

## ExerciseRx Parkinson

**What is the  
best exercise to  
improve  
DEPRESSION,  
APATHY &  
ANXIETY  
in Parkinson's?**



1

**1. Any exercise that improves your “mood” will likely be the best “exercise”.**

2. Best evidence:

**Mind-body & resistance training** strongest effects.

**Aerobic exercise** especially effective for depression.

4. Be vigilant about **triggers** during exercise that provoke frustration and demotivation.

5. Make a plan with alternative exercises for a **mood crisis**.



3

# TODAY



4

## MOOD ISSUES IN PD



### DEPRESSION

Feeling low, sad, hopeless, or unable to enjoy things



### ANXIETY

Feeling nervous, worried, frightened or tense for no apparent reason



### APATHY

Feeling indifferent to doing activities or being with people

5

## HOW DO THEY DIFFER

FROM JUST FEELING LOW OR  
DOWN ABOUT THINGS?

Did this feeling:

- ☒ Persist **longer than one day** at a time
- ☒ Make it difficult for you to carry out your usual activities or to be with people

6

# IMPACT

DAILY FUNCTIONING,

MOTIVATION &

ENGAGEMENT IN

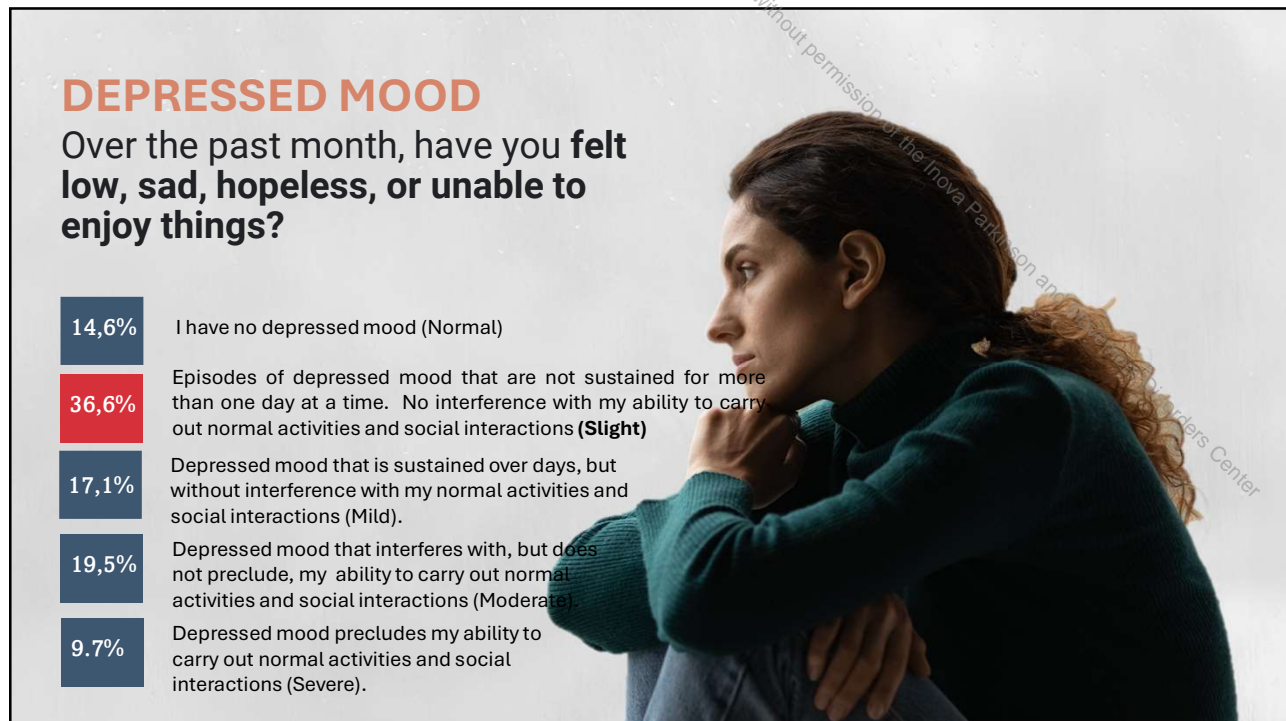
SOCIAL INTERACTIONS

*J Geriatr Psychiatry Neurol. 2020*

7

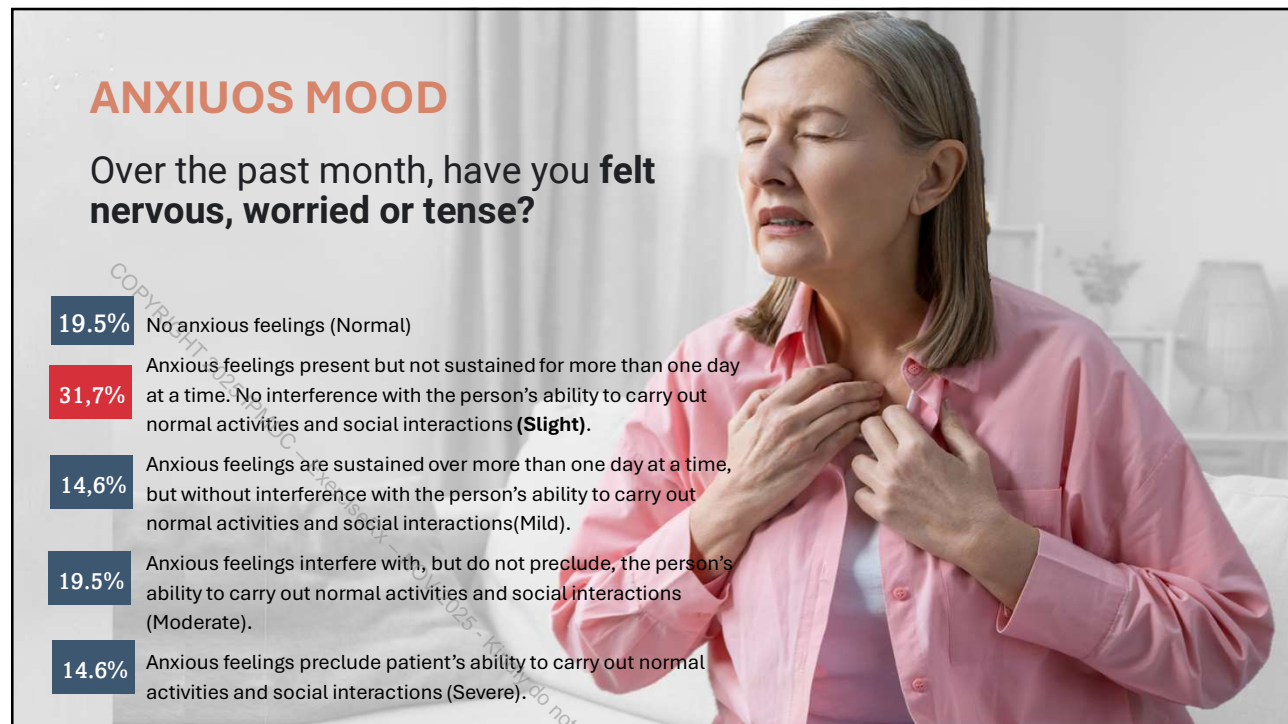


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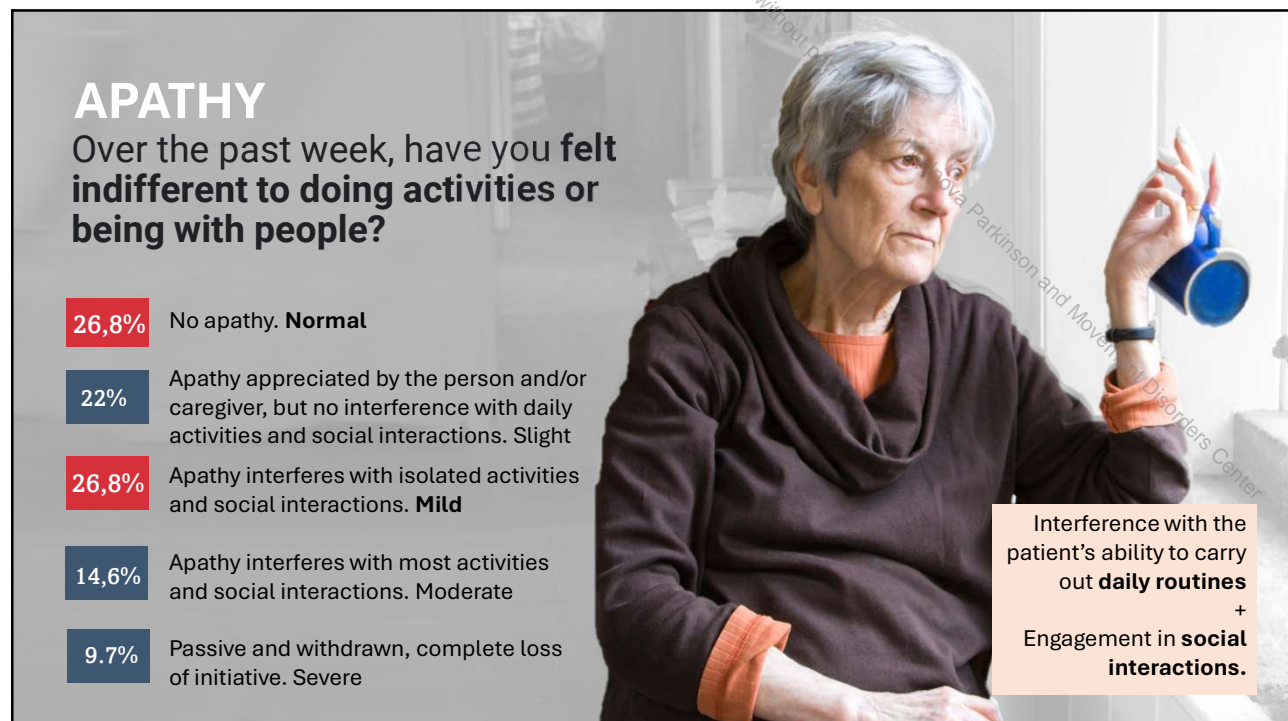


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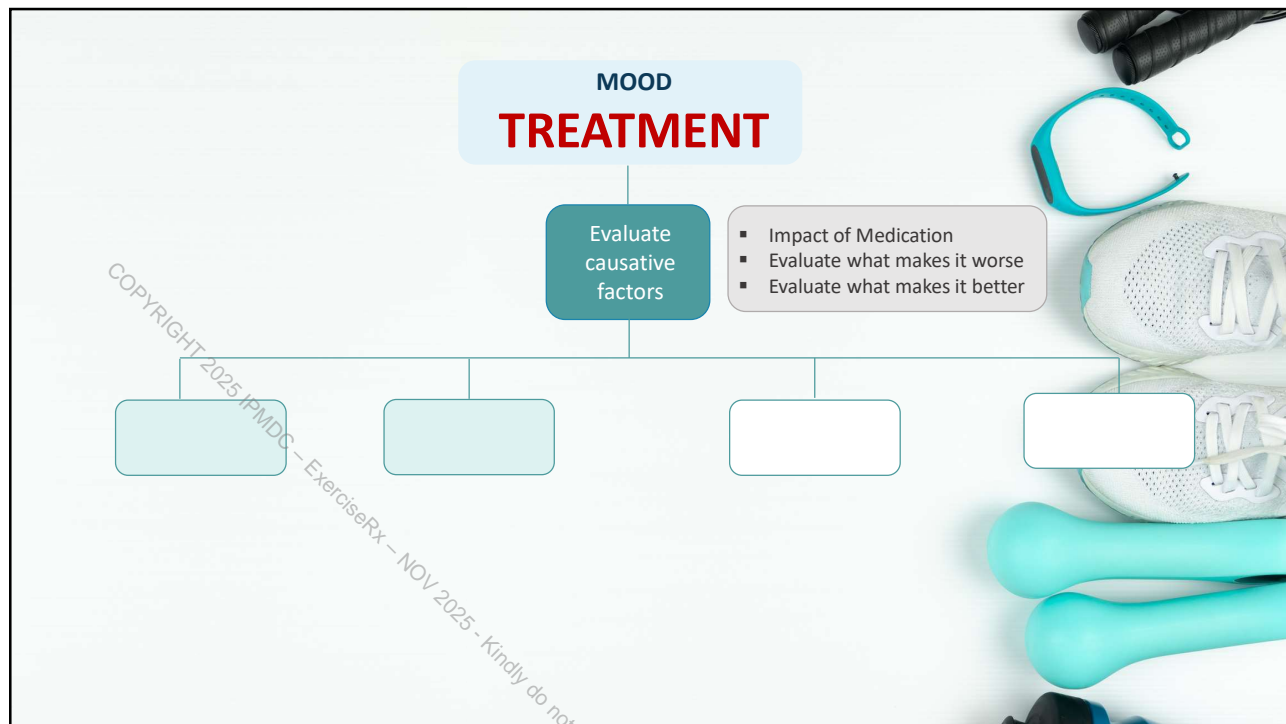




