



HART
CENTRUM

Bewegingsadvies voor arts & patiënt

What's enough and what's too much?

Dr. Jimmy Jacobs – Cardioloog ZAS

ZIEKENHUIS *aan*
de STROOM

Bewegingsadvies voor arts & patiënt

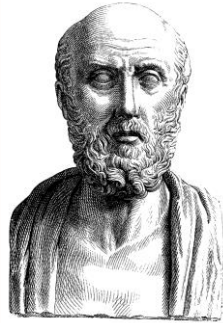


Inleiding



Oudheid

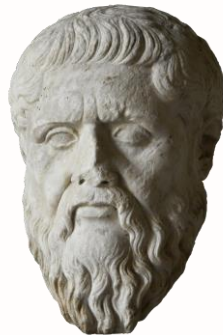
*All parts of the body which have a function if used in moderation and exercised in labors in which each is accustomed, become thereby healthy, well developed and age more slowly; **but if unused and left idle they become liable to disease, defective in growth and age quickly.***



Hippocrates, c. 450 B.C

Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise preserve and enhance it.

Plato, c. 380 B.C



20e eeuw

Behandeling acuut myocardinfarct: 1910 -1959

6 weken strikte bedrust



**'The Cardiac Chair'
1959**

Inleiding: Fysieke (in)activiteit

6% van cardiovasculaire ziekte

7% van diabetes mellitus type II

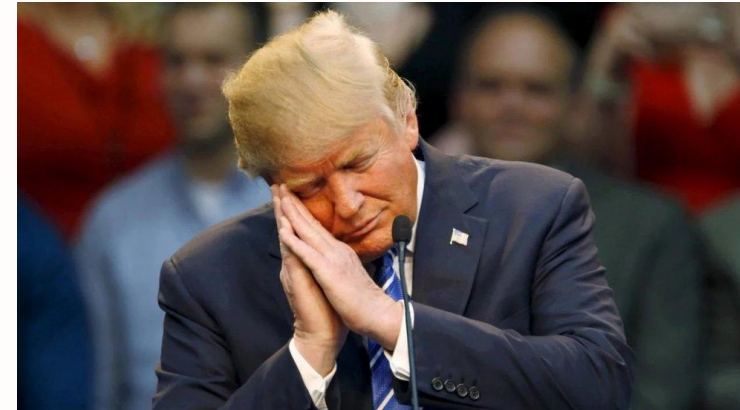
10% van borstkanker

10% van colonkanker

9% van premature mortaliteit

10% minder inactiviteit = 533.000 minder overlijdens/jaarlijks

25% minder inactiviteit = 1.300.000 minder overlijdens/jaarlijks



Introductie: Hoe doen we het?

Slechts 1 op 5 wereldwijd haalt richtlijn...

Geen positieve trend in participatie voorbij 20 jaar...

Artsen:

68,4% <600 MET-min/week

Verpleegkundigen:

46% <600 MET-min/week

+ minder 'sitting time'

Physical activity	MET
Light intensity activities	
< 3	
sleeping	0.9
watching television	1.0
writing, desk work, typing	1.5
walking, 1.7 mph (2.7 km/h), level ground, strolling, very slow	2.3
walking, 2.5 mph (4 km/h)	2.9
Moderate intensity activities	
3 to 6	
bicycling, stationary, 50 watts, very light effort	3.0
walking 3.0 mph (4.8 km/h)	3.3
calisthenics, home exercise, light or moderate effort, general	3.5
walking 3.4 mph (5.5 km/h)	3.6
bicycling, <10 mph (16 km/h), leisure, to work or for pleasure	4.0
bicycling, stationary, 100 watts, light effort	5.5
sexual activity	5.8 ^[10]
Vigorous intensity activities	
> 6	
jogging, general	7.0
calisthenics (e.g. pushups, situps, pullups, jumping jacks), heavy, vigorous effort	8.0
running jogging, in place	8.0
rope jumping	10.0

Bewegingsadvies voor arts & patiënt



Wat is genoeg?



Bewegingsrichtlijnen: WHO

Jongeren



1 uur per dag **matig of zwaar intensief** bewegen



3x per week **bot- en spierversterkende** activiteiten



Voorkom veel zitten

Volwassenen en ouderen



Minimaal 150 minuten per week **matig of zwaar intensief** bewegen, verspreid over meerdere dagen



2x per week **bot- en spierversterkende** activiteiten. **Voor ouderen in combinatie met balansoefeningen**



Voorkom veel zitten

At least 150 min/week of moderate-intensity, or 75 min/week of vigorous-intensity aerobic exercise, or an equivalent combination thereof is recommended in all healthy adults.^{113–118}

I

A

A gradual increase in aerobic exercise to 300 min/week of moderate-intensity, or 150 min/week of vigorous-intensity aerobic exercise, or an equivalent combination is recommended for additional benefits in healthy adults.^{114,116}

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Welke activiteiten?

