BMI 23 or greater

☐

Screening score (subtotal max. 14 points) ☐☐

12 points or greater Normal – not at risk – no need to complete assessment

11 points or below Possible malnutrition – continue assessment

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.

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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 ☐

D Has suffered psychological stress or acute disease in the past 3 months
0 = yes 2 = no ☐

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems ☐

F Body Mass Index (BMI) (weight in kg) / (height in m)²
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater ☐

Screening score (subtotal max. 14 points) ☐☐
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 ☐

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 ☐

M How much fluid (water, juice, coffee, tea, milk…) is consumed per day?
0.0 = less than 3 cups
0.5 = 3 to 5 cups
1.0 = more than 5 cups ☐.☐

N Mode of feeding
0 = unable to eat without assistance
1 = self-fed with some difficulty
2 = self-fed without any problem ☐

O Self view of nutritional status
0 = views self as being malnourished
1 = is uncertain of nutritional state
2 = views self as having no nutritional problem ☐

P In comparison with other people of the same age, how does the patient consider his/her health status?
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 PJ. 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 PJ and Guigoz Y, editors. Nestlé Nutrition Workshop Series. Clinical & Performance Programme, vol. 1. Karger, Bâle, in press.

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 ☐

D

E

F

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 ☐

J How many full meals does the patient eat daily?
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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
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L Consumes two or more servings of fruits or vegetables per day?
0 = no 1 = yes ☐

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Assessment (max. 16 points) ☐☐.☐

Screening score ☐☐

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

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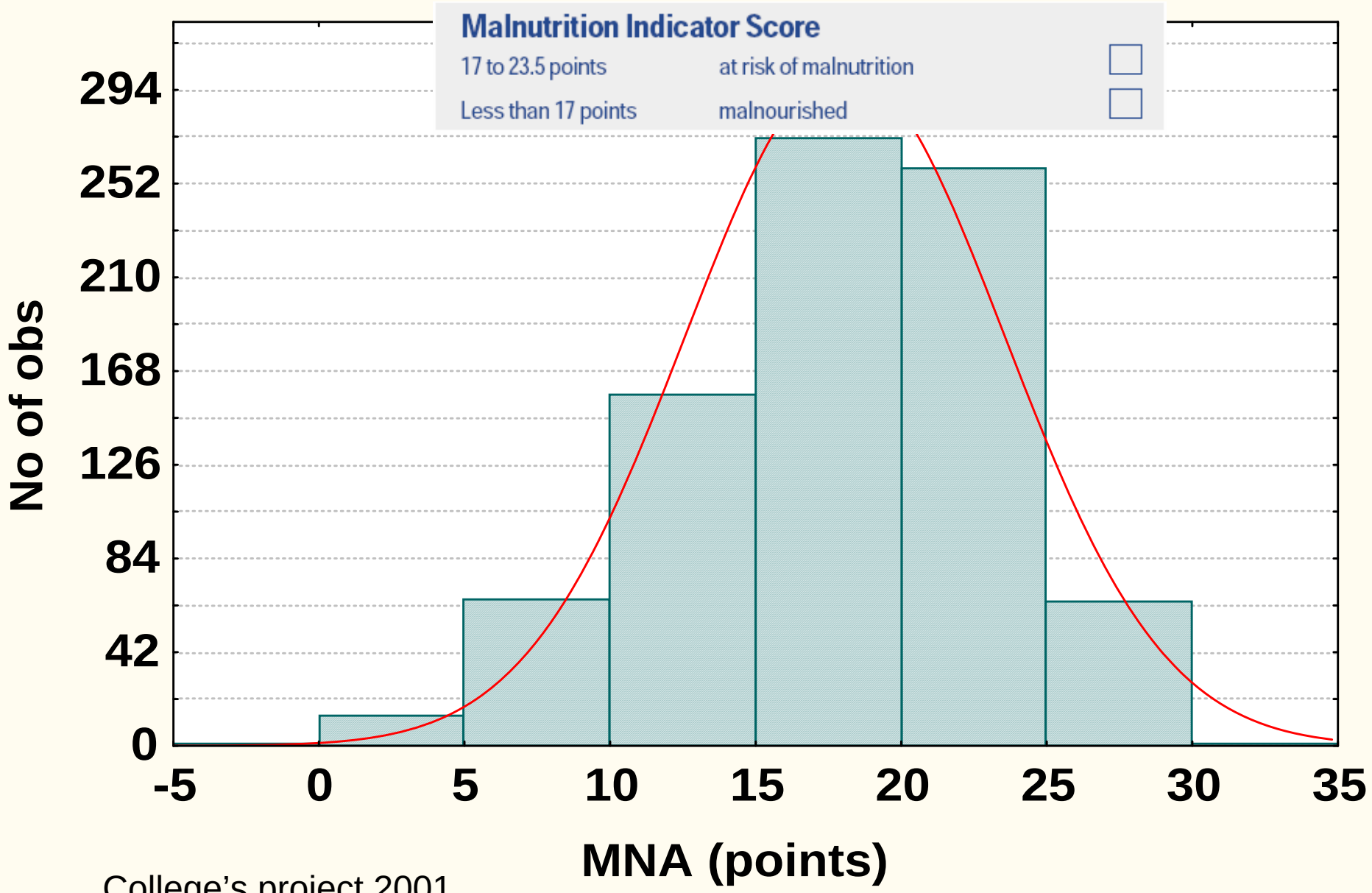
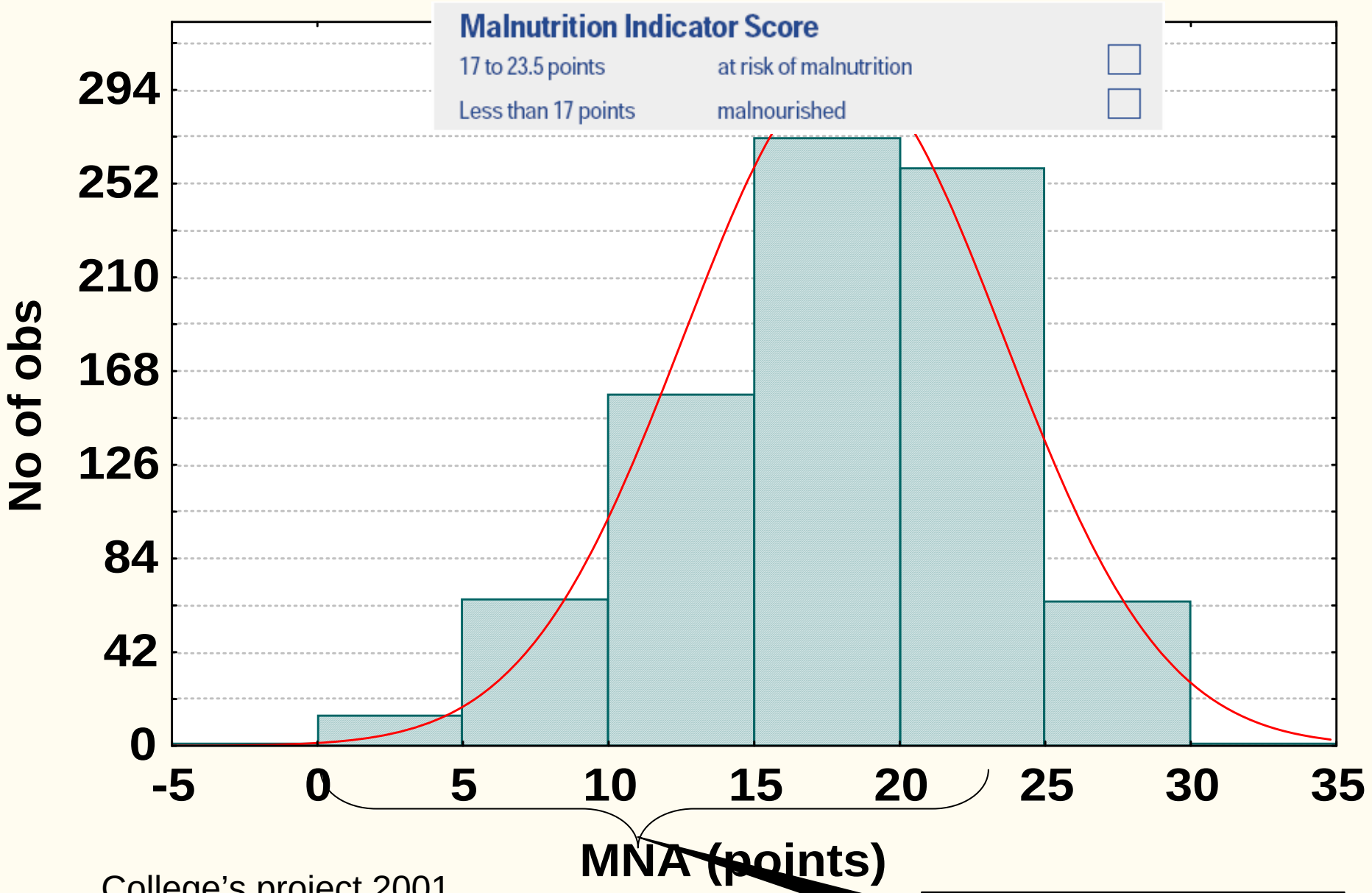


College's project 2001

Pepersack T on behalf of the College for Geriatrics. Outcomes of continuous process improvement of nutritional care program among geriatric units. J Gerontol A Biol Sci Med Sci 2005 60: 787-792.



College's project 2001

MNA <23,5: 60% of patients at risk

Pepersack T on behalf of the College for Geriatrics. Outcomes of c
of nutritional care program among geriatric units. J Gerontol A Biol Sci Med Sci 2005 60: 787-792.

Comment dépister MPC ?

- Mesures anthropométriques
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  - *Préalbumine*

Nursing Nutritional Checklist

LISTE DES PROBLEMES *Biffer les mentions qui correspondent à la situation*		**PLAN D'ACTION SUGGERE** *Biffer si effectué*	
❑	1. perte de poids de ≥5% en 30 jours ?	❑	1-4. Peser une fois par semaine *Continuer au §5*
❑	2. perte de poids de ≥10% en 180 jours ?		
❑	3. IMC ≤ 21 ?		
❑	4. Laisse plus de 25% de son repas (depuis 7j)?		
	5. Indicateurs de qualité - le patient présente-t-il ?		5.
❑	A. Impaction fécale	❑	A. Programme de régularisation du transit
❑	B. Infection	❑	B. Informer médecin
❑	C. Sonde gastrique	❑	C. Contacter diététicien pour évaluation
❑	D. Déclin fonctionnel (AVJ)	❑	D. Avis ergo/kiné
❑	E. Apparition escarre	❑	E. Programme de prévention
❑	6. Patient boit < 1500ml/j depuis 7 J ou Patient sous restriction hydrique ?	❑	6. Développer plan structuré pour assurer ingestion (par ex.: 300 mL pendant repas, 240 mL entre repas).
❑	7. Données de laboratoire disponibles (<30j) Hb Hct GB Na K Gly Urée Cr Alb Chol EMU:	❑	7. Informer le médecin
	8. Problèmes physiques / psychologiques		8.
❑	A. Peau	❑	A. Implément Programme Escarre
❑	B. Température	❑	B. Implément protocole de l'institution
❑	C. Diarhées	❑	C. Implément protocole de l'institution
❑	D. Constipation	❑	D. Implément protocole de l'institution
❑	E. Médicaments	❑	E. Contacter le pharmacien clinicien (revue)
❑	F. Dépression/Anxiété	❑	F. Evaluer les affects dépressifs (GDS)
❑	G. Perte d'appétit	❑	G. Implément programme Appétit
❑	H. Nausées/Vomissements	❑	H. Implément protocole de l'institution
❑	I. Dysphagie	❑	I. Appeler Diététicien pour évaluation
❑	J. Dentition	❑	J. Appeler Dentiste
❑	9. Insatisfait par la nourriture offerte (ethnique)	❑	9. Changer le régime, apporter aliments préférés
❑	10. Patient a besoin d'assistance pour repas	❑	10. Apporter à l'heure une assistance polie pendant repas
		❑	Apporter plateau équipé
		❑	Supervision des professionnels et aides soignants
		❑	Augmenter personnel qualifié
		❑	Envisager programme d'enseignement de l'équipe
❑	11. Patient présente agitation motrice, tremor, wandering	❑	11. Envisager évaluation par ergothérapeute
		❑	Apporter assistance à l'heure des repas
		❑	Apporter appareil de self-service (orthèses)
		❑	Offrir repas à manger avec les doigts
❑	12. Environnement distrayant, inadapté	❑	12. Minimiser les distractions pendant repas
		❑	Compagnon de chambre adapté
❑	13. Salle à manger mal éclairée	❑	13. Evaluer le lieu du repas
❑	14. Patient a besoin de 30 à 60 min pour manger	❑	14. Implément du programme repas (par ex. lieu séparé pour handicapé, doubler le service)
❑	15. ne tolère pas la consistance du repas	❑	15. Appeler diététicien pour adapter consistance
❑	16. Suppléments donnés aux heures de repas	❑	16. Optimiser l'horaire
❑	17. Médicaments donnés aux heures de repas	❑	17. Appeler pharmacien pour temps d'administration approprié
❑	18. Vision altérée	❑	18. S'assurer que les lunettes sont appropriées et portées pendant les repas
❑	19. Audition altérée	❑	19. S'assurer que l'appareil acoustique est placé
❑	20. Goût et odorat altérés	❑	20. Aliments de saison,
		❑	Servir à température adéquate

