



RUSH UNIVERSITY  
MEDICAL CENTER

# PARKINSON NEWSLETTER

## Genetics in Parkinson Disease

Deborah A. Hall, M.D., Ph.D.



Genes are the blueprint for our body. Genes provide the information that tells our body how to develop, what color

our eyes will be, where our organs will be located, and thousands of other instructions. Genes are made from DNA and are packaged into structures called chromosomes. Every cell in our body has the same set of chromosomes in it, which contain around 3 billion base pairs of DNA. The DNA sequence in any two people is 99.9% identical. A problem in a gene (called a gene mutation) anywhere in the chromosomes can cause disease. Some gene mutations occur out of the blue and many are passed down through families.

There are seven gene mutations that have been found to cause Parkinson disease. Some of these genes are asso-

ciated with a young onset of the disease (younger than age 40) and testing is available commercially for two of these genes: Parkin and PINK1. LRRK2 is the most common gene mutation associated with Parkinson disease. It can be seen in families with multiple people with Parkinson disease, in families with young onset, or in individuals without a family history. LRRK2 gene mutations account for Parkinson disease in 7% of patients in the United States. This rate is closer to 35% if the patient has an Arab or Ashkenazi Jewish background.

Commercial testing is available for LRRK2 and it is the least expensive of the tests currently available. Recently, a gene mutation has been discovered that increases a person's risk for Parkinson disease: glucocerebrosidase (GBA). This gene mutation is found in 4% of Parkinson patients. This gene mutation is not routinely tested for yet. A positive test result of any of these genes may be informative, but is not likely to change management of symptoms or prognosis. For this reason, recommendations regarding genetic testing in Parkinson

disease vary depending on the patient and treating physician.

Many insurance companies may not pay for testing, but some laboratories doing these tests offer reduced rates or payment programs for patients. Direct-to-consumer genetic testing is also now available. This testing can occur between the patient and the company without the involvement of your physician. There are some issues that occur with direct-to-consumer testing. First, a physician is typically not available from these companies to help the patients interpret the results. Although the results can be sent to your own personal physician, physicians may be unable to determine what tests were sent, what the results mean, or how the results may impact other family members.

Second, these laboratories may not be certified by the Departments of Public Health. It is also uncertain in some cases where the sample of the patient goes after the test has been completed. Given the potential expense of testing, I recommend that each patient

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## New Staff in the Section of Movement Disorders



***Christina Vaughan, M.D., M.H.S., Movement Disorder Fellow***

Dr. Vaughan has a long-standing interest in Parkinson's disease (PD) and movement disorders. She received her Bachelor of Science degree in Neuroscience from the University of Rochester and completed a one-year fellowship at the National Institutes of Health (NINDS) studying experimental therapeutics in PD. Dr. Vaughan then obtained a Masters degree from the Johns Hopkins School of Public Health where she focused on mental health and dementia. She was awarded a summer fellowship from the American PD Association (APDA) and began working on multiple clinical research projects at the Johns Hopkins School of Medicine. After several years in research, she decided to pursue medicine, and ultimately received her M.D. degree from the University of Buffalo School of Medicine and Biological Sciences. Dr. Vaughan was awarded a medical student summer fellowship from the Parkinson's Disease Foundation (PDF) and participated in a study of deep brain stimulation at the University of Pennsylvania. She completed her residency training in Neurology at the University of Pittsburgh where she served as Chief resident prior to her arrival at Rush University Medical Center in July of 2010.



***Theresa Pretto, A.P.N./C.N.P., Nurse Practitioner***

Theresa Pretto is a nurse practitioner joining our surgical program. Theresa has over 12 years of experience programming and managing neurological implants. She is a graduate of St. Xavier University's Family Nurse Practitioner program and received her undergraduate degree in nursing from Indiana University. In addition, she is a graduate of the Clinical Trials Management program from the University of Chicago. Ms. Pretto has previously served as the chairperson of the Movement Disorder Focus Group for the American Association of Neuroscience Nurses. She is currently working with the Movement Disorder Society to increase allied health education and collaboration. Her research experience includes outcomes from deep brain stimulation, drug delivery to the brain, intrathecal drug delivery, spinal cord stimulation, and hydrocephalus. Ms. Pretto comes to us from the University of Chicago where she coordinated the movement disorders surgical program and most recently served as the manager of the pacemaker clinic.

