



# *NEWLY DIAGNOSED*

*PARKINSON'S AND EXERCISE*

*HOW CHANGING YOUR BRAIN WILL CHANGE YOUR BODY*

# *WHO AM I*

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- Registered Physiotherapist
- Owner/Founder NeuroFit BC Ltd. - Parkinson's only Physiotherapy practice
- Course Instructor (UBC - Exercise and PD, Changing Parkinson's Course)
- Post graduate education in Neurological Rehabilitation (Bobath, NDT, PWR!)

For more information go to

[www.neurofitbc.com](http://www.neurofitbc.com)

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# *WHAT WE WILL COVER*


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- WHY EXERCISE?
  - How the brain behaves
  - Treatment options
  - What the research says
  - Pros and cons
  - What exercise can do
- HOW TO EXERCISE
  - FITT Principle
  - When to start
  - How to continue
- PHYSICAL REHABILITATION
  - Trainers & Therapists: When, why & what's the difference

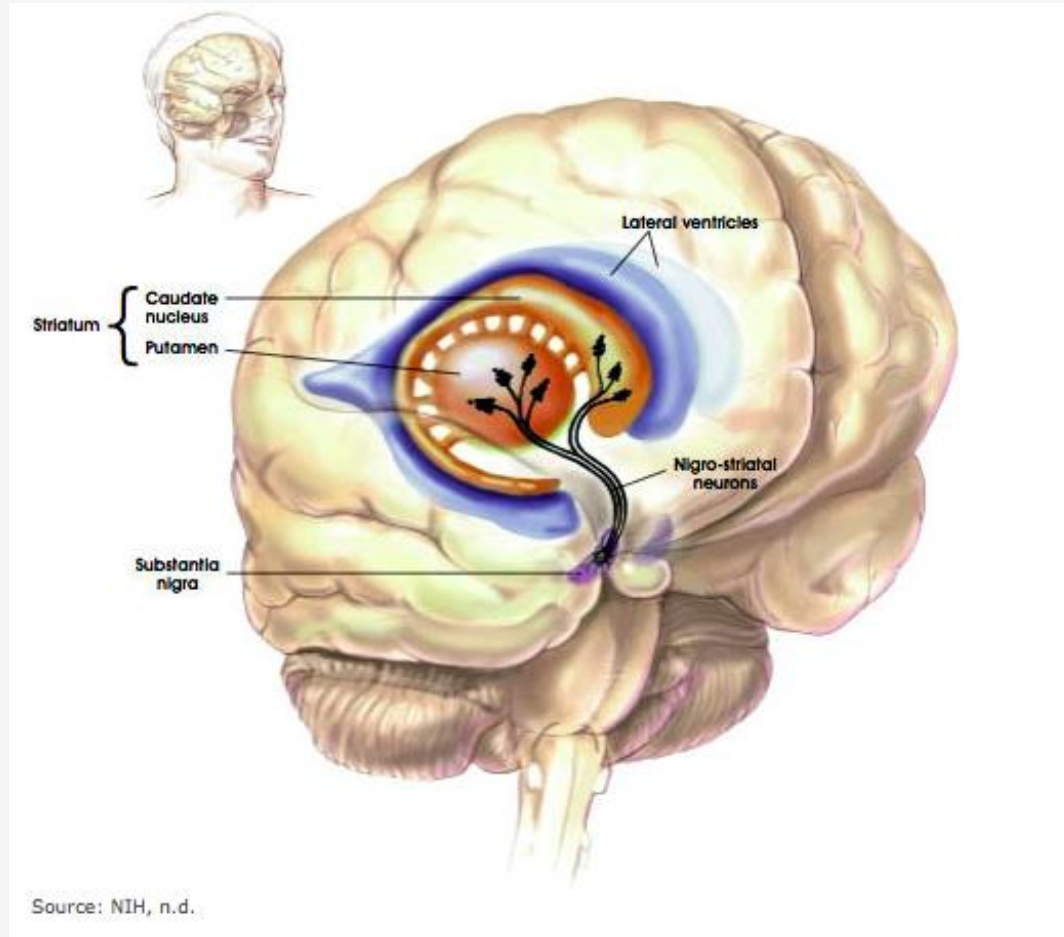
*SO YOU ARE  
TOLD YOU  
SHOULD  
EXERCISE...*

