

*Le Apo*

LEEFSTIJLAPOTHEKE®

# Samenvatting opleidingsdag 1

Preventie begint bij kennis!

CARE FOR CURE

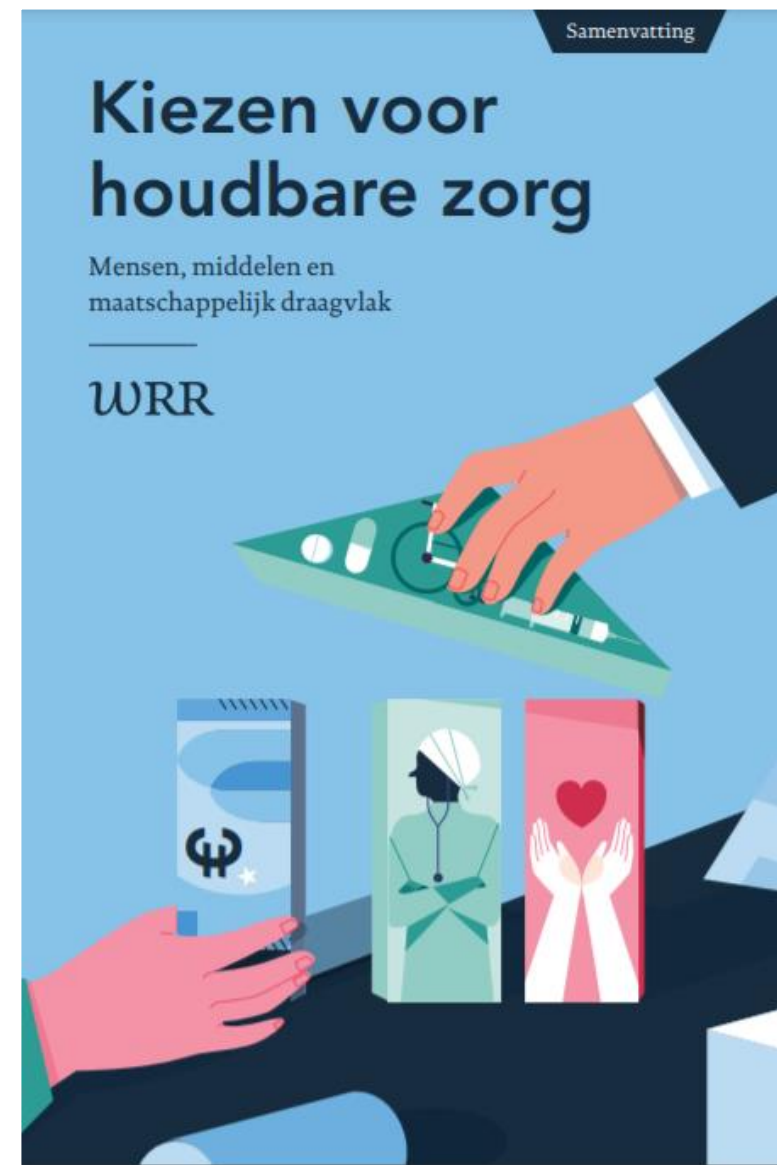
ADVIES IN  
GEZONDHEIDSZORG

Het momentum is daar!

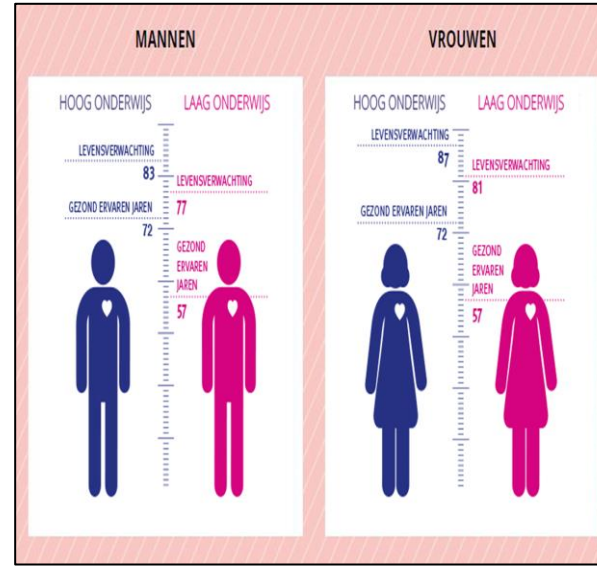
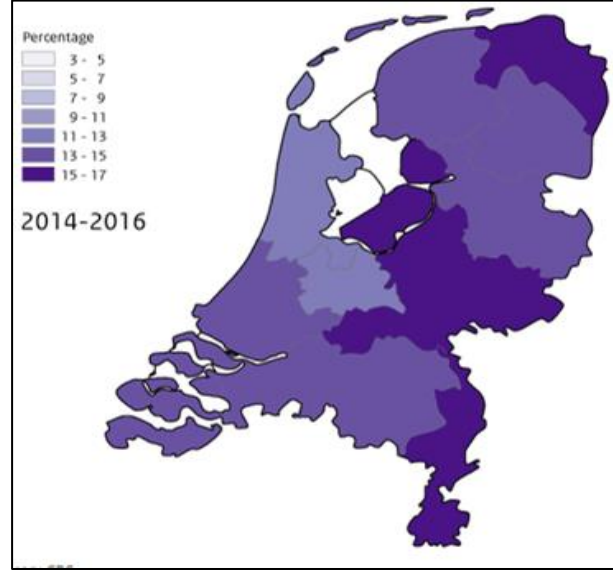
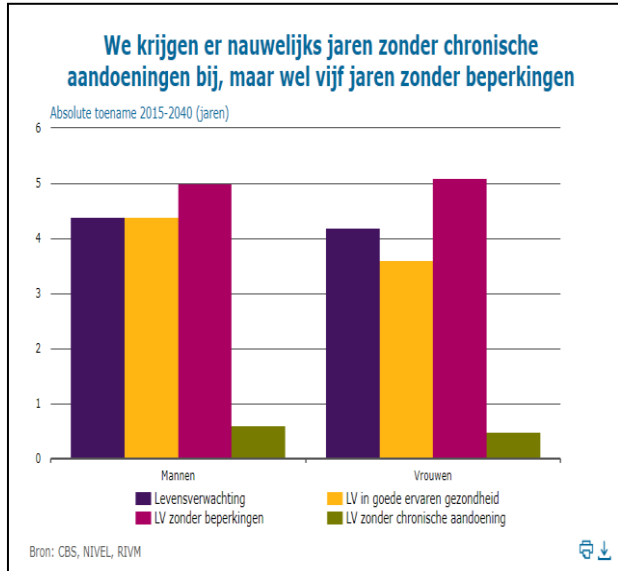
# 'Zorg moet rigoureuus veranderen', luidt boodschap campagne Zorginstituut

