

# (Onder)voeding bij kwetsbare ouderen: een complexe zaak van ziekte(n) en interacterende symptomen

Marcel Olde Rikkert



---

# Veel voorkomende voedingsproblemen

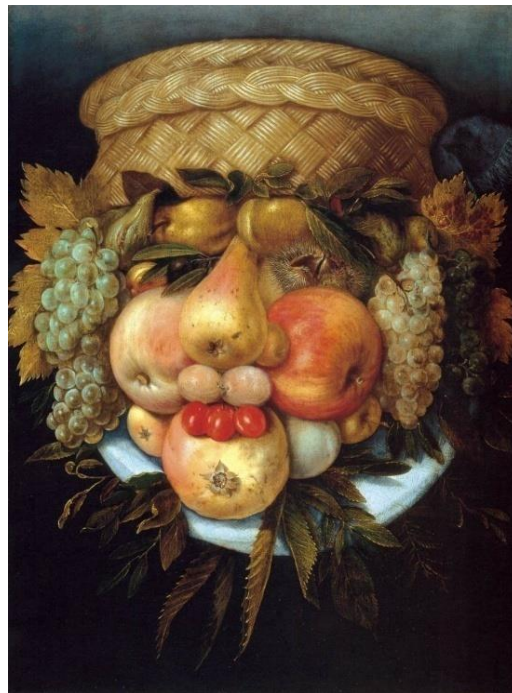
## 1. typische voedingssymptomen bij bepaalde ziekten



---

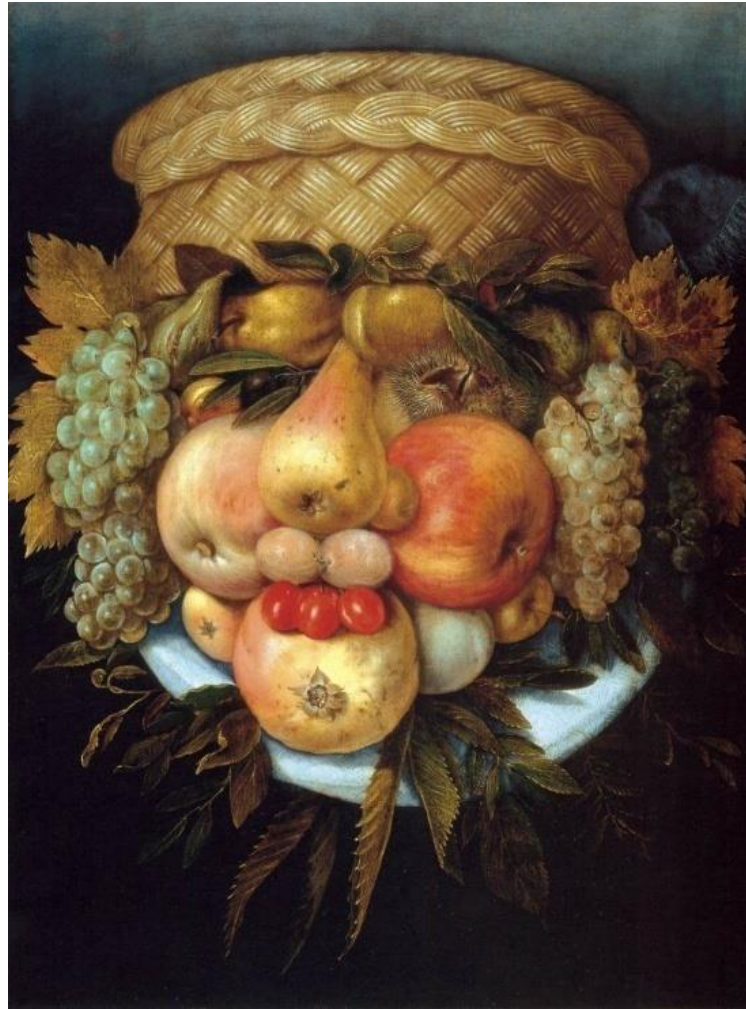
# Veel voorkomende voedingsproblemen

## 2. atypische symptoominteracties bij gewone ziekten



---

# Giuseppe Arcimboldo (1527-1593)



---

# Veel voorkomende voedingsproblemen

## 1. typische voedingssymptomen bij bepaalde ziekten



---

# Dementie, mn ziekte van alzheimer

- Vroeg: eiwit en energie tekort
- Omgekeerde causaliteit
- Bij gewichtsverlies:
  - Risico micronutrient tekort & dehydratie

