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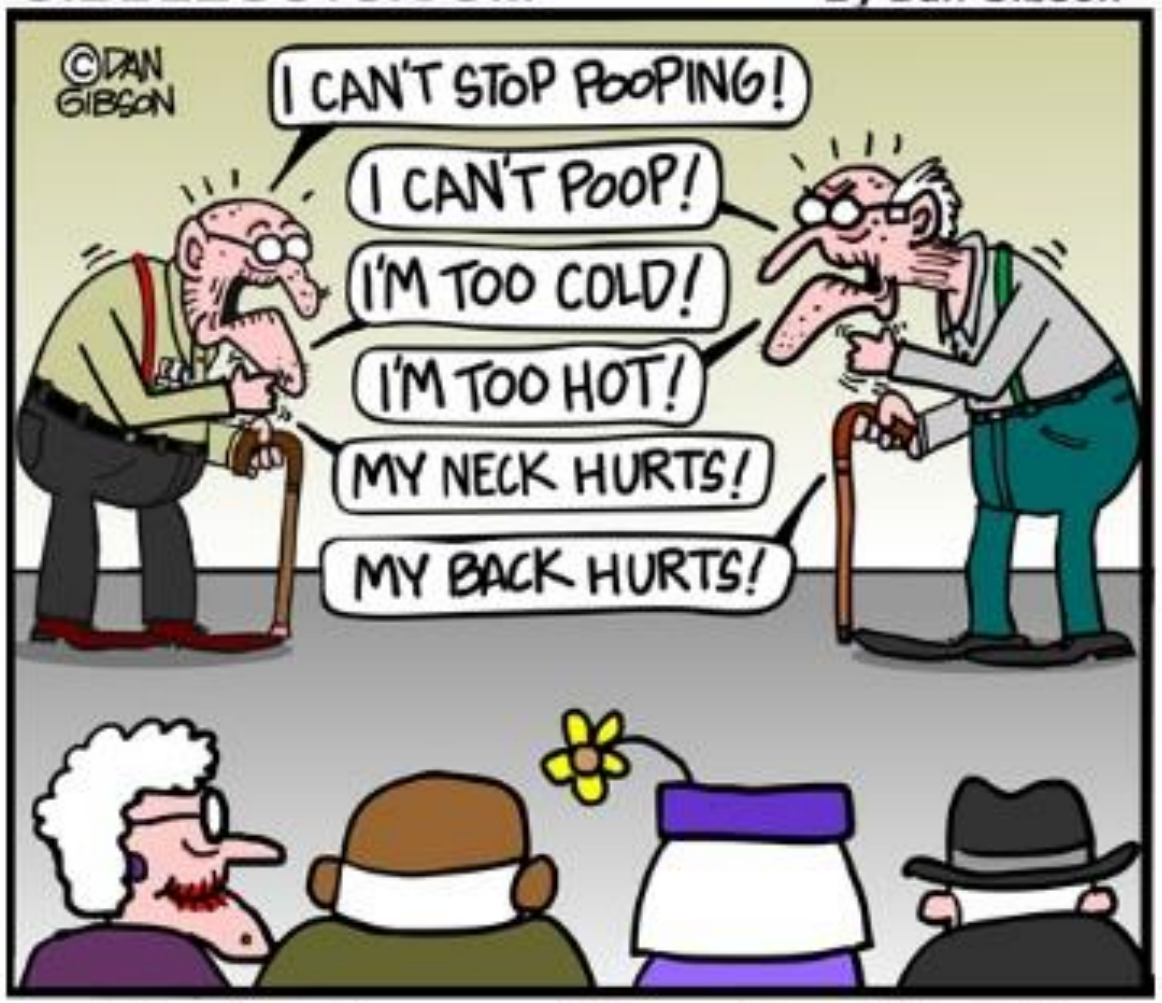
De kost van chronische aandoeningen; wat is de impact van een sterk preventiebeleid?

Prof.dr. Johan Albrecht
Drs. Désirée Vandenberghe

2 juli 2018

GIBBLEGUTS.COM

By Dan Gibson



Saturday afternoon old man 'Complain Off' at the senior's center.

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Ironman Lew Hollander (85):

"You get the first 40 years free and then you have to pay attention"

"Go anaerobic every day…. you just run until you can't breathe any more.
Some magic happens and your body thinks – damn, this guy's serious."

Twee stellingen over NCDs en preventie;

- Het aandeel van de belangrijkste chronische aandoeningen - hart- en vaatziekten, kanker, diabetes en ademhalingsproblemen - in de totale gezondheidszorguitgaven loopt in rijke Westerse landen op tot 75%; slechts 25% van de gezondheidszorguitgaven betreft interventies voor niet-chronische aandoeningen (2,3);
- Van de belangrijkste chronische aandoeningen is 70% tot zelfs 90% te vermijden door het opteren voor een gezonde levensstijl; niet roken, overgewicht vermijden, een gezond voedingspatroon, een actieve levensstijl met dagelijks voldoende beweging en een beperkte alcoholconsumptie (4,5).
- BE: € 44 mrd * 0,75 * 0,70 = € 23 mrd of 5% van het BBP
- Sterk preventiebeleid: redding sociale zekerheid en begroting?

“Chronic diseases represent a major share (77 %) of the total burden of disease in Europe and are responsible for 86 % of all deaths… At the moment, around EUR 700 billion are spent in the European Union each year on chronic diseases, that can represent 70-80 % of a country’s total health expenditure. The rises in chronic diseases are putting an increasing strain on health and social systems in the EU and on the health and wellbeing of EU citizens.”

(Kuipers Cavaco en Quoidbach, p.11)

“Among U.S. adults, more than 90 percent of type 2 diabetes, 80 percent of CAD [coronary artery disease], 70 percent of stroke, and 70 percent of colon cancer are potentially preventable by a combination of nonsmoking, avoidance of overweight, moderate physical activity, healthy diet, and moderate alcohol consumption. Collectively, these findings indicate that the low rates of these diseases suggested by international comparisons and time trends are attainable by realistic, moderate changes that are compatible with 21st-century lifestyles”.

(Willett et al., p.837)

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LUC BONNEUX:

‘Er is geen enkel verband tussen gezond eten en levensduur’

De epidemioloog over gezondheidshysterie, goesting om te leven, en het belang van een pintje

Knack, 16 mei 2018

Ik heb ooit in onderzoeken gezocht naar wat nu eigenlijk de grootste gezondheidsproblemen waren. Wel, voor blanke Angelsaksische protestanten was het dat ze te weinig alcohol dronken. Van die groep van puriteinen is 55 procent geheelonthouder, dus daar was een grote *oversterfte* aan cardiovasculaire aandoeningen.

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“Drink zeker 15 tot 20 pintjes per week!”

Kost van NCDs?

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- 4 grote NCDs; CVD, kanker, CRD en diabetes Type 2 (DMT2)
- Exclusief obesitas & depressies
- Op basis van belangrijkste COI-studies; Wilkins et al. (17), Eurostat/HEDIC (18), Luengo-Fernandez et al. (20), Jönsson et al. (19), Bommer et al. (24), IDF (25)

Totale directe en indirecte kost van de vier belangrijkste chronische aandoeningen in de Europese Unie, 2015

	Directe kost		Indirecte kost	
	in € miljard	als % van totale gezondheids-zorguitgaven	in € miljard	als % van het BBP
CVD	111 - 191	8.0 - 13.7	99	0.68
Kanker (excl. longkanker)	60 - 115	4.3 - 8.3	95	0.65
CRD (incl. longkanker)	56 - 85	4.0 - 6.1	59	0.40
Diabetes T2 (DMT2)	67 - 101	4.8 - 7.3	67	0.46
Totaal	293 - 492	**21.1 - 35.4**	321	2.2

Bronnen: Bommer et al. (24) ; Eurostat (18), IDF (25), Luengo-fernandez et al. (20), Wilkins et al. (17)

Eur J Health Econ. 2016 Dec;17(9):1141-1158. Epub 2015 Dec 23.

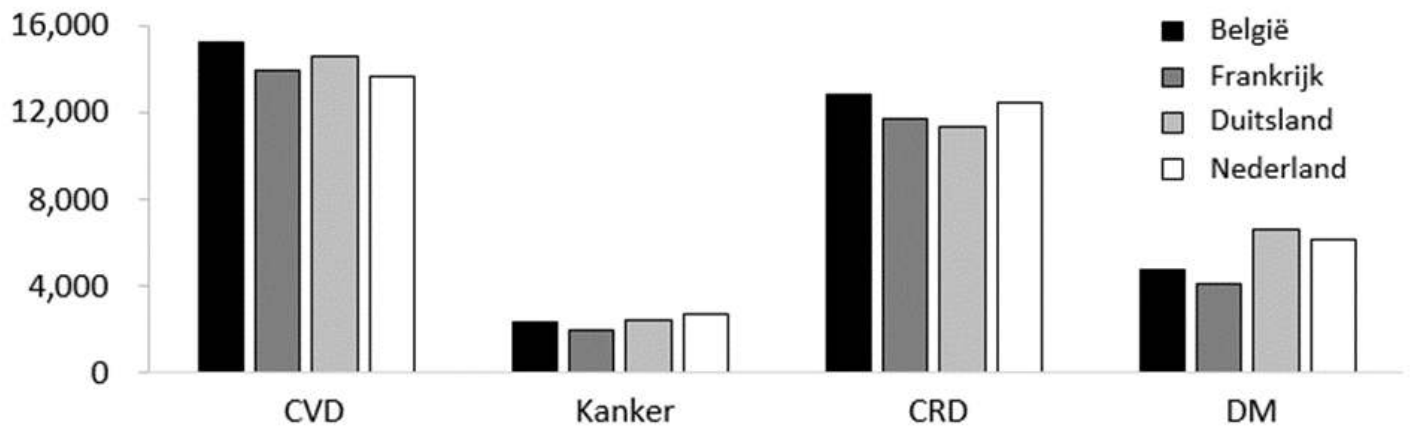
The costs and consequences of obesity in Germany: a new approach from a prevalence and life-cycle perspective.

Effertz T[1], Engel S[2], Verheyen F[2], Linder R[2].

Abstract

…Our results show that the cost estimations of obesity in Germany so far have been **largely underestimated**. The annual direct costs of obesity in Germany amount to approximately **€29.39 billion** and the indirect costs to an additional **€33.65 billion**. A total of **102,000 subjects die prematurely** each year because of obesity, and there is a significant excess of unemployment, long-term nursing care, and pain and suffering due to obesity.

From a lifetime perspective, **every obese man is equal to an additional burden of €166,911 and each woman of €206,526 for the social security system in Germany.** Obesity due to unhealthy eating is thus about to replace tobacco consumption in terms of costs and consequences as the main hazardous lifestyle factor and thus should be more intensively focussed by public health policy.



Directe medische en indirecte niet-medische kost van NCDs in België en buurlanden

	België		Nederland		Frankrijk		Duitsland	
	Per capita	% totaal	Per capita	% totaal	Per capita	% totaal	Per capita	% totaal
CVD	216	5.7	326 - 544	7.7 - 12.9	229	6.2	349 - 569	8.4 - 13.8
Kanker	107 - 238	2.8 - 6.4	158 - 325	3.7 - 7.7	108 - 230	2.9 – 6.2	189 - 347	4.5 - 8.4
CRD	224	6.0	118	4.8			264	6.4
DMT2	178 - 267	7.1	94 - 379	3.8 - 8.9	259	7.0	206 - 386	5.0 - 9.3
Total	726-1000	**19.2-26.8**	580-1368	**15.3-34.4**	514-758	**14.0-20.6**	745-1566	**18.1-37.9**

	België	Nederland	Frankrijk	Duitsland
CVD	0.5%	0.5%	0.4%	1.0%
Kanker	0.6%	0.8%	0.5%	0.7%

Uitgaven aan chronische aandoeningen in de Verenigde Staten (2015, in USD)

	Directe medische kost		Indirecte niet-medische kost	
	in $ miljard	als % van totale gezondheidszorguitgaven	in $ miljard	als % van het BBP
CVD	238 - 492	7.9 - 16.4	150 - 600	0.8 - 3.3
Kanker	89	3.0	125	0.7
CRD	86	2.9	19	0.1
DMT2	194 - 320	6.5 - 10.7	76	0.4
Totaal	606 - 986	**20.2 - 32.9**	370 - 820	2.1 - 4.5

Bronnen: CVD kosten van Go et al. (31); kanker kosten van de American Cancer Society (32) en Siegel et al. (33); CRD kosten van Ford et al. (34) en Rappaport (35); T2DM kosten van IDF (25) en Petersen (36)