NOS Nieuws • Dinsdag 17 mei 2022, 05:00

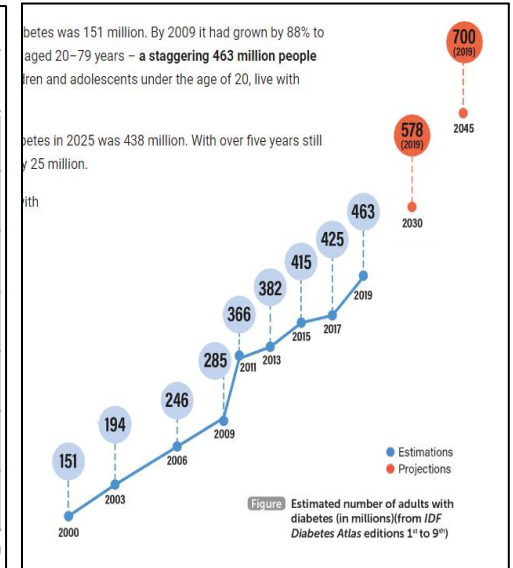
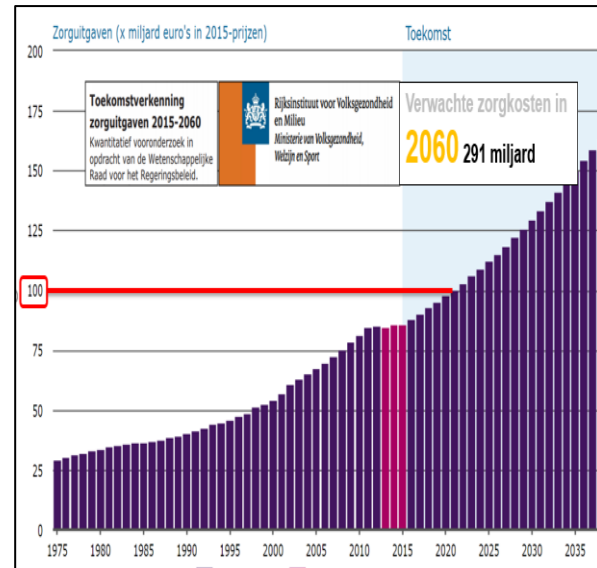
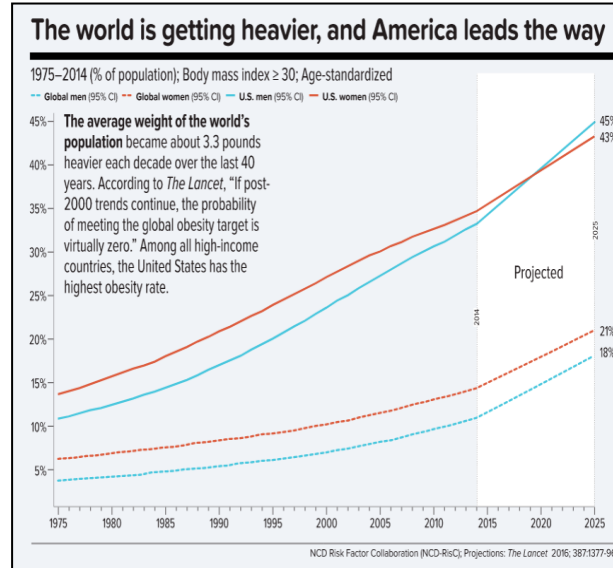
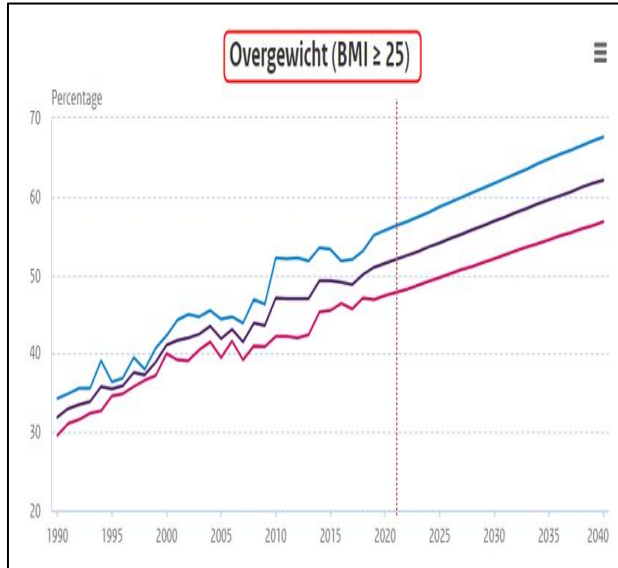
NOS



# Problemen uitgedrukt in cijfers, tabellen en grafieken



## En wat heeft ons hormoon insuline hiermee te maken?





### **Oorzaken *obesitas* *pandemie*:**

- 1. Globale toename welvaart / ongezonde leefomgeving**
- 2. Mondiale vergrijzing (toename levensverwachting)**
- 3. Krimpemde hoog / (nog) groeiende laag-sociaal economische klasse**



Normal

Prediabeet

Diabetes T2

## TNO tool: Diabetypering

Insuline  
resistentie

Verhoogd insuline  
resistentie

Endogene insuline  
secretie

Wat houdt  
insuline resistentie  
echt in?