Activiteiten met een matige intensiteit	3 tot 6
fietsen, stationair, 50 watt, zeer lichte inspanning	3.0
lopen 4,8 km/h	3.3
gymnastiekles, thuisstraining, lichte of matige inspanning, algemeen	3.5
lopen 5,5 km/h	3.6
fietsen 16 km/h vrije tijd, naar werk of naar plezier	4.0
spinning met 100 watt	5.5
Seks	5.8
Flinke inspanning	> 6
Joggen	7.0
Gymnastiekoefeningen (bijv. pushups, sit-ups, pull-ups, jumping jacks), zware krachttraining	8.0
Sneller hardlopen	8.0
Touwtjespringen	10.0

Zitgedrag

Zittende en (half)liggende activiteiten die weinig energie kosten

Bewegen kan op veel manieren. **Wissel af** door te bewegen **in en om het huis, tijdens werk, in vrije tijd** en door te **sporten**.

Licht intensief

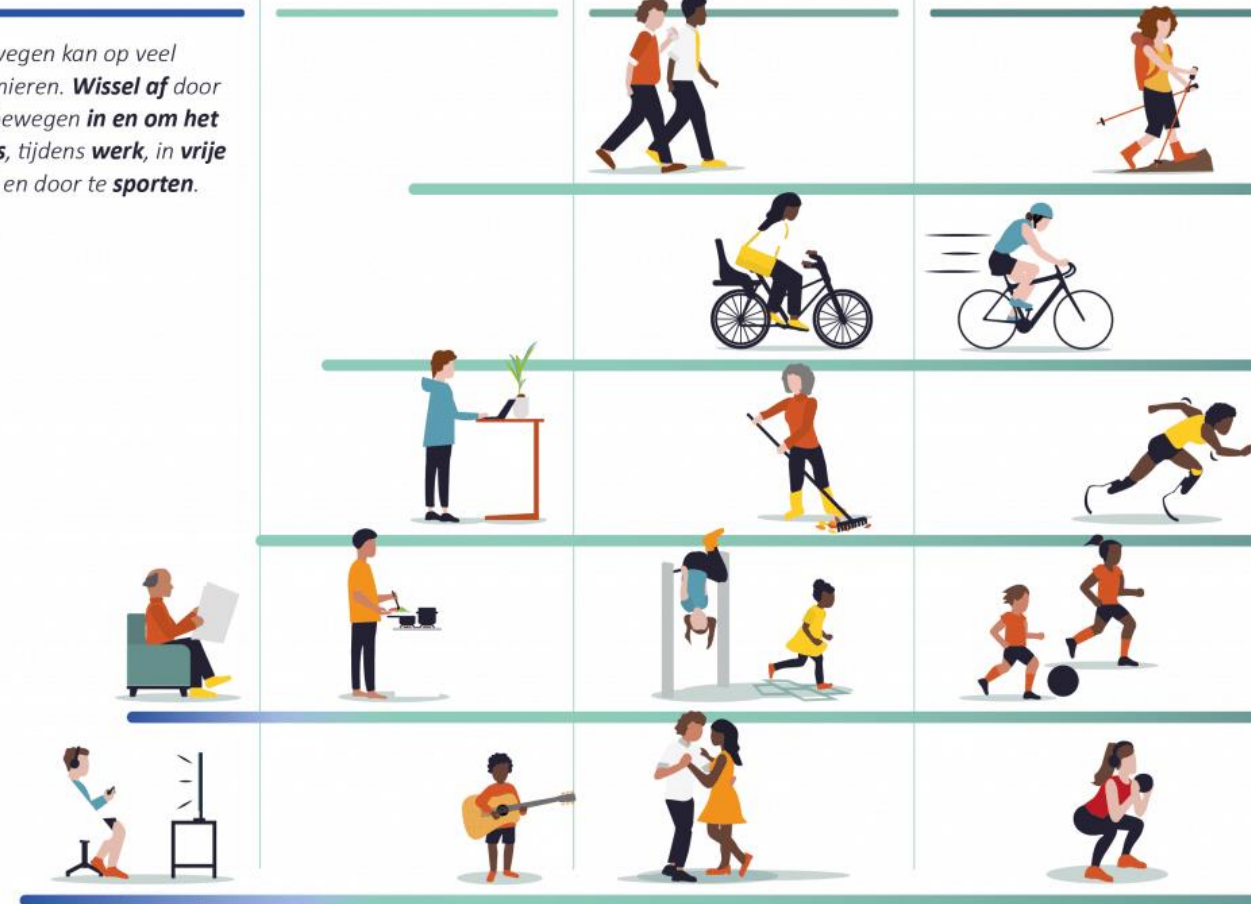
Geen verhoogde hartslag of versnelde ademhaling

