

## THE RELATIONSHIP BETWEEN PESTICIDES AND PARKINSON'S

We've received questions about the possible links between pesticides and PD and delved into this complicated topic in a longer article available on our website in hopes of shedding some light. We share some condensed information here, but encourage you to read the full story on our site.

It's important to remember that genetics are more likely to play a role in the development of PD than any environmental risk factor. Environmental exposure typically increases PD risk only by a very small amount. Regardless, it's important to understand all potential risk factors.

### Rural living and PD

Do people in rural areas have a higher risk for Parkinson's? Researchers have been exploring this question for decades. Evidence suggests that pesticide use, in particular, is associated with an increased risk for PD, albeit a small increase. Since people don't always know what pesticides they've been exposed to, it can be difficult to establish a definitive link.

Are specific pesticides more concerning? The pesticide with the strongest link to PD is a chemical called paraquat. Rotenone is another, even though home gardeners often think of it as a 'natural' pesticide because it is extracted from plants. Nevertheless, it has been linked to PD in humans, and in fact is used in the laboratory to induce a Parkinson's-like state in animals.

Organochlorine and organophosphate pesticides are also associated with increased risk, although DDT which is one specific type of organochlorine pesticide, was not associated with increased risk of PD in more than one study.

### Urban pollutants

Although studies suggest that a rural environment increases risk of PD, those who live in cities have their own pollutants to be concerned about. A recent review summarized the current state of knowledge on air pollution and analyzed the association between PD and various types of particles and pollutants found in urban areas. Results varied across studies, but overall data exists associating many components of air pollution with a small increased risk of PD.

### Exposure to pesticides in the military

Agent Orange was an herbicide that US troops sprayed in Vietnam from 1961-1971 to kill trees and crops that provided protection and food to the rival army. Agent Orange was also contaminated with Dioxin, a chemical even more damaging than Agent Orange itself, since its effects last longer. Birth defects have been linked to Agent Orange exposure, as well as multiple types of cancer.

Congress passed the Agent Orange Act in 1991, allowing the Department of Veteran Affairs to declare certain conditions "presumptive" to exposure to Agent Orange. The list of conditions has grown over the years, and in 2010, PD was added. APDA offers a free booklet (available via our website) specifically for veterans to help them find the care and support they need.

### Tips and Takeaways

Rural living, farming and pesticide exposure are linked to a small increased risk of developing PD. The pesticides with the most convincing data connecting them to increased risk of PD include paraquat and rotenone.

Other chemicals have been associated with an increased risk of PD including solvents and many components of air pollution. It is impossible, or at least extremely difficult, to avoid all substances that may increase the risk of PD.

Veterans who may have been exposed to Agent Orange and have PD should be aware that they are eligible for disability compensation.



*Continues inside*



A message from  
President & CEO,  
**Leslie A. Chambers**

Dear Friend,

Welcome to Parkinson's Awareness Month 2019! This is such a busy but also important month for us here at APDA, because the outside world takes a renewed interest in our mission, and that fills me with a sense of hope for what is possible when we all come together.

Your generosity allows us to do so much — from the important research being done at our Centers for Advanced Research to the activism and energy on the ground at our local chapters around the country — there are so many reasons for optimism!

Thank you for being a source of strength for us with your steadfast belief that people with PD can live life to the fullest! None of this work would be possible without your support. I hope we can continue to count on you in 2019.

Sincerely,

Leslie A. Chambers  
President & CEO  
American Parkinson Disease Association

## MARTY & KIMBERLY MOSELEY: KEEP MOVING FORWARD



**Kimberly and Marty Moseley,**  
APDA Legacy Society members

“In 2009, I began noticing an intermittent twitch in my upper left arm” states Marty Moseley of Virginia Beach, VA. That twitch eventually led to small tremors in his hand, and then finally a diagnosis of Young Onset Parkinson’s disease (PD) in 2014, at the age of 54. Marty’s movement disorder specialist referred him to the American Parkinson

Disease Association (APDA) as a credible authority for PD information and support which helped Marty, and his wife Kimberly, get a handle on the disease. In addition to accessing the information and support they needed, they also got involved by participating in the APDA Virginia Beach Optimism Walk, and began showing their support by making donations to APDA as well.

Marty is a man on the move and keeps moving forward with regular exercise and participation in PD activities through the APDA Virginia Beach Chapter. “APDA has been an authoritative source for us in dealing with PD, through education and other alternative methods of treatment — with boxing and high intensity interval training (HIIT) workouts at the top of the list” states Marty.

