



The PADRECC Post

Department of Veterans Affairs
2017

THE PHILADELPHIA PARKINSON'S DISEASE RESEARCH, EDUCATION & CLINICAL CENTER at
THE CORPORAL MICHAEL J. CRESCENZ VAMC

"Exercise As Medicine" in Parkinson's disease

By: James Morley, MD, PhD, PADRECC Associate Director of Research

Dopamine-replacing medicines improve the movement symptoms of PD, but these drugs can have unwanted side-effects, lose their benefit over time and often don't help with non-motor symptoms like mood and memory problems. Consequently, "non-pharmacologic" treatments, like exercise, have received much interest from researchers and doctors treating PD patients. This article discusses the reasons many doctors think of exercise as medicine and how patients should "take" it.

Exercise benefits both motor and non-motor symptoms

Most people know that exercise is good for the heart, but there is a lot of evidence that it is also good for the brain—and, specifically, for the symptoms of Parkinson's disease. Clinical trials have examined walking (on a treadmill or outside), weightlifting, vigorous stretching, interval training and many other forms of exercise finding benefits on motor symptoms in PD. Even some forms of activity not usually thought of as exercise including tai chi and tango dancing have been shown to benefit motor symptoms in PD. A recent meta-analysis (which looks at the combined results of other studies) review analyzed 39 exercise trials in more than 1800 PD patients and concluded that short-term (weeks to a few months) exercise interventions were associated with significant improvements in motor function, particularly walking and balance.

In addition to improvement of physical fitness, exercise has been shown in the general population to improve depression, poor sleep and memory, and Parkinson's researchers have started to study the

effects of exercise because these problems commonly appear in PD. Traditional treatments for these non-motor symptoms have limited effectiveness in PD, so a potential benefit of exercise, which could be used in combination with medical therapies, would be very exciting. While only a few trials with relatively small numbers of subjects have been performed in PD, the results suggest that aerobic exercise, in particular, may help with depression and anxiety. A large body of evidence indicates that exercise improves thinking and memory (cognition) in the general population and in dementias like Alzheimer's. A growing number of studies have shown that aerobic and resistance exercise can have similar benefits in PD patients with cognitive problems. Although it hasn't been the main focus of the studies, PD patients in exercise trials have also reported improvement of sleep.



Could exercise affect progression of PD?

Even more exciting than the potential for exercise to help with motor and non-motor symptoms, some evidence suggests that exercise—particularly aerobic exercise—might slow down the progression of PD, though this hasn't been proven. Several studies have shown adults with higher activity levels have a lower risk of developing PD in the future, suggesting that exercise might delay or prevent the cause of PD. Also, exercise affects biological targets (like brain growth factors) that scientists believe might slow down PD progression. Scientists aren't exactly sure how to tell whether treatments are changing disease progression (rather than just improving symptoms) but one small study indicated that an intensive exercise program resulted in an increased number of dopamine cell markers in regions of the brain affected in PD—as might be expected if disease progression was affected.

Exercise As Medicine Continued

While there are still some questions about the best type, duration and which patients get the most benefit from exercise interventions, the evidence suggests that many different exercises done in many different ways are helpful for motor and non-motor symptoms in PD. On the other hand, physical inactivity is associated with obesity and the “metabolic syndrome” that have been independently associated with worse symptoms in PD. More than 40 active studies of exercise in PD are currently listed on the website clinicaltrials.gov, so there will certainly be even more information to come in the near future.

What is the “prescription” for exercise

The American Heart Association recommends adults get 150 minutes of moderate exercise (fast walking, slow biking—you should be able to carry on a conversation) or 75 minutes of vigorous exercise (running, swimming laps—you should not be able to carry on a conversation and might feel out of breath) each week. That might seem like a lot (and it is!), so you may need to start at a lower “dose” and work your way up. Just as you would with any medication, it’s important to talk with your doctor before you start “taking exercise” to be sure your heart is healthy enough and to decide what would be a good level where you can start. There should be a level of activity that is safe for almost everyone—and you can certainly build from there if you keep at it! The hardest part is often getting started, but once you start “taking your exercise” regularly, you may find that it has as much—or even more—benefits than all of the other pills in your medicine cabinet.



