



பரிணாமம்

**SUPPORT GROUP MEETING
FOR PARKINSON'S PATIENTS**

Let us Share & Evolve

A **GUIDE** FOR PARKINSON'S PATIENTS

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Chapter 1

Symptoms



CLINICAL PRESENTATION OF PARKINSON'S DISEASE

Parkinson's disease is a progressive brain disorder that affects movement. Symptoms develop gradually, usually on one side of the body.

1. CORE MOTOR SYMPTOMS (CARDINAL FEATURES)



1. RESTING TREMOR

- Tremor occurs at rest
- Often starts in one hand "pill-rolling tremor")
- Reduces with movement
- Can affect hands, legs, jaw and lips

2. BRADYKINESIA (SLOWNESS OF MOVEMENT)



- Slowness in starting and performing
- Difficulty in daily activities tasks like buttoning clothes, writing, walking
- Reduced arm swing while walking



3. RIGIDITY

- Stiffness and increased muscle tone
- Lead-pipe rigidity (uniform stiffness rigidity)
- Cogwheel rigidity (jerky resistance)
- Causes pain and reduced movement



4. POSTURAL INSTABILITY

- Impaired balance and coordination
- Frequent falls
- Difficulty in turning
- Usually appears in later stages

2. GAIT AND POSTURE CHANGES

SHUFFLING GAIT



Short steps, feet close to the ground

FESTINATION



Steps get faster and hard to control

FREEZING OF GAIT



Sudden inability to move the feet forward

STOOPED POSTURE & REDUCED ARM SWING



Bending forward with less or no arm movement

3. FACIAL AND SPEECH CHANGES

FACIAL FEATURES



- Masked facies (reduced facial expression)
- Decreased blinking
- Expressionless face

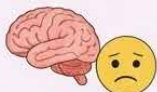
SPEECH CHANGES



- Hypophonia (soft voice)
- Monotone speech
- Slurred or slow speech

4. NON-MOTOR SYMPTOMS

NEUROPSYCHIATRIC



- Depression
- Anxiety
- Apathy
- Dementia (late stage)

AUTONOMIC DYSFUNCTION



- Constipation
- Orthostatic hypotension
- Urinary problems
- Sexual dysfunction

SLEEP DISORDERS



- Insomnia
- REM sleep behavior disorder (acting out dreams)

SENSORY SYMPTOMS



- Loss of smell (anosmia)
- Pain
- Fatigue

5. OTHER CLINICAL FEATURES

MICROGRAPHIA



Very small handwriting

DROOLING



Excess saliva (sialorrhea)

DYSPHAGIA



Difficulty in swallowing

SEBORRHEA



Oily skin, dandruff

FATIGUE



Low energy, tiredness



**EARLY DIAGNOSIS, MEDICATION, EXERCISE AND SUPPORT
CAN IMPROVE QUALITY OF LIFE.**



RESTING TREMOR IN PARKINSON'S DISEASE

A rhythmic shaking that occurs when the muscles are relaxed, usually when sitting or resting.

HOW IT LOOKS



Hand tremor
(most common)



Leg tremor



Tremor in chin
or jaw



Finger tremor

KEY POINTS

- Occurs at rest, not during activity
- May improve with movement or distraction
- Can vary in intensity



Rest
(Tremor present)



Movement
(Tremor may reduce)

NON PHARMACOLOGICAL TREATMENT MEASURES

Helpful daily habits and therapies to manage tremor better

1. REGULAR EXERCISE



Improves flexibility, balance and overall control.

2. PHYSIOTHERAPY



Strengthens muscles, improves posture and movement.

3. OCCUPATIONAL THERAPY



Teaches adaptive techniques and tools for daily activities.

4. RELAXATION TECHNIQUES



Deep breathing, meditation and mindfulness reduce stress and tremor.

5. WEIGHTED AIDS



Weighted wrist bands, utensils or pens can help reduce tremor during activities.

6. GOOD SLEEP & REST



Adequate sleep and rest help reduce fatigue and tremor.

7. HEALTHY DIET



Balanced diet, enough water and fiber support overall health.

8. AVOID TRIGGERS



Limit caffeine, avoid smoking and manage stress.

9. SOCIAL ENGAGEMENT



Stay connected, join support groups and stay positive.

Rigidity IN PARKINSON'S DISEASE

Stiffness or resistance to movement
even when muscles are relaxed.



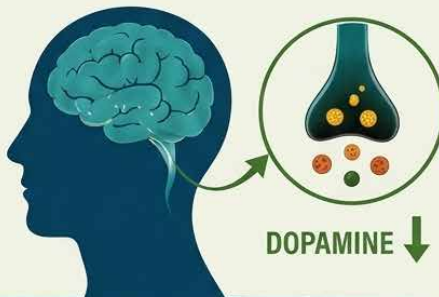
WHAT IS IT?

Rigidity is increased muscle tone that causes stiffness in the arms, legs, or neck or trunk. It can make movements slow, limited and uncomfortable.



WHY DOES IT HAPPEN?

In Parkinson's, the lack of dopamine affects the part of the brain that controls movement and muscle tone. This causes muscles to stay stiff even when they should be relaxed.



COMMON SITUATIONS



Dressing or undressing takes more effort



Writing becomes slow and hard



Can't do your therapy



Moving in bed or turning over is difficult



Difficulty in getting up from a chair or bed



Less arm swing while walking



SIGNS TO LOOK FOR



Stiff or tight feeling in arms, legs or body



Stooped posture while walking



Resistance felt during movement (even passive)



Mask-like facial expression with little movement



WHAT CAN HELP?



Regular exercise and stretching movement improve flexibility and reduce stiffness



Plan activities and take breaks as needed



Break tasks into small steps and do at a steady pace



Gentle range of motion exercises every day



Take medicines on time as prescribed by your doctor



REMEMBER



“Rigidity can make daily tasks harder, but, then with regular regular movement, the right care and support, you can **stay active and independent.**”

MAKE YOUR ENVIRONMENT HELPFUL



Keep rooms well lit



Remove loose rugs and clutter



Use handrails or grab bars



Use chairs with the rest arm rests



Keep things within easy reach



Wear proper, non-slip footwear



BE PATIENT WITH YOURSELF.
STIFFNESS DOESN'T MEAN YOU CAN'T.
CONSISTENT PRACTICE
MAKES A DIFFERENCE!



Move gently.
Move regularly.
Every movement counts.
*Stay Active.
Stay Positive. Stay Independent.*



BRADYKINESIA

IN

PARKINSON'S DISEASE

Slowness of movement that makes daily activities take more time and effort.

UNDERSTANDING BRADYKINESIA: SYMPTOMS AND CAUSES



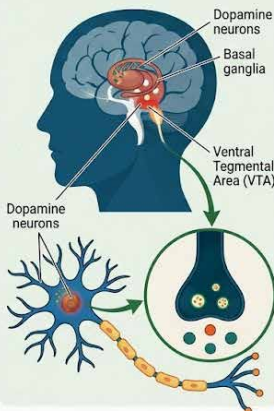
WHAT IS IT?

Bradykinesia is the slowness of voluntary movement. It can affect body movements, facial expressions and speech.



WHY DOES IT HAPPEN?

In Parkinson's, the brain does not produce enough dopamine. This makes it hard to start, and perform movements quickly.



COMMON SITUATIONS



Getting dressed takes longer



Writing becomes slow and small



Eating or drinking slowly



Difficulty in starting any activity



Moving slowly in daily tasks



Typing



Shoelaces



Buttoning a shirt



Struggling to get up from a chair



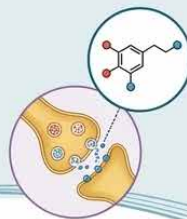
Taking smaller, shuffling steps



Facial stiffness or slowness (masked facies)



BRADYKINESIA: UNDERSTANDING AND MANAGING SLOWNESS



SIGNS TO LOOK FOR



Slowness in starting any movement



Slowness while walking (slow steps)



Small and slow handwriting



Takes longer to get up



Takes longer to get up from a chair



Reduced facial expressions (blinking less, masked face)



Soft and slow speech



WHAT CAN HELP?



Regular exercise and movement help improve speed and strength



Practice repetitive movements to reduce slowness



Plan activities and give more time to complete tasks



Break activities into small steps and do one step at a time



Take breaks between tasks and pace activities.



Stay active and socially engaged



Take medicines on time as prescribed by your doctor



REMEMBER



Bradykinesia may slow you down, but with regular practice, exercise and the right care, you can **stay active and independent.**

MAKE YOUR ENVIRONMENT HELPFUL



Keep rooms well lit



Remove loose rugs and clutter



Use handrails or grab bars



Use chairs with arm rests



Wear proper, non-slip footwear



Keep things within easy reach



BE PATIENT WITH YOURSELF.
SLOWER DOESN'T MEAN YOU CAN'T.
CONSISTENT PRACTICE
MAKES A DIFFERENCE!



Move at your own pace.
Every little movement counts.

Stay Active.
Stay Positive. Stay Independent.

EVERY STEP MATTERS

GAIT IN PARKINSON'S DISEASE

SMALL
STEPS
BIG
DIFFERENCE!

UNDERSTAND. ACT. KEEP MOVING.

A SIMPLE GUIDE TO SAFER, STRONGER STEPS
FOR A **BETTER** LIFE!

Gait-Improvement Action Guide



Physical Therapy & Exercise

Balance and strength training



Assistive Devices

Use proper
support
if needed



Environment Safety

Remove tripping hazards,
improve lighting



Cues and Rhythms

Use sound/visual cues for
a steady pace



WHAT IS GAIT?

Gait is the way we walk.
In Parkinson's, the brain's
signals get mixed up —
making steps slow, small,
and stiff.



WHY DOES IT HAPPEN?

Lower dopamine affects
the brain areas that control
movement, balance, and
posture — making each
step harder to plan and
perform.