With retirement on the horizon, Marty and Kimberly started getting organized and doing some estate planning. “The first organization we thought of was APDA,” states Marty, and they chose to include APDA in their planned giving. “I believe that medical researchers are on the cusp of finding a treatment for stopping or even reversing the effects of Parkinson’s. In the

meantime, much has been already done to make living with PD much more manageable as a result of education, exercise, and medical treatments. Our desire is to keep these resources, along with the very realistic hope of finding a cure for PD, moving in a forward direction.” By including APDA in their planned giving, the Moseley’s join the APDA Legacy Society, which honors the special people who include APDA in their estate plans.

APDA is incredibly thankful for the Moseley’s and for their thoughtful planning and generosity.

To learn more about the many ways to support APDA through planned giving, and about our Legacy Society, please visit [www.apdaparkinson.org/legacy](http://www.apdaparkinson.org/legacy) or call our Planned Giving Department at **347-329-1408**.

### Parkinson’s Awareness Month

While every day is about Parkinson’s awareness for all of us at APDA, each year April is officially designated as “Parkinson’s Disease Awareness Month” and we take advantage of the opportunity to increase our reach and educate even more people about the disease. We want as many people as possible to know that APDA is here for them with the support and information they need to live life to the fullest, so keep an eye on our website and social media channels for lots of interesting info and news in April.

Also in April, APDA will be a part of the 25th Annual Parkinson’s Unity Walk taking place in Central Park in NYC on April 27, 2019. Funds raised at the Unity Walk go solely towards PD research and APDA is one of the event’s beneficiaries. For more information about the Unity Walk, please visit [www.unitywalk.org](http://www.unitywalk.org). APDA will be there, so come visit our exhibitor tent and say hello!



## Spotlight on:

# UNIVERSITY OF ALABAMA AT BIRMINGHAM SCHOOL OF MEDICINE

APDA funds eight Centers for Advanced Research across the country, which facilitate investigations into the causes, treatments, and ultimately, a cure for PD. One of these centers is located at the University of Alabama at Birmingham School of Medicine, where APDA funding supports:

- Studies of neuroinflammation, protein aggregation and oxidative stress in PD as well as the role of the microbiome
- Multiple clinical trials including those testing novel drugs, DBS techniques and exercise intervention
- An active DBS program with approximately 150 procedures performed per year
- Approximately 6,800 patient visits per year



**Dr. David G. Standaert, MD, PhD** is the director of this Center for Advanced Research. You can learn more about our Centers for Advanced Research on our website at [www.apdaparkinson.org/research](http://www.apdaparkinson.org/research).

## PAINT AT THE PARRISH

### Special museum-based art program for people with PD

The Parrish Art Museum in Water Mill, NY, in collaboration with APDA and Stony Brook Southampton Hospital, launched *Paint at the Parrish* in 2017 — an art program specifically designed for individuals with Parkinson’s disease (PD) and their care partners. Since then, the once-a-month program has been, according to Sarah Cohen, PT, DPT, one of the program’s founders, “opening the door — both literally and figuratively — to individuals who may not otherwise have access to the museum, creating connection to a prominent institution in the community, fostering much-needed social connections, nurturing new relationships and improving quality of life. As one participant recently reflected about Paint the Parrish: ‘I am almost glad I have Parkinson’s disease!’”

During the Fall and Spring semester, each meeting begins with a seminar in the museum galleries focusing on the current art on display, which includes a beautiful collection of work from local artists as well as pieces from many artists whose work can be found in museums across the world. After each gallery seminar, participants head to the studio to work on a multi-media masterpiece of their own. (There are many aspiring artists among the group!) Discussion over lunch concludes the program and rounds out the special day.

Cara Conklin-Wingfield, Education Director at the Parrish Art Museum notes, “We have been honored to partner with APDA and the Center for Parkinson’s Disease at Stony

Brook Southampton Hospital as part of our ongoing Access Parrish program. We aim to engage participants and their care partners in a shared, positive experience viewing and making visual art that provides a break from their day to day stresses. Over the past year and half, we’ve seen a sense of community grow among the participants at the Museum through their deep engagement with the works of art, activities, and each other.”



**Joan and Ross Collard** (along with program volunteer Alissa Green) paint up a storm at Parrish Art Museum.

APDA is proud to support this ongoing program that is helping people with PD in a truly beautiful way!