Important VA Benefit Changes for Veterans with Parkinson’s Disease

Camp Lejeune Past Water Contamination

VA has established a presumptive service connection for active duty, reserve and National Guard members who served at Camp Lejeune for a minimum of 30 days (cumulative) between **August 1, 1953 and December 31, 1987** and are diagnosed with any of the following conditions:

- Adult leukemia
- Aplastic anemia and other myelodysplastic syndromes
- Bladder cancer
- Kidney cancer
- Liver cancer
- Multiple myeloma
- Non-Hodgkin's lymphoma
- **Parkinson's disease**

To learn more please visit:

www.publichealth.va.gov/exposures/camp-lejeune/

C-123 Airplanes and Agent Orange Residue Post-Vietnam Dioxin Exposure in Agent Orange–Contaminated C-123 Aircraft

Based on a report released January 9, 2015 by Health and Medicine Division (HMD) (formally known as the Institute of Medicine) of the National Academy of Sciences, Engineering, and Medicine, the VA decided that individuals in the Air Force or Air Force Reserve who had regular contact with aircraft that had been used to spray herbicide in Vietnam may qualify for benefits for Agent Orange exposure. Included are those who regularly operated, maintained or served aboard C-123 aircraft including those who trained and worked on the aircraft after its return to the United States from use in Vietnam. More information is available at:

<http://www.publichealth.va.gov/exposures/agentorange/locations/residue-c123-aircraft/index.asp>

IOM (Institute of Medicine). 2015. Post-Vietnam dioxin exposure in Agent Orange-contaminated C-123 aircraft. Washington, DC: The National Academies Press.

<http://www.nationalacademies.org/hmd/Reports/2015/Post-Vietnam-Dioxin-Exposure-in-Agent-Orange-Contaminated-C-123-Aircraft.aspx>

Research Happenings at the Philadelphia PADRECC

Medication-Induced Parkinsonism

Dr. James Morley is conducting a study to understand how Parkinson's-like symptoms caused by medications are related to PD. Symptoms of PD can be mimicked by certain medicines (usually used for schizophrenia and some other psychiatric conditions) that block dopamine—the major brain chemical missing in PD. Not everyone's symptoms improve after the medicines are switched or stopped, so it is possible that the medicines uncover very early PD in some cases. Dr. Morley's team is comparing medication-exposed patients with and without Parkinson's symptoms using questionnaires, physical exam, blood tests and a brain scan in addition to following patients with symptoms after the medication is switched or stopped. Their goal is to determine whether any of these tests can predict which patients are at higher risk of developing PD. Patients with abnormal brain scans suggesting they may have early PD, are being further studied by Dr. Morley to test whether exercise can improve movement symptoms and disease progression on the brain scan.

Traumatic Brain Injury

Dr. John Duda, PADRECC Director and his colleagues, Drs. Kacy Cullen and John Wolf, from the Department of Neurosurgery at the University of Pennsylvania, continue studies funded by the Rehabilitation Research and Development Service of the Department of Veterans Affairs to develop animal models of Chronic Traumatic Encephalopathy (CTE) that sometimes develops years later in people such as football players and war fighters who have had traumatic brain injuries. The goal of these studies is to develop models of these changes in the brains of animals so that novel treatments and preventive strategies can be tested. It is hoped that these studies will lead to treatments to prevent the development of these neurodegenerative diseases in Veterans and others who have suffered head injuries.

Neurorestoration in Parkinson's Disease

Dr. John Duda and his colleagues Kacy Cullen, PhD, and James Harris, PhD from Center for Neurotrauma, Neurodegeneration, and Restoration (CNNR) at the

Crescenz VA Medical Center, continue to investigate experimental reconstitution of the nigrostriatal pathway (the pathway that degenerates in PD and causes the motor symptoms) in animal models of PD in a grant entitled, 'Restoring the nigrostriatal pathway with living micro-tissue engineered axonal tracts'.

Bacteria and Parkinson's Disease

Dr. Fullard and Dr. Duda, in collaboration with Dr. Noam Cohen from the Ear Nose and Throat Department, continue to study how bacteria that colonize our body might contribute to the risk of Parkinson's disease. It has been shown that these bacteria are different in people with Parkinson's disease compared to people without Parkinson's disease. This study is trying to understand if there are genetic reasons why some people have certain types of bacteria in the hopes of developing new therapies in the future.