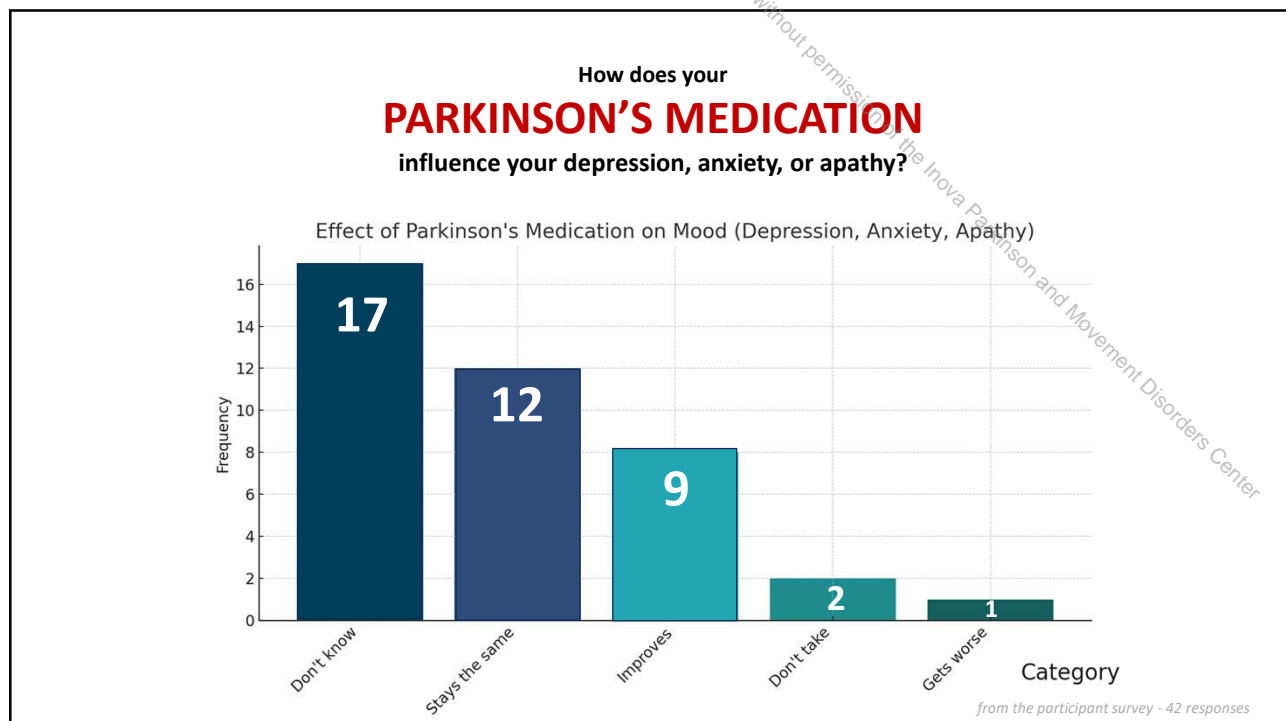
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11



12



13



Fatigue (3)  
Fatigued, medication not working, sleepiness.  
Pain in joints and muscles  
Fluctuating PD symptoms/meds not working, and fatigue.  
I Don't Know (2)

Lack of sleep, work stress/pressures, plus  
Having trouble moving/walking doesn't make me as eager to do stuff as I used to!