COMMON GAIT CHANGES

- Shuffled or short steps
- Slower walking
- Less arm swing
- "Freezing" (sudden stop)
- Forward-leaning posture





SIGNS TO LOOK FOR

- ❗ Takes several small steps to turn to turn
- ❗ Leans while walking
- ❗ Feet feel "glued" to the floor
- ❗ Tires easily while walking
- ❗ Loses balance or stumbles often



WHAT CAN HELP?

- ✓ Regular exercise & walking practice
- ✓ Big steps & full swings
- ✓ Visual cues – Floor lines
- ✓ Use walking aids, if recommended
- ✓ Take medicines exactly on time



REMEMBER:

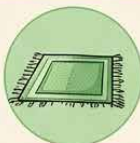
**SMALL STEPS TODAY CAN PREVENT BIG FALLS TOMORROW.
STAY ACTIVE. STAY SAFE. STAY INDEPENDENT.**



MAKE YOUR HOME WALK-FRIENDLY



**KEEP WALKWAYS
WELL LIT**



**REMOVE
LOOSE RUGS**



**USE STAIR
HANDRAILS**



**CHAIRS WITH
ARM RESTS**



**WEAR PROPER
NON-SLIP SHOES**

BIG STEPS, FULL SWINGS!



**GAIT MAY
CHANGE...**



STAY POSITIVE



STAY ACTIVE



**STAY
INDEPENDENT**

♥ This poster is for general patient education and does not replace advice from your neurologist or physiotherapist. ♥

CONSTIPATION

in PARKINSON'S DISEASE



DID YOU KNOW?

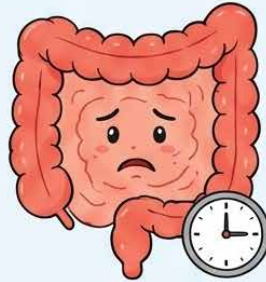
Constipation is very common in Parkinson's and can occur even before movement symptoms.

Understand • Prevent • Relieve • Feel Better

MEDICAL INFORMATION CHART

WHY DOES IT HAPPEN?

- Slower movement of the intestines
- Changes in the nerves controlling the gut
- Less physical activity
- Low fluid or fiber intake
- Some Parkinson's medications



SLOW BOWEL MOVEMENT

SIGNS TO WATCH FOR



Hard or lumpy stools



Bloating



Straining during bowel movements



Feeling of incomplete emptying



Less than 3 bowel movements per week

KEY MANAGEMENT POINT



Constipation can affect comfort, appetite, sleep and overall quality of life – but it can be managed!

NON PHARMACOLOGICAL TREATMENT MEASURES

1. EAT FIBER-RICH FOODS



- Whole grains
 - Fruits & vegetables
 - Legumes, nuts, seeds
- (Add fiber gradually)

2. DRINK ENOUGH FLUIDS



- Water is best
- Herbal soups, buttermilk, coconut water

3. STAY ACTIVE EVERY DAY



- Walking, stretching, yoga or tai chi help stimulate bowel movement.

4. ESTABLISH A TOILET ROUTINE



- Fix a regular time daily, preferably after meals.
- Do not delay the urge.

5. PROPER TOILET POSTURE



- Sit with knees higher than hips (use a stool).
- Lean forward slightly.
- Relax and breathe.

6. ABDOMINAL MASSAGE



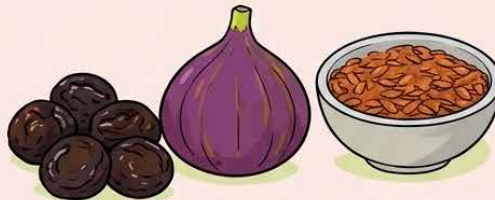
- Massage gently in clockwise direction.
- 5–10 minutes daily before bed or in the morning.

7. DEEP BREATHING & RELAXATION



- Reduces stress which can worsen constipation.
- Try deep breathing, meditation, or mindfulness.

8. USE NATURAL LAXATIVE FOODS (IF SUITABLE)



- Prunes, papaya, kiwi, soaked raisins
- Flaxseeds or chia seeds
- Psyllium husk (isabgol) with water

9. GOOD SLEEP HABITS



- Sleep well and on time.
- Poor sleep can affect bowel rhythm.

10. STAY CONSISTENT & PATIENT



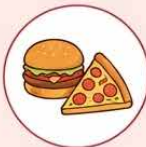
- Small daily habits bring big relief.
- Results take time – don't give up.

EXTRA TIPS

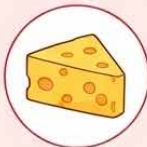
- ✓ Keep a food and bowel diary.
- ✓ Eat at the same time every day.
- ✓ Chew food well and eat slowly.
- ✓ Include probiotics like curd, buttermilk.



FOODS TO AVOID / LIMIT



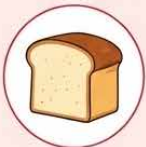
Processed foods



Too much cheese



Red meat



Refined flour foods



Excess tea, coffee & alcohol

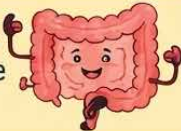
WHEN TO SEEK HELP

- No bowel movement for more than 3-4 days
- Severe bloating or pain
- Blood in stools
- Sudden change in bowel habits



A healthy gut supports a better life!

Small daily steps can keep you comfortable and confident.



**MOVE MORE
EAT SMART
STAY HYDRATED
BE REGULAR**



**YOU ARE
NOT ALONE.
WE ARE HERE
TO HELP YOU!**

Discuss with your
Neurologist / Physiotherapist / Dietitian



Chapter 2

Etiology



ETIOLOGY OF PARKINSON'S DISEASE

Parkinson's disease (PD) occurs due to a combination of genetic, environmental, and age-related factors that lead to damage and loss of dopamine-producing nerve cells in the brain.

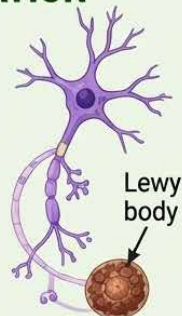
1. DEGENERATION OF DOPAMINERGIC NEURONS

- Loss of dopamine-producing nerve cells in a part of the brain called Substantia Nigra pars compacta.
- Leads to low dopamine levels in the striatum.
- Causes tremor, stiffness, slowness of movement and postural instability.



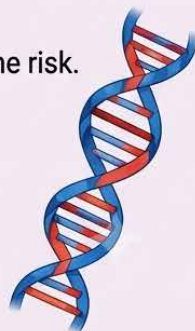
2. ALPHA-SYNUCLEIN AGGREGATION

- Abnormal folding of a protein called alpha-synuclein.
- Forms clumps called Lewy bodies inside nerve cells.
- These clumps damage the cells and lead to their death.



3. GENETIC FACTORS

- Changes (mutations) in certain genes increase the risk.
- Important genes:
 - **SNCA** (alpha-synuclein)
 - **LRRK2**
 - **PARK2** (Parkin)
 - **PINK1**
 - **DJ-1**
 - **GBA**
- More common in early-onset or family cases.



4. ENVIRONMENTAL FACTORS

- Exposure to certain toxins and chemicals increases risk.
- Examples:



Pesticides



Herbicides



Well water exposure



Heavy metals



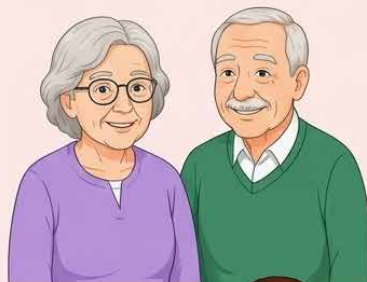
Industrial chemicals



Repeated head trauma

5. AGING

- Increasing age is the strongest risk factor.
- Age-related changes make brain cells more vulnerable to damage.



6. BOXING (RECURRENT HEAD INJURY)

- Repeated head trauma can cause chronic brain damage.
- May increase risk of developing Parkinson's disease.



7. PARKINSONISM IN CHILDREN

- Rare genetic and metabolic disorders can cause Parkinsonism in children.
- Causes include:
 - Dopa-responsive dystonia (DRD)
 - Juvenile Parkinsonism (PARK2, PINK1 mutations)
 - Mitochondrial disorders
 - Wilson's disease
 - Neurodegeneration with brain iron accumulation (NBIA)



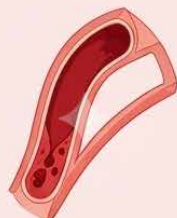
8. STROKE

- Damage to areas of the brain involved in movement control (basal ganglia) can lead to Parkinsonism.
- Symptoms may appear after a stroke.



9. VASCULAR PARKINSONISM

- Caused by multiple small vessel strokes or chronic reduced blood flow to the brain.
- Leads to damage in gait and movement pathways.
- More common in elderly with hypertension, diabetes, and vascular disease.



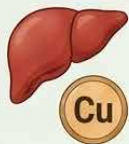


**EARLY AWARENESS, HEALTHY LIFESTYLE AND REGULAR MEDICAL CARE
CAN HELP MANAGE SYMPTOMS AND IMPROVE QUALITY OF LIFE.**



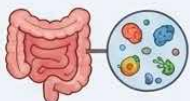
10. WILSON'S DISEASE

- Genetic disorder of copper metabolism.
- Copper accumulates in the brain (especially basal ganglia).
- Can cause Parkinsonson along with psychiatric changes.



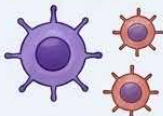
11. OTHER EMERGING / LATEST CONTRIBUTING FACTORS

GUT MICROBIOME DYSBIOSIS



- Imbalance in gut bacteria may trigger inflammation and synuclein aggregation.

CHRONIC INFLAMMATION



- Persistent low-grade inflammation may damage neurons over time.

MITOCHONDRIAL DYSFUNCTION



- Impaired energy production increases oxidative stress and neuronal vulnerability.

OXIDATIVE STRESS



- Excess free radicals damage proteins, lipids and DNA.

