Immunité

Interventions nutritionnelles

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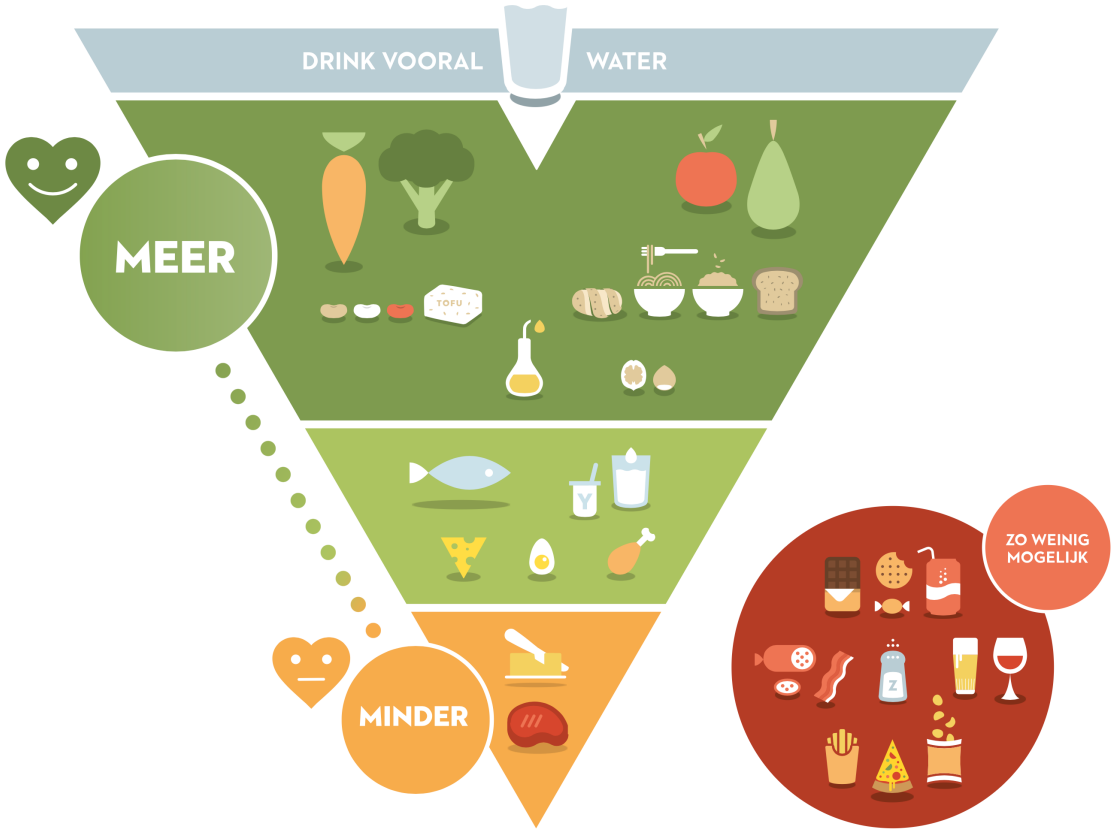
Interventions de base



Interventions de base

Interventions nutritionnelles

nutrients

MDPI

Review

A Review of Micronutrients and the Immune System–Working in Harmony to Reduce the Risk of Infection

Adrian F. Gombart [1], Adeline Pierre [2] and Silvia Maggini [2,*]

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check for updates

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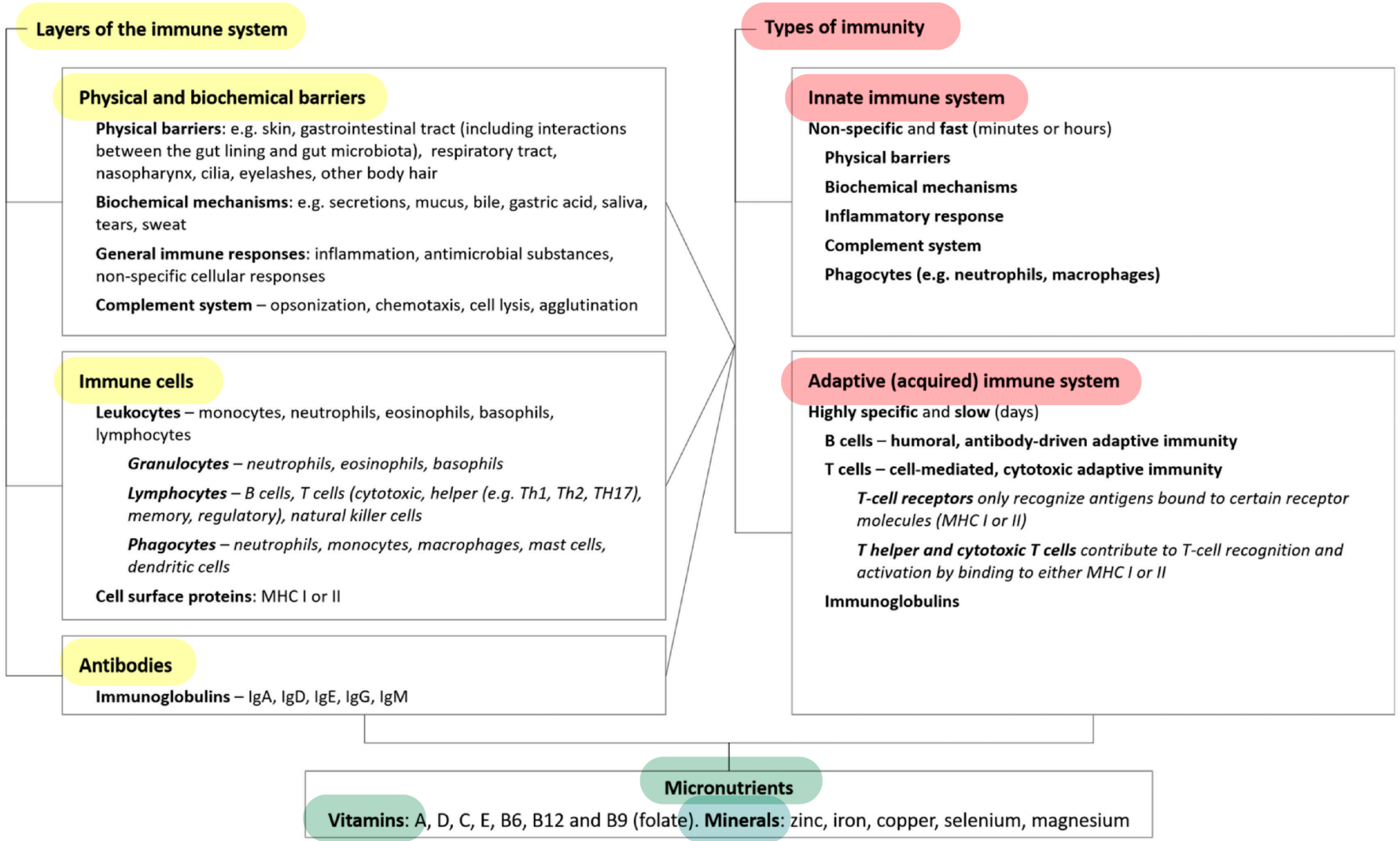