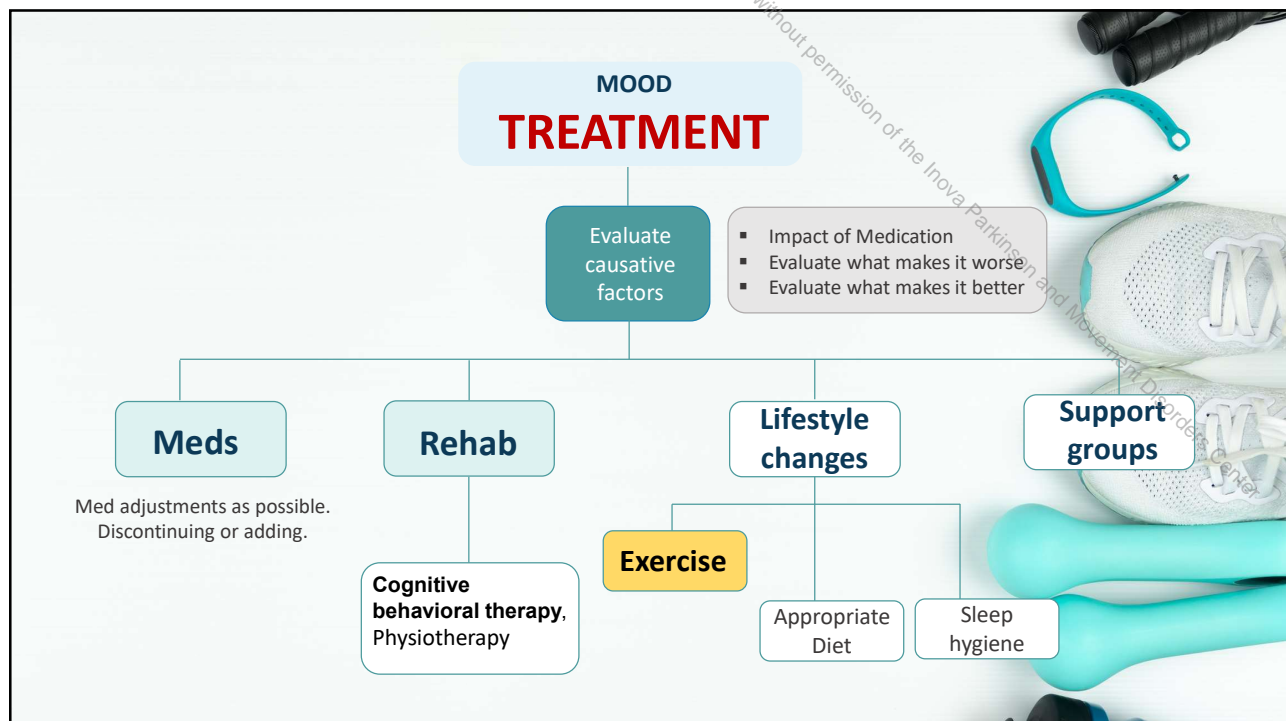
Mainly medication wearing off too soon.  
Medication needs reup.  
Late day is worse.  
Middle of the night when I can't get back to sleep.  
It often seems related to Meds.

I am losing ability to think things through, need help now with remembering my meds.

**Can you attribute these changes in mood to any specific causes or triggers?**

from the participant survey - 42 responses

14



15





16

## Today's program

1

Brief description  
and treatment of  
mood in Parkinson's

2

Identify **exercises**  
**most beneficial for**  
**mood issues (& how**  
**to apply them)**

17





18

### Physical Exercise for Treating the Anxiety and Depression Symptoms of Parkinson's Disease: Systematic Review and Meta-Analysis

Journal of Geriatric Psychiatry and Neurology 2024, Vol. 0(0) 1–21



#### For Depression:

**Aerobic**, **mind-body**\*, and **resistance** exercises are the most effective.



#### For Anxiety:

**mind-body** and **resistance** exercises are beneficial.

\*Mind-body exercises=  
Tai chi, Qigong and Yoga

19

## **AEROBIC EXERCISE** is especially effective for depression.

Most common effective dose ranged from 2-5 sessions p/ wk, lasting 5-16 weeks, with each session lasting 30-60 minutes and an intensity of 40%–50% to 60%–80% of the reserve heart rate.

Wu Plet al. PLoS One. 2017  
Cusso ME et al. , Front Med. 2016  
Wang LL et al. , Aging Clin Exp Res. 2022

20

Article

### **The Effects of a Dance and Music-Based Intervention on Parkinson's Patients' Well-Being: An Interview Study**

Barbara Colombo <sup>1,\*</sup>, Alison Rigby <sup>1</sup>, Martina Gnerre <sup>2</sup> and Federica Biassoni <sup>2</sup>

Emotional and social aspects are considered the most frequent perceived benefits of the dance program.

#### **Mood changes following social dance sessions in people with Parkinson's disease**

Carine Lewis, Lucy E Annett, Sally Davenport, Amelia A Hall and Peter Lovatt

- An overall reduction in total mood disturbance and a specific reduction in anger.
- Less fatigue was found for those initially scoring higher in depression.

- Particularly powerful against apathy and isolation.

21

JAMA Neurology | Original Investigation

## Effects of Mindfulness Yoga vs Stretching and Resistance Training Exercises on Anxiety and Depression for People With Parkinson Disease A Randomized Clinical Trial

Jojo Y. Y. Kwok, PhD, MPH, BN, RN; Jackie C. Y. Kwan, MSocSc, PDMH, BSW, RSW; M. AuYeung, MBChB; Vincent C. T. Mok, MD, MBBS; Claire K. Y. Lau, MSc, BN, APN; K. C. Choi, BSc, PhD; Helen Y. L. Chan, PhD, BSN, RN



Compared with conventional stretching and resistance training exercise, **mindfulness yoga** showed additional benefits on psychological distress, spiritual well-being, and health-related quality of life, with comparable benefits related to motor symptoms and mobility.

22

### RESEARCH ARTICLES

## Effects of Group, Individual, and Home Exercise in Persons With Parkinson Disease: A Randomized Clinical Trial

Laurie A. King, PT, PhD, Jennifer Wilhelm, PT, DPT, NCS, Yiyi Chen, PhD, Ron Blehm, DPT, John Nutt, MD, Zungiu Chen, MS, Andrea Sendar, PT, NCS, and Fay B. Horak, PT, PhD

J Neurol Phys Ther. 2015 Oct; 39(4): 204–212.

60 PWP | 3 times per week for 4 weeks



### HOME EXERCISE

Least effective way to see change & to deliver exercise to people with PD.

**Worse for people with other comorbidities** (depression, apathy, anxiety).



### INDIV. PHYSIOTHERAPY

Better in physical performance test, function & balance.

Better for comorbidities (depression, apathy, anxiety) because of supervision by a physical therapist.



### GROUP CLASS

Better improvement in gait outcomes and **ongoing motivation**.

23

## FOR COMPLEX SYMPTOMS

MORE THAN A MANUAL. PEOPLE NEED SUPERVISED HELP.



