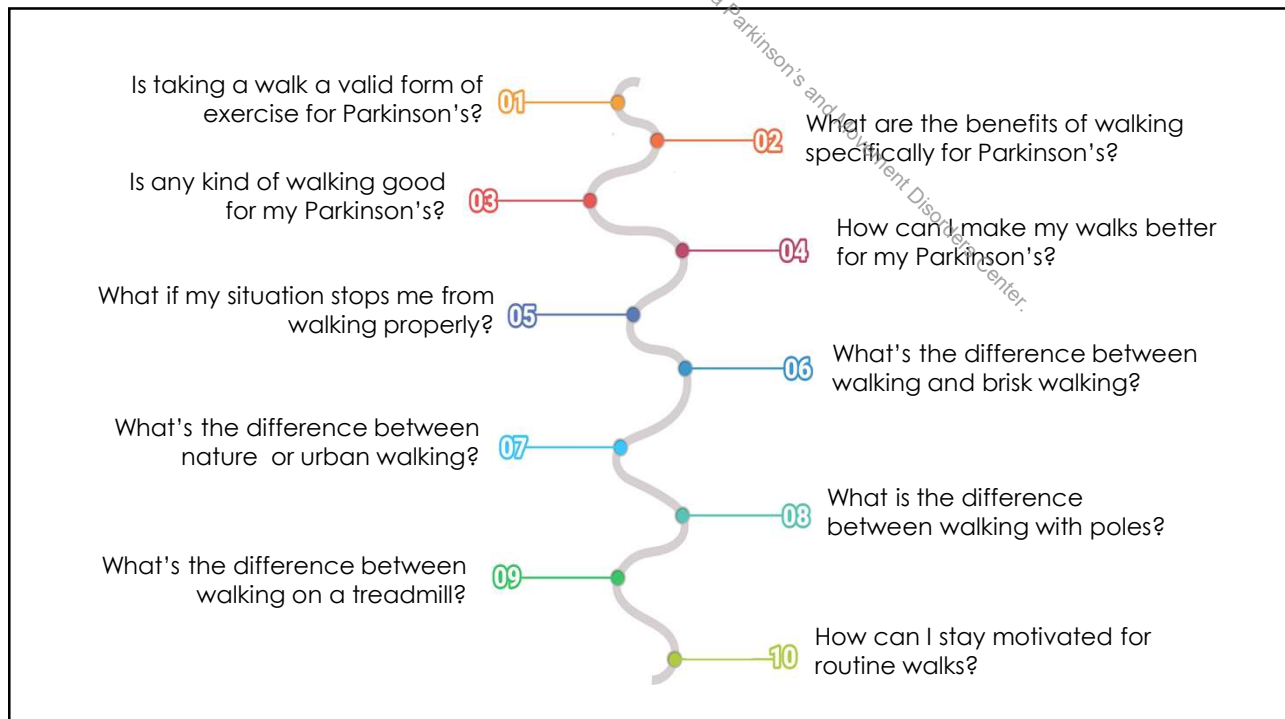




1



2

Is taking a  
walk a valid  
form of exercise  
for Parkinson's?



3



"I recommend incorporating **daily walking** into your routine. Walking is a simple yet effective way to support your overall health. Plus, it's a great way to reduce stress and improve your mood. Remember, consistency is key, so try to make walking a regular part of your day."

4



yopd\_upside\_down\_

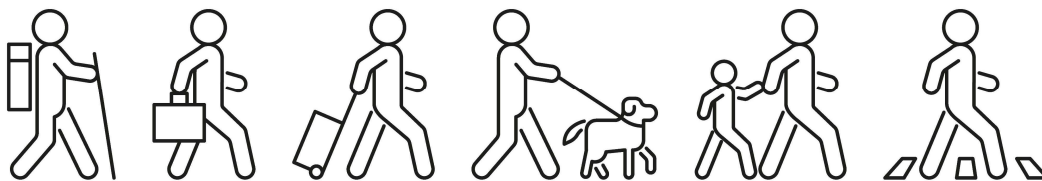
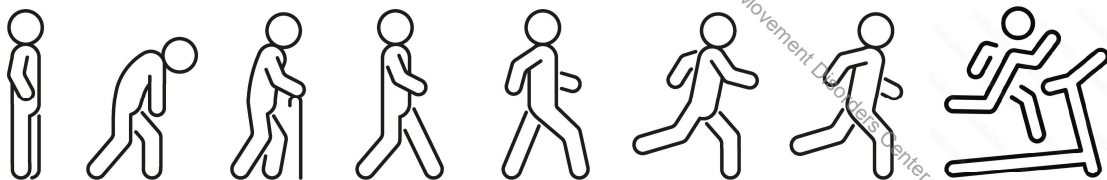
yopd\_upside\_down\_ I tried difference exercises and I realized that the one thing that I can do 99% of the days (even if I have some kind of mild pain) is walking at a fast speed for at least 30minutes, specially if I am surrounded by Nature, an element that is very important to make me feel good.

You can walk around your house, you can walk to the supermarket instead of taking the car, if it rain you take an umbrella...no excuses really!! 🤔



Rita Botelho, 40 years  
Diagnoses 10 months ago

5



Walking | Brisk walking | Nordic walking | Treadmill walking | Urban walking | Nature walking | Leisurely walking | Mall walking | Hiking | Trekking | Beach walking