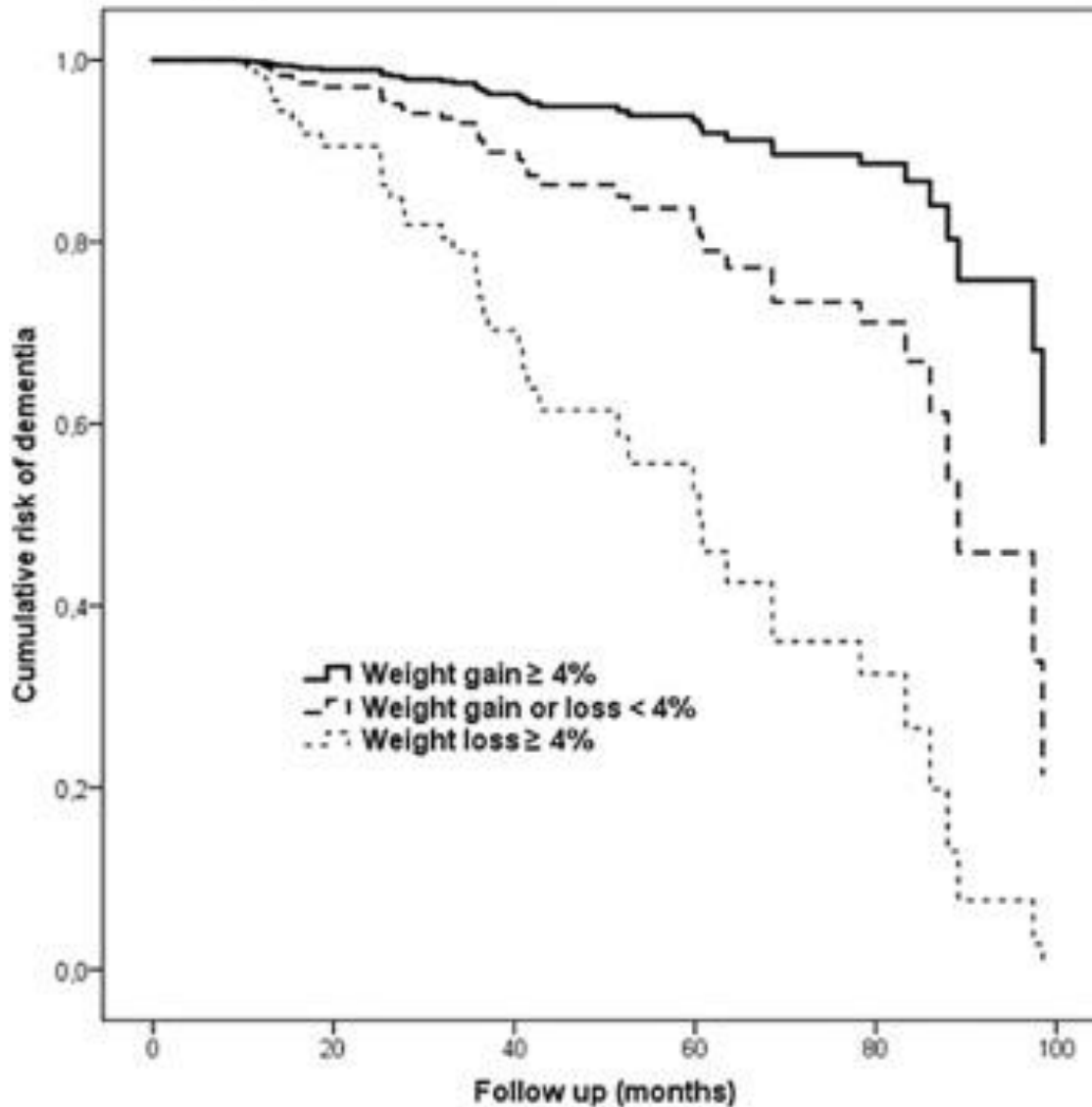
---

# Overgewicht

**Middelbare leeftijd: 10-40% toename,  
>65 jr: 10-25% afname risico dementie**

**Pedditiz e.a. Age Ageing 2016**

Fig. 2A



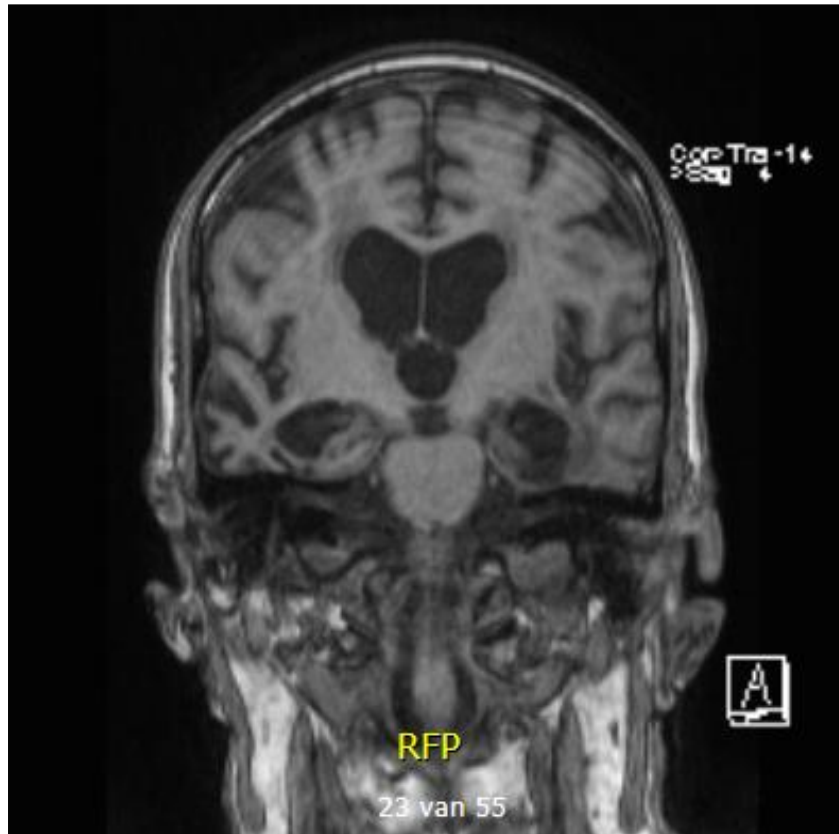
**>4%  
gewichtsverlies  
op 75 jr:**

**3maal hoger  
risico op  
dementie**

**Cova e.a.  
Plos One 2016**

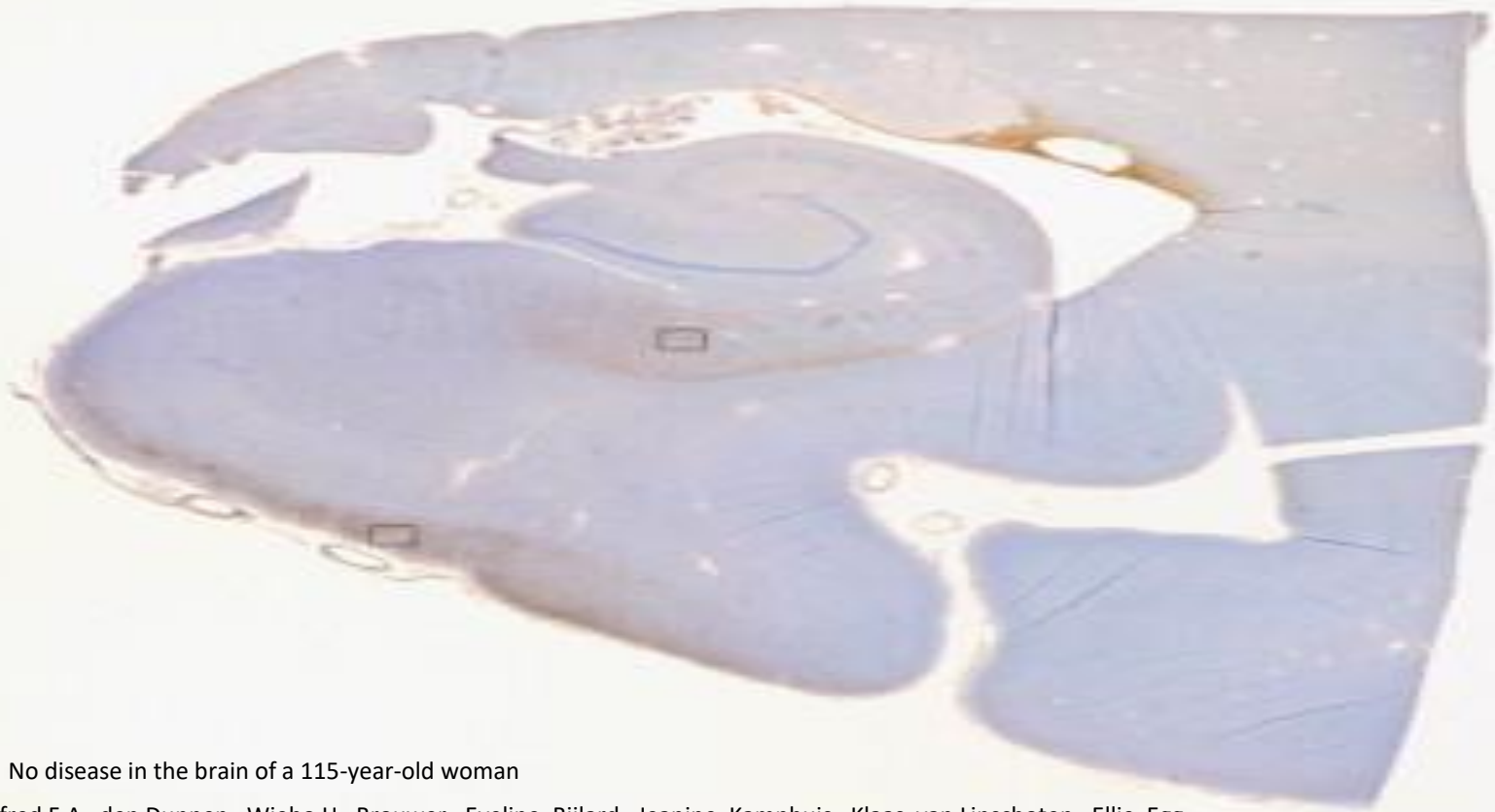
---

# Hr B: dementie alzheimer type



GCA: 3, MTA 3, Fazekas scores: 2

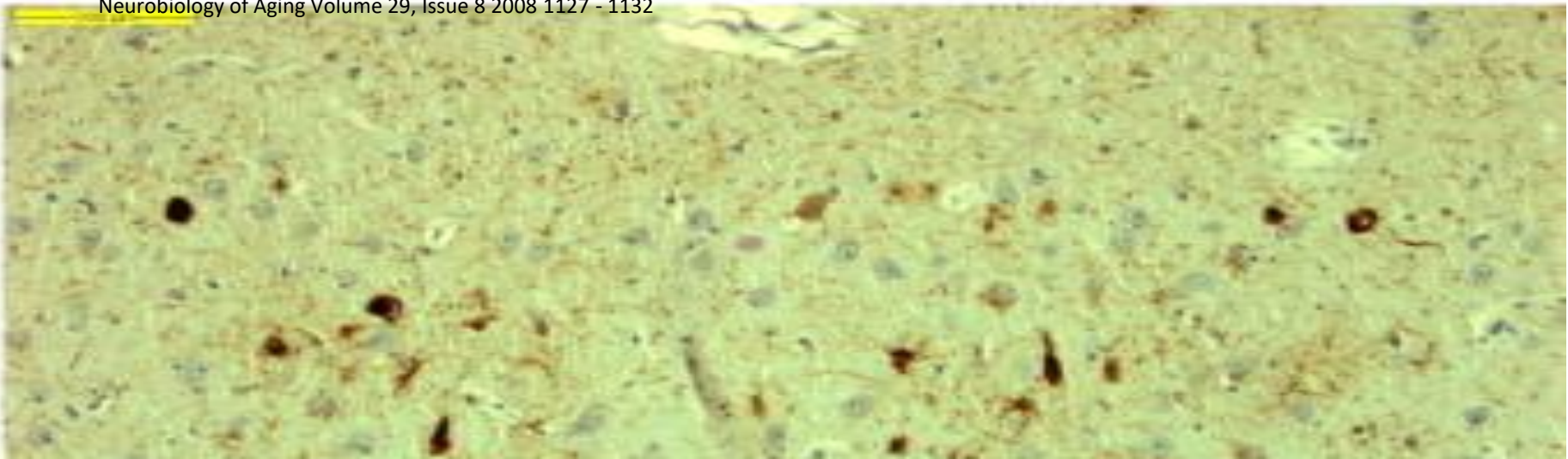
ApoE4 homozygote. Cognition: MCI (AD profile)



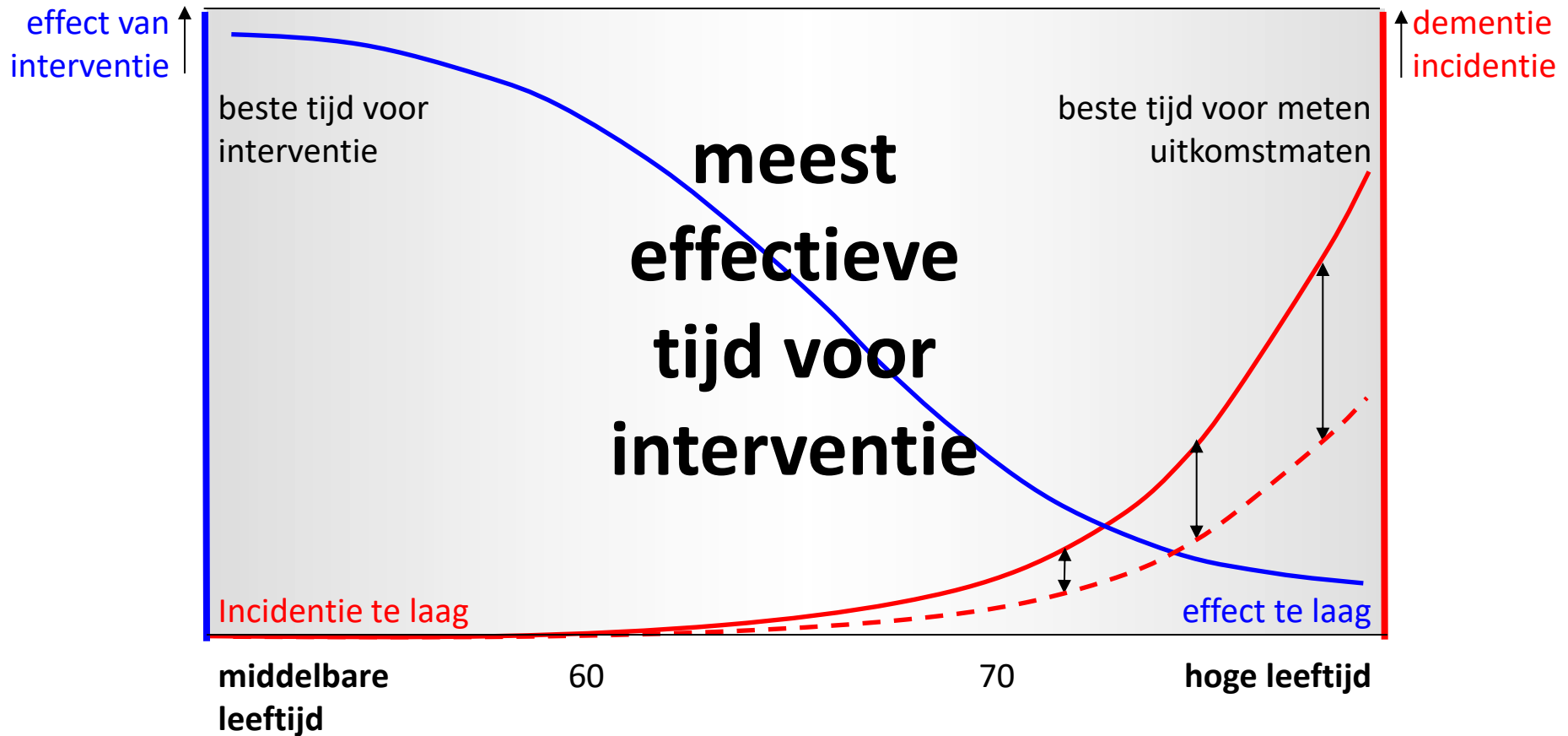
No disease in the brain of a 115-year-old woman

Wilfred F.A. den Dunnen , Wiebo H. Brouwer , Eveline Bijlard , Jeanine Kamphuis , Klaas van Linschoten , Ellie Egg...

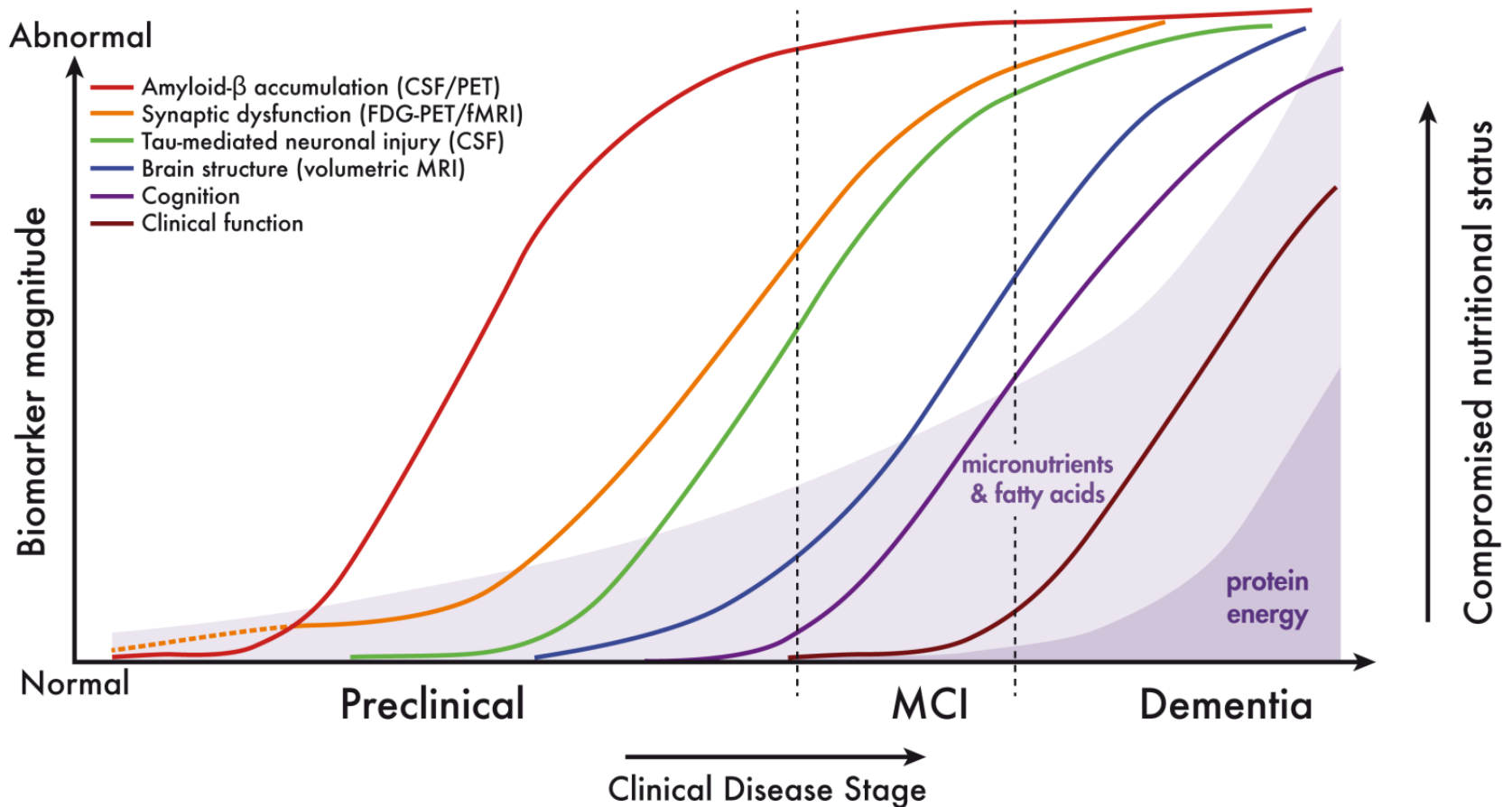
Neurobiology of Aging Volume 29, Issue 8 2008 1127 - 1132



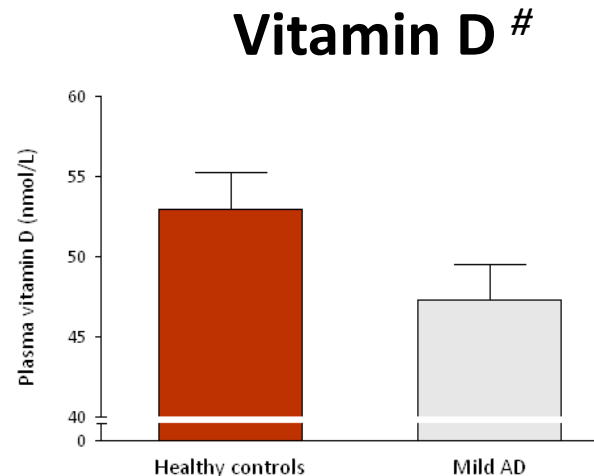
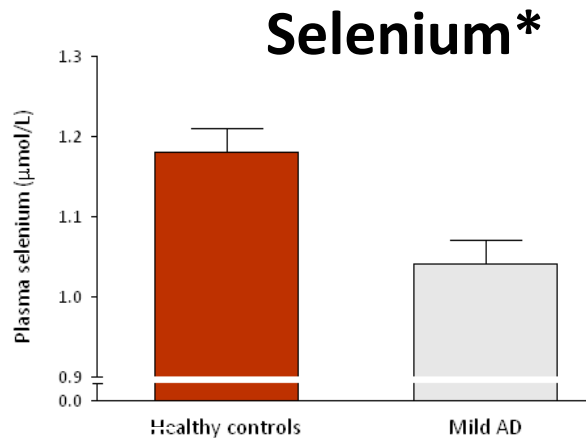
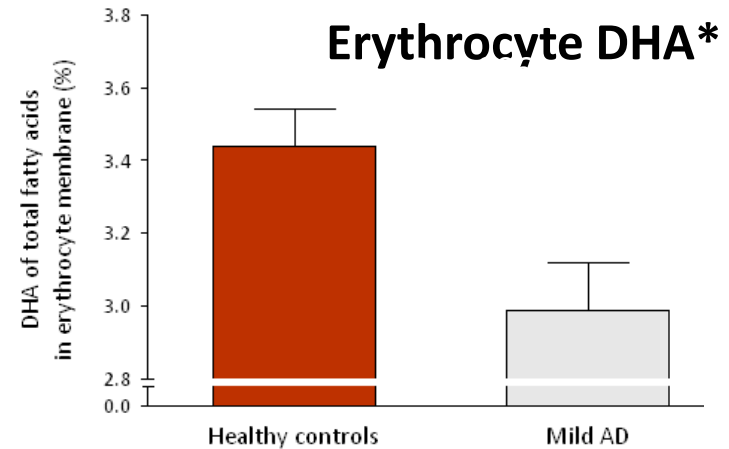
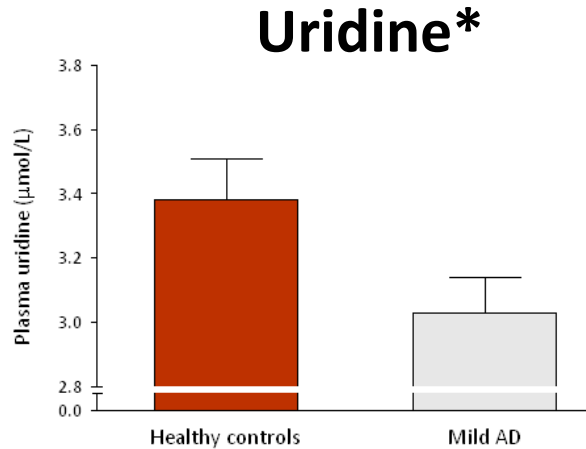
# Wanneer preventie?