What makes it better?

“When my physiotherapist comes once a week” — person with PD survey

24

## 2 approaches

### ADAPTATION:

adapting current exercises to be more accessible and effective



VS.

### PERSONALIZATION:

bespoke program built around the individual



25





26



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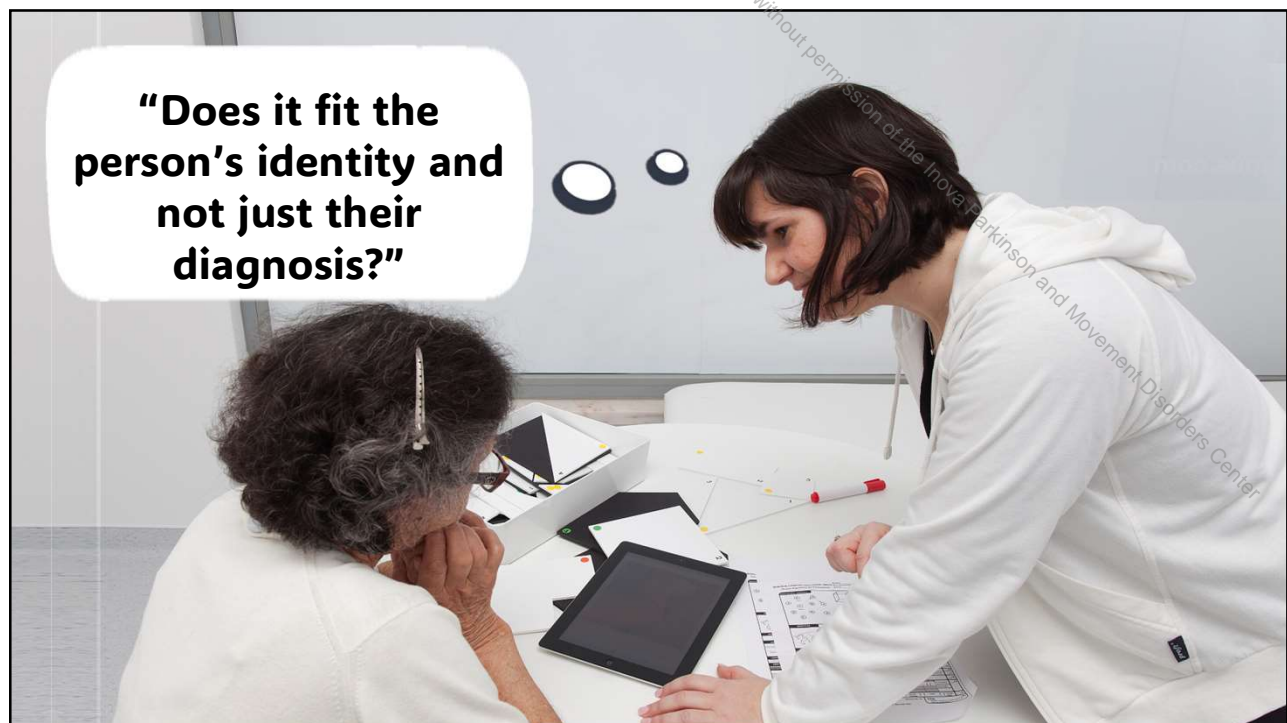


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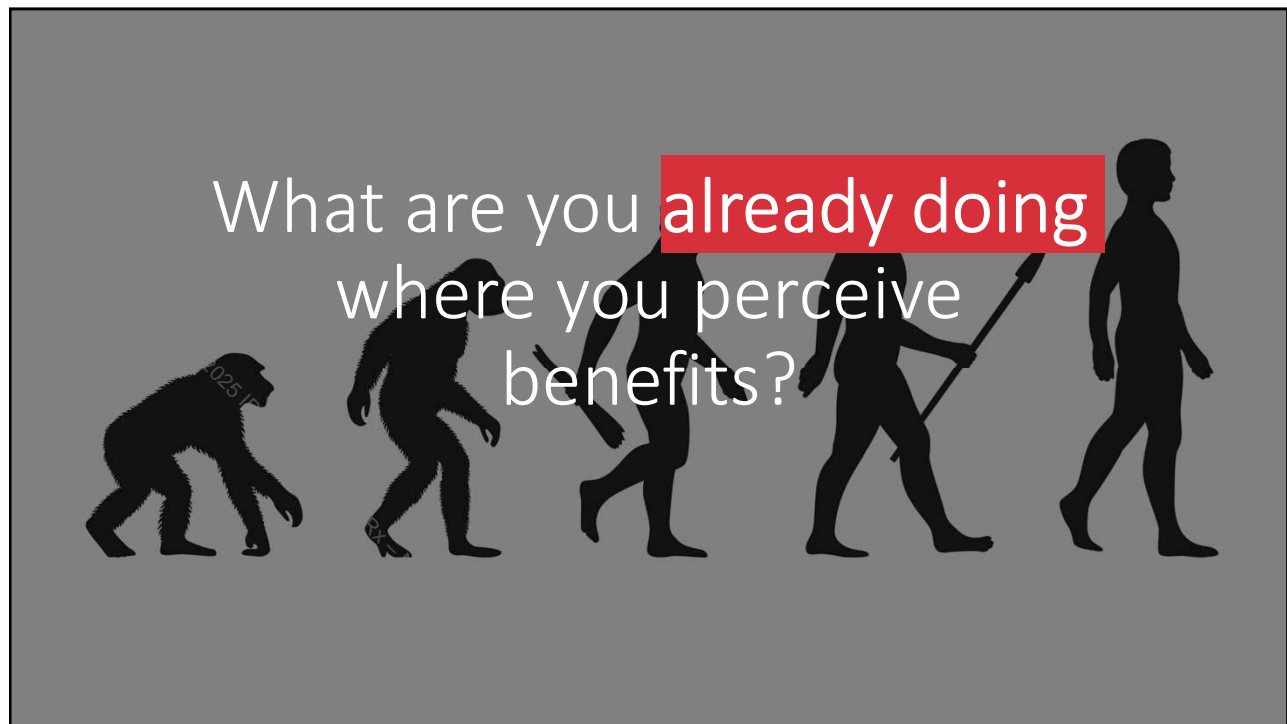