Glucose na maaltijd

### ORAL GLUCOSE TOLERANCE TEST (OGTT)

Oral Glucose Tolerance Test



No food or  
drink 8 to 12  
hours prior  
to test



Drink glucose



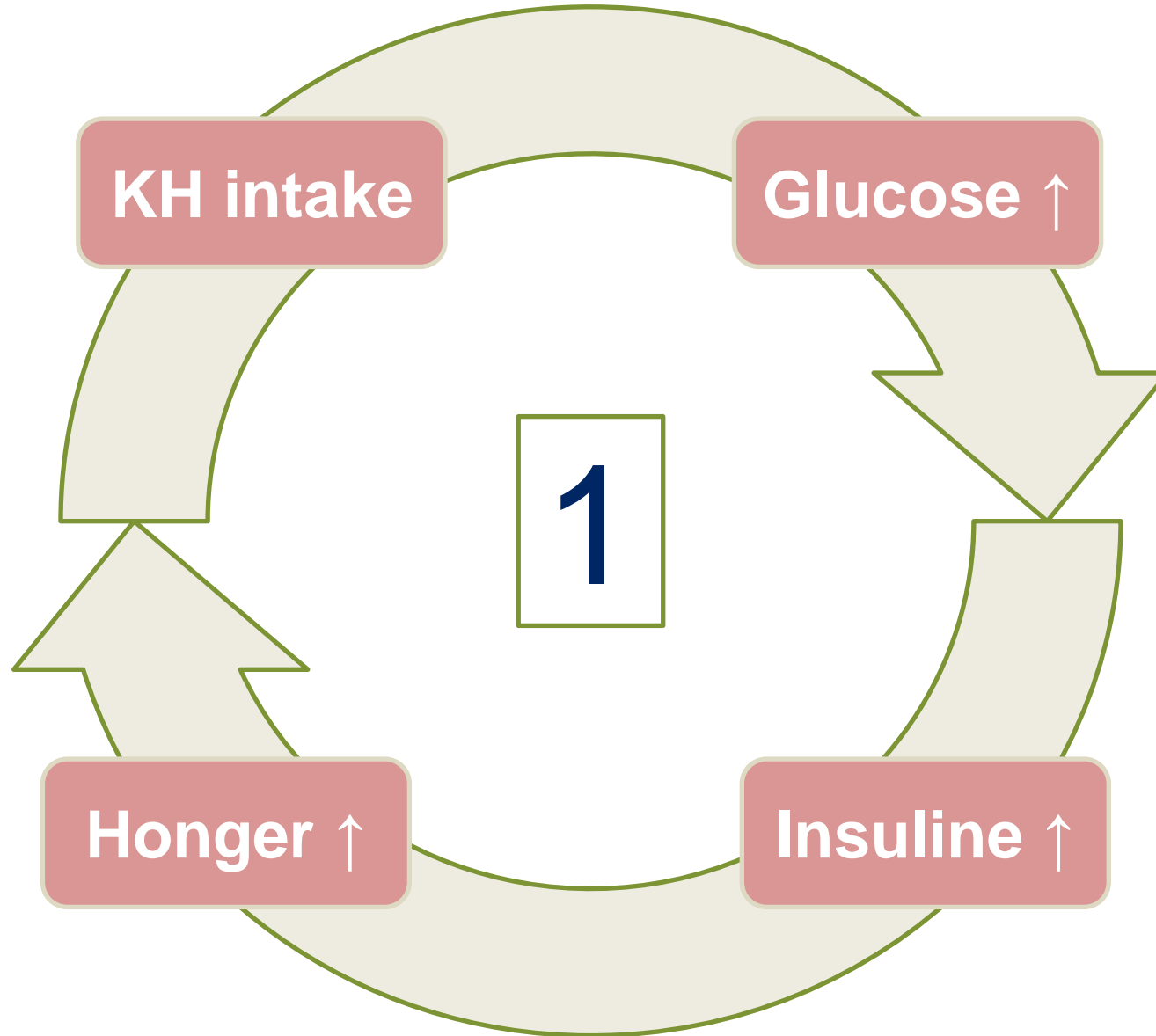
Blood is tested  
two hours later

High glucose level = potential diabetes

Nuchter glucose

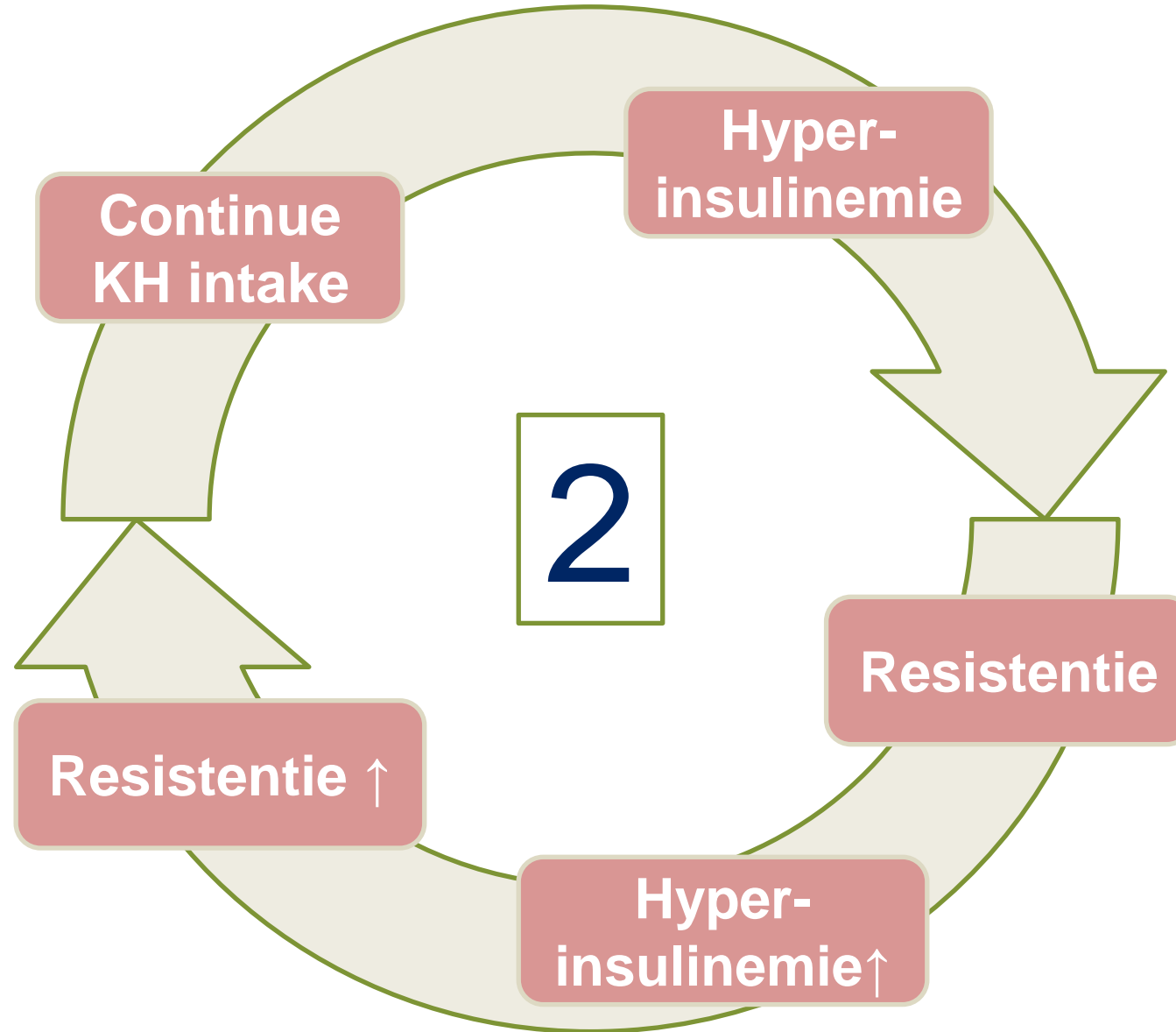
Hyperglycemie

# FASE 1: VICIEUZE CIRKEL 1



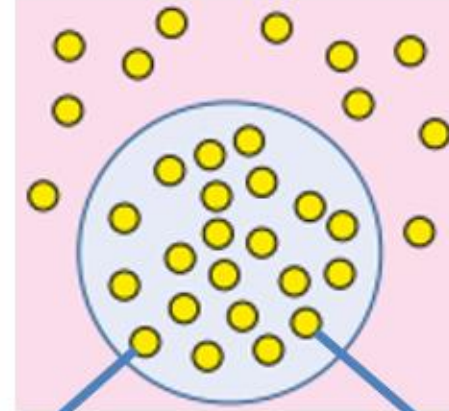
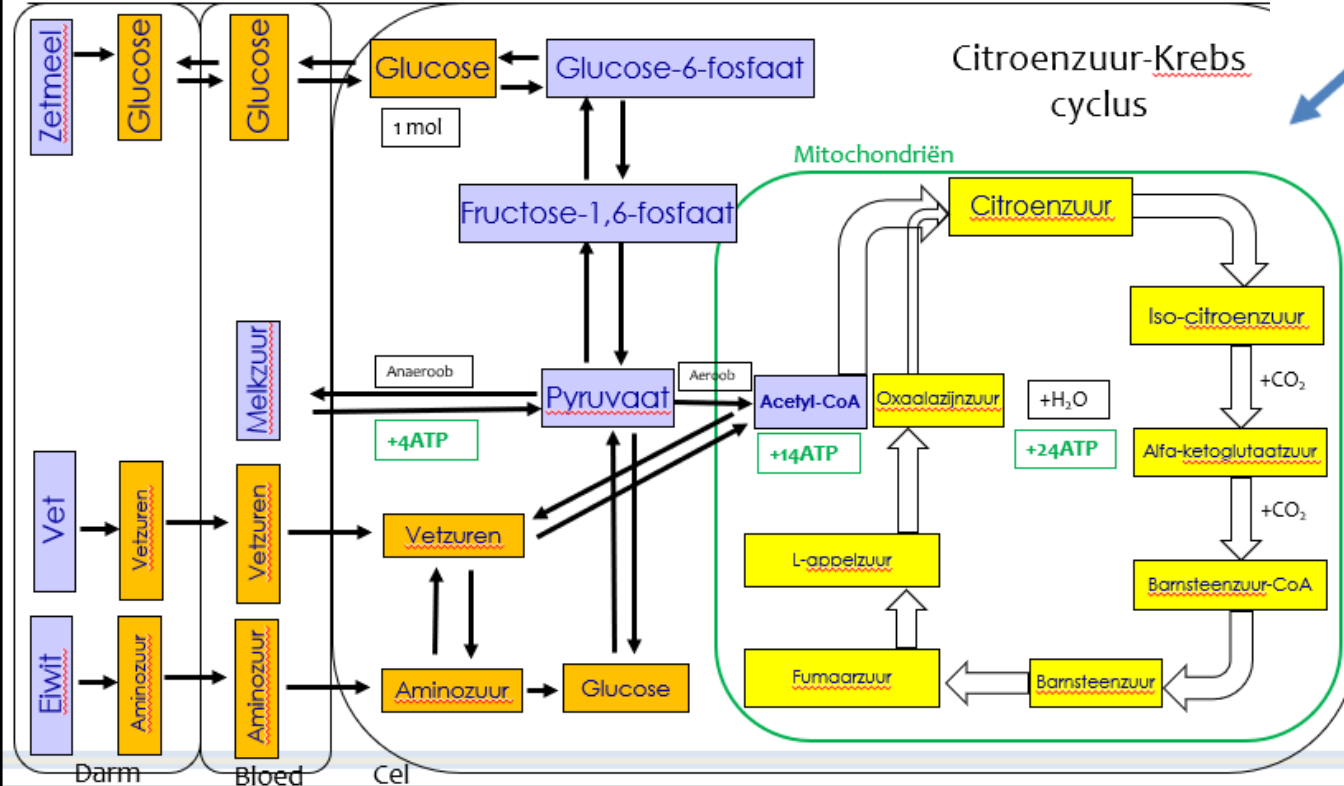
**KLAAR VOOR  
VICIEUZE CIRKEL 2?**