*BUT WHY?*

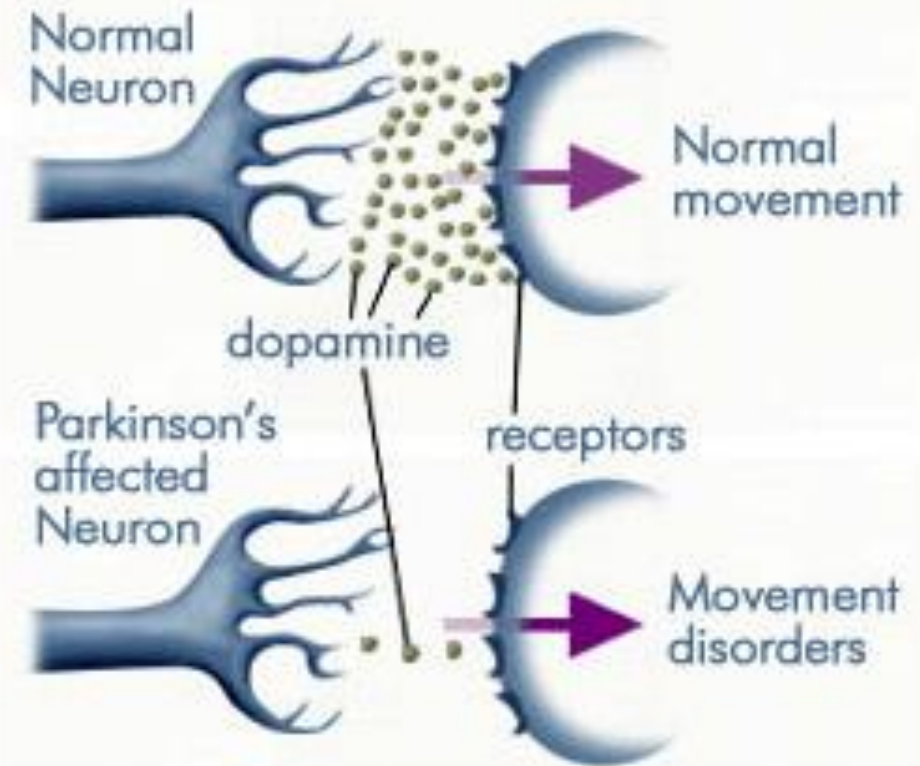
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1. THE BRAIN
  2. TREATING PARKINSON'S
  3. THE RESEARCH
  4. THE PROS & CONS
  5. WHAT CAN IT DO
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# 1. THE BRAIN



Dopamine levels in a normal and a Parkinson's affected neuron.