GUIDE CLINIQUE DE PREVENTION ET DE TRAITEMENT DE LA MALNUTRITION EN INSTITUTION

Facteurs déclenchants:
Perte de poids de 5% en 30 j ou 10% en 180 j
ou IMC <=21
ou laisse 25% des repas sur les plateaux

Peser 1X/sem

Evaluation des données de laboratoire → **Evaluer:**
Alb <3.4g/dL
Chol <160 mg/dL
Hb<10g/dL
Transferrin<180

traiter

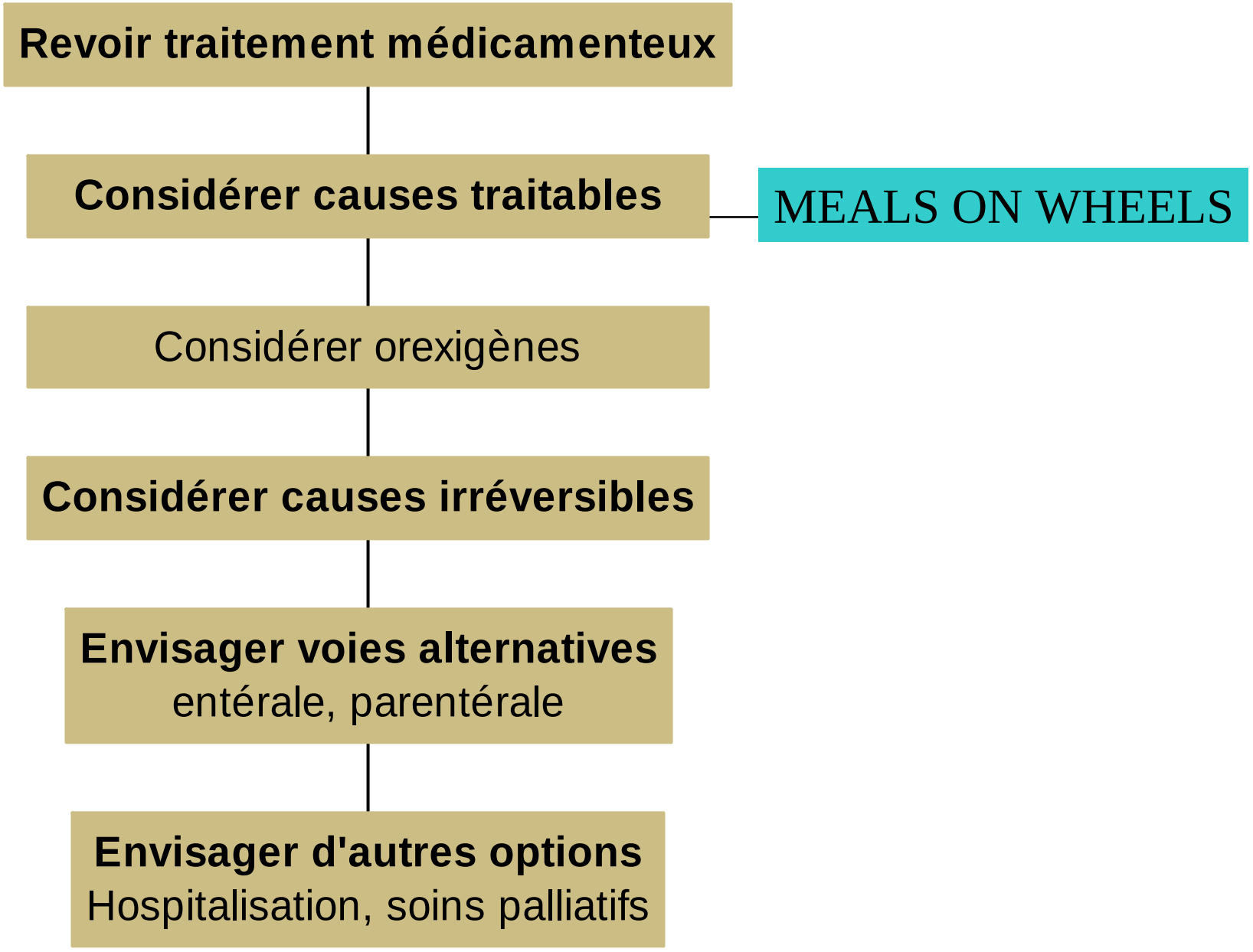
Considérer les indicateurs de qualité
causes
conditions associées → Impaction fécale
Infection
Sonde gastrique
Déclin AVJ
Escarres

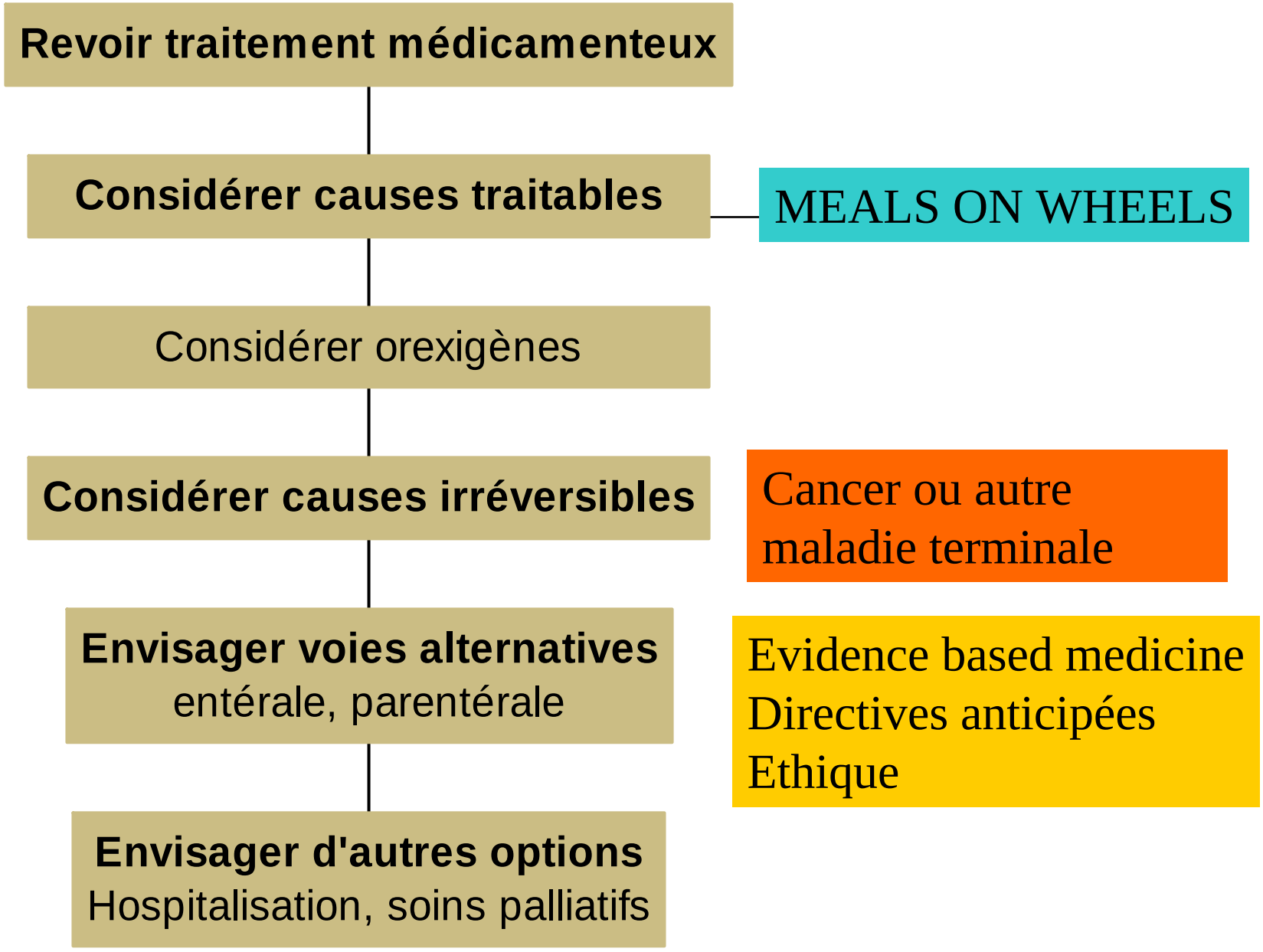
traiter

Considérer le statut d'hydratation
>1500 ml/J

Si ingestas diminuent brutalement
Considérer delirium, maladie aiguë
douleur, Dépression → CAM
Doloplus
GDS
Cornell

traiter


Revoir traitement médicamenteux
Considérer causes traitables
MEALS ON WHEELS
Considérer orexigènes
Considérer causes irréversibles
Envisager voies alternatives
entérale, parentérale
Envisager d'autres options
Hospitalisation, soins palliatifs


Revoir traitement médicamenteux
Considérer causes traitables
MEALS ON WHEELS
Considérer orexigènes
Considérer causes irréversibles
Cancer ou autre maladie terminale
Envisager voies alternatives
entérale, parentérale
Evidence based medicine
Directives anticipées
Ethique
Envisager d'autres options
Hospitalisation, soins palliatifs

Comment dépister MPC ?