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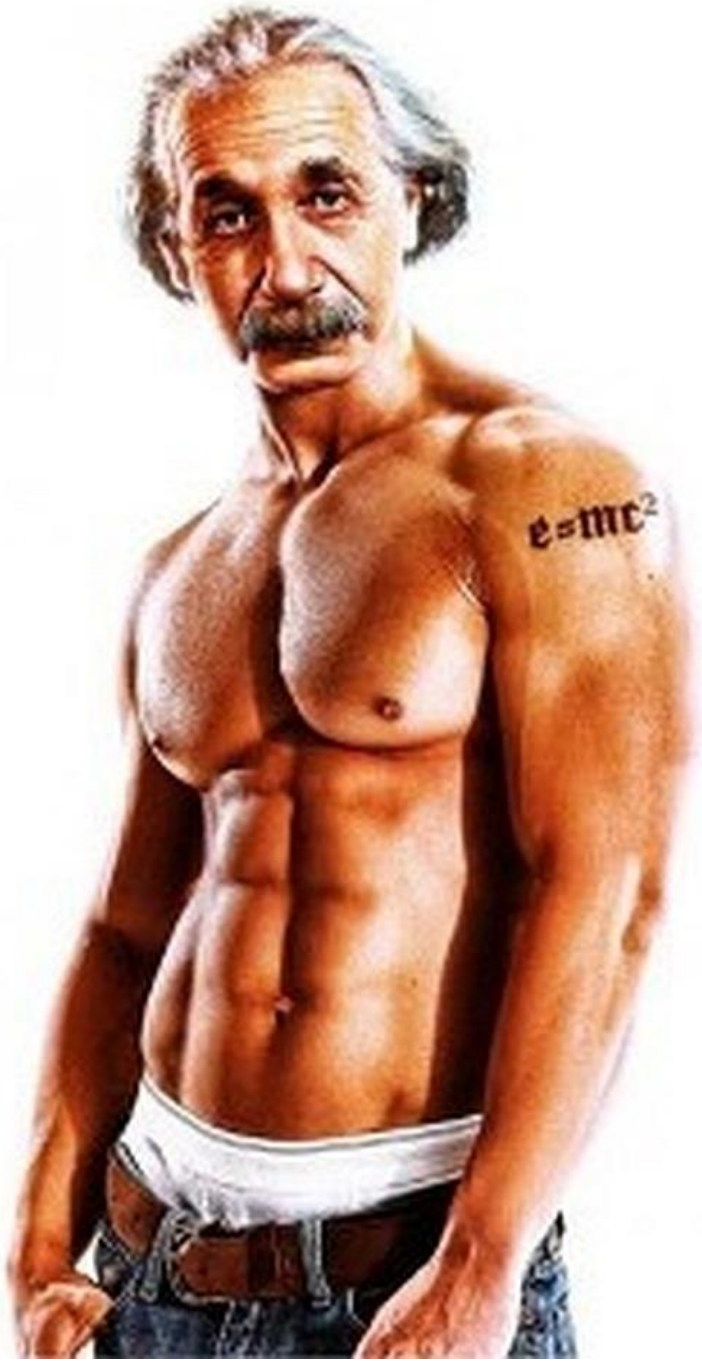

Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study,

The Lancet, Volume 364, No. 9438, p.937–952, 11 September 2004

- Abnormal lipids, smoking, hypertension, diabetes, abdominal obesity, psychosocial factors, consumption of fruits, vegetables, and alcohol, and regular physical activity account for most of the risk of myocardial infarction worldwide in both sexes and at all ages in all regions. These associations were noted in men and women, old and young, and in all regions of the world. ***Collectively, these nine risk factors accounted for 90% of the PAR (population attributable risks) in men and 94% in women…***
- This finding suggests that approaches to prevention can be based on similar principles worldwide and ***have the potential to prevent most premature cases of myocardial infarction.***

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Pharmaceutical Research, Vol. 25, No. 9, September 2008 (© 2008)
DOI: 10.1007/s11095-008-9661-9

Expert Review

Cancer is a Preventable Disease that Requires Major Lifestyle Changes

Preetha Anand,[1] Ajaikumar B. Kunnumakara,[1] Chitra Sundaram,[1] Kuzhuvelil B. Harikumar,[1] Sheeja T. Tharakan,[1] Oiki S. Lai,[1] Bokyung Sung,[1] and Bharat B. Aggarwal[1,2]

Received May 14, 2008; accepted June 9, 2008; published online July 15, 2008

Abstract. This year, more than 1 million Americans and more than 10 million people worldwide are expected to be diagnosed with cancer, a disease commonly believed to be preventable. Only 5–10% of all cancer cases can be attributed to genetic defects, whereas the remaining 90–95% have their roots in the environment and lifestyle. The lifestyle factors include cigarette smoking, diet (fried foods, red meat), alcohol, sun exposure, environmental pollutants, infections, stress, obesity, and physical inactivity. The evidence indicates that of all cancer-related deaths, almost 25–30% are due to tobacco, as many as 30–35% are linked to diet, about 15–20% are due to infections, and the remaining percentage are due to other factors like radiation, stress, physical activity, environmental pollutants etc. Therefore, cancer prevention requires smoking cessation, increased ingestion of fruits and vegetables, moderate use of alcohol, caloric restriction, exercise, avoidance of direct exposure to sunlight, minimal meat consumption, use of whole grains, use of vaccinations, and regular check-ups. In this review, we present evidence that inflammation is the link between the agents/factors that cause cancer and the agents that prevent it. In addition, we provide evidence that cancer is a preventable disease that requires major lifestyle changes.

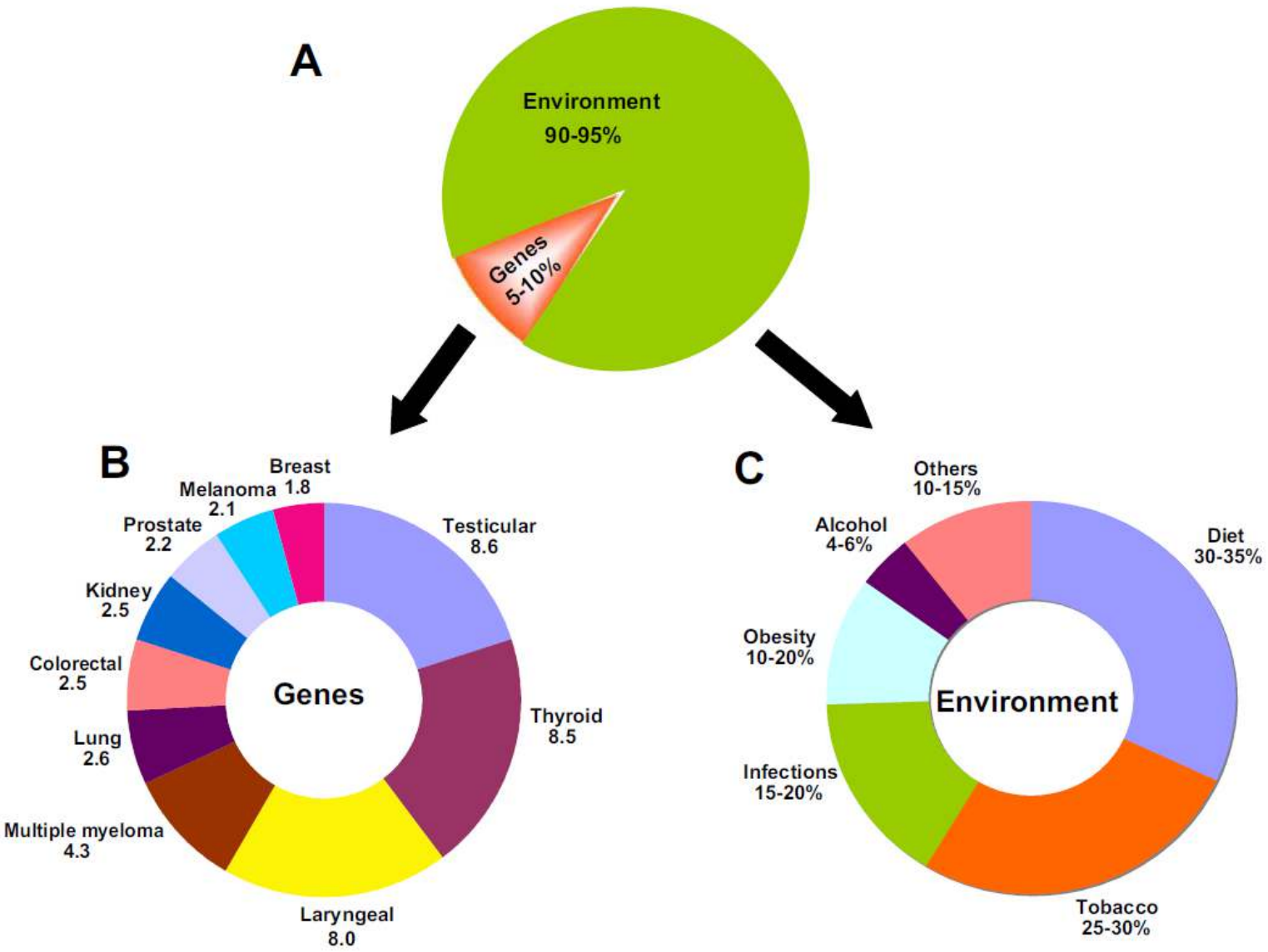

Fig. 1. The role of genes and environment in the development of cancer. **A** The percentage contribution of genetic and environmental factors to cancer. The contribution of genetic factors and environmental factors towards cancer risk is 5–10% and 90–95% respectively. **B** Family risk ratios for selected cancers. The

Hoeveel voortijdige overlijdens zijn te voorkomen?

WHO (2015): *"Of the 38 million lives lost to NCDs in 2012, 16 million or 42% were premature and avoidable – up from 14.6 million in 2000."*

http://www.who.int/mediacentre/news/releases/2015/noncommunicable-diseases/en/

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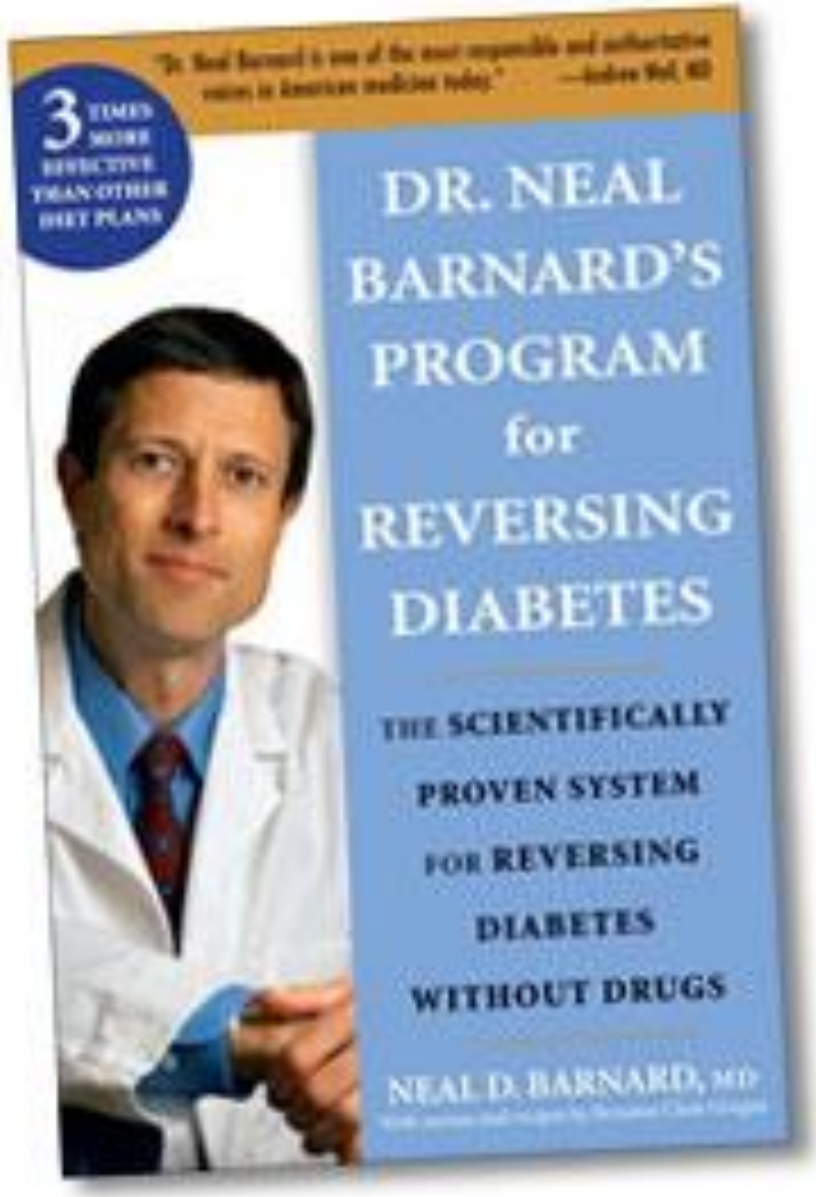
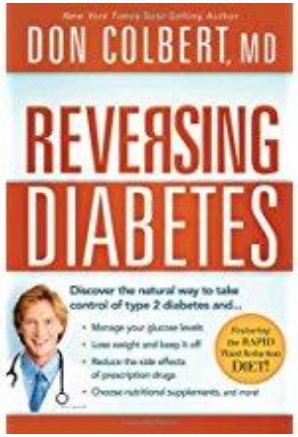
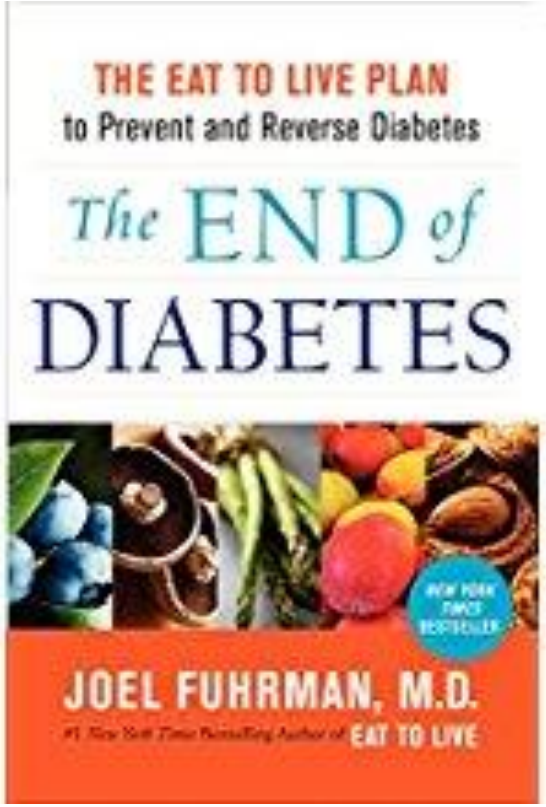
DIABETES?
VOOR-
KOMEN
KAN
GENEZEN
NIET.