## 2. *TREATING PD*



### 3. *THE RESEARCH*

#### ANIMAL STUDIES

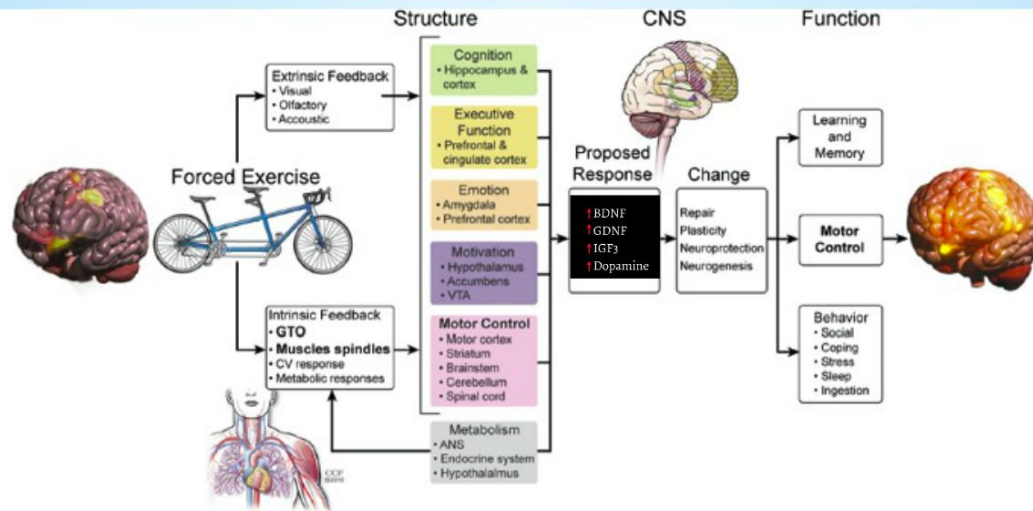




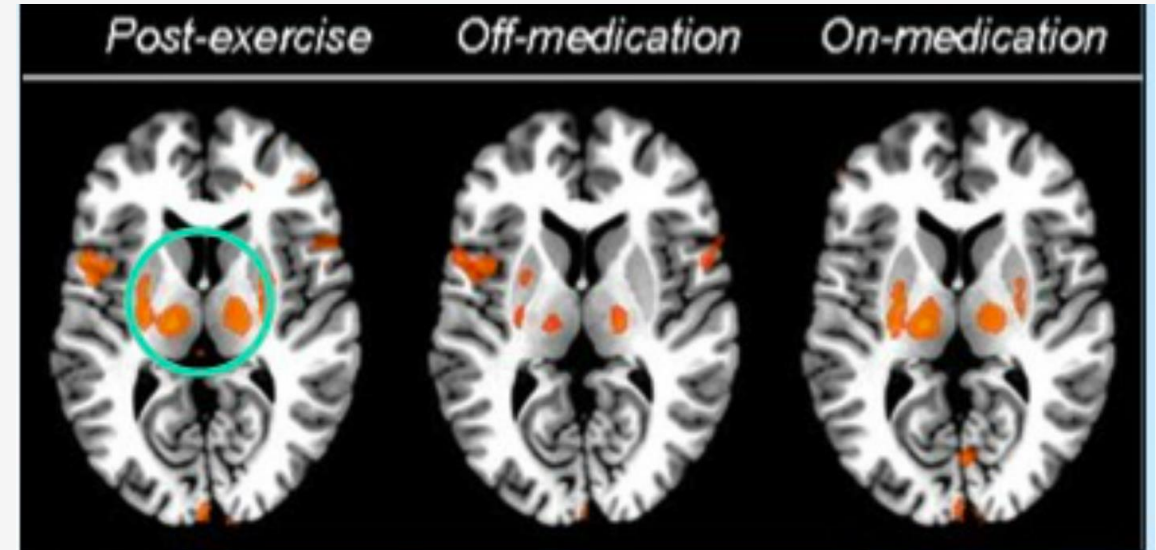
# 3. *THE RESEARCH*

## HUMAN STUDIES

Forced Exercise & PD Proposed Mechanisms for Change



Alberts et al 2011





# 3. *THE RESEARCH*

## HOW DOES IT WORK?

- Still being studied

(Current hot topics include the gut microbiome, cannabis, exercise, new drugs/therapies etc...)

- NEUROPROTECTION
  - NEUROREPAIR
  - ADAPTATION
- 



## 4. *PROS AND CONS*

Take the regular benefits and amplify them

- Exercise & Physical fitness in seniors =
  - Better cognitive scores
  - Better vascular health
  - Better cardiovascular health
  - Decreased incidence of diabetes mellitus, hypertension, hyperlipidemia, obesity, and osteoporosis, falls and fracture
  - Longer survival
  - Antiinflammatory effect
  - ...And more!

**All this occurs in PD + improved motor and non-motor symptoms & mitigation of disease progression**

## 4. *PROS AND CONS*

Negative side  
effects of  
medications

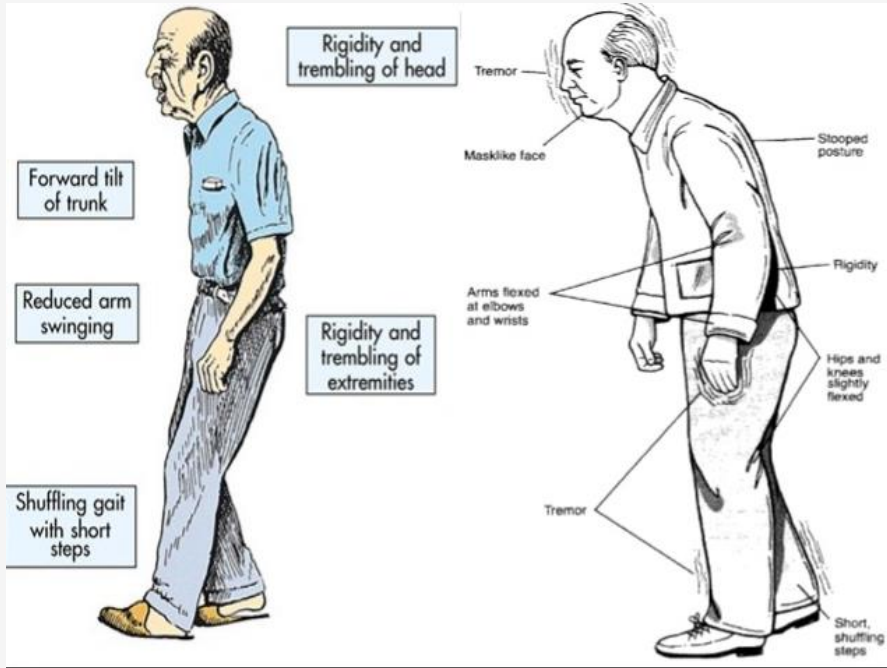
Negative side  
effects of  
exercise

ON/OFF periods  
Nausea  
Vomiting  
Dizziness  
postural hypotension  
dyskinesias  
Headache  
Drowsiness  
Insomnia  
Constipation  
Diarrhea  
Reynaud phenomena  
confusion

Can you think of  
any?



