FOOD AND DRUG ADMINISTRATION

PATIENT-FOCUSED DRUG DEVELOPMENT

PUBLIC MEETING

Afternoon Session

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Food and Drug Administration

White Oak Campus

10903 New Hampshire Avenue

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A P P E A R A N C E S

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DR. THERESA MULLIN, Office of Strategy Programs

DR. DAVE PODSKALNY, Division of Neurology Products

DR. ELLIS UNGER, Office of Drug Evaluation 1

DR. ERIC BASTINGS, Division of Neurology Products

DR. SUSANNE GOLDSTEIN, Medical Reviewer, Neurology Team

DR. KENNETH BERGMAN, Neurology Reviewer

DR. LEONARD CAPCALA, Medical Officer, Neurology Team

DR. PETER COMO, Division of Neurological and Physical Medicine Devices

DR. LEU XU, Central Biologics

DR. MEGHANA CHALASANI, Office of Strategic Programs

GRAHAM THOMPSON, Office of Strategic Programs

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C O N T E N T S

C O N T E N T S (Cont'd)

P R O C E E D I N G S

AFTERNOON SESSION

MS. GIAMBONE: All right. Well, let's go ahead and get started. Thank you all for being here. My name is Soujanya Giambone, and I'm with the FDA's Office of Strategic Programs. And I, along with my colleague Sara Eggers, will be facilitating this meeting today.

So, on behalf of all of my FDA colleagues, I'd like to just say thank you so much for being here and welcome you all. And we genuinely appreciate that you're all here today to share your perspectives with us.

What I'd like to do is go over the agenda and then just a few housekeeping items, and then we'll get started. So we're going to start off this afternoon with some opening presentations from my FDA colleagues. They'll provide an overview for the Patient-Focused Drug Development Initiative, background on Parkinson's disease and treatment options. And then I'll come back and provide an overview of the discussion format.

So we have two topics today that we're going to be covering. Topic 1 is on the symptoms of Parkinson's and how they impact you on a daily life. And then Topic 2 is on patient's perspectives on current approaches to treating Parkinson's.

We'll have a panel discussion for each topic, followed by a group discussion for each topic. That will take us to the last half-hour of the day, which we've reserved for Open Public Comment.

Open Public Comment is a time for anybody in the audience, not just patients or caregivers, but anybody that wants to share some thoughts that are outside of the scope of Topic 1 or Topic 2, you can sign up for Open Public Comment. We'll take a look at break time and see how many people have signed up and how much time each speaker will have.

And then finally, we'll wrap up the day with some closing remarks from FDA.

Some housekeeping items -- bathrooms are

back out in the lobby. If you go back out into the lobby area and make a right and go all the way down the hallway, you'll see the restrooms there. And you'll also see that we have a kiosk that serves basic sandwiches, drinks, and so forth available for purchase. So please feel free to get up and stretch, or get a snack, or whatever you need to do. So we just want you to be comfortable here.

And before we continue, can I have my FDA colleagues please introduce yourselves?

DR. UNGER: Good afternoon, everyone. My name is Dr. Ellis Unger. I'm Director of the Office of Drug Evaluation 1, and our office oversees the Division of Neurology Products.

DR. DUNN: I'm Dr. Billy Dunn. I'm the Director of the Division of Neurology Products.

DR. BASTINGS: Good afternoon. I'm Dr. Eric Bastings. I'm the Deputy Director of the Division of Neurology Products.

DR. PODSKALNY: Hi, I'm Dave Podskalny. I'm a clinical team leader in the Division for

Neurology Products.

DR. GOLDSTEIN: Hello. I'm Susanne Goldstein. I'm a medical officer in the Division of Neurology Product's teams.

DR. BERGMAN: Hi, I'm Ken Bergman. I'm a medical officer and clinical reviewer, neurology.

DR. KAPCALA: Good afternoon. My name is Dr. Len Kapcala. I'm a medical officer in the Division of Neurology Products.

DR. MULLIN: Hi, I'm Theresa Mullin. And I direct the Office of Strategic Programs in the Center for Drugs.

DR. COMO: My name is Dr. Peter Como. I'm a medical clinical reviewer in the Center for Devices and Radiologic Health in the Division of Neurological and Physical Medicine Devices.

DR. XU: Good afternoon. I'm Lei Xu. I'm the medical officer at the Center for Biologics Office of Cell Tissue and Gene Therapy.

MS. GIAMBONE: Thank you. And we have some colleagues over here.

DR. EGGERS: I'm Sara Eggers in the Office of Strategic Programs.

DR. CHALASANI: Meghana Chalasani, same office.

MR. THOMPSON: Graham Thompson, same office.

MS. VAIDYA: Pujita Vaidya, same office.

MS. GIAMBONE: All right. Thank you.

And just two more comments. This meeting is being recorded and transcribed. So we'll have the meeting recording and transcript available on the meeting website within a few weeks after the meeting.

And then, I know there are several of you that are joining us that joined us already for the morning portion of the meeting, and you're here again for the afternoon. We thank you for joining us for both. So some of the following presentations may be repetitive to you, but we just wanted to let you know.

So, on that note, I'd like to turn it over to Dr. Billy Dunn for his welcoming remarks.

DR. DUNN: Hi. How ya'll doing? Welcome. For those of you who were here this morning, welcome back. And I see a lot of new faces in the crowd, and we're just about as full as we were this morning. So I'm glad you're here.

Welcome to this meeting on Patient-Focused Drug Development for Parkinson's Disease. As I said, I'm Dr. Billy Dunn. I'm the Director of the Division of Neurology Products in the Office of New Drugs at the FDA. Our division reviews a wide breadth of drugs for neurological diseases, including Parkinson's disease.

This meeting is a very important one to us, and as you heard during the introductions, as a testament to that, we have the entirety of our team responsible for reviewing Parkinson's disease here to hear your opinions, to avail themselves of the informative commentary that I know that you will have for us, and to incorporate that into our daily work here as we engage in drug development for Parkinson's with sponsors in this area.