# Voedings micronutriënt tekorten: laat bij Alzheimer



# Voedingsstatus Alzheimer- vs Gezond



\*  $p < 0,05$ ; #  $p < 0,1$

Radboudumc

# Persoonsgerichte acties

<https://www.bol.com/nl/p/wat-kun-je-doen-aan-dementie/9200000085145003/>

🏠 > Boeken > Gezondheid & Psychologie > Ziekten & Stoorissen

## Wat kun je doen aan dementie?

De effecten van medicatie, leefstijl, voeding en geheugentraining

Auteur: Jurgen Claassen | Taal: Nederlands | ☆☆☆☆☆ Schrijf een review | Stel een vraag | ✉ E-mail deze pagina



---

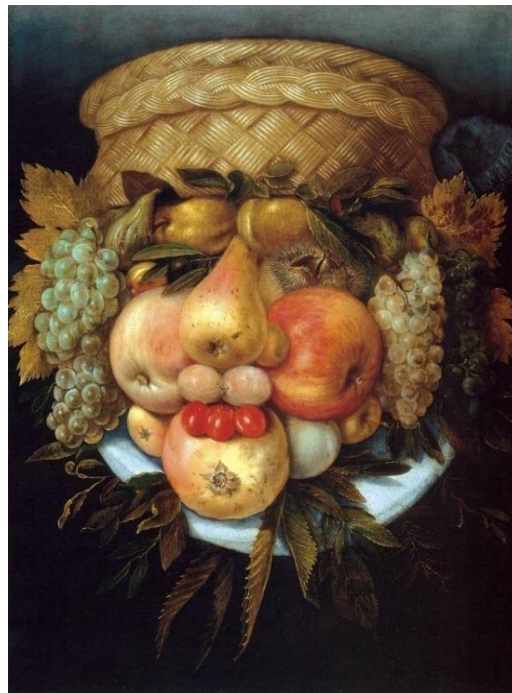
# Voedings tekorten: eerder bij

- **Lewy body ziekte: vroeg reuk verlies**
- **Frontaalkwab dementie: Kliver Bucy syndroom**
- **Depressie: anhedonie**

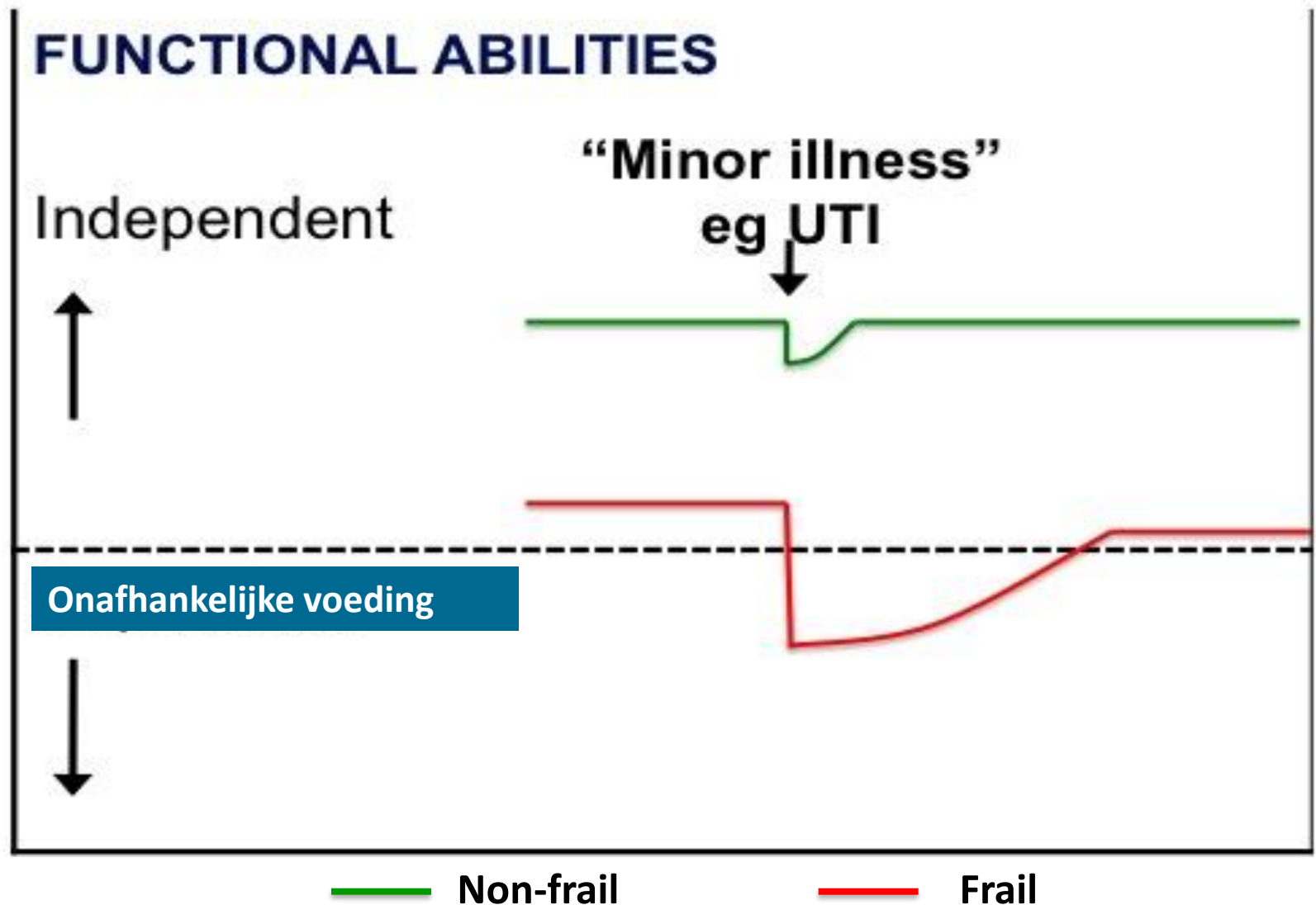
---

# Veel voorkomende voedingsproblemen

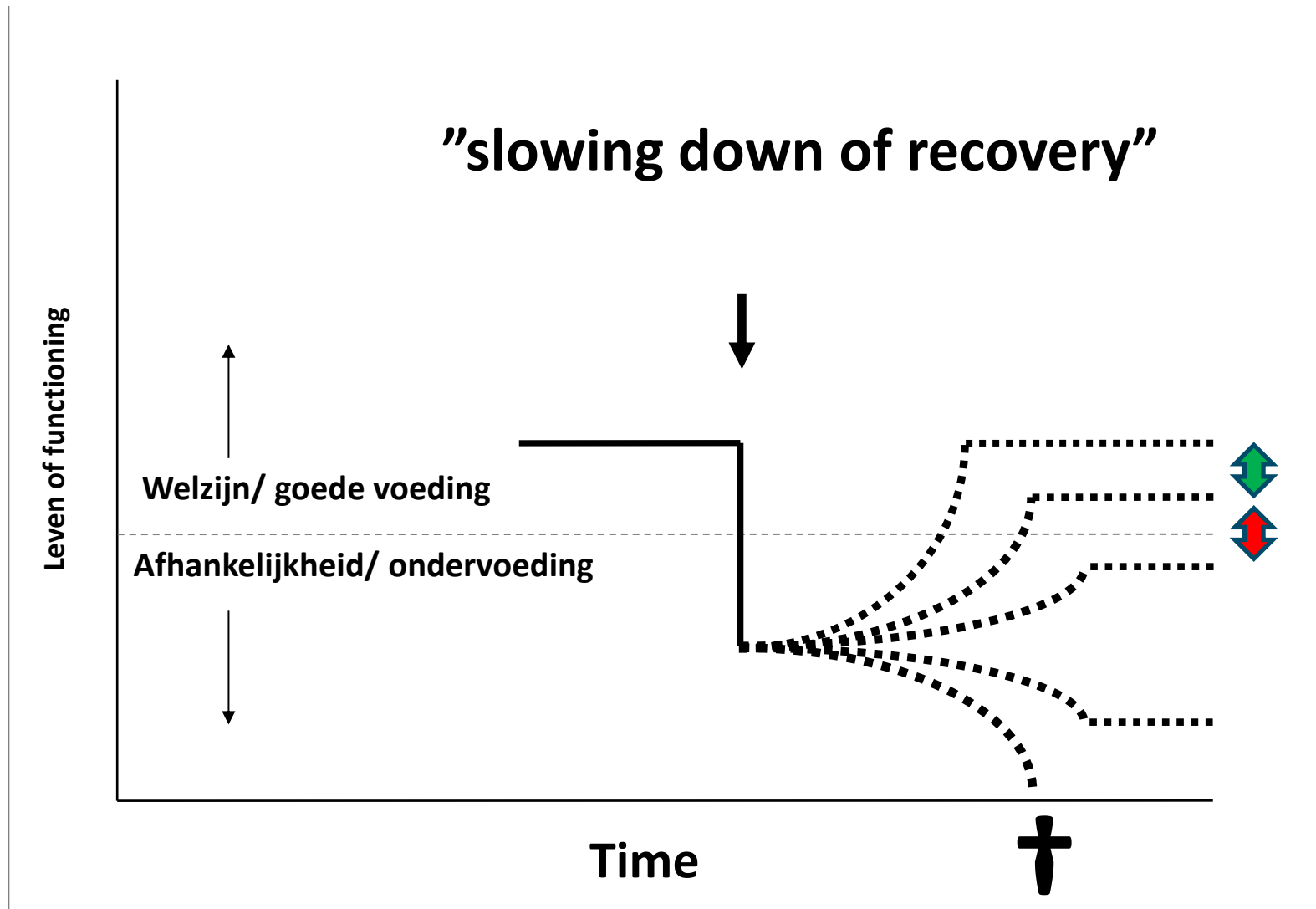
## 2. atypische symptoominteracties bij gewone ziekten



# Kwetsbaarheid: minder zelfstandige voeding



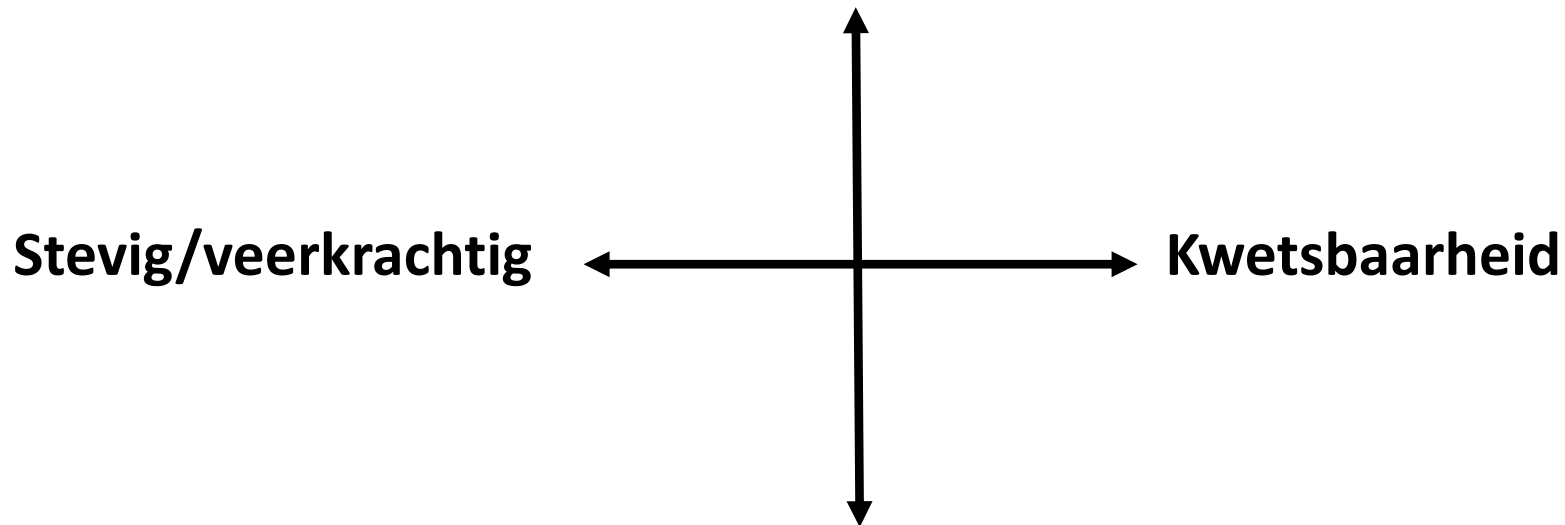
# Kwetsbaarheid →→ Veerkracht



---

# Frailty vs veerkracht

Vitaliteit, levenslust, zinvol



Levensmoe / weinig wilskracht

# Veerkracht is vermogen tot...

- Weerstaan...
- Herstel van....
- Aanpassen aan...

## Gezondheidsstressoren:

- Omgeving
- Ziekte
- Behandeling

Whitson, H.E., et al., *Physical resilience in older adults: systematic review and development of an emerging construct*. J Gerontol A Biol Sci Med Sci, 2015. 71(4): p. 489-95.