Matig intensief

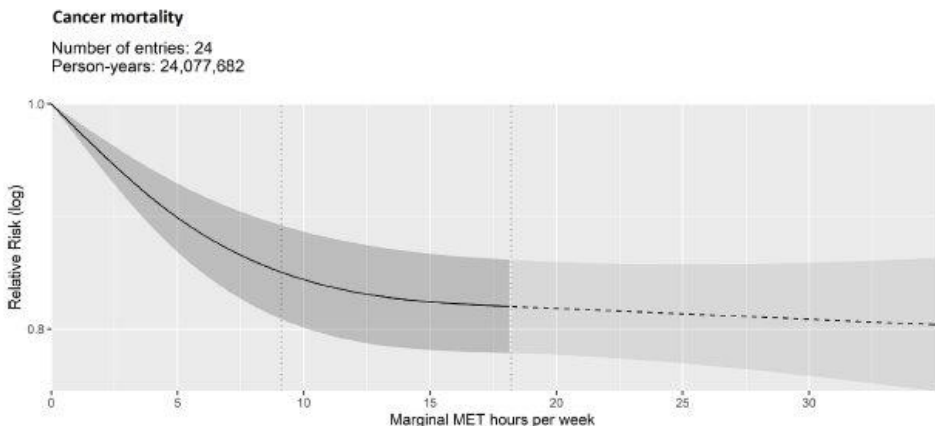
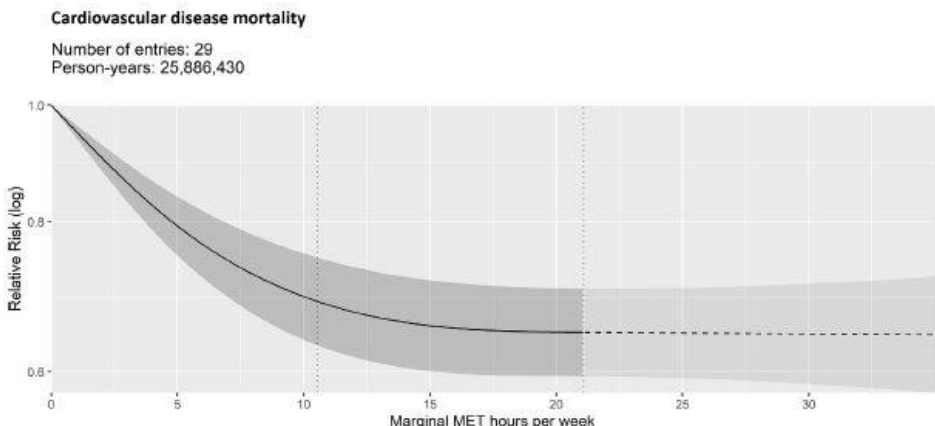
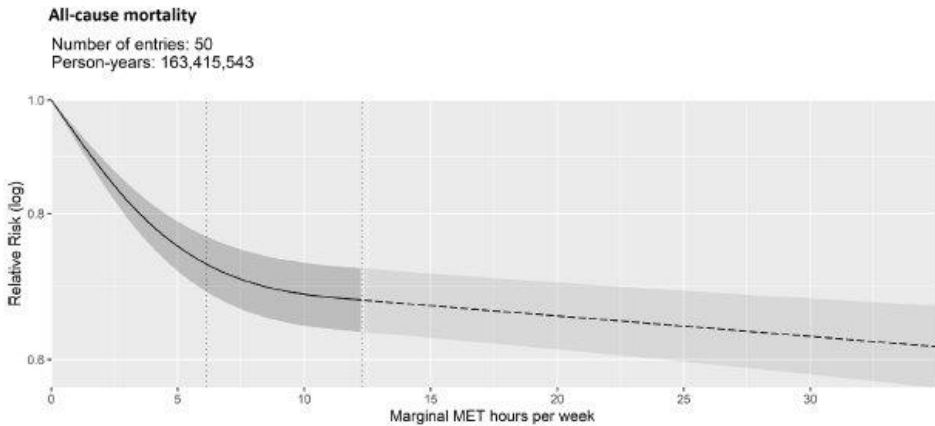
Verhoogde hartslag en versnelde ademhaling, praten blijft mogelijk