6

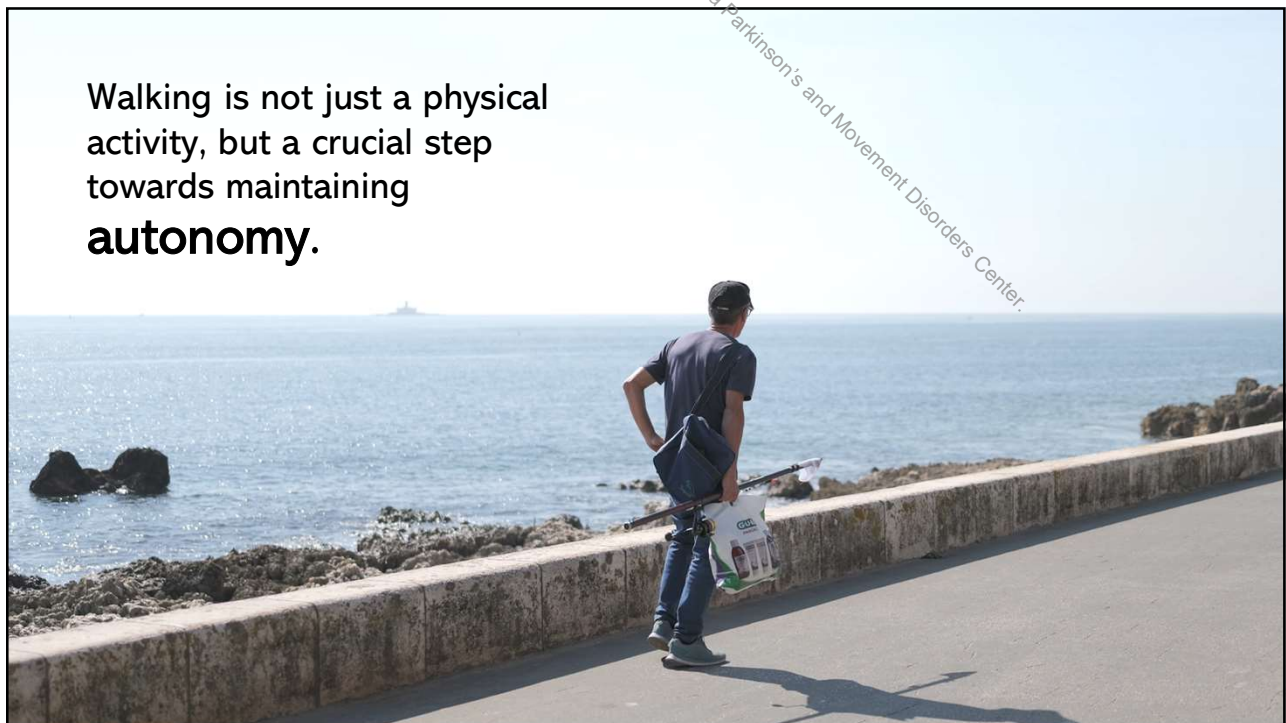
*"Please explain all the  
benefits of walking" —  
person with PD*

What are the  
benefits of walking  
specifically for  
Parkinson's?



7

Walking is not just a physical  
activity, but a crucial step  
towards maintaining  
**autonomy.**