Resist &  
Recover

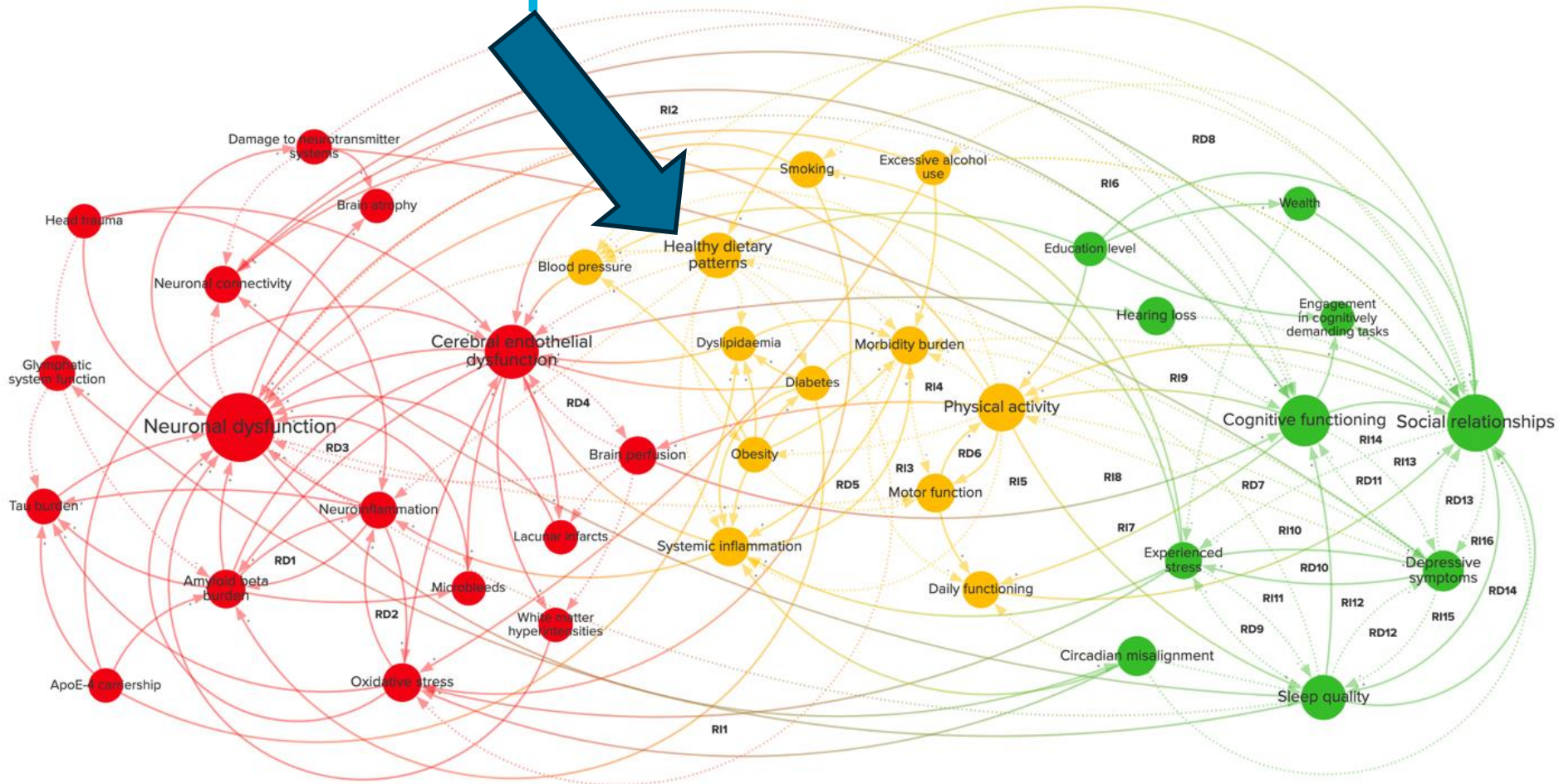
---

# Welzijn

- **Andere ‘schijf van vijf’:**
- **Bewegen**
- **Pijn**
- **Cognitie**
- **Slaap**
- **Sociaalcontact**



# Complexiteit multimorbiditeit



See: *Geroscience* 2021, Uleman et al

---

**Waarde geriatrie:**

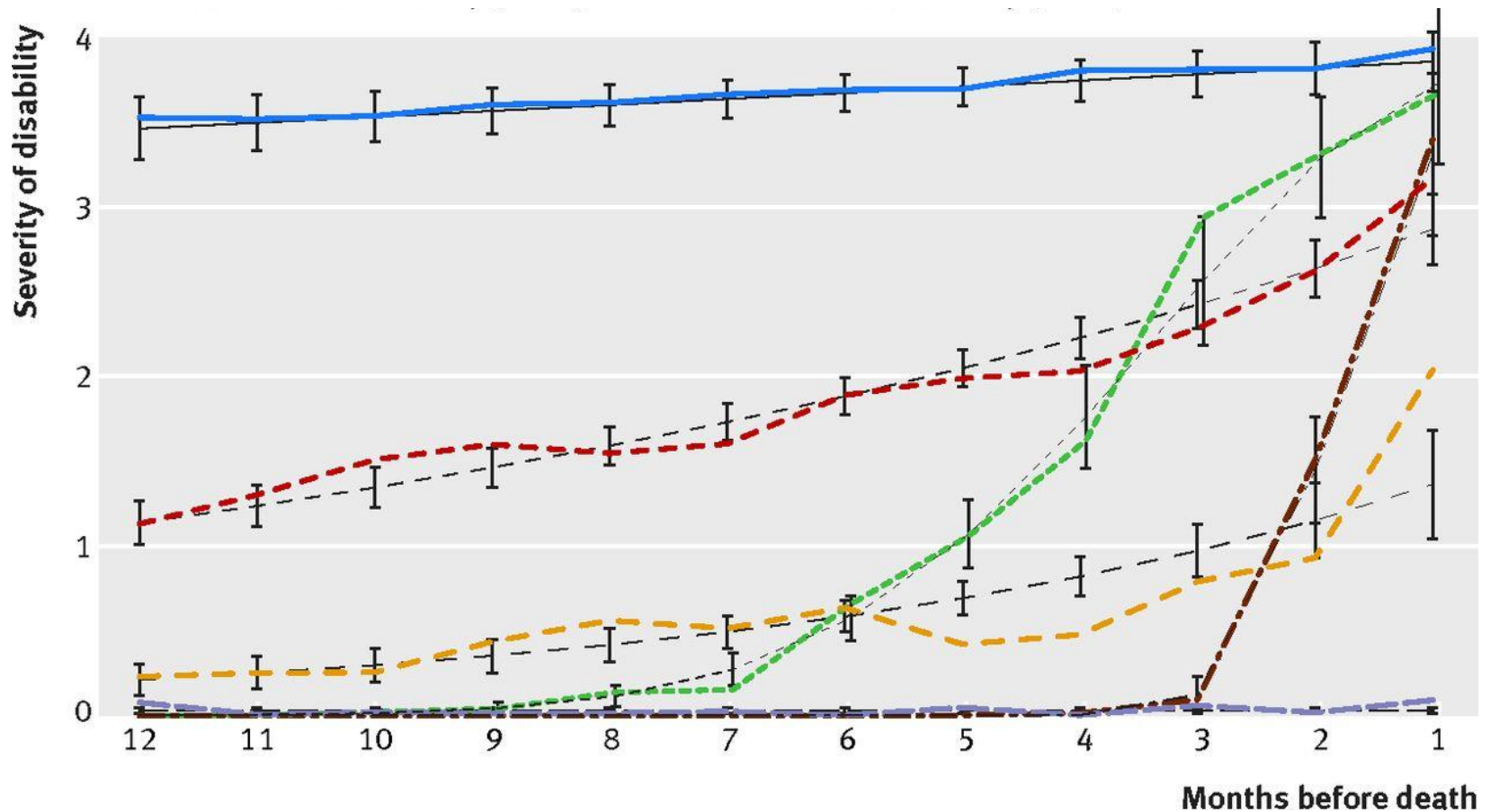
**Herstel welzijn**

**minus**

**schade door medisch handelen**

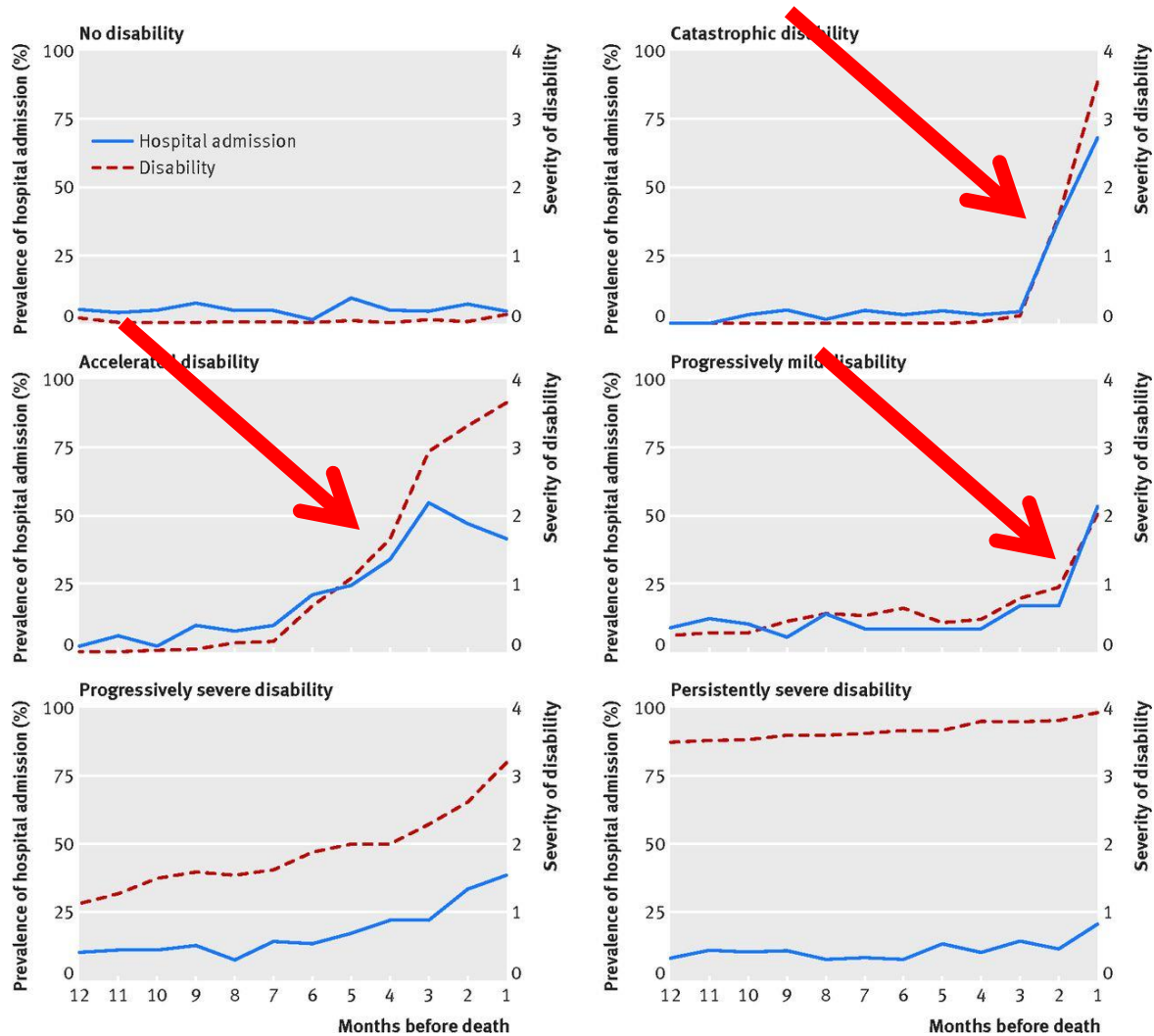
# Ziekenhuis senior proof?

