

Bewegen en Parkinson

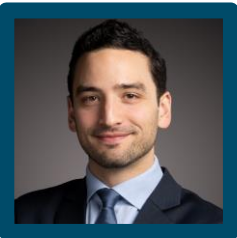
Parkinson Café Bilthoven

Thomas Oosterhof
arts-promovendus

12 mei 2025

Radboudumc

university medical center



PI



Coordinator



Postdoc



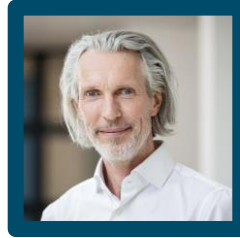
**Digital
biomarker
lead**



Imaging lead



Postdoc



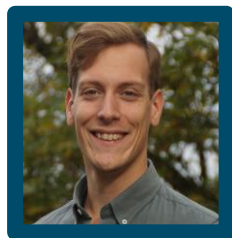
Director COE



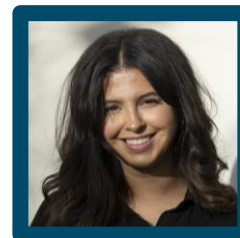
**Junior lead
NL**



PhD student

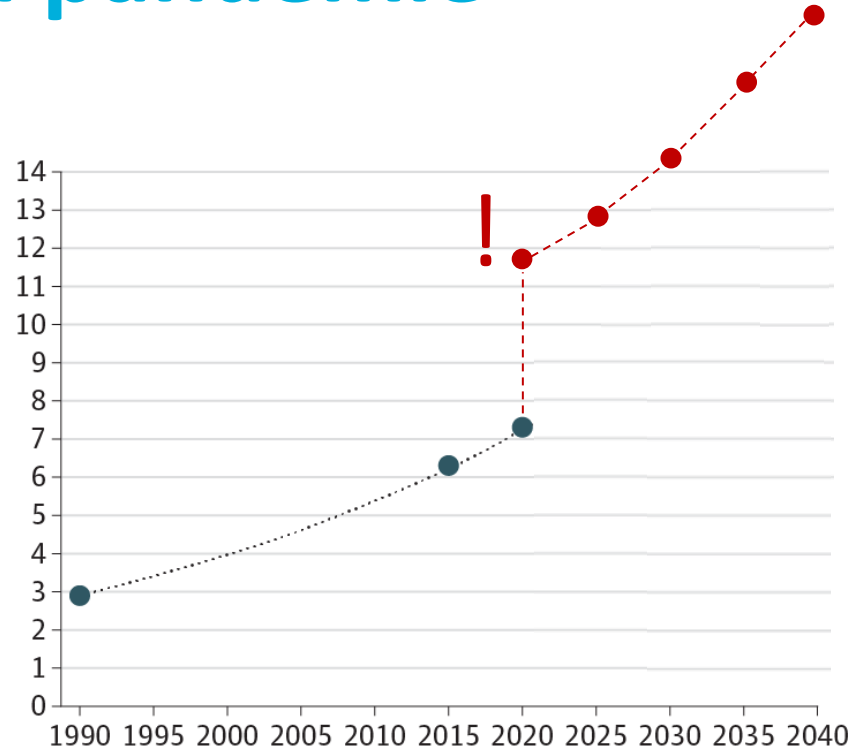


**Data
manager**



Outcome assessors

Parkinson pandemie





Effect van bewegen

- Uithoudingsvermogen

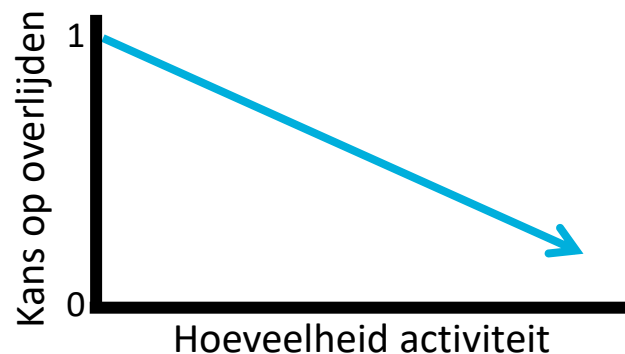
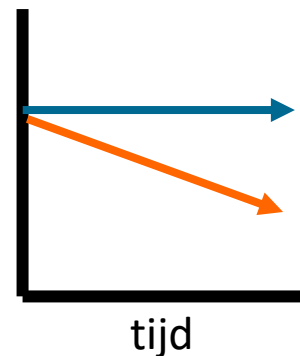


