Parkinson’s affects the part of our brain that produces the chemical dopamine. Dopamine contributes to feelings of satisfaction and our ability to be attentive. The chemical gives us control over the movements our body makes - hence the involuntary shaking of limbs from some people who have Parkinson’s.

In particular, a protein found in our brain called alpha-synuclein regulates the release of dopamine. For reasons that we do not quite understand, however, this protein clumps together and becomes toxic. The resulting brain cell damage leads to a host of neurodegenerative diseases, including Parkinson’s and other Parkinsonism conditions. Could the toxic clumping of alpha-synuclein be starting from the gut?

THE GUT FEELING

Ongoing research from the California Institute of Technology (which was done on mice) suggests that the dopamine regulating alpha-synuclein protein gets triggered first by gut bacteria. The vagus nerve, which runs from the stem of our brain to most of our major organs, then transports these infected clumps of alpha-synuclein to the brain.

These results suggest that misfolded alpha-synuclein travels to the brain and triggers normal alpha-synuclein to become misfolded as well. An apparent domino effect ensues which leads to the death of dopaminergic neurons.

To test this, the researchers at Caltech took two groups of mice that were injected with the alpha-synuclein protein. The only difference between them? One set of mice had no gut bacteria because of being raised in a completely sterile space. In all movement and Parkinson’s symptoms-related tests, the mice without gut bacteria performed effortlessly. The other set of mice, with alpha-synuclein protein and gut bacteria, demonstrated classic Parkinson’s symptoms. When the researchers injected the germ-free mice with gut bacteria from...
Parkinson’s patients, the mice then began to display Parkinson’s symptoms.

Mysteries remain, however, including why some people have clumps of the abnormal protein in the brain but no symptoms of Parkinson’s – and how alpha-synuclein becomes misfolded in the first place.

Researchers do expect that by identifying and halting these changes before they reach the brain, the majority of Parkinson’s symptoms can be stopped from ever appearing.

**HOW DO I IMPROVE MY GUT HEALTH?**

The gut is a permanent home to a diverse community of beneficial and sometimes harmful bacteria, known as the microbiome, that is important for the development and function of the immune and nervous systems. In fact, outside of your brain and spine, nearly 70 percent of all neurons in the peripheral nervous system are in the intestines!

While the link between diet and Parkinson’s is still largely ambiguous, possibly due to underlying genetic and gender-specific factors, increasing evidence suggests that diet may influence the risk of developing the disease.

If gut bacteria are causing Parkinson’s disease, then you could revamp your diet to improve your gut health. Please talk to a professional nutritionist before adopting any changes to your current diet.

**PROBIOTIC TREATMENT STRATEGY**

As links between the gut microbiome and central nervous system disorders such as Parkinson’s becomes more apparent, Scottish researchers are investigating a treatment strategy that capitalizes on microbes in the gut.

One over-the-counter probiotic in particular—Bacillus subtilis—cleared some toxic alpha-synuclein clumps and improved motor symptoms.

Bacillus subtilis works by changing how enzymes process specific fats known as sphingolipids. The bacterium produces chemicals that spark the change, which in turn prevents the alpha-synuclein protein from forming clumps.

This, however, doesn’t mean everyone should go to the pharmacy to buy probiotics. The researchers have conceded that the late-2019 study, which was done on roundworms, needs to be first validated in mice and humans in clinical trials successfully.

The results do provide an opportunity to investigate how changing the bacteria that make up our gut microbiome affects Parkinson’s.

**INTEREST IS HEATING UP**

Several research groups have turned to the gut microbiome in search of new ideas for treating Parkinson’s.

In the previous edition of the Parkinsonian, we introduced readers to Dr Vivianne Labrie, who is heading an interesting research project that is looking at the relationship of the appendix with the development of Parkinson’s. Dr Labrie’s team of researchers found that there were three times more alpha-synuclein aggregates in the appendix of people with Parkinson’s. The researchers also found that the alpha-synuclein aggregates were of a shortened form, which is highly pathogenic and disease-causing.

