

Parkinson's Perspective

Newsletter of the Colorado Springs Parkinson's Support Group
Colorado Parkinson Foundation, Inc.

www.co-parkinson.org | (719) 884-0103

September
2020

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The Colorado Springs
Parkinson's Support Group
(part of CPF) meets the second
Saturday of each month at 10AM
(with exceptions to be noted
in this newsletter).

ATTENTION!!! NEW MEETING DATE & LOCATION

Since we haven't received word whether 1st Presbyterian Church will be open to us in the foreseeable future, we'll be meeting at Academy Christian Church at least for the months of September, October and November. However, in September, we won't be able to meet on our usual meeting day of the 12th because of a conflict with an already planned church event so we will be meeting the next Saturday, the 19th, instead.

Next Meeting: Saturday, September 19th | 10 am-12:30 pm

Location: 1635 Old Ranch Rd, on the corner of Old Ranch & Hwy 83 (Voyager Parkway)

9:30 am – come early for a free “Dance for PD” class with instructor Laura Treglia from the Ormae Dance Studio on the west side of Colorado Springs.

9:45 am – Everyone else come in a few minutes early to check in, greet other members and ask question.

First time visitors: Be sure to sign in, get a name tag and proceed to the visitors' table for some special attention and information.

— September Program —

Important Program Note: This presentation will be zoomed live to those who cannot attend but have the ability to live zoom. It will also be recorded and the link to the recorded version will be posted on the website. Instructions on how to watch it live on zoom will be email blasted to you before the meeting.

Speaker: Dr. Melanie Tidman, DHSc, M.A., OTR/L

Topic: New CPF Study on the Effects of Nutrition on Parkinson's Disease

About the Speaker: Dr. Tidman completed a Bachelor's degree in Occupational Therapy at Colorado State University, Master's degree from the University of New Mexico and her DHSc from AT Still University Doctorate in Health Science program in 2011. Dr. Tidman has 40 years of experience as an Occupational Therapist in Pediatrics, Intensive care, and Adult Physical Rehabilitation with an emphasis in Neurology and Neurosurgery Rehabilitation. She owned and directed Tidman Therapy Services, a pediatric rehabilitation center, for 22 years and has expertise in all areas of inpatient and outpatient Adult Physical Rehabilitation with specialized expertise in Parkinson's Disease, Stroke and Brain Injury.

In 2019, Dr. Tidman conducted a field research study for the CPF entitled “*The effects of a community-based exercise program on mobility, balance, cognition, ADS's and QOL in PD: a community partnership pilot study*” which was published the Fall of 2019.

During her professional experience, Dr. Tidman has published several articles, is a contributing chapter author for an Occupational Therapy textbook and has published the first two books in a series of educational guides for families of patients with neurological conditions. Dr. Tidman currently is an Adjunct Professor for A.T. Still University's Doctorate in Health Science program, Nova Southeastern University's PhD in Occupational Therapy program and Colorado Christian University's Masters in Healthcare Administration program and in addition to presenting at professional conferences has particular interest in healthcare delivery and reform, patient-centered care and instruction for doctoral students on professional writing for publication.

The program will be followed by a potluck lunch.

The September Potluck main dish – Finger Sandwiches & Side Salads

If you would like to sign up to be a provider of the main dish of finger sandwiches and/or a side salad to the September meeting you can sign up through our website or you can contact Stephen Rudawsky at [REDACTED] or potluck@co-parkinson.org, no later than Wed. September 16th and tell him what you would like to bring. If you'd like to go through the website, go to the “Events” page of the website and find the meeting you're volunteering for and select “Event Details”. That will take you to the main sign-up page. In addition to the meeting information, you will see how many chefs and the number of servings per batch are needed. Click on “Sign Up” in the box and then select “Submit and Sign Up” which will take you to a page where you will select how many of the number of chefs you are signing up for. For example, if the # of servings requested is 10 but you're making 20 servings then the quantity you would select should be 2...the equivalent of 2 chefs. There is also a place for any comments you may have there. You must then provide your name & email address. When finished, select “Sign Up Now” and you will receive a confirmation email 7 your info will be sent to our potluck coordinator, Stephen. This capability should help make Stephen's job considerably easier. To return to the website, close the sign-up tab at the top of the screen.