Effect van bewegen

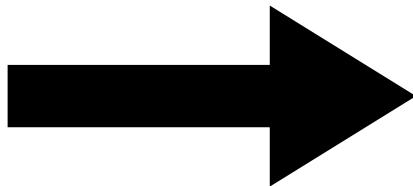
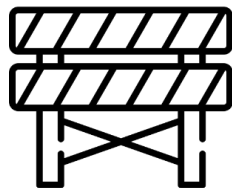
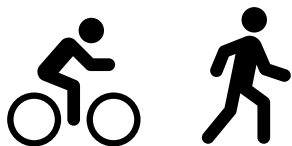
- Uithoudingsvermogen
- Motorische klachten
- Kwaliteit van leven
- Niet-motorische klachten
- Meer verbindingen



motorisch
functioneren



Bewegen blijft moeilijk





STEPWISE – bewegen op afstand



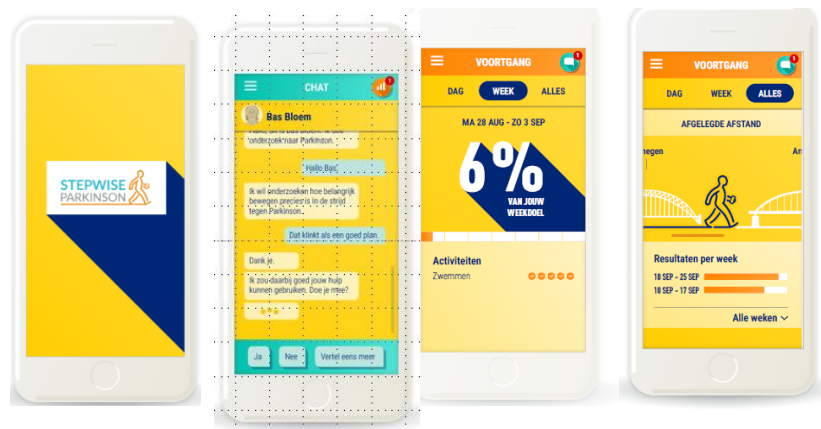
MASSACHUSETTS
GENERAL HOSPITAL

Radboudumc

Motiverende app

- Gedurende 1 jaar meer stappen zetten
- Op dit moment 420 deelnemers
- We zoeken nog **30 mensen** die aan de STEPWISE studie mee willen doen

info@stepwiseparkinson.nl



N=450, start juni 2021

Wat is bekend over bewegen en het ontstaan van Parkinson?

Meer bewegen → Minder Parkinson?



Parkinson



Meer Parkinson → Minder bewegen?

