A close-up photograph of a middle-aged man with grey hair and glasses, wearing a white lab coat and a blue stethoscope. He is looking down at a smartphone held in his right hand. The background is a soft, out-of-focus light blue.

*Dealing with Parkinson's Disease:
A Primer*

**A Glossary of Terms
or
“Why Can’t Doctors Speak English?”**

by C. Michael Beetner, Parkinson patient

This booklet expresses only the personal opinions of the authors and is not intended to offer medical advice. Always consult your personal physician for medical advice.

This booklet is distributed by National Parkinson Foundation Central & Southeast Ohio Chapter, a non-profit organization serving those afflicted with Parkinson's Disease, their partners and families. The society publishes a monthly newsletter with information for both patients and caregivers as well as establishing local support groups. Completing the form inside the back cover will add your name to the list of those of us fighting Parkinson's disease. If you reside in central or southeast Ohio, we can put you in contact with a nearby support group.

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The author would like to thank the following for their assistance and contribution to this booklet:

Carole Soskis, Dr. Jean Hubble, Dr. George Paulson, Pris Gates,
Jerry Mollman, Virginia Phillips, Michael Ham

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Glossary of Parkinson's Terms or "Why Can't Doctors Just Speak English?"

This booklet is designed to be a reference for the Parkinson's disease patient. Our goal was to produce a glossary which was easy for a newly-diagnosed patient to understand. As such, our definitions are very short and by no means complete. While this booklet is a reference, you should always depend on your physician as your first source of information. We have tried to include the common medical terms you might encounter as a patient, but we have no doubt missed some. Please feel free to write us at National Parkinson Foundation Central & Southeast Ohio Chapter with suggestions, corrections, and additions.

We subtitled this booklet "Why Can't Doctors Just Speak English?" In their defense, physicians need to be precise in describing symptoms and other observations. These descriptions must be universally understood by other physicians and researchers. It is said that Eskimos have 32 words to describe snow. This is because snow is very important to their survival, they have studied snow intensely, and it allows them to describe snow precisely. So it is with doctors.

There is absolutely nothing wrong with asking, "What does that mean, doctor?" or "Could you explain that to me in simpler words?" Your doctor has heard those questions before and should welcome them. Clear communication between you and your physician is always essential. It is your right as a patient to insist on it.

Additionally, a glossary of drugs commonly used in the treatment of Parkinson's Disease is provided at the end of this booklet, to be used only as a general reference point.

A

Acetylcholine

a chemical in the brain which acts as a neurotransmitter. An imbalance between dopamine and acetylcholine results in some Parkinson's disease symptoms.

Action Tremor

a tremor that increases when the hand is moving voluntarily.

Agonist

(see Dopamine Agonist)

Akinesia

no movement, freezing.

Ataxia

loss of balance.

Athetosis

slow, involuntary movements of the hands and feet.

Atrophy

wasting, shrinkage.

Autonomic Nervous System

the part of the nervous system that is responsible for automatic functions, such as the heartbeat, digestion, and salivation.

Axon

the long, hair-like extension of a nerve cell that carries a message to the next nerve cell.

Basal ganglia

several large clusters of nerve cells deep in the brain below the cerebral hemispheres; crucial in coordinating motor commands. Includes the striatum and the substantia nigra.

Benign essential tremor

a tremor of the hands, head, voice, or other body parts which often runs in families. This is also referred to as familial tremor and is sometimes mistaken for Parkinson's disease although there is no rigidity or bradykinesia.

Bilateral

both sides of the body.

Biofeedback

a behavior modification technique in which patients are taught to partially control unconscious bodily functions, such as blood pressure, balance, or heart rate.

Blink rate

the number of times per minute that the eyelid automatically closes. A normal rate may be 10 to 30 per minute; for the parkinsonian it may be 0 to 5 per minute.

Blepharospasm

uncontrolled closure of the eyelid.

Blood-brain barrier

the protective membrane that separates circulating blood from brain cells. This barrier prevents many drugs from reaching the brain.

Body scheme

the ability to identify body parts or to relate body parts to each other; the ability to sense one's position in space.

Bradykinesia

slowness of movement.

Bradyphrenia

slowness of thought processes.

Bruxism

grinding of teeth and clenching of jaw muscles.

C**Central nervous system**

the brain and the spinal cord.