- Mesures anthropométriques
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  - *GNRI*
- Biologie:
  - *Préalbumine*

(i) BMI
0= >20.0
1= 18,5-20.0
2=<18.5

(ii) Weight loss in 3-6 months
0= <5%
1= 5-10%
2=>10%

(iii) Acute disease effect
Add a score of 2 if there has been or is likely to be no or very little nutritional intake for > 5 days

The Malnutrition Universal Screening Tool (MUST) (BAPEN)

(i) BMI
0= >20.0
1= 18,5-20.0
2=<18.5

(ii) Weight loss in 3-6 months
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2=>10%

(iii) Acute disease effect
Add a score of 2 if there has been or is likely to be no or very little nutritional intake for > 5 days

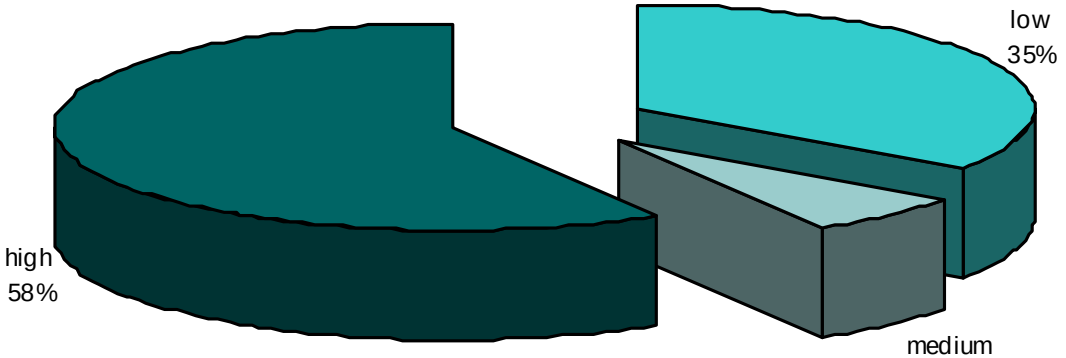
Overall risk of undernutrition		
0 **LOW** *Routine clinical care*	**1** **MEDIUM** *Observe*	**≥2** **HIGH** *Treat*
Repeat screening **Hospital**: every week **Care Homes:** every month **Community:** every year>75y	**Hospital:** document dietary and fluid intake for 3 days **Care Homes:** (as for hospital) **Community:** repeat screening 1-6 mths	**Hospital:** refer to dietitian or implement local policies (supplements) **Care Homes:** (as for hospital) **Community:** (as for hospital)

- Adequate intake (or improving to near normal)
- Little or no clinical concern

- Inadequate intake or deteriorating
- Clinical concern

The Malnutrition Universal Screening Tool (MUST) (BAPEN)

Risk of malnutrition (MUST)



MUST: 65% of patient at risk

Pepersack on behalf of the College for Geriatrics J Nutr Health Ageing in press

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SNAQ

- Did you lose weight unintentionally?
- More than 6 kg in the last 6 months
- More than 3 kg in the last month
- Did you experience a decreased appetite over the last month?
- Did you use supplemental drinks or tube feeding over the last month?

Wilson et al. Am J Clin Nutr 2005;82:1074–81.

Kruizenga et al. Clinical Nutrition 2005; 24: 75–82

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Geriatric Nutritional Risk Index: a new index for evaluating at-risk elderly medical patients[1–3]

Olivier Bouillanne, Gilles Morineau, Claire Dupont, Isabelle Coulombel, Jean-Pierre Vincent, Ioannis Nicolis, Simone Benazeth, Luc Cynober, and Christian Aussel

$$GNRI = [1.489 \times \text{albumin (g/L)}] + [41.7 \times (\text{weight/WLo})]$$

Relation between outcome score and nutritional variables[1]

	r	*P*[2]
Albumin	0.31	< 0.001
Prealbumin	0.18	0.02
CRP	−0.24	0.001
BMI	0.05	0.5
Weight:WLo	0.06	0.4
GNRI	0.27	< 0.001

Am J Clin Nutr 2005;82:777– 83.

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Marqueur biologique «idéal» critères:

- identification spécifique de la malnutrition ou du patient à risque
- sensible à des variations diététiques à court terme
- peu affecté par processus pathologique
- t1/2 court
- PM faible
- améliore le monitoring diététique

Protéines plasmatiques

Protéines	PM	t ½	Normes
albumine	65000	20 j	33-48 g/L
fibronectine	250000	15 h	220-400 mg/L
préalbumine	54980	48 h	160-350 mg/L
RBP	21000	24 h	30-60 mg/L
IGF1	7650	2 h	0.10-0.40 mg/L
transferrine	76000	10 j	1.6-3.6 g/L
TNFα	18500	<1 h	0.0002-0.007 pg/L
IL 1, 2, 4, 6	15-25000	<1 h	0.0001-2 pg/L

Spiekerman A. Analytical Chemistry 1995

Incorporation de la préalbumine

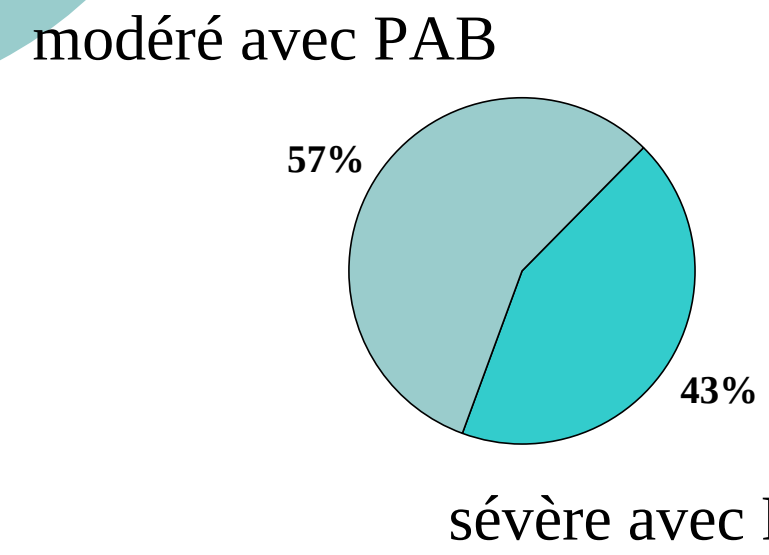
Critères d'évaluation de MPC

Albumine g/L	**Risque de MPC**	**PAB mg/L**
25-32	Modéré	100-170
< 25	Sévère	<100
>32	Nul	>170