LIFESTYLE FACTORS



LIFESTYLE FACTORS

- Sedentary lifestyle, smoking, high fat diet out, poor sleep linked to higher risk.

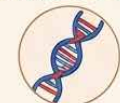
SLEEP DISORDERS



SLEEP DISORDERS

- REM sleep behavior and symptoms: Tremor, stiffness and poor sleep quality often precede PD.

FINAL OUTCOME - HOW PARKINSON'S DISEASE DEVELOPS



Genetic Susceptibility

+



Environmental Exposures

+



Aging & Other Risk Factors



**Alpha-Synuclein Aggregation,
Mitochondrial Dysfunction,
Oxidative Stress, Inflammation,
Other Mechanisms**



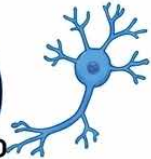
**Loss of Dopamine
Producing Neurons
in Substantia Nigra**



**Dopamine Deficiency
→ Symptoms:
Tremor, Stiffness,
Slowness, Postural Instability**



DRUG-INDUCED PARKINSONISM (DIP)

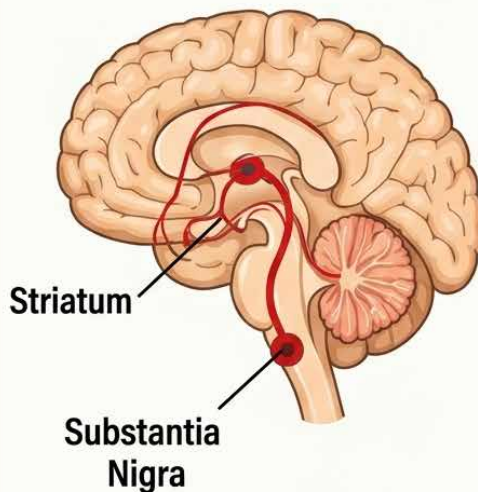


A REVERSIBLE PARKINSONIAN SYNDROME CAUSED BY DRUGS THAT BLOCK DOPAMINE ACTIVITY



DEFINITION

Drug-induced parkinsonism is a secondary parkinsonian syndrome caused by drugs that block or reduce dopamine activity, particularly in the nigrostriatal pathway.



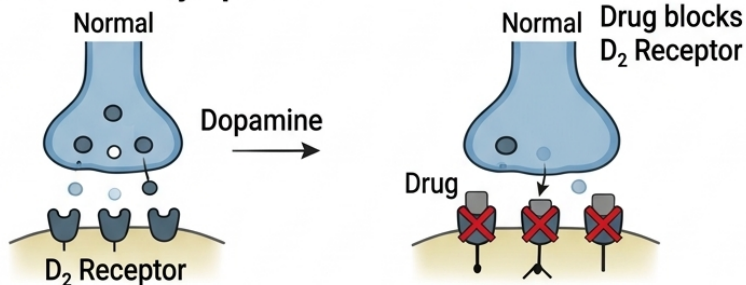
COMMON CAUSATIVE DRUGS

Drug/Class	Examples	Risk
Typical Antipsychotics	Haloperidol, Chlorpromazine, Fluphenazine, Trifluoperazine	★★★ High
Atypical Antipsychotics	Risperidone, Olanzapine, Amisulpride	★★ Moderate
Antiemetics / Prokinetics	Metoclopramide, Prochlorperazine, Domperidone	★★ Common
VMAT2 Inhibitors	Tetrabenazine, Deutetrabenazine, Valbenazine	★★ Moderate
Other	Valproate, Lithium, Calcium-channel blockers (Flunarizine, Cinnarizine)	★ Variable

MECHANISM

D₂ receptor blockade

- ↓ Dopamine activity in nigrostriatal pathway
- Relative cholinergic excess
- Parkinsonian symptoms



EASY MEMORY

D2 BLOCK  = **DOPAMINE DOWN** ↓ = **PARKINSONISM** 

CLINICAL FEATURES

Bradykinesia



Slowness of movement

Rigidity



Stiffness and resistance to movement

Tremor



Resting tremor ("pill-rolling" type)

Postural Instability



Reduced facial expressions

IMPORTANT CLUE

DIP is often **BILATERAL & SYMMETRIC**, whereas idiopathic Parkinson's disease is more commonly **ASYMMETRIC**.
(But not always)



Reduced facial expressions

Masked Face



Impaired balance and falls

Shuffling Gait



Short steps, dragging feet



MANAGEMENT

1



Identify and stop / reduce the offending drug if clinically possible.

2



If antipsychotic is essential → switch to a lower-EPS-risk agent such as **Quetiapine** or **Clozapine** (under specialist supervision).

3



Anticholinergics (Benztropine, Trihexyphenidyl) may help, particularly when symptoms are troublesome.

Avoid routine/prolonged use in older adults (cognitive & anticholinergic adverse effects).

4



Amantadine can be considered as an alternative, especially when anticholinergics are unsuitable.

5



Symptoms may take **weeks to months** to resolve after withdrawal; persistent symptoms can occasionally reveal Parkinson's disease.



Always review medication history in elderly patients with new parkinsonian symptoms.



Early detection leads to reversal!

GENETIC CAUSES OF PARKINSON'S DISEASE



OVERVIEW

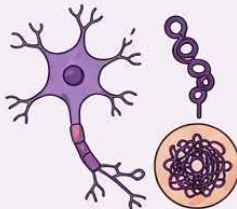
- About 10–15% of Parkinson's disease (PD) case directly linked to genetics.
- Remaining cases are sporadic, but even they carry genetic risk variants.

More than 90 genetic loci and multiple "PARK" genes are identified.

MAJOR PARKINSON'S DISEASE GENES

1

SNCA (Alpha-synuclein gene)

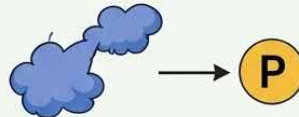


- Codes alpha-synuclein protein.
- Mutation → protein misfolding → Lewy bodies.

**Central to PD pathology
(protein aggregation)**

2

LRRK2 (Leucine-rich repeat kinase 2)

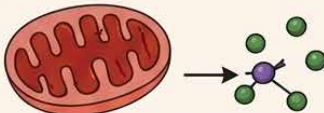


- Most common familial PD gene.
- Mutation → abnormal kinase activity → neuronal toxicity.
- Seen in:
 - 1–2% global PD cases
 - Higher in specific populations

**Important target for
precision medicine**

3

PRKN (Parkin gene) (PARK2)



- Most common cause of early-onset PD (<40–50 years).
- Function: Removes damaged mitochondria (mitophagy).

- Function: Removes damaged mitochondria (mitophagy).

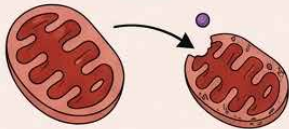
Mutation →

- ✗ Failure of protein clearance
- ✗ Mitochondrial damage

Leads to neuronal degeneration

4

PINK1



- Works with Parkin in mitochondrial quality control.
- Mutation → defective mitochondria → oxidative stress.

Defective mitochondria lead to oxidative stress and neuronal damage

5

DJ-1 (PARK7)



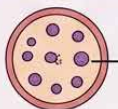
- Protects cells from oxidative stress.
- Mutation → increased neuronal vulnerability.

Loss of protection increases damage from oxidative stress

6

GBA1

(Glucocerebrosidase gene)



Lysosome

Lysosome

- Most common genetic risk factor.
- Present in 10–15% of sporadic PD.
- Function: Lysosomal enzyme → removes cellular waste.

Mutation →

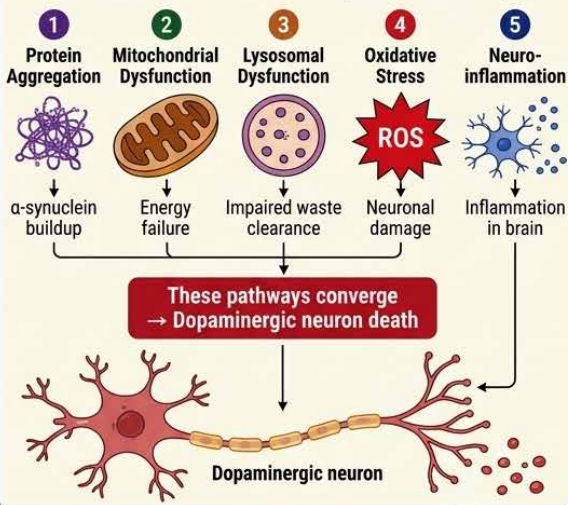
- ✗ Impaired protein clearance
- ✗ α-synuclein accumulation

Increases PD risk by 5–30 times

INHERITANCE PATTERNS

TYPE	GENES	PATTERN
Autosomal Dominant 	SNCA, LRRK2	One copy enough
Autosomal Recessive 		
Autosomal Recessive 	PRKN, PINK1, DJ-1	Both copies needed

PATHOGENIC MECHANISMS (GENETIC LEVEL)



KEY POINT

Genetic mutations disrupt multiple cellular pathways (protein handling, mitochondria, lysosomes, oxidative stress, inflammation) that ultimately lead to **loss of dopamine-producing neurons in the substantia nigra**, causing **Parkinson's disease**.

Chapter 3

Non-Pharmacological Treatment





MILD DAILY EXERCISES & ACTIVITIES FOR PARKINSON'S PATIENTS



Small daily steps, better life every day!