# FASE 1: VICIEUZE CIRKEL 2



**KLAAR VOOR  
VICIEUZE CIRKEL 3?**

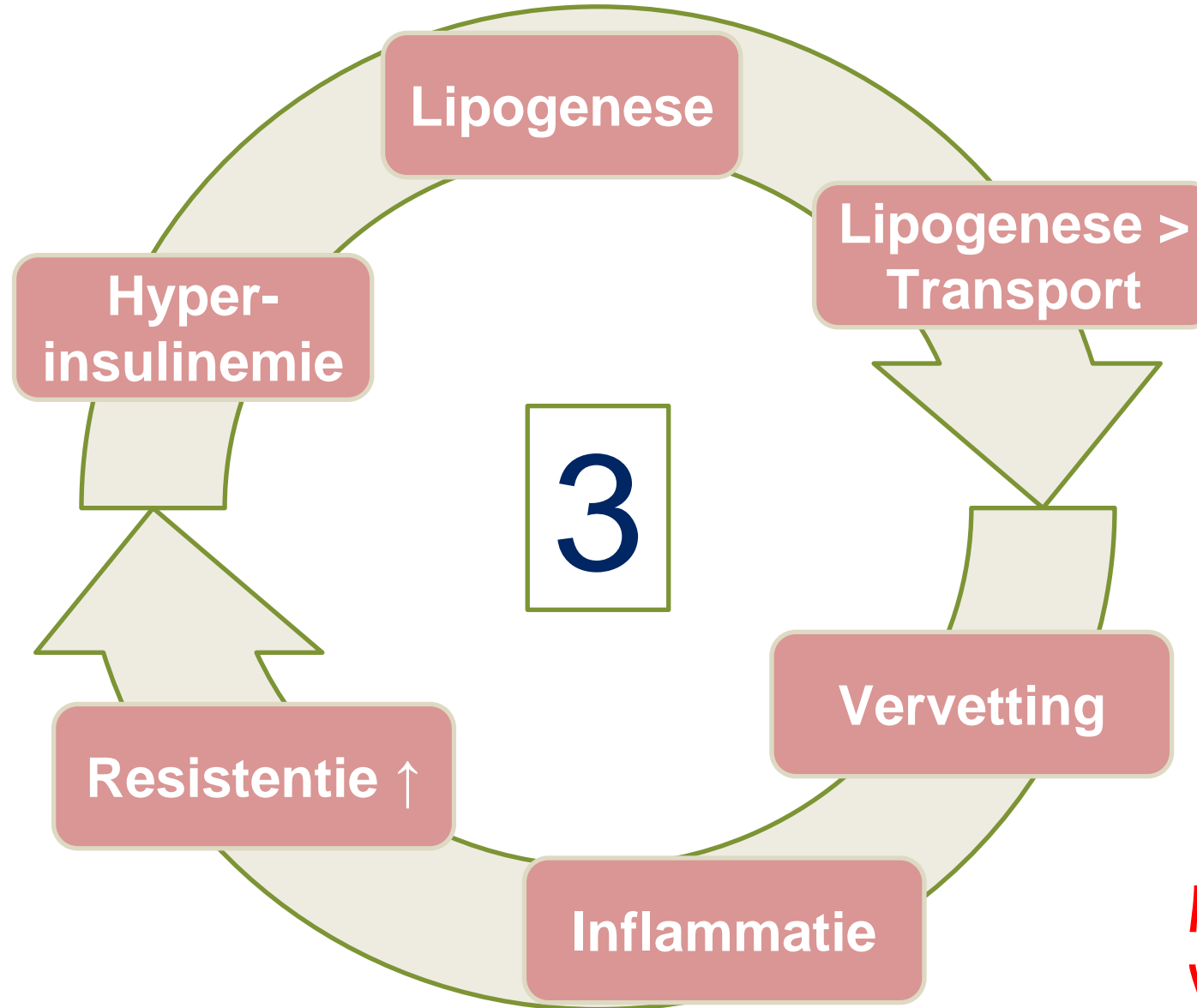
Citroenzuurcyclus: Energieleverancier via eiwit