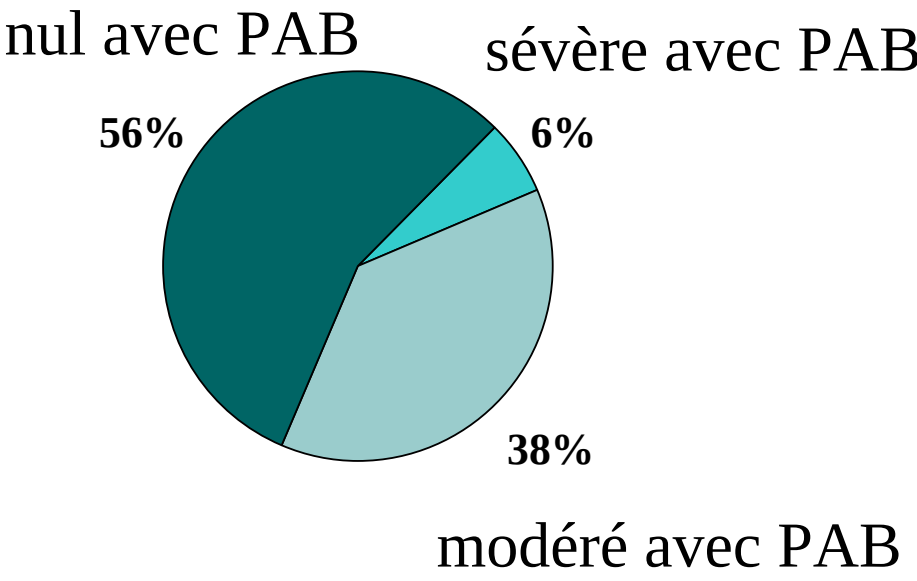
Mears E. Nutrition 1996

Evaluation du risque de MPC alb versus PAB

modéré avec alb
n=50

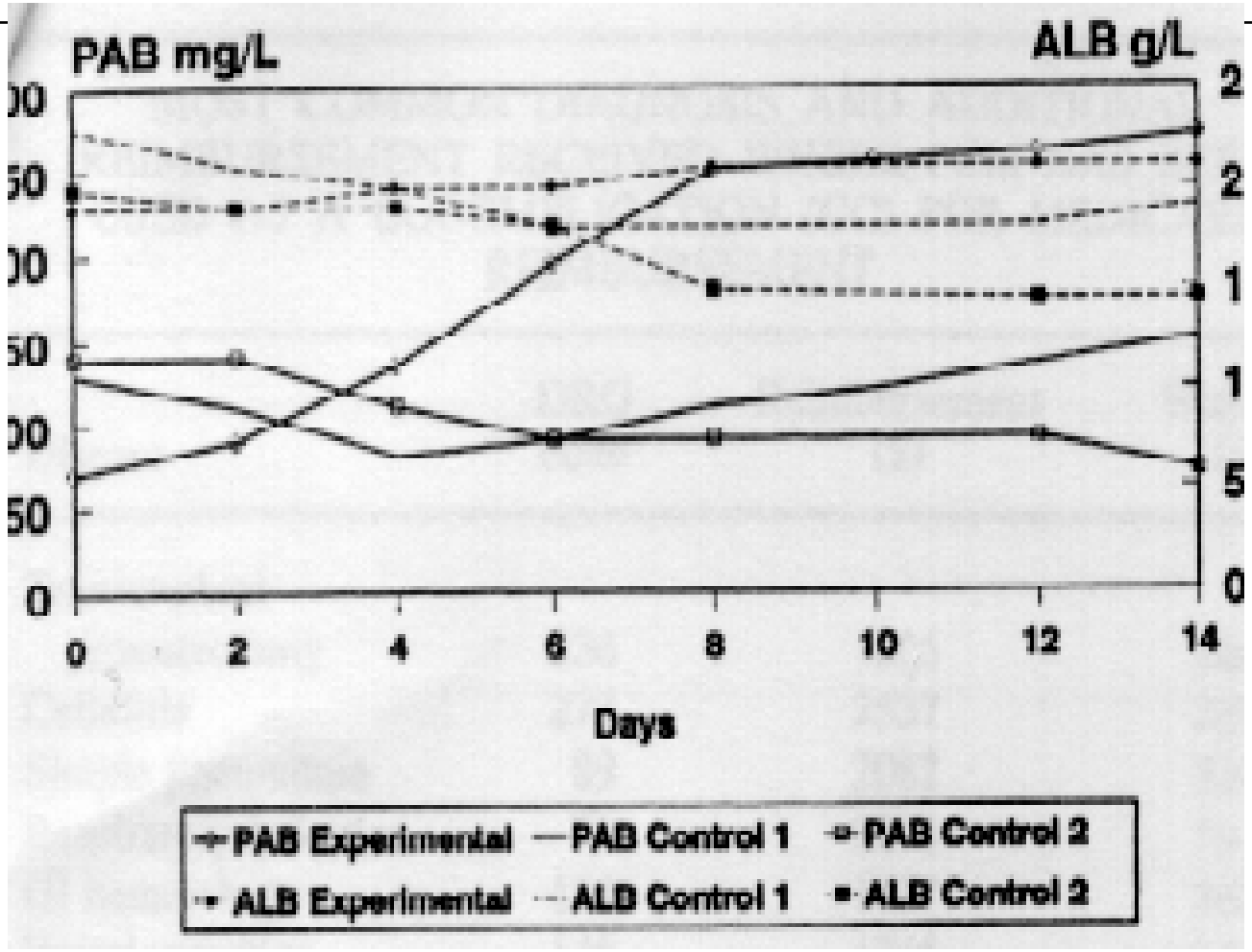


nul avec alb
n=35



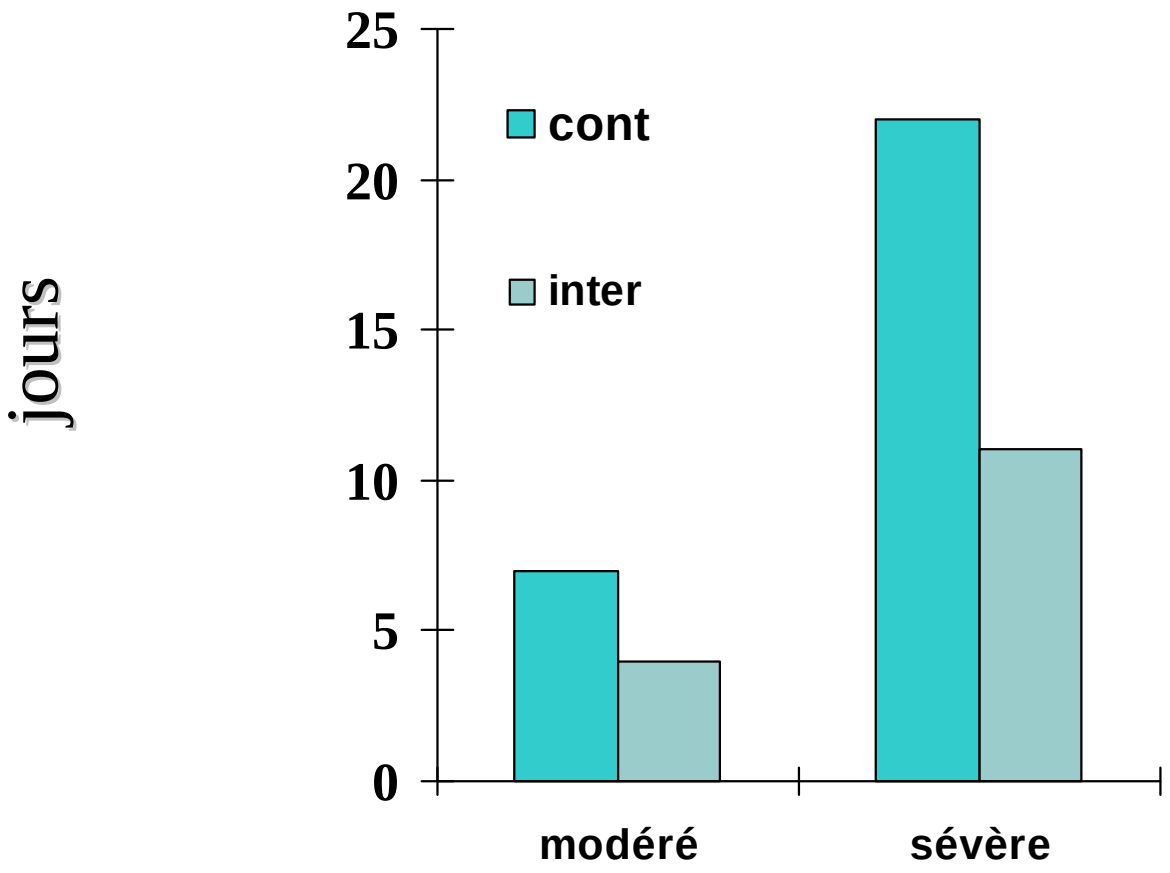
Mears A. Nutrition 1996

Evolution biologique



Mears et al. 1996

Durée d’hospitalisation et MPC



Vitamines et oligoéléments

- Ac Folique
- B 12
- B1

- Zn

Vitamines B12 & Folates

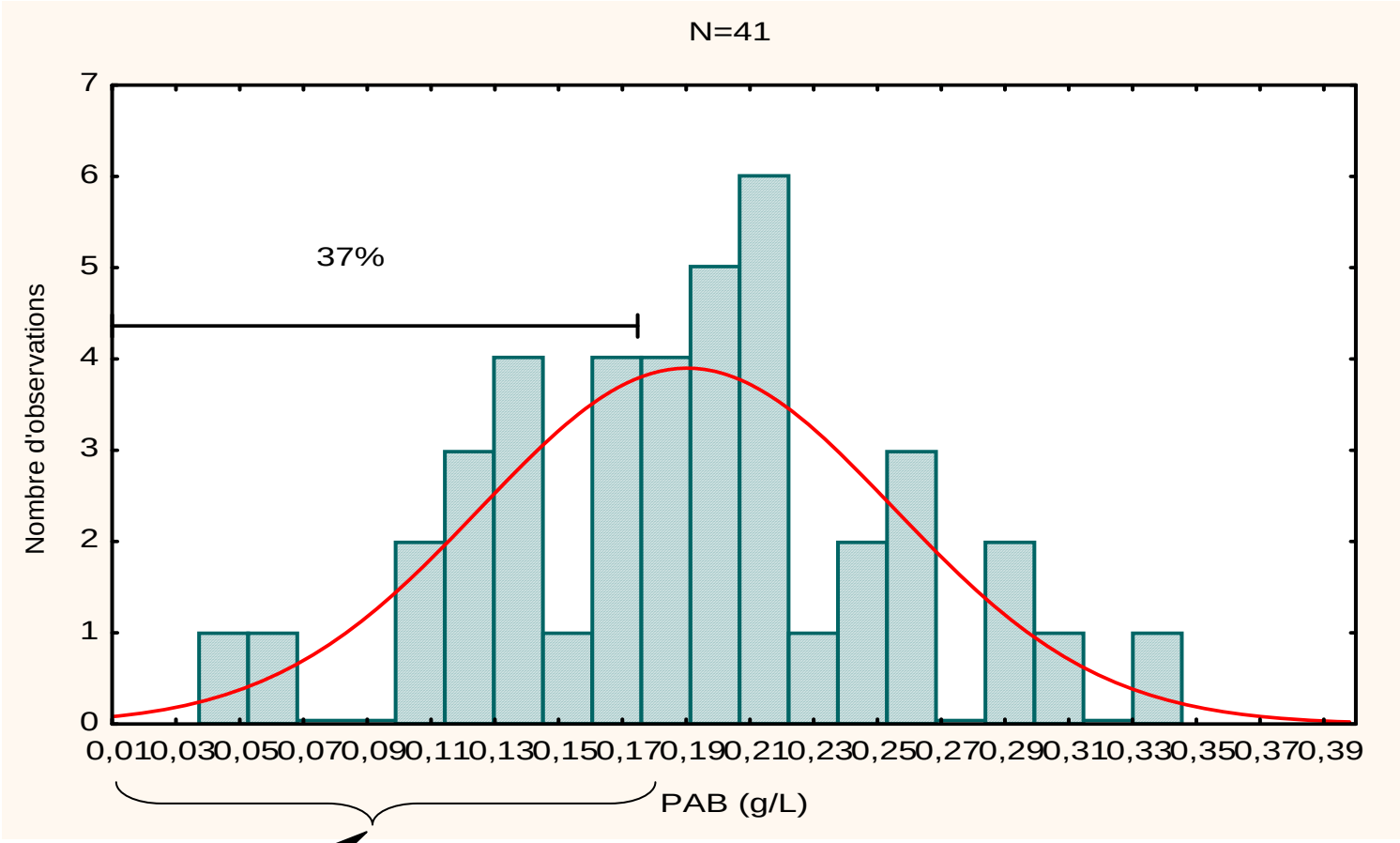
Key points

- déficience en Vitamine B12 affecte 5% des sujets entre 65–74 ans et 10% des sujets de plus de 75 ans.
- déficience en Folates est fréquente, il n'y a que 10% des sujets avec hypovitaminose B12 qui ont une déficience en folates.
- Cliniciens doivent rechercher ces déficits en gériatrie
- la détection de ces déficits permet de réduire l'incapacité fonctionnelle en gériatrie

Age and Ageing 2004; **33:** 34–41

Et chez nous ?

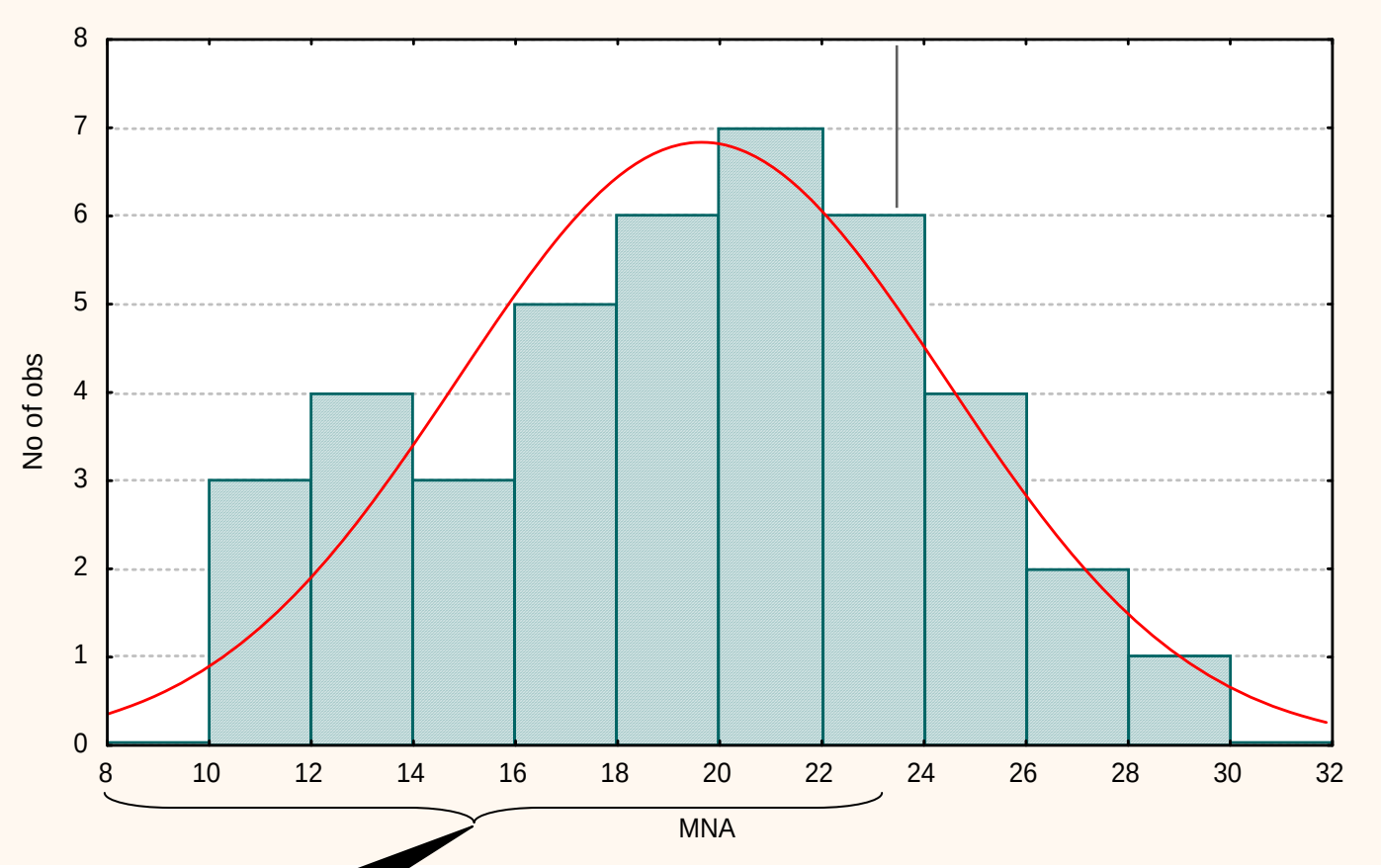
Histogram of frequencies of serum prealbumin value at discharge



37% of patients presenting PAB <17g/L

Benoit F, Rotsaert P, Bastan M, Willems D, Duchateau J, Pepersack T . SBGG Liège 1999