## SPOTLIGHT ON WEBINAR SERIES



APDA’s “Spotlight On Parkinson’s Disease” webinar series continues with great topics and guest presenters! Most recently we offered “Spotlight On Parkinson’s Disease: Managing Your Symptoms” with David G. Standaert, MD, PhD, The University of Alabama Birmingham School of Medicine, and “Spotlight on Parkinson’s Disease: Healthy Minds, Addressing Your Mental Health” with Marie Saint-Hilaire, MD, FRCPC, Boston University Medical Campus and Alice Cronin-Golomb, PhD, Boston University. These two new informative sessions, along with more than 15 other webinars can be accessed at any time at [www.apdaparkinson.org/webinar](http://www.apdaparkinson.org/webinar).

New to the series? Each webinar in the “Spotlight” series is a fantastic opportunity to hear about timely PD topics that are most relevant to you, from the comfort of your own home, or office. You can view each new webinar live online or dial-in via phone to hear top experts discuss key issues and answer questions from participants. If you cannot participate in real time, you can always access all past webinars online in our archive.



— Ask the —  
**DOCTOR**  
**Q&A**

with Dr. Rebecca Gilbert



## What's happening at APDA



### Optimism Walk 2019

Get Walking! The 2019 APDA Optimism Walk season is shaping up to be a great one! Walks take place from March through October, so check to see if there's one near you! Register to participate, or consider supporting someone who is walking with us. Funds raised at each Walk help support local PD programs and services. Special thanks to our National Optimism Walk sponsors: Acadia, Adamas, Amneal, Lundbeck and Sunovion. [www.apdaparkinson.org/optimism-walks](http://www.apdaparkinson.org/optimism-walks)

**Q.** Sometimes my brother with Parkinson's suddenly crashes and stops being able to stand, walk or communicate. Can you explain?

**A.** Most likely, your brother is experiencing a sudden "OFF" period during which he is not getting benefit from his medication. A sudden OFF may happen at the end of a dose when medication is wearing off, but it may also happen in the middle of a dose. OFF time can be managed by either changing the timing of medication doses, adding a medication to extend the life of a dose, or giving a rescue medication between doses. I addressed the problem of OFF time, why it happens, and strategies to help, in a recent webinar which you can access at [www.apdaparkinson.org/off-webinar](http://www.apdaparkinson.org/off-webinar).

It is also possible that something else entirely is going on during such a "crash". Taking a video of him during that OFF time and showing it to his neurologist can help the doctor better assess what is happening.

**Q.** I have PD and I am always tired. What do I do?

**A.** Fatigue in PD can be tricky to manage. The first thing to do is to work together with your neurologist to try to determine the cause of the fatigue. Possible factors could include:

- 1. A side effect of medications** that are given for PD — medication adjustments may help here.
- 2. The result of poor sleep** (a common non-motor symptom of PD) — a sleep study could investigate whether you have a sleep disorder, particularly *obstructive sleep apnea* which can be a major cause of daytime fatigue.
- 3. Another medical condition** that may be unrelated to PD, such as thyroid imbalance or anemia. These would need their own management and treatment.
- 4. Depression.** This can be managed independently as well.
- 5. Hardest to manage is fatigue** that is unrelated to the above reasons and is due to PD itself. If this turns out to be the case in your situation, your neurologist may consider adding a medication to help treat your fatigue.

Visit [www.apdaparkinson.org/fatigue](http://www.apdaparkinson.org/fatigue) for more information.

For more information, visit our website at [www.apdaparkinson.org](http://www.apdaparkinson.org), or call (800) 223-2732. To make a donation online, visit [www.apdaparkinson.org/Renew](http://www.apdaparkinson.org/Renew).

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### Chapter Highlight



The APDA Oklahoma Chapter held its 7th Annual Pennies for Pearls fundraiser in March 2018 at the Hard Rock Cafe in Tulsa, raising almost \$80,000! At this fun music trivia-themed event, each table of attendees competed against each other to see who would go home the music trivia champion! Shae Rozzi, Evening Anchor at Fox23-TV emceed with more than 400 people in attendance. A silent auction with music-themed items, including an album signed by Taylor Swift added to the fun. If you're in the Tulsa area, mark your calendars for this year's event (featuring a "The Greatest Showman" theme!) on April 6, 2019. For information and tickets visit [www.apdaparkinson.org/Oklahoma](http://www.apdaparkinson.org/Oklahoma).

### Disability Benefits

Disability benefits can be confusing and tricky to navigate. APDA has added new content to our website dedicated to helping people understand the nuances of long-term disability, VA disability compensation, and Social Security Disability Insurance benefits. Visit [www.apdaparkinson.org/disability](http://www.apdaparkinson.org/disability) to find practical information about applying for benefits and how to access the resources that might be available to you.