SYMPTOM

MILD EXERCISES / DAILY ACTIVITIES (Easy to Do at Home)

SLOWNESS & STIFFNESS



Morning Stretch

5-10 minutes gentle stretching of neck, arms, back and legs



Chair Exercises

Sit & lift legs one by one 10 times each



Hand Movements

Squeeze a soft ball 10-15 times with each hand

TREMOR



5 minutes,
slow and deep breathing
Relax and focus



5 minutes,
slow and deep
breathing

Weight Shifting

Stand and shift weight from one leg to another 10-15 times



Tap each finger on table one by one



Hold a glass of
water and bring
it to mouth slowly

Sit to Stand



Stand up from chair slowly 5-10 times

Side Steps



Take side steps left and right 10 steps each

POSTURAL INSTABILITY & BALANCE



Heel to Toe Walk



Walk in a straight line heel to toe for few steps

Stand on One Leg



Stand on one leg (with support) 5-10 seconds each leg



HYPHONIA (LOW VOICE)

Read Aloud



Read one page loudly every day

Speak Clearly



Practice slow, clear speech in daily talks

Singing / Humming



Sing your favorite song or hum for 5 minutes

Count Loudly



Count from 1-20 loudly every day



COGNITION & MOOD

Write One Page



Write one page diary or notes daily

Read One Page



Read one page of newspaper or book daily

Puzzles / Brain Games



Do simple puzzles, crossword or memory games

Gratitude Journal



Write 2-3 good things that happened today

GENERAL TIPS



Do exercises at the same time every day



Take rest if tired but don't sit for long



Drink enough water



Stay positive and patient



Involve family and friends



Follow your physiotherapist's advice



EXTRA DAILY HABITS THAT HELP



Eat healthy and on time



Sleep well at night



Go to bathroom regularly



Avoid smoking and alcohol



Spend some time in sunlight



CONSISTENT SMALL EFFORTS EVERY DAY CAN BRING BIG CHANGES.

Always consult your doctor or therapist for a personalized plan.





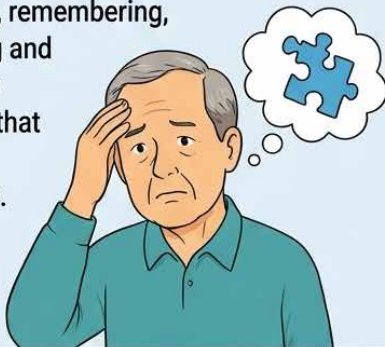
COGNITIVE IMPAIRMENT IN PARKINSON'S DISEASE



Understand • Recognize • Support • Stay Sharp

WHAT IS COGNITIVE IMPAIRMENT?

It refers to problems with thinking, remembering, planning and decision making that affect daily life.



COMMON COGNITIVE CHALLENGES IN PD



Memory problems



Difficulty in planning & organizing



Slowed thinking



Poor concentration



Trouble with visuospatial tasks

SIGNS TO WATCH FOR



Forgetting recent conversations or events



Difficulty managing appointments or medications



Trouble finding words or following conversations



Trouble finding words or following conversations



Difficulty in solving problems or making decisions



Confusion in new places or with familiar tasks



Confusion in new places or with familiar tasks



Loss of interest or withdrawal from social activities



Early identification and intervention can help maintain independence and quality of life.

NON PHARMACOLOGICAL TREATMENT MEASURES

1. COGNITIVE EXERCISES



- Crossword puzzles
- Sudoku, word games
- Memory games
- Brain training apps

2. REGULAR PHYSICAL ACTIVITY



- Improves blood flow to the brain
- Activities like walking, yoga, tai chi

3. ROUTINE & STRUCTURE



- Maintain a daily routine
- Use calendars, checklists and reminders

4. SOCIAL ENGAGEMENT



- Stay connected with family and friends
- Join support groups or community activities

5. HEALTHY DIET



- Eat brain-healthy foods (fruits, vegetables, whole grains, nuts, omega-3 rich foods)
- Stay hydrated

6. MENTAL STIMULATION



- Learn new skills
- Read books, listen to music
- Hobbies and creative activities

7. GOOD SLEEP HABITS



- 7-8 hours of quality sleep
- Maintain regular sleep and wake times
- Avoid screen time before bed

8. STRESS MANAGEMENT



- Practice relaxation techniques
- Deep breathing, meditation, mindfulness

9. ORIENTATION AIDS



- Use clocks, labels, and large print notes
- Keep important items in fixed places

10. CAREGIVER SUPPORT



- Educate caregivers
- Encourage patience and positive communication
- Take breaks and seek support

TIPS FOR PATIENTS & CAREGIVERS

- ✓ Stay mentally and physically active every day.
- ✓ Use memory aids (notes, alarms, reminders).
- ✓ Use positive and celebrate small achievements.

- ✓ Stay positive and celebrate.
- ✓ Work as a team- family & therapists.



TIPS FOR PATIENTS & CAREGIVERS

- ✓ Stay mentally and physically active every day.
- ✓ Break tasks into small, simple steps.
- ✓ Use memory aids (notes, alarms, reminders).
- ✓ Stay positive and celebrate small achievements.
- ✓ Work as a team - patients, family & therapists.



WHEN TO SEEK HELP

- ⚠ Noticeable worsening of memory or thinking
- ⚠ Difficulty in daily activities or independence
- ⚠ Confusion, agitation or behavior changes
- ⚠ Talk to your neurologist / rehab team



REMEMBER



A healthy brain works best with daily care, activity and support.



**KEEP YOUR BRAIN ACTIVE, STAY CONNECTED,
FOLLOW A ROUTINE & LIVE WELL EVERY DAY.**



**Small steps today,
better tomorrow!**

WEIGHT LOSS IN PARKINSON'S DISEASE

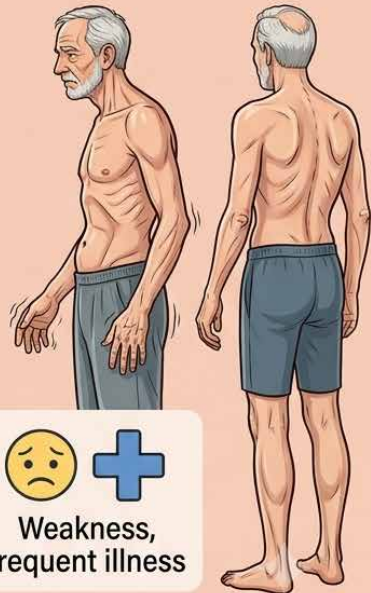
Why it Happens & How to Manage Naturally

WHY DOES WEIGHT LOSS HAPPEN?

- Reduced appetite
- Difficulty in chewing / swallowing
- Slower stomach emptying
- Increased energy use due to tremors & stiffness
- Depression / anxiety
- Loss of smell (affects taste)
- Constipation



SIGNS TO WATCH



Always consult your healthcare team for personalized care.

NON PHARMACOLOGICAL TREATMENT MEASURES

1. EAT SMALL FREQUENT MEALS



Have 5-6 small meals through the day.
Do not skip meals.

2. NUTRITION DENSE FOODS



Choose high calorie, high protein foods
Include healthy fats, and fruits.

3. PROTEIN IN EVERY MEAL



Include dal, eggs,
fish, include
chicken, paneer,
curd, milunes,
milk, nuts.

4. HYDRATE WELL



Drink enough fluids
through the day.
Dehydration
reduces your
appetite.

5. MAKE EATING EASIER



utensils. Take your time.

Eat in a calm
environment,
throughout the day
use big, easy -hold
Take utensils.

6. IMPROVE SWALLOWING



Follow swallowing
exercises taught
by therapist.
Take small bites and
sips.

7. REGULAR PHYSICAL ACTIVITY



Walking, stretching,
yoga or high resistance
exercises help build
muscle & appetite.

8. ORAL & DENTAL CARE



Keep teeth & mouth
healthy for better
chewing & eating.

9. MANAGE BOWEL REGULARITY



Eat fiber rich foods
(fruits, vegetables,
whole grains) and
drink water.

10. SOCIAL MENTAL WELL-BEING



Eat with family or friends
Stay socially active.
Manage stress & anxiety.

EXTRA TIPS



Use **healthy snacks** like nuts, smoothies, banana shake.



Add natural **calorie boosters** like ghee, butter, olive oil, nut butter.



Maintain a **food diary** to track intake.

Monitor weight weekly.



REMEMBER

Healthy nutrition + Regular activity + Positive mindset
= **Better strength, weight & quality of life**



**CONSULT YOUR DOCTOR,
DIETITIAN &
PHYSIOTHERAPIST
FOR PERSONALIZED GUIDANCE**

GOOD NUTRITION FUELS YOUR BODY, YOUR MIND & YOUR MOVEMENT.

Stay Active, Stay Strong!



POSTURAL INSTABILITY IN PARKINSON'S DISEASE

Difficulty in maintaining balance and posture increases the risk of falls.

HOW IT AFFECTS



Unsteady while standing or walking



Loss of balance easily, especially while turning



Frequent falls



Fear of falling and reduced confidence



**FALLS CAN CAUSE SERIOUS INJURIES.
BALANCE CAN BE IMPROVED WITH PRACTICE!**

SAFE LIVING TIPS



Use handrails



Keep home well lit



Remove loose rugs & clutter



Use stable chairs



Wear non-slip footwear



Use walking cane

NON PHARMACOLOGICAL TREATMENT MEASURES

Regular practice improves balance, posture and reduces fall risk.



1. BALANCE TRAINING

- Practice standing with feet apart
- Progress to standing with feet together (eyes open, then closed)

Goal: Improve stability



2. WEIGHT SHIFTING

- Shift weight from one leg to other
- Practice in all directions (front, back, sides)

Goal: Improve weight transfer



3. STRENGTH TRAINING

- Strengthen legs, hips and core muscles
- Sit to stand practice
- Use light resistance (band or weight)

Goal: Stronger muscles for better balance



4. GAIT & POSTURE TRAINING

- Walk with upright posture
- Take big steps
- Swing your arms
- Practice turning slowly

Goal: Improve walking and turning safely

PREVENTING FALLS: YOUR BALANCE JOURNEY



5. TAI CHI / YOGA

- Improves balance, flexibility, and body awareness
- Reduces risk of falls

Goal: Better balance and coordination

6. FUNCTIONAL TRAINING

- Practice daily activities like stepping up, reaching, turning
- Use support when needed

Goal: Improve real-life movements



7. DUAL TASK TRAINING

- Practice simple tasks while walking (e.g., counting, carrying a cup)
- Improves focus and balance together

Goal: Better balance in daily life



8. RELAXATION & BREATHING

- Deep breathing reduces stress and muscle tension
- Improves focus and balance

Goal: Calm mind, steady body

HABITS FOR SUCCESS



BE CONSISTENT

Practice regularly for better results.