Histogram of frequencies MNA at discharge



60% of patients presenting MNA <23.5

Benoit F, Rotsaert P, Bastan M, Willems D, Duchateau J, Pepersack T . SBGG Liège 1999

Clinical Section

Gerontology

Gerontology 1999;45:96–101

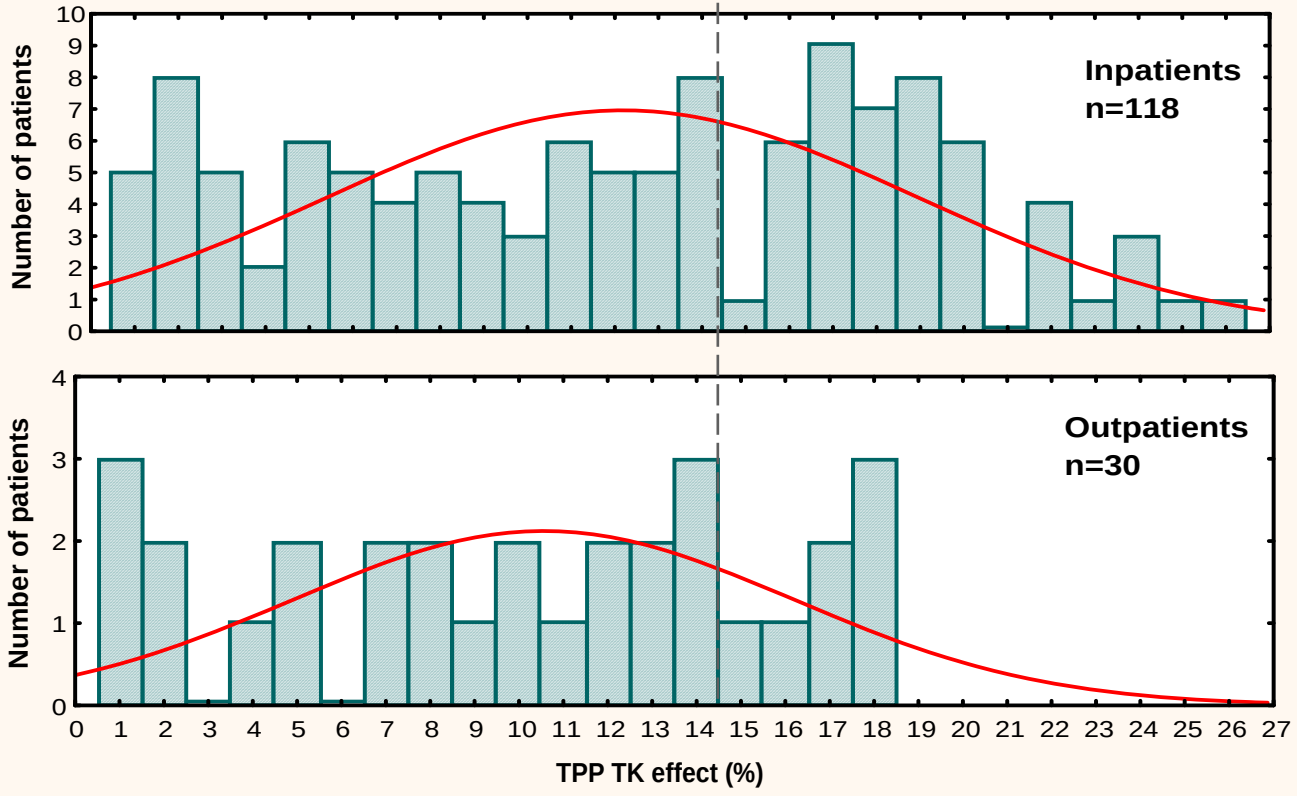
Clinical Relevance of Thiamine Status amongst Hospitalized Elderly Patients

Thierry Pepersack[a] Johanna Garbusinski[b] Jean Robberecht[b] Ingo Beyer[a] Dominique Willems[c] Michel Fuss[b]

[a]Division of Geriatric Medicine, [b]Department of Internal Medicine and [c]Department of Clinical Chemistry, Brugmann University Hospital, Free University of Brussels, Belgium

Histogram of frequencies of the values of Thiamine Pyrophosphate Transketolase effects

39% of inpatients presenting TPP TK>15%



Pepersack et al. Gerontology 1999:45; 96-101

Characteristics of inpatients according to their thiamine status

	TPP TK effect ≤ 15 (n = 72)		TPP TK effect > 15 (n = 46)		p <
	mean	SD	mean	SD	
TK TPP effect	7.7	4.4	19.2	2.6	0.001
Socioeconomic data					
Age, years	83	6.6	84	6.5	n.s.
Hospital stay, days	27	15	25	18	n.s.
Family composition	1.3	0.5	1.3	0.6	n.s.
Number of financial supports	1.2	0.4	1.3	0.5	n.s.
Preadmission residence					
Private	38 (53%)		6 (13%)		
Institutions	34 (47%)		40 (87%)		0.001

Pepersack et al. Gerontology 1999:45; 96-101

Characteristics of inpatients according to their thiamine status

	TPP TK effect ≤ 15 (n = 72)		TPP TK effect > 15 (n = 46)		p <
	mean	SD	mean	SD	
TK TPP effect	7.7	4.4	19.2	2.6	0.001
Diagnosis					
Delirium	40 (56%)		23 (50%)		n.s.
Alzheimer's disease	7 (10%)		9 (20%)		0.001
Depression	7 (10%)		9 (20%)		0.001
Falls	13 (4%)		18 (39%)		0.001
Cardiac failure	21 (29%)		21 (46%)		0.001
Medication					
Furosemide	6 (8%)		7 (15%)		0.01

Pepersack et al. Gerontology 1999:45; 96-101

Clinical relevance of thiamine status amongst hospitalized elderly patients

- **Conclusions:**
  - The prevalence of thiamine deficiency approached 40%.
  - Institutionalized subjects were at particular risk of developing thiamine deficiency.
  - Its clinical relevance on functional status and on cognitive function remained not significant.
  - By contrast, a high proportion of falls, Alzheimer's disease, depression, cardiac failure and furosemide use could have been associated to thiamine deficiency.

Pepersack et al. Gerontology 1999:45; 96-101

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Archives of Gerontology and Geriatrics
33 (2001) 243–253

ARCHIVES OF GERONTOLOGY AND GERIATRICS

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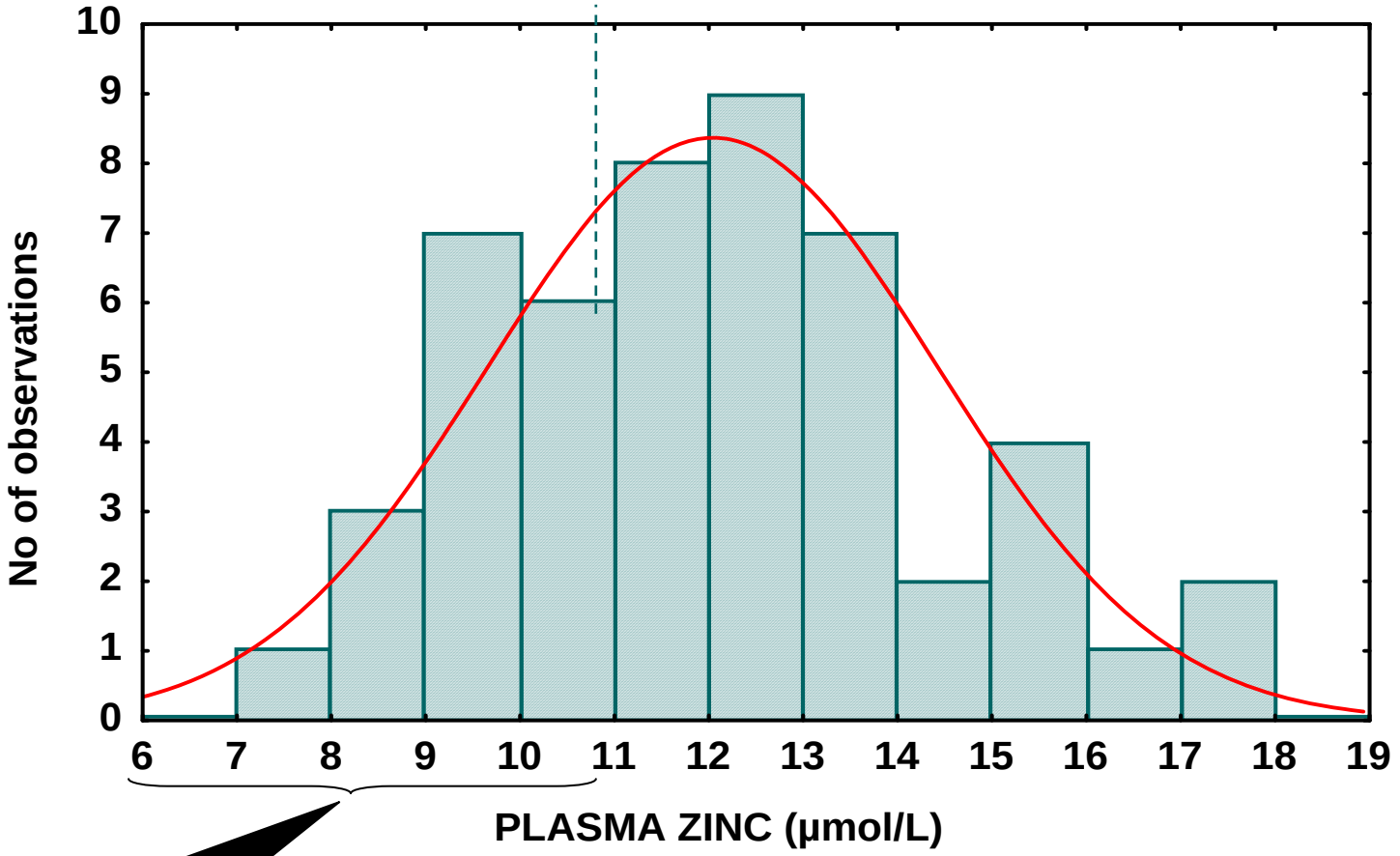
Prevalence of zinc deficiency and its clinical relevance among hospitalised elderly

Thierry Pepersack [a,*], Philippe Rotsaert [a], Florence Benoit [b], Dominique Willems [b], Michel Fuss [c], P. Bourdoux [d], Jean Duchateau [e]

Pepersack et al. Arch Gerontol Geriatrics 2001;33:243-253.