All these folks have specialized

training and have taken care of Parkinson's disease patients and are keen to hear your input today.

We had a great discussion this morning on Huntington's disease. I know we'll have another good discussion this afternoon.

Before we move on, I want to reiterate some of the important points from the morning. Some of them were already done. But I do want to just emphasize, as I said, the Patient-Focused Drug Development is very important to us, as illustrated by this meeting. We fully understand that Parkinson's disease is a serious condition.

And although we have treatments currently approved to treat Parkinson's disease, which many of you here in the room are going to be familiar with, there's obviously a continuing, strong need for development of therapies, particularly for patients with advanced disease or patients who have difficulty managing their condition with currently available therapies, not to mention the ultimate goal, which is to

ultimately find a cure for Parkinson's. That's absolutely what we all are here to do.

Dr. Susanne Goldstein, who introduced herself just a moment ago, will provide a bit more background on Parkinson's disease, specifically, in a few minutes, much of which may be familiar to you. But it is important to ground the discussion.

I do want to point out that it's FDA's responsibility to ensure that the benefits of a drug outweigh its risks. Therefore, what we hear from you today about the different ways your symptoms affect your daily life and what you value in a treatment can help us understand how you view those benefits and risks in relation to treatments for Parkinson's disease.

That will directly inform our work when we are faced with a drug which is effective, but which may have certain risks associated with it for Parkinson's disease as we consider the best way to get it out there and write a label for it and inform the population about the best way to

use it.

It's important to remember that FDA is just one part of the drug development process. This came up this morning. I had some questions after the session that really illustrated that it's not always transparent. A lot of the work that we do is confidential. It's not always transparent to what degree we are involved with companies. We're very involved with companies, but we are not the ones that initiate the clinical trials.

Drug companies, often working with researchers or patient communities, are the ones who conduct these trials and eventually submit their drug applications to the FDA for our review. We work closely with them throughout the drug development process, however.

That was a question that I faced this morning, and I thought I'd just go ahead and bring it up now, because I didn't have time to address it in any great detail earlier.

But from the discovery phase, when

molecules or new antibodies or whatever it might be are being researched in animals or considered kind of theoretically, to the first introduction into humans, to large-scale trials that are intended to demonstrate clear evidence of effectiveness, and right through approval and on to post-marketing surveillance, we're with the drug companies every step of the way.

So we're closely engaged, and we're bringing our approach, which I think is a flexible one, an open- minded one, and one which reflects the needs of the community -- we're bringing that to the table each and every day we meet with the sponsors who are developing these drugs.

I want to thank all the representatives from industry, academia, and others, as well, who are here as a part of this meeting. For those of you who are here representing the Parkinson's disease community, you may not realize that there are members of industry here who are also eager to hear what you have to say. And I think your comments will be equally valuable for them.

I guess that's about it. We had a few more comments this morning, but I think in the interest of time, we'll stop them here.

Dr. Theresa Mullin is going to step up and give you a few comments about the broad effort on Patient-Focused Drug Development. And again, thank you for being here. We really look forward to your comments today.

DR. MULLIN: Thank you, Billy, and welcome, welcome to FDA's campus. And as I said this morning, I just want to say that we're very, very grateful that you're here.

And in hindsight, we're grateful that we had the meeting today and not planned it for tomorrow or the next day, given how the road closures -- there are signs everywhere in the Washington area about how the roads are going to be closed. And it will probably be even more difficult than usual to get here tomorrow or the day after that. So that was a good move on our part, though we didn't realize it.

I'm going to spend a minute to tell you

about this Patient-Focused Drug Development Initiative. As you notice on the agenda, it says this is a Parkinson's disease meeting, a public meeting, as part of this Patient-Focused Drug Development. And as Dr. Dunn observed or reminded us all, you know, FDA and CDER in particular, and CDR and CDRH, the medical products centers, are focused on trying to ensure that the benefits outweigh the risks in the review of products, and even deciding whether or not to allow products to stay on the market.

And the clinical context for weighing benefit and risk are quite critical to that weighing and that decision. So that if a disease is quite severe and there are not a lot of good treatments available, it affects our willingness and patients' willingness as they tell us to accept risks.

So, what we realized is that, you know, we really needed a better way to get, systematically collect the patients' perspective because it's a most critical perspective on

benefit and risk, that patients are the ones who will be experiencing any benefit that there is to gain from the drug and will experience the harm. And we had no good way to collect that widely across the population affected by disease.

We have very good programs in the patient representative programs that allow us to talk to individuals, but not really do it in the way we're going to do it today, which is to get a broader perspective, a diverse perspective on what it's like to live with the disease, how that disease affects your life, and how well or not the treatments that are currently available are working for you.

This provides great insight for FDA in terms of our consulting with companies throughout drug development -- for example, from the CDER perspective, which we do -- and it allows us to weigh that, take that into consideration when an application comes in for marketing review.

So this is one of what we committed to do, 20 meetings over the course of five years of

the Prescription Drug User Fee. This authorization we call PDUFA V. We're going to do, it turns out, more than 20. But each is focused on a different disease area and intended to gain that kind of information over the course of the discussion and the meetings.

When we started this effort three years ago, we, working with the divisions, identified about 40 diseases to ask the public which we should focus on over the five years. We got about 4,500 comments on that. So we got even more diseases identified through the public comments. We had to take that and a very difficult task of trying to figure out which we would focus on in this first five years.

And we say "first five years" because we've learned a lot in the course of doing this effort that we can build on and provide opportunities, in fact, for others to have these meetings, as well.

So we had 16 diseases identified in the first three years. And there you can see the list

of all the diseases we will be covering under this initiative over the five-year period. And today, we're having the meetings on Huntington's disease this morning, and now we're going to have the meeting on Parkinson's this afternoon. And each has provided extremely beneficial and insight-providing input to us.