MAKE IT A DAILY ROUTINE

10-20 minutes daily can make a big difference.



INVOLVE FAMILY

Family support and a safe environment help you stay confident and active.



YOU CAN IMPROVE YOUR BALANCE!



Stay Active,
Stay Safe

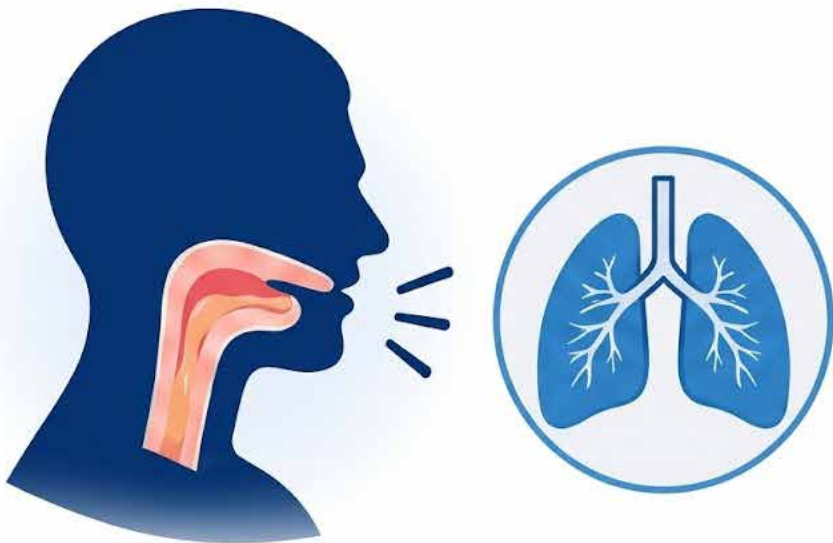


Stay Positive,
Stay Independent

**TOGETHER, WE CAN PREVENT FALLS
AND IMPROVE QUALITY OF LIFE.**

Always consult your physiotherapist/doctor for a personalized exercise plan.

THICK PHLEGM IN PARKINSON'S DISEASE



Many people with PD
struggle with thick phlegm
or mucus in the throat.

**Small daily changes can
make a big difference!**

✓ DO

DRINK MORE WATER



Helps thin
the phlegm
and makes
it easier
to clear.

**TRY CARBONATED
BEVERAGES**



May help loosen
thick mucus.

LEMON / GREEN TEA



Can help thin phlegm
and soothe the throat.



**DRINK REGULARLY
THROUGHOUT THE DAY**

✗ AVOID

DAIRY PRODUCTS



Milk and dairy
products can make
phlegm thicker some
people.

**DRINK REGULARLY
THROUGHOUT THE DAY**



Stay
hydrated



Clear
phlegm



Breathe
easier

MANAGING DROOLING IN PARKINSON'S DISEASE



Drooling does not always mean that your body is making too much saliva. In Parkinson's disease, you may **swallow less often** or less automatically.



1 SIP & SWALLOW

Take small, **frequent sips of water throughout the day**. This can help you swallow more often.



Ice chips may also help some people, if they are safe for you.



2 POSTURE & LIPS

- ✓ Head upright
- ✓ Chin parallel to the floor
- ✓ Lips gently closed



When you are not eating or talking, remember to swallow your saliva regularly.

3 REDUCE SUGAR



Sugar tends to produce more saliva in the mouth.

Reduce sweets, chocolates, biscuits, sweetened tea/coffee, soft drinks and packaged juices.

4 SUGAR-FREE LOZENGES



Sucking on sugar-free lozenges may help some people by encouraging swallowing.



Choose sugarless lozenges and avoid sour or strongly flavoured ones as they may increase saliva. Ask your SLP if this is suitable for you.

5 KEEP A CLOTH HANDY



Use a soft handkerchief or wrist sweatband to discreetly your mouth when needed.



A simple trick that can help you feel confident in any situation.

PARKINSON'S DISEASE FALL PREVENTION IN ADL ACTIVITIES



**OCCUPATIONAL THERAPY SUPPORTS SAFETY,
INDEPENDENCE & QUALITY OF LIFE**

People with Parkinson's may have balance, posture, movement and reaction time difficulties.

Simple strategies in daily activities can prevent falls.

FALL RISK FACTORS IN PARKINSON'S



**Postural
instability**



**Shuffling
gait &
freezing**



**Slowed
reaction
time**



**Muscle
stiffness &
weakness**



**Visual
difficulties**



**Cognitive
changes**



GOAL OF OT

- Reduce fall risk
- Promote safe independence
- Improve mobility & balance
- Adapt environment & activities
- Educate patient & caregivers

FALL PREVENTION TIPS IN ADL ACTIVITIES



1. TRANSFERS (BED / CHAIR / TOILET)

- Sit at the edge. Pause.
- Feet flat, hip-width apart.
- Push from surface, not pull.
- Use armrests if available.
- Take your time.



2. WALKING

- Walk slowly & steadily.
- Take bigger steps.
- Look ahead, not down.
- Use assistive device if advised.
- Avoid distractions.



3. TURNING

- Turn in small steps.
- Avoid sudden turns.
- Pause, then turn.
- Keep feet moving.



4. BATHING

- Use non-slip mat.
- Use grab bars.
- Shower chair for safety.
- Keep soap & toiletries within reach.



5. DRESSING

- Sit while dressing.
- Use stable chair.
- Wear easy fasten clothes.
- Avoid bending too low.

6. TOILETING



- Use raised toilet seat if needed.
- Install grab bars.
- Keep path clear.
- Take time, don't rush.

7. EATING



- Sit upright with good back support.
- Use weighted utensils if tremors.
- Take small bites.
- Keep items within easy reach.

8. HOUSEHOLD ACTIVITIES



- Avoid multitasking.
- Keep commonly used items within reach.
- Use long-handled tools.
- Take rest breaks.

9. MEDICATION ADHERENCE



- Take medication on time.
- "ON" time = Better movement & balance.
- Set alarms / reminders.
- Do not stop medication suddenly.

10. ENVIRONMENT SAFETY



- Remove loose rugs.
- Keep floors dry.
- Ensure good lighting.
- Clear clutter & wires.
- Use night lights.

EXERCISE REGULARLY

Improve strength, balance & flexibility



Consult your Occupational Therapist
for a personalized plan.



WHEN TO SEEK HELP?

- History of falls
- Near falls or unsteadiness
- Difficulty in daily activities
- Changes in movement
- Caregiver concern



**EARLY INTERVENTION
PREVENTS FALLS!**



CAREGIVER TIPS

- Be patient & supportive.
- Encourage safe mobility.
- Ensure environment safety.
- Accompany during high-risk activities.
- Communicate with the therapy team.

**SAFE TODAY, STRONG TOMORROW –
TOGETHER WE CAN PREVENT FALLS**

Consult your Occupational Therapist for
assessment, training & adaptive strategies.



OCCUPATIONAL THERAPY
ENABLING INDEPENDENCE
EMPOWERING LIFE

DUAL-TASK TRAINING IN PARKINSON'S DISEASE

Doing two things at the same time to improve movement, balance and daily life.



WHAT IS DUAL-TASK TRAINING?

Dual-task training means performing a physical task (like walking or standing) together with a mental or cognitive task (like counting, talking or remembering). It helps the brain and body work better together.



WHY IS IT IMPORTANT?

- ✓ People with Parkinson's may find it hard to do two things together.
- ✓ It improves balance, walking, thinking and concentration.
- ✓ It helps in daily activities like walking while talking, carrying things while thinking, etc.
- ✓ It can reduce the risk of falls and improve independence.



WHEN DO WE NEED IT?

This is crucial for managing the complex interplay of symptoms in Parkinson's.

It helps the brain and body work better together.

You may face difficulty when you do two things together, like:

- Talking while walking
- Counting while walking
- Carrying things while thinking
- Walking in a busy environment
- Remembering while moving

EXAMPLES OF DUAL-TASK ACTIVITIES

1 WALK & TALK



Walk at a comfortable pace while talking to someone.

2 WALK & COUNT



Walk while counting forward or backward (e.g., 100 to 1).

3 WALK & CARRY



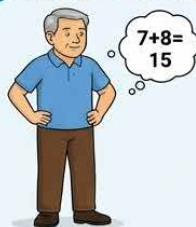
Walk while carrying a glass of water or a light object safely.

4 WALK & NAME



Walk and name fruits, animals, or things starting from a letter.

5 STAND & THINK



Stand and solve simple maths, remember words or dates.

6 STEP & CLAP



Step on a step or mark and clap, tap or say something.

HOW TO PRACTICE?



Practice 10-20 minutes, 5 days a week.



Do with the guidance of a physiotherapist or caregiver.



Use support if needed (chair, rail, wall).



Practice in different environments (home, garden, outside).



Track your progress and challenge yourself gradually.



TIPS FOR SUCCESS



Start with easy tasks and build up gradually.



Practice in a safe place, with support if needed.



Focus on both tasks. Do not rush.



Be patient and practice regularly.



Make it part of your daily routine.



SAFETY FIRST



Always have someone with you if needed.



Wear comfortable, non-slip footwear.



Keep the area clean and free from obstacles.



Ensure good lighting.



Stop if you feel tired, dizzy or uncomfortable.



**PRACTICE TODAY
FOR A BETTER
TOMORROW!**



**MOVE WITH FOCUS.
THINK WITH CONFIDENCE.
LIVE INDEPENDENTLY!**



Small steps. Strong focus. Better balance. Better life.

Stay Active. Stay Safe. Stay Independent.