8



## Common problems in walking in Parkinson's

Hypokinesia

Rigidity

Decreased gait speed

Short stride length

Increasing gait variability

Increased double-support time

Reduced & asymmetrical arm swing



Hesitations in walking

Difficulty initiating walking

Difficulty turning

Stooped posture

Reduced trunk rotation

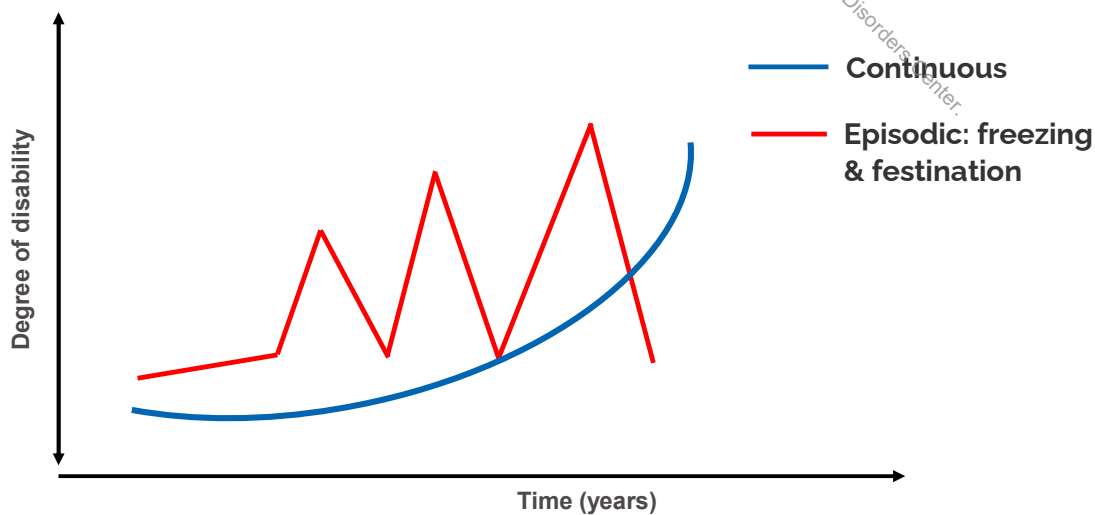
Reduced joint mobility

Weakness in the lower extremity

Difficulty dual task

9

## Changes in gait throughout the disease process

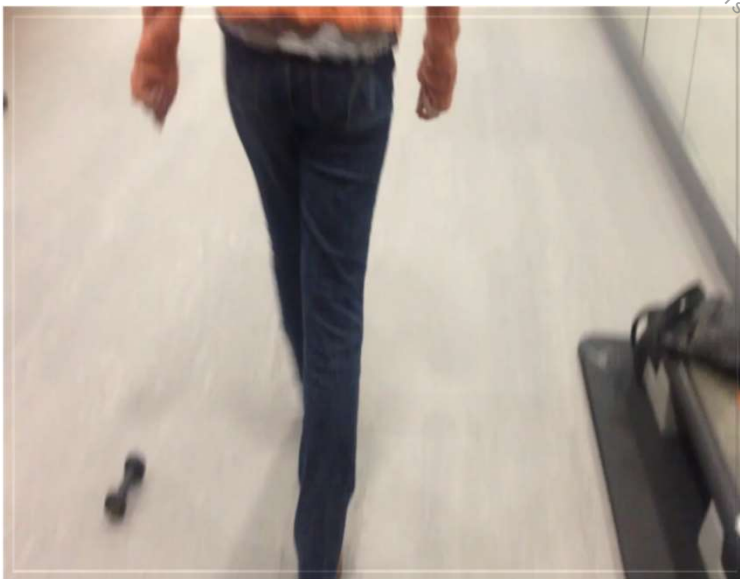


10



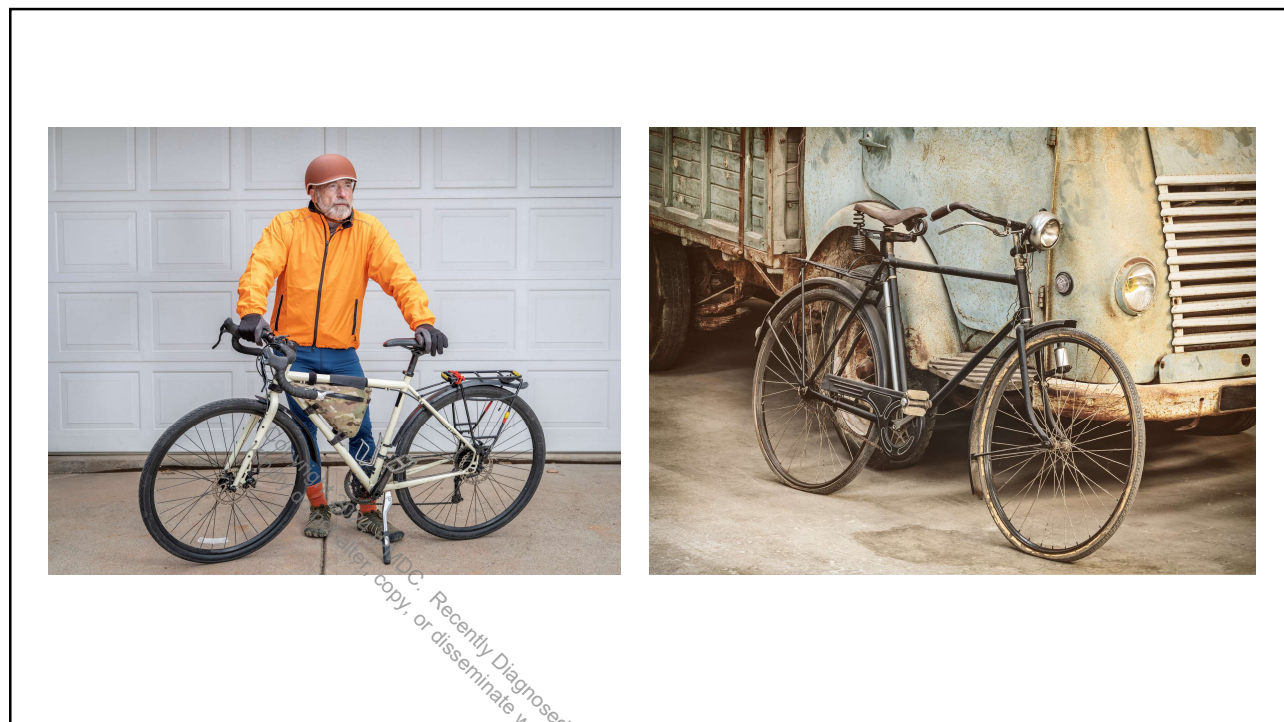
**Continuous  
changes in gait  
throughout the  
disease process**

11



**Episodic changes  
in gait (freezing &  
festination)**

12



13



14





Randomized Controlled Trial > JAMA Neurol. 2013 Feb;70(2):183-90. doi: 10.1001/jamaneurol.2013.646.

### Randomized clinical trial of 3 types of physical exercise for patients with Parkinson disease

Lisa M Shulman<sup>1</sup>, Leslie I Katzel, Frederick M Ivey, John D Sorkin, Knatchelle Favors, Karen E Anderson, Barbara A Smith, Stephen G Reich, William J Weiner, Richard F Macko

*J Funct Morphol Kinesiol*. 2020 Dec; 5(4): 82.  
Published online 2020 Nov 10. doi: [10.3390/jfmk5040082](https://doi.org/10.3390/jfmk5040082)

### Nordic Walking and Free Walking Improve the Quality of Life, Cognitive Function, and Depressive Symptoms in Individuals with Parkinson's Disease: A Randomized Clinical Trial

Elren Passos-Monteiro,<sup>1,2,3</sup> Felipe B. Schuch,<sup>1,4,\*</sup> Leandro T. Franzoni,<sup>5</sup> Alberto R. Carvalho,<sup>1,6</sup> Natalia A. Gomefuka,<sup>1,7</sup> Marindia Becker,<sup>1</sup> Carlos R. M. Rieder,<sup>8</sup> Alexandro Andrade,<sup>9</sup> Flávia G. Martinez,<sup>1</sup> Aline S. Pagnussat,<sup>2,10</sup> and Leonardo A. Peyré-Tartaruga<sup>1,11</sup>


Randomized Controlled Trial > J Parkinsons Dis. 2021;11(3):1431-1441. doi: 10.3233/JPD-202503.

### Six-Month Community-Based Brisk Walking and Balance Exercise Alleviates Motor Symptoms and Promotes Functions in People with Parkinson's Disease: A Randomized Controlled Trial

Margaret K Y Mak<sup>1</sup>, Irene S K Wong-Yu<sup>1</sup>

Copyright 2024 IPMDC. Recently Diagnosed Online Guide- Jan 2024  
Kindly do not alter copy, or disseminate without permission of the Inova Parkinson's and Movement Disorders Center.

15



# How can I make my walks better for my Parkinson's?

Copyright 2024 IPMDC. Recently Diagnosed Online Guide- Jan 2024  
Kindly do not alter copy, or disseminate without permission of the Inova Parkinson's and Movement Disorders Center.