Opslag als glycogeen of vet

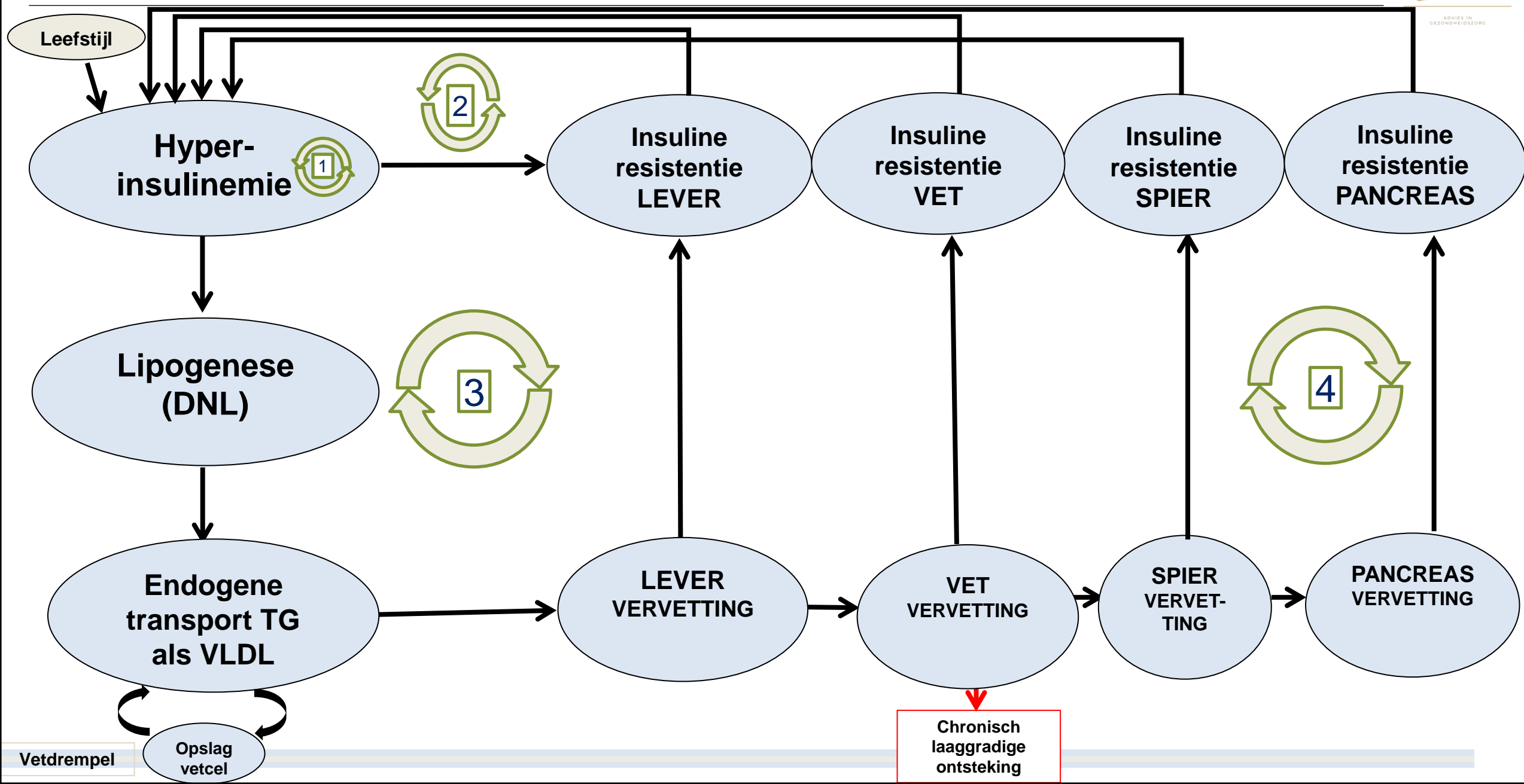


# FASE 1: VICIEUZE CIRKEL 3

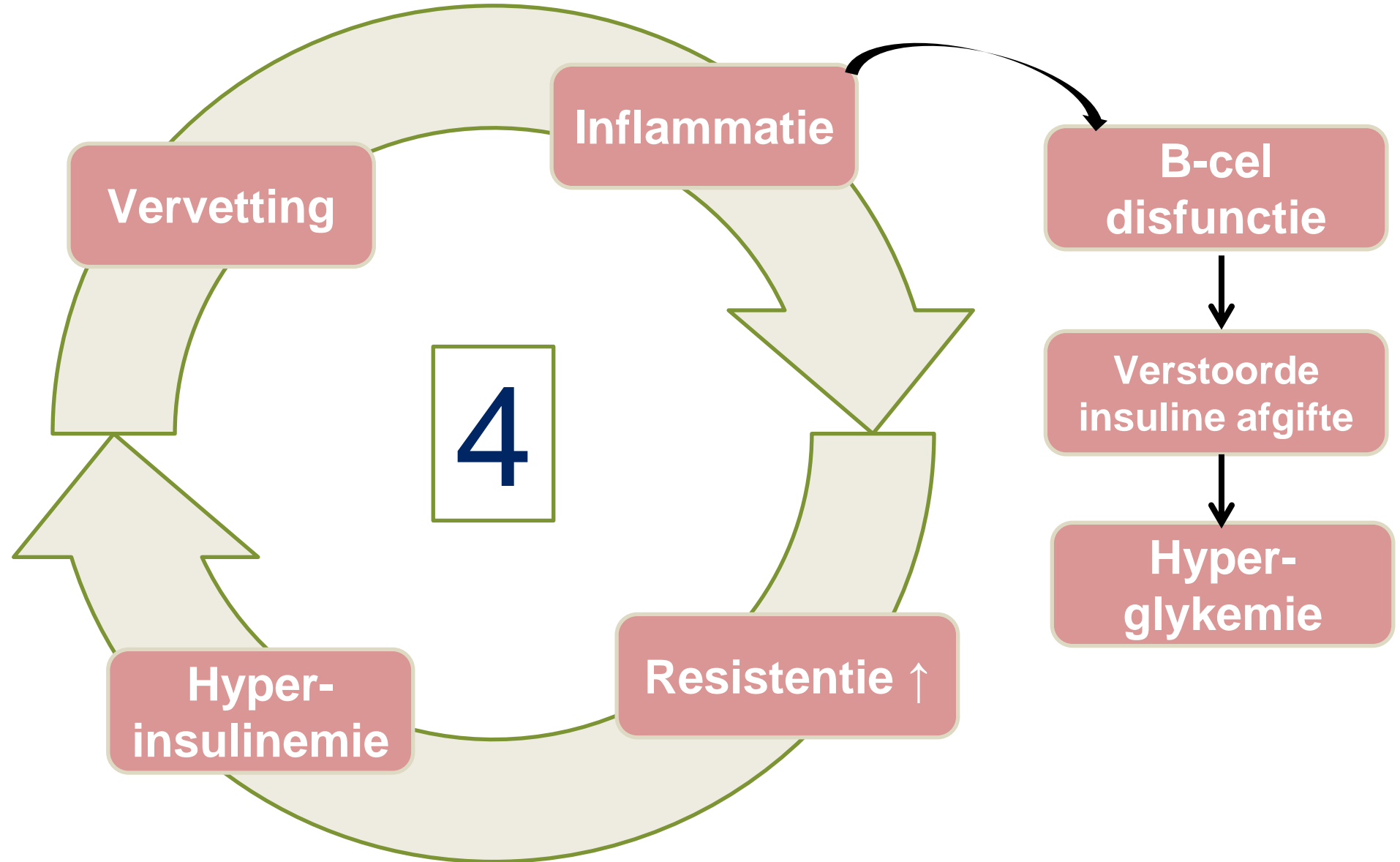


**KLAAR VOOR  
VICIEUZE CIRKEL 4?**

# FASE 2: VICIEUZE CIRKEL 4



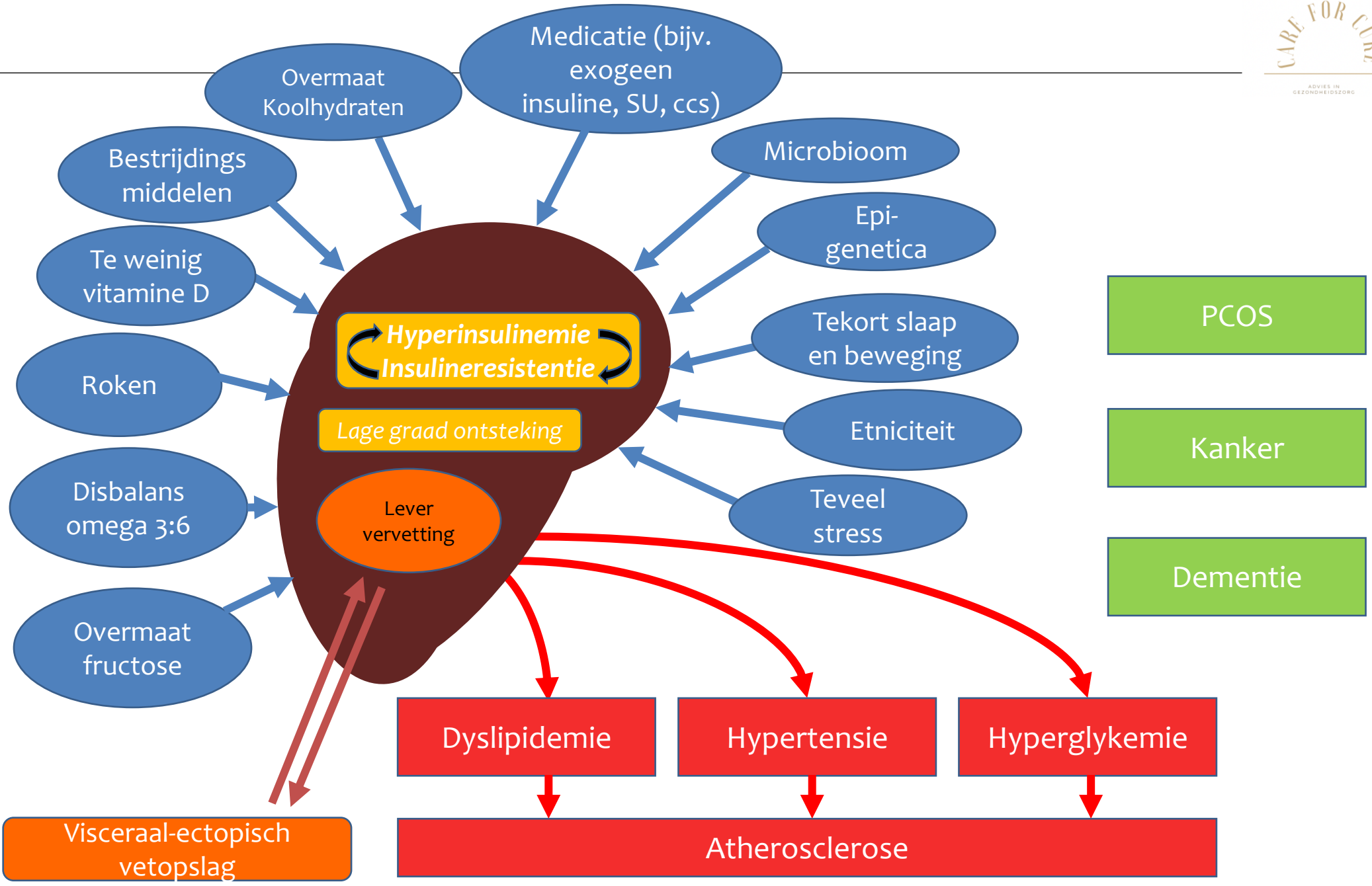
# FASE 2: VICIEUZE CIRKEL 4



Evolutie

Verbinding

Sociaal



# Theodosius Dobshansky

- Nothing in biology makes sense except in the light of evolution

## Evolutionary Medicine

- Nothing in human (patho) physiology makes sense except in the light of evolution



VOLUME 66, No. 1 MARCH 1991

# THE QUARTERLY REVIEW of BIOLOGY

THE DAWN OF DARWINIAN MEDICINE  
GEORGE C. WILLIAMS RANDOLPH M. NESSE






- Defense-mechanism
- Trade-offs/Conflicts
- Constraints
- **Mismatch**
- Genetics



Randolph M. Nesse    George C. William  
1926-2010  
Kuipers, Luxwolda, Muskiet. Medisch Contact <sup>47</sup> 2010



## Evolutionary Mismatch



**10.000 jaar geleden**



**200 jaar geleden**




**50 jaar geleden**



Onze **genen** leven nog in de **Steentijd**

