



Carlos Singer, MD
Professor of Neurology
Director of the Division of
Parkinson's Disease and
Movement Disorders
Miller School of Medicine
University of Miami

Neurology

Miller School of Medicine

The Nintendo Wii® game system for Individuals with Parkinson's Disease

Parkinson's disease is defined as a progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and aging adults. One of the roles of a physical therapist treating a patient with Parkinson's disease is to determine how the disease process is affecting that individual's quality of life and to create and implement a specific plan of care that will increase functional mobility. The Nintendo Wii® gaming system released in 2006 introduced a new style of virtual reality by using a wireless controller that interacts with the player through a motion-detection system.¹ The Wii® incorporates a 3-dimensional accelerometer technology that can respond to changes in direction, speed, and acceleration. Instantaneous feedback is provided to users on a television screen via interactive games so that they are able to make adjustments to their positioning in real time.¹ The purpose of using the Wii® within the clinical setting is to provide users with interactive simulations, visual and auditory feedback,

and motivate the user to participate in treatment that will result in improved postural control, visual-perceptual processing, walking speed, balance, and decrease risk for falls.²

Parkinson's disease tends to dominate normal movement patterns causing smaller, more rigid movements leading to motor dysfunction impacting balance. Diminished ability to maintain balance is a risk factor for falling. More than one-third of the adults 65 years and older fall each year in the United States, including many who have Parkinson's disease.¹ Balance training alone or in combination with other exercises has been shown to reduce the risk of falling among older adults.¹ A few studies have shown that computerized balance training including virtual reality games and biofeedback (such as the Wii®) improve balance in older adults who are at risk for falling.¹

The Nintendo Wii® gaming system offer therapists the control over exercise duration, intensity,

and environments that real-world tasks do not.² Users of the Wii® can perform tasks that they may not be able to execute safely or at all in real-world situations. The Wii® uses differences in the applied forces and accelerations of the remote to change the amount of feedback it provides to the user.² Multiple players can simultaneously participate in a game scenario. Some of the games resemble real-world games such as tennis, golf, and boxing, requiring total body movement similar to real-world motions.² In the clinical setting, many of the games can be performed in standing or sitting. One of the most unique characteristics of the Wii® that has caused a growing popularity for this gaming system among patients is its relative low cost, safety, and feasibility of using the Wii® for independent balance training in the home.¹ Studies have shown home based training is more convenient and accessible to older adults and helps to increase adherence to game play over time.¹

Continued on page 2



Parkinson's Disease & Movement Disorders Center
1501 NW 9th Avenue,
2nd Floor,
Miami, Florida 33136

To make an appointment call
(305) 243-3100
or (305) 243-6732

Inside this issue:

Cont'd Nintendo Wii®	2
Research Grants Awarded	2
Brain Endowment Bank	3
Coenzyme Q10 Update	3
New Staff: Dr. Henry P. Moore	3
Fall 2011 PD Support Groups Schedule	4
Upcoming PD Symposium	4



NATIONAL PARKINSON FOUNDATION

Cont'd: Nintendo Wii® game system for Individuals with PD

Research also shows that training with the Wii® led to improvements in postural control and stance stability which are affected in individuals with Parkinson's disease.³ Physical therapists who are specialists in Parkinson's disease at St. Catherine's Rehabilitation Hospital have reported that the Nintendo Wii® game system makes a difference in an individual's, balance, walking ability, and overall quality of life. Patients report high enjoyment immediately after game play, express experiencing improved balance with daily activities and a desire to play the games with their grandchildren and family members. Recently, Nintendo introduced a new interactive platform game, Wii Fit®, which was designed to provide multiple modes of exercise.³ The Nintendo Wii® and Wii Fit® provide innovative adaptive options to traditional balance training exercises that are enjoyable, purposeful, and result in improvements in physical functioning, depression, and overall quality of life.¹ For more information on innovative rehabilitation techniques for individuals with Parkinson's disease, you may contact Greg Hartley, PT, DPT, GCS at St. Catherine's Rehabilitation Hospital (305-891-8850 ext. 4283) or George Dumenigo, LCSW at the University of Miami (305-243-1865).