## Opnames laatste levensjaar 552 ouderen



Thomas M Gill et al. BMJ 2015;350:bmj.h2361

# Ziekenhuisopname: 150-700% kans op functieverlies!

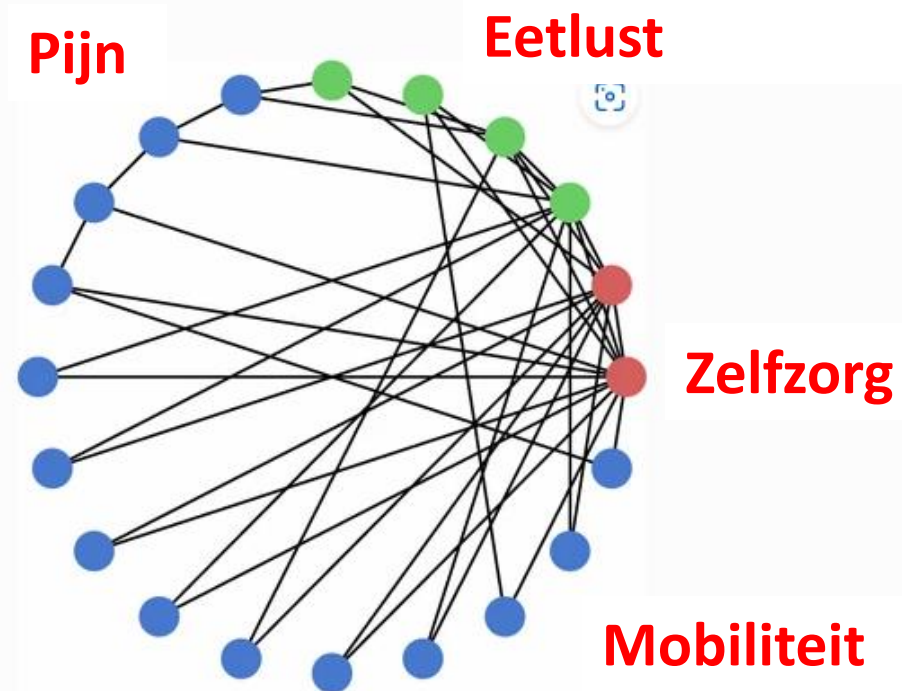


Thomas M Gill et al. BMJ 2015;350:bmj.h2361



# Network model van symptoom interactie

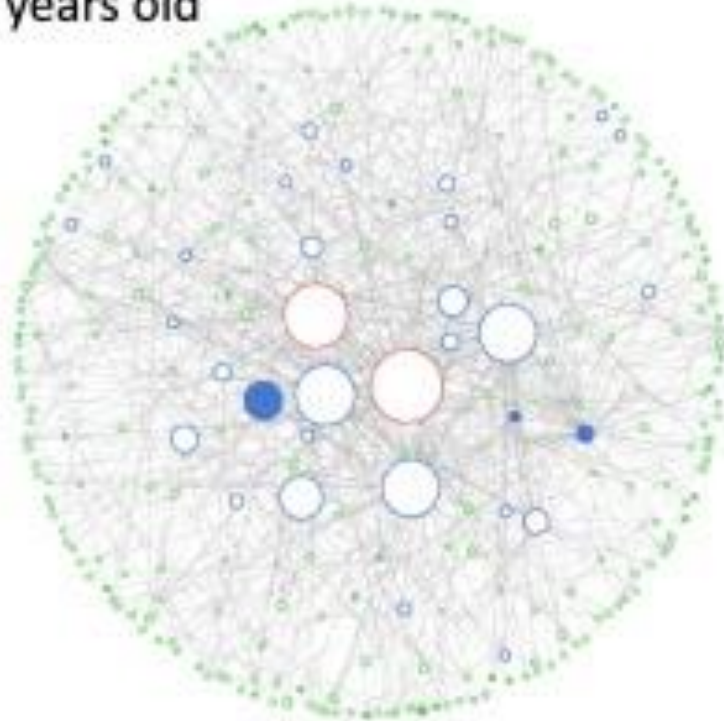
[Aging, frailty and complex networks](#)