Exercise and Parkinson's Disease

Dr. Sneha Mantri, PADRECC Movement Disorders Fellow and Dr. James Morley are conducting a study to better understand physical activity habits and attitudes about exercise of people with Parkinson's disease. Participants are asked to complete a series of questionnaires to assess exercise and activity habits, attitudes about exercise, sleep, mood, memory, and other symptoms. By understanding a veteran's physical activity habits, we can better design an exercise program that meets their needs to remain physically active.

Balance and Parkinson's Disease

Dr. Delaram Safarpour, PADRECC Movement Disorders Fellow and Dr. James Morley are studying whether a balance vest, Balance Based Torso Weighting (BBTW), can improve walking and balance in patients who have PD and related conditions. The weighted vest has been shown to improve walking and balance in patients with other neurological conditions, but it is unknown whether the vest could help patients with PD and related conditions. It is hoped that the BBTW can potentially be a non-pharmacological approach for improvement of balance and walking in this population of patients.



Preventing Falls in Parkinson Disease

By: Sneha Mantri, MD PADRECC Fellow



People with Parkinson disease (PD) are at a higher risk of falls than people without PD. Each year, one in three people with PD will have a serious fall, leading to injury, fracture, or decreased mobility. In fact, PD-related fall risk is one of the major reasons for nursing home placement. Here are some tips and tricks to keep you on your feet.

General tips: Most falls happen when you are trying to turn or pivot quickly. Take your time, especially in narrow spaces. Avoid multitasking, like talking on the phone and walking at the same time. When walking outside, be aware of uneven ground, cracks in the sidewalk, or anything else that might trip you up. Indoors, watch out for rugs, extension cords, and other objects on the floor. Go through your house with another person and identify any potential tripping hazards. Ask your doctor for a home safety evaluation, where an occupational therapist can come out to your house and help find problem areas.

Room-specific tips:

- ◆ In the bathroom, consider installing grab bars in the shower/tub and by the commode. Put a bamboo or plastic mat in the shower/tub to reduce slipperiness, or use a shower chair if space permits.
- ◆ In the kitchen, keep your most commonly used pans and utensils at waist-height to avoid bending into low cabinets or standing on stepstools. For lightweight items on higher shelves, use a long-handled reacher.
- ◆ Get a low-profile bedframe or even put your mattress directly on the floor to avoid losing your balance when climbing into or out of bed. When you sit on the bed, both feet should be able to touch the floor.
- ◆ All stairs should be non-skid, have at least one set of handrails, and be well lit; brightly colored reflective tape can help mark the beginning and end of each step

If you find yourself “freezing,” like your feet are stuck to the floor, don’t fight the freeze! Instead, try these freeze breaking techniques:

1. Stop, take a deep breath, and as you exhale, take a big step forward
2. Shift your weight from side to side until you can pick up a foot
3. Count “1....2....3...” then step
4. If the floor has a pattern on it, try to step over lines in the pattern
5. Play some dance music! Dancing cues can help your brain break the freeze

Stay physically active! The best way to reduce your risk of falls is to keep active. Exercise keeps your muscles and joints limber enough to pull you up after a fall, and weight-bearing exercise, in particular, helps to build strong bones and reduce the risk of fracture. All kinds of exercise are helpful to maintain mobility and independence for people with PD; popular options include Tai Chi, swimming, and tango. The best exercise for you is something you enjoy doing. So lace up your sneakers and keep moving!



National PD Web-Based Resources

Michael J. Fox Foundation: www.michaeljfox.org

◆ **Fox Feed Blog:** the latest reporting of progress in PD research & issues that matter to you. Features webinars, podcasts and blog posts on topics related to PD.

Parkinson Disease Foundation (PDF): www.pdf.org

◆ **PD Expert Briefings:** 1 hour online seminars that offer practical tips and tools. Seminars are broadcasted live and archived for later viewing.

◆ **Educational Publications:** factsheets, brochures and booklets on various PD topics are available for viewing and download on the PDF website.

National Parkinson Foundation: www.parkinson.org

◆ **Parkinson's Today Blog:** Up-to-date information on the latest PD research, news, and caregiving tips.