## Partnerships in Research

Your donations are needed to support our research. Rush University Medical Center is a not-for-profit organization and your gift is fully tax deductible. You may designate your gift to the area of greatest need within our group or direct it to an area of interest to you (patient care, research, or community outreach efforts). For further information, please contact Bernadette O'Shea at 312-942-8710 or email [bernadette\\_o'shea@rush.edu](mailto:bernadette_o'shea@rush.edu)

## the old woman

An old woman has taken over  
my body.

I have no idea who she is,  
although she resembles  
my mother a little;  
perhaps Mom's returned  
to haunt me.

It's quite strange  
to have someone new  
take control of your body.  
This creature falls too much.  
She is forever making me ache.  
I've tried to humor her  
To quit the torture,  
but she cares not for my sake.  
So I drag her to doctors' offices,  
buy her drugs and canes.  
Walgreens is her favorite  
place to play...  
we go there nearly every day.

I'd like to put her in a closet  
and go on my merry way.

*Charlene H. Dybedock*  
April 2010

## FLU SEASON IS HERE AGAIN

Influenza (the "flu") is a viral infection of the respiratory tract that causes fever, chills, headache, muscle aches, weakness, sore throat, cough, nasal discharge, fatigue, malaise, nausea and vomiting.

There are three types of influenza virus. Influenza A and B viruses are responsible for seasonal flu epidemics each year. A new influenza A (H1N1) emerged in the spring of 2009. Flu viruses constantly change; thus, it is important that you receive a flu shot every year. Flu shots are 60 to 70 percent effective in the prevention of the flu and it is important for people over the age of 65 and those with chronic diseases, such as Parkinson's disease, to receive an annual flu shot to help prevent infection. You can take further precautions by staying away from infected people (the virus is spread by droplets in the air).

Remember, the flu is a virus and antibiotics do NOT work on viruses. If you contract the flu, treatment consists of relieving symptoms by drinking fluids, especially warm fluids such as tea, broth, or warm fruit juices. The use of acetaminophen (Tylenol) as needed, rest, and sleep are also helpful. Studies have shown that old-fashioned chicken soup does help in relieving symptoms.

The flu shot is safe for Parkinson's patients and does not interact with anti-parkinsonian medications. See your primary care physician or contact your local public health agency for more information. 😊

## Anti-Constipation Paste (a recipe that is very popular with our patients)

- 1 pound pitted prunes
- 1 pound raisins
- 1 pound figs
- 3.5 - 4 oz. package of Senna tea (from Health Food Store)
- 1 cup brown sugar
- 1 cup lemon juice

*Recipe*

Prepare tea: use about 3.5 cups boiling water to package of tea - steep 5 minutes. Strain tea and add 2 cups to large pot. Add fruit. Boil tea and fruit for 5 minutes. Remove from heat. Add sugar and lemon juice. Cool. Puree with food processor or blender.

Freeze in glass jars or plastic containers. Take 1-2 tablespoons daily.

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with their physician to determine which specific tests to order, taking into account your own family history and age of onset. Check with your insurance regarding coverage of these tests.

Although there are genetic risk factors for Parkinson disease, it is unlikely that single gene mutations can account for the disease in most people. Research into more complex genetics and environmental causes may better clarify what causes Parkinson disease over time.☺

### A New Support Group

Our group is contemplating the creation of a new Patient Support Group for people diagnosed with Parkinson's disease within the last twelve months. If you are interested, please send us a note or email. Please indicate the following in your note: day of the week you would prefer, type of topics, and location. Also, would you want to have the meetings open to your spouse, significant other, or family member? If you are interested in this new support group, please contact Luci Blasucci at email [lucia\\_m\\_blasucci@rush.edu](mailto:lucia_m_blasucci@rush.edu) or send her a note.

### Monthly Educational and Support Program

WHEN: Second Saturday of each month, 10:00 am to 12:00 noon

LOCATION: Oak Park Hospital (Back of Cafeteria)

December 11, 2010	Kate Krajci	February 12, 2011	Christopher Goetz
January 8, 2011	Alexis Rasley	March 12, 2011	Katie Kompoliti

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