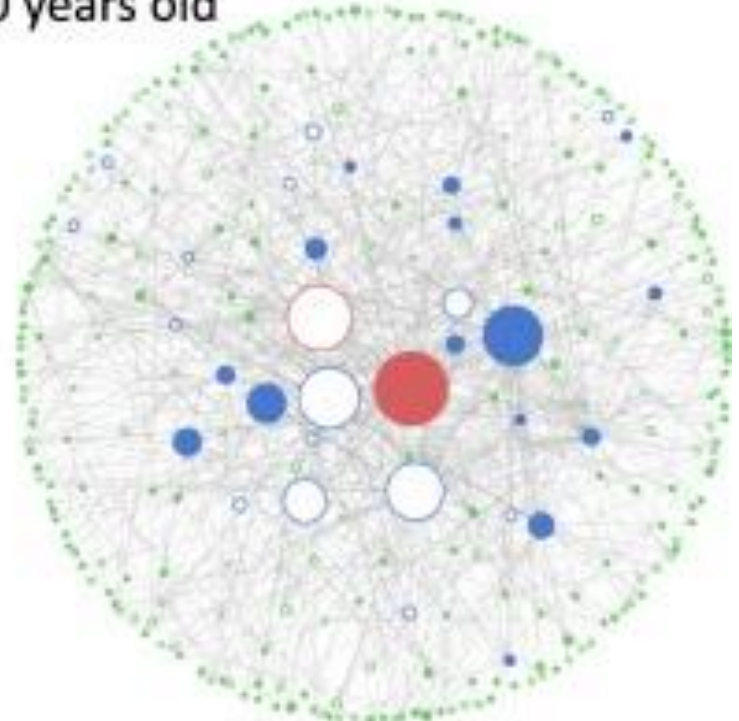
---

# Toename symptomen

40 years old



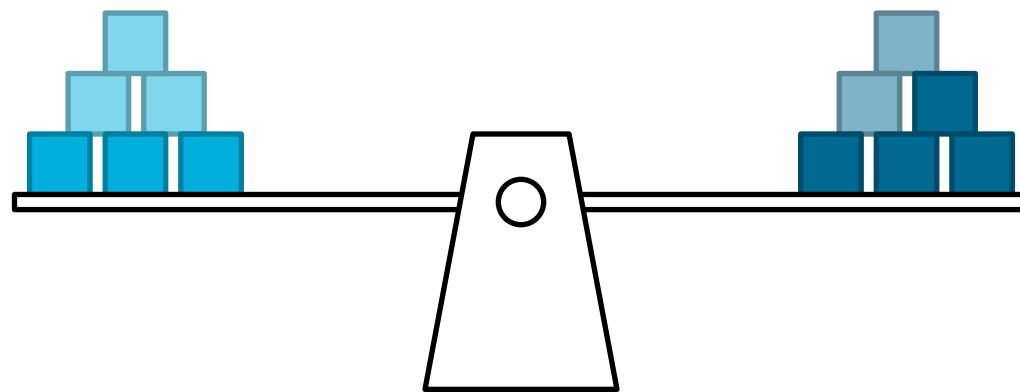
80 years old



---

# Subjectief welzijn en eetlust

Hoe meer symptomen hoe lager welzijn en eetlust

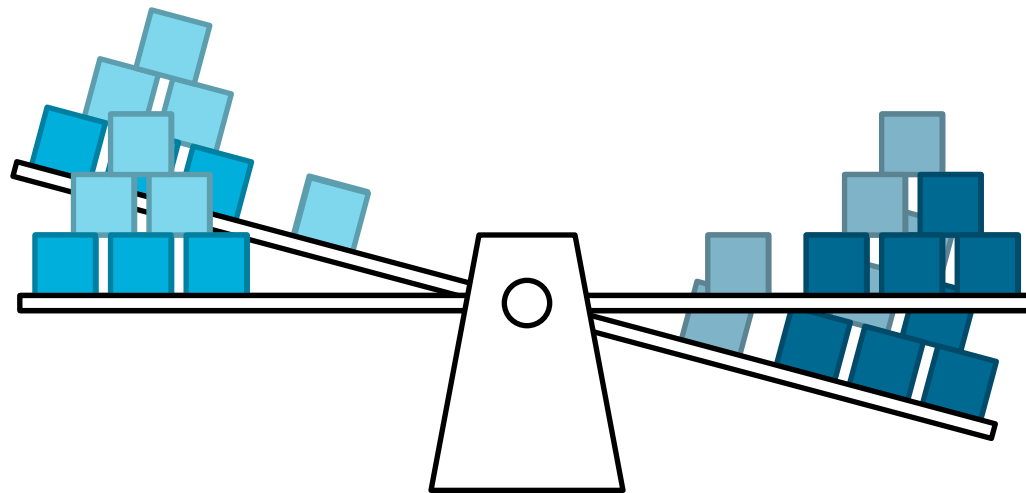


**Bronnen**

**Stressoren**

---

# Interactie: welzijn $\leftrightarrow$ eetlust



**Bronnen**

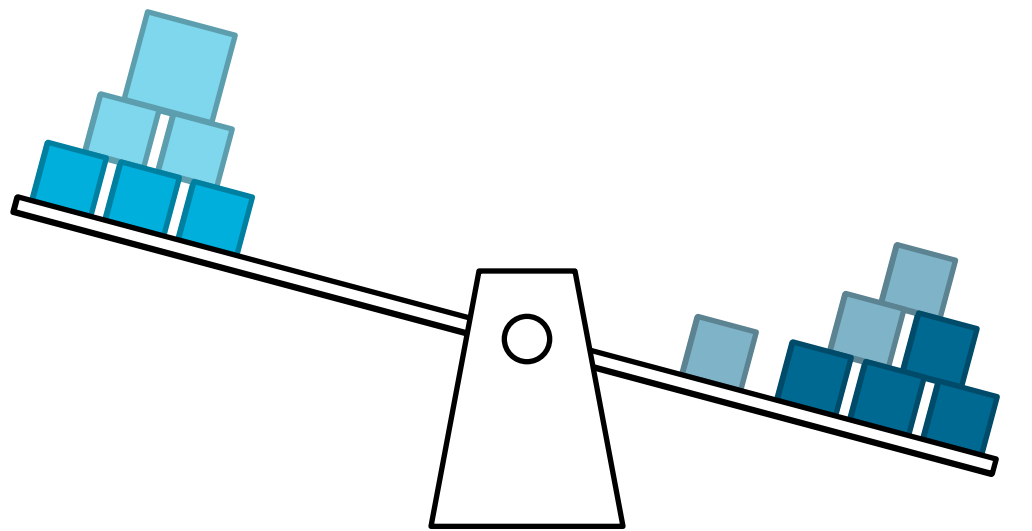
Intern

Extern

**Stressoren**

---

# Interactie: welzijn ↔ eetlust



**Bronnen**

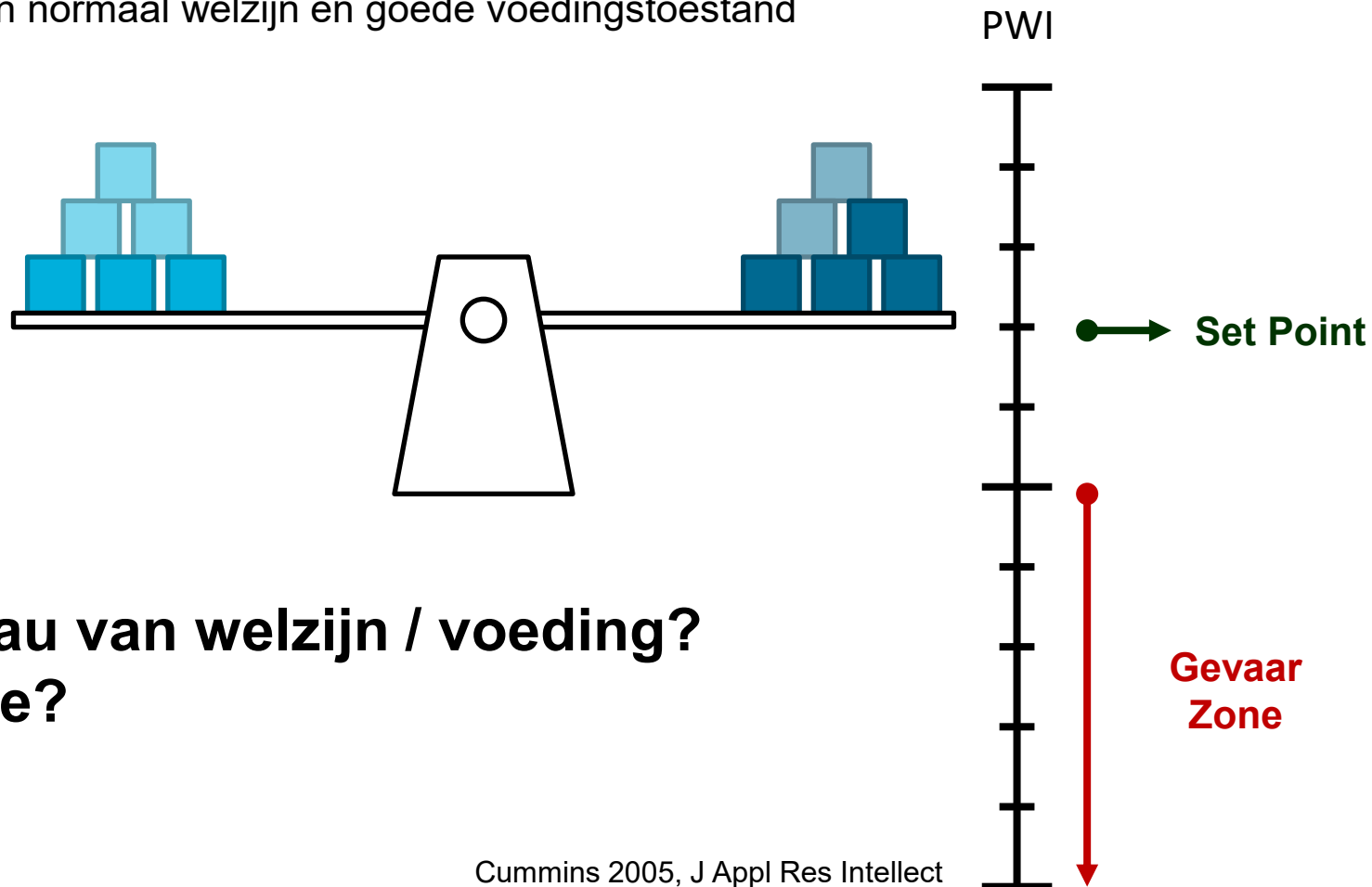
Intern

Extern

**Stressoren**

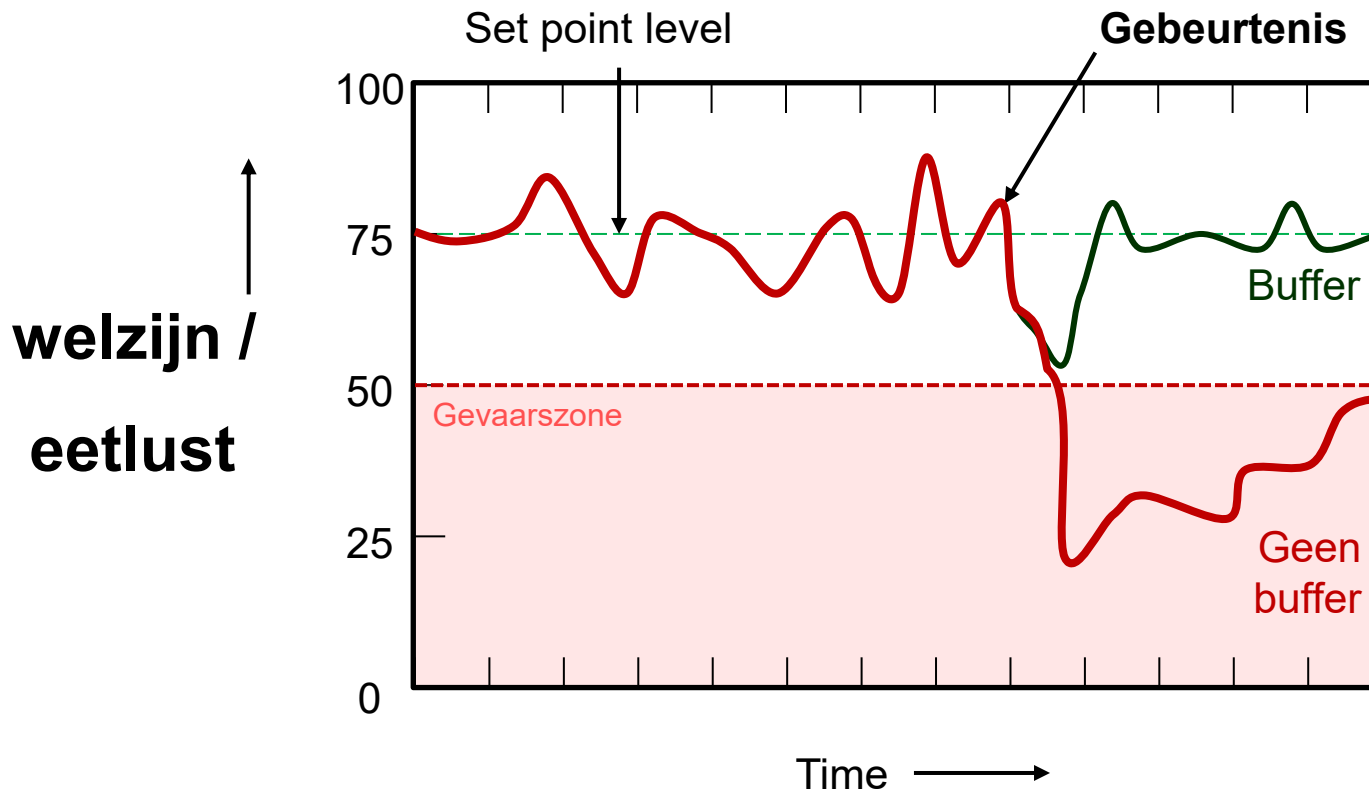
# Interactie: welzijn ↔ eetlust

Homeostasis van normaal welzijn en goede voedingstoestand



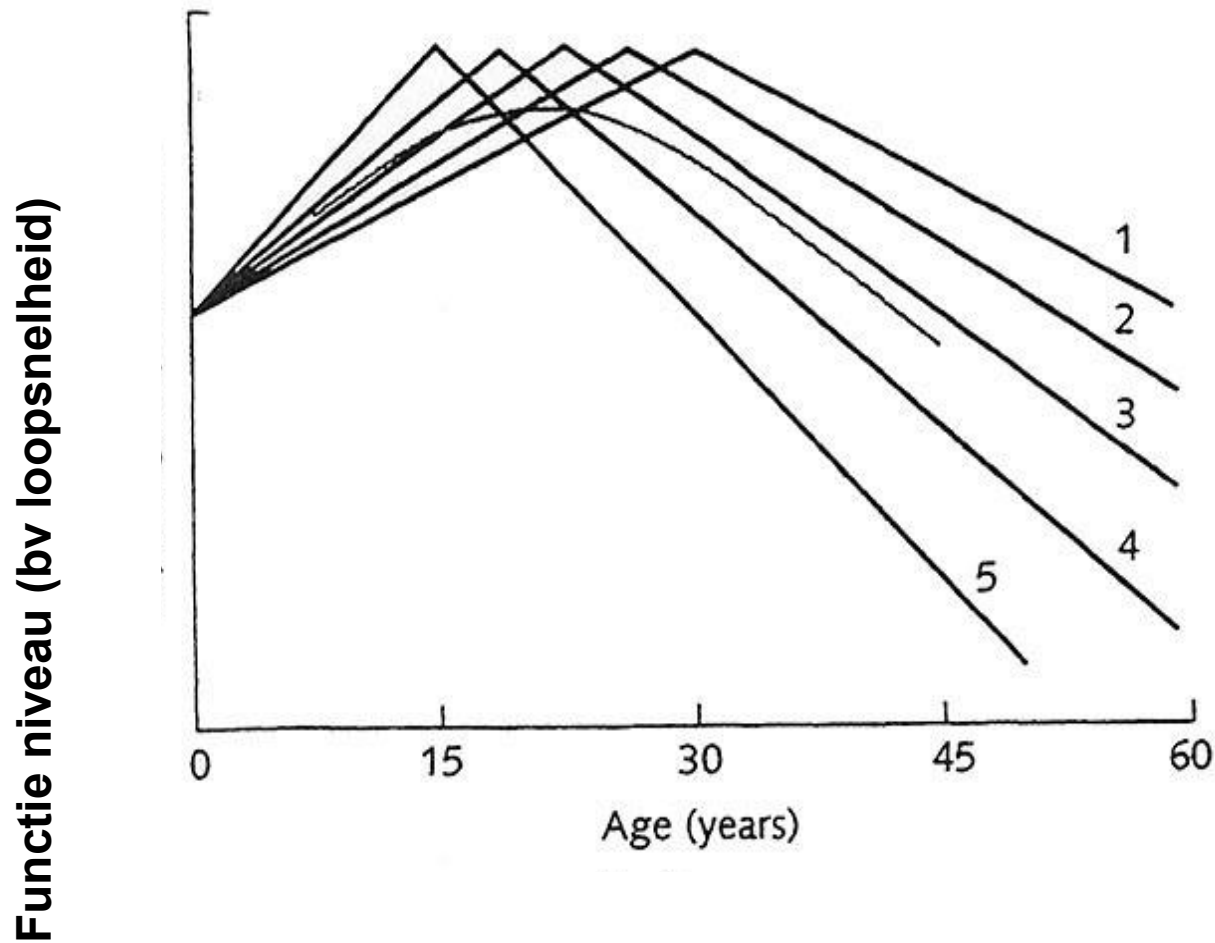
**Wat is niveau van welzijn / voeding?  
Is er reserve?**

Cummins 2005, J Appl Res Intellect



Homeostase van welzijn & eetlust

# Leeftijd: Heterogeniteit voedingsstatus ↑





**Veerkracht:  
Verschilt!!**



---

# Anneke Groot-Bosse



<https://nos.nl/nieuwsuur/artikel/2187554-anneke-89-doet-nog-salto-s-van-de-hoge-duikplank-beweging-is-belangrijk.html>



---

# **“Gezondheid”**

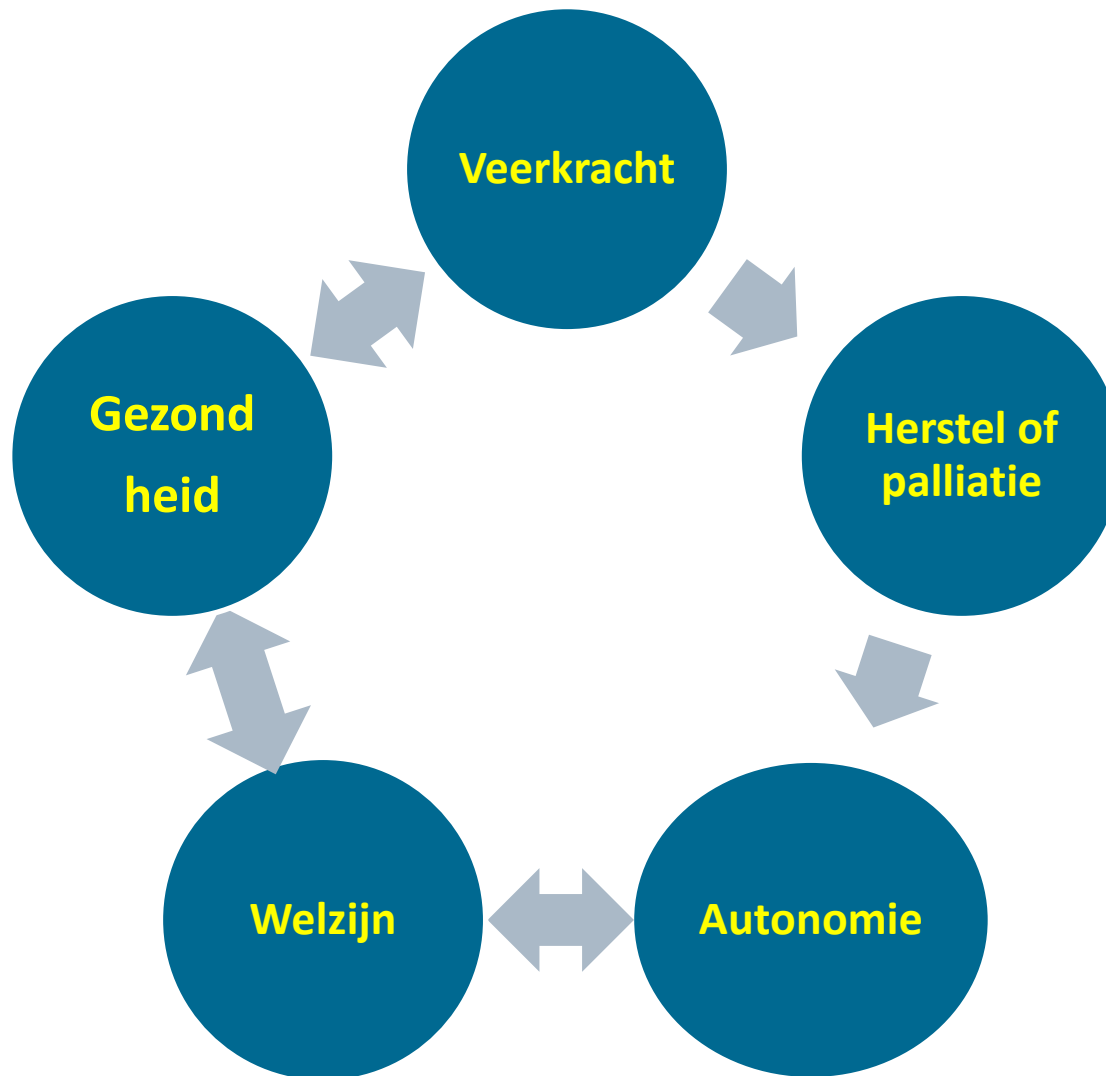
**= in staat tot aanpassing aan  
verandering & beperking**

**= in staat tot (meer)autonomie**

# Geriatrische diëthetiek:

---

## omarm complexiteit oudere



---

## Eerste geriatrie afdelingen (1983)

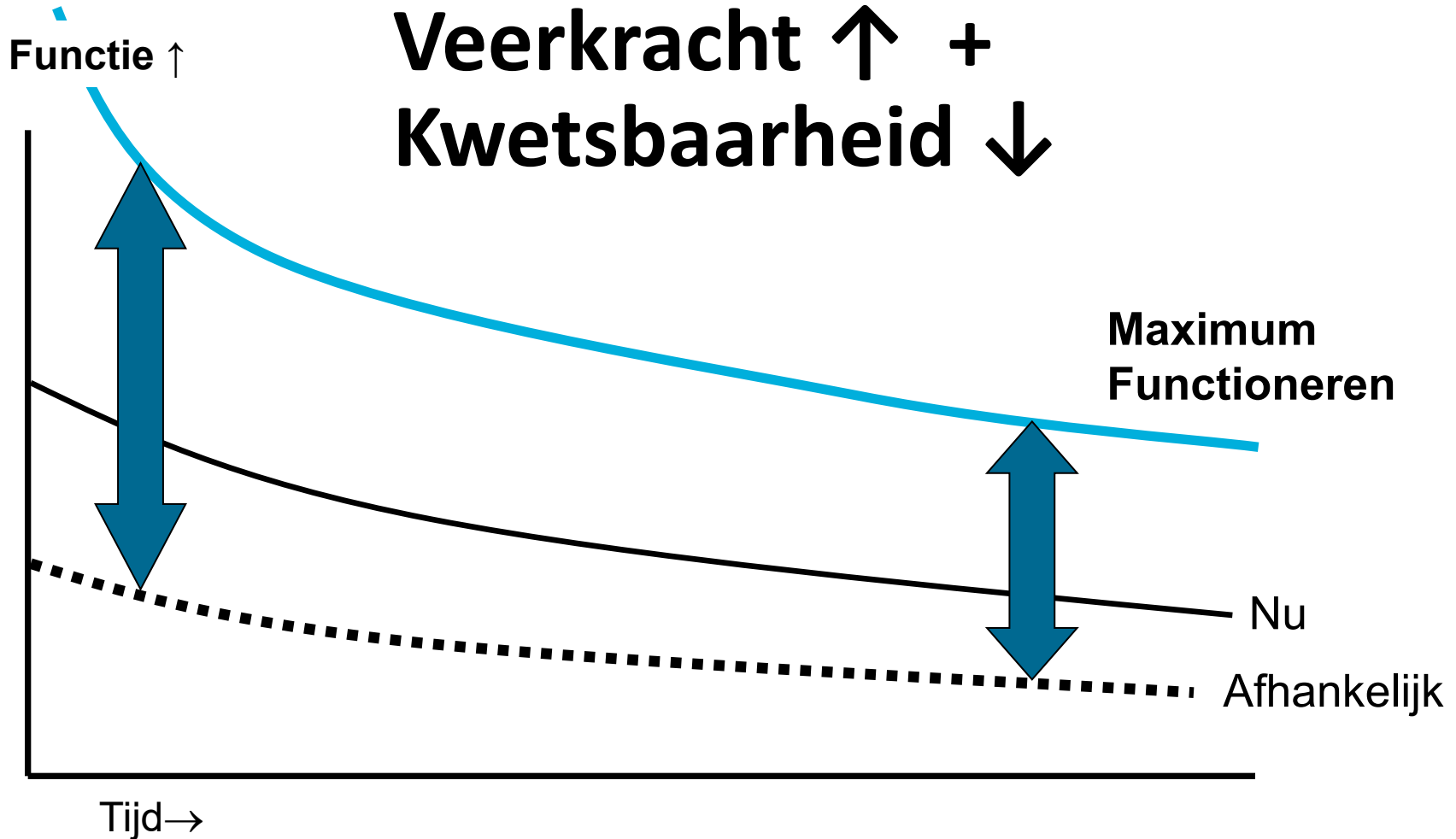
- meerdere opleidingen
- relatie verpleeghuizen
- fysio, ergo, logo, **diethetiek**
- psychologie