Remember that bringing food for the potluck is voluntary. **We look forward to seeing you there!**

The President's Corner

| Jill Reid - Interim President, CPF & CSPSG



Can you believe that summer is nearly over? You've probably experienced the same thing I have—the older I get, the quicker time flies. Summer in Colorado Springs is so nice that it's always sad to see it end. But this year is different, and that's because September is a really pivotal and exciting month for the Colorado Springs Parkinson's Support Group. It marks the beginning of our campaign to recruit people with Parkinson's to be a part of a study, the results of which will be published internationally!! What a wonderful opportunity this group has to provide ground-breaking research on the effects of diet on the symptoms of Parkinson's disease!

Dr. Melanie Tidman, who will be conducting the study with the help of two other PhD's, Dr. Dawn White and Dr. Timothy White, will be our guest speaker for the September meeting and will use that meeting to start recruiting. Due to a conflict at Academy Christian Church, our new gathering place, that meeting will take place on the **THIRD Saturday (September 19)** rather than our normal second Saturday. She will give us a thorough brief on the purpose of the study, who may participate, when it will start, what participants will have to do (eat only certain foods and take a periodic blood test using meters that we will provide), and when the study will end. As I mentioned, the results of the study will be published internationally through the World Health Organization. A similar study was conducted recently in New Zealand and found that this diet eased the symptoms of Parkinson's. Our study will include lessons learned from the New Zealand study and would add greatly to the weight of their results if our study shows the same improvement symptoms. This diet has already been shown to "cure" other health conditions like Type 2 diabetes, sleep apnea, and high blood pressure, just to name a few. Even if our participants' symptoms of PD don't improve, other aspects of their health most definitely will. **Participating in our study is a WIN-WIN for everyone in it, no matter what!**

We will need as many people with Parkinson's as possible to commit to completing the study. Please seriously consider signing up. The study will last 12 weeks, and you don't have to leave your home to participate! You don't even have to come to the September meeting because we will be broadcasting it on Zoom (so you'll need access to a computer), and we will record it and put a link to it on the website. But we do need you to sign up. Your participation has the potential to help people with Parkinson's disease all over the world. It can't get any more exciting than that!

One last note—you may be wondering why I am writing the President's Corner article. That's because Steve Locke has had to resign for health reasons. Pending a new election next year, since I am the Senior Vice President, I will also be the acting President for the time being. I would like to thank Steve for everything he did for us as President. His work has been invaluable.

Upcoming Study on the Effects of Nutrition on Parkinson's Disease and How You Can Participate Even in this Age of COVID-19

In our extremely important upcoming CPF sponsored study, the researchers are hoping to show that nutrition plays a major role in not only diminishing or eliminating Parkinson's symptoms but improving overall health. Additionally, the study will investigate the role of nutrition on symptoms of Anxiety and Depression, which are common symptoms in today's world and in people with Parkinson's Disease. Because we don't want COVID-19 concerns to keep you from participating in this important study, Dr. Tidman has come up with a way you can participate without face-to-face contact. For the study, participants will be expected to consume prescribed foods for the entire 12-week period. You will be provided a glucose/ketone monitor and will send in your blood test results every week, virtually (by email) to Dr. Tidman. The study's pre and post evaluations will be zoomed to you by appointment. For those without computer/internet/zoom capability, we will set up the CPF equipment for your use at an agreed upon location (your home or elsewhere). In that case, you will have to come face-to-face with either Jill or Julie who will be setting up the equipment but they will wear masks and practice social distancing throughout the process. So please don't let your lack of zoom capability prevent you from participating in this important study...**we will make it work.**

All participants will have to have your blood drawn at a lab before and after the study. These blood draws are necessary to show the effects of the diet (expected improvements) in your overall health. Additionally, all participants will need to have a permission form signed by their Primary Care Physician (PCP) to participate in the study. The researchers want to make all PCPs aware of your participation in case there are things they need to address. Dr. Tidman will be available to speak with your PCP if needed.