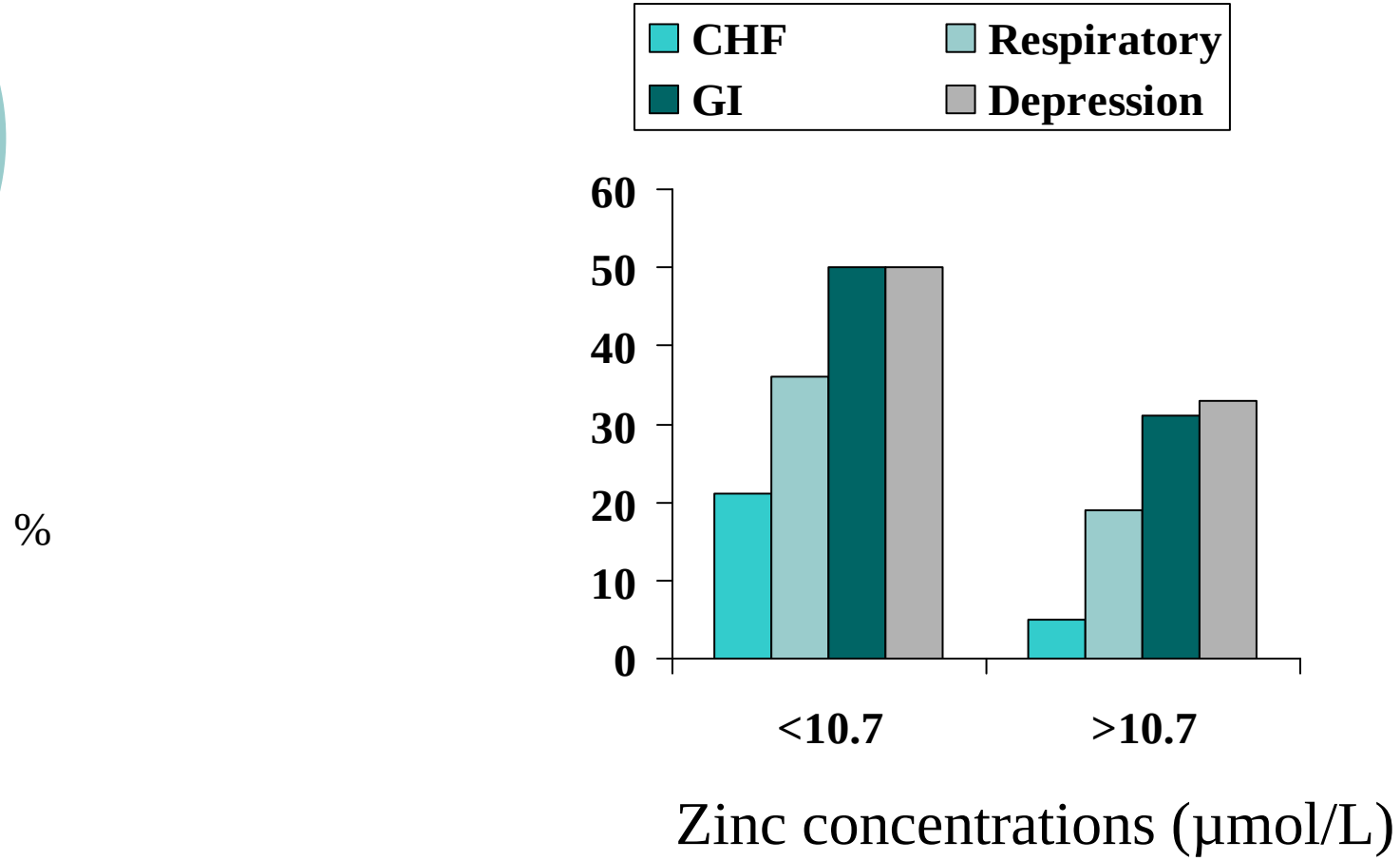
Histogram of frequencies of the values of serum Zinc concentrations



28% of patients presenting Zn<10.7 µM

Pepersack et al. Arch Gerontol Geriatrics 2001;33:243-253.

Co-morbidity f(Zn status)



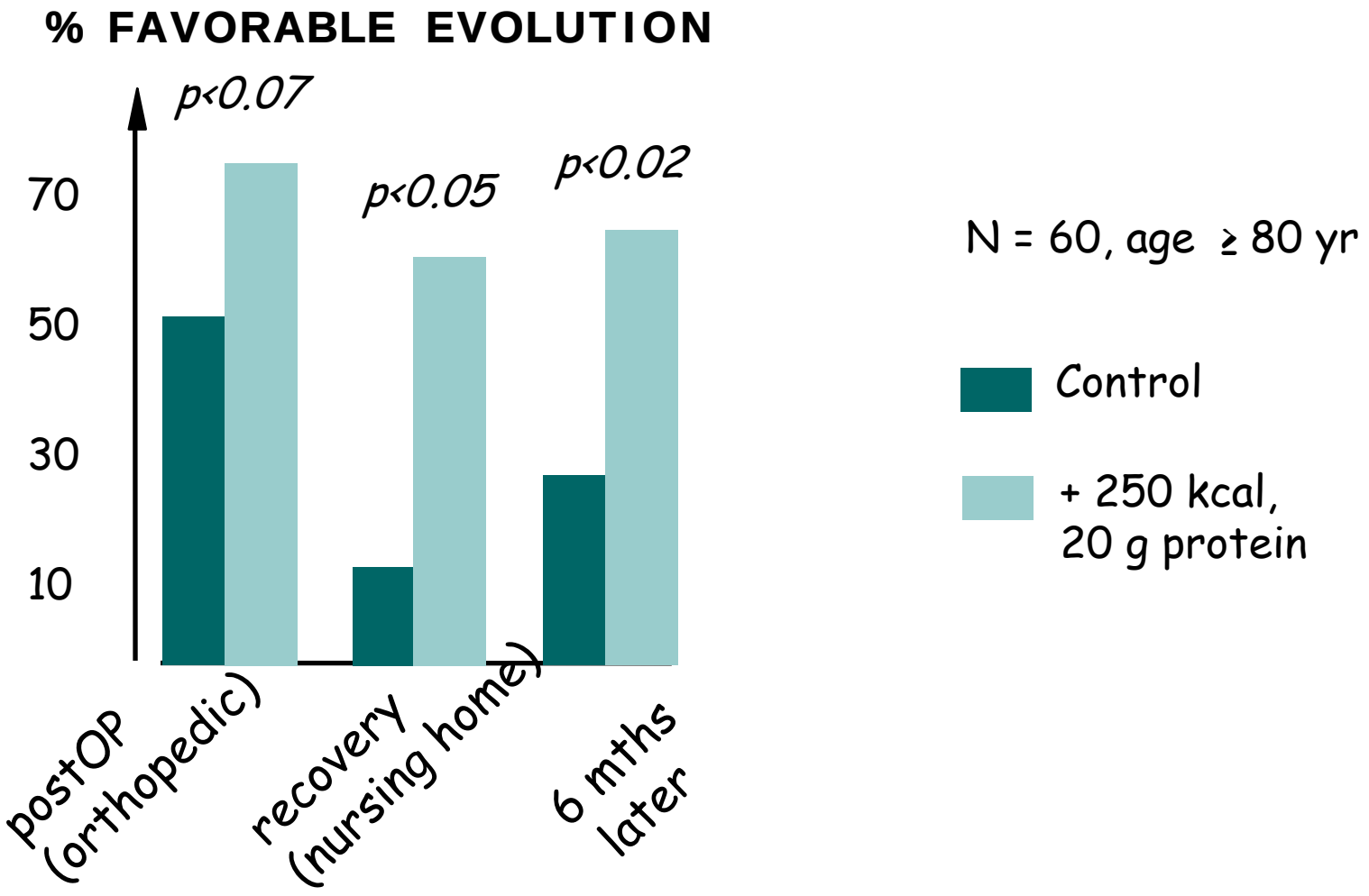
Pepersack et al. Arch Gerontol Geriatrics 2001;33:243-253.

Prevalence of zinc deficiency and its clinical relevance among hospitalised elderly

Pepersack et al. Arch Gerontol Geriatrics 2001;33:243-253.

Une intervention nutritionnelle est-elle efficace ?

Dietary supplementation in elderly patients with fractured neck of the femur

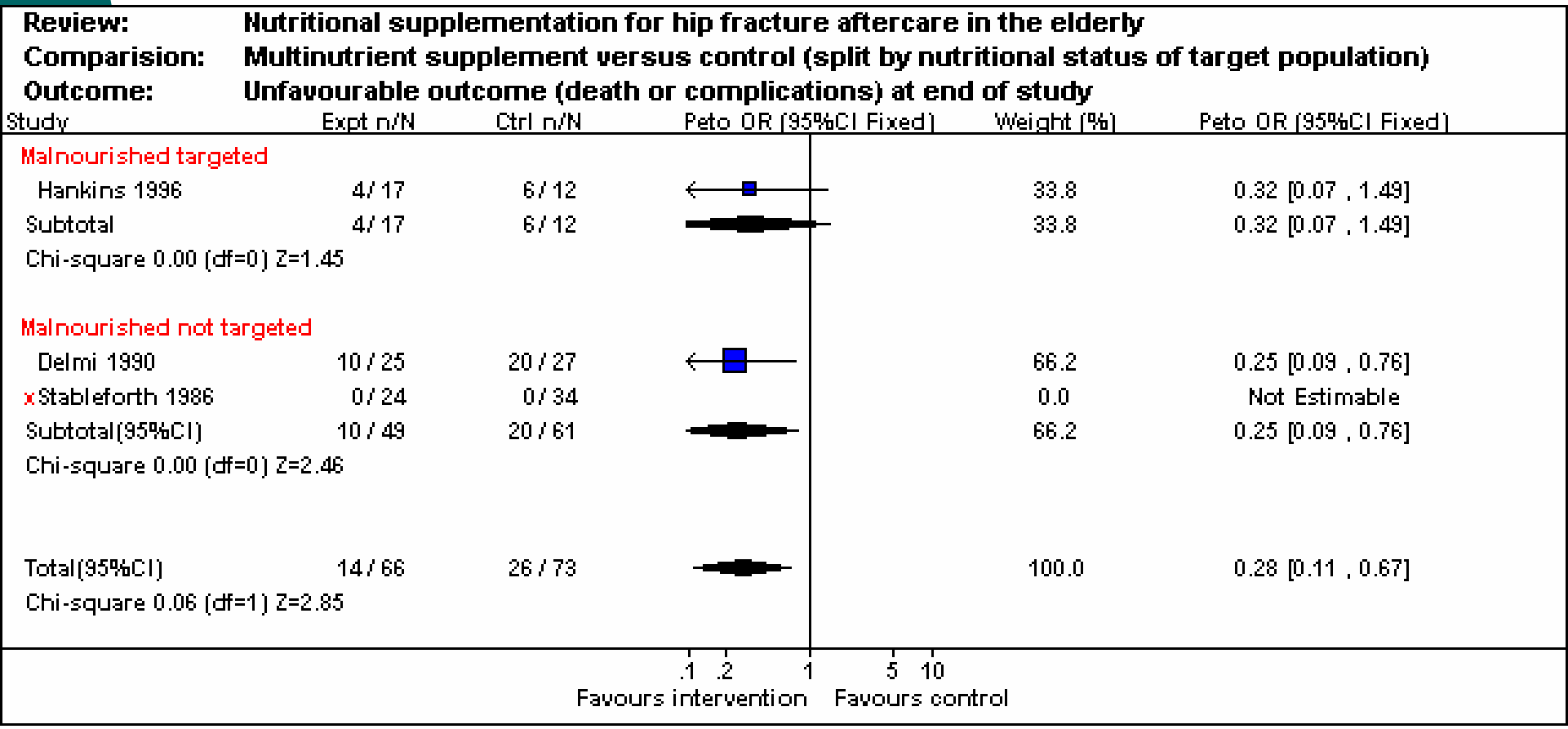


Delmi M et al. Lancet 335, 42-46, 1990

Review: Nutritional supplementation for hip fracture aftercare in the elderly

Comparision: Multinutrient supplement versus control (split by nutritional status of target population)

Outcome: Unfavourable outcome (death or complications) at end of study



Meta-Analysis: Protein and Energy Supplementation in Older People

- 55 trials of protein and energy supplementation in people older than 65 years of age.
- Among older and undernourished hospitalized patients, supplements sometimes *reduced*
  - Mortality
  - and complications, such as infections,poor wound healing, and pressure sores.
  - Oral supplements also sometimes caused nausea, vomiting, and diarrhea.