Start: 6 opleidingsafdelingen

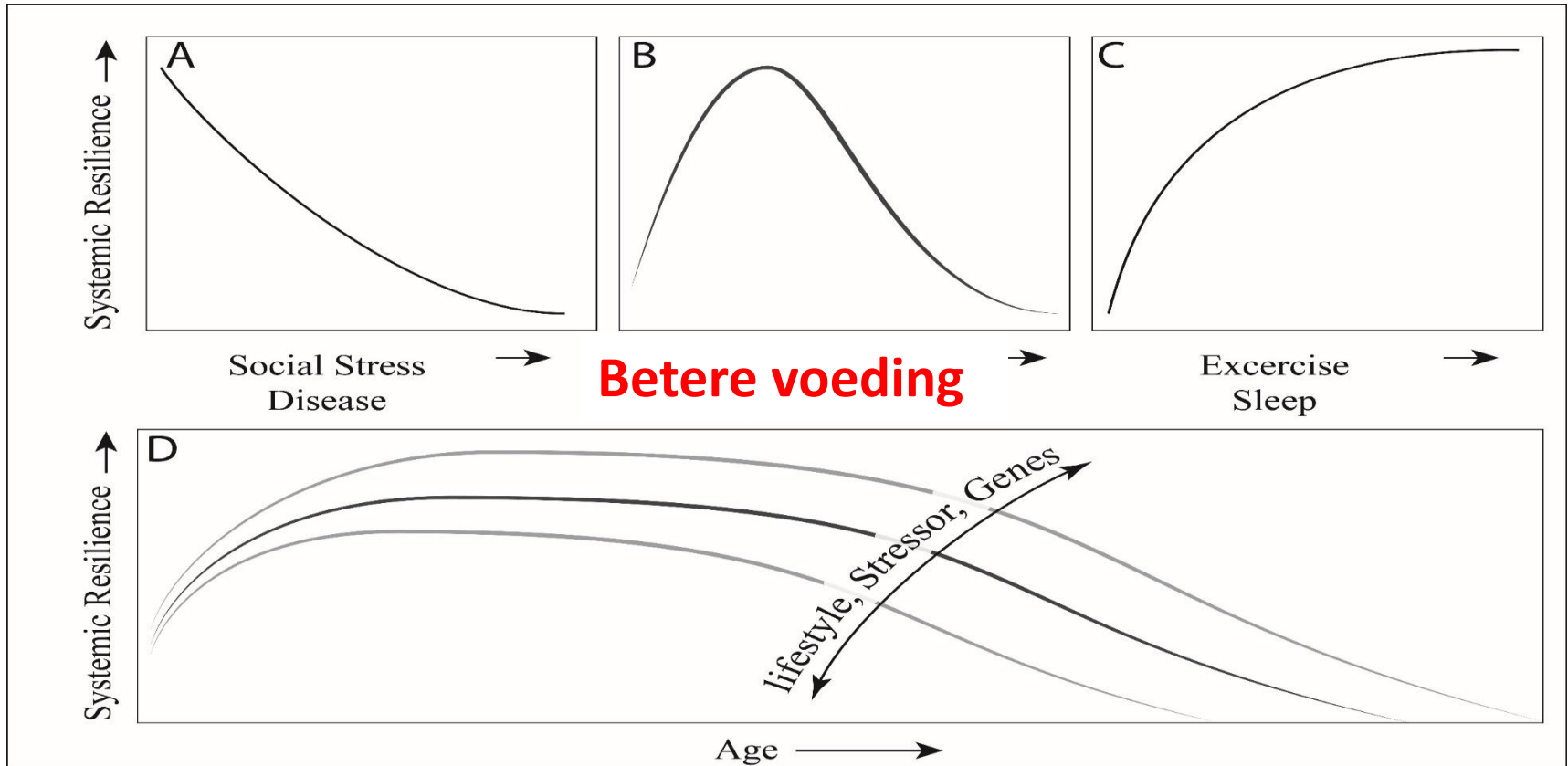
Wetenschap & Geriatriedagen

## Betere voeding:

**Veerkracht ↑ +  
Kwetsbaarheid ↓**



## Vweerkracht verbeteren



# Betere voeding: vaak beter dan medicatie!

---

Bohemian Polypharmacy



# BOHEMIAN POLYPHARMACY



A PARODY OF THE CLASSIC QUEEN SONG  
BOHEMIAN RHAPSODY

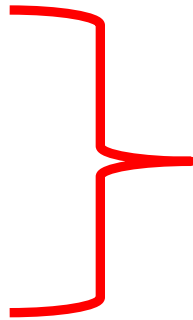
▶ ▶ 🔊 0:04 / 6:45



---

# Healthy diet: works in prevention!

**MIND,  
MeDI  
DASH**



- Weinig zout**
- Veel plantaardig**
- Veel groene groente, fruit**
- Weinig rood vlees, kaas, zoet**

---

# Slim blijven werken met keuzes

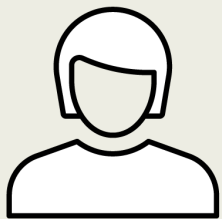
- 1. Selectie**
- 2. Optimalisatie**
- 3. Compensatie**

# JAMA Internal Medicine

## RCT: The Systematic Multi-Domain Alzheimer Risk Reduction Trial (SMARRT)

### POPULATION

**64 Men, 108 Women**



Adults aged  $\geq 70$  y at elevated risk for dementia  
**Mean age, 75.7 y**

### SETTINGS / LOCATIONS



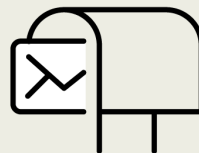
**1 Health care system in Washington**

### INTERVENTION

**172** Participants randomized



**82 SMARRT intervention**  
Personalized risk-reduction strategies with health coaching and nurse visits



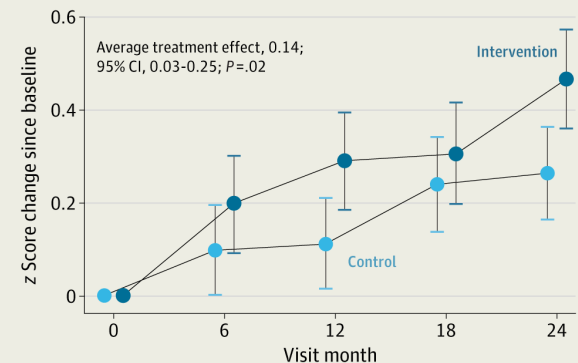
**90 Health education control**  
Mailed educational materials with information on dementia risk reduction

### PRIMARY OUTCOME

The primary outcome was change from baseline over 2-y follow-up in a composite modified Neuropsychological Test Battery (mNTB), using a z score with a mean (SD) of 0 (1)

### FINDINGS

The SMARRT intervention demonstrated statistically significant larger improvements in the composite cognitive score compared with the control group



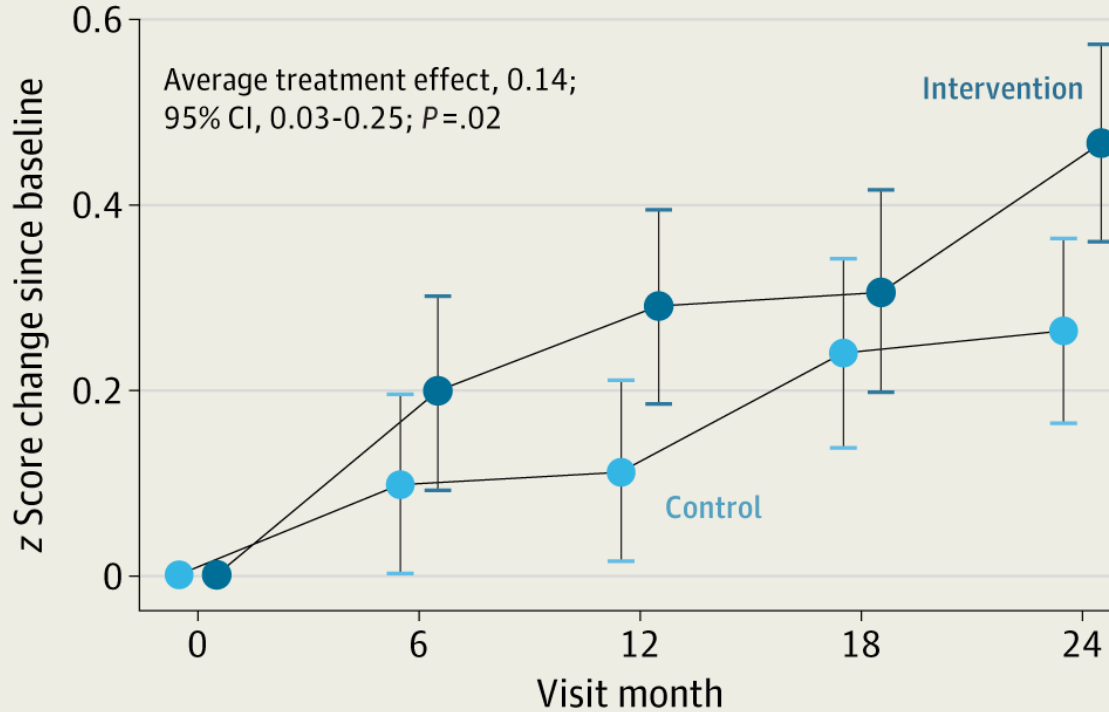
**Change intervention mNTB z score:** SD, 0.32; 95% CI, 0.24-0.40  
**Change control mNTB z score:** SD, 0.18; 95% CI, 0.11-0.26

Yaffe K, Vittinghoff E, Dublin S, et al. Effect of personalized risk-reduction strategies on cognition and dementia risk profile among older adults: the SMARRT randomized clinical trial. *JAMA Intern Med*. Published online November 27, 2023. doi:10.1001/jamainternmed.2023.6279

© AMA

# FINDINGS

The SMARRT intervention demonstrated statistically significant larger improvements in the composite cognitive score compared with the control group



**Change intervention mNTB z score:** SD, 0.32; 95% CI, 0.24-0.40

**Change control mNTB z score:** SD, 0.18; 95% CI, 0.11-0.26

# Welke doelen pre-valeren?

- **Individuele patiëntenzorg :**
- **Die van de patient of die van ons?**



---

# Geriatrische diëtetiek

**Activerende maaltijden:**

- samen met bewegen effectiefste**
- prehabilitatie**
- veerkracht verbeteren**
- train de trainer!!**



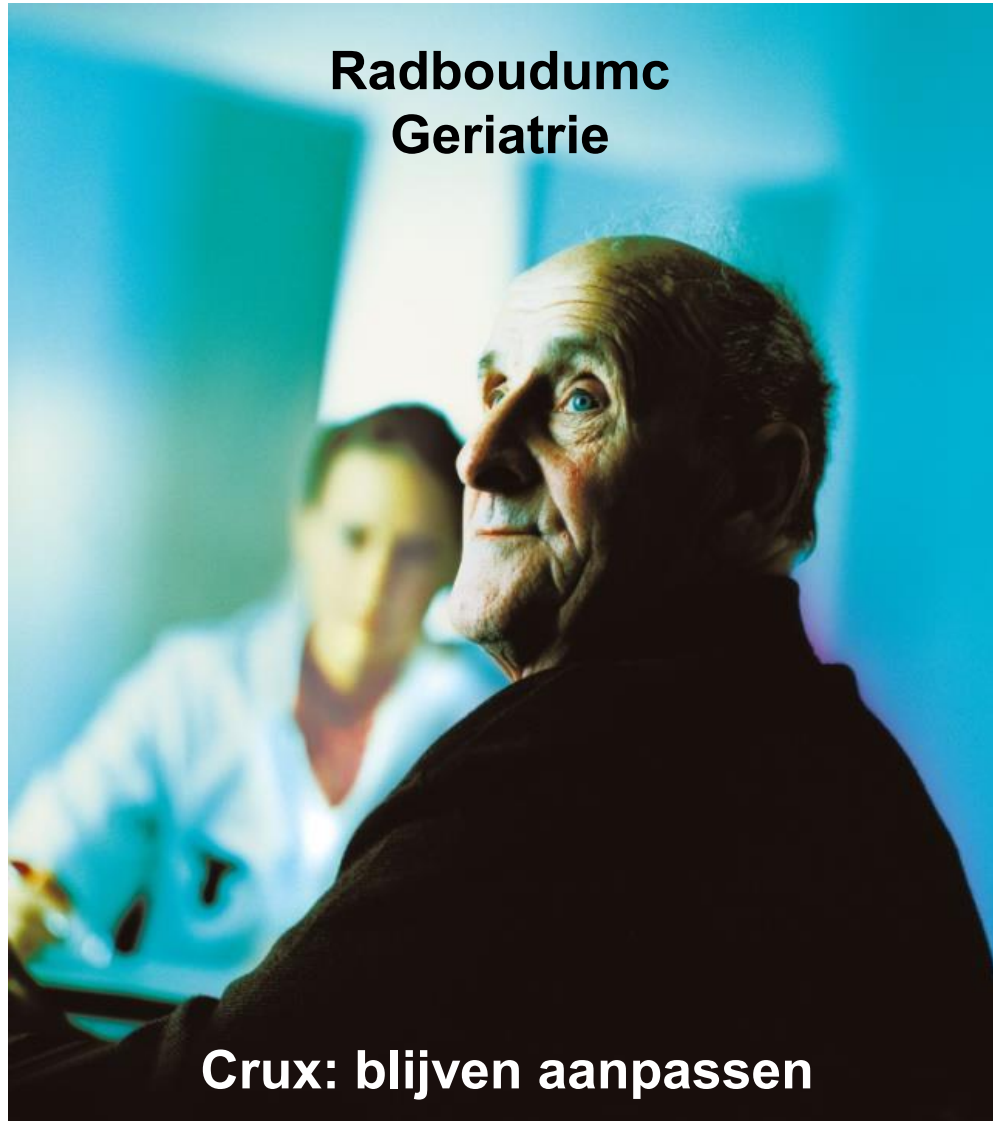
---

# Vragen



---

**Radboudumc  
Geriatric**



**Crux: blijven aanpassen**

Conform de wetgeving ten aanzien van de bescherming van gegevens verzoeken we je even de tijd te nemen om de belangrijkste punten van ons Privacybeleid te lezen. Dit beleid geldt voor alle services van Google. Het beschrijft hoe wij gegevens gebruiken en welke opties je hebt. Je moet dit vandaag nog doen.