◆ **Educational Publications and Webcasts:** factsheets, newsletters, handbooks, videos and archived webinars on various PD topics are available for viewing and download on the NPF website.

American Parkinson Disease Association: www.apdaparkinson.org

◆ **Webinar Series:** Up-to-date information on PD & treatment featuring expert speakers from the PD community. Available via the web and telephone and archived for future use.

◆ **Brochures & Pamphlets:** Materials focused on the clinical and psychosocial aspects of PD are available for download on the website.

NATIONAL RESEARCH LINKS

Fox Trial Finder (FTF)

<https://foxtrialfinder.michaeljfox.org/>

Online matching tool that connects volunteers with PD clinical trials.

NIH Clinical Research Trials and You

<https://www.nih.gov/health-information/nih-clinical-research-trials-you>

An online resource to help people learn more about clinical trials, why they matter and how to participate.

ClinicalTrials.gov

www.clinicaltrials.gov

Is a registry and results database of federally and privately supported clinical studies conducted around the world.



Workshop for Veterans with Parkinson's Disease at The Philadelphia Museum of Art

On June 22, 2017 the Philadelphia PADRECC partnered with **The Philadelphia Museum of Art** to offer a unique workshop designed for Veterans with Parkinson's disease and their care partners. The program included a private guided tour and an art lesson in the galleries by teaching artist Janice Merendino.

The exercises in this workshop were fun and created a camaraderie that encouraged people to go beyond self-imposed limitations.

We look forward to offering this program again. If you are interested in attending a future program please contact Gretchen Glenn-215-823-5934.

Special thanks to The Philadelphia Museum of Art-Accessible Programs!



Annual Patient Education Program: "Exercise As Medicine"

On **April 24th, 2017** the Philadelphia PADRECC held it's Annual Patient Education Program and this year highlighted the importance of exercise in the treatment of Parkinson's disease. The morning long program provided practical information on the benefits of exercise as well as an opportunity to try out different types of exercises shown to be beneficial to the PD population such as Tai Chi, Yoga, Rock Steady Boxing and LSVT Big. It was a fun morning that got participants moving and realizing exercise can be enjoyable as well as beneficial.



NEW: Tai Chi with Marcus at Crescenz VAMC

Balance, strength, flexibility, mobility and stress reduction. Discover what is known as the Supreme Ultimate martial arts as you find balance and harmony, physically and mentally, through the practice of Tai Chi.

Every Monday- 11:30am-1pm

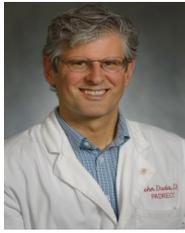
Location: 3rd floor Multipurpose Room

Contact: 215-823-5800 x3756

2017 PADRECC Parkinson's Disease Support Group

Support Groups are held the 1st Monday of the month from 1:30p-2:30p. Location of each group is listed below. Not all groups will be available at the CBOCs this year.

April 3rd	Topic: Cognitive Fitness Location: 4th Fl. PADRECC Conference Rm & Burlington and Horsham CBOCs via video
May 1st	Topic: Tai Chi with Marcus Location: Crescenz VAMC 7th Fl. 7A141-Back
June 5th	Topic: Discussion Group Location: 4th Fl. PADRECC Conference Rm
July 3rd	Topic: Tai Chi with Marcus Location: Crescenz VAMC 3rd Fl. Multipurpose Rm
August 7th	Topic: Benefits of Exercise Location: 4th Fl. PADRECC Conference Rm & Burlington and Horsham CBOCs via video
September 4th	Labor Day-No Group
October 2nd	Topic: Fall Prevention & Practical Pointers Location: 4th Fl. PADRECC Conference Rm & Burlington and Horsham CBOCs via video
November 6th	Topic: Discussion Group Location 4th Fl. PADRECC Conference Rm
December 4th	Topic: To Be Determined Location 4th Fl. PADRECC Conference Rm & Burlington and Horsham CBOCs via video