3 TIMES MORE EFFECTIVE THAN OTHER DIET PLANS
DR. NEAL BARNARD'S PROGRAM for REVERSING DIABETES
THE SCIENTIFICALLY PROVEN SYSTEM FOR REVERSING DIABETES WITHOUT DRUGS
NEAL D. BARNARD, M.D.


DON COLBERT, MD
REVERSING DIABETES
Discover the natural way to take control of type 2 diabetes and...


THE EAT TO LIVE PLAN
to Prevent and Reverse Diabetes
The END of DIABETES
JOEL FUHRMAN, M.D.
EAT TO LIVE

Lancet. 1990 Jul 21;336(8708):129-33.

Can lifestyle changes reverse coronary heart disease? The Lifestyle Heart Trial.

Ornish D[1], Brown SE, Scherwitz LW, Billings JH, Armstrong WT, Ports TA, McLanahan SM, Kirkeeide RL, Brand RJ, Gould KL.

Abstract

In a prospective, randomised, controlled trial to determine whether comprehensive lifestyle changes affect coronary atherosclerosis after 1 year, 28 patients were assigned to an experimental group (**low-fat vegetarian diet**, stopping smoking, stress management training, and moderate exercise) and 20 to a usual-care control group. 195 coronary artery lesions were analysed by quantitative coronary angiography. The average percentage diameter stenosis regressed from 40.0 (SD 16.9)% to 37.8 (16.5)% in the experimental group yet progressed from 42.7 (15.5)% to 46.1 (18.5)% in the control group. When only lesions greater than 50% stenosed were analysed, the average percentage diameter stenosis regressed from 61.1 (8.8)% to 55.8 (11.0)% in the experimental group and progressed from 61.7 (9.5)% to 64.4 (16.3)% in the control group. **Overall, 82% of experimental-group patients had an average change towards regression.** Comprehensive lifestyle changes may be able to bring about regression of even severe coronary atherosclerosis after only 1 year, without use of lipid-lowering drugs.

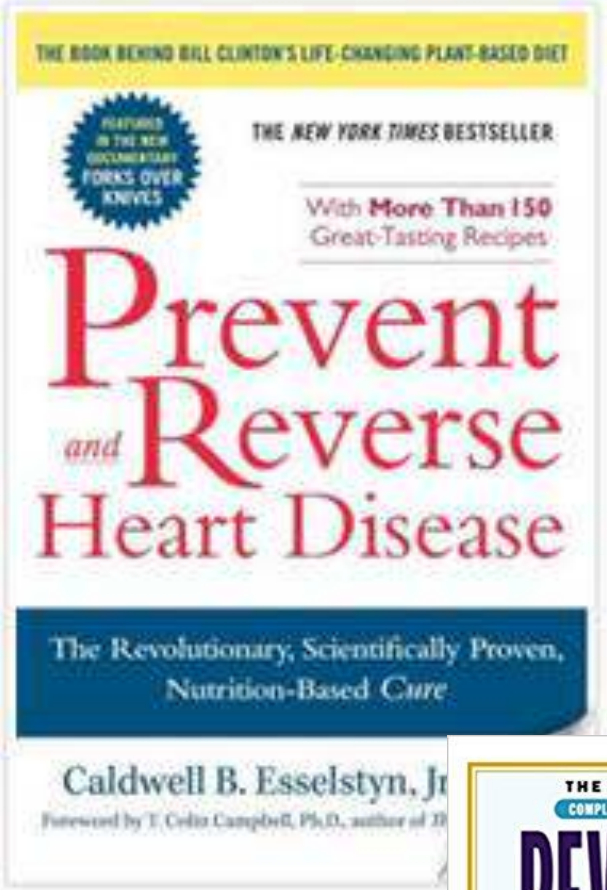
Intensive Lifestyle Changes for Reversal of Coronary Heart Disease

Dean Ornish, MD; Larry W. Scherwitz, PhD; James H. Billings, PhD, MPH; K. Lance Gould, MD; Terri A. Merritt, MS; Stephen Sparler, MA; William T. Armstrong, MD; Thomas A. Ports, MD; Richard L. Kirkeeide, PhD; Charissa Hogeboom, PhD; Richard J. Brand, PhD

Results.—Experimental group patients (20 [71%] of 28 patients completed 5-year follow-up) made and maintained comprehensive lifestyle changes for 5 years, whereas control group patients (15 [75%] of 20 patients completed 5-year follow-up) made more moderate changes. In the experimental group, the average percent diameter stenosis at baseline decreased 1.75 absolute percentage points after 1 year (a 4.5% relative improvement) and by 3.1 absolute percentage points after 5 years (a 7.9% relative improvement). In contrast, the average percent diameter stenosis in the control group increased by 2.3 percentage points after 1 year (a 5.4% relative worsening) and by 11.8 percentage points after 5 years (a 27.7% relative worsening) ($P = .001$ between groups. Twenty-five cardiac events occurred in 28 experimental group patients vs 45 events in 20 control group patients during the 5-year follow-up (risk ratio for any event for the control group, 2.47 [95% confidence interval, 1.48-4.20]).

Conclusions.—More regression of coronary atherosclerosis occurred after 5 years than after 1 year in the experimental group. In contrast, in the control group, coronary atherosclerosis continued to progress and more than twice as many cardiac events occurred.

JAMA. 1998;280:2001-2007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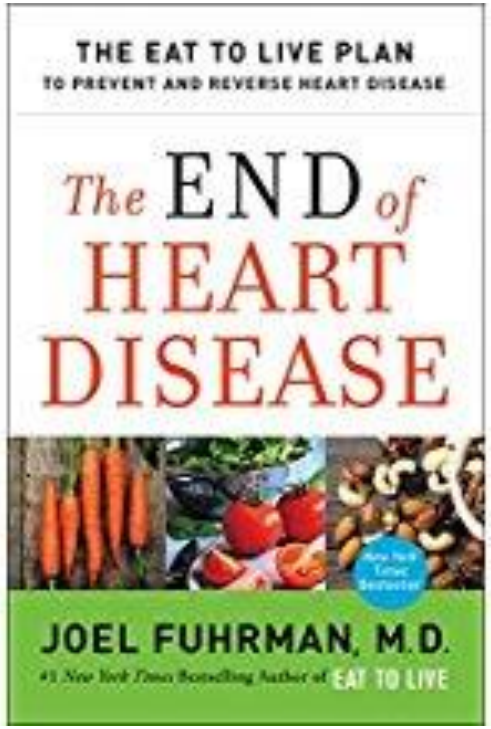
FEATURED IN THE NEW DOCUMENTARY FORKS OVER KNIVES
THE NEW YORK TIMES BESTSELLER
With More Than 150 Great-Tasting Recipes
Prevent and Reverse Heart Disease
The Revolutionary, Scientifically Proven, Nutrition-Based Cure
Caldwell B. Esselstyn, Jr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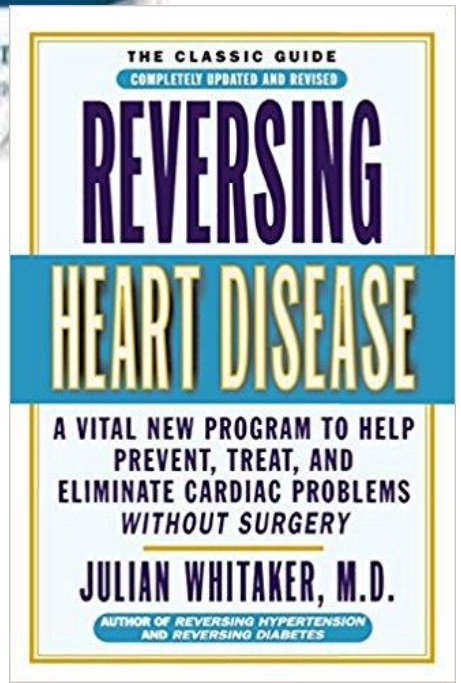
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A VITAL NEW PROGRAM TO HELP PREVENT, TREAT, AND ELIMINATE CARDIAC PROBLEMS WITHOUT SURGERY
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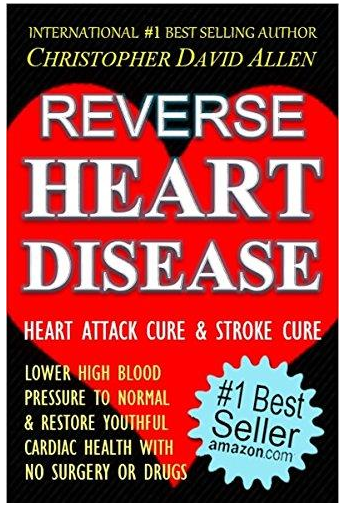
AUTHOR OF REVERSING HYPERTENSION AND REVERSING DIABETES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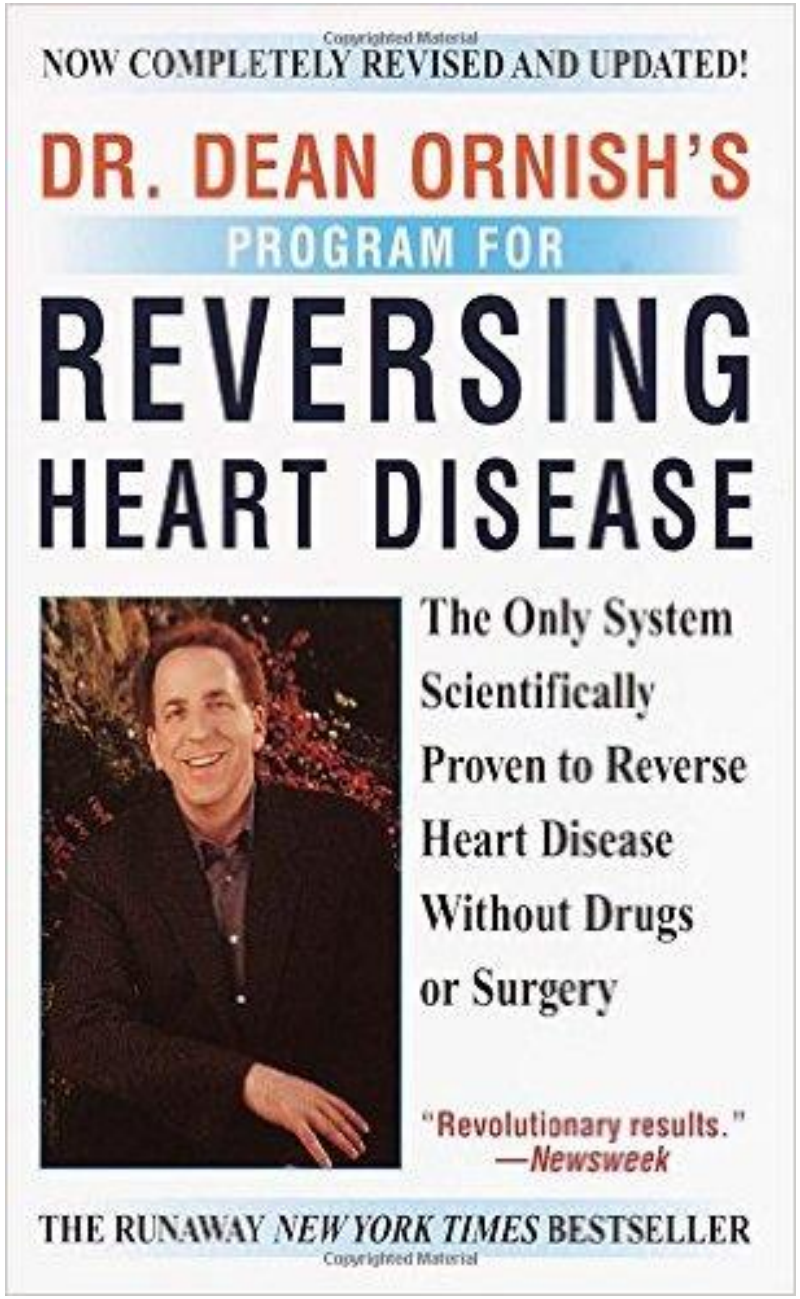
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The Only System Scientifically Proven to Reverse Heart Disease Without Drugs or Surgery
"Revolutionary results."
—Newsweek
THE RUNAWAY NEW YORK TIMES BESTSELLER
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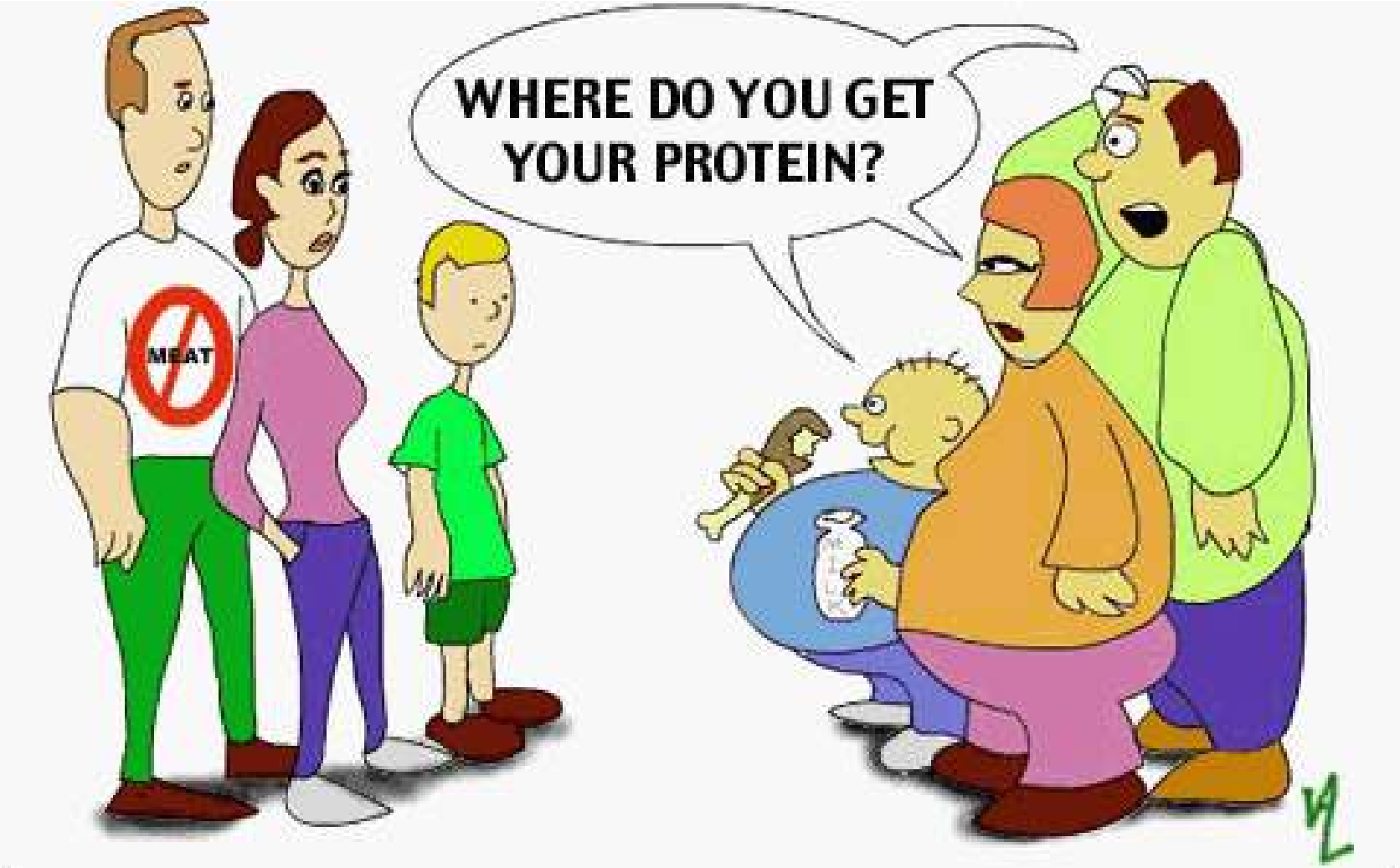
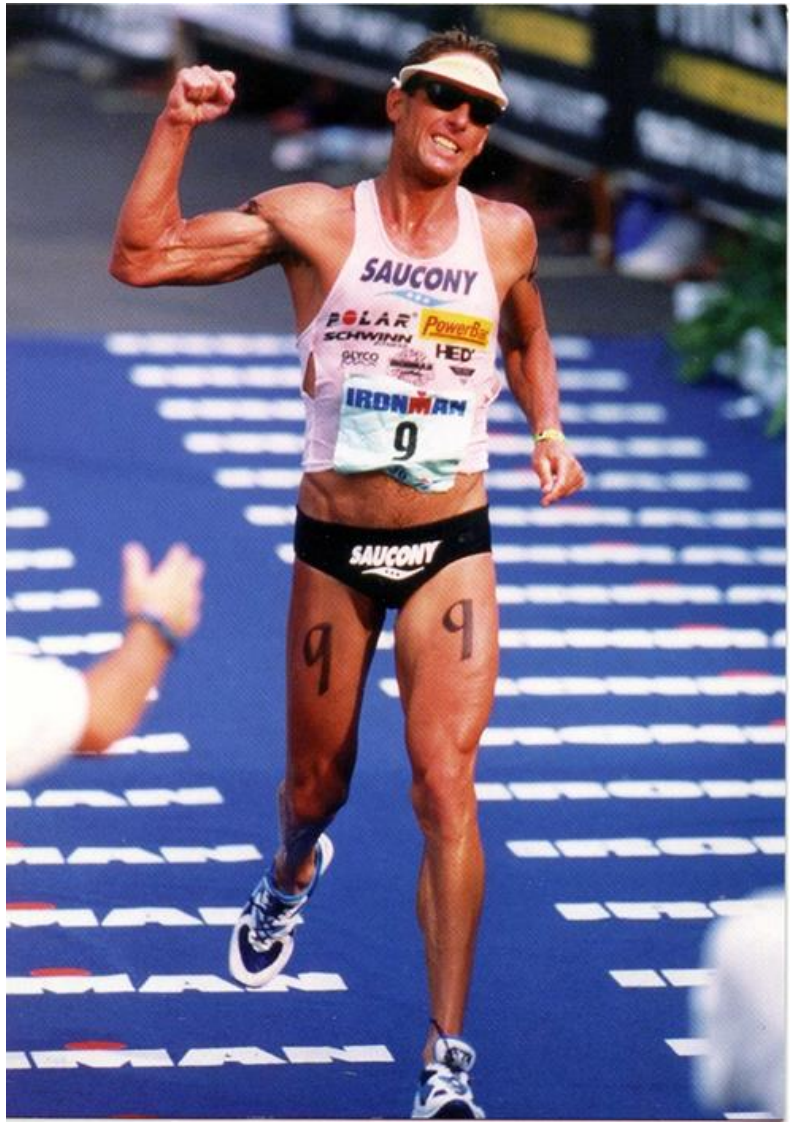
Medical Nutrition Therapy (MNT)