In June 2019, researchers at the Johns Hopkins University published research showing that in mice, misfolded alpha-synuclein protein can travel from the gut to the brain.

In 2018, a team led by the Michigan-based Van Andel Research Institute studied two large patient registries and found that people who have their appendixes removed lower their chances of getting Parkinson’s by up to 25%—a phenomenon they suspected was related to their discovery of alpha-synuclein clumps in appendix tissue.

Even earlier in 2016, California Institute of Technology scientists showed in mouse models that some gut bacteria promote Parkinson’s progression.

Their discoveries led them to launch Axial Biotherapeutics to pursue microbiome-aimed treatments for the disease and other central nervous system disorders.

Recently, a Finnish study on 14,000 people found that the excessive use of antibiotics is a Parkinson’s risk, as antibiotics may change the composition of gut bacteria.

Another Swedish study in late-2018 analysed the health records of more than 1 million people that have had their appendix removed early in life, and found that there was a 19% reduced risk of developing Parkinson’s.

Studies that identify bacteria that are beneficial in Parkinson’s have the potential to not only improve symptoms but could even protect people from developing the condition.

If alpha-synuclein does become dangerous because of gut bacteria, then by stopping those microbes, Parkinson’s could be dealt with efficiently. We can even hope to start seeing Parkinson’s being treated with a probiotic pill in a few years!

For the near 10 million people who have Parkinson’s globally, we can only hope that this gut feeling comes good.

**SOURCE:** Cell Reports Journal “Probiotic Bacillus subtilis Protects against α-Synuclein Aggregation in C. elegans”

Cell Reports Journal “Gut Microbiota Regulate Motor Deficits and Neuroinflammation in a Model of Parkinson’s Disease”

Movement Disorders Journal “Antibiotic Exposure and Risk of Parkinson’s Disease in Finland: A Nationwide Case-Control Study”

Heritage Medical Research Institute, California Institute of Technology “Gut Microbiota Regulate Motor Deficits and Neuroinflammation in a Model of Parkinson’s Disease”

Science Translational Medicine Journal “The vermiform appendix impacts the risk of developing Parkinson’s disease”
In this first issue of The Parkinsonian for 2020, we continue looking into a popular topic – gut health, while also focusing on freezing episodes and how to take care of Parkinson’s medication. This issue is packed with the latest news and research, and we’ve included more references for you if you would like to get more in-depth information.

Results from our 2019 Client Satisfaction Survey shows that our organisation is delivering tangible benefits for people with Parkinson’s in NZ. Nearly 8 in 10 people surveyed were satisfied with our Parkinson’s Nurse service, and the support provided by them. We’re also thrilled that 9 in 10 respondents reported an improvement in their well-being after attending one of our support groups. A similar number say that our exercise classes had led to one or more improvements in their physical and mental well-being.

Thank you to all who have completed the survey last year, made suggestions and offered feedback on our service. We will continue to ask for your feedback every year to make sure our service is what you want and to make sure the quality we provide is based on best practice.

I’m happy to see Team PNZ will be running Round the Bays after the first week of March, spearheaded by the Coulson family.

2020, being an election year, is set to be one in which charities throughout New Zealand will ask the parties to increase funds to the Charitable Sector. We recognise the need for awareness of people living with Parkinson’s as well as the significant impact, value and savings our charitable service provides New Zealand’s communities and the health sector. Although funds are continuing to be set aside by philanthropists for research to find a cure for Parkinson’s, there is need for support and education, right now, for people who are living with the condition.

Parkinson’s New Zealand’s charitable purpose is to make sure that diagnosed people have access to the support, information and education required to live well with Parkinson’s. To do this, we will continue to diversify funds and be more vocal about increasing government funding for people living with Parkinson’s.

This will be a big year for Parkinson’s New Zealand. I am grateful for your support and I look forward to sharing news with you throughout the year.

Deirdre O’Sullivan
Chief Executive

After the age of 75, Peter Coulson began having a lower back issue which began as a niggling pain. At an appointment in early 2013, Peter’s GP saw that his movements were slow and drawn out, and diagnosed him with Parkinson’s. An avid badminton player and soccer fan during his heyday, Peter knows extremely well that exercise is the key to helping him manage his symptoms. Besides taking part in boxing and a daily physio program, Peter has never forgotten his first love – Running.