Parkinson





Trager bewegen



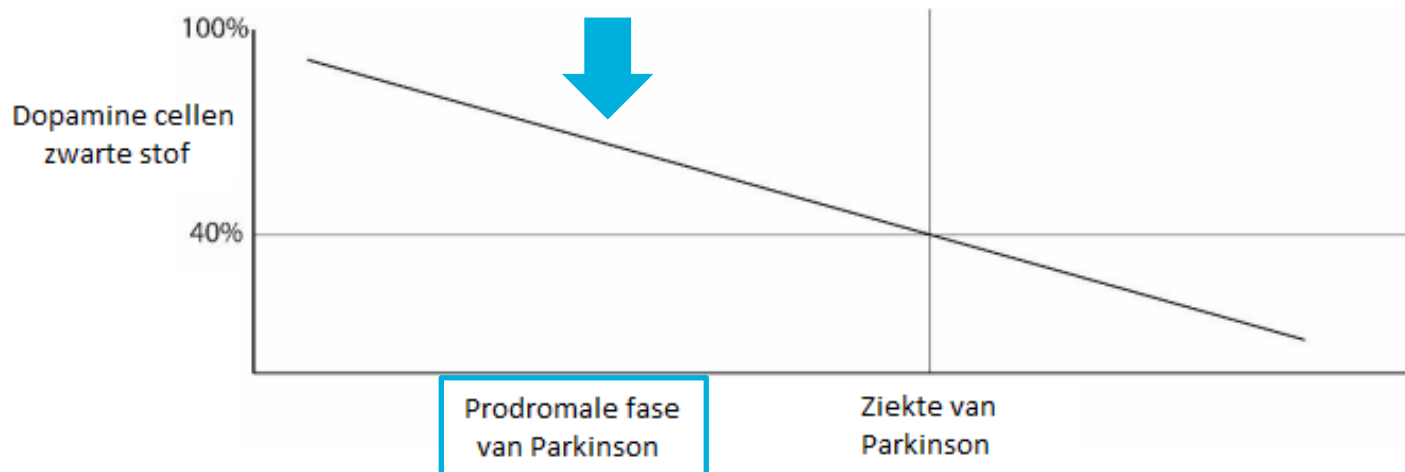
Trillen



Stijfheid



Verminderde balans



Pictures by Armando Hasudungan

Slow-SPEED-NL: Slowing Parkinson's Early through Exercise- Netherlands

*1st Parkinson
preventie-studie*



*Digitaal ondersteund
bewegen*



*2 jaar
Grotendeels vanuit huis*





Beweegadvies

Parkinsons Exercise Recommendations | Parkinson's Foundation

Parkinson's Exercise Recommendations

Parkinson's is a progressive disease of the nervous system marked by tremor, stiffness, slow movement and balance problems.

Exercise and physical activity can improve many motor and non-motor Parkinson's symptoms:



Aerobic Activity

3 days/week for at least 30 mins per session of continuous or intermittent at moderate to vigorous intensity

TYPE: Continuous, rhythmic activities such as brisk walking, running, cycling, swimming, aerobics class

CONSIDERATIONS: Safety concerns due to risks of freezing of gait, low blood pressure, blunted heart rate response. Supervision may be required.



Strength Training

2-3 non-consecutive days/week for at least 30 mins per session of 10-15 reps for major muscle groups; resistance, speed or power focus

TYPE: Major muscle groups of upper/lower extremities such as using weight machines, resistance bands, light/moderate handheld weights or body weight

CONSIDERATIONS: Muscle stiffness or postural instability may hinder full range of motion.



Balance, Agility & Multitasking

2-3 days/week with daily integration if possible

TYPE: Multi-directional stepping, weight shifting, dynamic balance activities, large movements, multitasking such as yoga, tai chi, dance, boxing

CONSIDERATIONS: Safety concerns with cognitive and balance problems. Hold on to something stable as needed. Supervision may be required.



Stretching

>2-3 days/week with daily being most effective

TYPE: Sustained stretching with deep breathing or dynamic stretching before exercise

CONSIDERATIONS: May require adaptations for flexed posture, osteoporosis and pain.



See a physical therapist specializing in Parkinson's for



Safety first: Exercise during on periods, when taking



It's important to **modify and progress** your exercise



Participate in **150 minutes** of moderate-to-vigorous

Alle beweging is goed!

Idealiter:

- Intensief: 3x per week 30 minuten
- Kracht: 2-3x per week 30 minuten
- Balans/multitask: 2-3x week
- Strekken: 2-3x per week

Maar bedenk vooral...!

Iedere minuut / stap is er één !