16



## The effect of walking with reduced trunk motion on dynamic stability in healthy adults

Tom J.W. Buurke<sup>a,b,\*</sup>, Lotte van de Venis<sup>c</sup>, Noël Keijsers<sup>c,d,e</sup>, Jorik Nonnekens<sup>c,d</sup>

<sup>a</sup> University of Groningen, University Medical Center Groningen, Department of Human Movement Sciences, Groningen, the Netherlands

<sup>b</sup> KU Leuven, Department of Movement Sciences, Leuven, Belgium

<sup>c</sup> Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour, Center of Expertise for Parkinson & Movement Disorders, Department of Rehabilitation, Nijmegen, The Netherlands

<sup>d</sup> Sint Maartenskliniek, Department of Research, Nijmegen, the Netherlands

<sup>e</sup> Radboud University, Donders Institute for Brain, Cognition and Behaviour, Department of Sensorimotor Neuroscience, Nijmegen, The Netherlands

Gait & Posture 103 (2023) 113–118

Reduced trunk  
motion

Narrow  
based gait

Walking with reduced trunk  
motion resulted in decreases in  
**step width.**

17



18

## The effect of walking with reduced trunk motion on dynamic stability in healthy adults

Tom J.W. Buurke<sup>a,b,\*</sup>, Lotte van de Venis<sup>c</sup>, Noël Keijsers<sup>c,d,e</sup>, Jorik Nonnekens<sup>c,d</sup>

<sup>a</sup> University of Groningen, University Medical Center Groningen, Department of Human Movement Sciences, Groningen, the Netherlands

<sup>b</sup> KU Leuven, Department of Movement Sciences, Leuven, Belgium

<sup>c</sup> Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour, Center of Expertise for Parkinson & Movement Disorders, Department of Rehabilitation, Nijmegen, The Netherlands

<sup>d</sup> Sint Maartenskliniek, Department of Research, Nijmegen, the Netherlands

<sup>e</sup> Radboud University, Donders Institute for Brain, Cognition and Behaviour, Department of Sensorimotor Neuroscience, Nijmegen, The Netherlands

Gait & Posture 103 (2023) 113–118

Reduced trunk  
motion

Narrow  
based gait

Balance

Walking with reduced trunk  
motion resulted in decreases in  
**step width.**

19

Absent arm  
swing

Reduced trunk  
motion

narrow-  
based gait

Balance

> [Front Neurol.](#) 2020 Apr 17;11:213. doi: 10.3389/fneur.2020.00213. eCollection 2020.

## Absent Arm Swing and Dual Tasking Decreases Trunk Postural Control and Dynamic Balance in People With Parkinson's Disease

Tarique Siragy<sup>1</sup>, Julie Nantel<sup>1</sup>

20



**Camilo:** "The other day I remembered what you taught me about not putting my hands in my pocket".

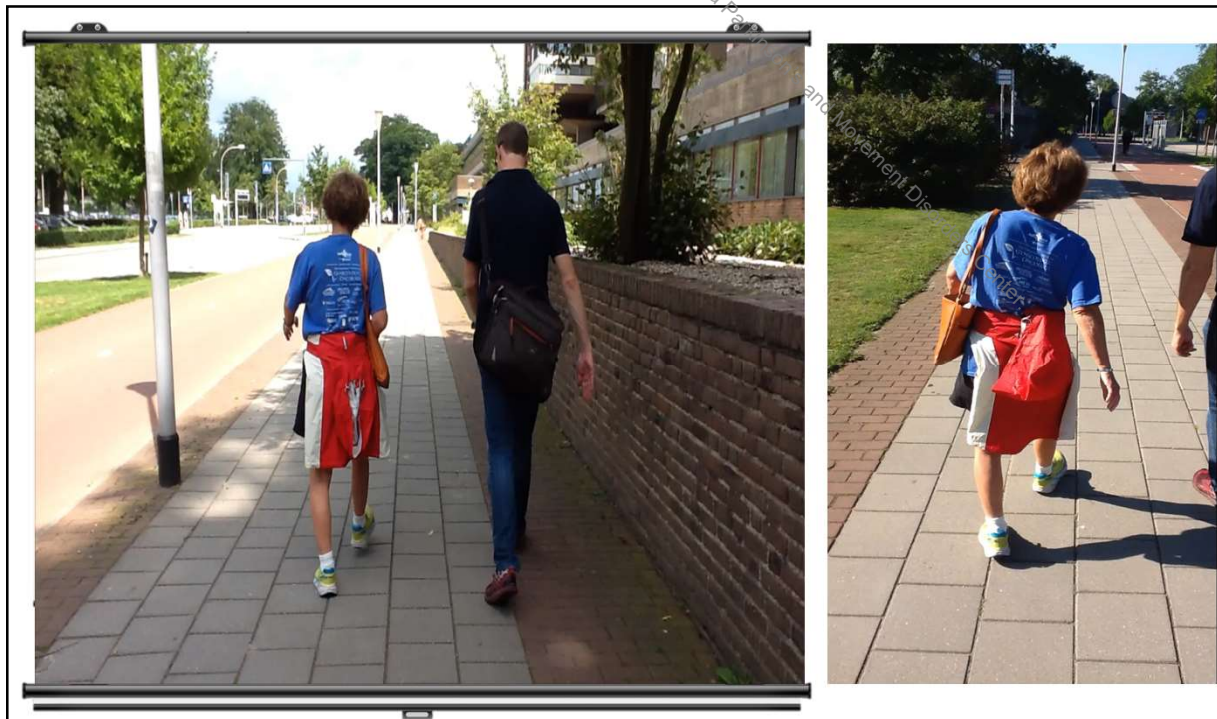
**Josefa:** Oh really...why?