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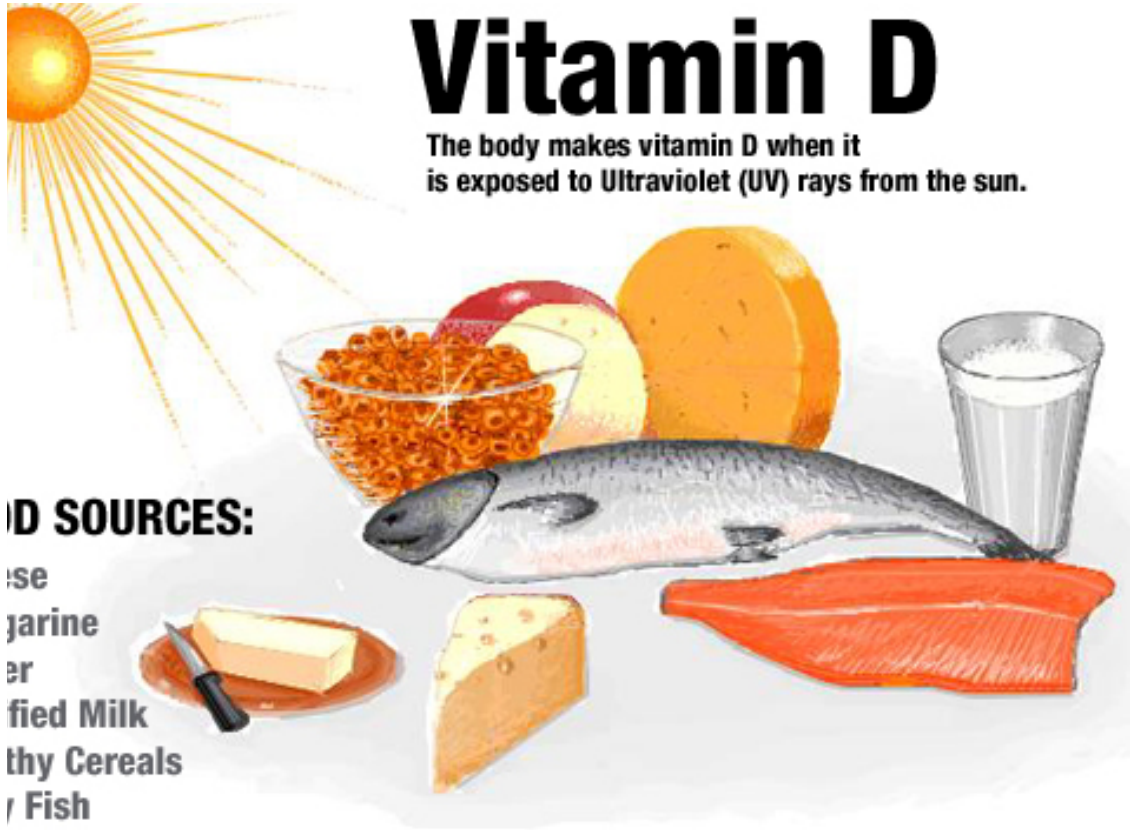
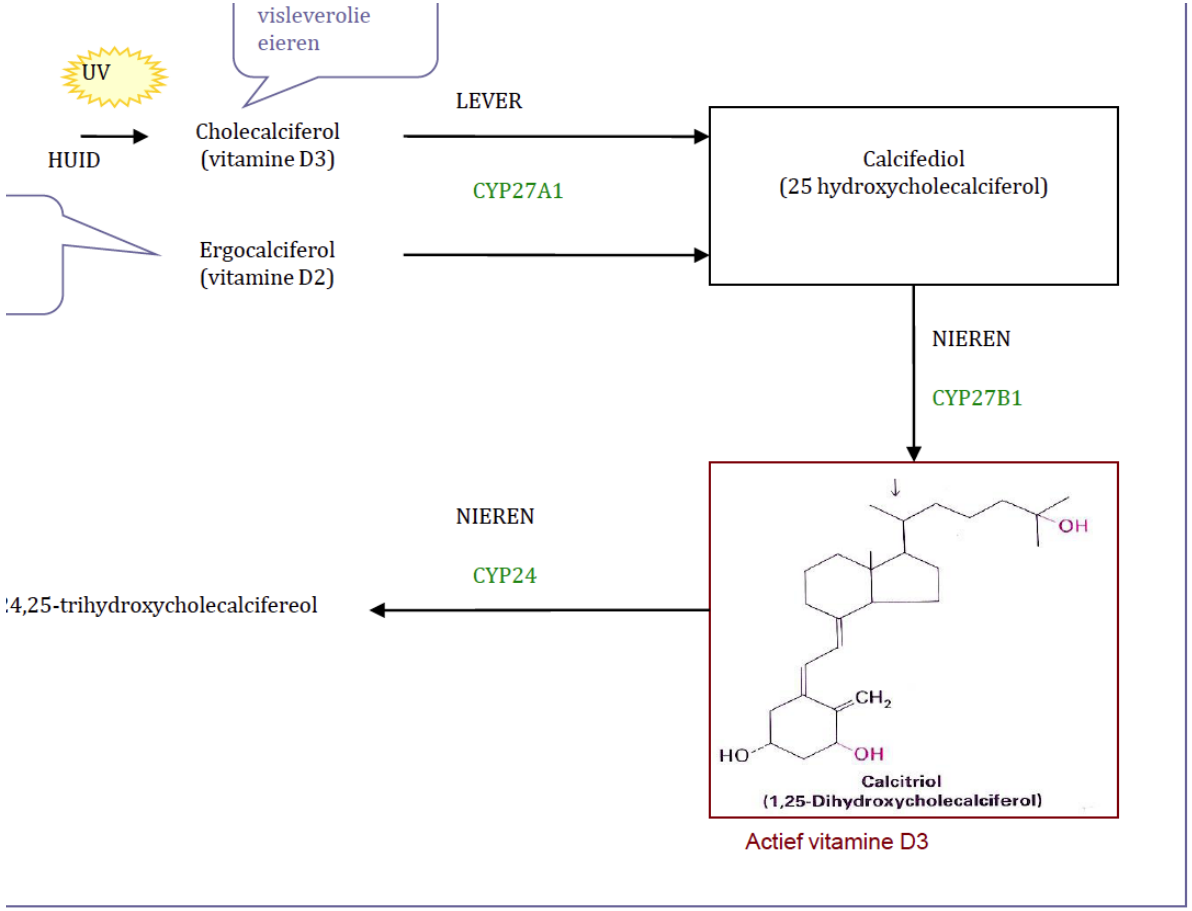
Interventions nutritionnelles / Vitamine D



Interventions nutritionnelles / Vitamine D



Interventions nutritionnelles / Vitamine D

Age	Sexe	Vitamine D3, µg/jour
0-6 mois	H/F	10
7-12 mois	H/F	10
1-3 ans	H/F	10
4-6 ans	H/F	10
7-10 ans	H/F	10
11-14 ans	H/F	10-15
15-18 ans	H/F	10-15
Adultes (19-70 ans)	H/F	10-15
Plus de 70 ans	H/F	20
Grossesse	F	20
Allaitement	F	20

Dans l'ancien système d'unité, 40 Unités Internationales correspondent à 1 µg de vitamine D.

Recommandations nutritionnelles pour la Belgique. CSS 2016.

Interventions nutritionnelles / Vitamine D

European Food Safety Authority

EFSA Journal 2012;10(7):2813

SCIENTIFIC OPINION

Scientific Opinion on the Tolerable Upper Intake Level of vitamin D[1]

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)[2, 3]

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

Following a request from the European Commission, the Panel on Dietetic Products, Nutrition and Allergies was asked to re-evaluate the safety in use of vitamin D and to provide, if necessary, revised Tolerable Upper Intake Levels (ULs) of vitamin D for all relevant population groups. The ULs for adults including pregnant and lactating women, children and adolescents were revised. For adults, hypercalcaemia was selected as the indicator of toxicity. In two studies in men, intakes between 234 and 275 µg/day were not associated with hypercalcaemia, and a no observed adverse effect level (NOAEL) of 250 µg/day was established. Taking into account uncertainties associated with these studies, the UL for adults including pregnant and lactating women was set at 100 µg/day. Despite a continuing paucity of data for high vitamin D intakes in children and adolescents, the UL was adapted to 100 µg/day for ages 11-17 years, considering that owing to phases of rapid bone formation and growth this age group is unlikely to have a lower tolerance for vitamin D compared to adults. The same applies also to children aged 1-10 years, but taking into account their smaller body size, a UL of 50 µg/day is proposed. For infants, the UL of 25 µg/day based on previously available data relating high vitamin D intakes to impaired growth and hypercalcaemia was retained as limited additional evidence has emerged since the previous risk assessment. Data on vitamin D intakes from surveys in 14 European countries indicate that intakes in high consumers are below the revised ULs for vitamin D for all population groups. © European Food Safety Authority, 2012

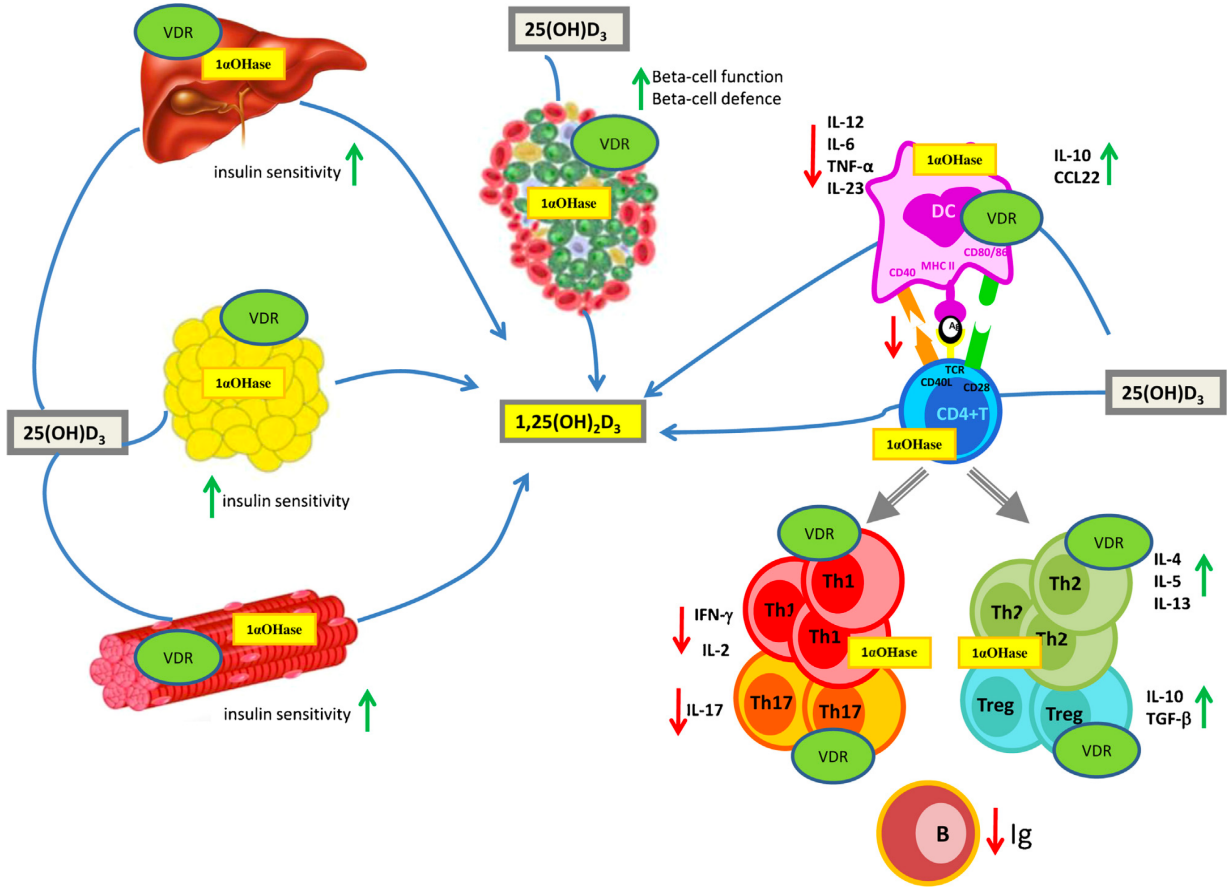
Compléments alimentaires:

- **À partir de 11 ans et pour les adultes:**
  - **max 75 mcg (3 000 IE)/jour**
- **Moins de 11 ans:**
  - **max 25 mcg (1 000 IE)/jour**

Médicaments:

- **Plus de 75 mcg par jour admis**

Interventions nutritionnelles / Vitamine D



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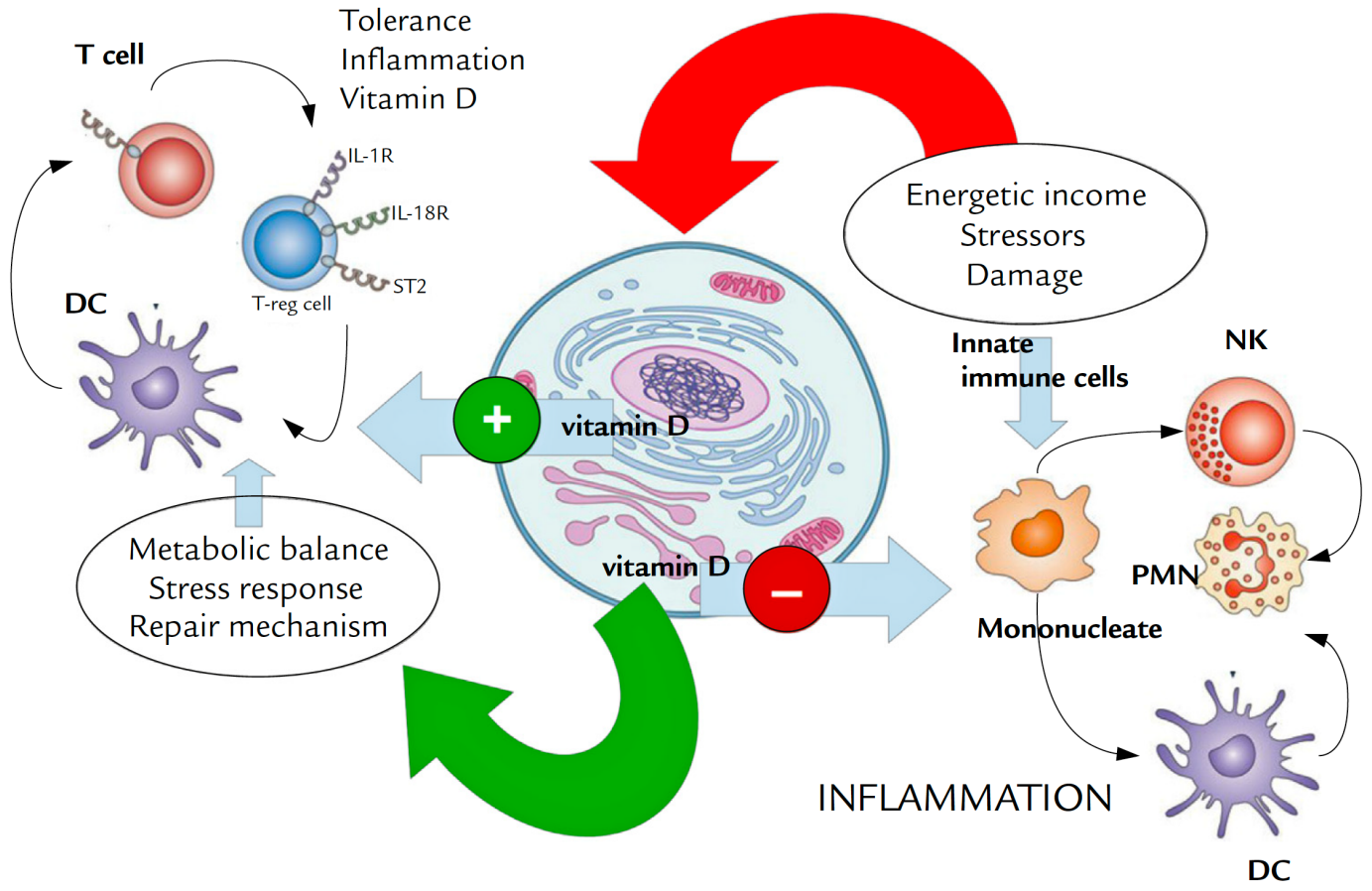
Interventions nutritionnelles / Vitamine D



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Interventions nutritionnelles / Vitamine D

Osteoporos Int (2008) 19:663–671
DOI 10.1007/s00198-007-0465-2

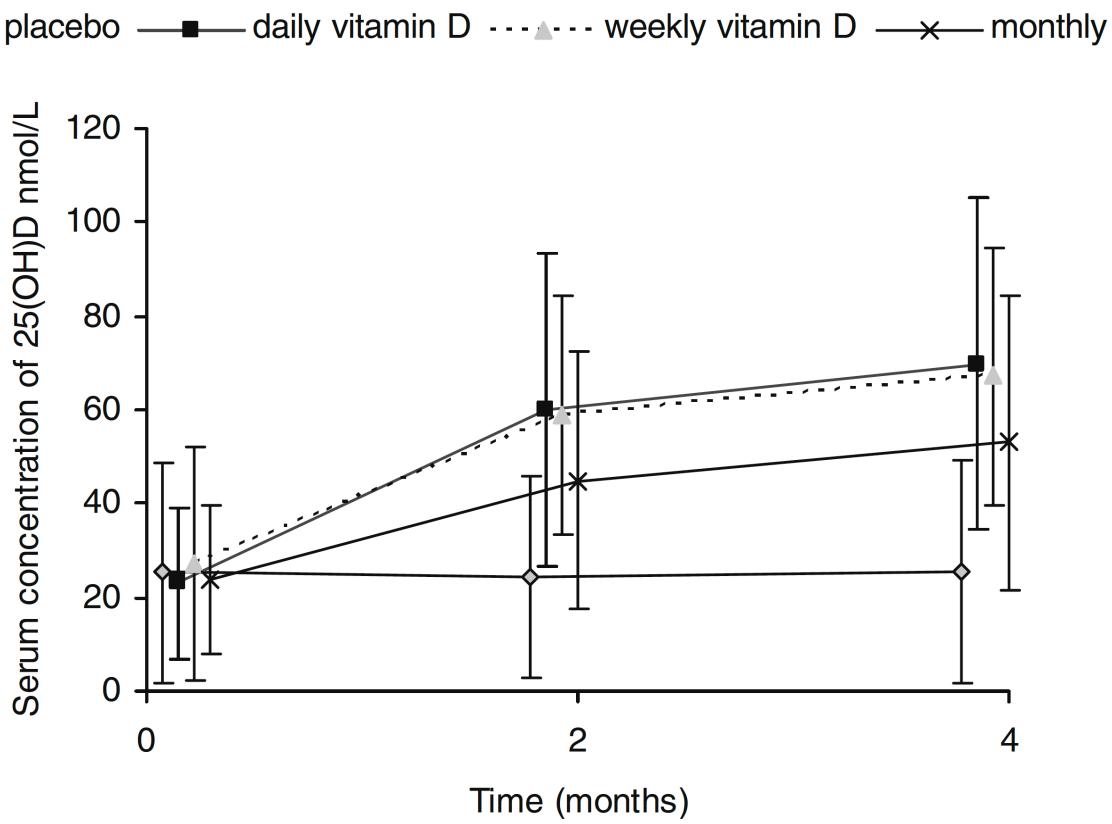
ORIGINAL ARTICLE

Efficacy of different doses and time intervals of oral vitamin D supplementation with or without calcium in elderly nursing home residents