## Conditions of existence

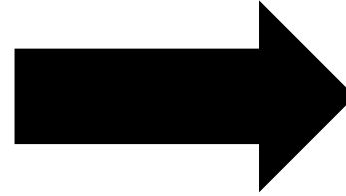
( = oorzaak)



## Survival of the Fittest

( = gevolg)

Om gezond te blijven  
moeten we onze  
'conditions of existence'  
of OER-omgeving  
(onder)kennen



## Onze 'Conditions of Existence'

- Laaste gemeenschappelijke voorouder met de chimpanzee: 6 miljoen jaar geleden
- 3rd Out of Africa Diaspora: 100.000 jaar geleden
- $100.000/6.000.000 \Rightarrow 0.02 = 2\% \Rightarrow 98\%$  van de menselijke evolutie vond plaats in Oost Afrika

Cradle of Mankind:  
Africa



Onze  
'conditions of existence'  
=  
land-water ecosysteem



*Take home message No. 7:*



**Welvaartsziekten**  
zijn op steeds jongere leeftijd optredende  
**ouderdomsziekten**  
veroorzaakt door langdurige blootstelling aan  
risicofactoren en daarmee  
**lage graad ontsteking**



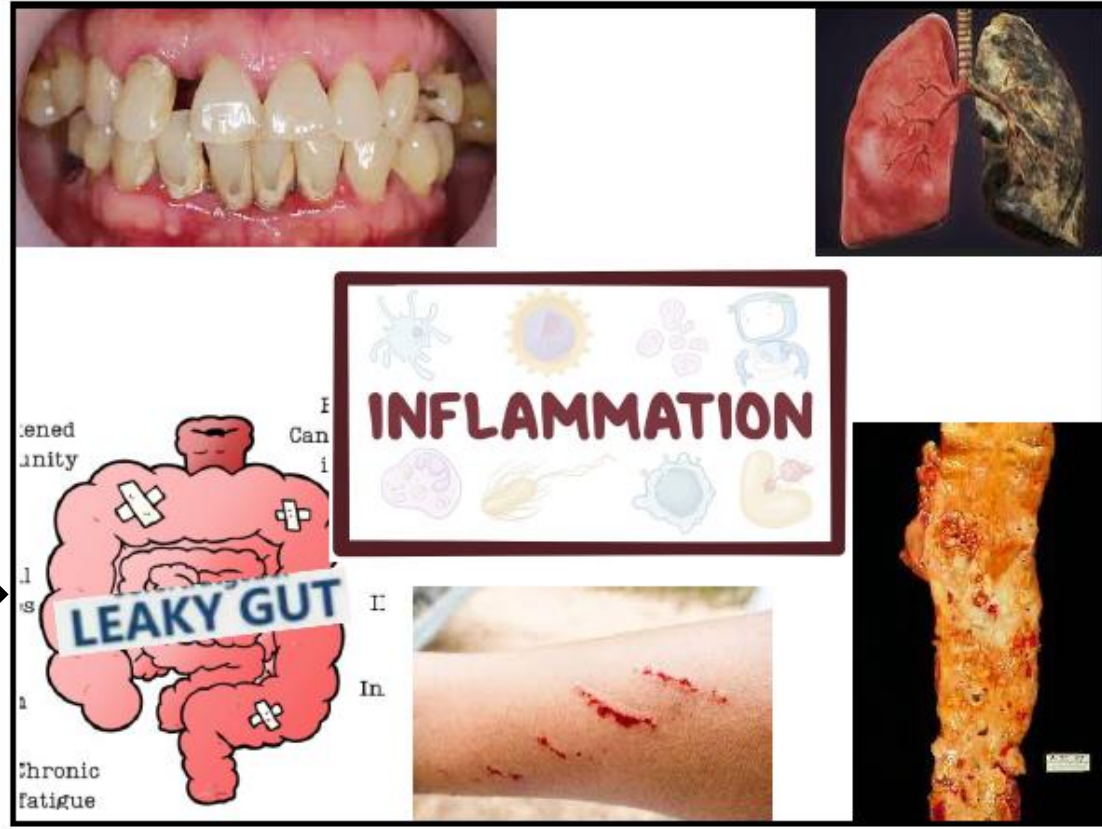
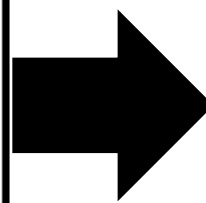
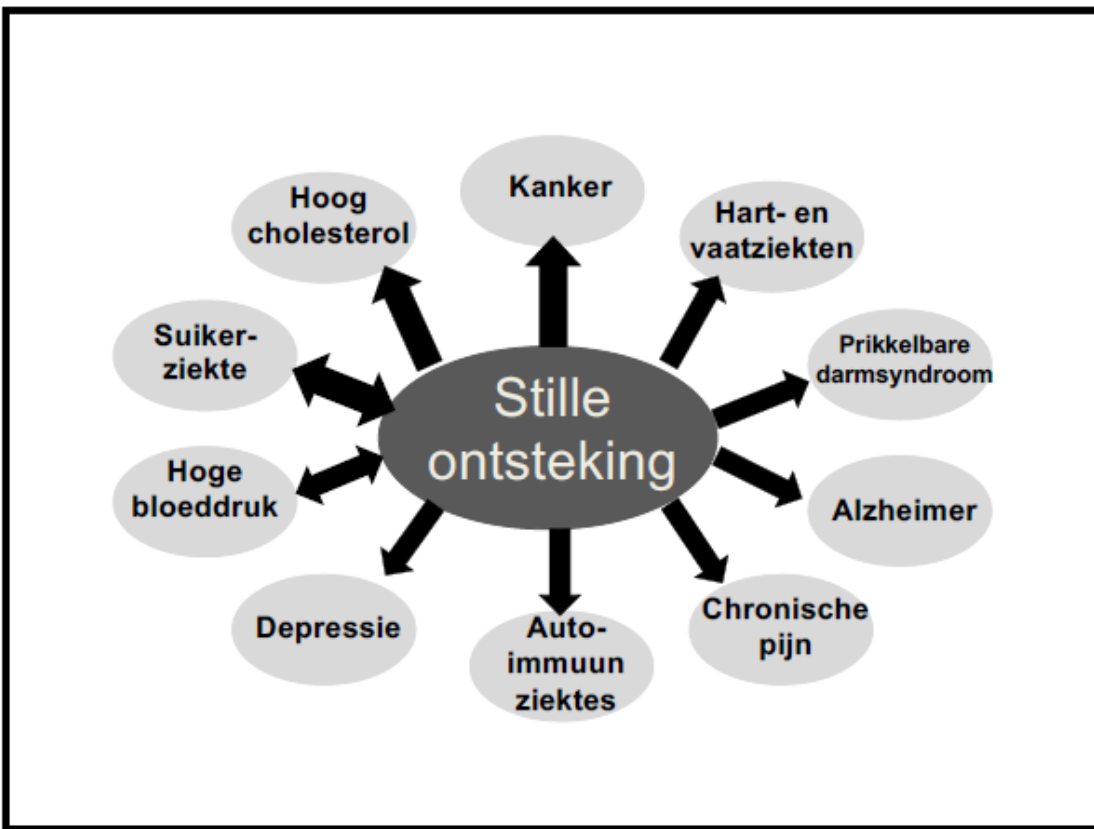
*Take home message No. 8:*