Each of these meetings is tailored to the particular issues related to the disease, but they also have this common set of questions that try to elicit the patient's and that patient's family and caregiver's perspectives on the disease and the current approaches to treatment. So we start with these questions, and then often we tailor and add additional questions of the review division has identified other questions they want to take this opportunity to put to you and ask you to help us understand better.

For example, when we had a meeting on HIV, we asked the patients how they would feel about participating in cure research. Many of them were on treatments that seemed to be working

well. Would they be willing to go off those treatments to try a cure, a possible cure treatment? And so, we asked sometimes about the difficulties of participating in trials and things related to other aspects of development.

We've learned a great deal from these meetings. At the end, and after we close the docket -- we leave our electronic docket open so that we can get other input that patients may be able to offer us or people who are unable to be here can send in. And we analyze all that information, as well as the transcript that we have from the meeting, to develop this report.

And you'll see the ones that have been developed already, on our website. If you were to Google "voice of the patient," you will find your way to this report. I usually find information on FDA's website by Googling, myself. And you can take a look at all this stuff we've done, in this way. And we'll produce a report like that on Parkinson's when we collect all the information and analyze it as well, going forward.

These reports are very useful as a reference to reviewers and others in terms of what they contain. They try to really authentically capture what you tell us today in the words that you tell us so that we really do have it be your voice that we're reflecting in these documents.

And we've also found that what we hear in these meetings is prompting us to look at how we can build on what we hear in these meetings to maybe even move towards the development of more systematic tools to collect information like this in clinical trials.

So it's been extremely valuable for us. So we're looking forward to engaging and hearing what you want to tell us today. And with that, I'll turn it to Susanne Goldstein to tell you more about the background on Parkinson's.

(Pause.)

DR. GOLDSTEIN: Welcome. And again, thank you very much for being here today, sharing your time and your thoughts with us.

I just want to briefly go over the

background of Parkinson's disease, which many of you are well aware of. And my remarks don't necessarily reflect those of the FDA.

Parkinson's affects approximately 1 million people in the United States, which is about a half a percent. For the population over 80 years old, this prevalence is up to about 10 percent. On average, people develop the symptoms of Parkinson's disease in their 60s. However, about 10 to 15 percent of patients develop their symptoms less than age 40, and this we refer to as "young-onset Parkinson's disease."

There's really no specific causative factor that's known. Both genetics and the environment probably play a role. Research has suggested that genetics play a larger role in the young-onset Parkinson's disease patients, whereas the environment plays a greater role in the later onset of the symptoms.

This is a little bit of a complicated slide, but it's just to briefly touch on something that's come up in research more recently, that

it's felt that the primary mechanism of neuro-degeneration, loss of dopamine cells in Parkinson's disease, is caused by program cell death, or apoptosis. And both genetics and the environment play a role in this.

There are two main symptom categories that define Parkinson's disease. And classically, most people are familiar with the motor symptoms -- - muscle stiffness; slowness of movement; tremors, specifically a resting tremor; as well as gait and postural instability.

Nonmotor symptoms, which we are now recognizing much more so, include depression and anxiety, difficulty with memory, which can happen early on, something known as the disexecutive syndrome, and in the advanced disease, sometimes as dementia. Difficulty sleeping, falling asleep, staying asleep, abnormal dreaming also are very common in Parkinson's disease, as are hallucinations, which can be from the disease itself or from the treatments.

And I just want to touch on the

treatments. We have a lot of treatments here, and I'll cover them briefly, that are mainly for the motor symptoms. And levadopa is still the gold standard, been around since the 1960s, and later reformulated as carbidopa- levadopa, much better tolerated. And it's available in a variety of formulations -- Sinemet; Sinemet CR, which is long-acting; Rytary, which is a combination of short- and long-acting.

More recently, we've approved in the gel infusion of carbidopa-levadopa, duopa, which is directly infused into the gut for more advanced Parkinson's disease.

There are other agents, like dopamine agonists, which can mimic dopamine in the brain. And there are drugs that can actually slow the breakdown of dopamine so you would increase the amount of dopamine the brain has, the more sustained benefit. And these are the COMT inhibitors and the MAOB inhibitors. Other agents, such as anticholinergics and amantadine, can help with the tremor and dyskinesias.

In terms of non-motor symptoms, there's nothing that's FDA approved, but we do use or you probably have experience with antidepressants and anxiolytics, as well as neuroleptic drugs for the depression, anxiety, and sleep.

We also have found some excellent benefit, and probably some patients here may have had this, with the deep-brain stimulation surgery, particularly for motor symptoms of tremor, stiffness, and slowness.

Nonpharmacological treatments are probably equally important, particularly early in the disease, but all throughout the disease. Physical and occupational therapy are very important, as are speech and swallowing for people suffering from issues of that. Diet and exercise are extremely important in maintaining functional ability. And counseling, both for the patient, caregiver, family, all very important.

And as a clinician, I found that support groups were a great help to my patients, because they could learn so much from each other in how to

deal with their daily lives.

So, at FDA, we are very aware, we're keenly aware that there are unmet medical needs still, both motor and nonmotor symptoms. And that's why it's so important that we have meetings like this today to hear your thoughts, to help guide us in future research and development of treatments. And again, thank you so much for taking the time to be here.

MS. GIAMBONE: Thank you to my FDA colleagues for your remarks.

And now what I'd like to do is just provide an overview of the discussion format. So, as I mentioned before, we have two topics that we'll be reviewing. Topic 1 is on the symptoms that matter most to you. So, in this topic, what we're listening for is, what are the most significant symptoms of Parkinson's and how do they impact your daily life? How do they affect your ability to do certain activities, or are you unable to do certain activities because of these symptoms?

Tell us how your symptoms have changed or evolved over time. And how do they affect your social interactions or your mood?