**Camilo:** I tripped and almost fell.

**Josefa:** Why did you put your hands in your pocket then?

**Camilo:** Humm, because it was cold :)

21



22



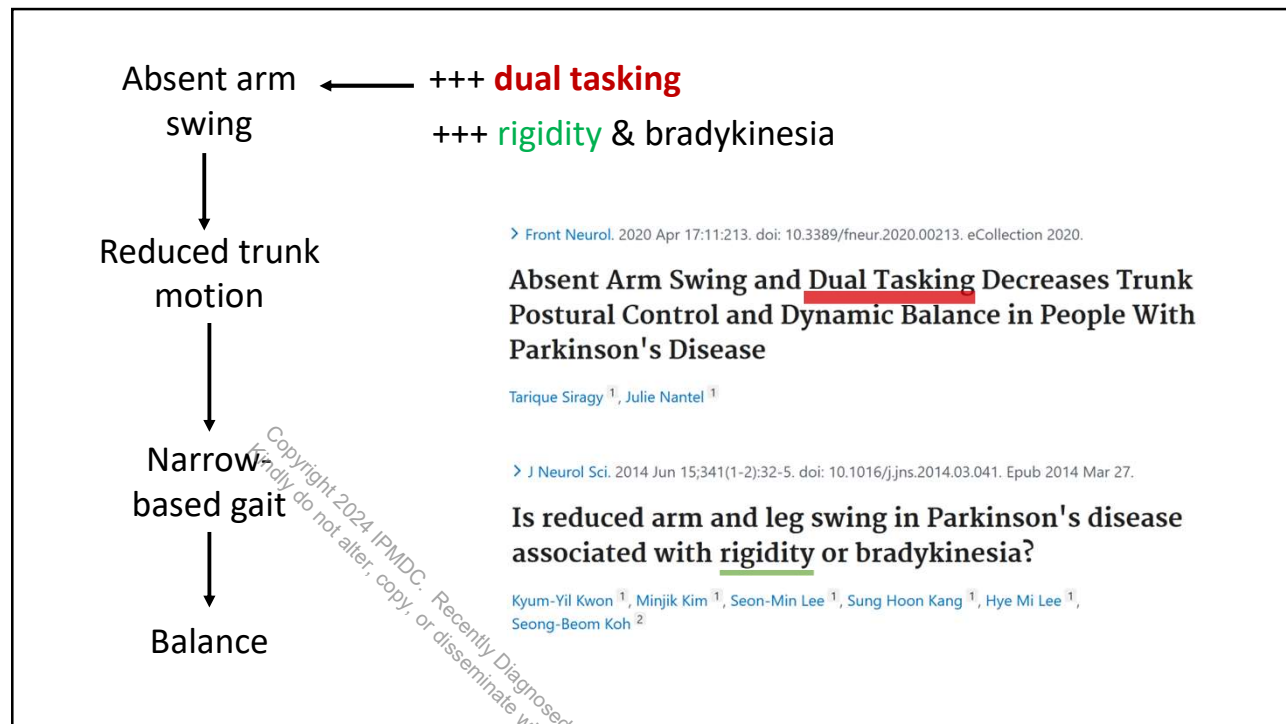


23

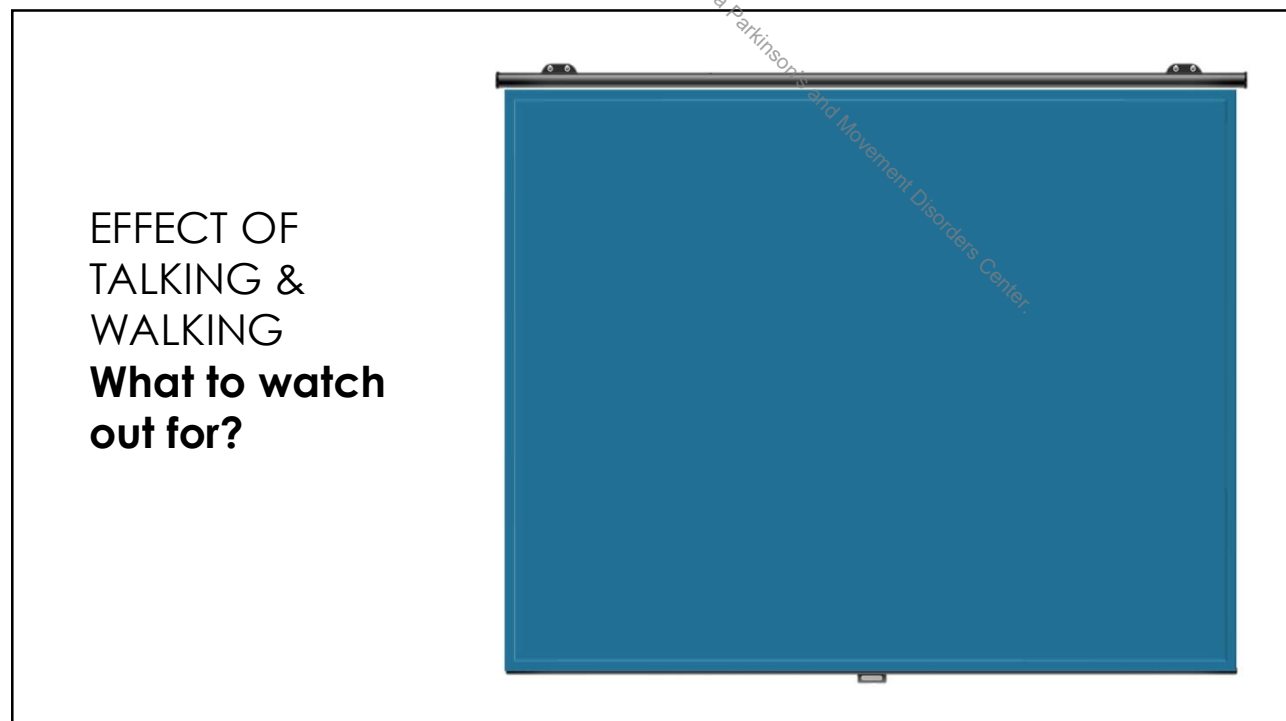


24





25



26



27

from patient questionnaires

### How long does your average walk take?

- 20 minutes if I take a walk
- 45 minutes, longer if broken into smaller distances ie some at home, some at mall
- 60 minutes
- 30-40 minutes
- outdoors about 1h-90min/indoors I do it as intervals incorporating LSVT exercises/strength training/core conditioning
- 40 minutes
- 30-40 mins
- One hour

28

from patient questionnaires

Do you take breaks during your walk?