Conclusies

- Bewegen is gunstig voor de symptomen mensen met Parkinson
- Het effect op ziekte *progressie* wordt verder onderzocht
- Of laag-intensief stappen zetten gunstig is voor de symptomen wordt onderzocht in de **STEPWISE studie**
- Of bewegen Parkinson kan voorkomen wordt onderzocht in de **Slow-SPEED studie**

Vragen?



Studie naar bewegen en Parkinson

info@stepwiseparkinson.nl

Meer info en aanmelden via www.parkinsonnext.nl/stepwise/



Preventie studie gericht op bewegen

info@onderzoek-bws.nl



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JAMA Neurology | **Original Investigation**

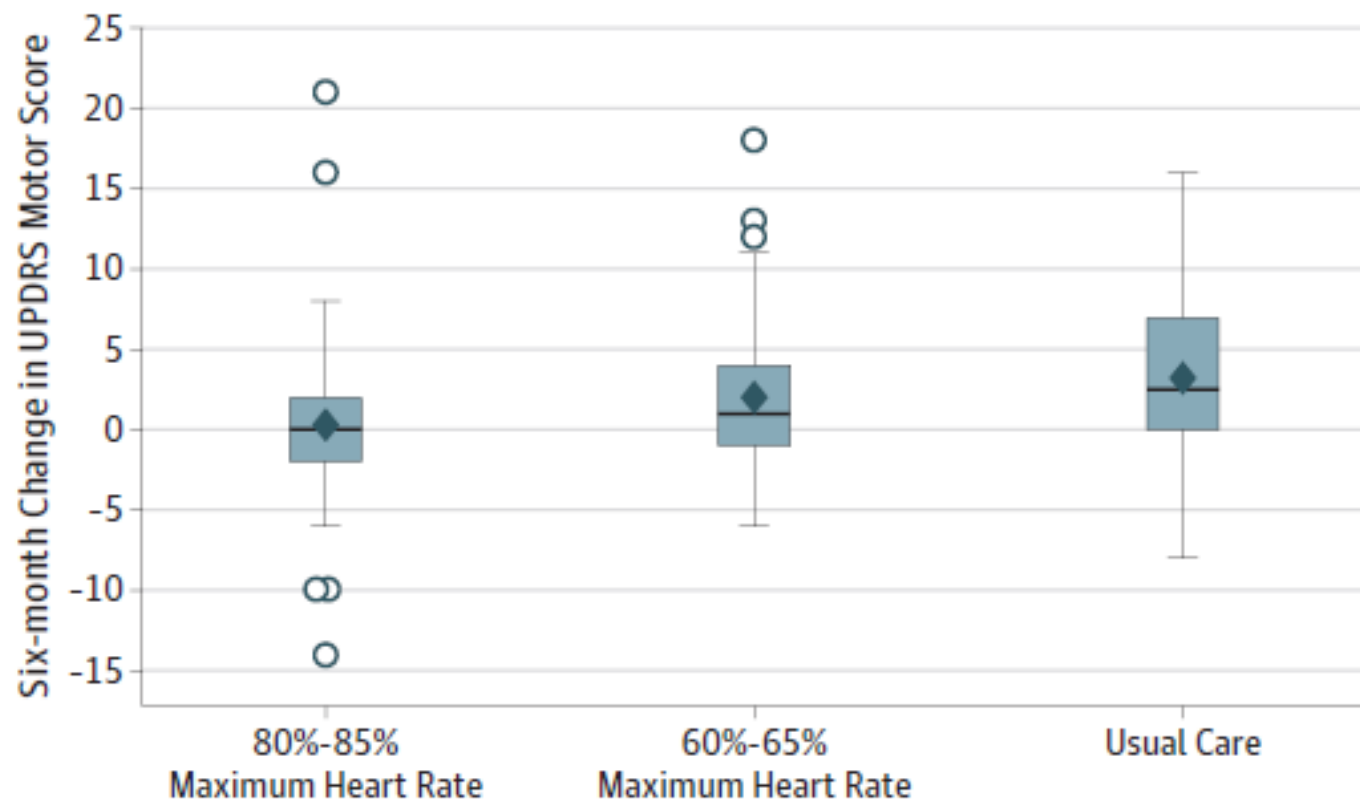
Effect of High-Intensity Treadmill Exercise on Motor Symptoms in Patients With De Novo Parkinson Disease