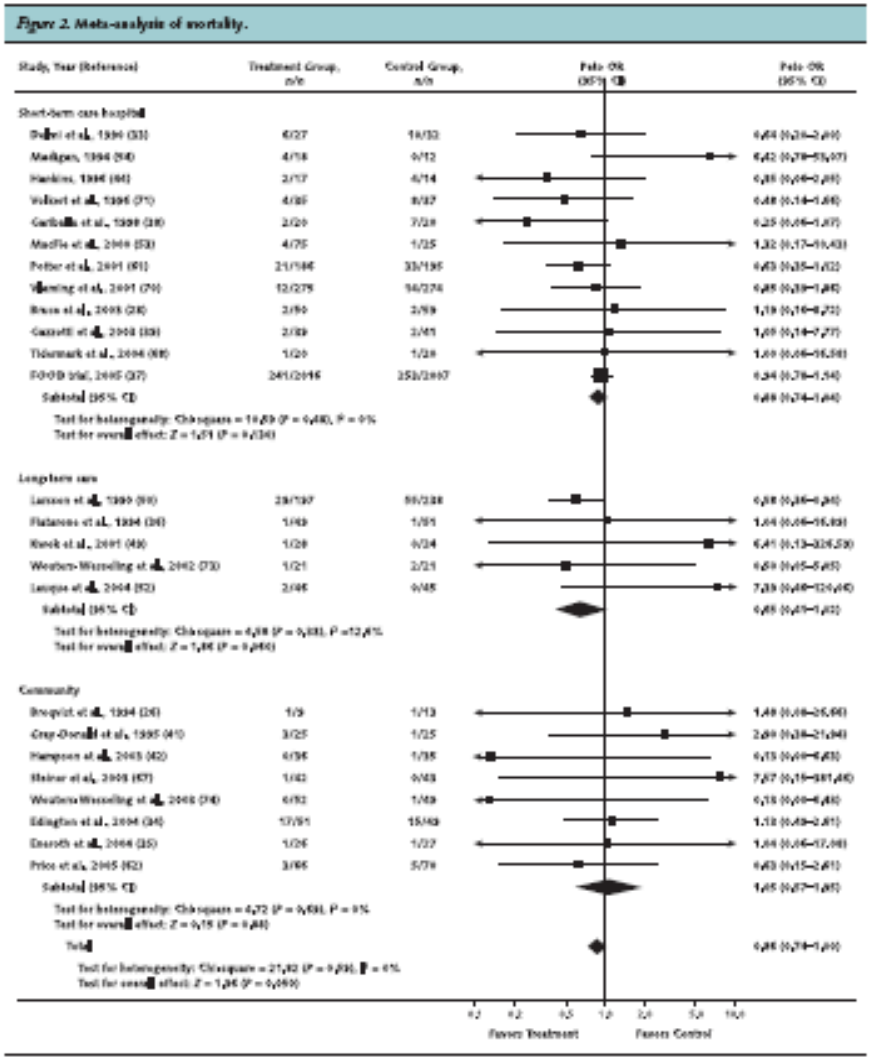
Milne AC et al. Ann Intern Med. 2006;144:37-48.

Annals of Internal Medicine | REVIEW

Meta-Analysis: Protein and Energy Supplementation in Older People

Anne C. Milne, MSc; Alison Avenell, MD; and Jan Potter, MB ChB

- Oral nutritional supplements can improve nutritional status and seem to reduce mortality and complications for undernourished elderly patients in the hospital.
- Current evidence does not support routine supplementation for older people at home or for well-nourished older patients in any setting.



Ann Intern Med. 2006;144:37-48.

Donc…

1. *haute prévalence de dénutrition*
2. *intervention nutritionnelle efficace*

Que faire ?

« cycle of quality»

1. *First, you have to say what you intend to do;*
2. *Then, you have to do what you said;*
3. *And finally you have to assess and write what you have done…*

The Journal of Nutrition, Health & Aging©
Volume 6, Number 5, 2002

THE JOURNAL OF NUTRITION, HEALTH & AGING©

EXAMINING THE EFFECT OF INTERVENTION TO NUTRITIONAL PROBLEMS OF HOSPITALISED ELDERLY: A PILOT PROJECT

T. PEPERSACK, M. CORRETGE, I. BEYER, B. NAMIAS, S. ANDRÉ,
F. BENOIT, A. MERGAM, C. SIMONETTI

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Journal of Gerontology: MEDICAL SCIENCES
2005, Vol. 60A, No. 6, 787–792

Outcomes of Continuous Process Improvement of Nutritional Care Program Among Geriatric Units

Thierry Pepersack

Service de Gériatrie, Hôpital Erasme, Bruxelles, Belgium.

Methodology

- Prospective survey of consecutive admissions between January and June 2001
- Comprehensive geriatric assessment
- Nutritional assessment (MNA & PAB & Lymphocyte)
- two phases project design:

Methodology: 2 phases

Observation

- Comprehensive geriatric assessment and MNA
- Routine nutrition

Intervention

- Comprehensive geriatric assessment and MNA
- **« Flow Chart»**
- **« Meals on Wheels » approach**

0 3 6 months

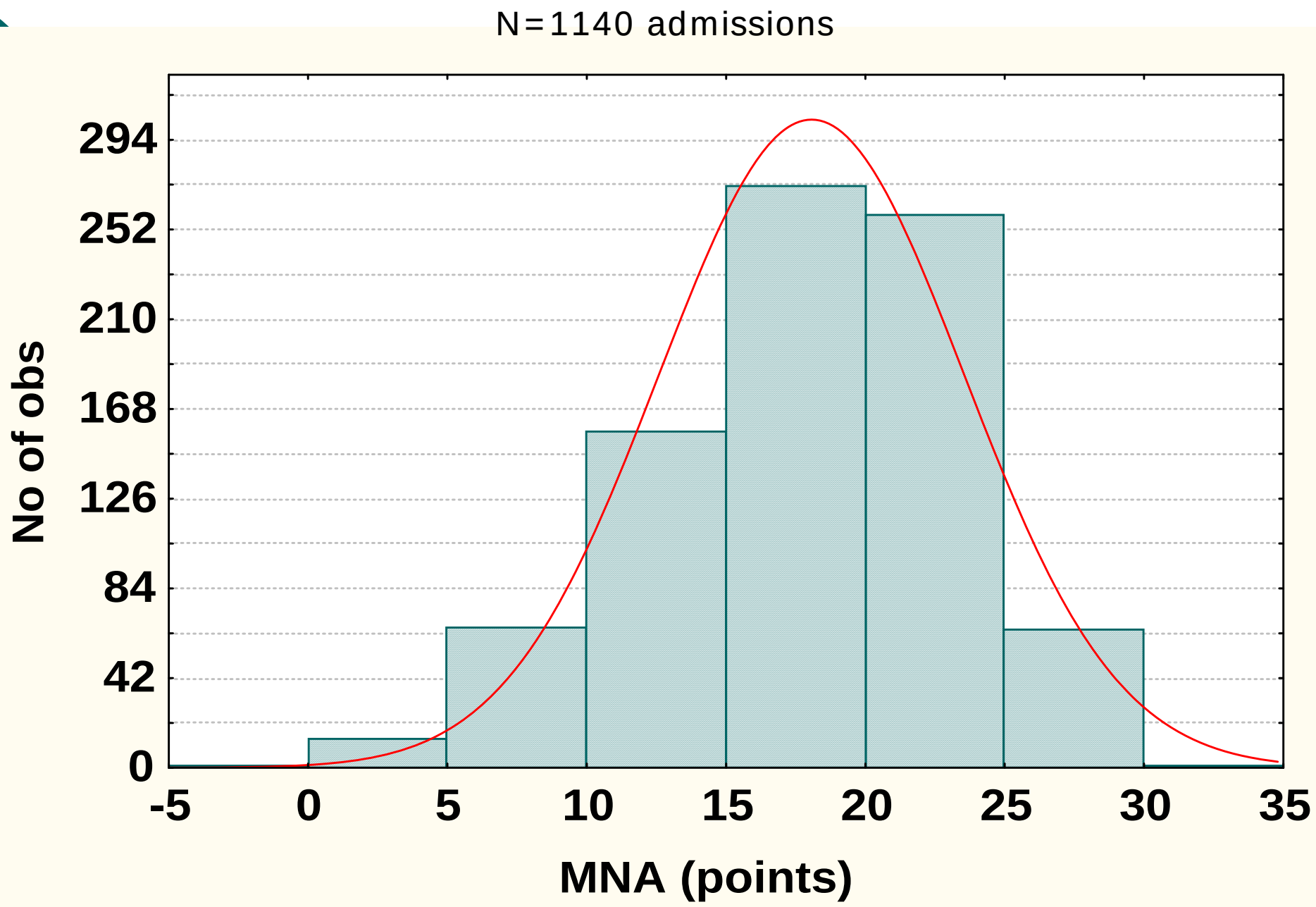
FLOW CHART SUGGESTING A RATIONAL APPROACH TO THE MANAGEMENT OF MALNUTRITION

- MNA <23.5 points and/or PAB<0.2 g/l
- START CALORIC SUPPLEMENTATION
- RULE OUT TREATABLE CAUSES/ UTILIZE MEALS-ON-WHEELS APPROACH
- IF PAB FAILS TO RAISE
- CONSIDER ENTERAL (or parenteral) NUTRITION
- CHECK PAB AT DISCHARGE

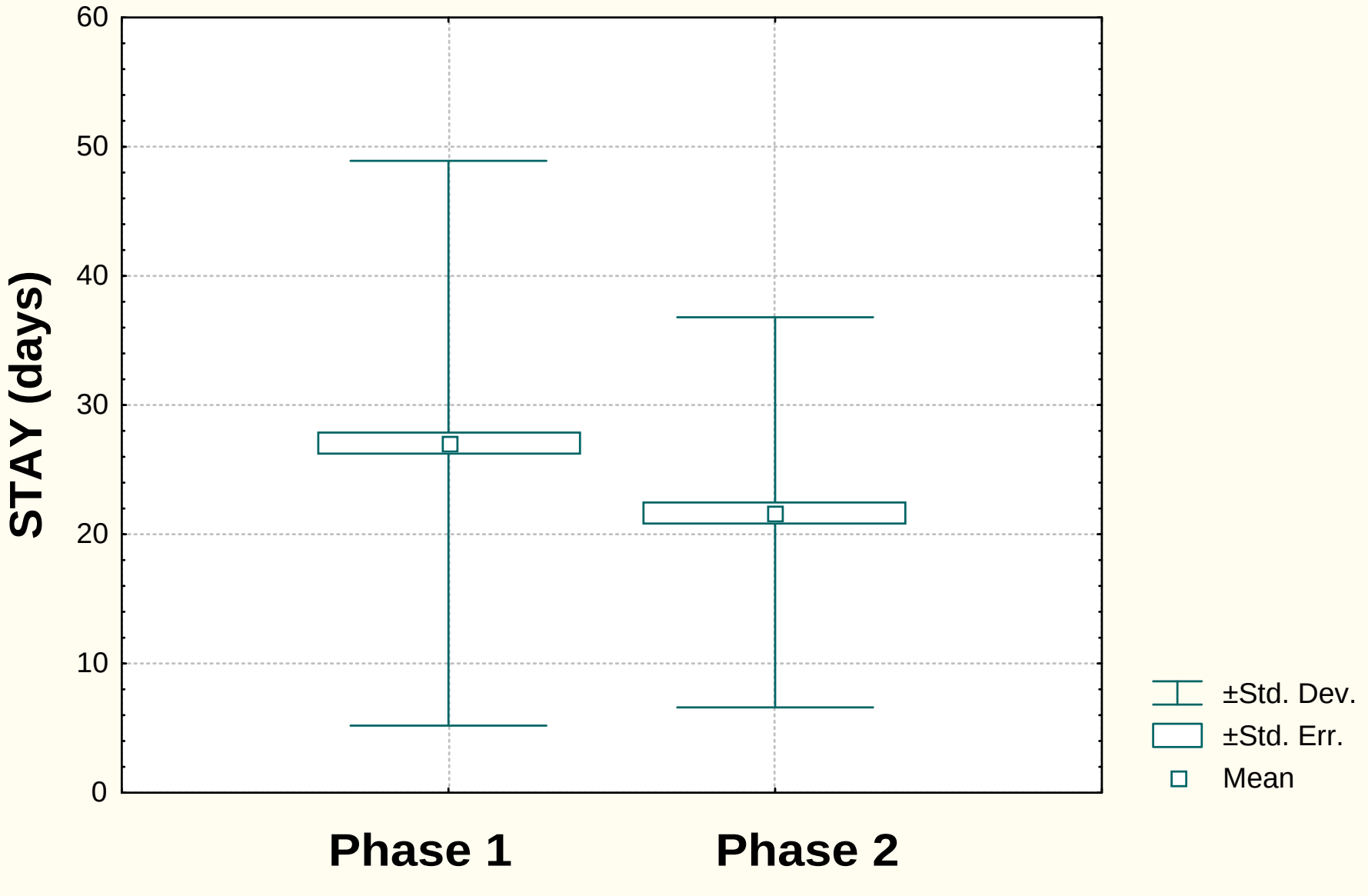
The « meals-on-wheels approach »