Topic 2 is on current approaches to treating Parkinson's disease. So here we're listening for, what is your current treatment regimen? And both prescription therapies and other therapies, as Susanne just mentioned. How well are these treatments treating your significant symptoms? And how do you know that it is or is not working for you? What are the biggest downsides to your treatments?

And then finally, we'd like to hear your perspectives on what you look for in an ideal treatment.

So first, we'll start with hearing from a panel of patients and caregivers. And I've had the honor and the pleasure of working with our panelists for the last week-and-a-half. And I can tell you they've worked so hard to put their thoughts down. You're all incredibly courageous people to do that and then come here and share

those stories with us. So, thank you for doing that.

Our panel reflects a range of experiences with Parkinson's disease. And each panelist will have roughly five minutes to present their remarks.

So then what we'll do is we'll broaden the dialog, and we'll invite other patients and caregivers in the audience to build on what they've heard from the panel, share with us what's similar in your life, but also what's different in how you experience Parkinson's or how your loved one experiences Parkinson's.

So, periodically, we'll ask some questions along the way. And if you're comfortable to do so, please raise your hand. And we'll have some microphone runners around the room. They'll come to you, and you can provide your thoughts. Please state your name before answering. It just makes it a little bit easier in our transcript.

We'll also do some polling questions

along the way. And you should all have clickers, for patients and caregivers and patient representatives only, please. You should all have the clickers at your table that you'll use to answer the polling questions. And we'll test that out in just a little bit.

So, the polling questions are not scientific. It's completely voluntary for the patients and patient representatives to respond. And what it does is it just gives us some more understanding of what perspectives are in the room.

For those of you on the Web, you can also respond via the webcast. So speaking of the Web, we have over 200 people joining us on the webcast today. So that's incredible. Thank you so much to all of you joining us on the Web. We can't see you, but you're a very, very important part of our meeting. And we'll be checking in with you periodically. We'll summarize some of the themes that we're hearing from on the Web. And all of your comments from the Web will also be

incorporated into our summary report.

And then finally, we'll also go to the phone towards the end of each discussion, to hear from a few of the dial-in folks.

(Pause.)

MS. GIAMBONE: We also have a public docket that will stay open for two months after the meeting. And this electronic docket is just a very important part of our meeting. It's anything that you weren't able to, you know, either share with us today or additional thoughts that come to mind. Please go to the public docket and continue to submit your written comments. They're extremely important. They're all part of the public record. And we'll go through each and every one of them. And we incorporate those comments into our summary report.

Anybody is welcome to comment in the public docket, not just patients and caregivers.

We also want to share some additional resources at the FDA that you may already know of. First is FDA Office of Health and Constituent

Affairs. And their contact information is here. And then finally, we also have -- within the CDER, Office of Center Director, we have the Professional Affairs and Stakeholder Engagement, or PASE. And some of you, I think, have already interacted with this group.

And again, all of this information will be available on our meeting website. You know, the slides and everything will be posted there.

Okay. So we'd just like to go over a few ground rules for today. Today is really a day to hear from patients and caregivers. So we encourage you to contribute to the dialog. We are looking forward to hearing as much as we can from you. On that note, FDA is here to listen, along with industry, academia, and other government agencies. We think this meeting is going to be very important to all of you also. We just ask that you stay in listening mode.

Our discussion will focus on symptoms and treatments on our topic questions. And we understand that there are many, many aspects to

Parkinson's. So what we'll do is anything that's outside the scope of Topic 1 or Topic 2, again, please sign up for Open Public Comment, or submit it to the public docket, you know, any additional thoughts that come to mind.

The views expressed today are personal opinions, and on that note, respect for one another is paramount. And then finally, we're going to be passing out evaluation forms toward the end of the meeting. So let us know how the meeting went for you today. And it really helps us to see what we can improve upon for future meetings.

All right. So, let's start with our first polling question. So again, if we can have our patients and patient representatives, caregivers. All right. So, the first question is, where do you live? A, within the D.C. metro area; or B, outside of the D.C. metro area.

(Pause.)

MS. GIAMBONE: When you press it, it should give you a little bit of a buzz, I think,

right?

(Pause.)

MS. GIAMBONE: And just to avoid double-counting, if the patient is already responding, the caregiver doesn't have to. But certainly, if you would like to help and provide that input, then the caregiver can submit the response on their behalf.

Okay. So it looks like nearly 75 percent of you are from outside of the D.C. metro area. So thank you again for making the travel to come here. Twenty- five percent, local neighbors we have here. So great to see you all, too.

Second question. Have you ever been diagnosed as having Parkinson's disease? A for yes, B for no.

(Pause.)

MS. GIAMBONE: Okay. So, two-thirds of you in the room, roughly, have been diagnosed as having Parkinson's disease. And 36 percent, no.

Next question. Are you A, male; or B, female?

(Pause.)

MS. GIAMBONE: All right. So, almost an even split here. It looks like we have more females in the room, but good to see that we also have a good portion of male perspectives in the room.

Okay. Age. A, younger than 30; B, 30 to 40; C, 41 to 50; D, 51 to 60; E, 61 to 70; or F, 71 or greater.

(Pause.)

MS. GIAMBONE: Okay. So it looks like almost half of you responding are in the 61-to-70 age range, followed by the 51-to-60 age range. And it actually, it looks like we have a good mix of most of the age groups, so great to see that.

Okay. What is the length of time since your diagnosis? A, less than five years ago; B, five to ten years ago; C, ten to twenty years ago; D, more than twenty years ago; or E, I'm not sure.

(Pause.)

MS. GIAMBONE: Okay. So, it looks like we have several people that have been diagnosed

less than five years. And then, a large portion of you diagnosed between five to ten years ago, and then ten to twenty years ago. So again, a good mix, it looks like.

Okay. And then on that note, could we see what we're hearing on the Web?

MR. THOMPSON: Very, very similar results. About 63 percent diagnosed, an even split between male and female, similar age range, and 80 percent of people are either five to ten or less than five years.