V. Chel · H. A. H. Wijnhoven · J. H. Smit · M. Ooms · P. Lips

Received: 12 June 2007 / Accepted: 21 August 2007 / Published online: 14 September 2007
© International Osteoporosis Foundation and National Osteoporosis Foundation 2007

Abstract
Summary The effect of equivalent oral doses of vitamin D3 600 IU/day, 4200 IU/week and 18,000 IU/month on vitamin D status was compared in a randomized clinical trial in nursing home residents. A daily dose was more effective than a weekly dose, and a monthly dose was the least effective.
Introduction It is assumed that equivalent daily, weekly or monthly doses of vitamin D3 equally influence vitamin D status. This was investigated in a randomized clinical trial in nursing home residents.
4 months, mean serum 25(OH)D levels increased to 62.5 nmol/L (after daily vitamin D3 69.9 nmol/L, weekly 67.2 nmol/L and monthly 53.1 nmol/L, P<0.001 between groups). Median serum PTH levels decreased by 23% (p< 0.001). Bone turnover markers did not decrease. Calcium supplementation had no effect on serum PTH and bone turnover.
Conclusion Daily vitamin D was more effective than weekly, and monthly administration was the least effective.



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Interventions nutritionnelles / Vitamine D

- **Forme d'administration**
  - Matrice huileuse
- **Population**
  - Automne et hiver: tout le monde
- **Posologie**
  1. ***Sans analyse de sang***
     - ➢ *20-25 mcg (800-1000 IE)/j*
  2. ***Déficience avérée (analyse sanguine)***
     - ➢ /R : administration quotidienne ou hebdomadaire

Interventions nutritionnelles / Magnésium

- Cofacteur déenzymes
- Immunité
  - Innée
    - Prolifération, différenciation des cellules
  - Acquise
    - Productions d'anticorps

Interventions nutritionnelles / Magnésium

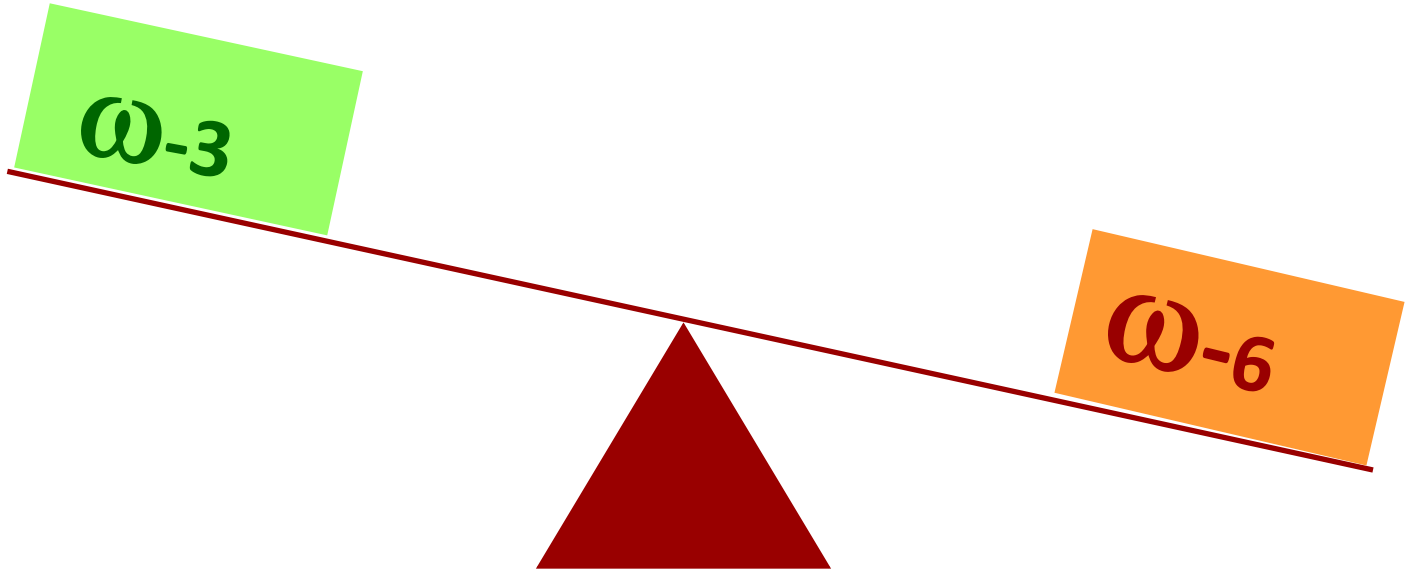
- **Forme**
  - De préférence organique
  - Disponibilité
  - Effets secondaires
- **Indication**

  Immunité reduite
  - Stress
  - Mauvaises habitudes alimentaires
  - …

Interventions nutritionnelles / Oméga-3

Sain: Oméga-6/Oméga-3: 1/1 à 5/1

Régime occidental typique: 15/1 à 16.7/1

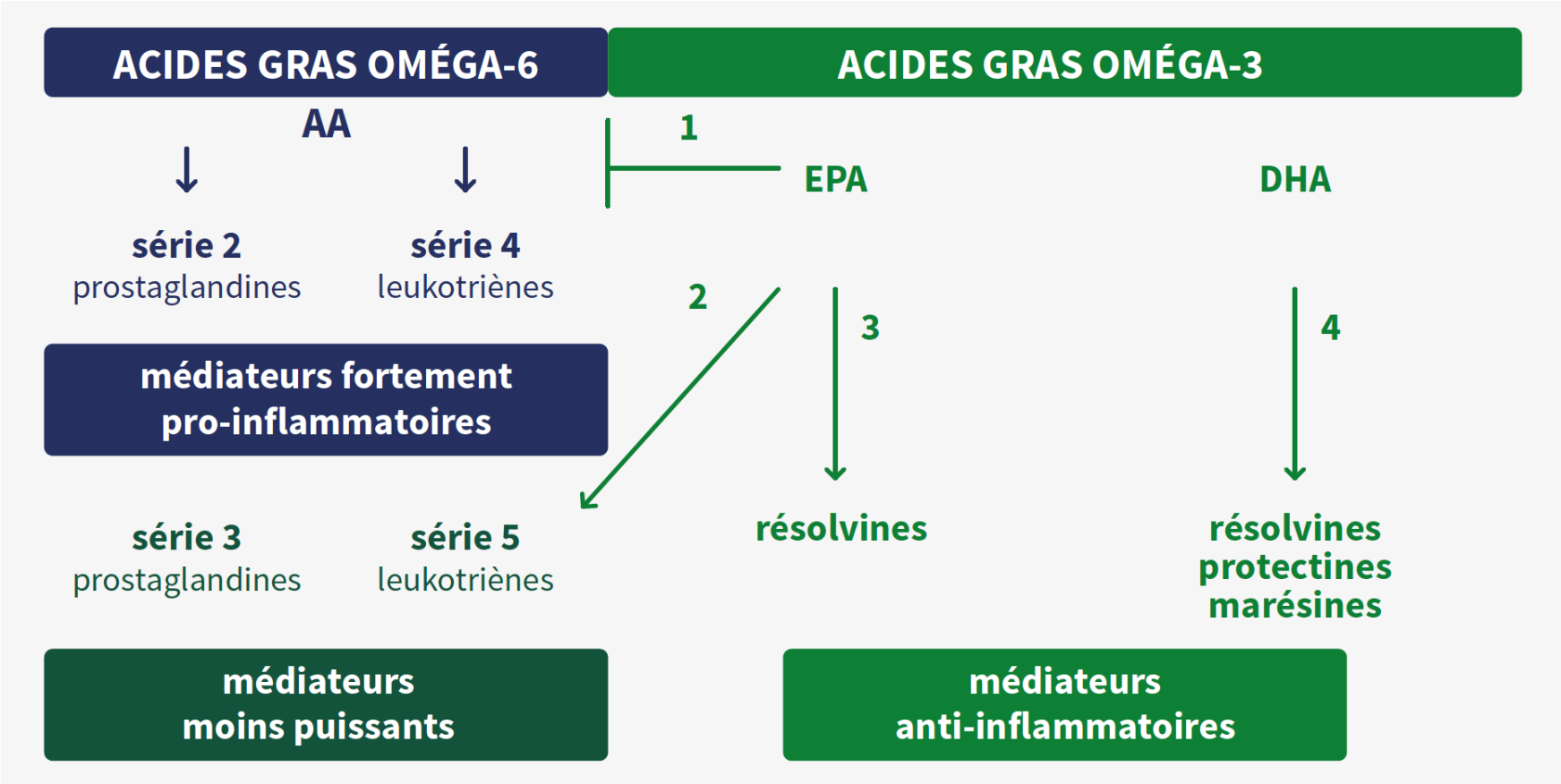


Interventions nutritionnelles / Oméga-3

Oméga-6		Enzyme	Oméga-3	
Acide linoléique (LA)	18:2		Acide alpha-linolénique (ALA)	18:3
		Delta 6 désaturase		
Acide gamma-linolénique (GLA)	18:3		Acide stéaridonique	18:4
		Elongase		
Acide dihomogamma-linolénique (DGLA)	20:3		Acide eicosatétraénique	20:4
		Delta 5 désaturase		
Acide arachidonique (AA)	20:4		**Acide eicosapentaénique (EPA)**	20:5
		Elongase		
Acide adrénique	22:4		Acide docosapentaénique (DPA)	22:5
		Elongase		
Acide tétracosatétraénique	24:4		Acide tétracosapentaénique	24:5
		Delta 6 désaturase		
Acide tétracosapentaénique	24:5		Acide tétrahexaénique	24:6
		Bêta-oxydation		
Acide docosapentaénique (DPA)	22:5		**Acide docosahexaénique (DHA)**	22:6

Din JN, Newby DE, Flapan AD. Omega 3 fatty acids and cardiovascular disease, fishing for a natural treatment. BMJ 2004; 328(7430):30-5.