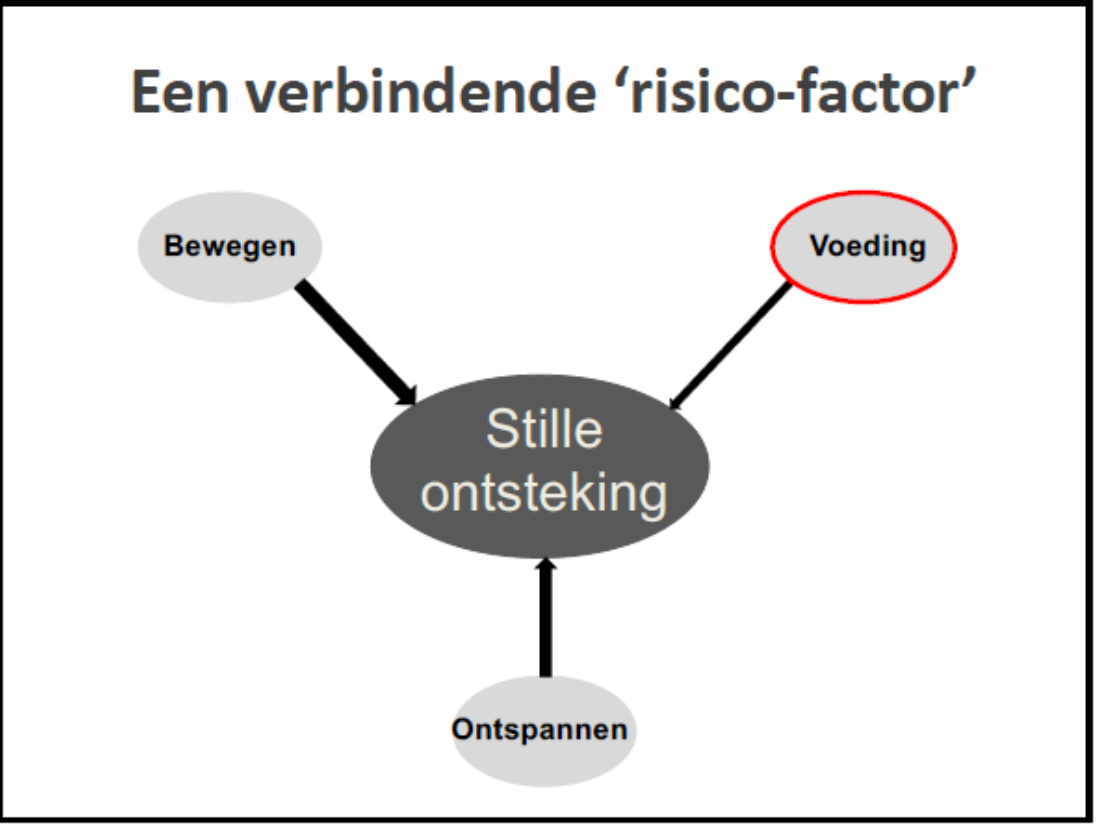
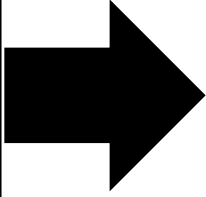
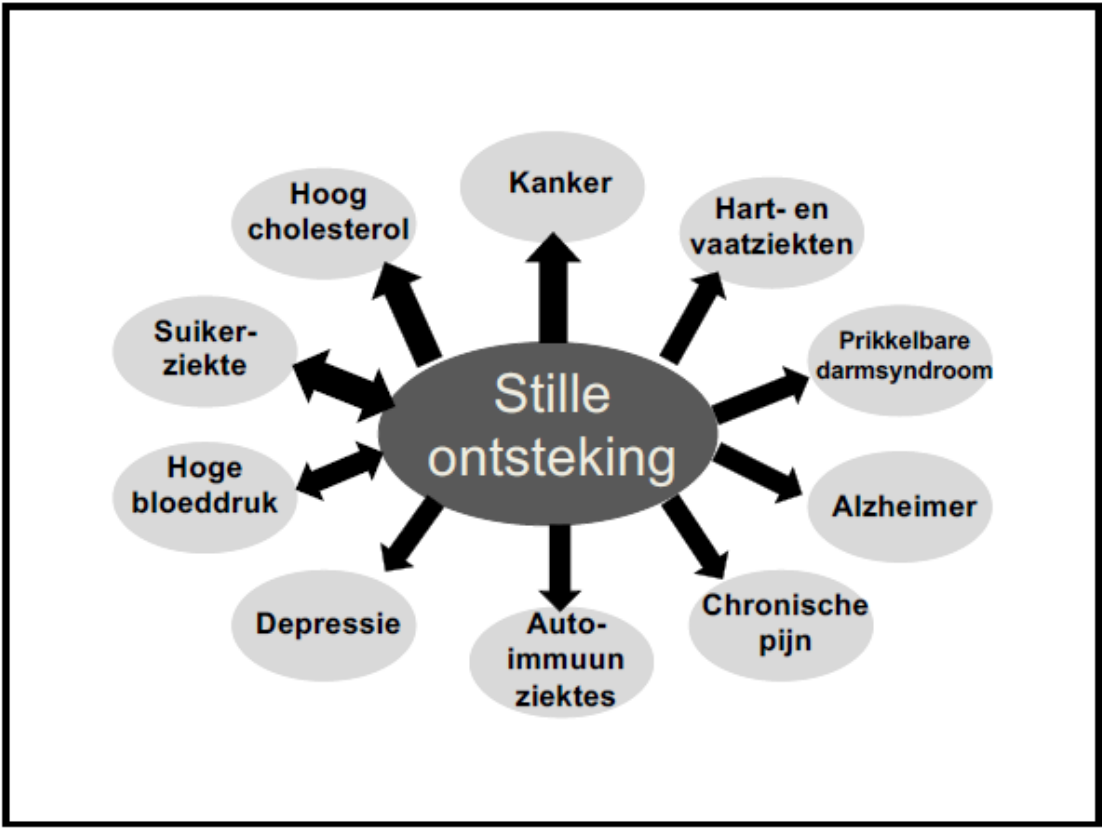
**Om gezond te blijven**  
moeten we terug naar onze  
**'conditions of existence'**  
of OER-omgeving