Peter attended his first Round the Bays (RTB) fun run back in 1981. For the last 39 years, the run has become an unmissable tradition in the Coulson home. Despite his PD symptoms progressing at the age of 82, Peter has still managed to partly walk the 8.4km course, with his wife by his side, over the past two years. This year, however, an intergenerational approach is in the works!

Peter’s son, Roger, joined the PNZ Board after his father’s diagnosis. Roger remembers how difficult it was for everybody, including Peter’s grandchildren, to see his condition progressing. This March, you will find different generations of the Coulson family jostling for a place with 29,000 other people running RTB, as Team PNZ! Thank you for raising funds and awareness for Parkinson’s!
Introducing Janeane, Bequests Advisor at Parkinson's NZ

Janeane and her father, Ian Wilson, in 2019

TALK TO JANEANE
Freephone: 0800 473 4636
or direct dial 027 383 1144.
Janeane.Summerfield@parkinsons.org.nz

Janeane’s connection to Parkinson’s is closer to home than most, as her father has advanced PD. Working in clinical healthcare for over two decades, Janeane genuinely understands the effects of life-long conditions like Parkinson’s on people and their families. She recently joined Parkinson’s New Zealand, as our new Bequests Advisor.

Only about 50% of New Zealanders have a valid Will, which means only about half of our population will have their estate distributed according to their wishes. Of course, your family and loved ones come first, but we would love it if you’d consider leaving a bequest to Parkinson’s NZ in your Will. Your lasting legacy will enable us to continue providing vital services for people living with Parkinson’s, well into the future.

It’s easy to make a bequest. Janeane would be happy to confidentially discuss your options for leaving a gift in your Will. To get in touch, please give Janeane a call on her direct line or send her an email (details above).

If you have already left the Parkinson’s NZ Charitable Trust a gift in your Will, we would love to thank you personally, in your lifetime, so please do let us know!

Together, we can make sure no one faces Parkinson’s alone.

ATTENTION: Life after Cheques

Times are changing and fewer people are using cheques because of alternative, safer ways to pay. Given these changes, certain NZ banks will no longer be accepting cheques after February 28, 2020. Kindly remember that not all banks are phasing out cheques at this stage, so it’s best to check first.

Here are some tips to make the transition easier for you:

- Set up your internet banking, either on your mobile browser or an app on your smartphone. To send Parkinson’s New Zealand a donation, make use of this bank account - 03 0502 072774 4 00. This also allows you to set up automatic payments for causes you believe in.

- Go to www.parkinsons.org.nz and click on the Donate button to make a donation with your credit card details.

- Or, simply give us a call on 04 801 8850 or 0800 473 4636, and you can phone in your card details. Kindly keep your supporter number handy, so that you can keep the call quick and easy.
AWAKENING DORMANT NEURONS COULD PROVIDE DISEASE-MODIFYING PARKINSON’S TREATMENT


Together with dying nerve cells, dormant neurons also may be at the root cause of Parkinson’s disease, according to a recent study on rodents.

Reawakening these neurons by targeting a type of brain cells called astrocytes can restore dopamine production in the brain and reverse Parkinson’s motor symptoms, the early study found.

Nerve cells in the substantia nigra portion of the brain are known as dopaminergic neurons as they are responsible for producing dopamine, a chemical messenger that allows nerve cells to communicate, regulating movement and feelings of satisfaction.

Using mouse and rat models of Parkinson’s, South Korean researchers found that the motor symptoms begin when dopaminergic neurons in the substantia nigra are still alive but in a dormant state, unable to produce dopamine.

The key, however, could be held by astrocytes, which are star-shaped cells present in the brain and spinal cord that help protect the nervous system.

When neurons die, nearby astrocytes release an inhibitory neurotransmitter called gamma-aminobutyric acid (GABA) at excessive levels.

This puts neighbouring neurons “on hold,” suspending their production of dopamine.