Zwaar intensief

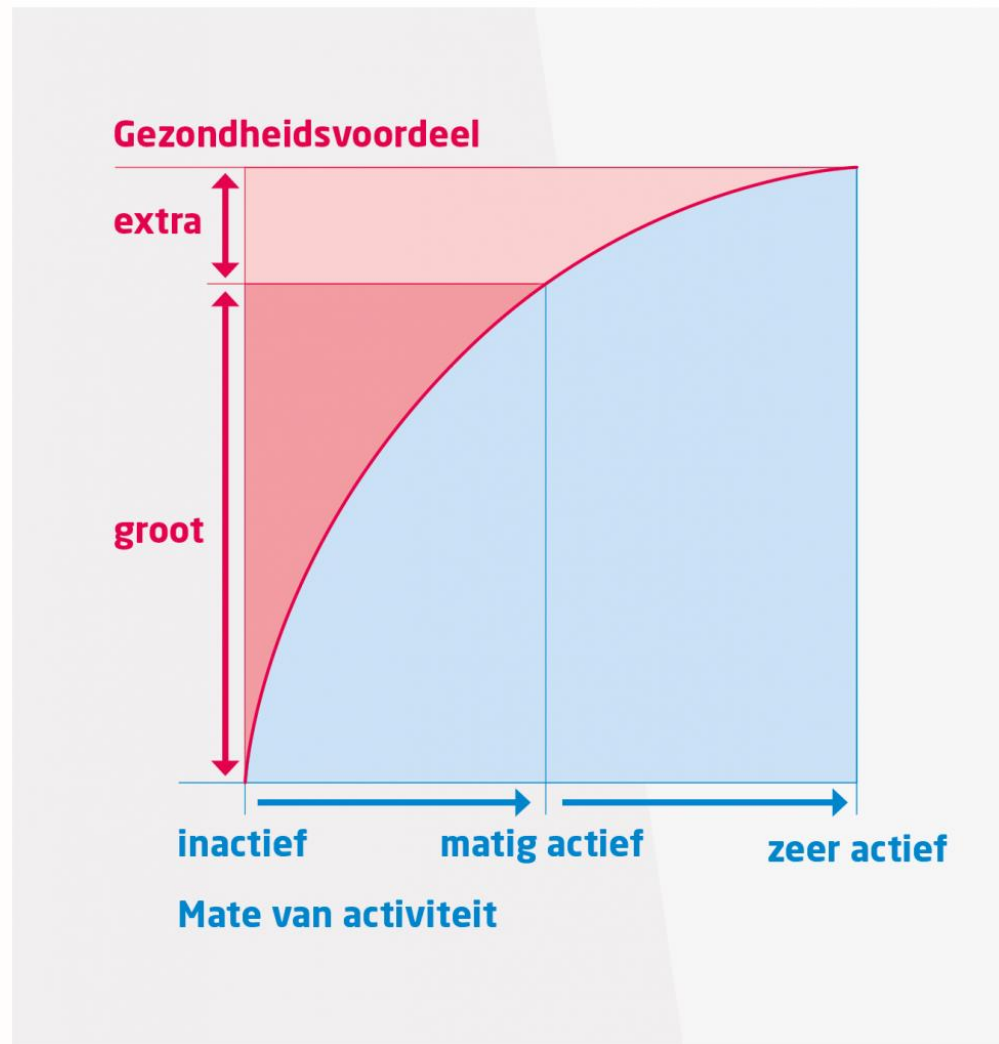
Zwaarder ademen of hijgen, praten gaat moeilijk