Cerebellum

a large structure consisting of two halves (hemispheres) located in the lower part of the brain; responsible for the coordination of movement and balance.

Cerebrum

consists of two parts (lobes), left and right, which form the largest and most developed part of the brain; initiation and coordination of all voluntary movement take place within the cerebrum. The basal ganglia are located immediately below the cerebrum.

Chorea

rapid, jerky, dance-like movement of the head, shoulders, hands and/or feet.

Classic triad

the three symptoms commonly occurring together that are the hallmark of Parkinson's disease -- tremor, rigidity, and slowness of movement.

Cogwheel rigidity

Stiffness in the muscles with a jerky quality when arm and leg joints are repeatedly moved.

Constipation

difficulty with or lack of bowel movements. The medical definition is fewer than three bowel movements in a week.

Contraindicated

contraindications in relation to drug therapy implies a risk of drug interaction that can make your condition worse, cause new problems, or in some cases, cause death. You should take all contraindications seriously. Contact your pharmacist or physician with any questions or concerns.

Cortex

the outer layer of the cerebrum, densely packed with nerve cells.

D

Deep-brain stimulation (DBS)

use of wires implanted in the brain connected to a “pace-maker-like device” which provides the same type of relief as a pallidotomy only DBS is reversible.

Delusions

a condition in which the patient has false beliefs and perceptions that cannot be reasoned or explained away.

Dementia (also called senility)

the deterioration from a higher level of intellectual function. Difficulty with memory, recognition, abstraction, and calculation.

Dendrite

a threadlike extension from a nerve cell that serves as an antenna to receive messages from the axons of other nerve cells.

Dopa decarboxylase

an enzyme present in the body that converts levodopa to dopamine.

Dopamine

a chemical substance, a neurotransmitter, found in the brain that regulates movement, balance, and walking. It is the substance that is lost in Parkinson’s disease.

Drug half life

this term refers to the measurement of how long a drug remains active in your body. For example, selegiline (Eldepryl) has a half life of 12 hours, which means that if you take the drug at 7am, only half of the drug will still be active in your body by 7pm (12 hours later). An additional 12 hours will cause an additional 50% reduction, and this break down of the drug will continue until it is no longer active.

Drug holiday

a three to fourteen-day withdrawal of levodopa after long-term treatment when side effects of levodopa outweigh benefits; rarely done today because of the severe effects of drug withdrawal.

Drug-induced parkinsonism

patients receiving drugs for tranquilization may develop symptoms similar to PD.

Dyskinesia

an involuntary movement including athetosis and chorea.

Dysphagia

difficulty in swallowing.

Dysarthria

difficult, poorly articulated speech.

Dystonia

a slow movement or extended spasm in a group of muscles.

E

Edema

tissue swelling due to excessive fluid.

Enzyme

a substance that speeds up a specific chemical reaction but that is not itself consumed in the reaction.

Essential tremor

(see benign essential tremor)

Euphoria

a feeling of well-being or elation; may be drug related.

Extensor (muscle)

any muscle that causes the straightening of a limb or other part.

Extrapyramidal system

the system of nerve cells, nerve tracts, and pathways that connects the cerebral cortex, basal ganglia, thalamus, cerebellum, reticular formation, and spinal neurons; it is concerned with the regulation of reflex movements such as balance and walking. The extrapyramidal system is damaged in PD.

F

Familial tremor

(see benign essential tremor)

Festination

short, shuffling steps; involuntary speeding up of the gait.

Flexor (muscle)

any muscle that causes the bending of a limb or other body part.

Freezing

temporary, involuntary inability to move.

G

Ganglion

a cluster of nerve cells.

GDNF

Glial-Cell-Line-Derived Neurotrophic Factors. GDNF has been proven to aid in the survival of dopamine-producing neurons from fetal cells.

Gray matter

the darker-colored tissues of the central nervous system. In the brain, the gray matter includes the cerebral cortex, the thalamus, the basal ganglia, and the outer layers of the cerebellum.

F

G

H

Half life

(see drug half life)

Hallucinations

false or distorted perception of objects or events, usually taking the form of seeing people or things that others do not see.

Hoehn and Yahr Scale

a common scale used to evaluate the severity of Parkinson's:

Stage 0: no visible disease.

Stage I: disease that involves only one side of the body (mild disease).