One of the most important discoveries of the study was that surviving dormant neurons could actually be “awakened” from their “sleeping” state and rescued to alleviate motor symptoms, by blocking GABA production.

Since dormant neurons can be awakened to resume their production capability, this finding provides hopes of reversing PD in the early stages.

This research could refute the common belief that there is no disease-modifying treatment for PD due to its basis on neuron cell death.

GENE THERAPY OPENS A NEW WORLD OF PARKINSON’S RESEARCH

SOURCE: Proceedings of the National Academy of Sciences Journal, “A systematic capsid evolution approach performed in vivo for the design of AAV vectors with tailored properties and tropism”

A new gene therapy method allows researchers to develop a “vehicle” for delivering gene therapies — that could potentially accurately target and deliver genes to dopaminergic neurons for people with Parkinson’s.

The vehicle is the adeno-associated virus (AAV) which is lab-made and has been shown to be an effective gene therapy delivery vehicle for genetic diseases, such as spinal muscular atrophy.

In gene therapy, scientists deliver a working version of a faulty gene using a harmless AAV that was modified in the lab.

This way the virus is completely safe as it does not have the capacity to damage tissues and cause disease.

A team of Swedish researchers have developed a new method — called barcoded rational AAV vector evolution, or BRAVE — that combines powerful computational analysis with the latest gene and sequencing technology to produce AAVs that can specifically target neurons.

One particular capsid, called MNM008, showed a high affinity for rat dopaminergic neurons as well as the potential to target human dopaminergic neurons.

Thanks to this technology, researchers can now study millions of new virus variants to determine the most suitable virus shell for the chosen application — in this case, dopaminergic nerve cells.

The Swedish team from Lund University have collaborated with Harvard researchers to establish a new biotechnology company, Dyno Therapeutics, to further develop the virus engineering technology, using artificial intelligence.

PERSONALIZED “BRAIN MAPS” MAY HELP IMPROVE DEEP BRAIN STIMULATION

SOURCE: Neuron Journal, “Integrative and Network-Specific Connectivity of the Basal Ganglia and Thalamus Defined in Individuals”

Not everyone’s brain connections map at exactly the same location, which may explain why deep brain stimulation (DBS) therapy, used for treating severe cases of Parkinson’s, works for some patients and not for others.

Brain mapping could help doctors choose where in the brain to implant electrodes.

DBS is a surgical procedure in which electric stimulators are placed at target regions inside the brain to relieve Parkinson’s motor symptoms.

The procedure is typically reserved for people who have had the disease for at least four years and whose motor symptoms cannot be fully controlled by medication.

While symptoms such as stiffness, slowness, and tremor can be abated, the procedure is not quite effective enough to resolve imbalance, freezing and other non-motor symptoms.

While this surgical procedure can be transformative for some, for others, it causes side effects that outweigh the benefits, including cognitive or memory problems.

Researchers have now mapped specific circuits in the brain using magnetic resonance imaging (MRI) and found that each person’s brain networks position a bit differently.

This may help explain why the effects of DBS vary so much from person to person and point to a potential way of improving the treatment.

From the brain scans of 10 healthy individuals, researchers created three-dimensional maps of the functional networks running through structures located deep inside the brain.
The regions that the researchers focused on are usually targeted by DBS and known as the thalamus and the basal ganglia.

Researchers discovered that the distinct networks that control vision, movement, attention, goal-oriented behaviours and the brain’s default resting state, intermingle and share information at nine hubs inside the basal ganglia and thalamus.

As each person’s functional networks can be positioned a bit differently, when DBS electrodes are placed in the same anatomical spot, they may yet influence different functions in different people.

Some networks such as the motor integration zone, where the control of movement and goal-directed behaviour share paths are “consistently successful sites of deep brain stimulation,” the researchers wrote.

The research team is now exploring ways of using each person’s brain map to personalize the best regions to target to provide relief while avoiding side effects.

Researchers also want to look for other brain spots that might provide even better results.

What this study suggests is that a particular patient may do better if the wire is placed in relation to their personal functional brain map rather than in the context of the population average.