A Phase 2 Randomized Clinical Trial

Margaret Schenkman, PhD, PT; Charity G. Moore, PhD; Wendy M. Kohrt, PhD; Deborah A. Hall, MD, PhD; Anthony Delitto, PhD, PT;
Cynthia L. Comella, MD; Deborah A. Josbeno, PT, PhD; Cory L. Christiansen, PhD, PT; Brian D. Berman, MD, MS; Benzi M. Kluger, MD;
Edward L. Melanson, PhD; Samay Jain, MD; Julie A. Robichaud, BS-PT, MHS, PhD; Cynthia Poon, PhD; Daniel M. Corcos, PhD



C Six-month change in UPDRS motor score





Effectiveness of home-based and remotely supervised aerobic exercise in Parkinson's disease: a double-blind, randomised controlled trial



Nicolien M van der Kolk, Nienke M de Vries, Roy P C Kessels, Hilde Joosten, Aeilko H Zwinderman, Bart Post, Bastiaan R Bloem

Summary

Background High-intensity aerobic exercise might attenuate the symptoms of Parkinson's disease, but high-quality evidence is scarce. Moreover, long-term adherence remains challenging. We aimed to evaluate the effectiveness of aerobic exercise—gamified and delivered at home, to promote adherence—on relieving motor symptoms in patients with Parkinson's disease with mild disease severity who were on common treatment regimes.