Dr. John Duda



Dr. Jayne Wilkinson



Dr. James Morley

The Philadelphia PADRECC Team

- Dr. John Duda, Director
- Dr. Jayne Wilkinson, Associate Clinical Director
- Dr. James Morley, Associate Director of Research
- Dr. Branch Coslett, Chief, Neurology Service
- Dr. Sneha Mantri, 2nd year Fellow
- Dr. Yonglu Huang, 1st year Fellow
- Dr. Daniel Weintraub, Geriatric Psychiatrist
- Dr. Rasham Shah, Pharmacist
- Rebecca Martine, MSN, RN, PMHCNS, Nurse Coordinator
- Heidi Watson, BSN, RN, Nurse Coordinator
- Eileen Hummel, MSN, RN, Nurse Coordinator
- Gretchen Glenn, LCSW, Social Worker
- Stephanie Wood, Research Coordinator
- Dawn McHale, Program Specialist
- Tonya Belton, Program Support Associate
- Yolanda Underwood, Patient Services Assistant

To learn more about the Philadelphia PADRECC and the National VA PD Consortium, please call: **215-823-5934 or 1-888-959-2323** or check us out on the Internet at: www.parkinsons.va.gov

The Philadelphia PADRECC Consortium Network



National VA PD Consortium Centers

The National VA Parkinson's Disease Consortium was established in 2003 as a means to broaden the impact of the Parkinson's Disease Research, Education and Clinical Centers (PADRECCs) and encourage modern Parkinson's disease care across the VA Healthcare System. Together, the PADRECCs and Consortium Centers create a hub and spoke model of care, allowing effective and convenient services to all veterans, regardless of location. Veterans who cannot access services at a PADRECC facility can receive specialized care at the closest Consortium Center in their region.

Northeast Consortium Centers

<p>Albany, NY Consortium Director: Dr. Donald Higgins Referral Number: 518-626-6373</p> <p>Baltimore, MD Consortium Director: Dr. Paul Fishman Referral Number: 410-605-7000 x7060</p> <p>Bronx, NY Consortium Director: Dr. Ruth Walker Referral Number: 718-584-9000 x5915</p> <p>Cleveland, OH Consortium Director: Dr. Aasef Shaikh Referral Number: 261-791-3800</p>	<p>Jamaica Plain, MA Consortium Director: Dr. Raymond Durso Referral Number: 617-232-9500 x4750</p> <p>Pittsburgh, PA Consortium Director: Dr. David Hinkle Referral Number: 412-688-6185</p> <p>Syracuse, NY Consortium Director: Dr. Dragos Mihaila Referral Number: 315-425-3474</p> <p>West Haven, CT Consortium Director: Dr. Diana Richardson Referral Number: 203-932-5711</p>
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PD Organizations

American Parkinson Disease Association (APDA)
www.apdaparkinson.org (800) 223-2732

National Parkinson Foundation (NPF)
www.parkinson.org (800) 327-4545

Parkinson Disease Foundation (PDF)
www.pdf.org (800) 457-6676

Michael J. Fox Foundation
www.michaeljfox.org (212)509-0995

Davis Phinney Foundation
www.davisphinneyfoundation.org (866) 358-0285

Related Movement Disorder Organizations

CurePSP
www.psp.org

Lewy Body Dementia Association
www.lbda.org

Association for Frontotemporal Degeneration
www.ftd-picks.org

Huntingdon's Disease Society of America
www.hdsa.org

International Essential Tremor Foundation
www.essentialtremor.org

Veterans Affairs

National VA PADRECC & PD Consortium
www.parkinsons.va.gov 1-888-959-2323

Agent Orange Website
www.publichealth.va.gov/exposures/agentorange

VA Health Care Eligibility
www.va.gov/healthbenefits 1-877-222-8387

Veterans Benefits Administration
www.benefits.va.gov/benefits/ 1-800-827-1000

VA and Department of Defense
www.ebenefits.va.gov

My HealtheVet
www.myhealth.va.gov

VA Caregiver Support
www.caregiver.va.gov 1-855-260-3274

State Veterans Affairs Offices
www.va.gov/statedva.htm

Veterans Crisis Line
1-800-273-8255 Press 1

With Sincere Thanks

The Philadelphia PADRECC would like to thank those who made charitable donations on behalf of loved ones followed in the clinic. The donations are used to support our education initiatives.

The PADRECC Post

Editors: Gretchen Glenn, LCSW & Dawn McHale

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