32




33





34

Of all the exercise modalities you do or participate in, **which one improves your mood the most?**



### 1. Walking-Based Activities

- Cardio-walking
- Walking, gardening or anything outside.
- Walking outside
- Walking in the woods
- Walking
- Walking
- Walking
- Walk daily
- Walkies
- Walking with my husband and sharing a few in-depth videos on topics of interest to me and my husband, and discussing these videos with him.
- Elliptical trainer, Marple rope pole. Walking my dog.
- Probably walking, but can't do very much on my own!

from the participant survey – 42 responses

35

Of all the exercise modalities you do or participate in, **which one improves your mood the most?**



## 2. Group / Social / Class-based activities

**Chair fit** because it is early in the day, improves my expectations for the rest of the day. It is a group activity; it would be hard to do any solo exercise first thing in the morning.

**Group sessions with others**

**In-person** exercise class

**Zoom classes** help motivate me, wake up all, yoga, boxing.

**Group classes** at the YMCA

Group exercise

Exercising with other people

**Springfield College mobility clinic.**

**Parkinson's pickleball class**

**Dance for PD classes**

Dance

**Dual tasking online**

**Yoga**

**Water aerobics**

from the participant survey – 42 responses

36

Of all the exercise modalities you do or participate in, **which one improves your mood the most?**



## 3. Home Exercise / Solo Exercise

Doing some outdoor repairs.

Good hard ride on a stationary bike.

Stationary bicycle and weights.

Probably a recumbent stepper or bike.

Rapid stretching of a TheraBand.

Elliptical trainer, Marple rope pole.

Zoom classes have helped connect me with working out.

from the participant survey – 42 responses

37

Of all the exercise modalities you do or participate in, **which one improves your mood the most?**



#### 4. Therapy-Supported Activities

When my physiotherapist comes once a week  
When my wife exercises with me

#### 5. Motivators / Conditions That Help

Anything, as long as there is music in the background.  
Any helps

#### 6. Uncertain / No Preference / No Effect

None  
Not sure  
None more than others  
Can't tell  
N/a

from the participant survey – 42 responses

38

## WHAT **EFFECT** DO YOU FEEL EXERCISE HAS ON YOUR MOOD (DEPRESSION, ANXIETY, OR APATHY)?

### Strong Positive Effects

- Boosts my mood
- Feel good when exercising
- Makes me feel better
- Joy & self-esteem
- Energizes me
- Positive impact on problems
- Feeling better, clearer thinking
- Improves my mood
- Improves all
- Feeling of accomplishment
- Lightens me up, finds joy, reinforces self-esteem

### Moderate or Situational

- May improve
- Improving
- Eases it
- It helps
- Fatigue improves
- Temporary lift in mood
- Feel better after walking outside

### Distraction Effects

- It distracts me
- Takes your mind off things
- helps me not to think too much

### Uncertain

- Not sure
- Mixed or unclear benefit.

### No Effect

- None

from the participant survey – 42 responses

39

What  
**DISCOURAGES**  
 you the most from  
 exercising?



40

## ADAPTATIONS

– What can we do?



Music  
**60%**



Exercising with  
 peer group or  
 community  
**37,5%**



Fun/ challenges/  
 enjoyment  
 /gamification  
**55%**



Doing it at home:  
 online or with a  
 professional  
**45%**



Clear goals &  
 progress  
**35%**



Short  
 sessions  
**30%**



Feedback (progress  
 reports, reminders)  
**27,5%**



Exercising  
 with  
 carepartner  
**22,5%**



Flexible  
 scheduling  
**35%**

from the participant survey – 42 responses

41



## DANCE & BOXING as therapy



Primary focus: movement  
specific to PD



Primary focus: movement  
specific to PD

42

## Feasible, accessible & you can switch off at any time

Growing  
evidence in  
favor

Access to  
specialist

Increasing  
frequency of  
trainings



43

# TRUST

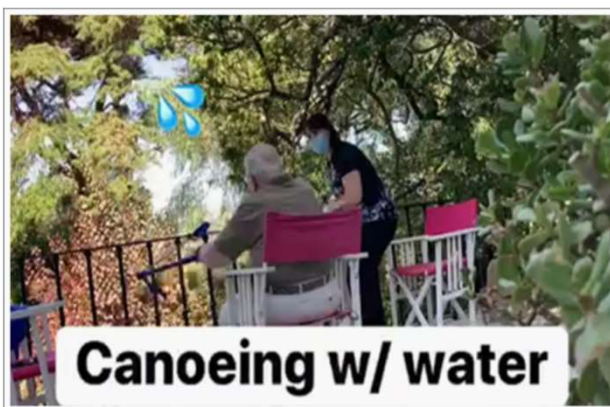
professionals can adapt



44

# TRUST

professionals can make it fun too!