**75%** **NO**

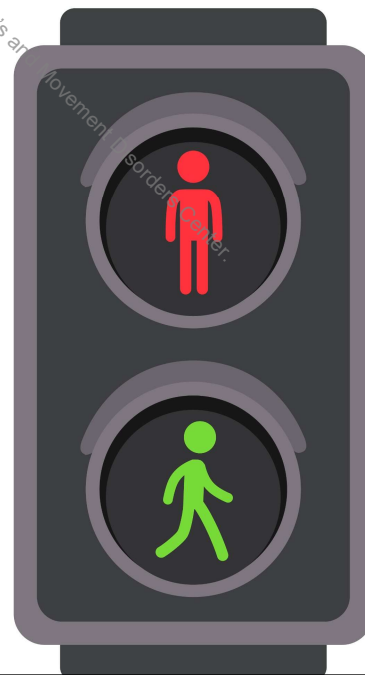
Only to watch sunset or animals

No, the dog won't let me 😊

Not if I am just walking outside. broken up if walk includes grocery store, cleaning house, etc.

29

Preferable to do  
**regular stops** to  
reset movement,  
especially if you  
have back pain or  
discomfort.



30

What if my situation  
stops me from  
walking properly?

[My Context]

31

from patient questionnaires

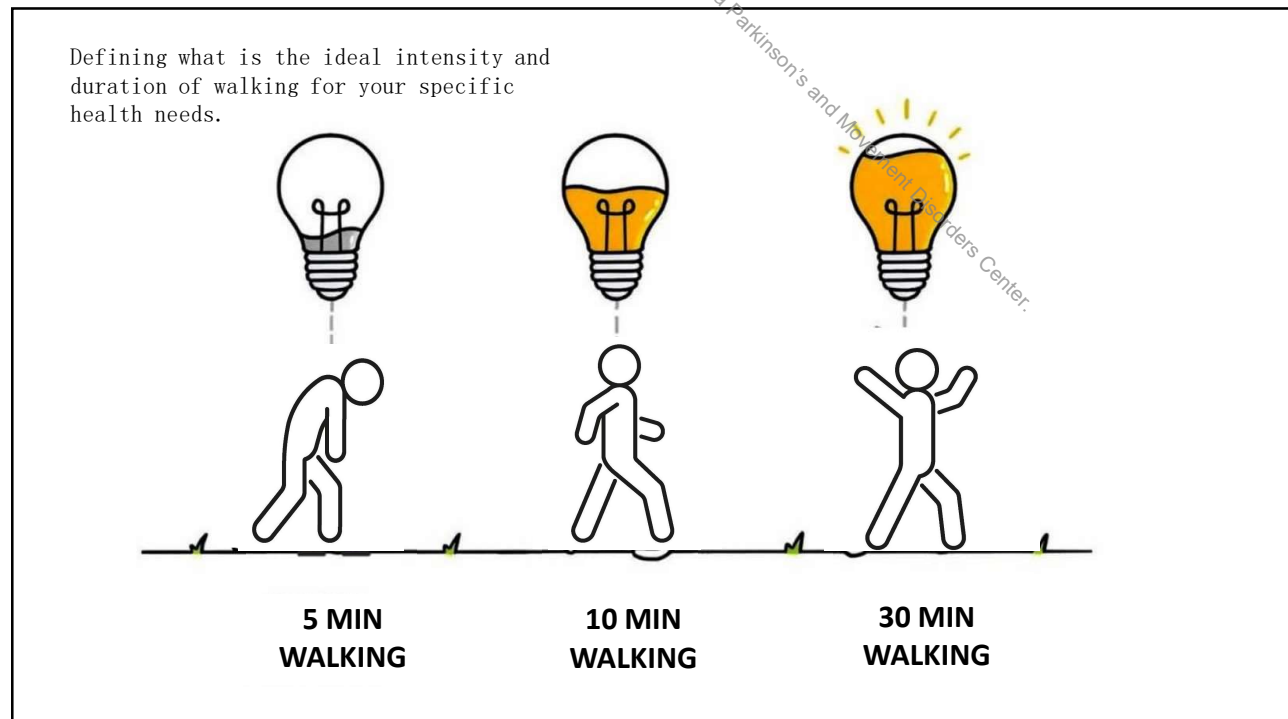
“I like to walk with my wife,  
but she's short and can't keep  
up with me if I'm walking  
briskly. How to get the most  
benefit from walking when I  
have to slow my pace? “

32

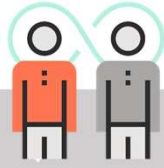




33



34



- A 'dose' of nature recommended is of interest for health benefits (Shanahan et al., 2016; Shanahan, Fuller, Bush, Lin, & Gaston, 2015).

environment



- Consider what's best and safest for you: walking alone or in group settings.
- Define when it is important to vary your walking routine or to stick to the same one.