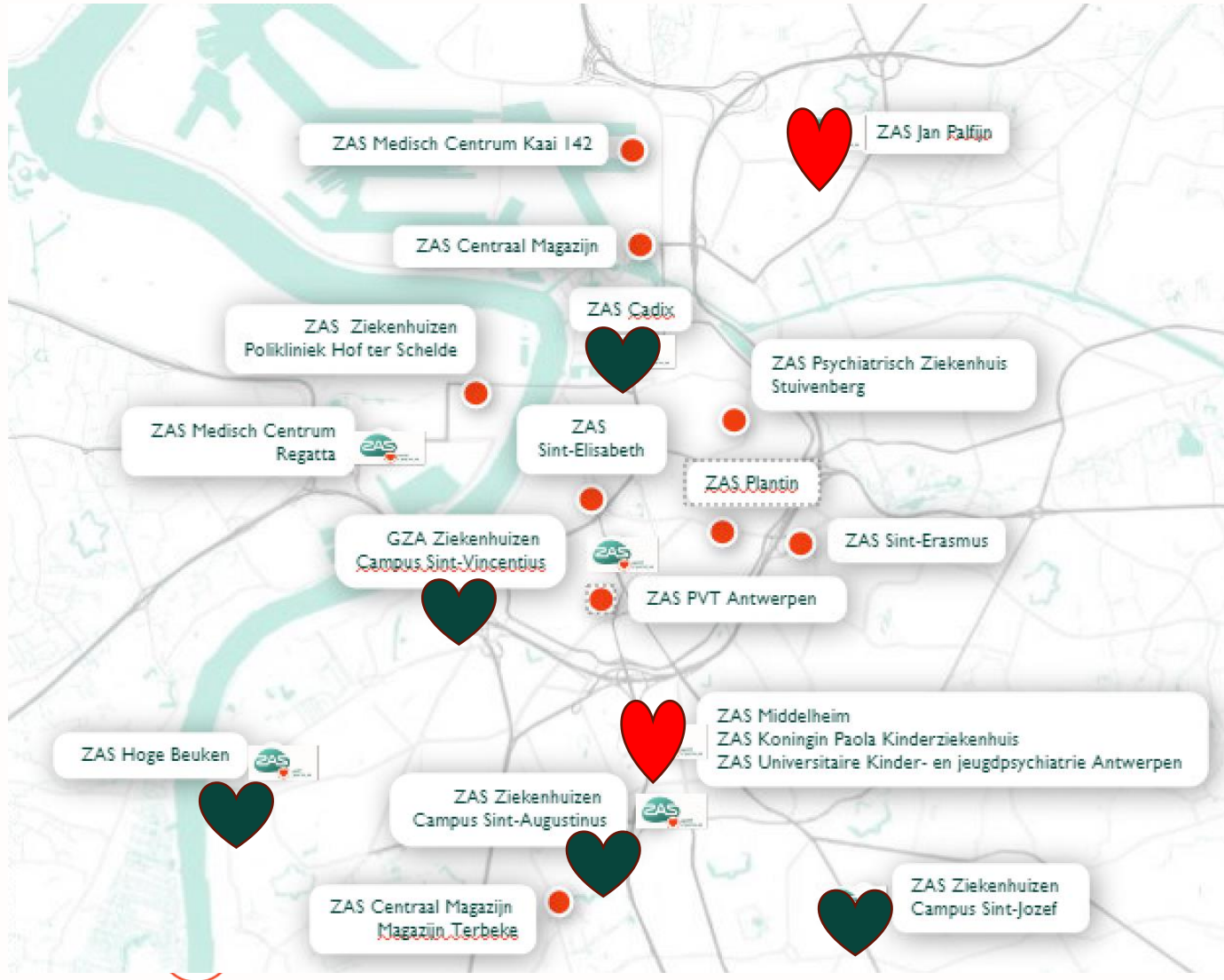
Wat is genoeg?



'Some is better than none'



Beweging na een cardio-vasculair event?



Cardiale Revalidatie binnen ZAS

♥ ZAS Middelheim

♥ ZAS Palfijn

Cardiale Revalidatie ZAS

45 sessies

(2-)3x/week

Ergospirometrie – VO₂ max – Trainingszones

Onder begeleiding obv HR: matig intensieve zones

Multi-disciplinaire approach

Indicatie:

- Klepchirurgie en/of CABG
- Post-ablatie (PVI, ...)
- Post-AMI / PTCA / ...
- Hartfalen(hospitalisatie)
- Device-implantatie (ICD/CRT-D)



Bewegingsadvies voor arts & patiënt



Kan het ook té veel?