Lancet Neurol 2019

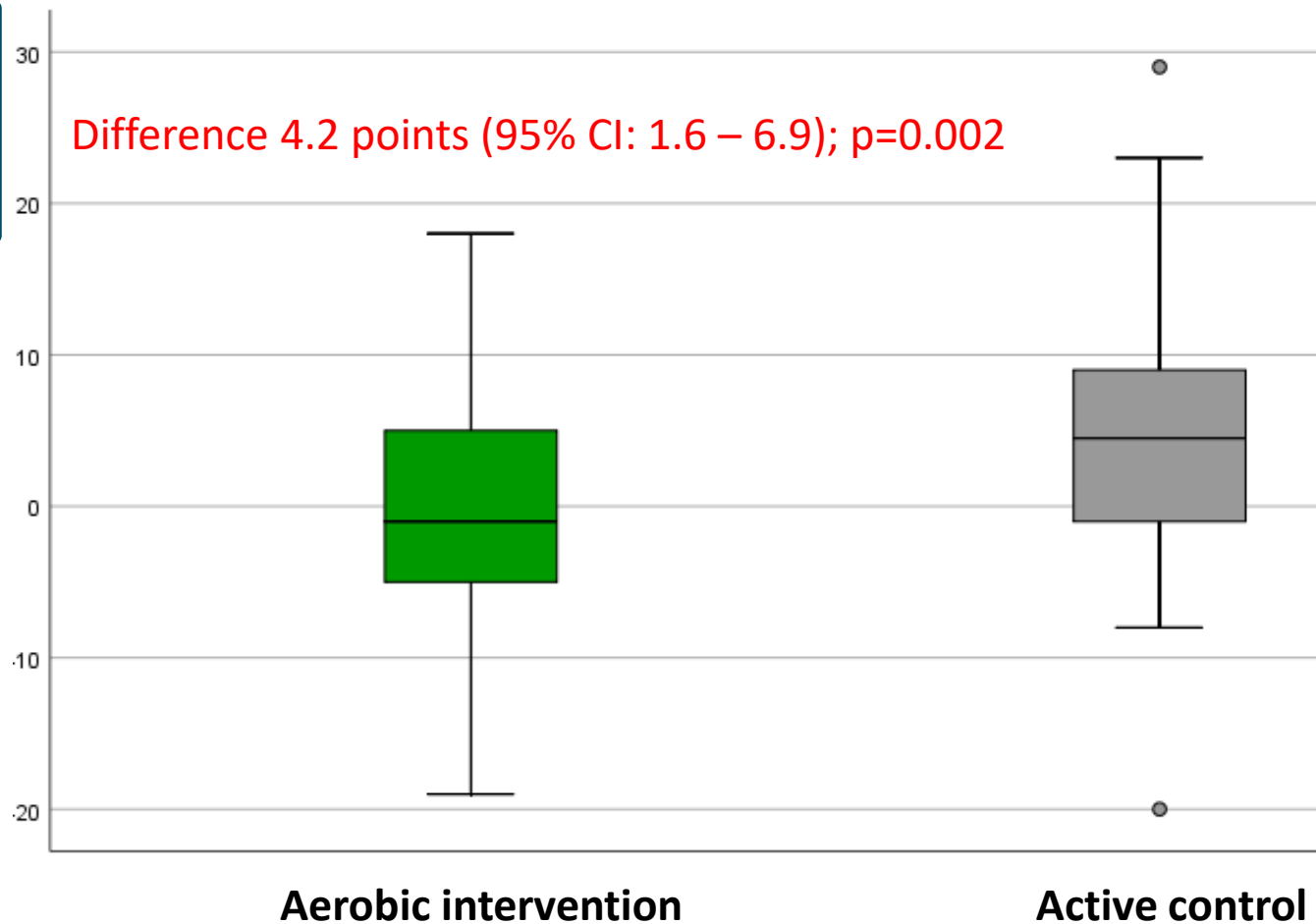
Published Online

September 11, 2019

[http://dx.doi.org/10.1016/](http://dx.doi.org/10.1016/S1474-4422(19)30285-6)

[S1474-4422\(19\)30285-6](http://dx.doi.org/10.1016/S1474-4422(19)30285-6)

Delta UPDRS III (in OFF phase)