This diet has been proven to "cure"/prevent common health conditions such as type 2 diabetes (and, in some cases, type 1), high blood pressure, heart issues, cancer and many other health issues in addition to some neurodegenerative diseases. If you have diabetes we encourage you to participate so you can possibly eliminate that condition. With that said, if you do have diabetes, there will be conditions that you and your doctor must agree to in order to participate in the study. If your blood sugar improves which we anticipate it will as the study progresses, then your diabetes medication will need to be adjusted along the way so you're not overdosed. Your doctor must agree to monitor this and adjust your diabetes medication as needed during the study.

To repeat: Those participants with diabetes will absolutely be required to monitor their blood sugars a few times per day throughout the study and adjust their diabetes medications per their doctor's instructions. Participants should ask their PCPs about an Insulin Sliding Scale for injectable insulin products, and how to adjust other medications like Metformin according to blood sugar numbers.

So be your own advocate and take charge of your health by signing up for this ground-breaking study and, in the process, become your healthiest self.

July 11, 2020 Program Review

| by Jill Reid, Interim President

**Shaken to the C.O.O.R.E. – Learning to deal with the atomic events of your life
Presented by: Greg Ritscher, Fellow Parkinsonian**

Greg's daughter experienced a dire, life-threatening problem with her pregnancy. The medical staff had 16 hours to save her and the baby's lives. His granddaughter was delivered at 27 weeks, 13 weeks early, and she survived. Today, Emma has become a major focal point of Greg's life.

C.O.O.R.E stands for control, origin, ownership, reach, endurance—5 steps of dealing with atomic events in our lives.

Every culture has a word for the bad things that happen to people, e.g., Murphy's Law, kismet, bad juju, and dark karma. Some bad things are worse than others; these are atomic events after which nothing is ever the same again. The death of a loved one, divorce, disease diagnosis, and losing a job are all atomic events. Hearing the words, "You have Parkinson's," is an atomic event for anyone to whom they are directed. Those people are not being picked on but suddenly F.E.A.R (Future Expectations Appear Real) of becoming a burden to loved ones and losing independence looms large. Parkinson's tends to take things away from you. When your normal life is hit by an atomic event, it can have a catastrophic impact. But you have a choice: you can embrace the life changing energy of the atomic event and use it as a source of power and inspiration and thrive or you can embrace the trauma and drama of the atomic event rather than its energy and stagnate. The choice is ours.

Greg's vision for using the life-changing energy of his PD atomic event was born with his granddaughter, Emma. When she was born, he decided to live his life with PD so that he can walk down the aisle with Emma on her wedding day. Everything he has done with his PD since then has been guided by this goal. It is his inspiration for everything he does to Control his PD, acknowledge that the Oorigin of his PD doesn't matter, take Ownership of his PD, limit the Reach of PD in his and his loved ones' lives, and Endure until he completes his mission: to make PD wish it had never met him. These make up his C.O.O.R.E. When Emma was born, he decided not to let his PD make him a victim but a victor.

C: Control. To what degree do you control your PD? This is a tough question since your symptoms vary from day to day, but you need to decide.

O: Origin. What is the origin of your PD? Is it actually important? Does it matter? Probably not. So don't focus there.

O: Ownership. You have to take ownership of your PD and your situation and decide what you are going to do.

R: Reach. How far are you going to allow PD into your life? How far you let it reach into others' lives is entirely up to you.

E: Endurance. PD will endure through your life. Figure out what can you do to help others with PD not lose so much. And each year, find something new to do—something you didn't used to do so that you're expanding, not imploding and contracting.

Greg's PD has taken him from being a Type A Warlord of Commerce to being an ambassador of PD; according to his family, he is a gentler and kinder version of himself. The "Old Normal" passed away, and a New Way arose. Each month, he picks a PD cause and tackles it. He has written the EPA and Congress about the fact we in the US still use ETC, a metal cleaner that can cause PD. All PDers could and probably should pick a PD cause and tackle it. Join in on the campaign against ETC and lobby for research dollars for better medications and a cure.