# Een bijzondere casus... Anneke Groot-Bosse



The video player shows a woman in a dark swimsuit standing on a diving board over a large indoor swimming pool. The pool has a yellow wall and large windows in the background. The text 'NOS-NTR' is visible in the top left corner of the video frame, and the 'npo' logo is in the top right. A URL is overlaid on the video: <https://www.youtube.com/watch?v=bTmzXvOAFeg>. The video player interface includes a play button, a progress bar showing 0:57 / 12:14, and icons for full screen, settings, and share.

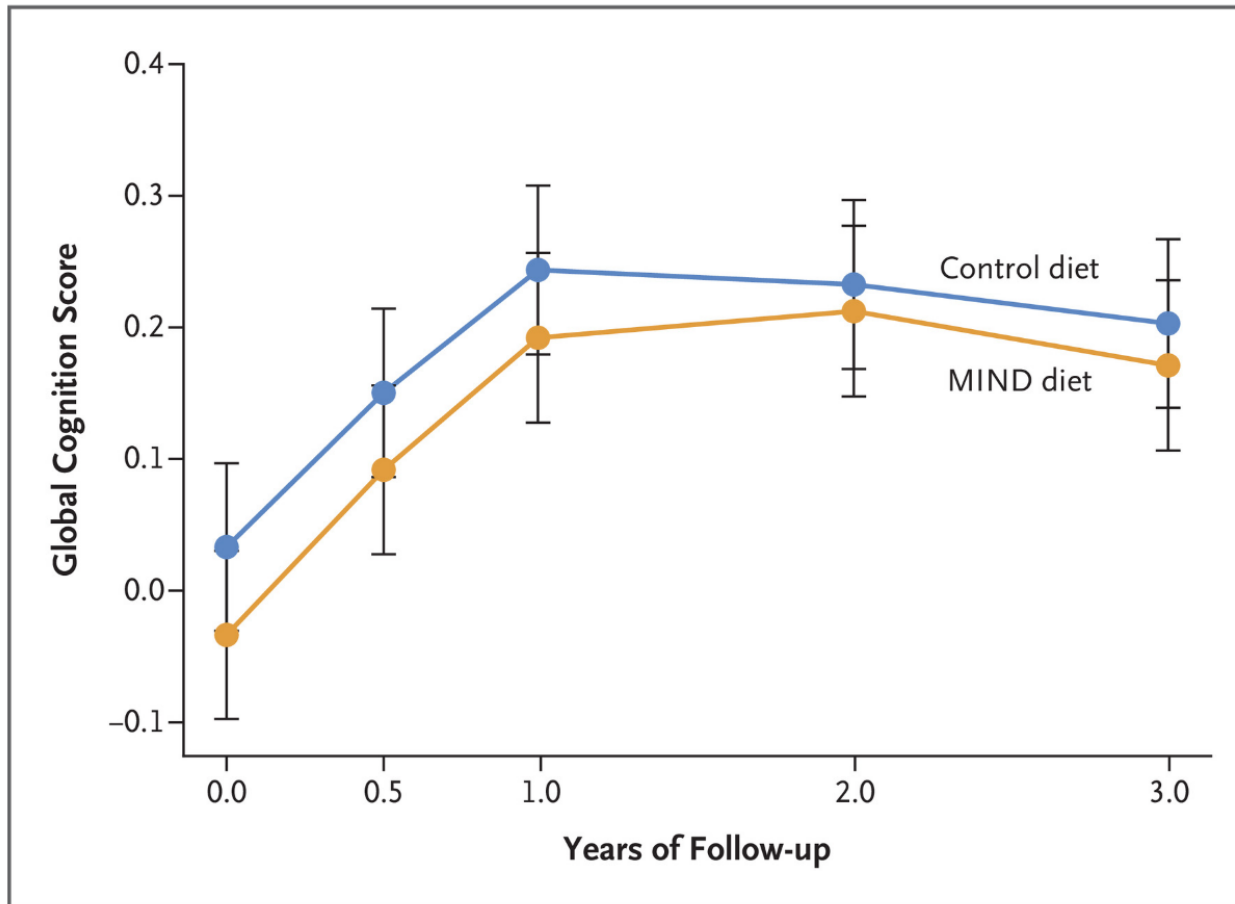
Volgende



Het leven van een 90 jarige

Jasper Hafkenscheid

# MIND dieetstudie Barnes et al NEJM 2023



---

## Conclusie MIND

- In drie jaar niet sign minder cognitieve verlies
- bij cognitief goede ouderen (70 jr)
- eerste graads familielid met dementie
- tov gezond dieet + lichte calorie restrictie
  
- lichte verbetering cognitieve
- herhaal/ trainingseffect?

# Multicomponent Finger studie

Voeding + beweging + educatie:

25-150% betere uitvoerende psychische functies!

- Gezond dieet
  - 5-7 maal bewegen
  - Vasculaire risico's↓
  - Combinaties
  - Verouderingskennis
- Bij Risicogroep!!



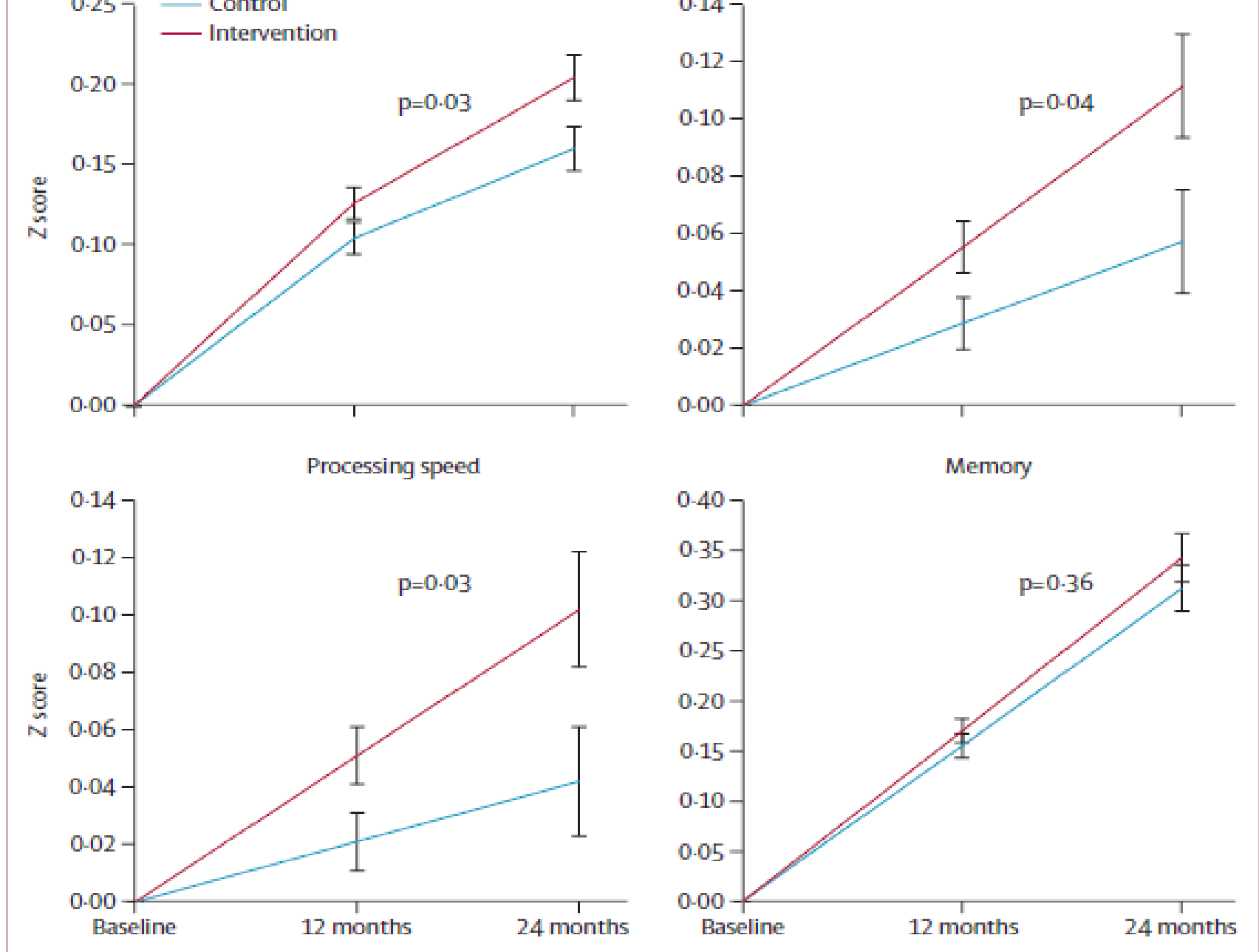


Figure 2: Change in cognitive performance during the 2 year intervention

Finger Study, Ngandu e.a. Lancet 2015; Rosenberg e.a. Alz & Dementia 201



**Radboudumc**

# Finger food (II)

<5 gr vet

<5% alcohol

30 gr vezels

Veel fruit, groente

2 maal/week vis

Plantaardige margarine

© THL CC BY 4.0

## How to prevent memory disorders?



**Healthy diet.**  
The participants received personal advice on what changes to make to improve their diet, and tips on shopping for groceries, for example. The aim was to achieve a diet which conforms to current nutritional recommendations.



**Physical activity protects the brain.** The participants took part in various physical activities under the guidance of a professional trainer. Cardiovascular exercise included water aerobics and Nordic walking strength training included training.



**The brain needs to flex its muscles as well – regularly and with sufficient resistance!** Cognitive exercises were performed with the help of a computer programme. Learning to do new things, meeting people and having hobbies are also beneficial for the brain.



**Cardiovascular risk factors under control.** The participants' blood pressure, weight and blood cholesterol and glucose were monitored regularly. They were encouraged to make lifestyle changes and referred to drug therapy, when necessary.

[www.thl.fi/fingeren](http://www.thl.fi/fingeren)

# Nutrients and nutritional patterns in neurocognition and Alzheimer's disease risk

**Neuroprotective diets:**  
MeDi  
DASH  
MIND

## Neuroprotective foods:

Vegetables  
Fruits  
Whole grains  
Soy beans  
Nuts  
Moderate fish intake  
Reduced caloric intake or caloric restriction mimetics (e.g., resveratrol)  
Extra virgin olive oil  
Legumes  
Berries  
Dark green leafy vegetables  
Probiotics

## Supplementation of neuroprotective nutrients:

B vitamins  
n-3 PUFAs  
Vitamin E  
Vitamin D  
Curcumin/turmeric  
Sulforaphane  
Genistein  
Fortasyn Connect and other multi-component supplementations

## Foods detrimental for neurocognition:

Saturated or trans-unsaturated fats  
Red meat  
Poultry  
High-fat dairy products  
Processed foods  
Refined sugars (e.g., sweets, sugar-sweetened soft drinks)  
Pastries  
Fructose- and purine-rich foods

## Other factors:

Impaired systemic availability of certain nutrients e.g., DHA, EPA, choline, B vitamins (e.g., B1, B12, folate), vitamin C, vitamin E, vitamin D, uridine, choline, minerals  
MetS-related risk factors (e.g., hyperhomocysteinemia, insulin resistance)  
Decrease of plasmatic phosphatidylcholine species  
Increase of plasmatic carbonyl proteins  
Nutritional deficiencies in early life

*High evidence*

*Controversial evidence*

*High evidence*

Beneficial effects on neurocognition

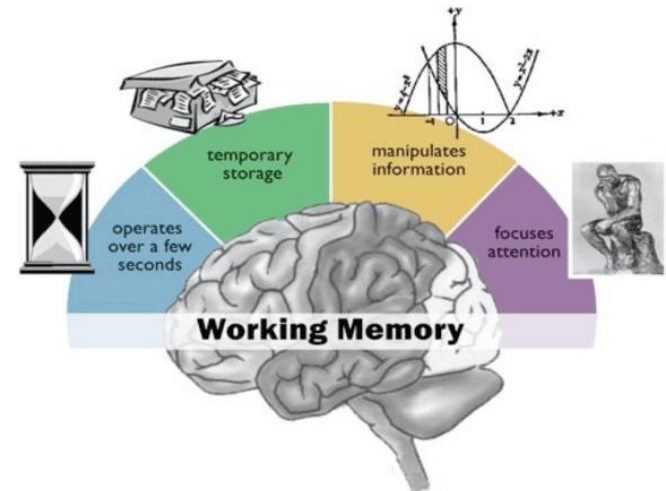
Detrimental effects on neurocognition



---

# Finger studie

- 20% eiwit
- 30% vet (< verzadigd)
- 3 gr Omega-3 vet
- 50% Koolhydraat (<10% suiker)



*Ngandu ... Kiviipelto  
Lancet 2015*