context

35



36



- Safe environments
- Facilitate good performance

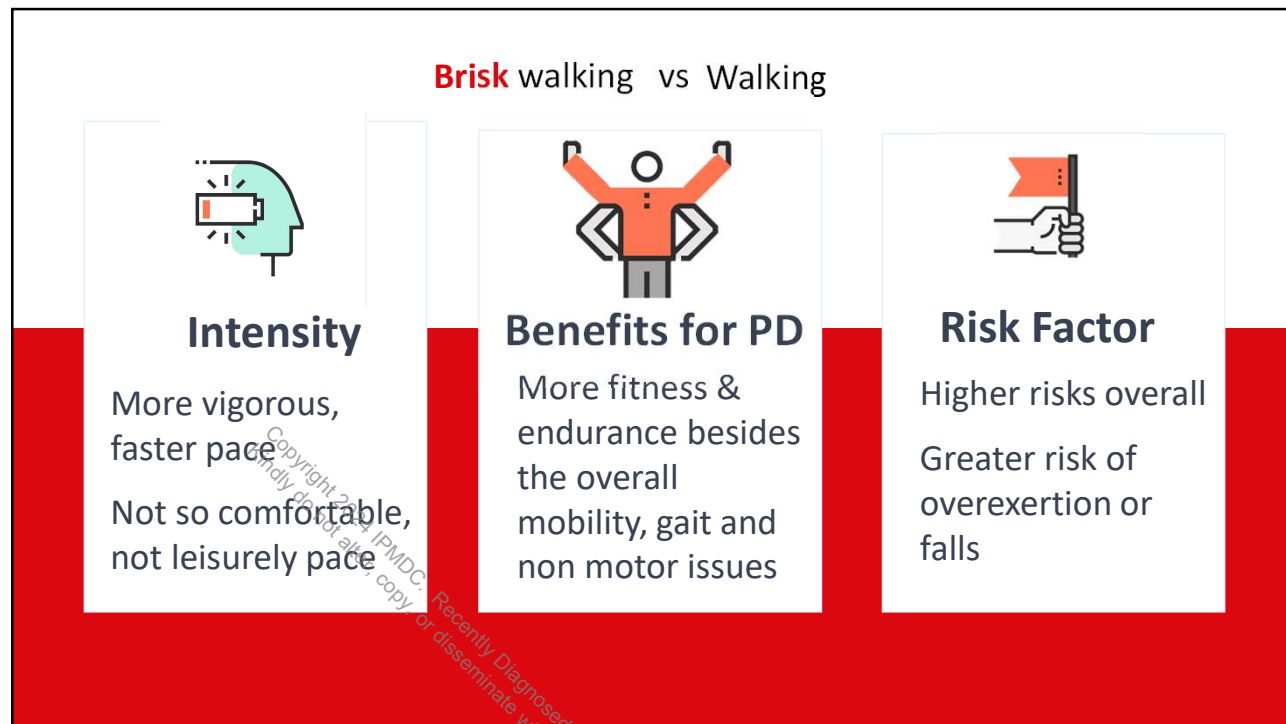


37

What's the  
difference  
between walking  
and brisk walking?



38



39

Journal of Parkinson's Disease 11 (2021) 1431–1441  
DOI 10.3233/JPD-202503  
IOS Press

**Research Report**

---

**Six-Month Community-Based Brisk Walking and Balance Exercise Alleviates Motor Symptoms and Promotes Functions in People with Parkinson's Disease: A Randomized Controlled Trial**

Margaret K.Y. Mak\* and Irene S.K. Wong-Yu  
Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong SAR, China

- Brisk walking is a moderate intensity aerobic training.
- Six-month brisk walking and balance program alleviates motor symptoms, and promotes functional and gait performance, walking capacity, and dynamic balance in people with mild to moderate PD.