Written by: **Sabrina Joseph, PT, DPT**



St. Catherine's Rehabilitation
Hospital & Villa Maria
Nursing Center



Citations

1. Agmon M, et al. A Pilot Study of Wii Fit Exergames to Improve Balance in Older Adults. *J Geriatr Phys Ther.* 2011; 34(4):1-7.
2. Deutsch JE, et al. Use of a Low-Cost, Commercially Available Gaming Console (Wii) for Rehabilitation of an Adolescent With Cerebral Palsy. *Physical Therapy.* 2008; 88(10): 1197-1207.
3. Miller CA, et al. Using the NintendoWii Fit and BodyWeight Support to Improve Aerobic Capacity, Balance, Gait Ability, and Fear of Falling: Two Case Reports. *J Geriatr Phys Ther.* 2011; 34(3):1-10.

Research Grants Awarded to Dr. Carlos Singer & Dr. Fatta Nahab



Carlos Singer, MD

The National Parkinson Foundation (NPF) has awarded more than \$1 million dollars in clinical research projects in 2011. Through NPF's individual investigators awards program, NPF is supporting work to advance three key areas of Parkinson's disease (PD): 1) an advanced biomarker study, 2) a clinical trial to treat memory impairment, and 3) a study of the effectiveness of a treatment for sleep apnea in PD. NPF funded the following two-year clinical research grant at the University of Miami:

Sleep Disordered Breathing and its Impact on Cognitive Performance and Quality of Life in Parkinson's Disease: Carlos Singer, MD, Miller School of Medicine, University of Miami.

Poor sleep affects the quality of life for people with PD, but there is also evidence that it may also contribute to decreased cognition. This study will evaluate the prevalence of sleep disordered breathing (SDB) and test the effectiveness of a common SDB treatment in people with Parkinson's. Sleep disturbance in PD has been highlighted as not only having a measurable impact on quality of life, but also contributing to trauma and injury associated with reduced vigilance due to fatigue.



Fatta Nahab, MD

Essential Tremor (ET) is the most common tremor disorder, currently affecting an estimated 2.9 million Americans. The most common symptoms are tremors occurring during movement that involve the hands and head. While ET is more common in older adults, many individuals develop their first symptoms in adolescence or early adulthood. Both the causes of ET and the mechanisms of treatment response are poorly understood. The Laboratory for Functional Imaging of Neurodegenerative Disorders is conducting an NIH-sponsored study to understand both the causes of ET and how various treatments work. Up to 50 individuals with ET will be enrolled in this study and will receive a complete clinical evaluation and research MRIs. Unaffected individuals are also needed to serve as controls and will undergo similar testing at no cost. For more information, please call 305-243-5827.

BRAIN DONATION - THE GIFT THAT KEEPS ON GIVING

Making the choice to donate your brain for scientific research is a noble gift that keeps on giving. The University of Miami's Brain Endowment Bank serves the scientific community by providing a brain biorepository. Scientists from all over the world are then able to request brain tissue for various studies that advance our knowledge of brain-based disorders such as Parkinson's Disease, Alzheimer's Disease, Huntington's Disease, Amyotrophic Lateral Sclerosis. The Brain Endowment Bank was founded in 1986 to help solve the mysteries of neurological and neuropsychiatric disorders which devastate the lives of so many.

Our talented research team is led by Dr. Deborah C. Mash who has published over 250 articles on Parkinson's Disease, Amyotrophic Lateral Sclerosis, Multiple System Atrophy, Progressive Supranuclear Palsy, Alzheimer's Disease, as well as Healthy Brain Aging. The team members include doctors, post doctoral and research assistants who are studying genetic expression and environmental effects on healthy and diseased brains. Our staff go out into the community to discuss the benefits of brain donation. We at the Brain Bank are eternally grateful for family member's generosity in allowing their loved ones to make this final special gift.

Donors and family members are an integral part of our team as they provide the gifts that keep on giving. These gifts further the research that provides an understanding of the causes, prevention and cures for many brain-based illnesses.

UM Brain Endowment Bank
305.243.6219 or 1-800-UMBRAIN
www.brainbank.med.miami.edu



The Latest on CoQ10

In recent years, there has been a lot of conversation regarding the use of Coenzyme Q10 (CoQ10) in Parkinson disease. This vitamin was identified as part of the "energy pump" inside the nerve cells. This "energy pump" is deficient in the nerve cells of the Parkinson patient. The thought was that by taking CoQ10 regularly, we would be helping this "energy pump" work better.

This idea received even more impetus when a small but well done study in Parkinson patients showed that those who were taking 1,200 mg a day were doing better than those taking doses lower than 1,200 mg or placebo. The stage was set for a large study, administering CoQ10 at doses of either 1,200 mg a day or 2,400 mg a day and comparing both doses to placebo. A recent analysis of the data made it clear to the organizers of this study, the Parkinson study group, that it would be futile to continue this study as no difference could be detected with placebo.