A personalized functional map — as opposed to an anatomical map, which is what is currently used — could help neurosurgeons place a wire in the exact place that could potentially provide the patient with the most benefit.

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A personalized functional map — as opposed to an anatomical map, which is what is currently used — could help neurosurgeons place a wire in the exact place that could potentially provide the patient with the most benefit.

**RESEARCHERS IDENTIFY UNDISCOVERED PARKINSON’S GENE NETWORKS**

**SOURCE:** Nature Communications Journal, “The landscape of multiscale transcriptomic networks and key regulators in Parkinson’s disease”

Egyptian researchers have found new gene networks that could trace the development of Parkinson’s disease, helping better understand therapeutic targets.

Currently, about 20 genetic mutations that directly cause Parkinson’s have been identified, but these cases are rare.

However, as most cases are caused by unknown factors, Parkinson’s is often suspected to arise from a complex intermingling of genes in unique conditions.

The study not only reveals new drivers, but it also makes more apparent the conditions within which previously identified Parkinson’s risk inducing genes behave.

A particular advancement in molecular profiling techniques has helped uncover patterns of Parkinson’s gene activity and regulation, and find links between them to deliver therapy.

The Mount Sinai-based research team developed a data analysis method called multiscale gene network analysis (MGNA) to uncover massive datasets of patients.

By analyzing the brains of 83 Parkinson’s patients, the team discovered a set of gene regulators that had never before been considered a driver of the condition.

One particular gene – STMN2, was found to become weaker in people that developed Parkinson’s.

STMN2 is usually active in nerve cells that produce the chemical dopamine and is active in providing directions for producing a protein called stathmin 2.

The researchers then genetically engineered mice to reduce the activity levels of the STMN2, to find that 9 key Parkinson’s-related genes were activated.

The mice then went on to develop classic Parkinson’s hallmarks such as dopaminergic neuronal loss and the toxic clumping of alpha-synuclein protein in the brain, as well as motor symptoms such as loss of balance.

For idiopathic Parkinson’s cases, where the cause of the disease is unknown, gene network research could open up new avenues for drug development.

**ARTIFICIAL INTELLIGENCE GEARS UP FOR PARKINSON’S**

**SOURCE:** IEEE/CAA Journal of Automatica Sinica, “Classification of Short Time Series in Early Parkinson’s Disease With Deep Learning of Fuzzy Recurrence Plots”

As Parkinson’s can take years to progress, early detection is a top priority for researchers globally.

Because a significant amount of the substantia nigra neurons have already been impaired before the onset of motor features,
people with Parkinson’s may first start experiencing symptoms much later in the course of the disease.

Current methods to evaluate motor symptoms focus on a person’s movements and balance while walking, which requires a trained specialist and clinic visits.

An international team of researchers based in Saudi Arabia and Sweden has recently published exciting evidence of the prospects of an ingenious typing test to check for Parkinson’s.

The test involves the measurement of computer keystroke “hold time” to study the delays between pressing and releasing a key, beyond typical gait and balance testing.

In this experiment, subjects press one or two buttons on a device such as an iPhone as fast as possible for a short period of time.

The algorithm can distinguish people with early-onset Parkinson’s and those without.

Researchers developed a new way of analyzing typing patterns using machine learning.

Machine learning is at the cutting-edge of artificial technology, using neural networks that can learn from data by processing information at lightning speeds.

Through its superior forecasting capacity, the discomfort caused to people with Parkinson’s in performing long, difficult physical tasks for balance and gait could be reduced.

The researchers say they will continue to hone the algorithm to become more accurate in determining the progression of Parkinson’s in a patient.

ACTIVATING CANNABIS RECEPTORS COULD STOP INVOLUNTARY MUSCLE MOVEMENTS

SOURCE: Neurobiology of Disease Journal, “Targeting the cannabinoid receptor CB2 in a mouse model of l-dopa induced dyskinesia”

A compound that affects some of the same receptors in the brain as cannabis could help reduce dyskinesia — involuntary muscle movement — that typically develops following levodopa treatment in Parkinson’s disease.