- MNT; national coverage Medicare & Medicaid vanaf 2002
- Kan kost diabetes in VS verminderen met 23%
- *Diabetes Education Centre, Southlake Regional Health Centre*:
- + 12 500 diabetes patiënten per jaar
- 89% van patiënten; geen kennis van MNT/plantaardig dieet
- 66% wel geïnteresseerd, mits ondersteuning
- **22% wil uitdrukkelijk geen aanpassing dieet overwegen**
- *72% van medisch personeel kent voordelen van MNT*
- *32% van medisch personeel beveelt dieetverandering aan*
- Bron: Lee, V., McKay, T. & Ardern, C. (2015). Journal of Nutrition and Metabolism



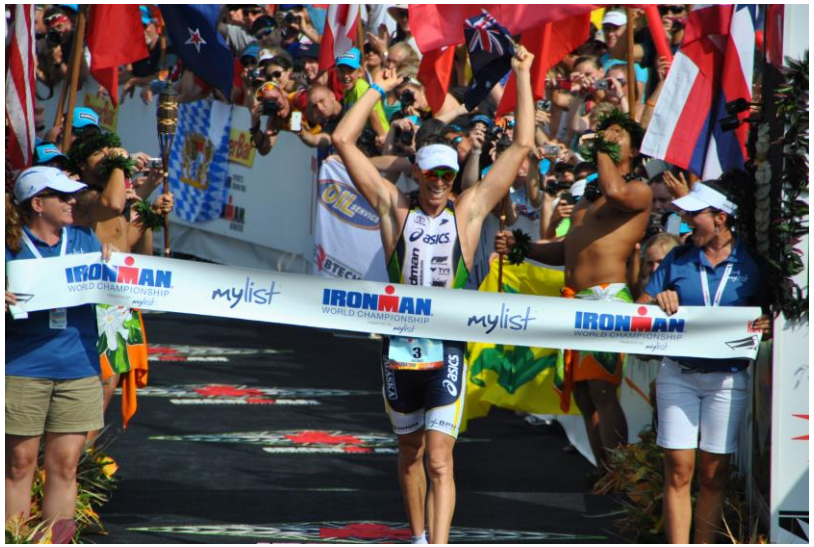
Latest studies: A third of Americans are overweight, and an additional quarter are obese.


PATRICK LANGE
08:01:40
2017 IRONMAN WORLD CHAMPION
2.4 MILES / 3.8 KM
48:45
112 MILES / 180 KM
4:28:53
26.2 MILES / 42.2 KM
2:39:59



1st: 1980, 1982, 1983, 1984, 1986, 1987
+ 3 times 2nd, 1 time 5th (1996, 8u28)

2015, 2016



2012

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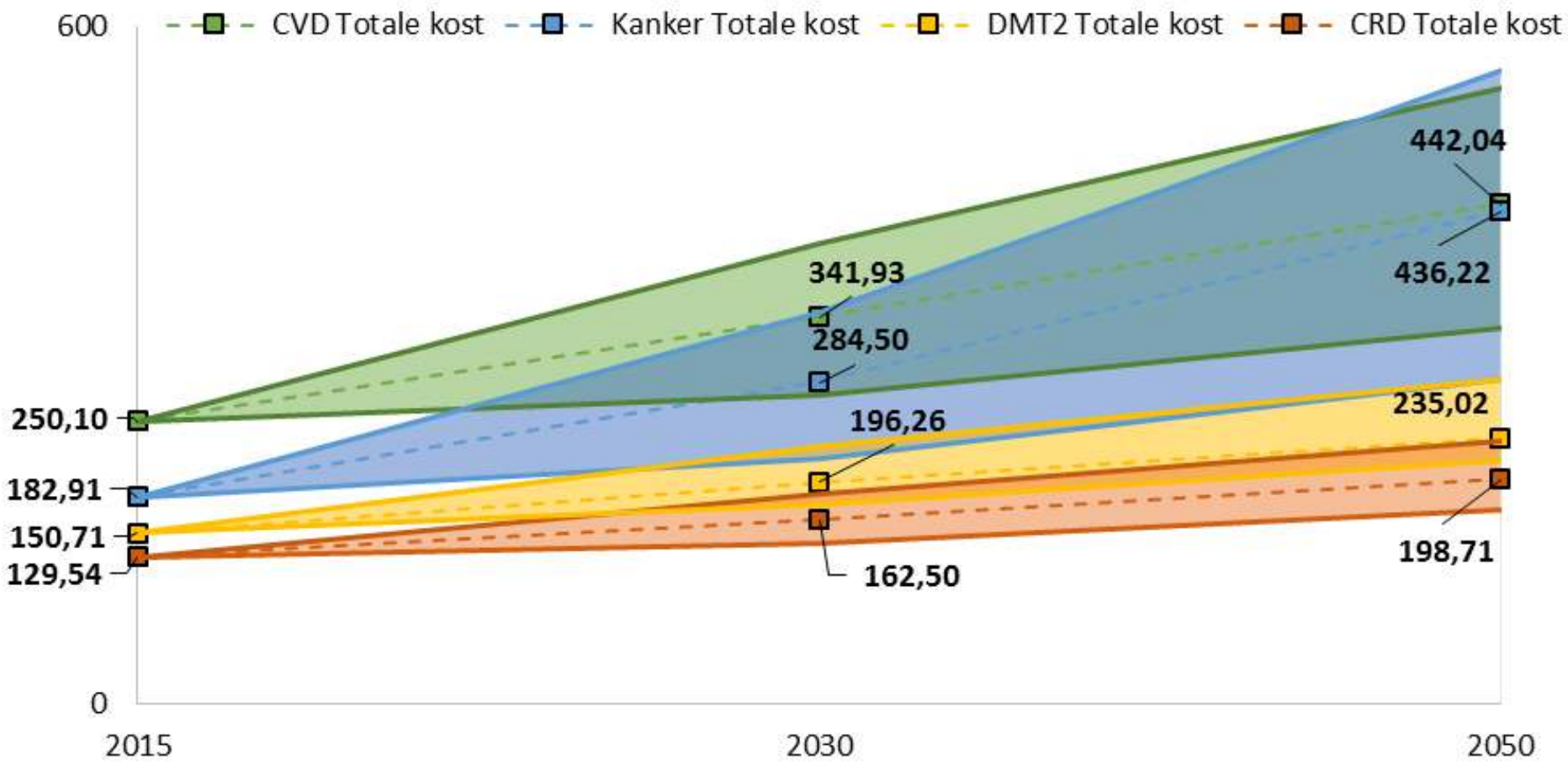
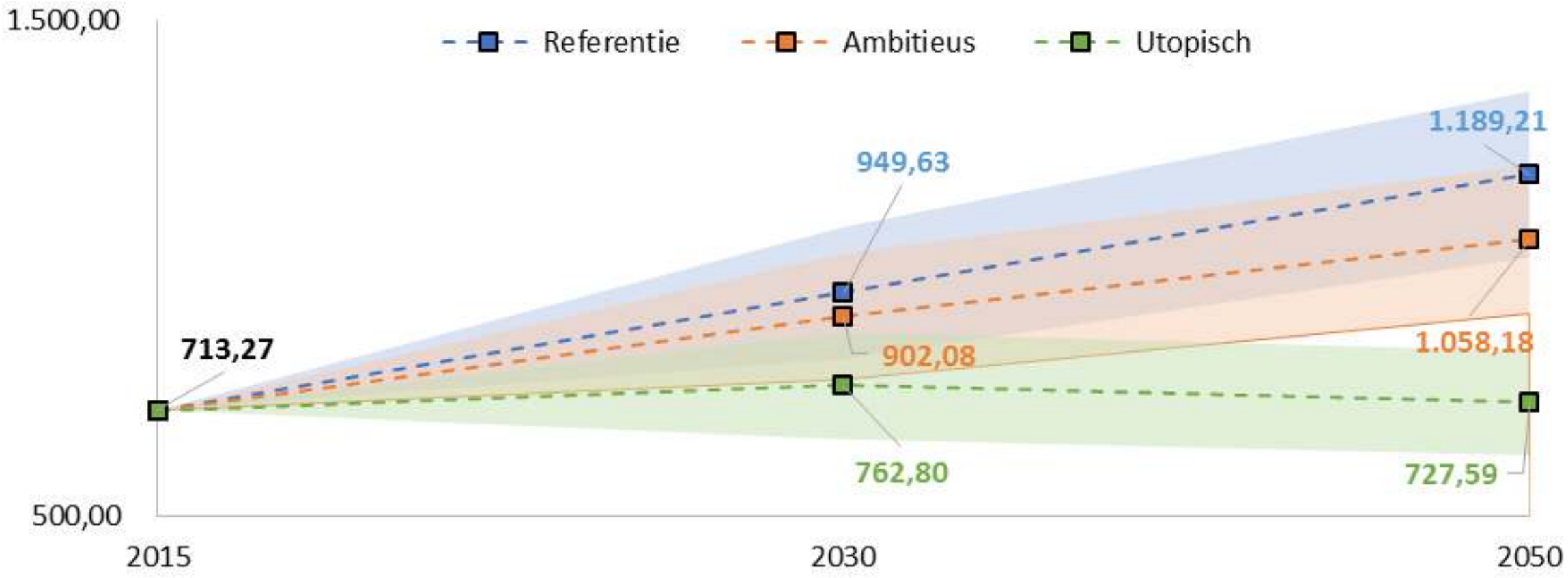
€ 44 mrd * 0,35 * 0,50 = € 7,75 mrd (17,6%)