➤ EAT SAFE, SWALLOW SAFE ➤

Simple Tips for Easier Eating & Swallowing

Small steps can make a BIG difference!





1. SIT UPRIGHT

Always sit upright (preferably in a chair) when eating, drinking and taking pills.

If you are able, sit upright for 30–60 minutes after eating.



2. CHEW WELL

Chew small amounts of food well and swallow it all before eating more.



3. PUT YOUR FORK DOWN

Put your fork down between bites to slow yourself down.



4. SWALLOW TWICE

If food feels stuck, swallow multiple times (at least twice) after every bite.



5. SMALL SIPS

Take small sips when drinking. Take one sip at a time. Do not gulp or tip your head backward when drinking.



6. USE STRAWS WISELY

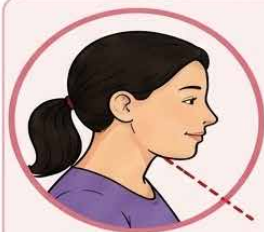
Straws are useful when you have severe tremors or dyskinesias but can put the neck in bent, too far back into the mouth, too quickly before the airway has a chance to close.

Try to keep the straw only at the front of your tongue.

FOOD MATTERS



The types of foods you eat can affect chewing and swallowing.



7. CHIN POSITION

Keep your chin slightly down or at least parallel to the table.

Avoid lifting your chin, especially when drinking the last bit of liquid – it increases the risk of fluid going into the lungs.

Use cups or bottles with lids or removable caps instead of nozzle-type bottles.



8. DON'T TALK WITH FOOD

Don't talk with food in your mouth.



9. MINIMIZE DISTRACTIONS

Minimize distractions during meals. Distractions may cause you to be less aware of your chewing and swallowing and may increase the risk of choking.



10. SMALL, FREQUENT MEALS

Consider eating several small meals during the day. This may help reduce fatigue during eating that occurs because of difficulty swallowing or difficulty feeding yourself.



11. CHECK YOUR MOUTH

Be aware of food sticking in your mouth. Use your tongue to help clear food. Make sure that your mouth is clear of all food before taking additional bites.



12. CHOOSE FOODS WISELY

If you have difficulty chewing or clearing food from your mouth, choose soft, moist foods (e.g. soups, stews, mashed potatoes). Avoid dry or crunchy foods that feel hard to eat. Use caution with foods that have both a liquid and solid component (e.g. pieces in liquid portion).

Chapter 4

Pharmacological Treatment



THE JOURNEY OF PARKINSON & DOPA

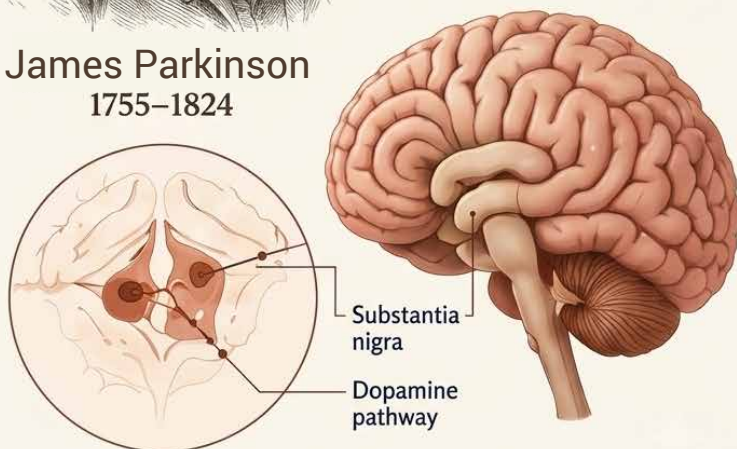
*From shaking palsy to hope in motion – the discovery
that changed millions of lives.*

**“I first became acquainted with this remarkable affection
in the autumn of the year 1817.” – Dr. James Parkinson**



James Parkinson
1755–1824

Two centuries of observation,
curiosity and innovation
transformed Parkinson’s
disease (PD) from a mysterious
“shaking palsy” into a manageable
neurological disorder – and
gave the world L-DOPA.



FROM DESCRIPTION TO DIAGNOSIS



1817 Dr. James Parkinson publishes "An Essay on the Shaking Palsy" – the first clinical description.



1860s–1890s Jean-Martin Charcot and others further characterize the disease, the term "Parkinson's disease" is adopted.



1919 Konstantin Tretiakoff describes loss of pigmented neurons in the Substantia nigra.



1950s Discovery of dopamine (DA) as a neurotransmitter by Arvid Carlsson.



1960s Understanding of the dopaminergic deficit in PD opens the door for DOPA therapy.

A TIMELINE OF PARKINSON'S DISEASE & L-DOPA

DISCOVERY & EARLY DEVELOPMENT OF L-DOPA



1910
George Barger & James Ewens synthesize DOPA while studying melanin chemistry.



1957
Arvid Carlsson shows that DOPA increases dopamine levels in the brain.



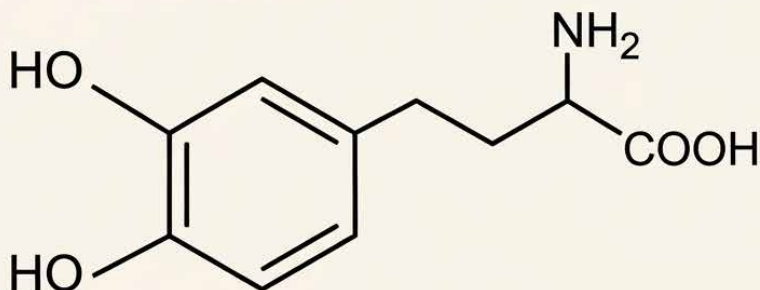
1960
Birgitta & Arvid Carlsson demonstrate that DOPA improves movement in PD patients.



1961
First clinical use of L-DOPA in PD patients – remarkable improvement in rigidity and akinesia.

WHAT IS L-DOPA?

L-3,4-Dihydroxyphenylalanine (L-DOPA) is a natural amino acid and the immediate precursor of dopamine.



Chemical formula: $C_9H_{11}NO_4$

FROM BENCH TO BOTTLE



Chemical Synthesis

Levodopa is synthesized industrially



Purification & Crystallization

Ensures high purity and stability



Formulation

Tablets/
Capsules with
Carbidopa or
Benserazide to
prevent peripheral
degradation

L-DOPA IN PATIENTS: HOW LIFE WITH PARKINSON'S HAS EVOLVED OVER THE DECADES



1960s The Beginning of Hope

- Severe disability, frequent falls, dependence.
- Limited treatment options – rest, physiotherapy, unpredictable surgery.
- L-DOPA trials begin – first 'miracle' improvements seen.



1970s Relief Arrives

- L-DOPA becomes widely available.
- Dramatic improvement in movement and daily activities.
- "On-off" fluctuations and dyskinesias start to emerge.



1980s

Learning to Live Better

- Dose adjustments and timing strategies improve control.
- Addition of COMT inhibitors & MAO-B inhibitors prolong 'on' time.



1990s

More Options, More Control

- New formulations (Sinemet), controlled release.
- Better management of fluctuations.
- Improved understanding of the disease.



2000s

Personalized Therapy

- Combination therapies become standard, options.
- Apomorphine and advanced drug delivery
- Focus on quality of life and independence.



2010s

Technology & Precision

- Duodopa® intestinal gel
- Deep brain stimulation complements L-DOPA.
- Wearables and apps help track symptoms.



2020s & Beyond

Empowering Lives

- Earlier diagnosis and neuroprotection research.
- Continuous drug delivery, digital health & telecare.
- Aim: long, active and dignified lives.



"L-DOPA didn't just improve movement — it gave back independence, dignity and hope." — A patient's voice

THE ROLE OF L-DOPA TODAY

- ✓ Most effective and gold standard therapy for symptomatic relief in PD.
- ✓ Unmatched improvement in rigidity, bradykinesia and overall quality of life.
- ✓ Long-term use associated with motor complications (dyskinesias, fluctuations) – managed with individualized strategies.
- ✓ Used in combination with other drug classes for optimal outcomes.
- ✓ Still the cornerstone of treatment algorithms worldwide.



RECENT ADVANCES & EMERGING FRONTIERS



New formulations:
Extended release,
intestinal gel (LCIG),
inhaled L-DOPA.



Adjunct therapies:
COMT inhibitors,
MAO-B inhibitors,
dopamine agonists,
MAO-B inhibitors.



**Personalized medicine
& pharmacogenomics**
for better response &
reduced side effects.



**Device-aided
therapies:** DBS,
Focused Ultrasound,
closed-loop systems.

*“Science discovered
the molecule.
Compassion gave it
purpose. L-DOPA gave
millions the chance
to live again.”*



KEY TAKEAWAY

From a careful observation in 1817 to modern therapeutic innovations, the story of L-DOPA is a testament to the power of curiosity, collaboration and care.

It remains the heart of hope for millions of people living with Parkinson's disease across the world.