The study, which was done on mice, used an activating agent to bind onto a cannabinoid receptor in the brain.

Cannabinoids are the active chemicals that give the cannabis plant its medicinal and recreational properties.

Numerous earlier studies have looked at the chemicals’ potential to ease motor symptoms in several neurodegenerative conditions, including Parkinson’s.

Doing so was found to reduce tremors without triggering the infamous psychoactive effects associated with cannabis.

Treatment with Levodopa or Sinemet have long been the gold standards for Parkinson’s treatment, because of the ability to induce the chemical dopamine.

However, this medicine can lead to some nasty side-effects such as uncontrollable muscle movements through a condition called levodopa-induced dyskinesia, or LID.

By all means, between 52-78% of all people taking levodopa medication are at risk of contracting the LID condition.

Cannabinoid-based therapies can exert effects on glial cells which protect neurons.

The suppression of neuroinflammation and neuroprotective effects have led to cannabinoid-based therapies providing hope for mainstream application.

Cannabis itself, however, may not be suitable for the treatment of Parkinson’s symptoms as it has numerous effects which may not all be ideal for people with Parkinson’s.

The compounds in cannabis act primarily via two chemical receptors in the brain, CB1 and CB2.

While CB1 is primarily responsible for the “high” cannabis can impart, activating CB2 was shown to reduce involuntary muscle movements.

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Managing Parkinson's Medication

In the last edition of the Parkinsonian, we introduced readers to the guidelines for using medication safely. Expanding upon that, we explore an important role often played by most carers - keeping track of the prescribed medication of the person with Parkinson’s.

The more carers know about how medications work, the easier it will be to ensure that symptoms are better managed in the person with Parkinson’s.

Below are some generally accepted guidelines for managing Parkinson’s medication.

Regardless, please talk to your Parkinson’s Community Educator or GP before adopting any sweeping changes.

COMMUNICATE OPENLY
Take the initiative to communicate with your GP about developing, adjusting, and following an effective medication plan.

Understanding what to expect with the prescribed medications is key to supporting the progress of the person with Parkinson’s.

Do not be shy to ask your doctor about all details regarding the medicine, including if it ought to be taken with food or on an empty stomach, what the possible side effects are, and if there are any interactions to avoid.

All consultation should be done after considering the treatment goals of the person with Parkinson’s and ensuring they know when the treatment plan is working.

KEEPING TRACK
Always keep a list of medications with both yourself and the person you are caring for, including exact dosages.

Ensure the list is in hand at all times, to be accessible at any time.

DISCIPLINE IS KEY
It is important to take PD medications on a regular dosing schedule to get effective symptom relief.

Work together to finalise a routine for taking medications by cultivating a habit of taking them at the same time each day.

Try using a pillbox that is marked with the days of the week, and fill it at the beginning of the week to make it easier to remember.

Maintaining a medicine calendar can help keep track of the doses taken.

Engage in some spring cleaning for the medicine cabinets, in order to occasionally dispose of outdated drugs.

PLANNING AHEAD
Schedule medication refills at least a week before supplies run out to ensure that the person you are caring for never has to break their dosing schedule.

When travelling with Parkinson’s medication, ensure that the medicine is always packed with carry-on baggage, in case checked-in luggage is misplaced or lost in transit.

Keeping close tabs on how long it takes before the medication starts working for the person with Parkinson’s is useful information for most doctors in understanding better what suits the person with Parkinson’s.

If the patient misses a dose at the scheduled time, they should be encouraged to take it as soon as possible. However, if it is almost time for the next dose, simply return to the regular medication schedule.

ADJUST AFTER ADVICE
Since PD is progressive, it may be inevitable that medication adjustments need to happen to manage progressive symptoms.

As a carer, you should know that ensuring the best medication approach does not mean having to adopt a “cookbook” approach.

AVOIDING INTERACTIONS
Potential problem areas regarding Parkinson’s drug interactions typically arise when the patient is making use of some anti-psychotics, anti-nausea, or pain medications.