MS. GIAMBONE: Okay. Thank you very much.

And now I'd like to turn it over to our Panel 1 panelists to talk about their most significant symptoms and daily impacts. So we'll start with Dan.

MR. LEWIS: Hello. Thank you for this opportunity to let the patients talk to the doctors. It's a refreshing change. And we welcome it. I'm fairly typical of each person's individual profile with this disease. But I think

mine is fairly typical except for one thing, which is the length of time.

I'm 71 years old. I was diagnosed when I was 15. And my neurologist, Steve Rich (phonetic), said that I was going to go slow and would not rush into major dramatic changes, and he was right. But after about eight years, I had difficulty walking and balance, and freezing. So we upped the Sinemet, and I was taking about -- Sinemet, 25-slash-100 every two hours.

I had terrible dyskinesia. So no one would eat with me because I would knock over all the glasses at the table. And I'm a lawyer. And in the courtroom, I would have to take recess and shoot myself with Apokyn to continue the cross examination or argument before the judge.

Things were very, extremely difficult. And my doctor, Dr. Rich, said, "How about a brain implant?" And my first reaction was, the last thing I want is a doctor messing around with my brain. But I came around. And I had the operation in 2005. And it was very successful for

me. I reduced the amount of Sinemet that I was taking by 50 percent. And with the help of amantadine, I didn't have any dyskinesia except a slight, slight bit, but not enough to interfere with any activities. So, it was very successful for me.

And I run a support group for about 12 years now, 15 years. And we have a lot of experience with DBS. And we've found that some people don't do well with DBS at all, and that large psychological problems occur and they get very depressed. But I was lucky. I had none of that.

Then, as my problems increased, I found that the answer to most of my problems was not with the doctors, unfortunately, and not with the medicine, but with the exercise. Exercise is more important than the pills we take, I think. So, I'm in a regimen now. I do about 12 hours to 15 hours of supervised exercise aimed at Parkinson's. Most of them are run by the Parkinson's Foundation for the National Capitol Area. They're free, and

they're excellent.

And that has enabled me to be mobile. I have ups and downs, periods of several months of where I can walk without a walker and talk and be understood. But other times, I have down times. And throughout the whole time, I am doing exercises. So they're not a total panacea. But I have times where I have several months of good on-time, and then off-time where I can't even stabilize myself with a walker.

And the problems I have now that I need to address medically are the things that DBS won't help. And that is speech, sleep, and freezing and falling -- balance, I'd say. So I would urge you all, because the numbers are dramatic, the number of people who have Parkinson's. And I think the main is a little low. But we've been pushing legislation at PAN to get -- see to do a real survey of who has Parkinson's and who doesn't. That will show how widespread Parkinson's really is.

MS. GIAMBONE: Any final thoughts, Dan?

MR. LEWIS: Let me say, address the impact of my situation. I can walk with a walker and go to museums. I can fly. I can sit and read. But I'm fearful of falling down and breaking my hip. That is the fear that I think many of us share, because once you break your hip, recovery is slow and complicated, and you often die.

So, it's something that is always in the back of my mind. Am I going to fall? I have fallen pretty regularly. Last week, I was in LA. I fell, and I had to have five stitches. I luckily fell in a way that didn't harm myself permanently. But it's one of the things that you all need to address, pharmacological devices, if I could be so bold as to suggest such a thing with the panel.

MS. GIAMBONE: Thank you so much, Dan. We really appreciate it. Thank you.

Next, we have Karl.

(Pause.)

MR. ROBB: This is Parkinson's under

stress.

(Pause.)

MR. ROBB: Okay, I'm good.

MS. GIAMBONE: Karl, would you like for me to read your comments? You have some excellent comments down. Or we can come back to you if you'd like.

MR. ROBB: I think I can do it. Just give me one second.

MS. GIAMBONE: Okay. No problem.

DR. DUNN: Sir, let me reassure you that don't let anything from our end cause you any stress. We're thankful that you're here and very eager to hear your comments. Take all the time you need, okay?

MS. GIAMBONE: Yes.

MR. ROBB: I think I can go on. I'm sorry.

Thank you. Thank you for this opportunity. My name is Karl Robb. I'm 49 years old. I've had Parkinson's since I was aged 17. But I was diagnosed six years later. I'm an

Amazon bestselling author, a blogger, lecturer, an advocate for and board member for the Parkinson's Action Network.

I'm attempting to say that my slowness of movement -- one second.

(Pause.)

MR. ROBB: I find that tasks take longer and more effort. And the rigidity, range of movement, poor flexibility have become more difficult. Balance, ease of walking, and gait are slowly becoming factors that I find most challenging of all, the worst symptoms that I encounter.

The most frustrating and annoying factors, really the sheer unpredictability of when certain symptoms crop up without forewarning. Surprise. These factors can affect all factors of daily living -- all factors of daily living. Attempting to summarize some of the system is massively intricate. It's not an easy feat.

So this changes your being, robs you of your identity, forces you to become someone else.

Between the disease and the meds, you must determine what are symptoms or side effects of meds and what is truly Parkinson's. At age 30, I made the very difficult decision to give up driving. I didn't want to jeopardize or put others at risk. So I wasn't sure as I could be in better control.

Someone that's age 30 shouldn't have to face something this difficult. On my best days, I believe that I'm productive, mobile, and the meds are working well. Even after two decades of nearly the same dosage of meds, on the worst days, I experience some balance problems, speech, and probably experience dyskinesia as well. I never really can tell when a good day is coming or not.

My ability to cope came at such a young age, I have to make my peace with this illness as something that must be dealt with, learned from, and creatively worked around. It's trying at times and hard to see this illness slowly creep up on you. I imagine any illness fluctuates over time. So, yes, I see variance from moment to

moment and day to day. I rarely, if ever, see two that are alike. I try to make each a productive day. I'm aware that stress is a major factor in this illness.