# 5. WHAT IT CAN DO



## 5. *WHAT IT CAN DO*

### Improve motor symptoms

- Gait (arm swing, shuffle, freezing etc...)
- Balance
- Reduce falls
- Posture and alignment
- Reduce rigidity
- Keep you functioning BETTER FOR LONGER!
- Improve body awareness

**Mitigate disease progression**

**Improve quality of life**

### Improve non motor symptoms

- Mood
- Depression
- Apathy
- Fatigue
- Cognition
- Sleep
- Writing

# *SO HOW DO YOU DO IT?*

1. THE “FITT” OF PARKINSON’S EXERCISE
2. KEY FACTORS
3. SETTING
4. WHEN AND FOR HOW LONG

# *1. FITT*

## FREQUENCY

- 5-7 days of the week

## INTENSITY

- Moderate to high

## TIME

- At least 30 minutes

## TYPE

- AEROBIC, INTERVALS, YOGA, TAI CHI, DANCE, BOXING, STRENGTH, PWR!
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# 1. FITT

1. Adults aged 65 years and above should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week **or** do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week **or** an equivalent combination of moderate- and vigorous-intensity activity.
2. Aerobic activity should be performed in bouts of at least 10 minutes duration.
3. For additional health benefits, adults aged 65 years and above should increase their moderate-intensity aerobic physical activity to 300 minutes per week, **or** engage in 150 minutes of vigorous-intensity aerobic physical activity per week, **or** an equivalent combination of moderate- and vigorous-intensity activity.
4. Adults of this age group, with poor mobility, should perform physical activity to enhance balance and prevent falls on 3 or more days per week.
5. Muscle-strengthening activities should be done involving major muscle groups, on 2 or more days a week.
6. When adults of this age group cannot do the recommended amounts of physical activity due to health conditions, they should be as physically active as their abilities and conditions allow.

## Canadian Physical Activity Guidelines

FOR OLDER ADULTS - 65 YEARS & OLDER

### Guidelines



To achieve health benefits, and improve functional abilities, adults aged 65 years and older should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.



It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.



Those with poor mobility should perform physical activities to enhance balance and prevent falls.



More physical activity provides greater health benefits.



Parkinson Society Canada  
Société Parkinson Canada

Since  
Depuis  
1965



Canadian  
Physiotherapy  
Association

Association  
canadienne de  
physiothérapie

## Physical Activity and Parkinson's Disease

### Get Active and Stay Active!



- People with Parkinson's who exercise fare better over time than those who are not active.
- Physical activity should be initiated early in the diagnosis and be a life-long commitment.
- Engaging in aerobic activity, along with other activities for strength, flexibility and balance, improves Parkinson's symptoms and sense of well-being.

#### Why Aerobic Activities?

- Aerobic activities make the body's large muscles move in a rhythmic manner for a sustained period of time.
- Aerobic activities improve physical fitness, including strength and endurance.
- Aerobic activities have a positive effect on slowness and stiffness, as well as mood, and quality of life.  
*Examples: brisk walking, swimming, cycling, dancing, water aerobics, skating, hiking, treadmill or elliptical, Wii*

#### Why Strengthening Activities?

- Strengthening activities improve muscle strength, walking speed, posture and overall physical fitness.
- Improving strength will help everyday activities, such as getting up from a chair, easier to manage.  
*Examples: yard work or gardening, weights/resistance (free weights, elastic bands, body weight)*

#### Why Balance Activities?

- Balance activities improve posture and stability.
- Better balance reduces the fear of falling and helps in performing daily tasks.  
*Examples: Yoga, hiking, Wii*

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#### Why Flexibility Activities?

- Flexibility or stretching exercises improve mobility, increase range of motion, and reduce stiffness.
- Improving range of motion affects posture and walking ability making everyday activities easier.  
*Examples: Tai Chi, stretching*

### Get Started

- ✓ Consult your doctor before starting an exercise program, especially if you have other health issues or are over 60.
- ✓ Work with a physical therapist/physiotherapist to develop a specific program that meets your needs. A physiotherapist can ensure you are performing activities safely and that they are right for you.
- ✓ Choose a variety of activities to reduce boredom.
- ✓ Have fun! Choosing activities you like will help you stay with a program.