Interventions nutritionnelles / Oméga-3



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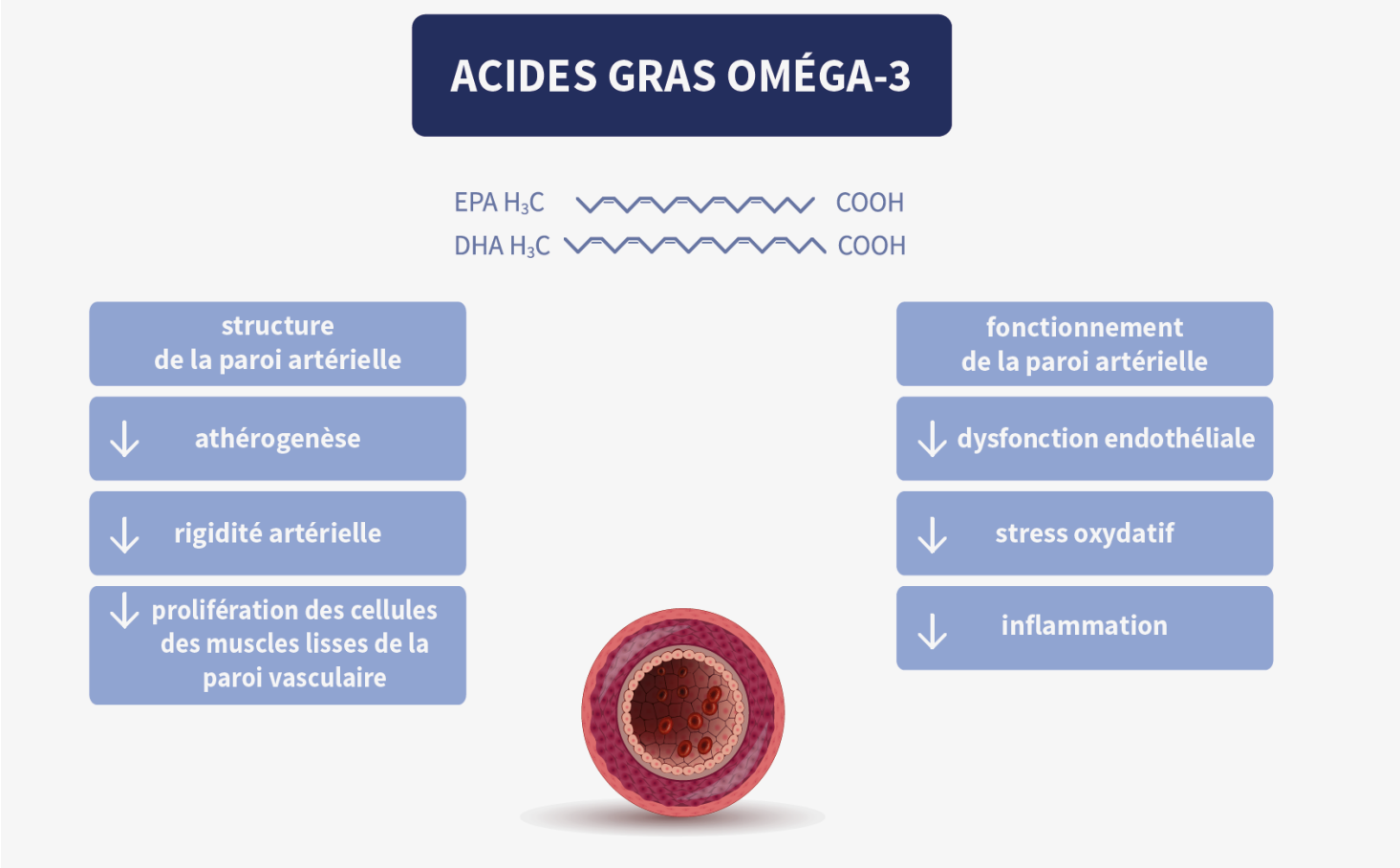
Interventions nutritionnelles / Oméga-3

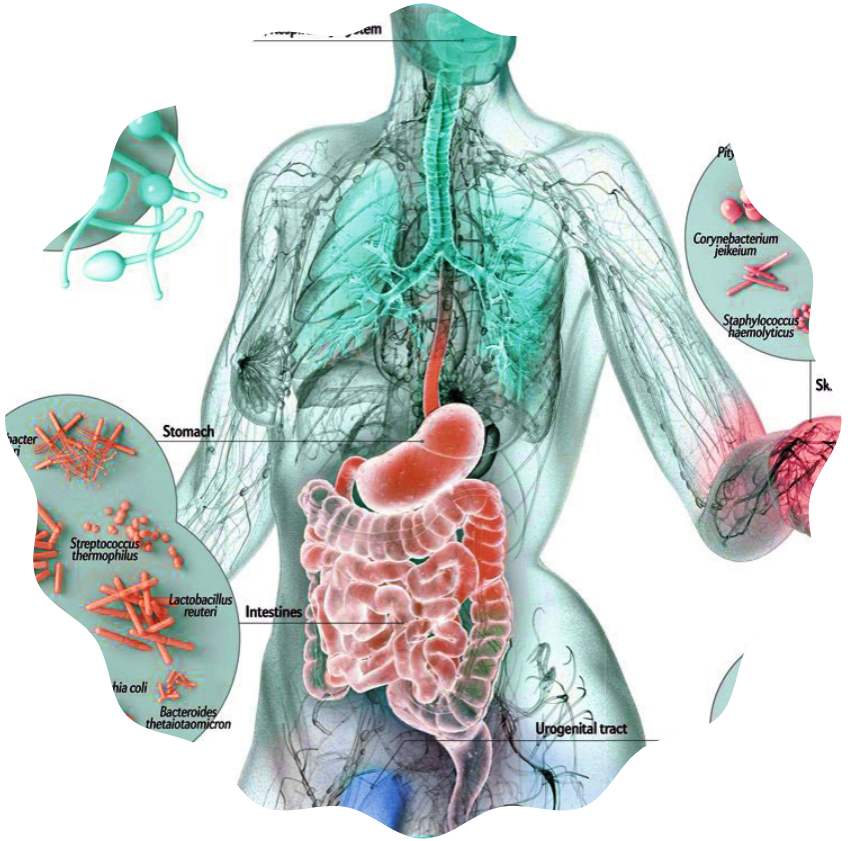


Zanetti M et al. Biomed Res Int 2015; 2015:791978.

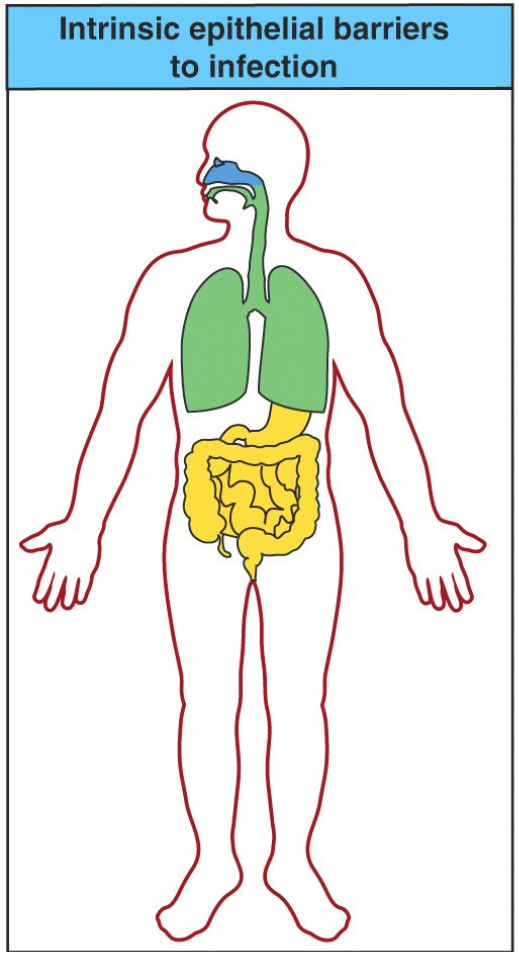
Interventions nutritionnelles / Oméga-3

- **Plus d'acides gras oméga-3 dans l'alimentation**
  - Poissons gras, noix, graines, huile (colza, algues)
- **Posologie**
  - 250-500 mg EPA+DHA per jour (avis CSS 2015)
  - Attention particulière: végétariens/végétaliens
- **Pharmacovigilance**
  - Jusqu'à 5 g EPA + DHA (advi EFSA)
  - Certificat d'analyse
    - oxydation
    - Substances contaminantes