Diet -- I think being a long-time vegetarian has been a benefit. I find that when I eat healthier, more natural foods, my digestion improves and my whole body seems to function better as well. Yoga has been excellent in balancing and centering my mind and body. Greg (phonetic) used to tell me so much about energy and mindfulness. Sleep is crucial for PD patients. I'm so grateful that I'm able to sleep well.

Meditation, stress reduction, massage and reflexology, and trying to learn patience have all been helpful. Lastly, exercise can help briefly, as well. But it can make balancing the meds for the day even more difficult.

Stress, anxiety, crowds, and being rushed all contribute to making my symptoms worsen, such as like right now. When one loses

confidence in one's own body and knows that his or her body will not respond as well as asked, you wonder, search, seek for options and solutions. It worries me that our best alternatives are invasive solutions and dangerous drugs with side effects, and that we don't look at something that's truly a more organic and basic approach.

This illness affects the mind, body, and spirit, and all three must be kept in balance for fear they should fall as well. I'm worried that there are fewer effective drugs and more patients and that so little is understood about the aspects of Parkinson's. It worries me to contribute less and less to my family's care and not be able to always help with household chores when I want to.

No two Parkinson's patients are exactly alike. My observation in getting a handle on this illness is a mystery. Parkinson's affects all ages at all stages of their lives. Parkinson's disease is an awkward disease on a social level and a physical level. Since my diagnosis, nothing in my life has ever been normal or predictable.

Before my diagnosis, I experienced tremors, poor posture, balance issues, mobility problems, dystonia, festination, padykinesia, and speech issues.

When I began Sinemet over 25 years ago, I experienced a miracle transformation in my condition, as I saw my balance, gait, and overall mobility condition improve. Moving forward, I began experiencing dyskinesia, dyskinesias at one point that would last for two hours, two exhausting hours. Right now, I feel my greatest challenge and struggle is timing and to stand the potency of the meds as the pills wear off over the day.

One of the hardest challenges throughout the day is the delicate balance of mixing meds and food over time. I'm very protein-sensitive, even though I eat vegetarian. When traveling or going out, it is never easy to know what to expect with change in schedule.

For someone who's had this disease for so long, my dosage of Sinemet, Requip, and

amantadine are all still quite low. But my window of off-times is slowly creeping up. It has cost me several friendships and given me many friendships. But most of those relationships are out of my control. I've lost friends who just couldn't get their arms around this illness. I accept that trying to understand Parkinson's without living it on a daily basis is pretty much impossible.

Parkinson's disease has brought me an amazing community of close friends who understand what I am experiencing and are there to support me, as I do them. I have practiced (inaudible) for 16 years, with a master of it for three, and seen a huge improvement over the time, over those 10 years in mental, physical, and spiritual ways.

I'm a long-term vegetarian, which has improved my digestion, skin, and overall pill uptake. Plus, I feel better without meat protein. I do moderate exercise with walking, playing Nintendo Wii until I sweat. I write almost every day just to create something new every day.

My Sinemet continues to maintain most of the efficacy needed on a good day. For movement and balance, my Requip does most of the same. Amantadine that I take has helped my balance.

To answer your question, too, about how well your regimen is treating you, that's a tricky question because I've had this so long I don't know. I think that I'm doing well, for as long as I have lived. So far, well enough, but I wouldn't mind seeing more -- question 2A. So far, well enough, but I wouldn't mind more help, and most of my friends and readers need a lot more help.

I'm especially worried about my caregiver, care partner, as I increase her workload over time. Of course, side effects like dyskinesia and the on-off effects are probably the worst of the batch of my symptoms. I see the insurance companies tell me which drugs are maintenance and which drugs are not. I don't think it should be up to them to tell me which are significant and those that are not. If we need our meds, we need our meds.

I don't know what a cure would mean, whether that means all end to illness or reversing it. But in my mind, the perfect treatment would be a once-a-day pill, patch, or inhalant that controls all symptoms, minus side effects and without on-off at times. I'm a realist, but it is fun to dream.

I'm hopeful for the future, developments in therapies as well as drugs. Our community is in dire need of assistance in slowing, stopping, and even reversing this thief of a disease. Thank you.

MS. GIAMBONE: Thank you so much, Karl.

Next, we have Todd.

MR. HEBB: PD for me is pathos-defiant. Good afternoon, ladies and gentlemen. My name is Todd Hebb. I am 63 years old. I have Parkinson's disease.

I was diagnosed in November 2008. In the seven years since, I have listened to brilliant doctors, read stories about PD by celebrated people, participated in clinical

research, joined a foundation, the Parkinson's Disease Foundation, and am an advocate, and helped form a nonprofit organization to raise money for PWP services.

I'm here today to share my experience with PD and specifically my symptoms as my disease has progressed. Parkinson's disease is insidious. Motor deficits are deceptively routine in the scheme of old aging, stiffness, slowing, shaking, and loss of balance. But finding these symptoms in patients in their 30s and 40s and 50s, decades before seniority, is unusual and frightening.

Upon these challenges, Parkinson's disease often affects cognition -- memory, executive function, and autonomic systems in the human body.

Two years before I was diagnosed with PD, I was having difficulty walking and controlling my forward momentum. I was carrying one end of a cabinet to install and could not stop. My orthopedic surgeon recommended I see a neurologist. I was first tested with the Hoehn

and Yahr rating scale, performing with ease the simple motor coordination and reflex evaluations. I felt reassured that I was not suffering a brain disorder.

The neurologist then asked a question that jolted me to attention, because I had not mentioned this annoyance to anyone. He asked if my handwriting had become smaller. I nearly laughed at his precise deduction. Yes, my handwriting had become Lilliputian.

It would start out relatively normal, but by the sentence end, it was an illegible scrawl. I had micrographia -- judgment: PD.