Here are methods of control for the storms of life: choose your responses to the storms since you each have the unique ability to respond to stimuli; improve your capacity to deal with adversity; use response-ability to your advantage; understand change; understand F.E.A.R; find models that work for your situation; be intentional in what you do and how you respond (for example, have your spouse signal you in social situation when you look disinterested but you really want to look interested); recognize that you can still have a positive impact on your family and others; pause between stimulus and response and make an intentional decision on how to respond (but don't choose either fight or flight); and focus on a positive outlook for the future. As the Bible says, as a man thinks, so he is.

We both resist and seek change. We resist it because we like things to stay comfortable and familiar and because we fear the loss that change might bring. But we also seek change for the better because it engenders hope.

The major theme of Greg's book, Rising Above Parkinson's, is hope. Hope is the key. When life gives you lemons, you can have hope by knowing what to do, knowing how to handle the scenario, controlling your attitude, and learning to thrive despite PD. Also, yearly examine where you are in PD; if you don't, you can't manage it. You can find tools online to help you assess where you are. Also, find and use a support team.

Lastly, remember the Noah principle: It's not your ability to predict rain that counts; it's your ability to have prepared an ark.

Other Local Support Groups: Due to Coronavirus concerns, check ahead to see if canceled**Parkinson's Caregivers Support Group**

All family caregivers of persons with Parkinson's are invited to come to our discussion meetings. The group meets the 3rd Friday of every month at the Care & Share building just east of Constitution and Powers from 1:30-3:30 pm.
Contact Linda Marie Shewsbury at [REDACTED]

Ladies with Parkinson's Support Group

If you are a lady with Parkinson's Disease, and would like to join the group or just get more information, contact Carla Holland at [REDACTED] or by email at president@co-parkinson.org.

Essential Tremor Support Group

For information on scheduled meetings and locations, please contact the POC listed below.

POC: Jim Sanchez
ET Support Group Co-Leader
719-660-7275

Tri-Lakes Parkinson's Support Group

Meets the 3rd Saturday of every month at 10 am at the Monument Community Presbyterian Church, 238 3rd Street, Monument.
For more info contact John Farley by email: robun2good@gmail.com or [REDACTED] or Syble Krafft at (719) 488-2669.

Other Opportunities: Due to Coronavirus concerns, check ahead to see if canceled**LSVT BIG and LOUD at Home**

At Home Healthcare offers the LSVT BIG & LOUD therapy program for individuals with Parkinson's Disease in the comfort of their homes. Their therapists are LSVT certified and can accommodate patients' home schedules. Medicare covers out patient therapy at 80% and home health therapy at 100%. If you have questions about this service or would like a referral coordinated through your primary care provider please call their office at: (719) 227-8624.

Creativity Lab

Greetings everyone! With concerns for the health and safety of our participants, we at The Unsteady Hand have suspended all in person programming. We hope to resume around the first of the year. In interim, we are regularly updating our webpage with creative and fun things to do at home (Homework-the fun kind) and we also recently created a PD resource page on our site.
We miss you dearly and can't wait to see you again!

www.TheUnsteadyHand.org
Re-Imaging Parkinson's

- Mo

Adult Speech Therapy at Home

Outpatient speech therapy services conducted in the comfort of the patient's home. Personalized speech therapy for restoration of function due to illness or injury. Therapy offered includes speech/ language & cognitive therapy, swallow rehabilitation and voice therapy (LSVT LOUD) an evidenced based voice treatment program designed for patients with Parkinson's disease. For more info, contact Jana Hothan, MA, CCC_SLP, LLC at slp@janahothan.com or by phone at (719) 338-8165.

Upcoming Parkinson's Events:

The Focused Ultrasound Foundation (FUS) is holding its next biennial conference virtually because of COVID-19 concerns. CSPSG member, Ron Nickelson, was one of the first volunteers to undergo this procedure some years ago in hopes of diminishing his Parkinson's symptoms and is very pleased with the outcome.
The date is November 8-13.

For information and to sign up, go to www.symposium.fusfoundation.org.
To learn more about Ron's experience go to www.fusfoundation.org/news/focused-ultrasound-was-worth-the-wait-for-parkinson-s-patient.