Stage II: disease that involves both sides of the body, but does not impair balance (mild disease).

Stage III: disease that impairs balance or walking (moderate disease).

Stage IV: disease that markedly impairs balance or walking (advanced disease).

Stage V: disease that results in complete immobility (advanced disease).

Hormone

a substance secreted by a gland that is transported in the bloodstream to various organs in order to regulate or modify bodily functions.

Hypokinesia

abnormally diminished motor activity.

Hypophonia

soft voice.

I

Idiopathic parkinsonism

the usual case, i.e. Parkinson symptoms with no known cause.

Incontinence

involuntary voiding of the bladder or bowel.

Internal tremor

a tremor felt inside your body that cannot be seen by others. Over 40% of Parkinson's patients report having internal tremors.

L

Lateropulsion

involuntary stepping or staggering to one side.

Lewy body

a pink-stained sphere, found in the bodies of dying cells, that is considered to be a marker for PD.

I

L

M

Microglia

a type of cell in the brain that regulates inflammation.

Micrographia

a change in handwriting that causes the script to become smaller and increasingly cramped.

Mechanism of action

a term used to describe the specific biological mechanism by which a drug works in the body or brain.

Monoamine oxidase (MAO)

an enzyme that breaks down dopamine. There are two types of MAO: "A" and "B". In Parkinson's disease, it is beneficial to block the activity of MAO B.

MPTP

a chemical produced during an attempt to make a synthetic narcotic. MPTP destroys the cells of the substantia nigra and produces a disease that mimics PD.

Multiple system atrophy (Shy-Drager Syndrome)

a neuro-degenerative disorder that can resemble PD, but has more pronounced effects on the autonomic nervous system, causing low blood pressure, abnormal breathing, and trouble regulating body temperature.

Myoclonus

jerking, involuntary movements of the arms and legs. This may occur normally during sleep.

N

Neurologist

a doctor who deals with the nervous system (brain and spinal cord) and disorders affecting it.

Neuroprotective

a drug that preserves or protects the brain from attack or further deterioration.

Neurosurgeon

a doctor who performs surgery on any part of the nervous system.

Neuron

a cell specialized to conduct and generate electrical impulses and to carry information from one part of the brain to another.

Neurotransmitters

chemical substances that carry impulses from one nerve cell to another; found in the space (synapse) that separates the transmitting neuron from the receiving neuron.

Nigral

of or referring to the substantia nigra.

Norepinephrine

a neurotransmitter found mainly in areas of the brain that are involved in governing autonomic nervous system activity, especially blood pressure and heart rate.

O

On-off phenomena

abrupt changes in performance during the day caused by the “taking effect” or “wearing off” of anti-Parkinson drugs.

Orthostatic hypotension

a large decrease in blood pressure upon standing. May result in fainting as a result of certain drugs, or spontaneously in PD patients.

P

Pallidotomy

brain surgery where a part of the brain is destroyed to mitigate Parkinson's symptoms.

Palsy

weakness, paralysis.

Paradoxical kinesia

paralysis of a muscle or group of muscles which occurs when an effort is made to use the muscle.

Paralysis agitans

the Latin term for Parkinson's disease used as the official diagnostic term of the World Health Organization.

Parkinsonism

symptoms of PD, could be from many causes.

Parkinson's Disease (PD)

a slowly progressive disease generally associated with tremor or trembling of the hands, arms, or legs; stiffness and rigidity of the muscles, and slowness of movement.

P

Parkinson's plus

when the patient is afflicted not only with Parkinson's disease but also with other brain abnormalities.

Peristalsis

wavelike contractions that move food through the digestive tract.

Placebo

a substance or preparation containing no medication and often used as a control in an experiment or test to determine the effectiveness of a medicinal drug.

Postural deformity

stooped posture.

Postural instability

difficulty with balance.

Postural tremor

tremor that increases when hands are stretched out in front.

Progressive supra-nuclear palsy

people with this can experience bradykinesia and freezing. They have prominent gait and balance problems and difficulty looking down. They also blink only three to four times a minute and have slow, spastic speech.

Pyramidal pathway

the pathway that controls movement, including voluntary movement.

R

Range of motion

the extent that a joint will move from full extension to full flexion.

Restless leg syndrome

a crawling or aching sensation in one or both legs which usually manifests itself at nighttime.