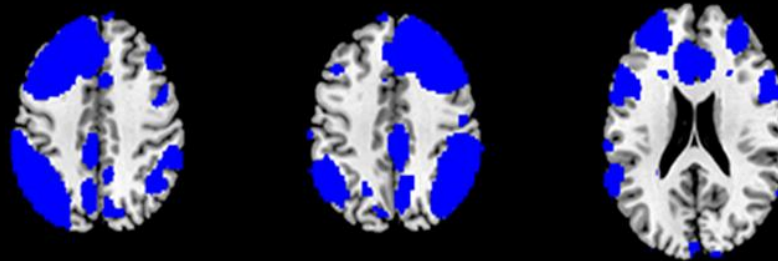


Park-In-Shape imaging study

Exercise stimulates
Cortico-Striatal Motor
Network Connectivity



Exercise stimulates
Cortico-Cortical
Cognitive Network
Connectivity



Johansson et al. Ann Neurol 2022

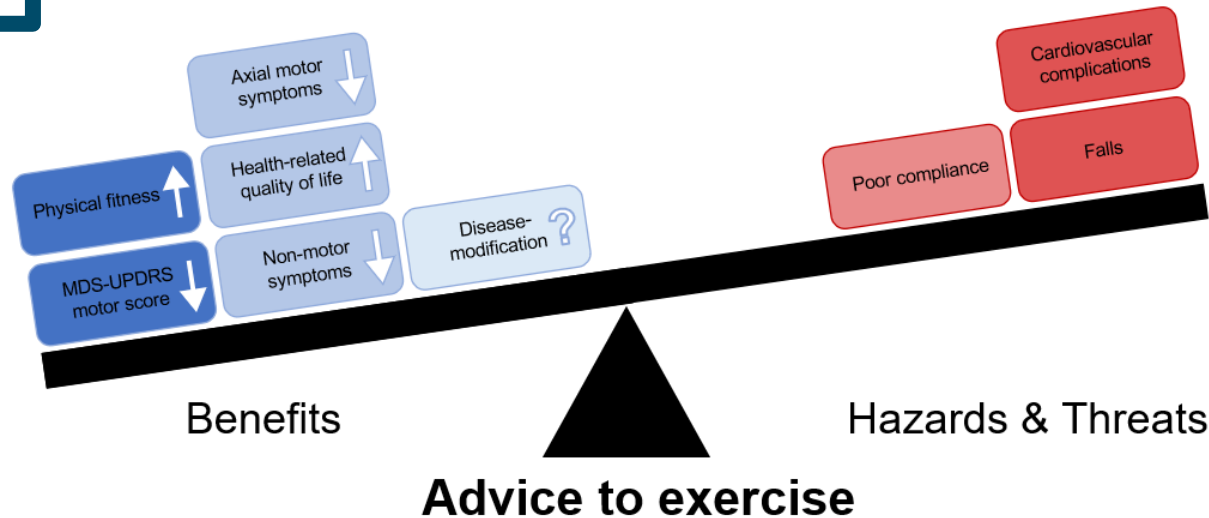
Exercise for Depressive Symptoms in Parkinson Disease: A Systematic Review and Meta-analysis of Randomized Controlled Trials

Daniel Feller MSc^{a b}  , Irene Fox BSc^c, Paolo Gozzer BSc^a, Francesca Trentin BSc^a,
Davide Papola MD, PhD^d

Show more 



Effect van aerobe training



Schootemeijer et al. 2020

Volume



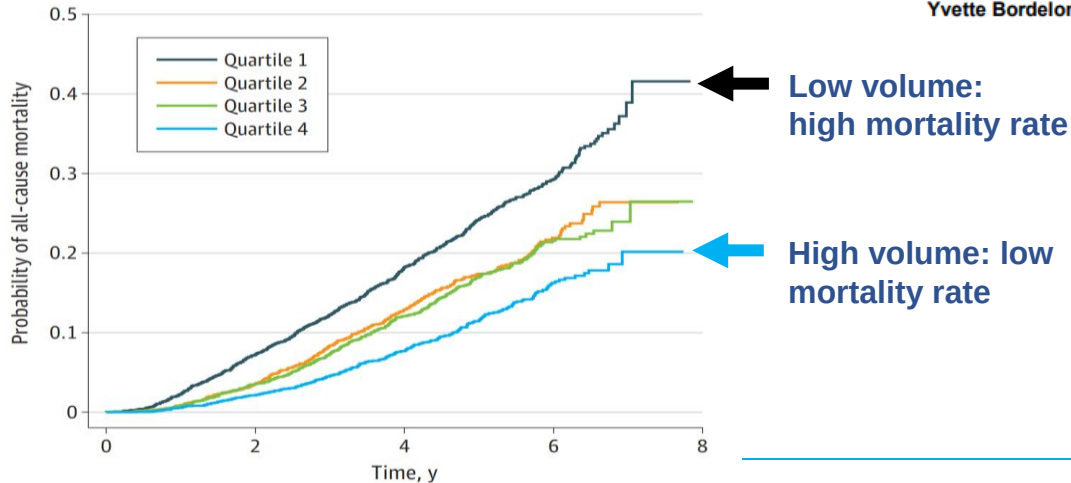
JAMA Neurology | Original Investigation

Association of Physical Activity, Including Amount and Maintenance, With All-Cause Mortality in Parkinson Disease

Seo Yeon Yoon, MD, PhD; Jee Hyun Suh, MD, PhD; Seung Nam Yang, MD, PhD; Kyungdo Han, PhD; Yong Wook Kim, MD, PhD

The Association Between Lifestyle Factors and Parkinson's Disease Progression and Mortality

Kimberly C. Paul, PhD¹, Yu-Hsuan Chuang, PhD¹, I-Fan Shih, PhD¹, Adrienne Keener, MD², Yvette Bordelon, MD, PhD², Jeff M. Bronstein, MD, PhD², and Beate Ritz, MD, PhD^{1,2,*}



Yoon et al. JAMA Neurol 2021