The 7th Annual Parkinson Disease Symposium at the University of Colorado Anschutz Medical Campus in Denver will be held virtually on November 4th. For information and to sign up, go to www.eventbrite.com/e/7th-annual-parkinson-disease-symposium-registration-113803820290

September Executive Meeting

Tues, Sept 22nd | 12:00-1:30 pm | Location: 1605 Elm Creek View in the Creative Arts Room
Contact Jill at [REDACTED] or president@co-parkinson.org if you haven't been to an Executive Meeting so we will know you are coming. Leave your email address so we can contact you if anything changes.

OCTOBER NEWSLETTER**INPUT DEADLINE:****SEPTEMBER 23RD**

Call or e-mail Julie at:

[REDACTED] or db_mgr@co-parkinson.org

HAPPY
september
BIRTHDAYS!

Your birthday isn't listed? Fill out the membership form and check BD listed "YES".

- Mike Ballo
- Teri Ballo
- Dan Bandy
- Jackie Casey
- Gloria Chism
- Larry Christian
- Ray Coddington

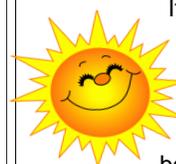
- Janet Conover
- Gerald Costanzo
- Nancy Crosier
- John Fletcher
- Karen Fletcher
- Carole Henrichsen
- Patrick Holland

- Alan Knight
- Maralyn Legleiter
- David Lydon
- Paul Metzler
- Alison Meyer
- Corinne Nelson
- Ric Pfarrer

- Carol Rushing
- Gary Shrewsbury
- Dennis Smith
- Judith Stauffer
- Onda Waller

Thank You!

Thanks to **ALL** who brought food and to those that helped setup and cleanup at the July meeting & August Picnic!

Help us spread some sunshine to our members!

If you know of a Parkinsonian or PD caregiver that is having a tough time (illness, surgery) or one of our members has passed away, please let our Sunshine Chairman, Sharon Carlson know. Sharon can be reached by calling [REDACTED]

PD Exercise Classes: Due to Coronavirus concerns, check ahead to see if canceled**Ormao Dance Company****Invites you to Dance for****Parkinson's Live Streamed Class**

Dance for Parkinson's—Keep Moving! Each Fri at 11am until further notice. It's free and just requires internet access, a computer, iPad or smart phone to connect to the zoom website. There will be a new Zoom Meeting each week. Go to the <https://co-parkinson.org> event calendar each week for a new link. Contact Laura Treglia at 719-640-8478 for more information.

Look forward to moving with you!

UCCS Center for Active Living - at the Lane Center

Power Moves group exercise and Balance & Agility classes. For more information call (719) 255-8004 or email CAL@uccs.edu.

PWR!Moves Class

Skyline Wellness & Aquatics Center is partnering with the YMCA to help the PWR! Moves class be more available to everyone. We are reaching out to help individuals who may be located on the south side of town and need a closer location to their home. We are located within Brookdale Skyline at 2365 Patriot Heights near Bear Creek Dog Park. Our classes are held every Tuesday and Thursday from 12:30-1:30 pm. If you have any questions, please contact the Fitness Coordinator Karisa Dreyer at (719) 867-4658.

PWP: Parkinson's With Poles

Come join Emily Moncheski and Eileen O'Reilly for a great exercise workout at Monument Valley Park. Every Friday, 9 am at the north parking entrance of Fontanero and Culebra streets. Poles are provided. Everyone is welcome.

Max Capacity NeuroFitness

Max Capacity is offering PWR Boot Camp classes, donation based Power Punch Boxing, pole walking classes and individual PD specific fitness training. All PD Boxing classes and PWR BootCamp classes have moved to: 731 Iowa Ave. in Otis Park. Boxing: Tues/Thur – 4:00 to 5:00pm and Sat – 9:00am to 10:00am PWR Boot Camp: Mon/Wed – 3:30pm to 4:30pm

Boxing is free of charge, Boot Camp packages available! Contact Emily Moncheski at (719) 213-3996 or emily@maxcapacitypt.com for info.