In conclusion, there is no evidence that taking high dose CoQ10 would make any difference in the long run for our patients. We are now concentrating our research in potential medications. We are currently involved in a trial of an antidiabetic agent as a possible disease modifier and next year we expect to be part of two other studies looking at other medications with that same idea: slowing down the progression of Parkinson disease.

Written by: Dr. Carlos Singer

New Member to Our Parkinson's Team: Dr. Henry P. Moore



Dr. Henry Moore has recently joined our Movement Disorders Division as an Assistant Professor of Clinical Neurology. He earned his undergraduate and medical degree at Universidad Peruana Cayetano Heredia – School of Medicine, Lima - Peru. He performed his Neurology Residency at Jackson Memorial Hospital / University of Miami – Miller School of Medicine. Then, he performed a 2-year Movement Disorders Fellowship at Jackson Memorial Hospital / University of Miami – Miller School of Medicine. Dr. Moore's clinical and research interests include dystonia, non-motor manifestations of Parkinson's disease such as urological, cardiovascular and sleep related; and deep brain stimulation (DBS) surgery. He is certified in Neurology by the American Board of Psychiatry and Neurology.

His clinic locations are: NPF, 1501 NW 9th Avenue, 2nd floor, Miami, FL 33136, clinic number (305) 243-4075, fax (305) 243-3321 and UHealth at Boca, 3848 FAU Boulevard, Suite 305, Boca Raton, FL 33431

Yamileth Perez is his clinical administrative assistant. She can be reached at (305) 243-4075.

His clinics will be held at NPF on Mondays and Thursdays and at Boca on Tuesdays and Wednesdays.

PARKINSON INSIDER

A publication of the University of Miami, Parkinson's Disease & Movement Disorder Center

Fall 2011
Issue 9

Parkinson Insider Editorial Staff



Chief Editor: Angela P. Russell, ARNP-BC, FNP, PhD
arussell@med.miami.edu

Co-Editor: George Dumenigo, LCSW, MSW
gdumenigo@med.miami.edu

Contributing Editorial Staff:

Sabrina Joseph, PT, DPT

Carlos Singer, MD

Angelica D. Marr, MD

Subscribe to our Newsletter via e-mail

Email the editors a request with the word "Subscribe" on the subject line, & start receiving our publication electronically.



Or send fax request to

(305) 243-3321.

Our newsletters can also be found online @

www.neurology.med.miami.edu/x98.xml

Please remember that the material presented in this newsletter is for informational purposes only. It should not be used for treatment purposes. Consult with your physician for further information and discussion, if needed.

The Parkinson Insider is published three times a year for patients and their caregivers with Parkinson's disease and other movement disorders.

Fall 2011 University of Miami PD Support Groups Schedule

<p>October 2011</p>	<p>Parkinson's Disease Caregiver Support Group When: Thursday, October 6, 2011 Time: 11:30am - 12:30pm</p> <p>Parkinson's Support Group When: Thursday, October 6, 2011 Time: 1:00 - 2:00pm</p> <p>Deep Brain Stimulation Support Group When: Friday, October 21, 2011 Time: 1:00 - 2:30pm</p> <p>Dystonia Support Group When: Tuesday, October 25, 2011 Location: The Forum at Deer Creek</p>
<p>November 2011</p>	<p>Parkinson's Disease Caregiver Support Group When: Thursday, November 3, 2011 Time: 11:30am - 12:30pm</p>
<p>December 2011</p>	<p>Parkinson's Disease Caregiver Support Group When: Thursday, December 1, 2011 Time: 11:30am - 12:30pm</p> <p>Parkinson's Support Group When: Thursday, December 1, 2011 Time: 1:00 - 2:00pm</p> <p>Deep Brain Stimulation Support Group When: Friday, December 16, 2011 Time: 1:00 - 2:30pm</p>

Upcoming
PD
Symposium

SAFRA Foundation
Visiting Nursing Faculty Program

September 22 & 23rd, 2011
2 day Lecture-Nursing Faculty Only

Parkinson's Disease 101

(2 day lectures)

For patients and caregivers

Presenters: Angela Russell, ARNP-BC, PhD., Clinical Coordinator, &

George Dumenigo, LCSW, Social Worker

UM Parkinson's Disease & Movement Disorders Center.

When: Tuesdays, October 11 & 18, 2011

From 10:00am-12:30pm

Location: The Palace Suites,

11377 SW 84th Street, Miami, FL 33173

We are grateful to the NPF for their support of the Parkinson Insider.