Another early symptom was emotional sensitivity. Usually, when I was alone, that would bring, without warning, episodes of tearful weeping, linked to worry and anxiety about family, as well as emotional welling associated with joy and gratitude. I cried often at movies and at music in the car, anyplace where emotions were out. I considered the possibility that I was evolving and maturing. I never thought of this as

pathological.

Shortly after my diagnosis, I learned of emotional incontinence, a symptom not uncommon with Parkinson's disease.

During the last seven years, I've experienced a slow, but gradual worsening of motor symptoms. The most difficult of these is freezing, the sudden inability to move my legs, as if they were set in blocks of hardened concrete. This occurs most often when I'm at home, in hallways, in closed quarters, usually coming off my levadopa.

Often, this occurs when I'm trying to hurry out to an appointment. And I'm severely affected when standing in large crowds. This condition presents the greatest risk of falling.

Sleep dysfunction, including daytime sleepiness, contributes to impaired thinking, slow reaction time, and fatigue. I've not had a restorative sleep in many years. Initially, restless leg caused an aching in my calves, which took hours to walk off.

The medications helped, and then caused sleep attacks, which are moments when my conscious mind is switched off and I sort of go blind. This has happened during casual conversations, while watching TV. And you can imagine it's terrifying for driving a car or operating machinery. Adding to sleep problems, I have sometimes had vivid dreams and act these out occasionally, which contributes to my temperament.

Slowness, or bradykinesia, is my condition most of the time. It is not just physical change in movement, velocity, but a pervasive slowing of thought patterns, like a freezing of synapses. One way that I counteract this condition is by using a positive intention that requires a clear and undivided purpose. And that's how I carry on.

Thank you, and my name is Todd Hebb.

MS. GIAMBONE: Thank you so much, Todd.

Next, we have Rosa.

MS. KIM: Hi. I'd like to thank FDA to giving me opportunity to tell my experience. My

name is Rosa Kim. I'm research advocate with the Parkinson's Disease Foundation and coordinator of support group for Korean Americans with Parkinson's disease in Chicago area.

I'm here on behalf of my mother, who suffered from Parkinson's disease for six years and passed away three years ago. My mother, a schoolteacher, was a strong-willed and a most loving and caring person. She was diagnosed Parkinson's at age 81. Like most people, she had symptoms such as insomnia, loss smell, constipation, anxiety, and fear long before her diagnosis. However, her first major symptoms were stiffness and inability to move.

Mom raised the four of us by herself, and she was very independent woman. Therefore, when she could no longer walk or move, she felt powerless. She felt like her humanity was taken away and became very depressed. Soon after, she developed speech problems and difficulty finding words, which made her even more withdrawn.

Her degeneration was much faster than

most of Parkinson's disease patients. Around age 84, she became wheelchair-bound, and her mild dementia started. Eventually, she lost ability to do daily activities like dressing, bathing, feed by herself, and go out for a walk. After that, the nonmotor symptoms got worse, as well. She was very embarrassed about her symptoms. And we often had to cancel plans because her constipation, diarrhea or stomach pain.

On good days, she was very responsive and tried to help herself do little things like holding a cup while she's drinking or trying to use chopsticks to eat. Doing exercise and getting out of the house helped her with flexibility and mood.

She had bad days. When she was around with lots of people, with noises, like parties, and even family gathering. When she seemed stressed, the medical didn't seem work well. And her mind will be so distant and blank. Also, if she woke up from a long nap, it would take her some time to realize where she is and who she is.

Talking through it with her often helped.

One example how we could tell her cognitive condition from day to day is, when I call her, "Mom!" If she answers, "Yes?" then I know her mind is somewhat clear. But when she answers, "Yes, ma'am?" or smile and don't answer, then I know she doesn't know who I am. So, then we will have conversation based on that situation.

My mother spoke Korean and Japanese, and limited English. After a couple of years, as her disease progressed, she would answer us in Japanese, which we do not speak. And she would ask questions in Korean to her friend who only speak Japanese. She sometimes started her sentence in Korean and ended in English.

Other bad days, she had body aches. Although we didn't know where the body aches were, we could tell her by moaning out loud when we moved her. We discussed with this doctor, and we added pain medication before bathing or moving activities to alleviate her pain.

My mother's greatest fear were losing

her independence, become dependent on her children, and losing the respect of her peers. Unfortunately, my mother had to realize and live through many of these fears. I hope the FDA can use us in Parkinson's disease support groups and Parkinson's foundations as a resource for developing better medicine in the future. Thank you.

MS. GIAMBONE: Thank you so much, Rosa.

And finally, we have Becky.

MS. HOUDE: Hi. My name is Becky Houde, and I'm from Princeton, Massachusetts. I'm 33 years old, and I have been living with Parkinson's disease for 10 years.

My initial symptoms appeared when I was 23. I went to numerous doctors in Massachusetts, all of who dismissed my symptoms and my fears, stating that I was far too young to have Parkinson's, especially given that I had no family history of it. A year later, I moved south to attend Duke Law School. It was there that I was diagnosed with Parkinson's disease at the age of

24, one month after beginning law school and a long way from home. Thank you.

By the time I was 30 years old, the disease had progressed to the extent that deep brain stimulation, or DBS, was necessary. The three most significant symptoms that I deal with are difficulty moving, dyskinesia, and cognitive difficulties. Difficulty moving is one of the most crippling symptoms that I have.

When I was initially diagnosed, difficulty moving meant that my left hand moved slower than my right, and I walked with a slight limp. Since my diagnosis nine years ago, difficulty moving has increased exponentially and now includes problems walking, eating, showering, turning over in and getting out of bed, and at times not being able to stand up without assistance. I often have to get dressed while lying on the floor.

Using the restroom is difficult, both because my stomach muscles are often too cramped to actually go to the bathroom, and also because I

have so much difficulties both standing up and pulling up my pants.

I also suffer from dystonia, where my entire upper body goes stiff, leading to a severe back pain and neck pain and headaches. My mouth is often forced open in a painful position, or my mouth is forced closed with my tongue stuck out.