Voorkamerfibrillatie: dose-response analyse

ENDURANCE TRAINING VS STRENGTH TRAINING A HIGH-PERFORMANCE ATHLETE'S HEART

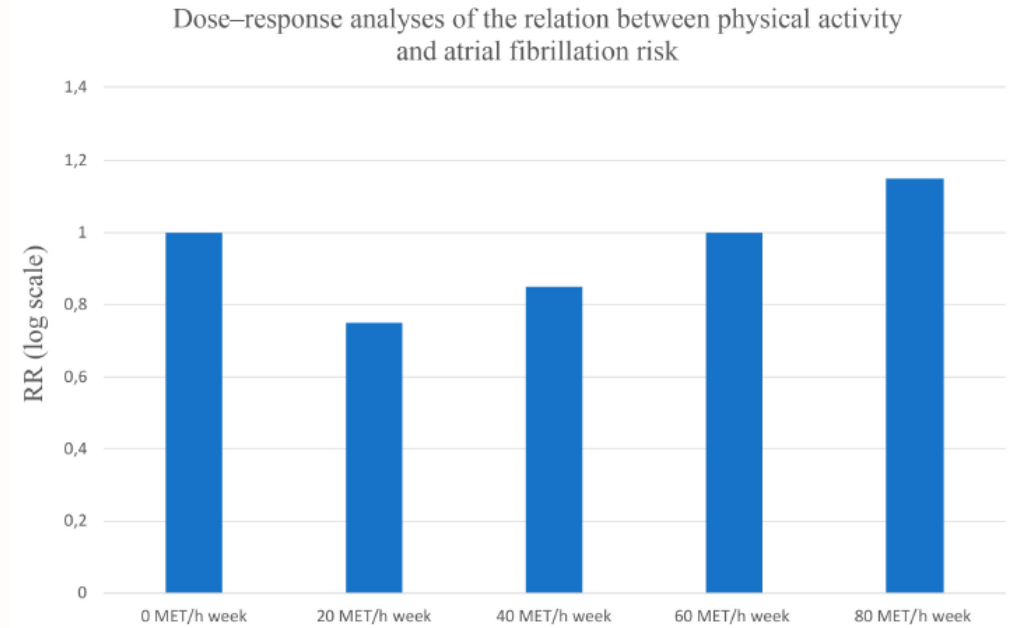
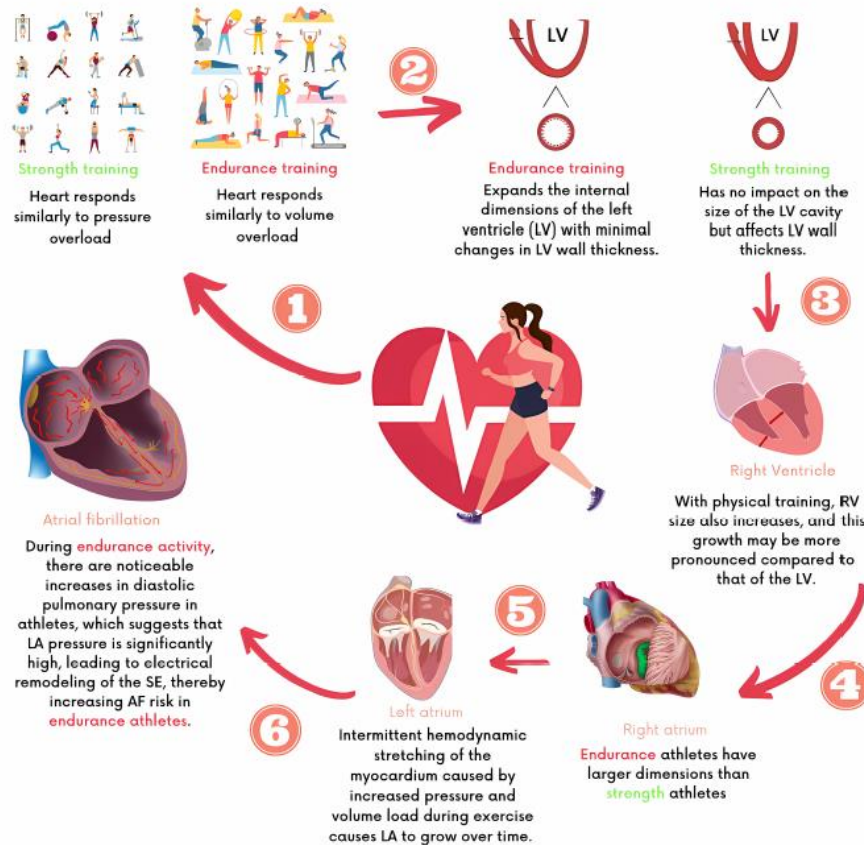
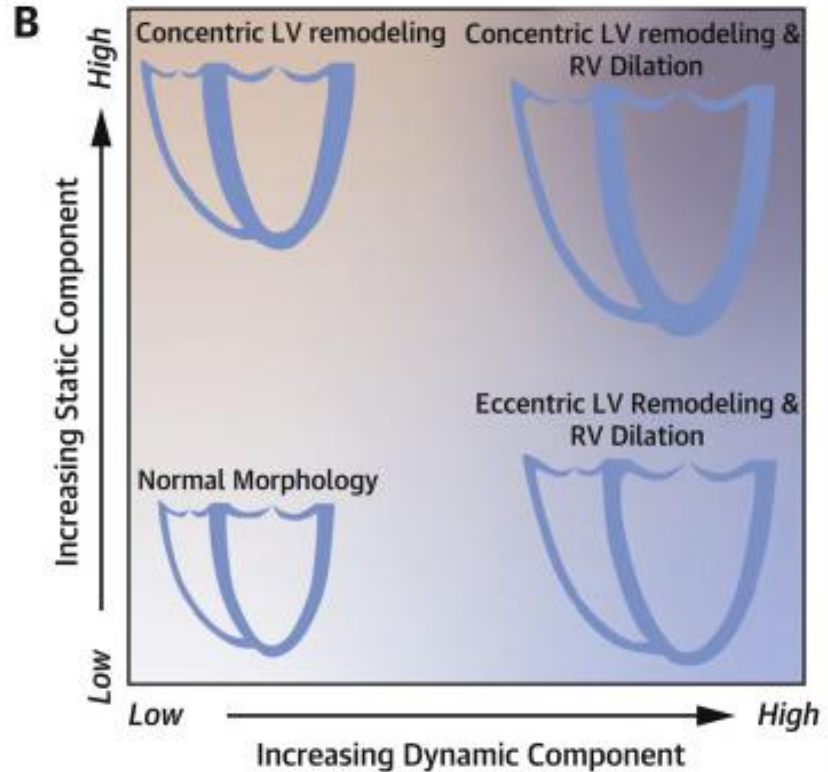