- Medicaments
- Emotions
- Anorexia
- Late life paranoia
- Swallowing (déglutition)
- Oral problems
- No money
- Wandering, (comportements)
- Hyperthyroidie, HPT1
- Entry (malabsorption)
- Eating problems (fiche)
- Low salts, low chol diets (régimes)
- Shopping

Morley 1994



Pepersack T on behalf of the College for Geriatrics. Outcomes of continuous process improvement of nutritional care program among geriatric units. J Gerontol A Biol Sci Med Sci 2005 60: 787-792.



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Characteristics of the patients according to period.

Phase I: observational period; phase II: interventional period.

	Phase I			Phase II			
	Valid N	Mean	Std.Dev.	Valid N	Mean	Std.Dev.	p
PAB variations (g/l)	483	-,007	,094	278	,009	,144	**,045595**
CRP variations	585	-2,2	10,5	328	-1,0	23,1	,276841
Lymphocytes count variations	626	55	472	340	48	574	,838543

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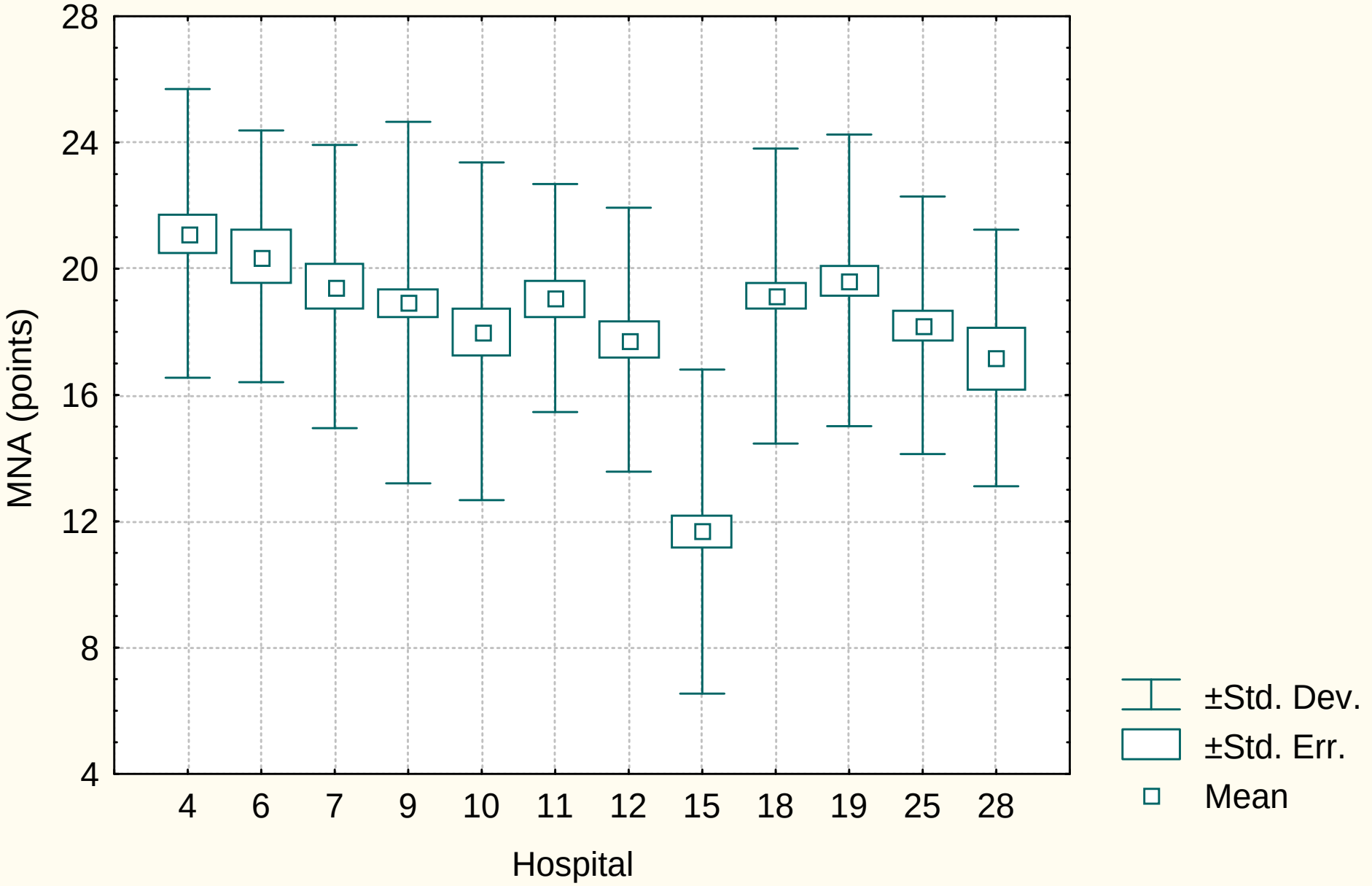

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Conclusions Quality Programs

- High prevalence of malnutrition among geriatric hospitalized patients
- Significant decreased hospitalization stay during 2nd phase (Confounding factor?)
- Significant decreased PAB concentrations at discharge during the first phase whereas PAB did not decrease during the 2nd phase

Pepersack T on behalf of the College for Geriatrics. Outcomes of continuous process improvement of nutritional care program among geriatric units. J Gerontol A Biol Sci Med Sci 2005 60: 787-792.

General Conclusions:

- Holistic approach of
  - Medical
  - Psycho-social
  - Functional
  - Environmental
  - ***Nutritional?***

problems

Stuck AE et al. Lancet 1993;342:1032-36

General Conclusions:

- Holistic approach of
  - Medical
  - Psycho-social
  - Functional
  - Environmental
  - **Nutritional** 👍

problems

Convivialité

- Les personnes âgées modulent leur consommation alimentaire en fonction de:
  - l'heure du jour, du nombre de convives, du contenu gastrique, et de leur état subjectif au même titre que les personnes plus jeunes.
- Les femmes mangent mieux (+13%) lorsque leur conjoint est présent,
- Les PA consomment plus (+23%) en présence de leur famille.

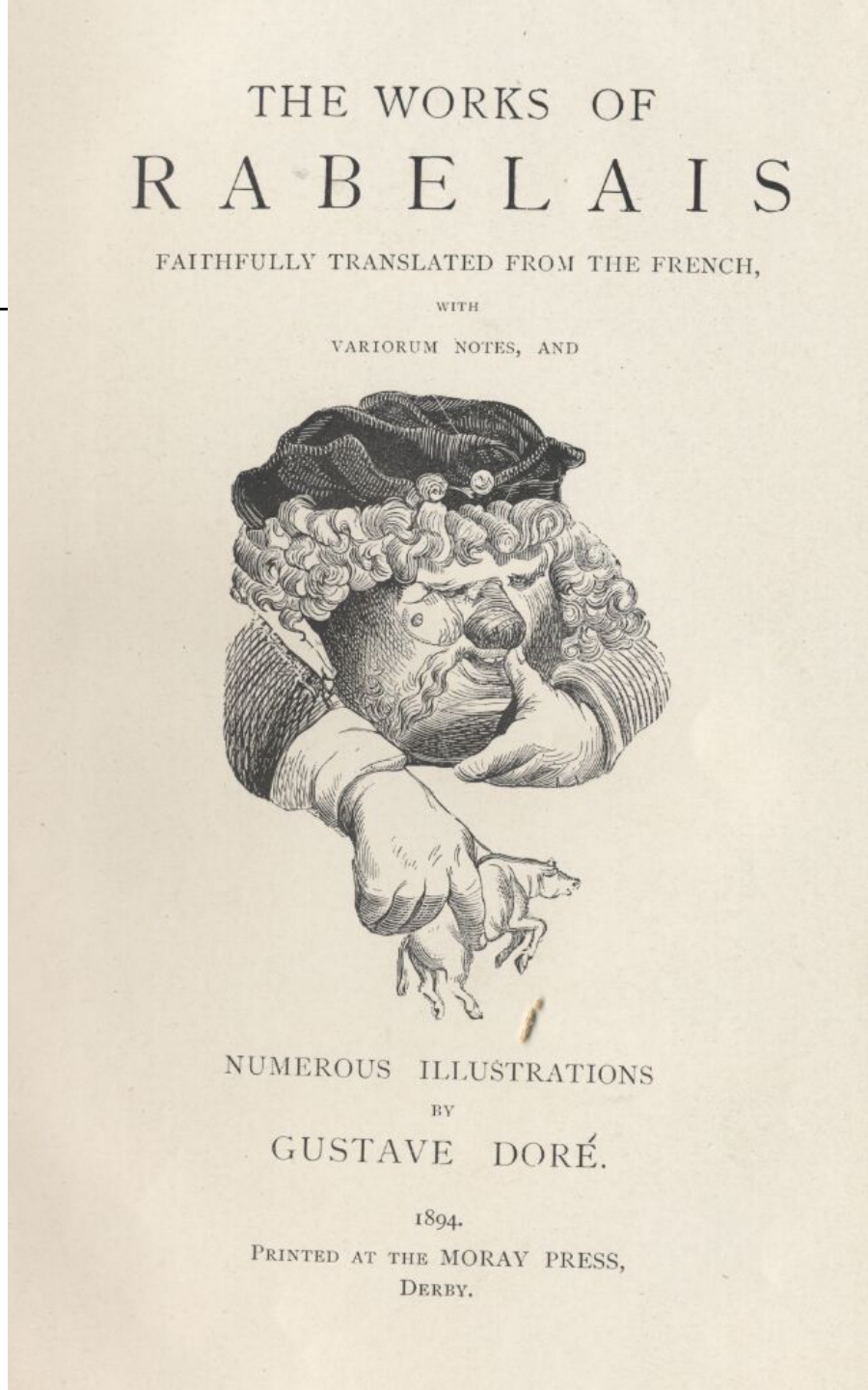
De Castro JM. How can eating behavior be regulated in the complex environments of free-living humans? *Neurosci Biobehav Rev* 1996;20:119-131

Convivialité

- La consommation augmente de 44% si les repas sont pris en groupe, les gens mangent plus le week-end et en fin de journée
- Un environnement calme, bien éclairé et convivial permet d'augmenter la prise alimentaire.
- Si les repas sont apportés à domicile, le fait que la personne qui apporte la nourriture reste présente pendant le repas réduit le risque de dénutrition.

Morley JE. Anorexia, sarcopenia, and aging. *Nutrition* 2001;17:660-663

hedonic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1894.
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