Resting tremor

a tremor of a limb that increases when the limb is at rest.

Retropulsion

the tendency to fall backwards.

Rigidity

increased resistance to the passive movement of a limb.

P

R

S

Seborrhea

a skin condition caused by an excessive discharge of the oily secretions of the sebaceous glands. This is a condition common in Parkinson's disease.

Shaking palsy

the old term for what we now call PD. It was shaking palsy that James Parkinson was describing in his paper that led to the term "Parkinson's disease".

Shy-Drager syndrome

(see Multiple System Atrophy)

Sialorrhea

drooling.

Spasm

a condition in which a muscle or a group of muscles contract involuntarily.

Striatum

part of the basal ganglia; it is a large cluster of nerve cells, consisting of the caudate nucleus and the putamen, that controls movement, balance, and walking; the neurons of the striatum require dopamine to function.

Substantia nigra

a small area of the brain containing a cluster of black pigmented nerve cells that produce dopamine which is then transmitted to the striatum.

S

Sustention (postural) tremor

a tremor of a limb that increases when the limb is stretched.

Symptomatic Parkinson's

Parkinsonian symptoms secondary to some other process such as mini-strokes (Transient Ischemic Attacks or TIA's), etc.

Synapse

a tiny gap between the ends of nerve fibers across which nerve impulses pass from one neuron to another; at the synapse, an impulse causes the release of a neurotransmitter, which diffuses across the gap and triggers an electrical impulse in the next neuron.

T

Thalamotomy

an operation whereby the surgeon destroys a small part of the brain known as the thalamus to relieve tremor and rigidity in the Parkinson's patient.

Tremor

a rhythmical shaking of a limb, head, mouth, tongue, or other part of the body.

Tyrosine

the amino acid involved in the production of dopamine.

W

White Matter

nerve tissue that is paler in color than gray matter because it contains nerve fibers with large amounts of insulating material (myelin) that helps to speed up neuron to neuron communication.

S

T

W



Glossary of Drugs

(Last Updated March 2011)

The following glossary provides general information about drugs used in the treatment of Parkinson's Disease. This is not a comprehensive list of all drugs used in the treatment of PD, but rather a reference point for gaining an overall picture of commonly used drug therapies approved for use in the U.S.

The drugs are organized by their "drug class" and are then provided in alphabetical order, with the generic name for the drug listed first, followed by the brand name(s) in parentheses. A direct Internet link to the US National Library of Medicine, where much of this information was obtained, is also provided.

ANTI-CHOLINERGICS

Drugs in this class treat Parkinson's Disease by blocking the action of acetylcholine, thereby re-balancing it in relation to dopamine and reducing rigidity and tremor.

Amantadine (Symmetrel, Symadine)

(a man' ta deen) is a drug that is used in the treatment of Parkinson's Disease, but the mechanism by which it works is not completely understood. It has numerous effects in the brain, including increasing the release of dopamine from nerve endings and acting as an anti-cholinergic.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000564>

Benzotropine Mesylate (Cogentin)

(benz tro peen) is used to treat some of the symptoms of Parkinson's Disease, like tremor or rigidity. It helps to restore the balance between acetylcholine and dopamine in the brain.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000595>

Procyclidine (Kemadrin)

(pro sye kli deen) is no longer available in the U.S. as of 2008. If you are currently taking this medication, you should speak with your doctor about switching to a different drug therapy.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000320>

Trihexyphemidyl (Artane, Trihexane)

(trye hex ee fen' i dil) is used to treat some of the symptoms of Parkinson's Disease, like tremor or increased salivation. It is often used in addition to other drugs, like levodopa, for the treatment of PD.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000599>

COMT INHIBITORS

Drugs in this class treat Parkinson's Disease by inhibiting the action of the enzyme COMT, which normally breaks down and inactivates dopamine.