1. Daalt kost NCD bij ambitieus preventiebeleid?
2. (Kost ambitieus preventiebeleid?)

Verwachte kostenevolutie NCDs in de EU: + 38% in 2030 / + 84% in 2050



Totale kost van de vier NCDs bij drie beleidsvarianten inzake preventie, EU
Bij ambitieus beleid: +26% in 2030 / +48% in 2050
Bij utopisch preventiebeleid: +7% in 2030 / + 2% in 2050



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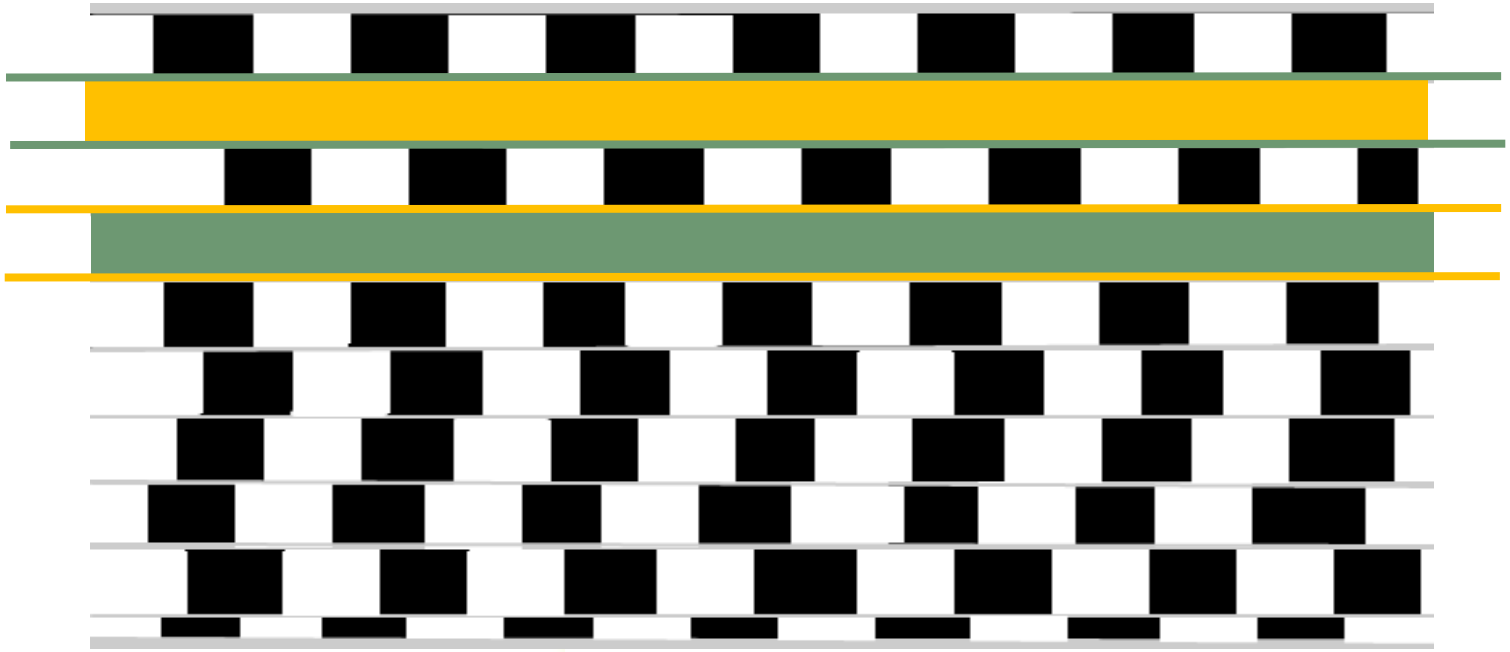
Conclusies

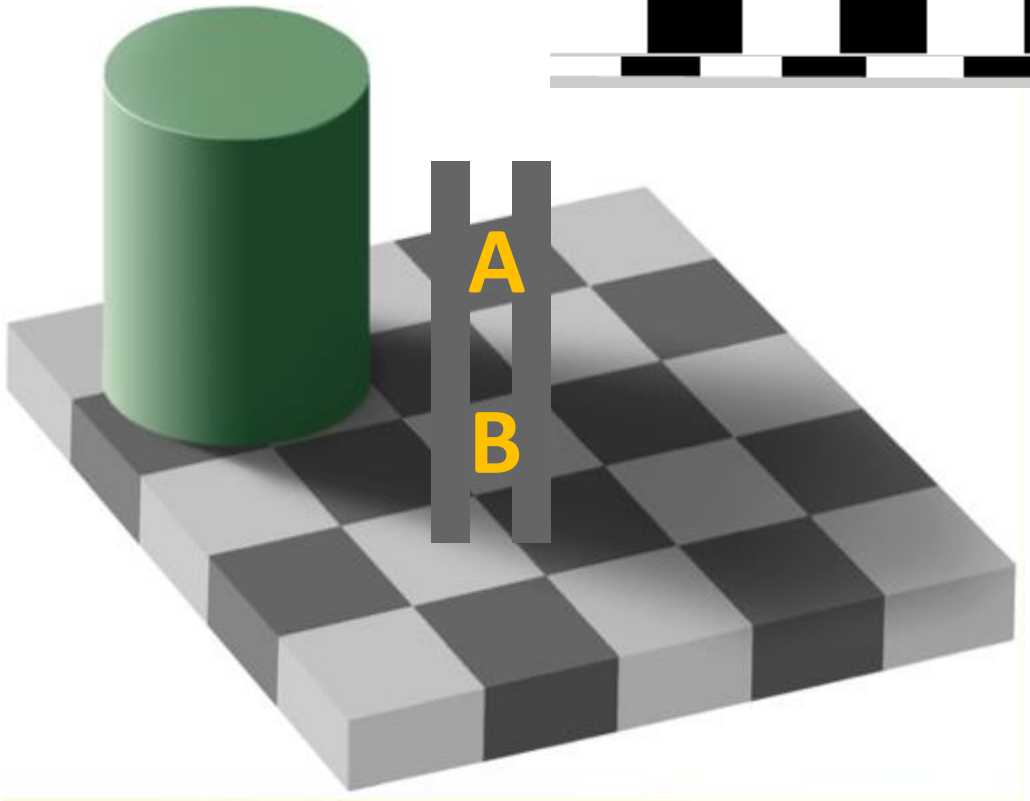
- NCDs zijn duur (35% uitgaven gezondheidszorg) en de factuur zal stijgen
- Potentieel preventie: 42% voortijdige overlijdens / 70% NCDs
- Ambitieus preventiebeleid nodig om toename factuur NCDs te temperen

Wat gedragseconomie ons kan leren over een effectief preventiebeleid

Désirée Vandenberghe

Maandag 2 juli 2018

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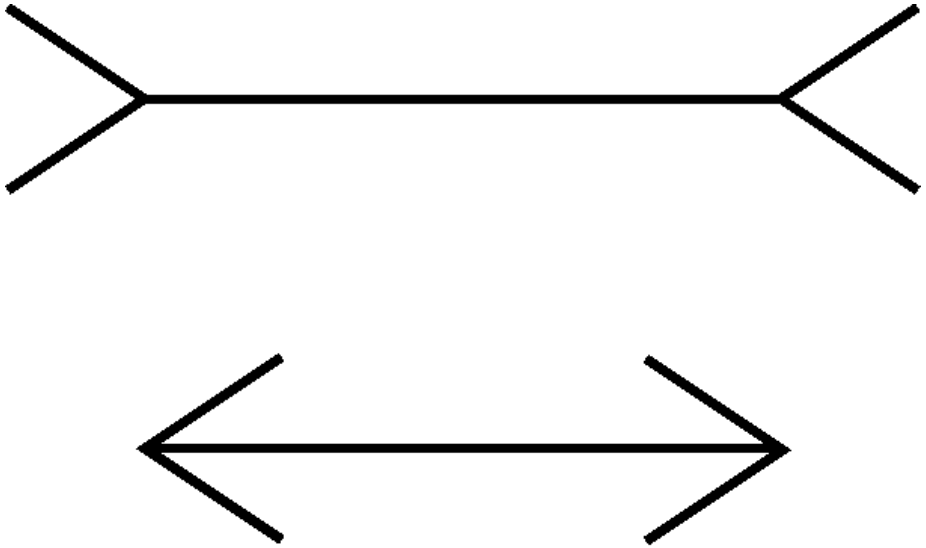


Een effectief preventiebeleid
houdt rekening met
denkfouten en omgeving

I. Wat is preventie?

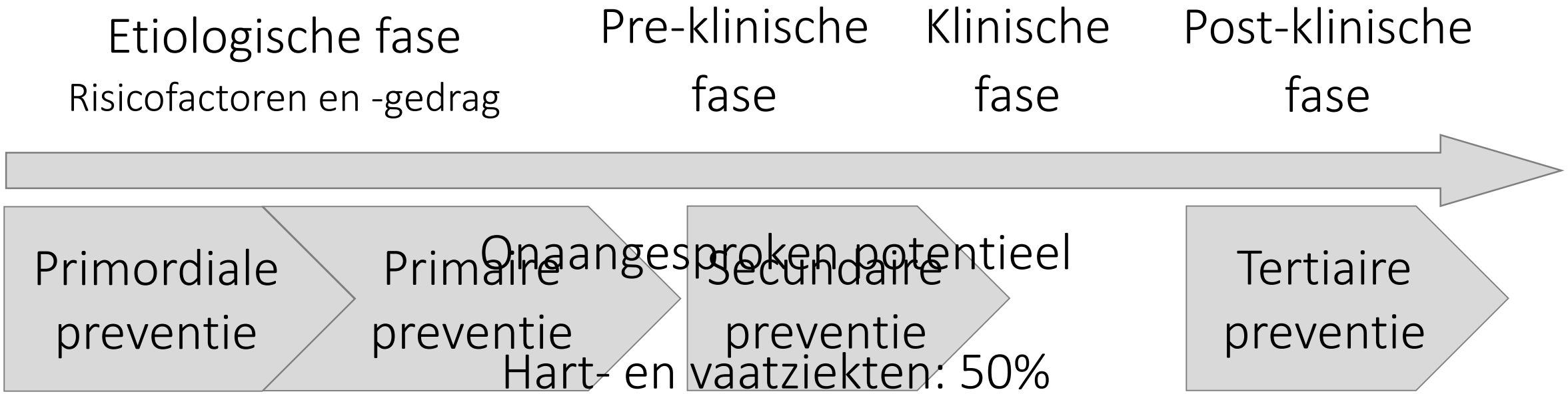
I. Wat is preventie?