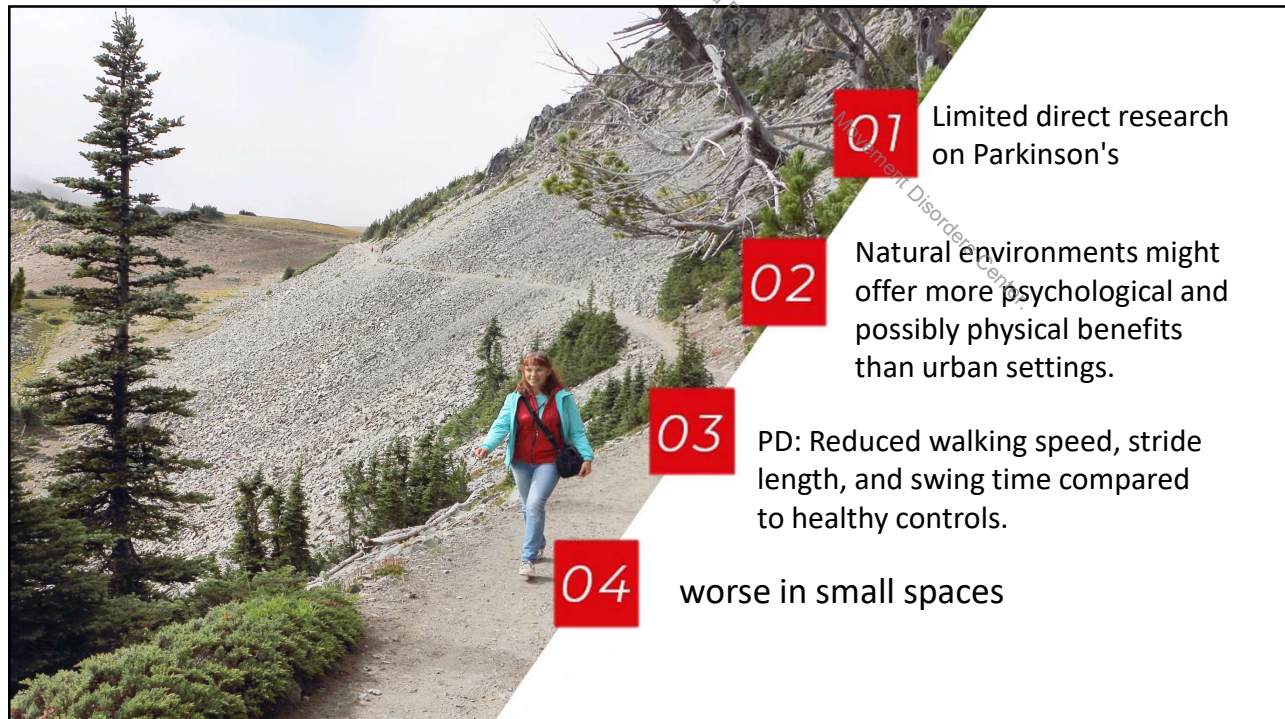
40



# What's the difference between nature or urban walking?



41



42



## Research Note

## Psycho-physiological responses of repeated exposure to natural and urban environments

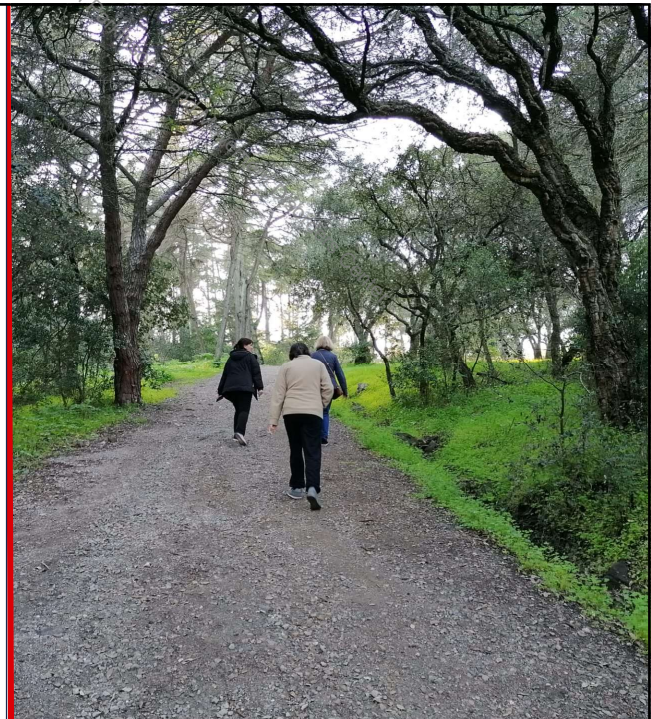
Marc V. Jones<sup>a,\*</sup>, Christopher J. Gidlow<sup>b</sup>, Gemma Hurst<sup>b</sup>, Daniel Masterson<sup>c</sup>, Graham Smith<sup>b</sup>, Naomi Ellis<sup>b</sup>, David Clark-Carter<sup>b</sup>, Mika P. Tarvainen<sup>d</sup>, Elizabeth C. Braithwaite<sup>a</sup>, Mark Nieuwenhuijsen<sup>e,f,g</sup>

- A) Does walking in a natural environment lead to better psycho-physiological outcomes than a pleasant urban environment?
- B) Do effects of walking repeatedly in the same environment change over time?
- C) Do any effects persist to the following day?

43

## Things we know...

- At least 30 min in a natural environment is associated with **lower depression and blood pressure** (Shanahan et al., 2016)
- Increased frequency of nature exposure is associated with **greater social cohesion and physical activity** (Shanahan et al., 2016).
- Improvements in **cognitive function** after 50 min in a natural environment (Berman, Jonides, & Kaplan, 2008; Hartig, Evans, Jamner, Davis, & Garling, 2003).
- No difference in the effects of walking in natural and urban environments on **mood** (Gidlow et al., 2016; Johansson, Hartig, & Staats, 2011; Kinnafick & Thøgersen-Ntoumani, 2014).
- No effects persisted over a 24-hour period, suggesting that **regular nature exposure is required** to maintain health benefits (Shanahan et al., 2016).



44





45



46





47

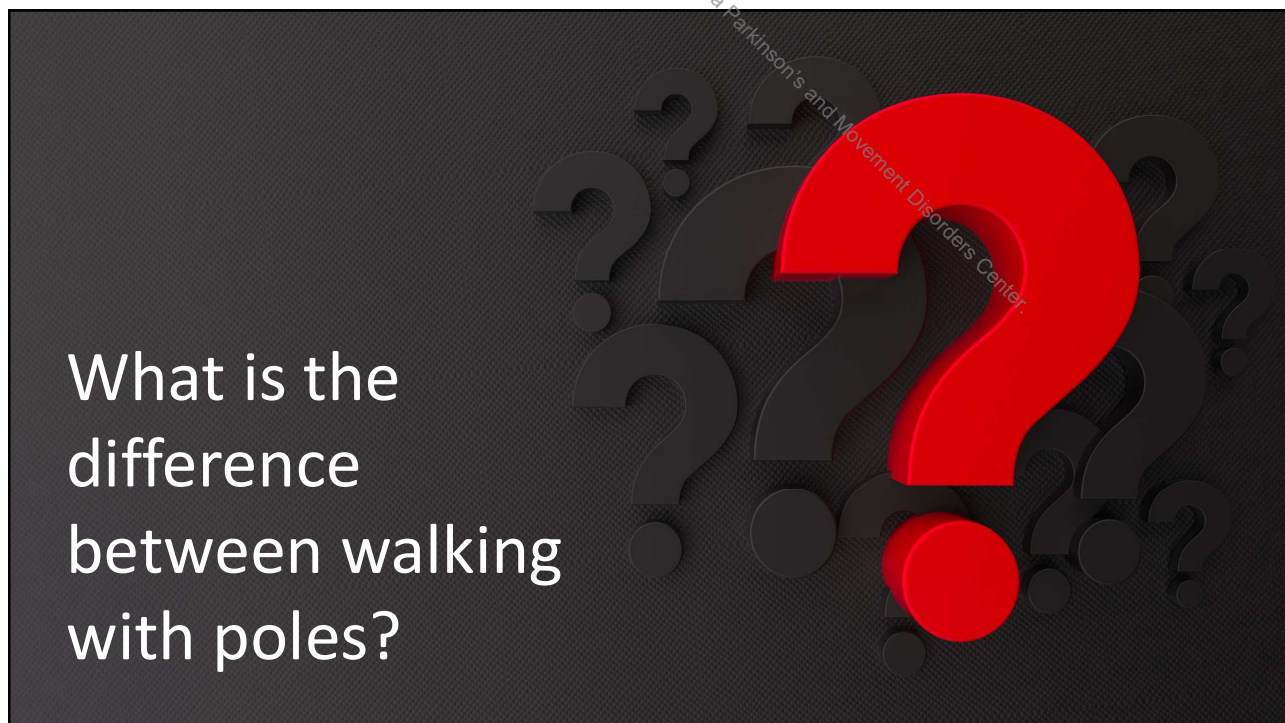


48





49



50



Using poles allows for:

- Better arm swing, trunk rotation, large stride, walking faster pace
- Potential for more moderate or vigorous exercise intensity
- Better inter-limb coordination



51



52



What's the  
difference  
between walking  
on a treadmill?



53



Cueing gait on the treadmill

**Treadmill training** for patients with PD results in sustained gains in **gait speed & stride length** (Class II).

The combination of **4 weeks of treadmill training and cueing** induces even greater benefits for freezing of gait than cueing alone (Class II).

54

## Special attention to compensations



55

How can I stay  
motivated for  
routine walks?



56

## Changes in humor may affect **motivation**

Stay alert for changes in mood (depression, apathy & anxiety)

- depression may lead to decreased physical activity.



57



58





59

2014 Research Disclosure | Online Guide-Jan 2024  
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without permission of the Inova Parkinson's and Movement Disorders Center.