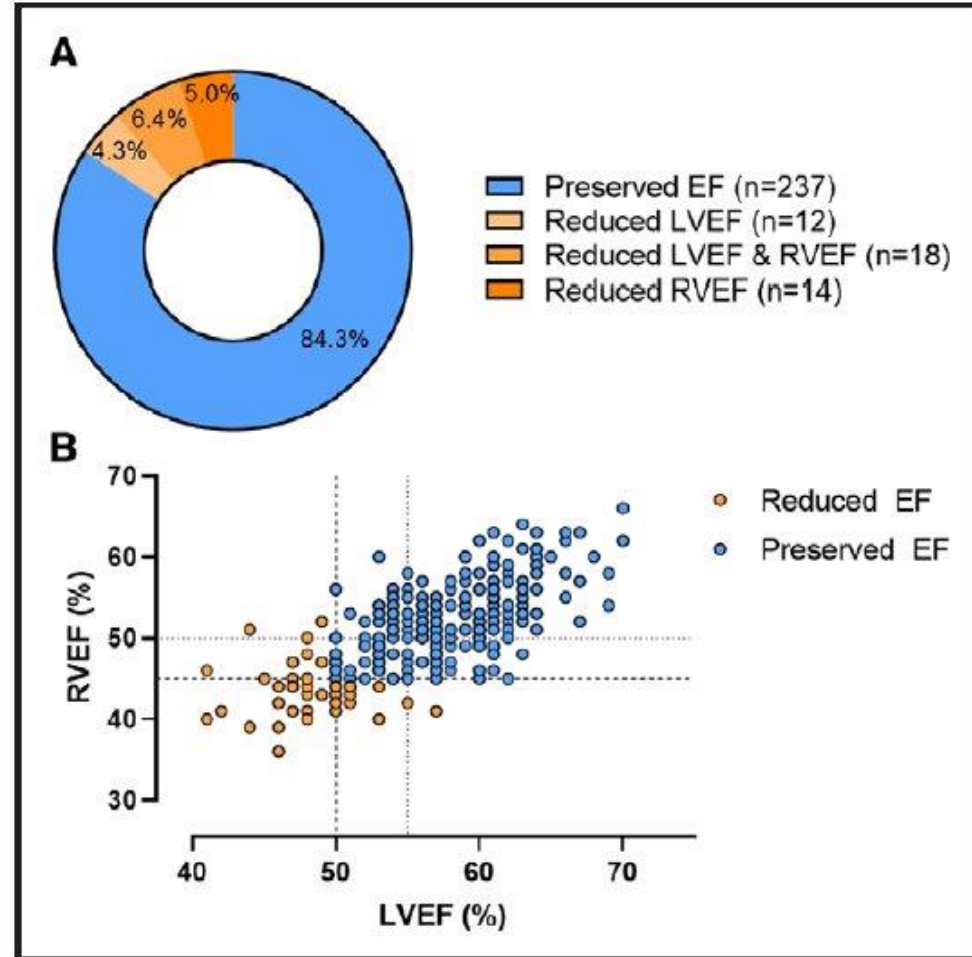
Fig. 5. Dose-response analyses of the relation between physical activity and atrial fibrillation risk. RR, risk rate. *Based on: PA level has a U-shaped relationship with AF risk, with active groups having a 12% lower risk than sedentary groups [70].*

Cardiac remodelling?

Athlete's Heart



Pro@Heart-study



Coronairlijden & cardio-vasculaire events?

MASTER @ Heart-study


176 Controls
 
191 Late-onset endurance athletes
 
191 Lifelong endurance athletes


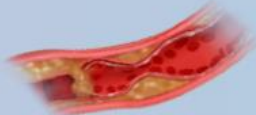
Absence of cardiovascular disease and of established risk factors for coronary artery disease

No current or past history of smoking, no body mass index >27.2 kg/m²

Sampled at random for inclusion to minimize the risk of selection bias

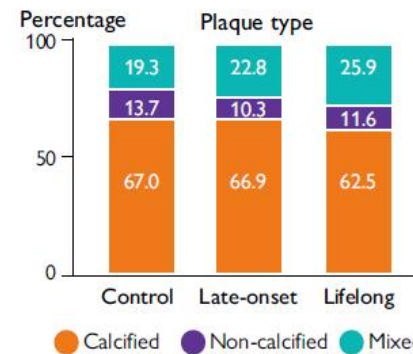
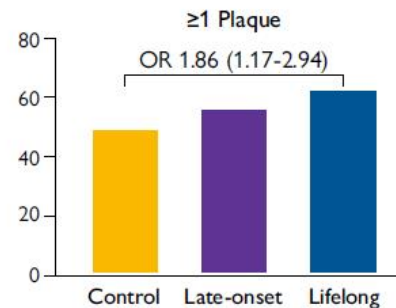
Primary endpoint