Interventions nutritionnelles / Probiotiques



www.nutritionreview.org



	Skin	Gut	Lungs	Eyes/nose
Mechanical	Epithelial cells joined by tight junctions			
	Longitudinal flow of air or fluid		Movement of mucus by cilia	
Chemical	Fatty acids	Low pH		Salivary enzymes (lysozyme)
		Enzymes (pepsin)		
	Antibacterial peptides			
Microbiological	Normal flora			

Immunobiology, 6/e. Garland Science. 2005

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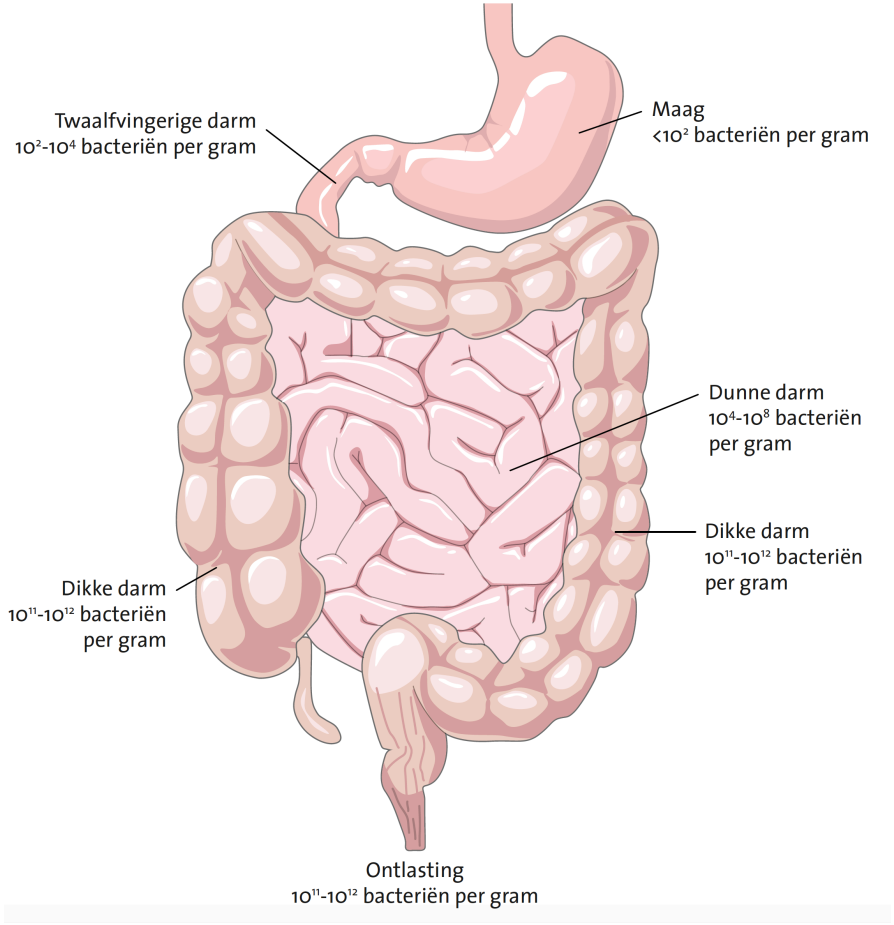
Interventions nutritionnelles / Probiotiques



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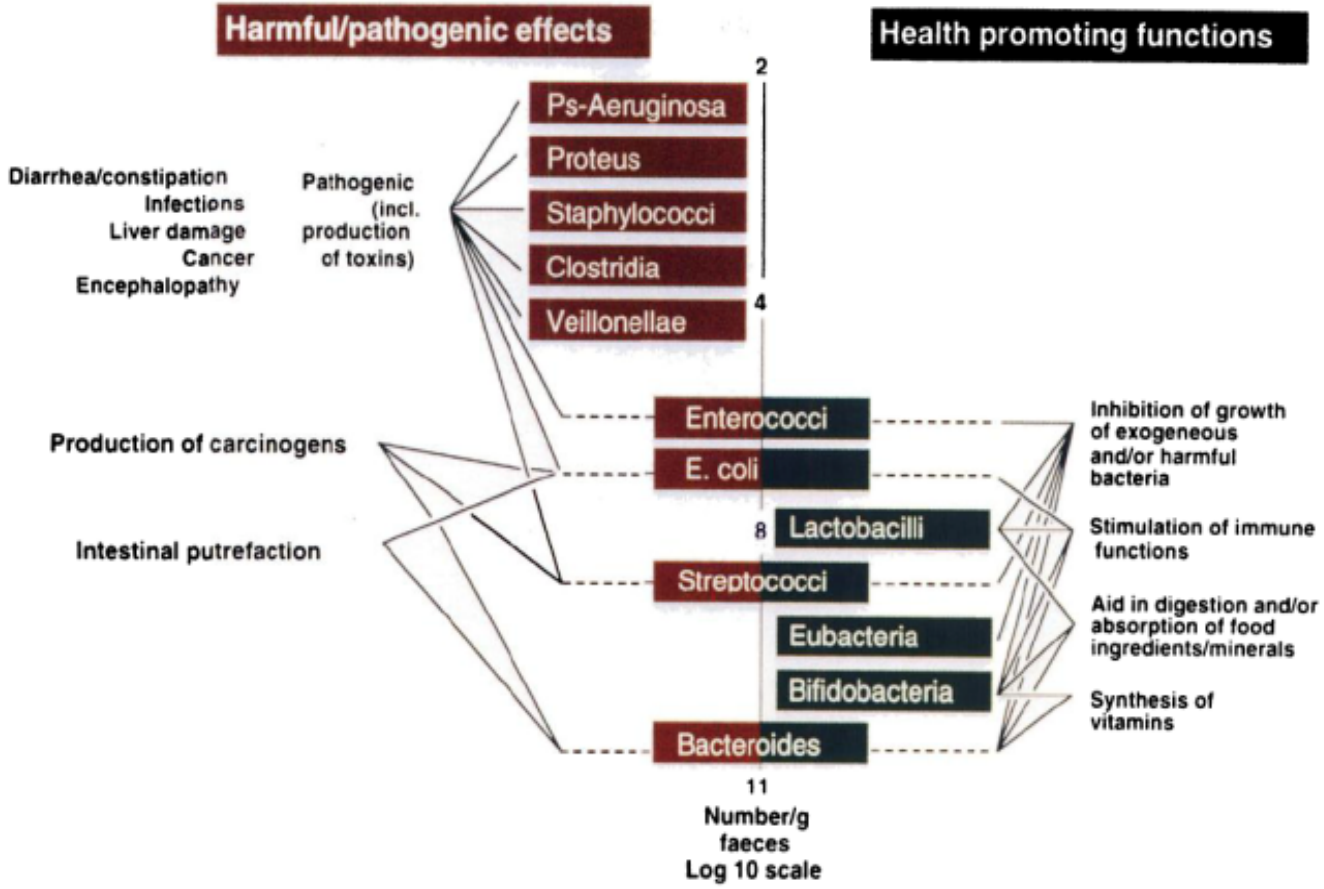