**TWO CENTURIES
OF SCIENCE.**

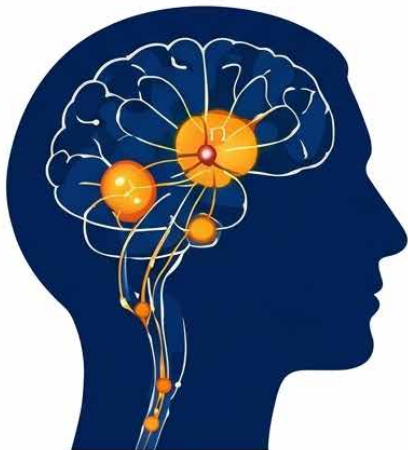


**MILLIONS OF LIVES
TRANSFORMED.**



**THE JOURNEY
CONTINUES...**

IMPULSE CONTROL DISORDERS (ICD) IN PARKINSON'S DISEASE



**ICD = Inability
to resist
strong urges for
rewarding
activities.**

MEDICATIONS THAT CAUSE ICD

HIGH RISK (MOST COMMON)



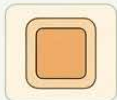
PRAMIPEXOLE

(Dopamine agonist)



ROPINIROLE

(Dopamine agonist)



ROTIGOTINE PATCH

(Dopamine agonist)

LOWER RISK

- LEVODOPA / SYNDOPA
- MAO-B INHIBITORS
- AMANTADINE
- APOMORPHINE (SOME CASES)

SYMPTOMS RELATED TO ADL & IADL

IADL (INSTRUMENTAL ADL)



GAMBLING



COMPULSIVE SHOPPING



EXCESSIVE ONLINE USE



POOR MONEY MANAGEMENT



**BINGE /
COMPULSIVE
EATING**



HYPERSEXUALITY



**PUNDING
(REPETITIVE ACT.)**



**RELATIONSHIP /
SOCIAL
PROBLEMS**

ADL (ACTIVITIES OF DAILY LIVING)



**IRREGULAR
EATING**



**NEGLECT OF
HYGIENE**



**IRREGULAR
DRESSING**



**IRREGULAR
SLEEP ROUTINE**

RISK FACTORS



LONGER DURATION
OF PARKINSON'S



HIGHER DOSE OF
DOPAMINERGIC
MEDICATIONS



YOUNGER
AGE
AT ONSET



MALE
GENDER



PERSONAL /
IMPULSIVE
BEHAVIOR



DISORDERS
(DEPRESSION,
ANXIETY)



LACK OF SOCIAL
SUPPORT

OT INTERVENTION – COMPONENTS

1

ASSESSMENT



Assess behavior, triggers, impact on
ADL, IADL, safety, finances, relationships.

2

ROUTINE STRUCTURING



Set daily schedule, use reminders,
checklists.

3

ENVIRONMENT MODIFICATION



Limit access to triggers, set spending
limits, caregiver supervision.

4

ALTERNATIVE ACTIVITIES



Provide meaningful, rewarding
occupations (hobbies, exercise,
volunteering).

5

EDUCATION & CAREGIVER



Educate patient & caregiver, coping
strategies, support system.

6

COLLABORATION & REFERRAL



Communicate with
neurologist/psychiatrist for
medication review and management.

OT INTERVENTION – ONE EXAMPLE

PRESENTING ISSUE



Compulsive
online shopping

INTERVENTION

- Block shopping websites/apps
- Set monthly spending limit
- Daily routine & meaningful activities



EXAMPLE



Patient replaced online shopping with gardening, puzzle and daily walk.

OUTCOME



- Reduced urges
- Better money management
- Improved IADL participation

WHO TO COLLABORATE



- Neurologist
- Psychiatrist /
- Psychologist
- Caregiver / Family



GOAL:

GOAL:



SAFE PARTICIPATION



INDEPENDENCE



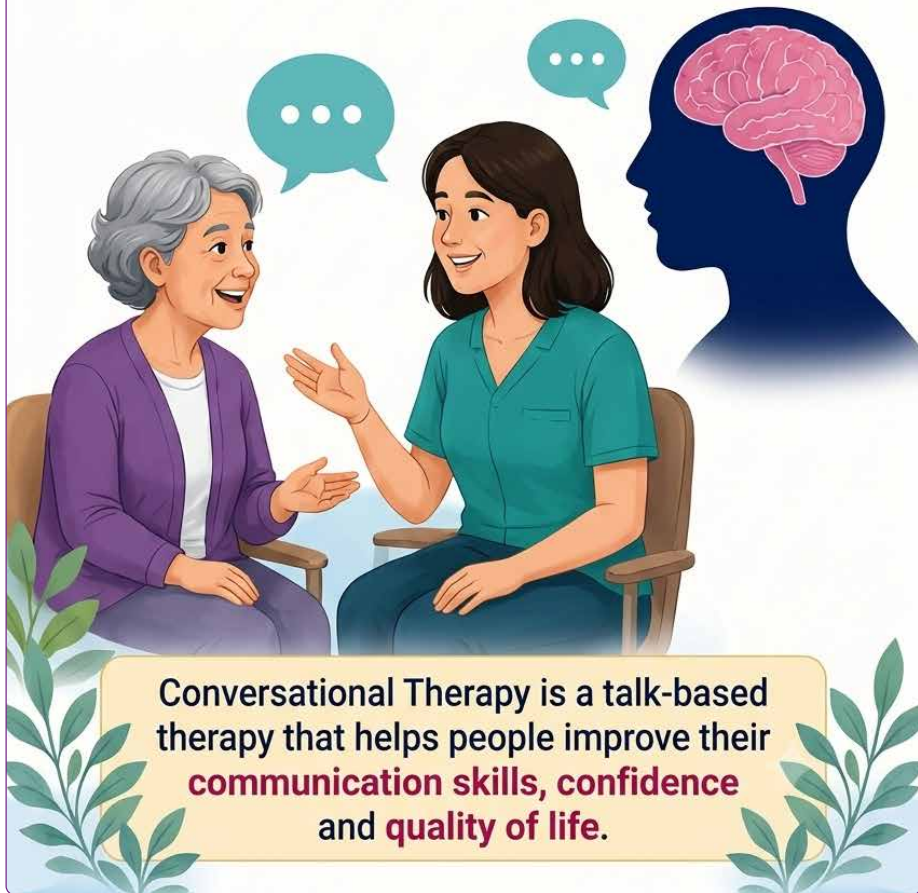
BETTER QUALITY OF LIFE

CONVERSATIONAL THERAPY

Stronger Conversations, Better Connections,

Better Life! 

Conversations heal, connect and empower.



Conversational Therapy is a talk-based therapy that helps people improve their **communication skills, confidence and quality of life.**

Benefits of Communication and Expressive Activities



**Builds Confidence in
speaking and expressing**



**Strengthens
Relationships
with loved ones**



**Improves
Speech, Voice
& Expression**



**Supports
Thinking,
Memory & Focus**



**Improves
Mood and
Emotional Well-being**

WHAT IS CONVERSATIONAL THERAPY?

It is a personalized talk therapy with a trained therapist that helps you:

- ✓ Speak more clearly
- ✓ Find the right words
- ✓ Understand and express better
- ✓ Listen and respond with confidence
- ✓ Handle daily conversations with ease

♥ It's not just about talking, it's about being understood and connecting better.

HOW DOES IT WORK?



♥ A safe space. A listening ear. A better you.

WHAT CAN IT HELP WITH?



**Speaking clearly
and fluently**



**Finding the right
words**



**Listening and
understanding better**



**Social skills and
starting conversations**



**Managing emotions
and stress**



**Memory, attention
and thinking skills**



**Communication after
illness or injury
(stroke, brain injury
etc.)**

WHO CAN BENEFIT?



Older Adults

Improve memory,
word finding and
social connection



Children

Build speech,
language and
confidence



Adults

Improve
communication at
work and in daily
life



People with Stress, Anxiety or Low Confidence

Express better,
feel better



People recovering from Stroke, Brain Injury or Illness

Regain communication
skills and independence

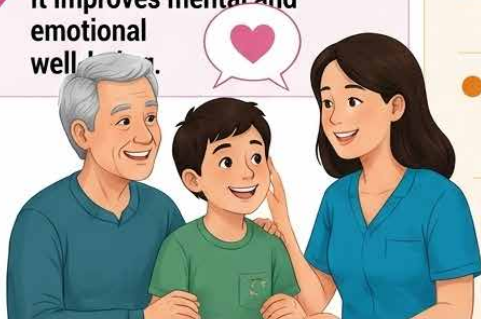
WHAT HAPPENS IN A SESSION?

- ✓ Friendly conversation
- ✓ Activities and exercises made just for you
- ✓ Tips and strategies for daily life
- ✓ Encouragement and positive support



WHY IS IT IMPORTANT?

- ✓ Good communication improves relationships.
- ✓ It builds confidence and independence.
- ✓ It reduces frustration and isolation.
- ✓ It improves mental and emotional well-being.



TIPS FOR BETTER CONVERSATION EVERY DAY

● Speak slowly and clearly



● Listen fully without interrupting



● Ask questions and show interest



● Practice new words and phrases



● Stay positive and be patient with yourself



Every conversation is a step towards a better you.
Speak your heart. Share your thoughts. Stay connected.

We're here to help you every step of the way!



Talk
Open up



Connect
Build bonds



Learn
New skills



Grow
Every day



Thrive
Live better

Your voice matters.
Your story matters.
You matter.



Chapter 5

Surgical





DEEP BRAIN STIMULATION (DBS)

Precision Stimulation. Better Outcomes.

*Precision Stimulation.
Butcomes. Improved Lives.*

DBS is an established, evidence-based neurosurgical therapy that delivers targeted electrical stimulation to specific brain circuits to modulate abnormal neural activity and improve symptoms in carefully selected patients.



A JOURNEY OF INNOVATION



1947

First attempts at evidence-based neurosurgical therapy that stereotactic lesions for movement neuronal disorders



1987

Introduction of chronic DBS in humans



1993

FDA approval for Essential Tremor



2002

FDA approval for Parkinson's disease



2010+

Expansion to multiple neurological and psychiatric disorders



Today

Ongoing advances in technology, targets in derrifications and: and indications

WHAT IS DBS?



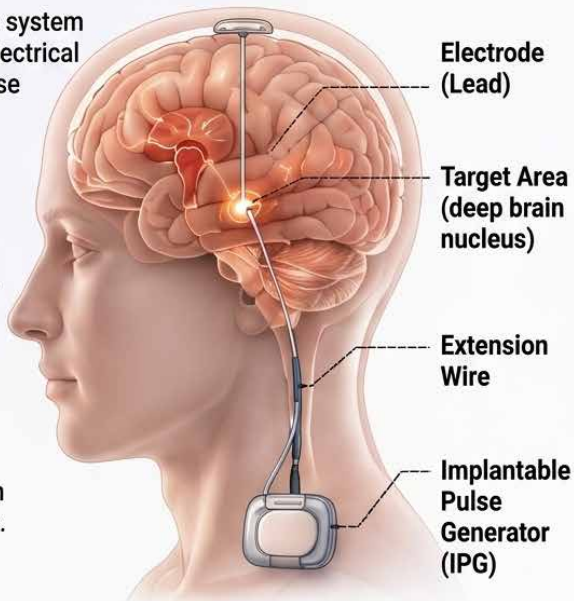
An implantable system delivers mild electrical pulses to precise brain areas.