II. Gedragseconomie

III. Inzichten voor preventie

IV. Duurzaam preventiebeleid

I. Wat is preventie?



Onaangesproken potentieel

Hart- en vaatziekten: 50%
Kanker: 30%
Diabetes: 90%
Ademhalingsziekten: 70%

Bron: AFMC (1); Ford et al. (2)

I. Wat is preventie?

Het is moeilijk/duur/vergt inspanning om een gezonde levensstijl te onderhouden

51%

Ik vind dat ik een gezonde levensstijl heb

80% van nieuwe fitnessers in januari stopt na 5 maanden

Bron: Delta Lloyd Life (3)

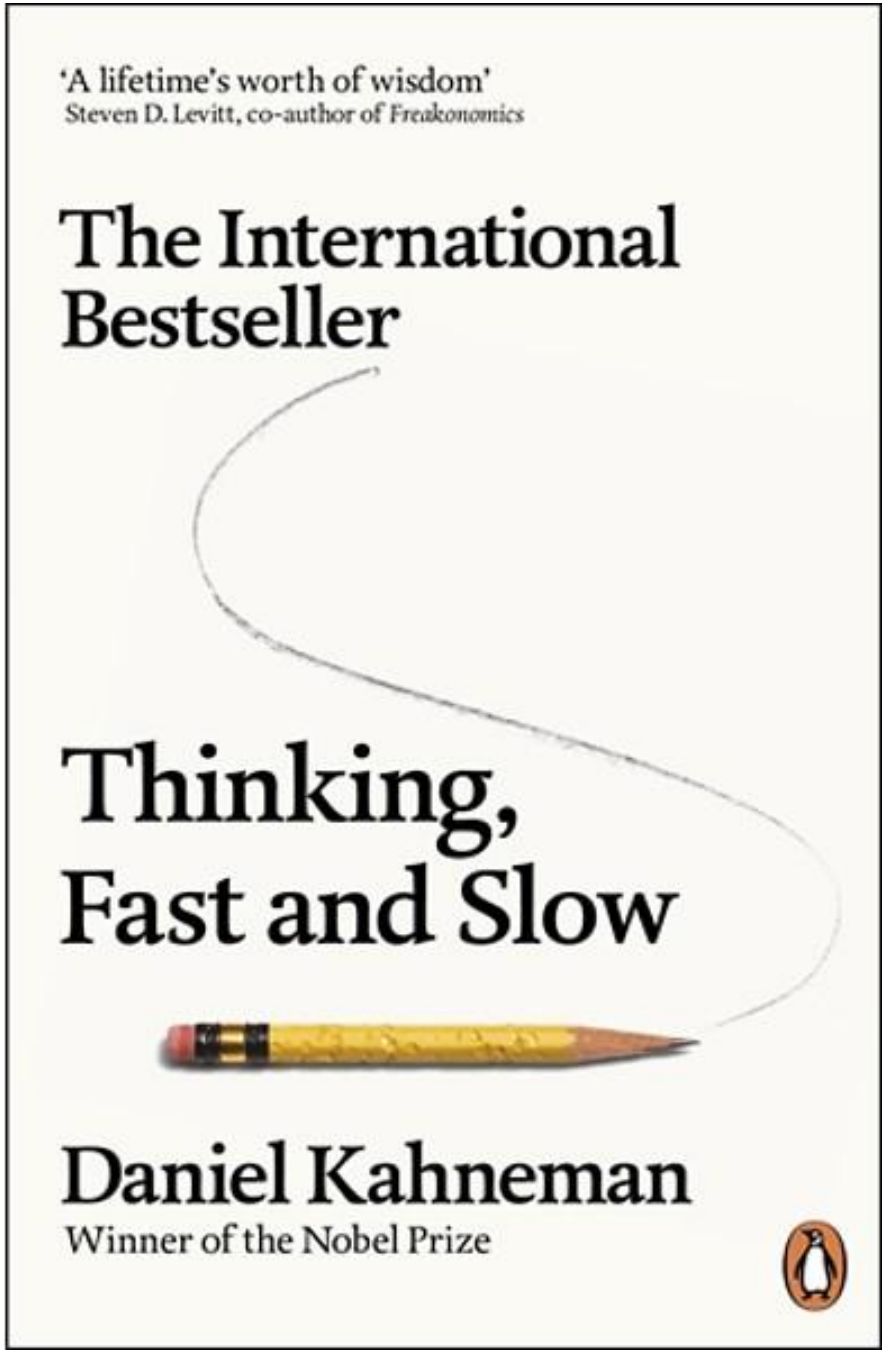
II. Gedragseconomie

I. Wat is preventie?

II. Gedragseconomie

III. Inzichten voor preventie

IV. Duurzaam preventiebeleid

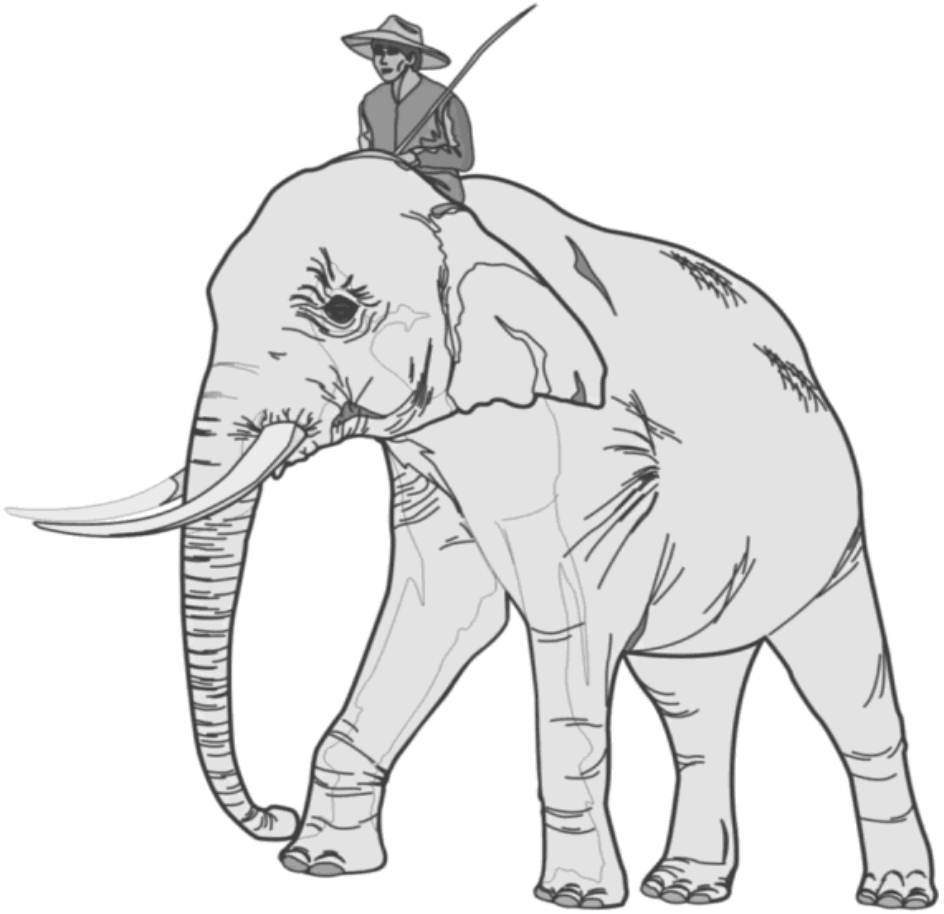


II. Gedragseconomie

Rationeel systeem ← Begeleid de ruiter

Emotioneel en irrationeel systeem ← Motiveer de olifant

Omgeving ← Vorm het pad



Bron: Haidt (6)

III. Inzichten voor preventie

I. Wat is preventie?

II. Gedragseconomie

III. Inzichten voor preventie

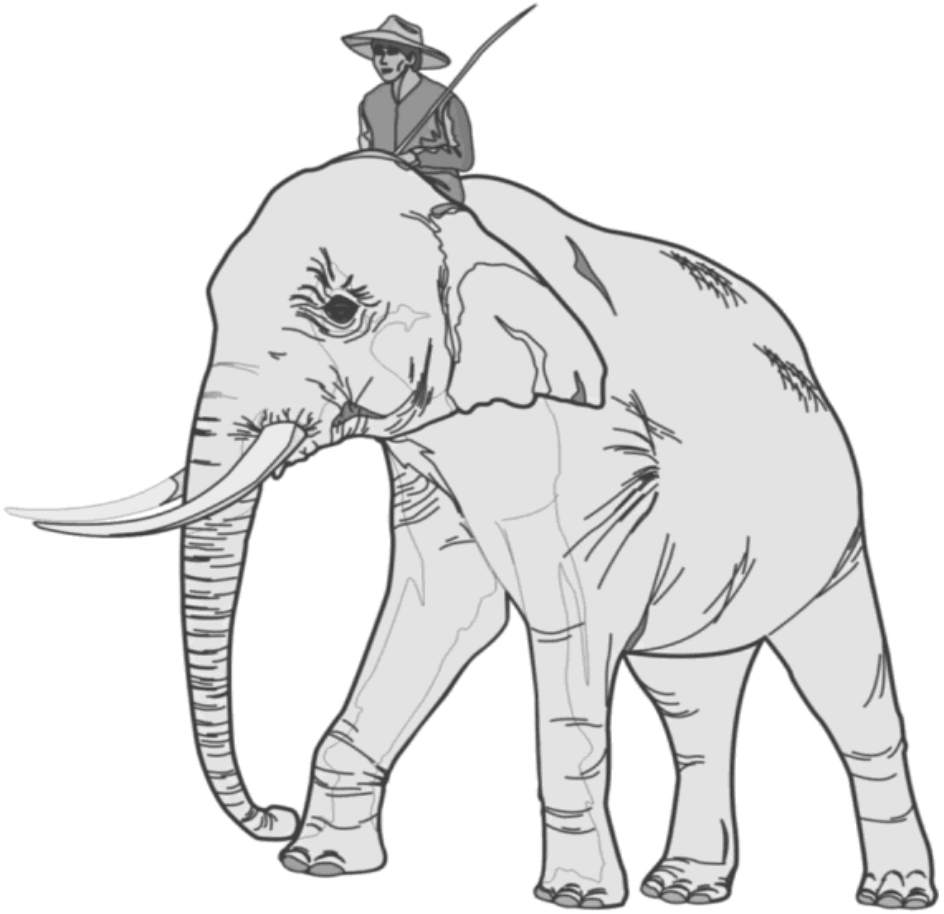
IV. Duurzaam preventiebeleid

III. Inzichten voor preventie

Rationeel systeem ← Begeleid de ruiter

Emotioneel en irrationeel systeem ← Motiveer de olifant

Omgeving ← Vorm het pad



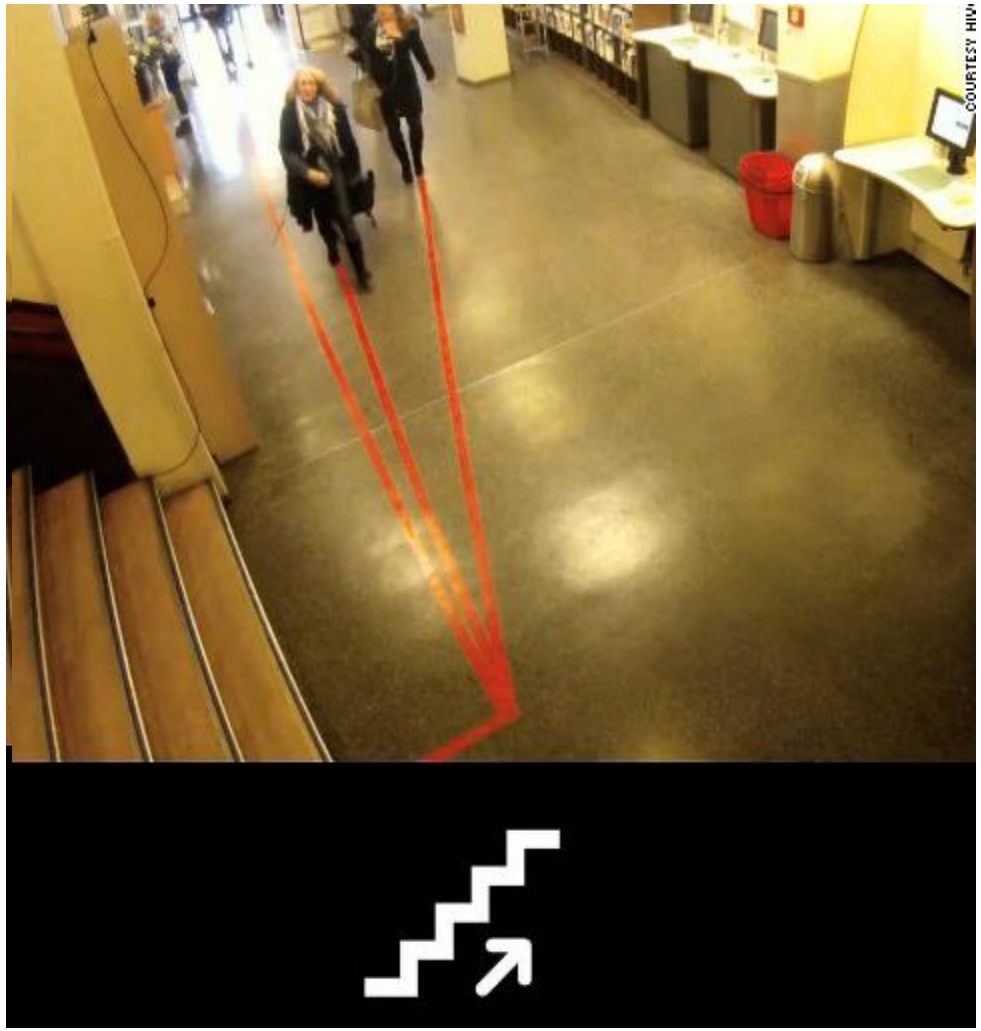
III. Inzichten voor preventie

Rationeel systeem	Informatie over **roken**
Emotioneel en irrationeel systeem	Optimisme bias Persoonlijke info Nudging
Omgeving	Sociale normen Nudging

Bron: Weinstein et al. (7); Masiero et al. (8); Noar et al. (9); Cataldo et al. (10); McMillan et al. (11)

III. Inzichten voor preventie

Rationeel systeem	Informatie over **beweging**
Emotioneel en irrationeel systeem	Projectie bias Gewoontes
Omgeving	Sociale normen Nudging



Bron: Acland en Levy (12); Neal et al. (13); Rünger enWood (14); John en Norton (15); Hivos (16)

IV. Duurzaam preventiebeleid

I. Wat is preventie?

II. Gedragseconomie

III. Inzichten voor preventie

IV. Duurzaam preventiebeleid

IV. Duurzaam preventiebeleid

Noord-Karelia project

1ste grootschalige programma voor preventie van hart- en vaatziekten

Gestart in 1972, looptijd van 25 jaar

Waarom Noord-Karelia?