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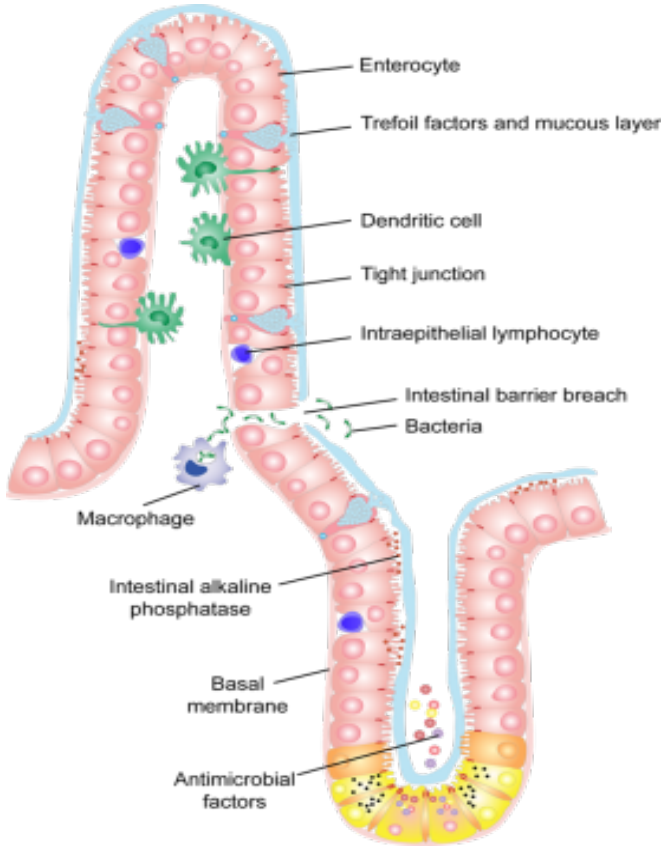
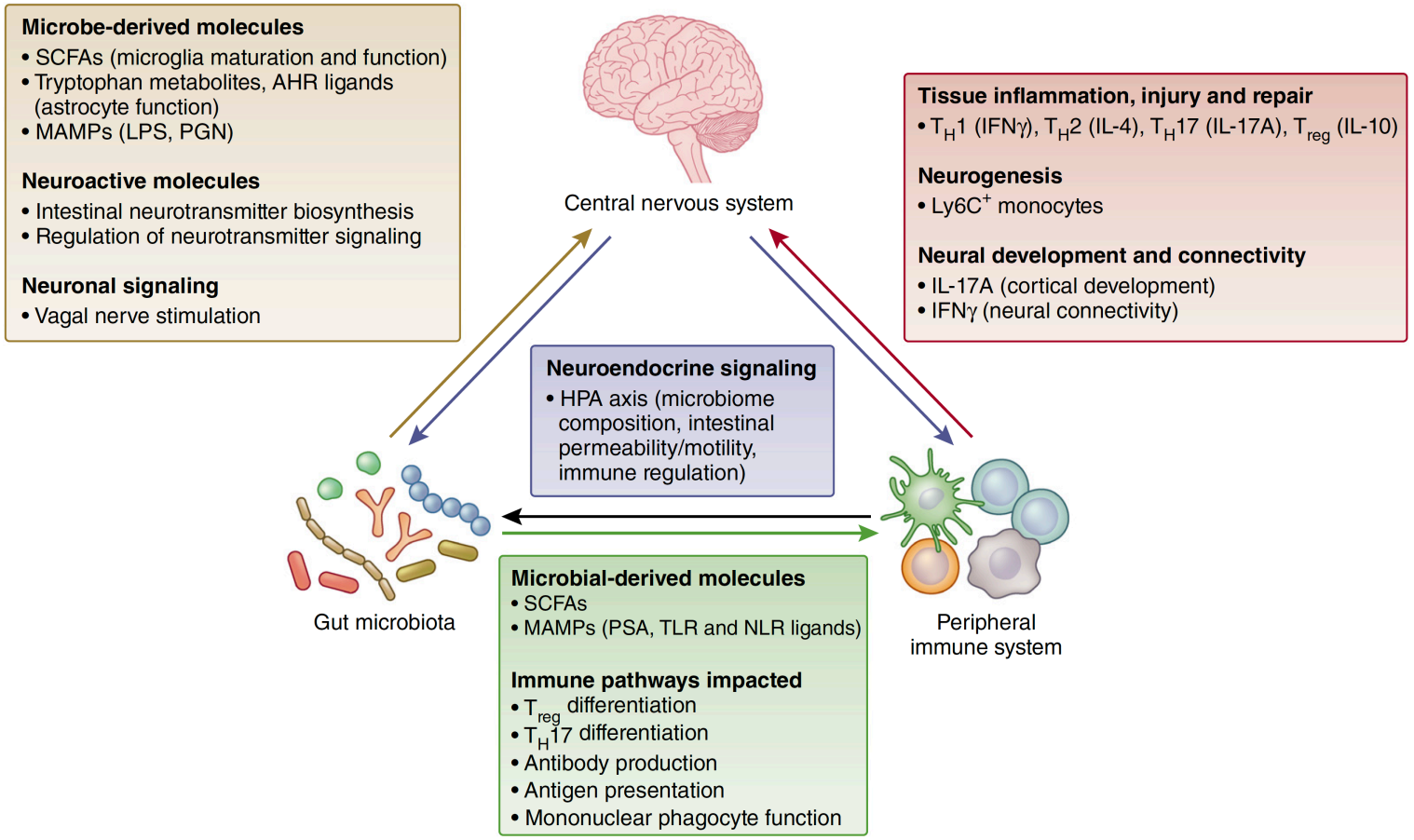
Interventions nutritionnelles / Probiotiques



1. Renforcer la barrière intestinale
2. Prévenir la prolifération des agents pathogènes
3. Production d'acides gras à chaîne courte
4. Synthèse de vit. (groupe B, vit. K)
5. Système immunitaire des muqueuses
6. Décomposition des xénobiotiques

Aureli 2011

Interventions nutritionnelles / Probiotiques



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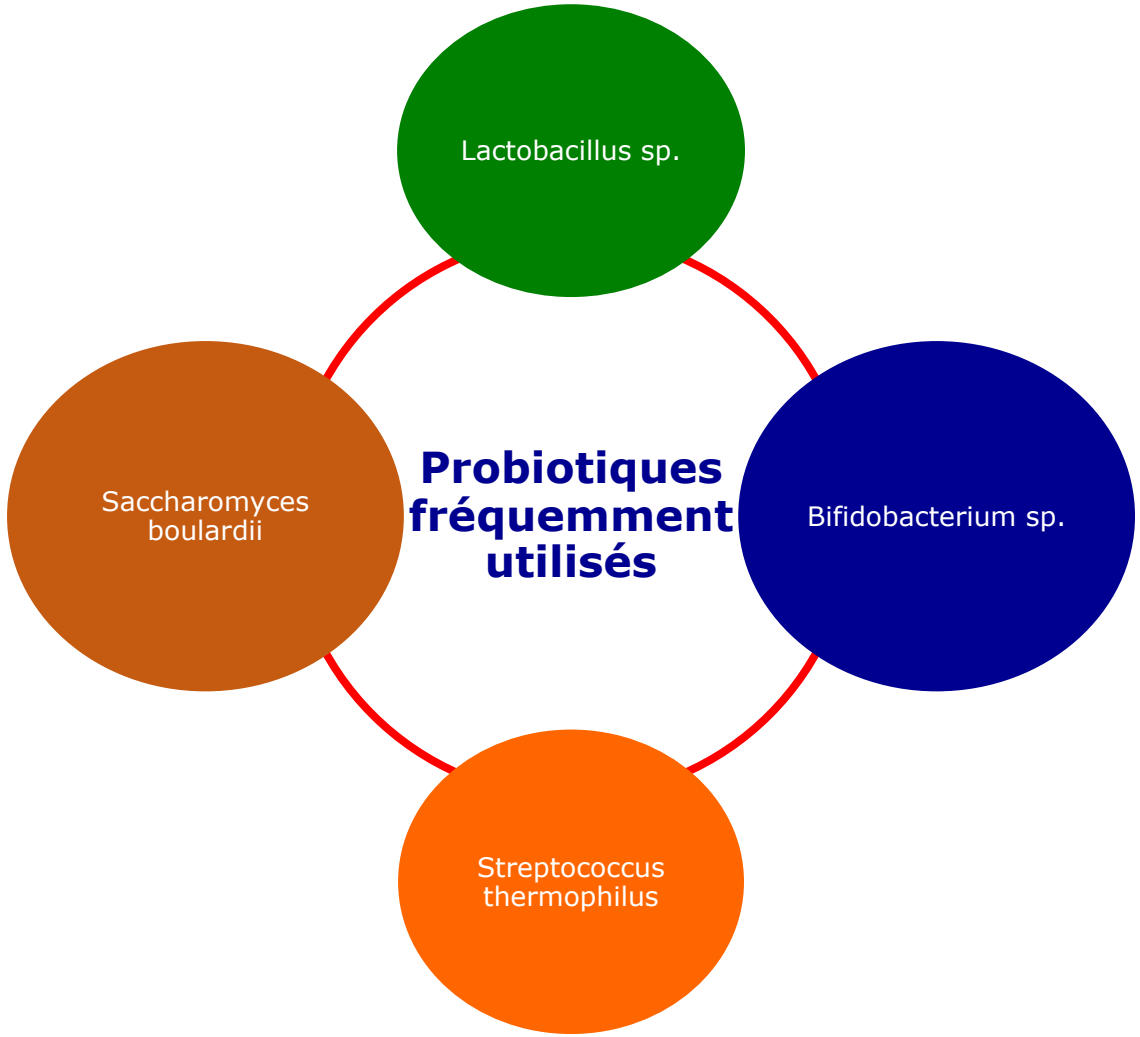
Interventions nutritionnelles / Probiotiques