## 2. *KEY FACTORS*

A. DO YOU ENJOY IT?

B. DOES IT CHALLENGE YOU PHYSICALLY AND MENTALLY?

C. IS IT SPECIFIC TO YOUR SYMPTOMS?

(Assessment/Prescription and program implementation)

D. WILL YOU CONTINUE TO DO IT?

E. DOES IT INCLUDE POWERFUL, HIGH AMPLITUDE MOVEMENTS?

F. DOES IT SUIT YOUR BUDGET, PERSONALITY, SCHEDULE AND  
FUNCTIONAL LEVEL ?

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### 3. *SETTING*

#### PROS AND CONS OF EACH

- Group classes
  - 1:1 Treatment
  - Gym or home programs
  - Online options
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## 4. *WHEN AND FOR HOW LONG*

- The earlier the better – Research supported outcomes!
  - Lifelong!
  - Use it or lose it principle “on steroids”
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*PHYSICAL  
THERAPY?*

*PERSONAL  
TRAINER?*

*ONLINE  
COACH?*

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HOW TO DECIDE  
WHAT YOU NEED  
AND WHEN YOU  
NEED IT.



# *QUESTIONS TO CONSIDER*

1. Have you been assessed?
  2. Have you had a fall?
  3. Do you have pain?
  4. Have you noticed a change in function?
  5. What are your goals?
  6. Are you consistent with your exercise?
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# *EUROPEAN GUIDELINES PARKINSON'S AND PHYSIOTHERAPY*

## **2. When should you visit a physiotherapist?**

In all stages of the disease, a physiotherapist can provide you with advice and education. If required, a physiotherapist will also provide treatment. Physiotherapy treatment aims to prevent, stabilise or reduce movement related problems. You are advised to consult a physiotherapist:

- As soon as possible after your diagnosis for self-management support.
- When you find it difficult to exercise regularly.
- When you have questions on exercise types, frequency, intensity or safety.
- When you experience:
  - walking problems like slowness, hesitation or feeling glued to the floor (freezing)
  - any balance problems, like recent falls or near falls or if you are afraid you might fall
  - problems rising from a chair, rolling over in bed or getting in and out of a car
  - pain, for example in your neck, back or shoulders.

It is important that your neurologist knows when you are visiting a physiotherapist. In some countries, referral by a physician or general doctor may be necessary to obtain reimbursement of your physiotherapy care costs.

Care for Parkinson's is complex. Therefore, it is important that you visit a physiotherapist with Parkinson's specific expertise. If no such physiotherapist is around, you might inform the physiotherapist you are visiting about the European Physiotherapy Guideline for Parkinson's Disease or hand over a copy of the Guideline's Quick Reference Cards ([www.parkinsonnet.info/euguideline](http://www.parkinsonnet.info/euguideline)).

## **What to expect when you visit a physiotherapist?**


A physiotherapist assesses your mobility problems and analyses why they occur. This may take two appointments. If you experience your main problems at your home, the physiotherapist may assess you at your home. If physiotherapy is indicated, you and the physiotherapist together set your individual goals and develop a treatment plan. Physiotherapy treatment may include a combination of advice, education, (home) exercise and training of so-called compensatory strategies. The duration of a treatment period, as well as the frequency of the visits will depend on your individual goals and treatment plan.

The physiotherapist will support you in your self-management and therefore discuss and agree with you upon time and means of ongoing contact. How often you return to visit the physiotherapist will depend on your individual circumstances and needs.



# *PERSONAL TRAINERS & ONLINE COACHING*

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- HAS COST AND CONVENIENCE BENEFITS
  - ASK ABOUT EXPERIENCE AND EDUCATION
  - LET YOUR PHYSIO KNOW! COMMUNICATION WITHIN YOUR HEALTH CARE TEAM IS KEY
  - PARKINSON'S SPECIFIC KNOWLEDGE OR PROGRAMMING
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# *TAKE HOME MESSAGES*

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- Exercise is an integral and key component to treating Parkinson's Disease.
  - Exercise can help you manage your symptoms and mitigate disease progression
  - The earlier you start exercising the better
  - Exercise helps change your brain to change your body and can have a NEUROPROTECTIVE effect!
  - Research supports benefits from various types of exercise but intensity and Parkinson's specific treatment is key for optimizing the effects of your exercise routine.
  - Having a supportive and educated network of health professionals around you will help ensure you are getting the type of exercise and support YOU need to live well now and in the future!
  - Get assessed early on and then use the many resources available to you to create goals and implement a plan to reach them.
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# *QUESTIONS?*

Contact info:

[info@neurofitbc.com](mailto:info@neurofitbc.com)

Resources:

<http://www.neurofitbc.com/resources.html>



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