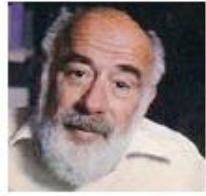


Lage graad ontsteking  
en  
een oerleefstijl



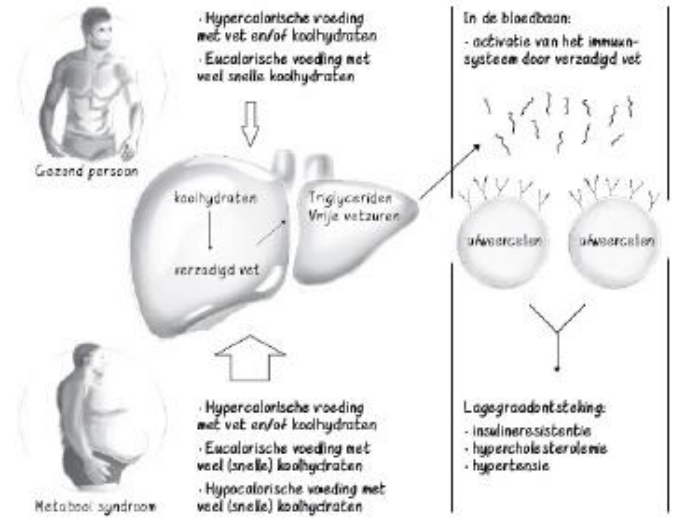
Lage graad ontsteking  
en  
een oerleefstijl

## De link tussen koolhydraten en inflammatie



John Gofman

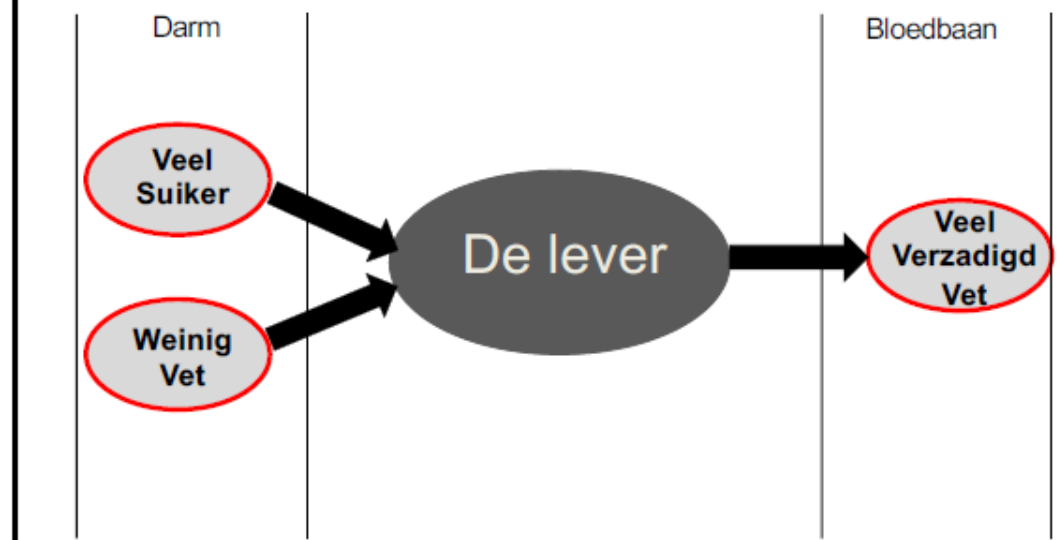
**Carbohydrate induced hyper-TG**



Figuur 21. De gevolgen van de inname van verschillende soorten voeding op de triglyceriden, het cholesterol, op insulineresistentie, overgewicht (obesitas) en hoge bloeddruk (hypertensie) via lagegraadontsteking in gezonde personen en personen met het metabool syndroom.<sup>45)</sup>

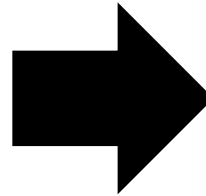
Kuipers, het Oerdieet, 2014

## Verzadigd vet en aderverkalking



Endotoxin-lipoprotein hypothese

Samaan *Diabetology & Metabolic Syndrome* 2011



Vervang

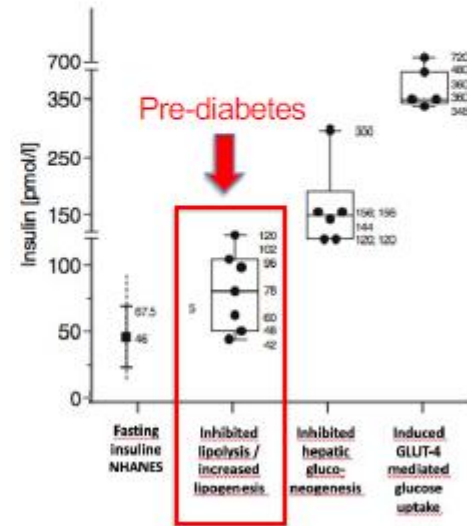
**ongezonde (snelle) koolhydraten (fastfood en frisdrank) en verzadigd vet (rood vlees) door door langzame koolhydraten (groente en fruit) en noten, peulvruchten, gevogelte en vis**

## The carbohydrate-insulin model: a physiological perspective on the obesity pandemic

David S Ludwig,<sup>1,2,3</sup> Louis J Aronne,<sup>4</sup> Arne Astrup,<sup>5</sup> Rafael de Cabo,<sup>6</sup> Lewis C Cantley,<sup>7</sup> Mark I Friedman,<sup>8,9</sup> Steven B Heymsfield,<sup>10</sup> James D Johnson,<sup>11,12</sup> Janet C King,<sup>13</sup> Ronald M Krauss,<sup>14,15</sup> Daniel E Lieberman,<sup>16</sup> Gary Taubes,<sup>9</sup> Jeff S Volek,<sup>17</sup> Eric C Westman,<sup>18</sup> Walter C Willett,<sup>3,19</sup> William S Yancy, Jr,<sup>18</sup> and Cara B Ebbeling<sup>1,2</sup>

### ABSTRACT

According to a commonly held view, the obesity pandemic is caused by overconsumption of modern, highly palatable, energy-dense processed foods, exacerbated by a sedentary lifestyle. However, obesity rates remain at historic highs, despite a persistent focus on eating less and moving more, as guided by the energy balance model (EBM). This public health failure may arise from a fundamental limitation of the EBM itself. Conceptualizing obesity as a disorder of energy balance restates a principle of physics without considering the biological mechanisms that promote weight gain. An alternative paradigm, the carbohydrate-insulin model (CIM), proposes a reversal of causal direction. According to the CIM, increasing fat deposition in the body—resulting from the hormonal responses to a high-glycemic-load diet—drives positive energy balance. The CIM provides a conceptual framework with testable hypotheses for how various modifiable factors influence energy balance and fat storage. Rigorous research is needed to compare the validity of these 2 models, which have substantially different implications for obesity management, and to generate new models that best encompass the evidence. *Am J Clin Nutr* 2021;00:1–13.



Ludwig et al, AJCN, 2021

Kolb et al. BMC Medicine (2018) 16:232

## Take home message

Vervang  
omega-6 vetten (zonnebloemolie)  
door omega-3 vet (vis)

Eet meer  
groente & fruit

Matig(er) met granen en zuivel