**Canoeing w/ water**

Challenges with  
reward or playful  
punishment

45

## SECRET MISSION APPROACH

“Help me help someone”

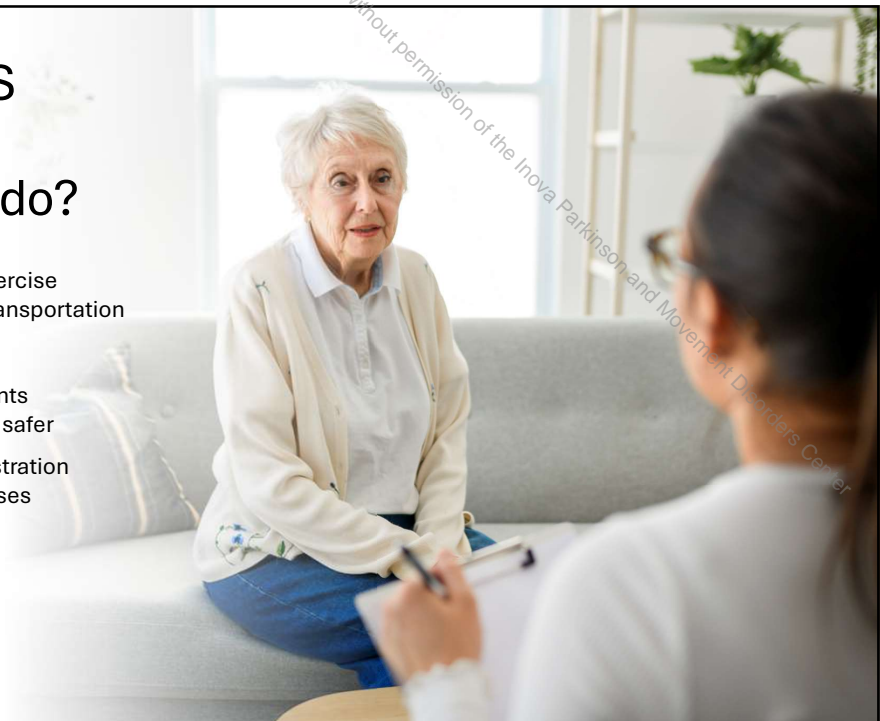


46

## ADAPTATIONS – What can **carepartners** do?

- Encouraging the person to exercise
- Helping organize schedule/transportation
- Reminding or prompting
- Celebrating progress
- Joining classes or appointments
- Adapting tasks to make them safer
- Helping overcome fear or frustration
- Helping remember the exercises
- Giving space / independence

**Exercising together**



47

“

- I'm **more disciplined** when exercising with my spouse/care partner.
- I have **more motivation**.
- **Social interaction** is good.
- It benefits our social interaction and makes time pass quickly than when exercising alone.
- It helps make the **relationship stronger**.
- **Understanding** the difficulties, I'm going through.
- Feels reinforcing and **reduces driving**.
- **Encouragement**, understanding, sometimes how to master the challenge.

”



Motivation

Social Interaction  
& connectionMore  
efficiency

#Patient's perspective

48

Exercising  
together  
as  
buddies



49



## Take-home messages



Exercise improves mood best when it's **enjoyable, social, and sustainable.**



Exercise should constantly improve mood. If the **mood worsens** with an exercise, **reassessment** is needed.



The best exercise is the one that a person can do regularly with **confidence that it's effective for their problem.** Personalized programs matter.

50

How effective is high intensity exercise for PD? Do we have to reach the HI level in order to get the benefits?