Increasingly, pain medications may have interactions with Parkinson’s medications, potentially causing confusion, hallucinations, or agitation. Remember to discuss with your GP before mixing different types of medication.

SOURCE: Michigan Parkinson Foundation Professional Advisory Board, “Medication Administration In The Management of Parkinson’s Disease”
One in three people with Parkinson’s experience freezing episodes, usually when doing repetitive activities, or when you are multitasking. But how do you break free?

WHY DOES FREEZING HAPPEN?

Freezing of gait (FOG) is the result of the degeneration of neurons in the substantia nigra which are responsible for initiating movement.

Conditions that worsen freezing episodes in the brain are amplified when the person is experiencing fatigue, stress or anxiety.

Freezing can happen anywhere and at any time, but walking through doorways and turning around are common triggers.

For a person with Parkinson’s, freezing is not simply frustrating, it can be dangerous by leading to decreased mobility and falls.

COMING UNSTUCK

Giving your brain time to use another neural pathway is an effective way to come “unstuck”, as the automatic response is no longer readily available.

Typically, people start moving by making use of some cues.

Cues could be something simple, like a laser pointer, or simply by concentrating on walking.

When attempting to break from a freezing episode, it is important to adopt a mindfulness approach of being more aware of the task in hand.

Apply the following four-step technique developed by Dr Sarah King (PhD):

1. Stop to Stand
   The next time you find yourself stuck in a movement, the first thing to do is stop moving and stand tall.
   Lift your head up and squeeze your shoulders back, till your back is completely flat. Doing so will put you in the optimal position to get moving again.

2. Shake it off
   Take a deep breath and try to relax any part of your body where you may be holding tension, usually your hands, jaw or neck.
   By decreasing your anxiety levels, your brain can focus more keenly on the task at hand.

3. Shift your weight
   If you are standing start moving your hips, slowly rocking back and forth on your heels, to shift your weight alternatively between your right and left foot.
   If you are sitting, then move your shoulders backward and forward, lifting yourself off the chair slightly to shift your weight between your buttocks and your feet.
   Regardless of whether you are sitting or standing, ensure that you try to keep your back straight.

4. Step Up
   If you are standing, use a rocking motion to lift your knee up high and take a massive marching step forward. Ensure that you are placing your foot ahead carefully, in order to maintain your centre of gravity.
   If you are sitting, bring your nose over your toes, reach forward and spring up to stand.
   The key is to ensure that you are making a large, exaggerated movement to break the freezing episode.

Talk with your neurologist or movement disorder specialist about other ways to manage freezing episodes.

Your doctor may be able to refer you to a physical therapist who specializes in treating the gait problems and freezing associated with Parkinson’s.

SOURCE: Dr Sarah King (PhD in Physical Therapy), Invigorate Physical Therapy & Wellness
The Michael J. Fox Foundation, “5 Tricks to Move Through Freezing Episodes in Parkinson’s Disease”
Exercise with Parkinson's

Physical exercise has been recommended for people with Parkinson's because it helps to maintain balance, posture, mobility, and the ability to perform normal daily activities. Our top exercise for the quarter is Boxing!

WHY SHOULD I EXERCISE?
Over two decades of focused research has shown that Parkinson’s patients who exercise at least 2.5 hours every week typically experience a better quality of life. Exercise does not magically increase dopamine in the body. Instead, exercise makes your body use dopamine with more efficiency. Exercise also reduces the chance that neurons will be damaged.

A lack of balance, loss of mobility and increased stiffness can be effectively reduced with exercise. Exercise improves the delivery of oxygen to the brain while your neurotransmitters get a workout trying to maintain your vital organs and nervous system! By managing hormones, exercise could help with reducing depression, stress, and anxiety.

PARKINSON’S EXERCISE OF THE QUARTER: BOXING

Boxing classes combine many aspects of exercise that are important for people with PD – aerobic, strengthening, balance/agility, and dual-task practice. Boxing is a terrific way to improve unplanned and random movements as it forces you to change tempo and direction regularly. Get in touch with Parkinson's NZ in order to know where the acclaimed Rock Steady Boxing and Counterpunch Parkinson’s programs are happening near you.