Entacapone (Comtan)

(en ta' ka pone) is typically used in combination with levodopa and carbidopa because it helps them get into the brain by preventing their breakdown in the body. For this reason, it is included in the brand name drug Stalevo, which combines carbidopa, levodopa, and entacapone into one pill. It is important to note that this drug is currently being investigated by the Food and Drug Administration (FDA) for potential heart risks.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000168>

Tolcapone (Tasmar)

(tol ka pone) is typically used in combination with levodopa and carbidopa because it helps them get into the brain by preventing their breakdown in the body. Unlike entacapone, it is also able to pass through the barrier that separates the brain from the body's blood circulation, allowing it to prevent the breakdown of dopamine, levodopa, and carbidopa directly in the brain. This drug does carry a greater risk of causing life threatening liver damage, however, so speak with your doctor carefully about this concern.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001039>

DOPAMINE AGONISTS

Drugs in this class treat Parkinson's Disease by mimicking the actions of Dopamine (the natural neurotransmitter in the brain that is decreased in Parkinson's Disease).

Apomorphine (Apokyn)

(a poe mor' feen) is a potent dopamine agonist that is used to treat "off" episodes (times of difficulty moving and speaking) that can occur as medications wear off, or at random. It is not used to prevent "off" episodes, but can be used to treat them when they occur.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000264>

Bromocriptine (Cycloset, Parlodel)

(broe moe krip teen) has many therapeutic uses for diseases and disorders that are unrelated to PD. It treats PD by stimulating specific dopamine-receptors in the brain.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000569>

Ropinirole (Requip)

(roe pin i role) is used alone or in combination with other drugs for the treatment of tremor, slow movement, balance, **no meds really "treat" balance** and rigidity. Like the drug pramipexole, it activates a specific dopamine receptor subtype, and approximately 3-13% of people taking this drug will have unusual gambling or otherwise compulsive-like behavior that resolves when the medication is stopped.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001026>

Pramipexole (Mirapex)

(pra mi pex ol) is used alone or in combination with other drugs for the treatment of tremor, slow movement, **balance**, and rigidity. Like the drug ropinirole, it activates a specific dopamine receptor subtype, and approximately 3-13% of people taking this drug will have unusual gambling or otherwise compulsive-like behavior that resolves when the medication is stopped.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001004>

Rotigotine Transdermal Patch (Neupro)

(roe ti go teen) is no longer available in the U.S. as of April 2008.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000408>

DOPAMINE PRECURSOR PRO-DRUGS

Drugs in this class treat Parkinson's Disease by boosting the availability of the ingredient's needed to make dopamine in the brain.

Levodopa and Carbidopa (Atamet, Parcopa, Sinemet)

(lee voe doe pa) and (car bi doe pa) are frequently provided as a combination drug. Levodopa is a basic ingredient, or precursor, needed in the brain to make dopamine. Increasing the availability of this precursor increases the amount of dopamine produced.

Carbidopa helps levodopa reach the brain. Without carbidopa, a considerable amount of levodopa would be broken down in the body before reaching the brain. Carbidopa prevents the breakdown of levodopa in the body and reduces the amount of levodopa needed, which helps to reduce levodopa-related side effects.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000065>

MAO-B INHIBITORS

Drugs in this class treat Parkinson's Disease by preventing the breakdown of dopamine in the brain. Certain drugs are contraindicated for use with MAO-B inhibitors, and using them may cause serious life threatening side effects. If you are taking any anti-depressant medications, weight loss drugs, pain medication, or cold or cough medicine, make sure you notify your doctor or pharmacist. Also, speak with your doctor or pharmacist about any prescription, non-prescription, dietary supplements, vitamins, or herbal products that you are taking.

Rasagiline (Azilect)

(ra sa ji leen) is used to prevent the breakdown of dopamine in the brain by the enzyme MAO-B. This drug can help to lower the dose of levodopa, which can decrease levodopa-related side effects. Certain dietary restrictions may be warranted at higher doses of selgiline. Ask your doctor or pharmacist if this applies to you.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000344>

Selgiline (Eldepryl, Anipryl, Atapryl, Carbex, Zelapar)

(se le ji leen) is used to prevent the breakdown of dopamine in the brain by the enzyme MAO-B. This drug can help to lower the dose of levodopa, which can decrease levodopa-related side effects. Certain dietary restrictions may be warranted at higher doses of selgiline. Ask your doctor or pharmacist if this applies to you.

For more information:

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001015>

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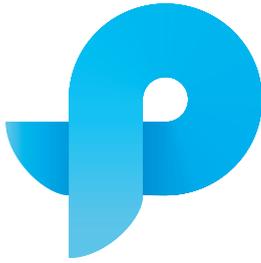
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Rev. 06/13