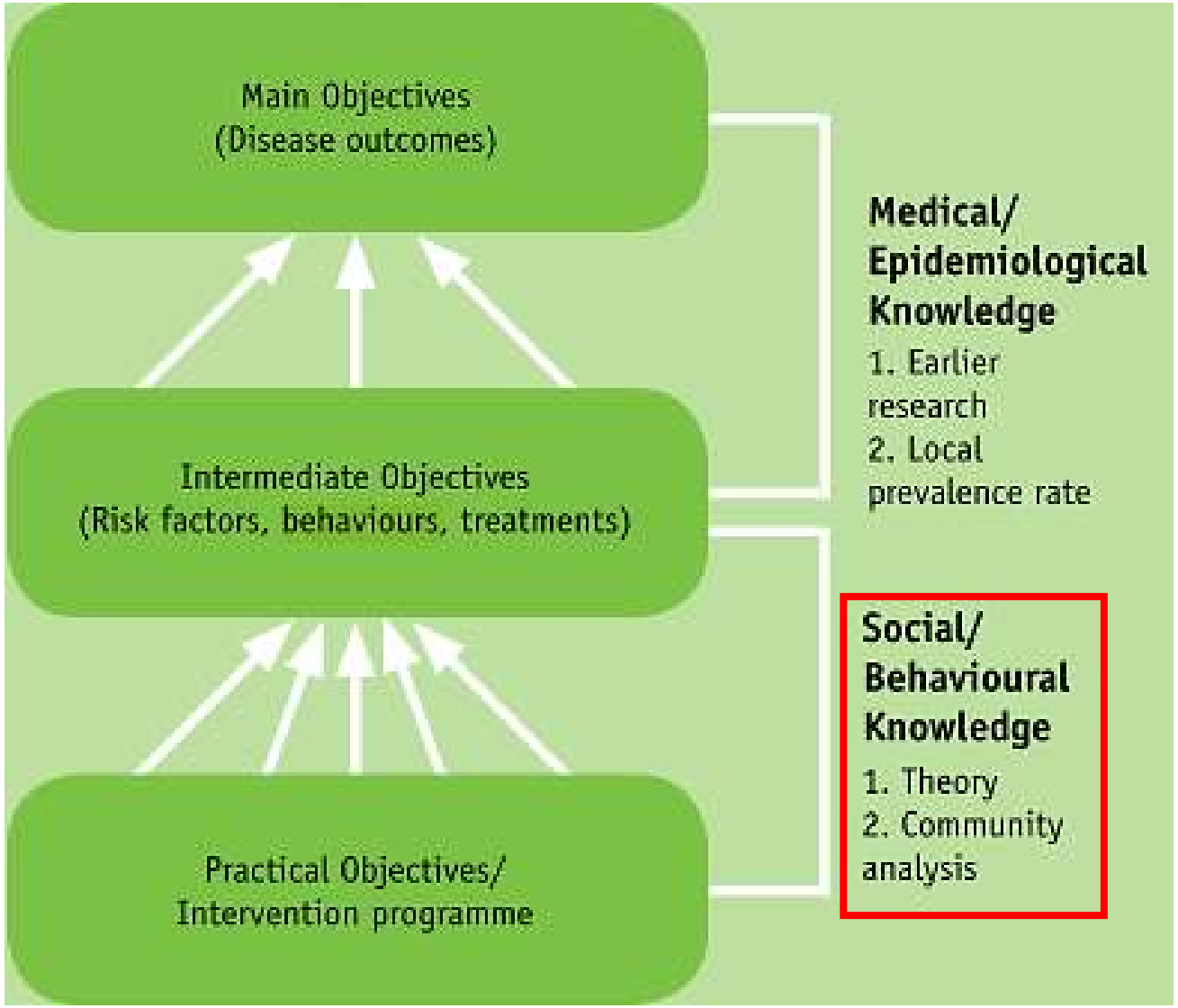
Bron: Puska et al. (17)

IV. Duurzaam preventiebeleid

1. Planning

‘community analysis’

Aandacht voor gedrag
en sociale normen



Bron: Puska et al. (17); McLaren et al. (18)

IV. Duurzaam preventiebeleid

1. Planning
   ‘community analysis’
2. **Implementatie**
   ‘community involvement’

   - Rationeel: informatie via mediakanalen & opleidingen
   - Emotioneel/irrationeel: communicatie, gewoontes, competitie
   - Omgeving: lokale ondersteuning, voedingsproducenten, sociale normen

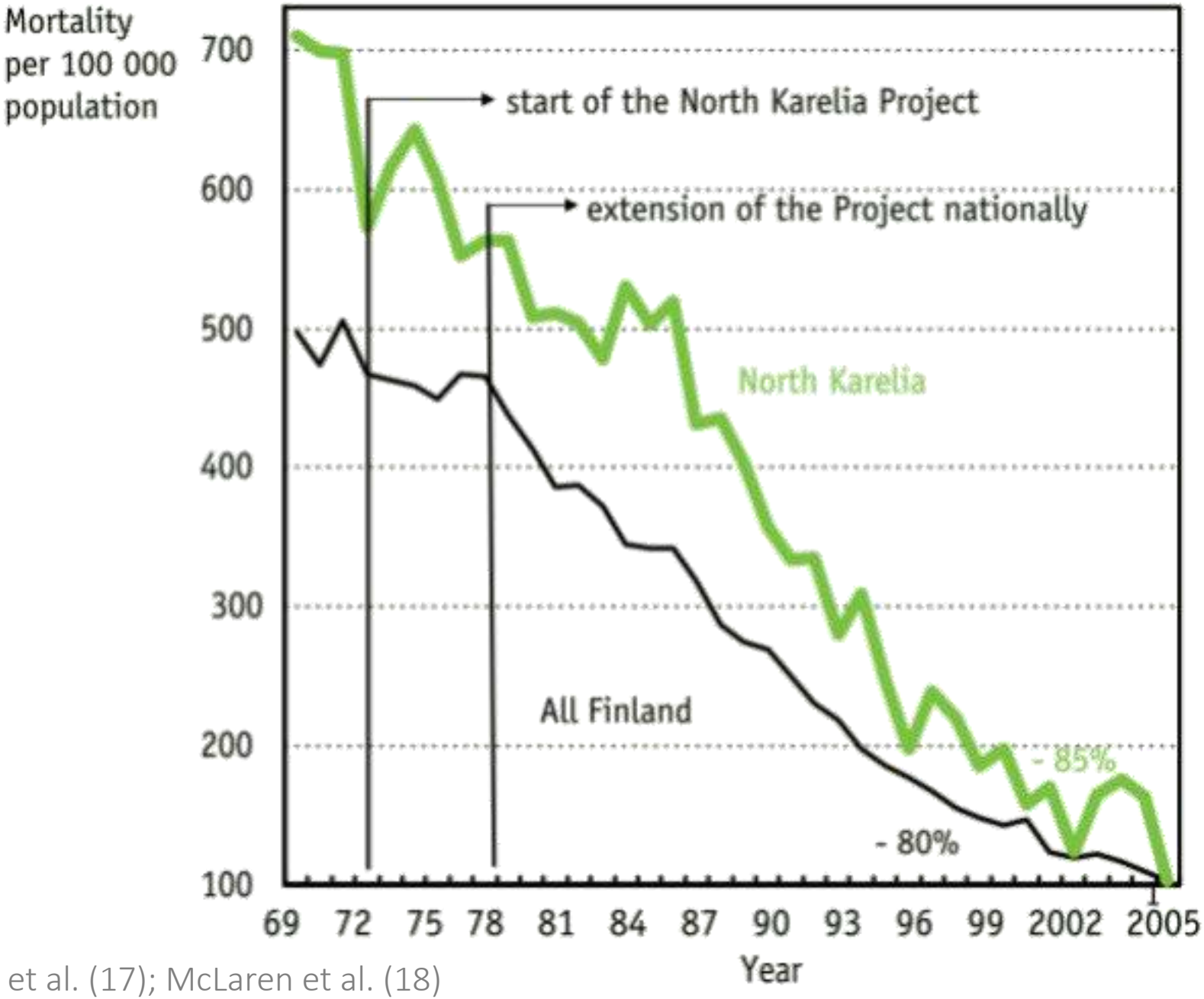
Bron: Puska et al. (17)

IV. Duurzaam preventiebeleid

1. Planning
   ‘community analysis’
2. Implementatie
   ‘community involvement’
3. **Evaluatie**

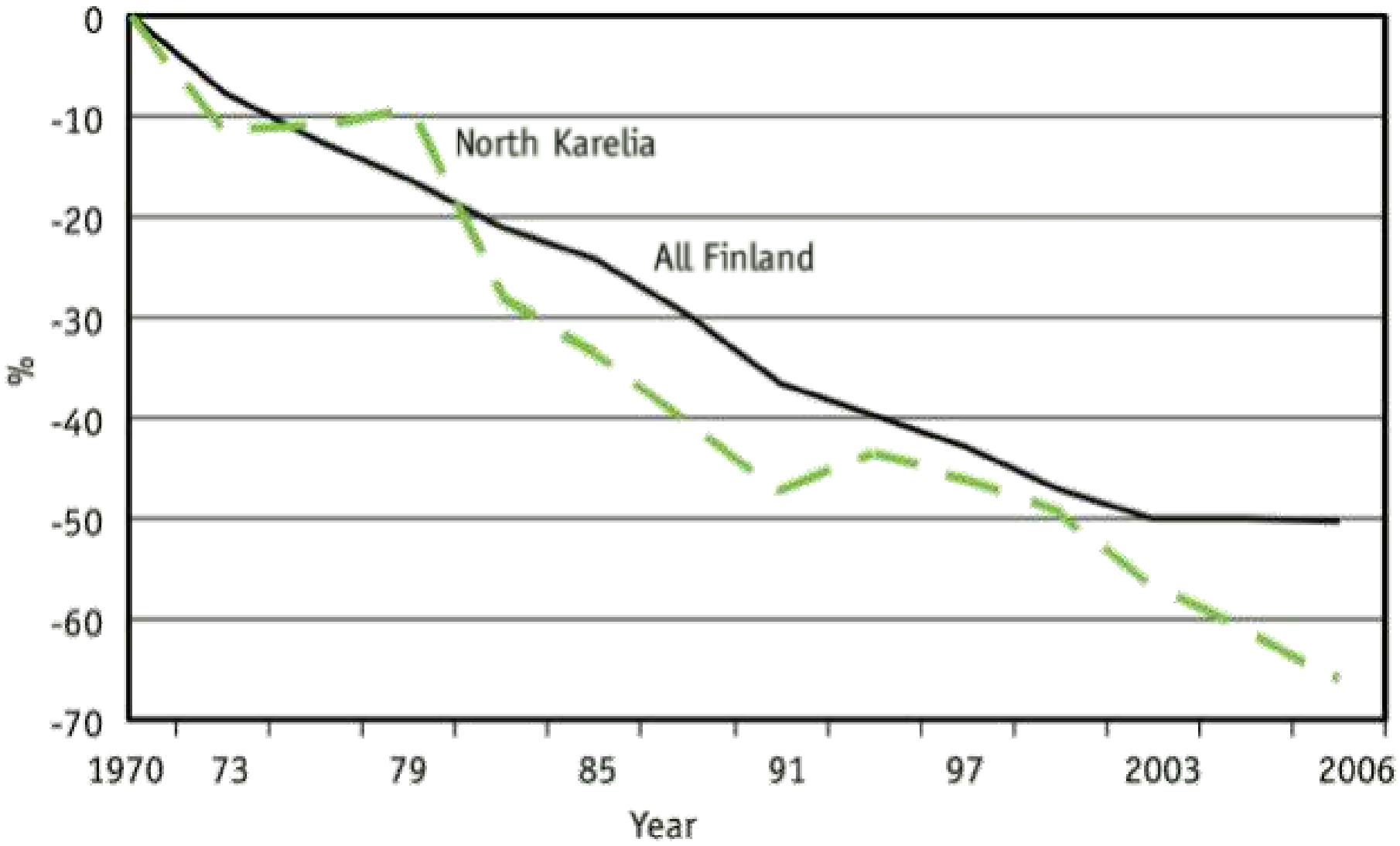
Bron: Puska et al. (17)

Mortaliteitsratio in hartziekte (gecorrigeerd voor leeftijdsverschillen)



Bron: Puska et al. (17); McLaren et al. (18)