NIA Class

Moving to Heal – the art of feeling better; slower movements with joy and purpose. NIA works with balance, breath, cognitive mind/body function, mobility and stability. You can go at your own pace. Stop if you want, sit down and dance while sitting in a chair for a while. All while dancing to music from all genres; Jane, the instructor, often asks what we need that day and works her routine around what can help. She has done a wonderful job making the routines fit our Parkinson's needs.

When: Every Friday at 10:30
Location: 525 East Fountain Blvd. MACS—corner of Fountain & Royer
Cost: \$10.00 a class.

Falcon Exercise Group

Mon and Fri –11:00 – 12:00 noon, Grace Community Church. For more information contact Catherine Reed at [REDACTED]

Coronavirus and Parkinson's Disease

For information on coronavirus and Parkinson's Disease go to: www.parkinson.org/CoronaVirus.

YMCA PD Exercise Classes

We utilize exercise as medicine to increase quality of life so that you can get better and stay better.

Tri-Lakes YMCA: PWR!Moves – Mon & Wed, 3 pm - 4 pm and Pedaling – Tues & Thur, 11:15 am - 12:15 pm

Garden Ranch Y: PWR!Moves – Mon & Wed, 11:15 am – 12:15 pm; Fri, 1:10 pm – 2:10 pm

Downtown YMCA: PWR!Moves – Mon & Wed, 1:15 pm – 12:15 pm For more info, call 719-329-7233 or email jclayton@ppymca.org

Briargate YMCA: Ping Pong – Playing times are Monday, Wednesday and Friday from 1:30 to 3:30 pm. Come and join in the laughter and improve your skills. For more info contact

Kristin Woestehoff, 719-648-9593 or

kgwoestehoff@comcast.net

Briargate YMCA: Boxing for Parkinson's – A non-contact boxing class based on a specific curriculum. Through rigorous exercise, emphasizing gross motor movements, balance, core strength and rhythm with positive impact on range of motion, gait, flexibility, posture and strength, this class should improve overall quality of life.

The classes will be on Tuesdays & Thursdays from 12:30 – 1:30. \$5 for YMCA members and \$7.50 for non-members. For more info contact Jamie Clayton at jclayton@ppymca.org.

NeuroRehab Project at ORA – Water and Movement Classes

offers the following classes:

Improve your mobility in the water: We offer warm water (92 degrees) pool classes for people with movement disorders. Mondays and Wednesdays from 1:30-2:30. \$10.

Parkinson's Wellness Recovery Exercise Class: Power Moderate level. Fri at 1:30. \$10

Parkinson's Wellness Recovery Exercise Class: Power Advanced level. Wed at 1:30. \$10.

Danielle Spivey, PT and Rachel Johnson, SLP have created these opportunities to augment skilled Physical and Speech Therapy.

Location: Pikes Peak Athletics, 602 Elkton Drive in Rockrimmon. Please call us at (719) 559-0680 for information and to get signed up.

Gut Bacteria Affecting Parkinson's Treatment

By Dr. Ulji Thomas, MD

An article in News Medical Life Sciences

The following article has a lot of scientific terms but is worth the read. It has a lot of information about the role of the gut in Parkinson's disease – Julie Pfarrer

Parkinson's disease (PD) is treated by levodopa, which is a prodrug capable of crossing the blood-brain barrier before being metabolized to dopamine, a vital neurotransmitter in the brain.

However, certain gut bacteria interfere with this treatment, leading to unpredictable fluctuations in the motor response to levodopa and pushing up the dosage levels unnecessarily.

The Gut-Brain Axis

The gut microbiome numbers trillions, which is an order of magnitude higher than the number of cells in the human body. It also contains 150 times more genes and its biomass is equivalent to the human brain in mass. They are grouped into 500-1000 species belonging to 3 enterotypes, namely *Ruminococcus*, *Bacteroides*, and *Prevotella*.

All humans do not have the same microflora; in fact, not even all human populations do not share the same pattern. Variations occur in tune with the environment, nutritional factors, and genetic factors.