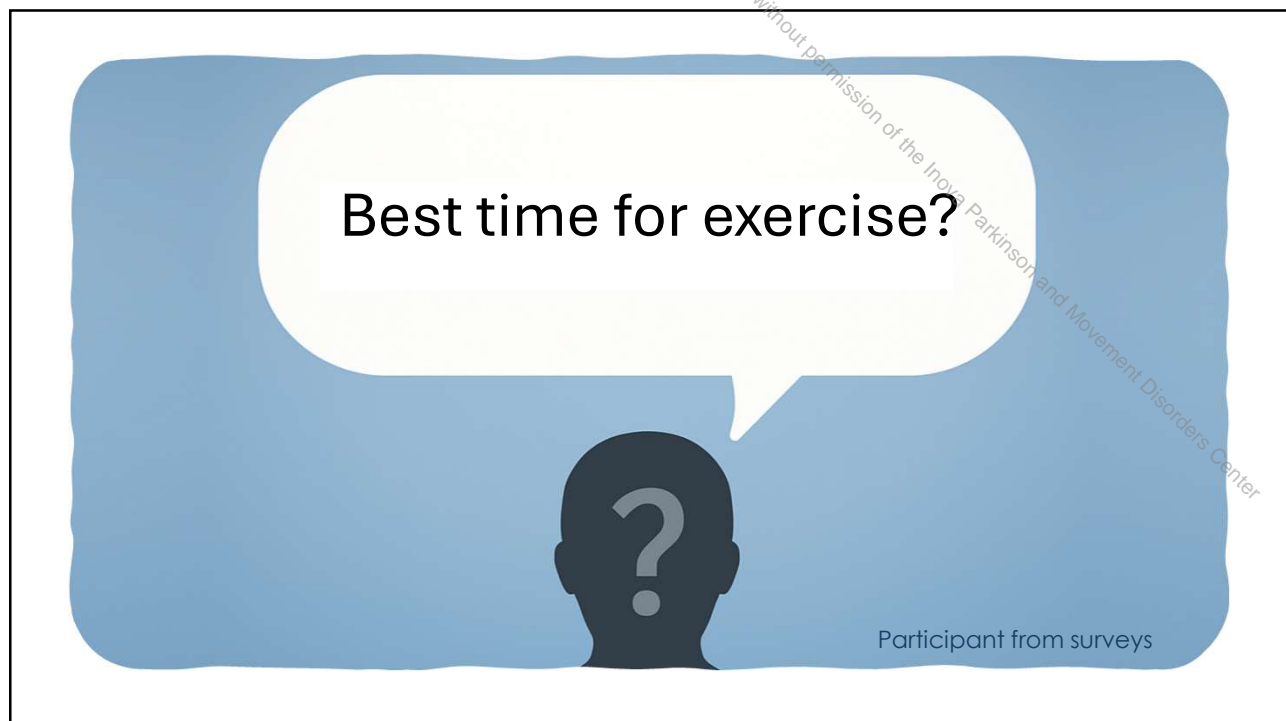


Participant from surveys

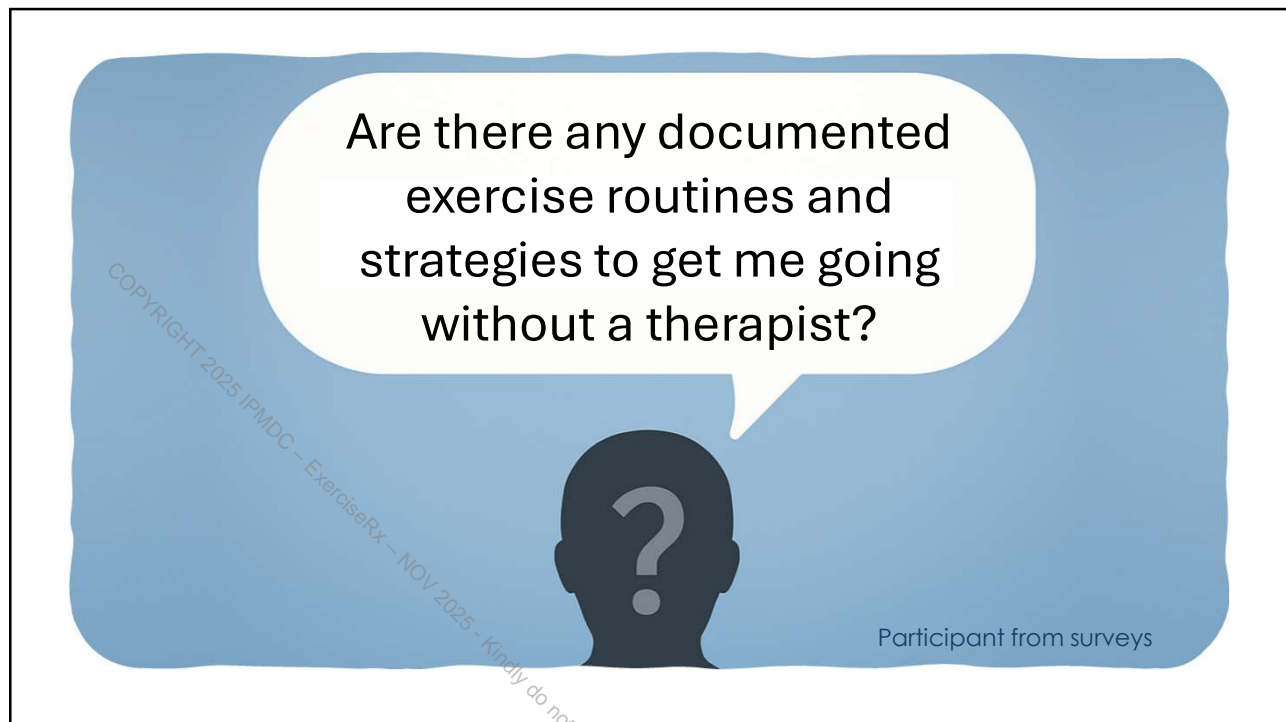
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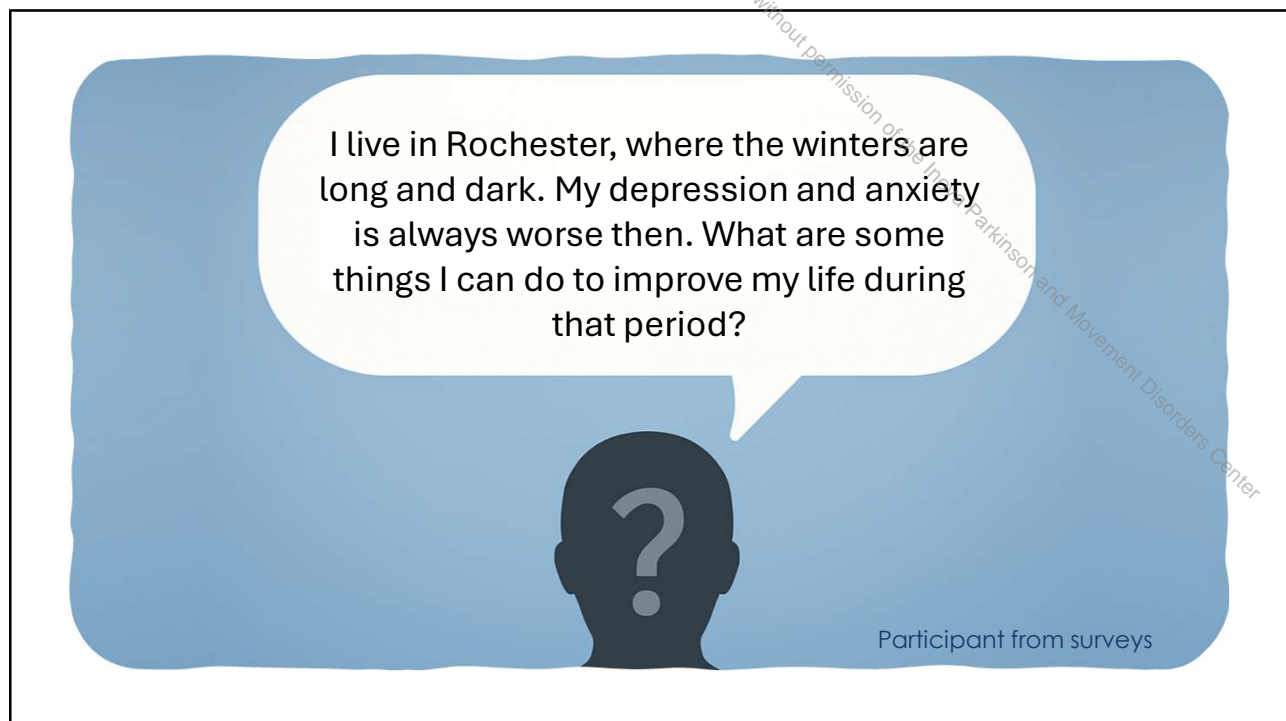
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53



54



55

## QUESTIONS or COMMENTS



56

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