Prevalence of any coronary plaques (calcified, mixed, non-calcified) by computed tomography

Plaque burden and plaque composition by endurance exercise group

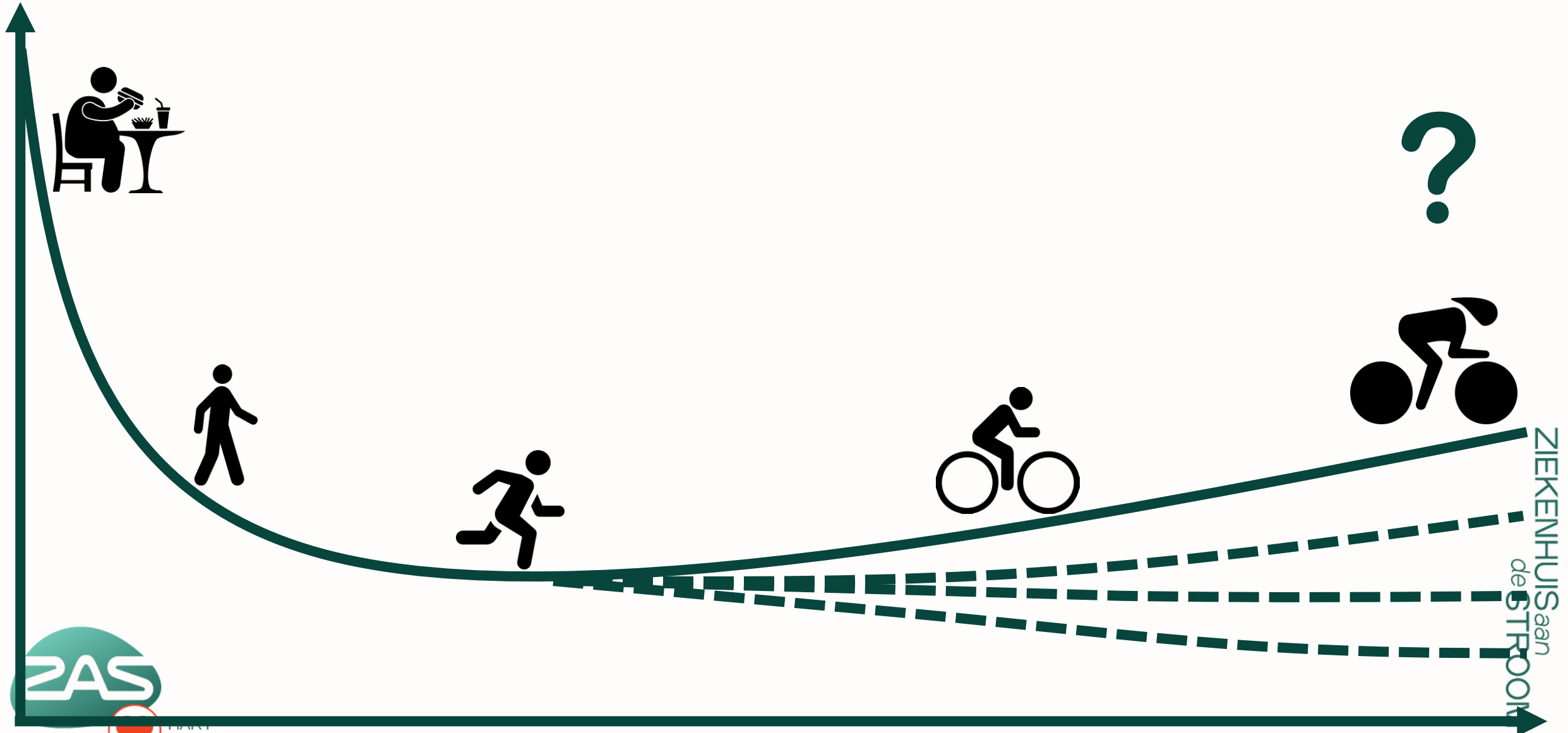
Odds of having coronary plaque in *lifelong endurance athletes* compared to *controls*



- ≥1 mixed plaque 1.78
- ≥1 coronary plaque 1.86
- ≥1 non-calcified plaque 1.95
- ≥1 proximal plaque 1.96
- ≥1 proximal non-calcified plaque 2.80

Odds ratios were adjusted for other risk factors

Adverse events



Lifetime exercise

Take Home Messages

Iets is beter dan niets

Bewegen is goed. Meer bewegen is (een beetje) beter

Nog meer is (voor sommigen) leuk, maar zonder échte gezondheidswinst

Héél veel is misschien wel té veel (maar voorlopig weten we het niet)