The mode of birth is thought to exert a formative effect on gut microbiota, in common with the maternal diet, neonatal health, maternal age, antibiotic exposure, and other factors that form antibiotic resistance determinants.

The gut microbiome functions to inhibit the growth of pathogenic bacteria, protect the gut epithelium from invasive growth, synthesize vitamins, modulate the energy balance of the body, regulate immune development, and xenobiotic effects.

They also produce essential molecules like short-chain fatty acids (SCFAs), bile acids, choline, amino acids, and other precursor molecules that maintain the integrity of the neurohormonal axis.

The gut-brain axis could be defined as a relationship between neurons in the gut, the peripheral nervous system, and the central nervous system.

Is PD Related to the Gut Microbiome?

Parkinson's disease is a progressive neurodegenerative disorder in which there is a deficiency of dopamine in the substantia nigra due to the loss of dopaminergic neurons, and cholinergic neurons from the posterior motor nucleus of the vagus. Simultaneously, the brain shows an accumulation of alpha-synuclein.

PD is the second most common neurodegenerative condition in the world, affecting 1% of the world's population in the over-60-year age group.

The gut neurons and gut microflora are related via several protein receptors that activate the innate immune system like the toll-like receptors (TLRs). In mice models, these are activated by the dysregulated hypothalamopituitary axis (HPA) occurring as a result of chronic stress.

The final event is dysbiosis of the gut, with a marked reduction in 'good' species like those of the genus *Bifidobacterium*, and the overgrowth of pathogenic species.

If this is prolonged, 'leaky gut syndrome' occurs, with increased intestinal permeability and colitis. Low-grade inflammation sets in, with breakdown of the intestinal epithelium, and oxidative stress.

Immune reactions are suppressed, disrupting the blood-brain barrier, which in turn allows lipopolysaccharides from Gram-negative bacteria and other toxins to gain access to the brain. One

of the resulting conditions is PD.

Do Gut Microbes Disrupt PD Treatment?

However, gut microbiota can also stop one of the drugs that are effective in the treatment of PD by breaking it down. Levodopa is a prodrug that is metabolized to dopamine in the brain.

However, gut microbes like *Enterococcus faecalis* break down much of the levodopa into dopamine before it ever crosses the epithelial barrier of the intestine. Unfortunately, dopamine cannot cross the blood-brain barrier.

Research has shown that a molecule similar to amino acid can block *E. faecalis* without killing it. The administration of this molecule results in increased levodopa levels, in mice.

This conversion of levodopa to dopamine is catalyzed by the enzyme tyrosine decarboxylase that is also responsible for converting tyrosine to tyramine. The rate of levodopa metabolism remains high even when this bacterium is exposed to a high concentration of tyrosine, which is an alternative substrate.

Decarboxylase Inhibitors Ineffective

Patients with PD receive a decarboxylase inhibitor like carbidopa to block this type of peripheral conversion of levodopa to dopamine. However, this only blocks the human version of this enzyme, leaving the bacteria unaffected.

Other compounds like benserazide and methyldopa are also ineffective at inhibiting the bacterial enzyme.

The resulting lower levels of levodopa reaching the brain may be one reason why levodopa is not uniformly effective in all patients. Fecal samples showing a high concentration of the bacterial tyrosine decarboxylase gene are found in patients who need higher doses of levodopa and carbidopa, as well as a longer period of treatment.

The Vicious Cycle: High Decarboxylase-High Dopamine-Bacterial Overgrowth

Many PD patients have slow intestinal motility, probably because of the higher levels of dopamine produced from levodopa. It could also be because of the overgrowth of small intestinal bacteria. It is linked with a variable motor response to the drug levodopa, which results in a higher frequency of dosage.

Again, the use of proton pump inhibitors to treat gut symptoms could lead to the overgrowth of levodopa-metabolizing bacteria.

The final common pathway for all these stimuli is bacterial overgrowth in the small intestine, triggering a vicious cycle. Moreover, long-term exposure to this combination of drugs may probably select for bacteria that express the genes encoding tyrosine decarboxylase, leading to its overgrowth.