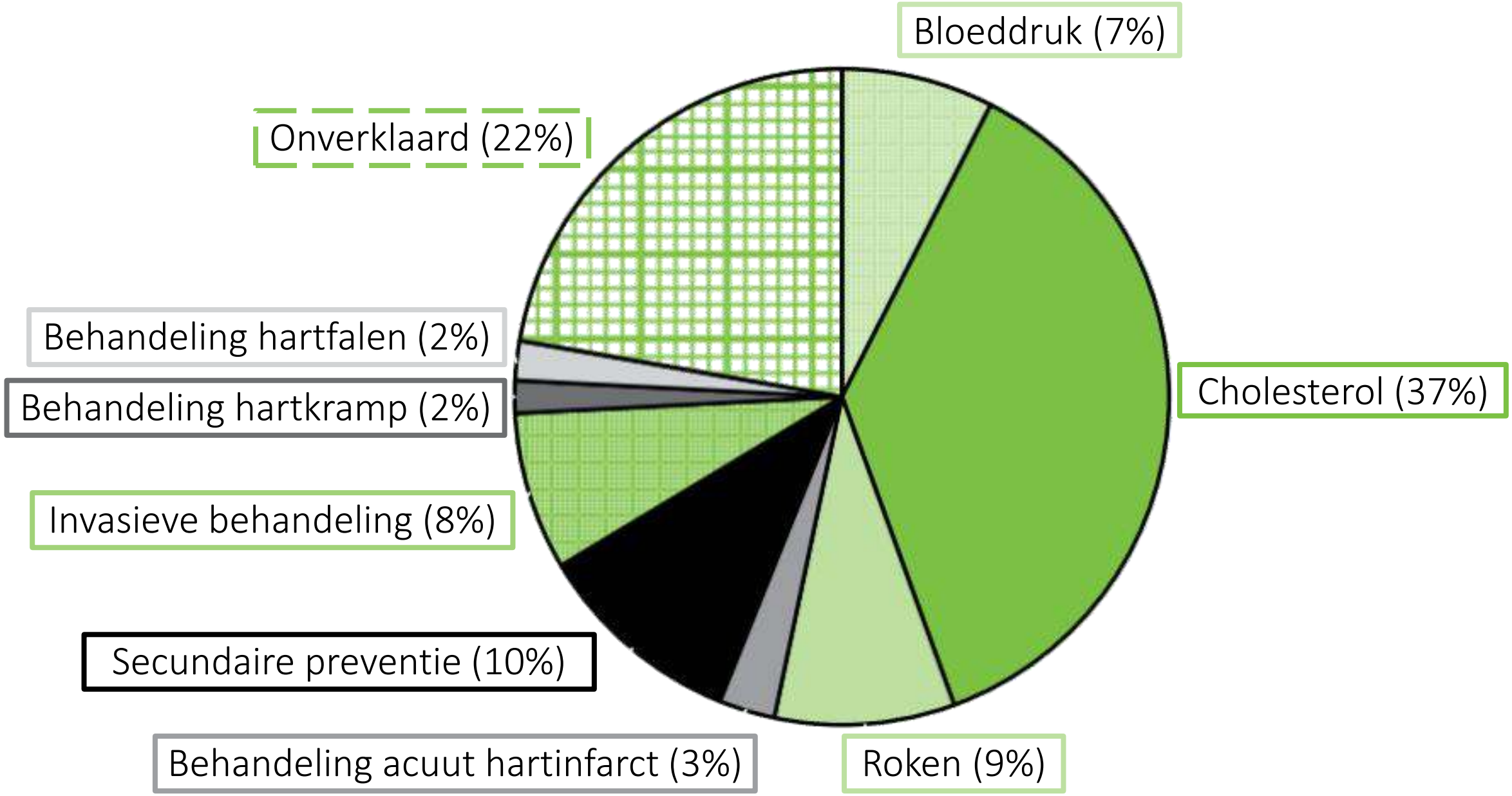
Daling in kankermortaliteit (mannen tussen 35 en 64)



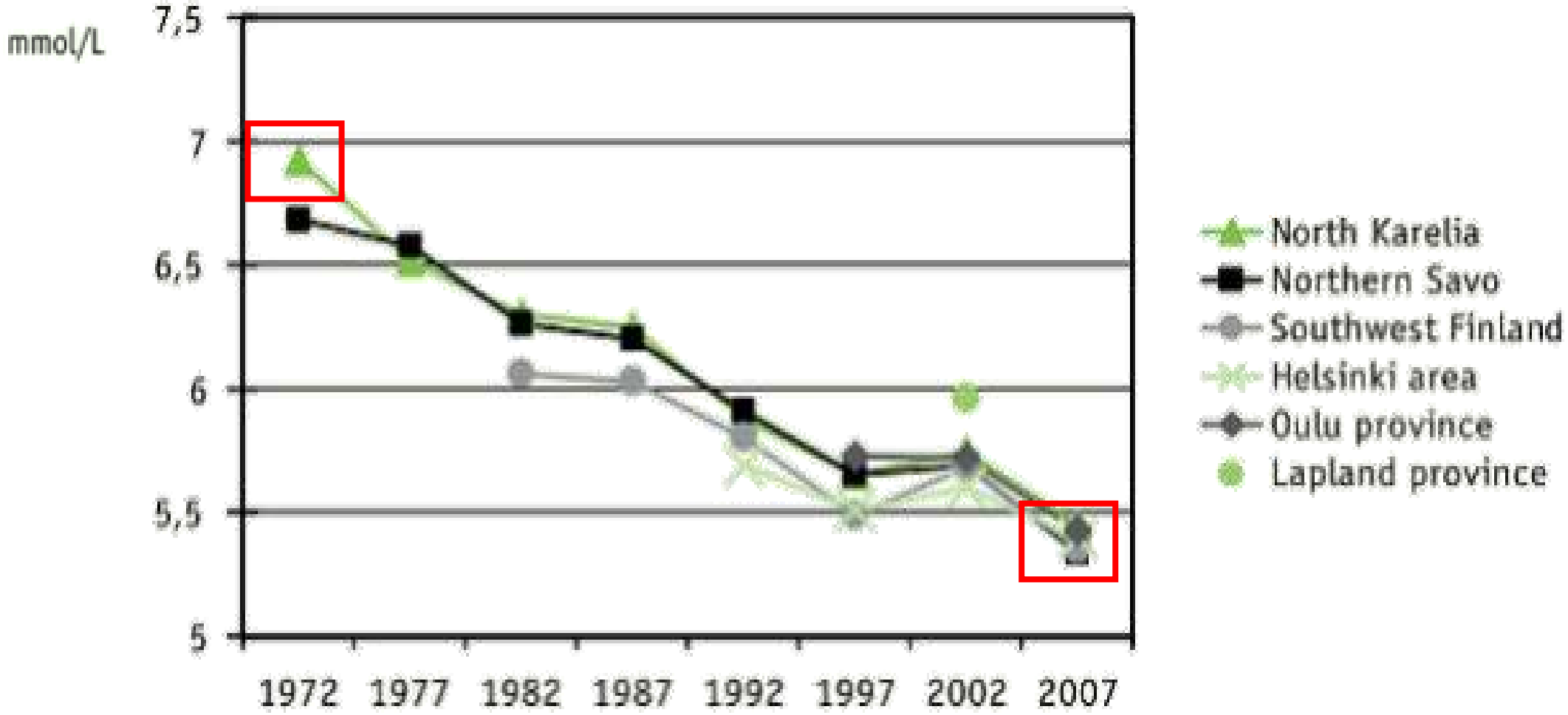
Bron: Puska et al. (17); McLaren et al. (18)

Aandeel van mogelijke factoren in mortaliteitsdaling door hartziekten (1982-1997)

Aandeel van mogelijke factoren in mortaliteitsdaling door hartziekten (1982-1997)



Bloed-cholesterolgehalte(mannen tussen 30 en 59)



Bron: Puska et al. (17); McLaren et al. (18)

IV. Duurzaam preventiebeleid

1. Planning
   ‘community analysis’
2. Implementatie
   ‘community involvement’
3. **Evaluatie**
   daling van 85% in mortaliteit door hartziekten
   waarvan 53-75% dankzij daling in risicogedrag

   Succes dankzij aandacht voor **gedrag en sociale normen**

Bron: Puska et al. (17)

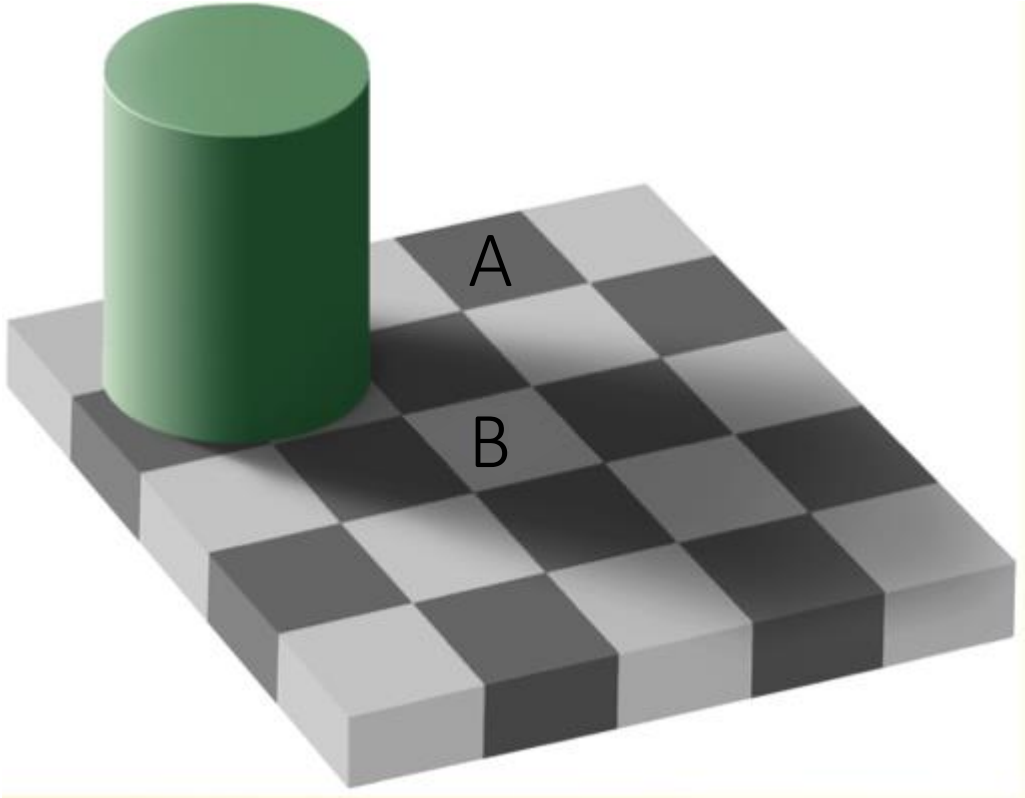
Een effectief preventiebeleid
houdt rekening met
denkfouten en omgeving

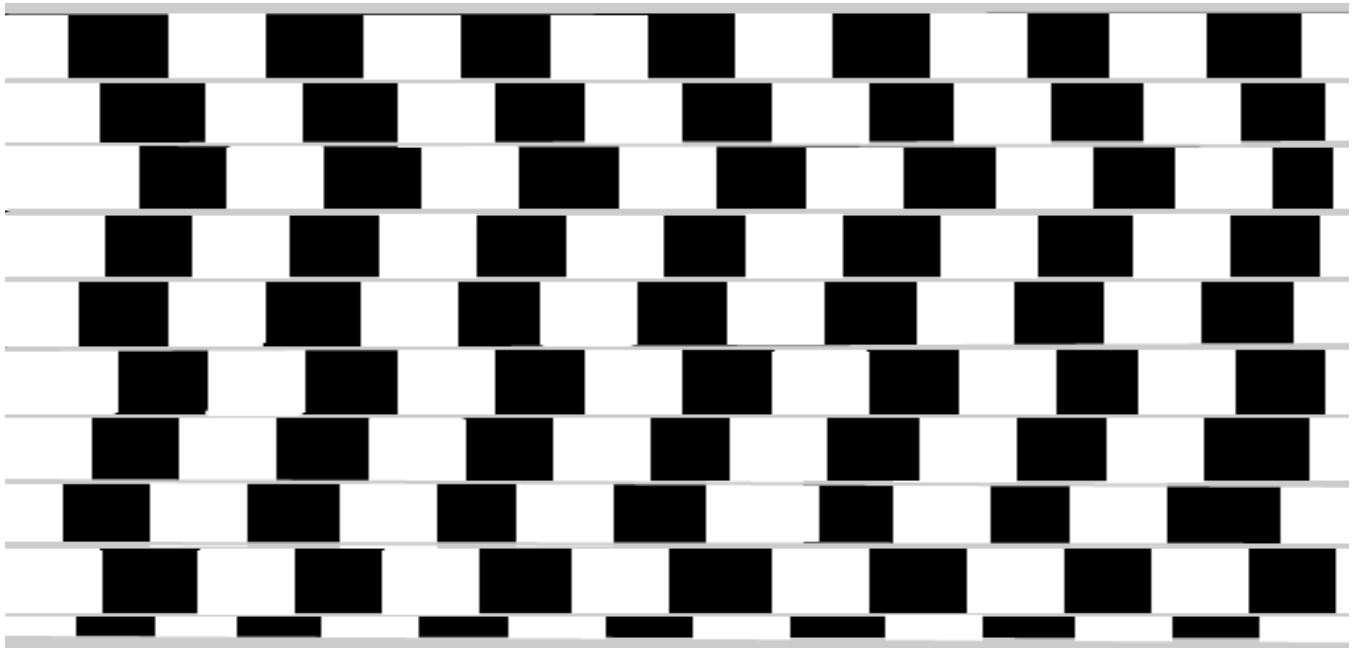
Actieplan
‘Gezonder leven’

Vlaams Parlement zet licht op groen voor “nudge-unit”

Bron: Vlaams Agentschap Zorg en Gezondheid (19); RIZIV (20); Nieuwsblad (21)

Bedankt





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