It modulates dysfunctional neural circuits responsible for symptoms.



Stimulation is adjustable and reversible – tailored to each patient's needs.



WHEN TO CONSIDER DBS?

- ✓ Medication-refractory symptoms persisting despite optimal therapy
- ✓ Disabling motor or non-motor symptoms affecting quality of life
- ✓ Good overall health and realistic expectations
- ✓ Psychological stability and strong social support
- ✓ No untreated neurological or psychiatric disorder
- ✓ Informed consent and commitment for long-term follow-up



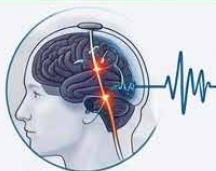
TYPES OF DBS

1. CONVENTIONAL DBS



- Continuous stimulation at a constant amplitude, pulse width and frequency.
- Most widely used approach.
- Effective for a broad range of movement and neuropsychiatric disorders.

2. ADAPTIVE DBS



- Stimulation is automatically adjusted in real time based on detected brain signals (biomarkers).
- Delivers stimulation only when needed.
- May improve efficacy and reduce side effects, preserve battery life.

3. FOCUSED USG-DBS



- Incisionless, frame-free procedure using focused ultrasound guided by MRI.
- No implanted electrodes.
- Lesioning effect to create a precise target.
- Currently approved for essential tremor in selected patients.

HOW DBS IS PERFORMED



1. Evaluation

- Detailed clinical, imaging and neuropsychological assessment



2. Surgical Planning

- Target selection
- Trajectory planning
- Frame-based or frameless stereotaxy



3. Lead Implantation

- Awake procedure for mapping (when possible)
- Microelectrode recordings
- Test stimulation



4. Trial & Programming

- Initial programming
- Parameter optimization
- Symptom assessment



5. Permanent System

- Implant IPG (usually under the collarbone)
- Final programming & follow-up

DBS is adjustable – settings can be changed non-invasively to maximize benefit and minimize side effects.

INDICATIONS - COMMON TARGETS



- Parkinson's disease – STN, GPi
- Essential tremor – Vim
- Dystonia – GPi
- Epilepsy – ANT, other targets
- Obsessive-compulsive disorder – NAC
- Treatment-resistant depression – MFB
- Chronic pain – Various targets

STN



Parkinson's disease

GPi



Dystonia/
Parkinson's

Vim



Essential Tremor

NAC



OCD,
Addiction

THE BENEFITS

- ✓ Significant improvement in motor and non-motor symptoms
- ✓ Reduces medication burden
- ✓ Improves quality of life, functioning and independence
- ✓ Adjustable, reversible and upgradeable
- ✓ Cost-effective over the long term in appropriate patients

POTENTIAL RISKS & LIMITATIONS

- ✗ Surgical risks: hemorrhage, infection, hardware complications
- ✗ Stimulation-related side effects: speech changes, balance issues, paresthesia, mood changes
- ✗ Battery replacements required
- ✗ Benefit may decrease over time in some patients
- ✗ Not a cure – symptoms may persist or progress



POSITIVES & NEGATIVES

+ POSITIVES

- ✓ Proven efficacy for selected disorders
- ✓ Personalized, titratable therapy
- ✓ Reversible and adjustable
- ✓ Improves daily functioning and quality of life
- ✓ Can treat bilaterally
- ✓ Adjunct or alternative to medications

– NEGATIVES

- ✗ Invasive surgical procedure
- ✗ Possible side effects and stimulation-related issues
- ✗ Requires maintenance and programming
- ✗ Battery replacements and hardware costs
- ✗ Not suitable for all patients

RECENT ADVANCES



Directional leads – more precise targeting, reducing side effects



Closed-loop & adaptive systems – responsive stimulation based on brain signals



Rechargeable IPGs – longer battery life, fewer replacements



Remote programming & telemetry monitoring



Multiparametric sensing – local field potentials (LFPs), beta-band monitoring

THE FUTURE OF DBS



Smarter closed-loop systems with AI-driven personalization



Minimally invasive & incisionless approaches (focused ultrasound, robot-assisted DBS)



Novel targets & network-based modulation



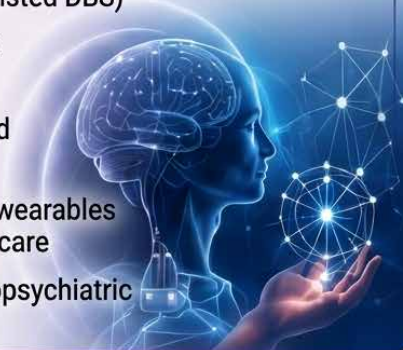
Gene & cell therapies combined with DBS



Integration with digital health, wearables & telemedicine for continuous care



Expanding indications to neuropsychiatric and pain disorders



DBS is a collaboration between patient, clinician and technology.

Careful selection, expert implantation and lifelong follow-up unlock the full potential of DBS to restore function, reduce suffering and improve lives.



Evidence-based



Individualized



Innovative



Compassionate



Impactful

*Changing circuits.
Changing lives.*



Chapter 6

Clinical Psychology





Care for the Caregiver

**You can't pour
from an empty cup.**

Taking care of
yourself helps you
care better for
your loved one.

You
matter
too.



A WELL-CARED CAREGIVER = STRONGER SUPPORT

CAREGIVER SELF-CARE GUIDE



RECOGNIZE YOUR STRESS

It's normal to feel stressed, tired, your mind, worried or overwhelmed.
Your feelings are valid.



TAKE BREAKS WITHOUT GUILT

Short breaks refresh your mind body.
Even 15 in yourself makes a difference.
Rest not selfish.



ASK FOR HELP AND ACCEPT IT

You don't have to do alone. Let family, friends or professionals support you.
Asking for help is a sign of strength.



SET BOUNDARIES THAT PROTECT YOU

It's okay to say no. Boundaries protect.
Your well-being matters.



KEEP YOUR OWN IDENTITY

Nurture your hobbies, interests, relationships and goals.
You are more than a caregiver.
You matter too.

SIMPLE DAILY SELF-CARE IDEAS



Sleep well and eat well.
Good sleep and nutrition help you cope better.



Move your body.
A little movement reduces stress and boosts mood.



Practice relaxation.
Deep breathing, meditation or prayer can calm your mind.



Stay connected.
Talk to someone who listens and understands.



Celebrate small wins.
Every day, acknowledge what you did well.

SIGNS YOU MAY NEED EXTRA SUPPORT



Feeling sad, anxious or irritable most of the time



Constant fatigue or feeling physically unwell



Feeling hopeless or losing interest in things



Trouble sleeping or changes in appetite



Feeling like you can't cope

If these feelings persist, reach out to a professional.
You deserve support too.



Remember:

- ♥ You are doing an amazing job.
- ♥ It's okay to have difficult days.
- ♥ Taking care of yourself helps your loved one.
- ♥ You are not alone in this journey.

*Be kind to yourself
the way you are kind
to others.*



**YOU ARE NOT ALONE.
WE ARE WITH YOU.**

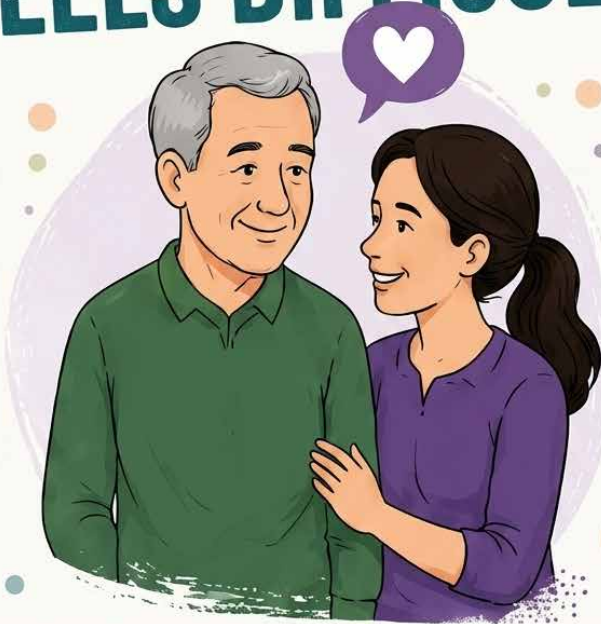


Take care of you, so you can
keep being their strength.





WHEN PARKINSON'S FEELS DIFFICULT



Simple strategies for patients and caregivers

- Simple strategies for patients and caregivers

EVERYDAY DIFFICULTY	TRY THIS
 Movement feels slow	 Give yourself extra time. Avoid rushing.
 Finding words or responding takes time	 Pause and allow time. Ask for a moment if needed.
 Too many instructions feel confusing	 Break tasks into one step at a time.
 Changing from one task to another is difficult	 Finish one task before starting another whenever possible.
 Getting distracted easily	 Reduce background noise and distractions when concentrating.
 Forgetting appointments or tasks	 Use alarms, calendars, notes and routines.
 Fatigue affects functioning	 Plan demanding activities during better-energy periods.
 Feeling frustrated or overwhelmed	 Pause, take a break and communicate what kind of help is needed.



**SLOW DOWN • SIMPLIFY
CUE • GIVE TIME**



FOR CAREGIVERS

**DON'T RUSH • DON'T ASSUME
DON'T TAKE OVER • DO SUPPORT**



Supporting independence
means helping when needed
while allowing the person
to do what they can safely
do for themselves.



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