Higher doses of levodopa can cause dyskinesia, a serious obstacle to achieving adequate dosages, and symptom control. Hope may come through the small molecule alpha-fluoromethyltyrosine (AFMT), that can block this pathway.

Says researcher Emily Balskus of Harvard University, "This opens up the door to the possibility of developing a new class of therapeutics to improve patient response to levodopa – that would be drugs targeting gut microbe metabolism in addition to targeting host metabolism.

EDUCATE. EMPOWER. ENERGIZE.



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US WorldMedics

VIRTUAL E3 CONFERENCE

Saturday, October 3, 2020 | 8:30am - 2:30pm

Join us for the Parkinson Association's first virtual e3 Conference! We are facing this challenge head on and are working hard to bring the same resources, energy and sense of community to our virtual conference. Through a virtual platform, we are able to expand our reach into underserved communities and provide breakout rooms for specific groups within the Parkinson's community, such as Care Partners, the Hispanic community, etc.

Although we will miss seeing your smiling faces, we hope the conference will educate, energize and empower you to live your best life with Parkinson's disease.

THE E3 CONFERENCE WILL CHALLENGE PARTICIPANTS TO:

- **educate** themselves on the symptoms of anxiety and depression in Parkinson's
- **energize** their community to get up and moving through exercise
- **empower** themselves to self-advocate and use positive self-talk

For more information or to register, visit
www.ParkinsonRockies.org/e3conference

Colorado Parkinson Foundation, Inc.

1155 Kelly Johnson Blvd.

Suite # 111

Colorado Springs, CO 80920

Parkinson's Perspective

SEPTEMBER 2020

Coming Events

See Inside for Details, Phone Numbers, and for More Information

September 19th - Reg Mtg at the Academy Christian Church - 10 am

Program: Upcoming Study on Effects of Nutrition on Parkinson's Disease - **Speaker:** Dr. Melanie Tidman

October 10th - Reg Mtg at the Weber Street Center - 10 am, **Program:** TBD - **Speaker:** Dr. Brian Grabert

November 14th - Reg Mtg at the Weber Street Center - 10 am, **Program:** TBD and Thanksgiving Potluck

December 12th - Reg Mtg at the Weber Street Center - 10 am, **Program:** Holiday Party

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- ◆ CSPSG Caregivers meeting is the 3rd Friday of each month — Contact Charlene at [REDACTED]
 - ◆ Tri-Lakes PD Support Group meets the 3rd Sat of each month — Contact Syble (719) 488-2669 or John at robun2good@gmail.com.
 - ◆ NeuroRehab Project at ORA — Call Danielle for PWR!MOVES or Rachel for Speech Therapy & Swallowing at 719-265-6601.
 - ◆ YMCA- Parkinson's Wellness Recovery Exercise — call (719) 329-7295 or email wellness@ppymca.org.
 - ◆ Colorado Springs Senior Center: Exercise, Yoga, and TaiChi for older adults - (719) 955-3400 or <http://www.ppymca.org/colorado-springs-senior-center/about-us>.
 - ◆ UCCS Center for Active Living — at the Lane Center - Power Moves group exercise classes. Also: Balance & Agility Class for information: Call 719-255-8004 or email CAL@uccs.edu.
 - ◆ Max Capacity NeuroFitness — Contact Emily at (719) 213-3996 or visit maxcapacitypt.com
 - ◆ The Resource Exchange — the single-entry point for Medicaid long-term care – must be eligible for Medicaid and for Social Security disability.

More useful websites: <https://parkinsonsnewstoday.com>; www.parkinsonrockies.org; www.parkinson.org; www.nwfp.org; michaeljfoxfoundation.org; www.parkinsonheartland.org; <https://www.pdself.org>; <https://www.brainhq.com/world-class-science/published-research/active-study>; www.davisphinneyfoundation.org/living-pd/webinar/videos/cognitive-nonmotor-symptoms-parkinsons; <http://caremap.parkinson.org>; https://www.youtube.com/playlist?list=PLkPIhQnN7cN6dAJZ5K5zQzY84btUTLo_C; <https://www.michaeljfox.org/foundation/news-detail.php?self-care-tips-for-parkinson-disease-caregivers>