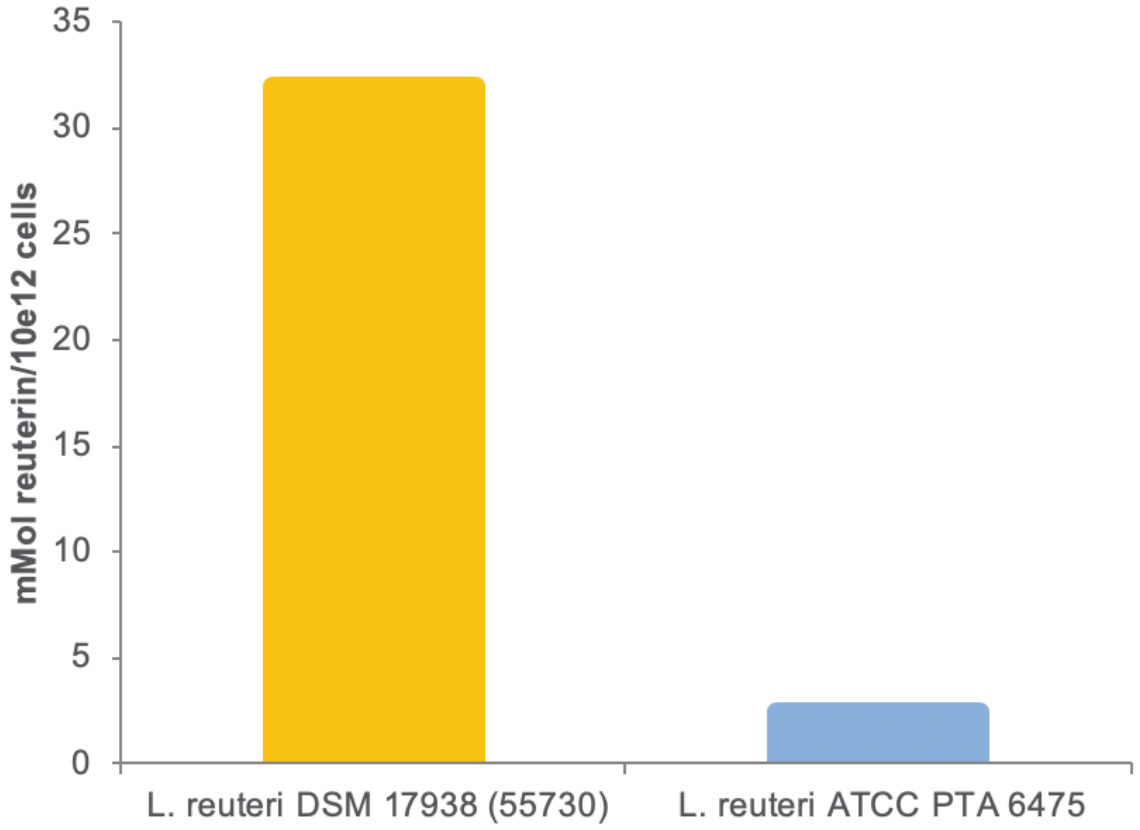


Interventions nutritionnelles / Probiotiques

Micro-organismes ayant un effet bénéfique sur la santé quand:

- la **bonne souche** est utilisée
- une **quantité suffisante** est administrée
- exactement **la même composition** a été testé dans des **études contrôlées contre placebo chez l'homme pour l'indication revendiquée**

Interventions nutritionnelles / Probiotiques



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Interventions nutritionnelles / Probiotiques

APPLIED AND ENVIRONMENTAL MICROBIOLOGY, Feb. 2004, p. 1176–1181 Vol. 70, No. 2
0099-2240/04/$08.00+0 DOI: 10.1128/AEM.70.2.1176–1181.2004
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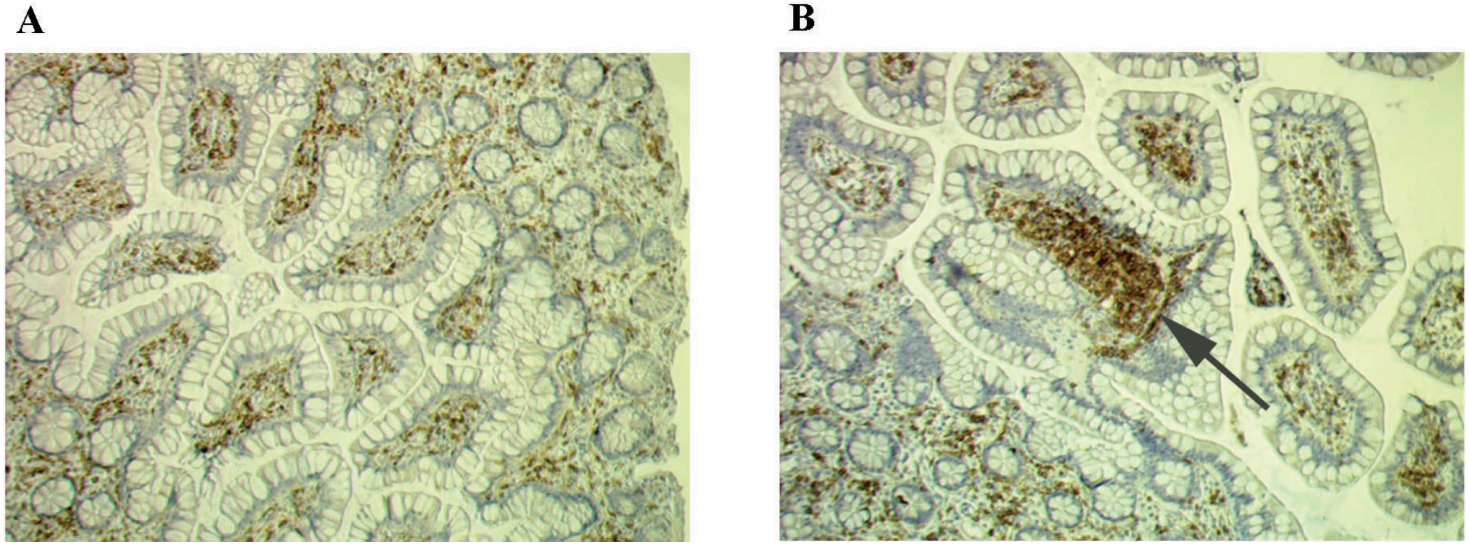
Colonization and Immunomodulation by *Lactobacillus reuteri* ATCC 55730 in the Human Gastrointestinal Tract

Nana Valeur,[1] Peter Engel,[2] Noris Carbajal,[3] Eamonn Connolly,[3]* and Karin Ladefoged[1]

Department of Internal Medicine, Gastroenterology,[1] and Department of Pathology,[2] Roskilde County Hospital, Köge, Roskilde, Denmark, and Research Laboratory, BioGaia Biologics Inc., Raleigh, North Carolina[3]

Received 16 April 2003/Accepted 28 October 2003



L. reuteri ATCC 55730 (DSM 17938)

- 4 x 10^8 CFU
- 28 jours
- $CD4^+$ Lymphocytes-T
- **Colonisation**
- **Réponses immunitaires**
- **Remodulation microbiome**

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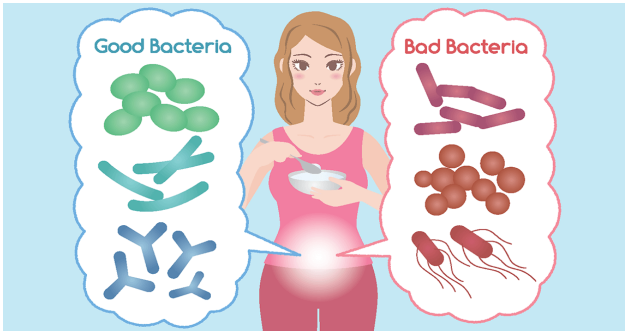
Interventions nutritionnelles / Probiotiques

- **La souche et la dose déterminent l'effet**
- **Critères de qualité**
  - Sécurité (long terme)
  - Utilisé dans des essais cliniques performants
  - Stable jusqu'à la date d'expiration
  - Survie dans le système digestif
- **Formule mono ou multi souches?**
  - L'efficacité prouvée dans des études bien exécutées est beaucoup plus importante!!!



Interventions nutritionnelles / Glucanes

- **Pleurotus ostreatus**
  - Modulateur immunitaire
  - Pas de suractivation!
  - Pas de risque d'hypercytokinémie!
  - Formules standardisées
    - Bêta 1,3/1,6 glucanes
      - 100-300 mg /jour

Interventions nutritionnelles / Conclusions

- **Mangez coloré et varié**
- **Déplacez-vous à l'air libre**
- **Assurer un sommeil réparateur**
- **Soutien micronutrionnel d'immunité**
  - Respecter les dosages recommandés
  - Vit. D, A, C, B6, B12, E et acide folique
  - Magnésium, cuivre, zinc, sélénium
  - Du fer! (analyse de sang !)
  - Formules standardisées de bêta 1,3/1,6 glucanes
  - Probotiques ayant exactement la même composition, testés lors d'essais cliniques