Non-contact boxing has grown in popularity as an effective Parkinson’s exercise, as it mixes aerobic exercise with muscle building. Punching is a fast repetitive action that produces toned taut muscles. Boxing requires your muscles to contract repeatedly causing the muscles involved to fatigue. With training, your muscles can keep contracting for longer duration without getting tired.

SOURCE: The Michael J. Fox Foundation, “Can Boxing Knock Out Parkinson’s Symptoms?”

Get Going for Parkinson's like Syd, Mike, Jim

We’re immensely proud of Syd King, who unfortunately had to give up on his dream of walking the 3,000-km-long Te Araroa trail in mid-January. Resuming the South Island leg of his long walk post-Christmas, Syd found himself struggling to cope with an unavoidably heavy backpack (10-day food rations) and increasingly rugged tramping conditions. Regardless, Syd’s efforts have got a lot of eyes looking at Parkinson’s New Zealand and the services we provide, so we couldn’t be more grateful!

At the time of writing, Mike Havill from Hamilton has departed on his cycling trip on Tour Aotearoa from Cape Reinga to Bluff. We are astounded by Mike’s endurance and drive, particularly considering that he was diagnosed with early-onset Parkinson’s 7 years ago!

We’re also thrilled for Jim Tetlow, who has completed his staggering 145-km “December Running Challenge”. Jim ran an average of 5.32 kilometres for 25 days of December, including a half-marathon on Christmas Day, to raise funds and awareness for Parkinson’s New Zealand.
Optical Clinical Trials are currently looking for new study volunteers with Parkinson’s disease who live in Auckland.

The study is looking for approximately 60 patients. To be eligible for this study you must be:

- Diagnosed with mild to moderate Parkinson’s Disease
- On stable medication for the last month, if you are being treated
- Have NOT had deep brain stimulation

This study is researching whether investigational medications have beneficial effects on improving the ability of brain cells to remove protein build-up and reduce the production of fats in the brain. It is also testing whether the investigational medication is safe and tolerable for patients with Parkinson’s Disease and if the drugs can get into the brain in sufficient amounts to affect the disease progression.

You will receive reimbursement for your travel expenses and inconveniences.

If this sounds of interest, then simply email claudette@optimalclinicaltrials.com or call Optimal clinical research on 0800 737 327 to find out more.
BLACK SABBATH ROCKSTAR OZZY OSBOURNE REVEALS HE HAS PARKINSON’S

British rocker Ozzy Osbourne, who last year postponed a world tour due to health issues, disclosed in a January interview that he has been diagnosed with PD.

Osbourne, 71, said that he received the diagnosis in February 2019. The musician, who made his name as lead singer of the heavy metal band Black Sabbath, had previously denied having Parkinson’s, but said he now wanted to be open with his fans.

“I feel better. I’ve owned up to the fact that I have a case of Parkinson’s.”

Osbourne said he was taking Parkinson’s medication and nerve pills.

SOURCE: Reuters

BRAIN CELLS LAUNCHED TO OUTER SPACE TO UNDERSTAND PARKINSON’S

An ongoing study onboard the International Space Station (ISS) is investigating how microgravity affects the development of immune cells in the brain.

The goal of the study is to understand the cellular processes behind the neurodegeneration seen in Parkinson’s, providing new disease biomarkers and improve therapy options.

In the preliminary experiment, researchers from the New York Stem Cell Foundation (NYSCF) Research Institute and Aspen Neuroscience cultured patient-derived stem cells and cells from healthy donors. After launching to space on December 4, 2019, the cells were then frozen for analysis to conclude the first study of long-term cell culture in microgravity.

Onboard the ISS, patient-derived and control stem cells will be grown into simplified versions of an organ.

These organoids will include microglia, which are immune cells of the brain whose dysfunction is thought to drive conditions such as Parkinson’s. Microglia are constantly scanning the brain for danger, and it’s starting to look like they overreact in neurodegenerative illnesses, contributing to the death of neurons.

SOURCE: NASA