As for dyskinesia, I am very sensitive to Parkinson's medications, and as a result, I have extreme reactions to even tiny amounts of medication. On some days, I just look like I've had a lot of -- too much sugar. But at times, my dyskinesia is so severe that it looks like I'm having a seizure, and very painful.

Before undergoing DBS, I was expending so many calories that I lost 15 pounds and I was down to a weight of only 88 pounds. On a positive note, having so much dyskinesia means that I can always fully justify eating a lot of ice cream and an extra helping of dessert.

When I'm dyskinetic, my left foot turns in, causing me to walk on the outside of my foot.

The dyskinesia can cause me to slam the side of my foot against the ground. As a result, not only have I lost the ability to wear high heels, which is something that I mourn deeply; I have also fractured my foot on several occasions.

Cognitive difficulties have been especially hard for me to deal with, as I recently had to leave my job as a corporate attorney, a position I held for the past five years and loved. When I am off, I have difficulty understanding simple questions, and it feels like I'm in a fog. My concentration and ability to multi-task are greatly affected. I often go from task to task without ever actually completing anything.

As a result of these cognitive difficulties, I suffer from anxiety whenever I need to complete a particular task. In preparation for this panel, we were also asked how our lives were affected by Parkinson's. At the risk of sounding overly dramatic, every aspect of my life is affected by this disease. My life revolves around my medication schedule. I take

Sinemet every one hour and seven minutes.

In addition to Sinemet, I take 14 other types of Parkinson's or related medication throughout the day, including 15 pills just at nighttime.

My symptoms change frequently and unpredictably. Not knowing how I'm going to react to each dose of medication I take, as well as the uncertainty of the length and severity of the various off-and-on states, is what makes this disease so hard to live with. Because of this, I find myself confined to the house on many days. I have to push myself to make plans with friends, and when I do so, I often cancel at the last minute because I get so anxious going out.

Leaving the house often triggers a panic attack, where my whole body freezes and it becomes difficult to breathe. My ability to cope with these symptoms have definitely declined over time. I used to be so hopeful that the DBS would alleviate most of the symptoms. And while it has had some success with decreasing the dyskinesia,

the severity and frequency of my off-times have continued to increase.

As bad as the dyskinesia was, I find the off times to be even more debilitating, as then have to rely on others for help with basic tasks such as dressing.

My biggest concern is not being able to forecast what the progression of my disease will be. It is incredibly scary not knowing how fast and to what extent my disease will progress. I fear that the people I love most in the world will have to take care of me.

My family has all been there for me through everything, and I do not want them to have to worry about my care in the future. I'm engaged to be married, and my fianchas stood by me through brain surgery and through all of my ups and downs. And I want to be there with him to build a family and a happy life together.

With that said, I will continue to draw my hope and strength from my family, the advocates in this room, and the researchers around the globe

who are studying Parkinson's. And I know that one day, together, we will find a cure.

MS. GIAMBONE: Thank you so much, Becky.

Can we please give our panelists a round of applause?

(Applause.)

MS. GIAMBONE: I mentioned this earlier, but it takes an extraordinary amount of courage for coming here and sharing your stories with us. So, thank you so much for doing that.

And what I'd like to do now is ask you, for other patients and caregivers in the audience, what you heard from the panel, do those experiences resonate with you also? You can raise your hand or nod your head. Does that sound similar to your experiences? Yeah? Okay.

And on that note, I'd like to ask two other questions. So, Todd, you brought up the micrographia. And I was wondering if others in the audience, is that something that you've experienced? So, several hands raised for that. And then, Karl and Becky touched upon just the

unpredictability of the Parkinson's. And was that something also that you experienced, living with that unpredictability? Okay. So a lot of head nods. So thank you for sharing that.

Okay. So what we'd like to do now is a polling question. So if you could get your clicker out.

(Pause.)

MS. GIAMBONE: Okay. All right. So, of all the symptoms that you have experienced because of Parkinson's disease, which do you consider to have the most significant impact on your daily life?

And you can choose up to three: A, motor symptoms such as slowed movement or tremor; B, impaired balance and coordination; C, constipation; D, sleep issues such as falling asleep, staying asleep, or abnormal dreams; E, cognitive impairment such as difficulty concentrating or difficulty with complex tasks; F, fatigue and loss of energy; G, difficulty swallowing, or drooling; H, depression or anxiety;

or I, other symptoms not mentioned.

(Pause.)

MS. GIAMBONE: Okay. So, it looks like the majority of you who responded identified A, motor symptoms, as one of the most significant symptoms that you're living with, followed by impaired balance and coordination, and sleep issues. And then it looks like we have, you know, the other symptoms also highlighted here. In addition to, several people chose other symptoms not mentioned. So we'll be sure to touch upon that in a little while also.

How about on the Web?

MR. THOMPSON: We had 55 percent say motor symptoms; 55 percent also say fatigue and loss of (inaudible) -- 36 percent say cognitive impairment; 40 percent, sleep issues; and 40 percent, impaired balance. And all the rest are 20 or below.

MS. GIAMBONE: Okay. Thank you.

All right. So, now I'd like to invite other patients and caregivers in the audience, and

certainly, panelists, please also share your thoughts, too. Would somebody like to start us off with how you or your loved one experiences the motor symptoms and how that impacts your life?

(Pause.)

MS. GARRIDO-REVILLA: Thank you. My motor symptoms and all my other symptoms are the same as my brothers and sisters here with Parkinson's. In some of them, I see my past; in some of them, I see my future. And that's the reason why I'm here.

I don't want to be -- I'm supposed to be the caregiver of my children. My children are at the point that -- they're only teenagers, and they're beginning to help. I want that -- that's not the right way to be a parent. I wish that situation could change. I don't know how to change it. That's why I'm here.

As for the current medications, there are no medications. There are only symptoms. The current things that we have available, and we're running out of options, are like an aspirin to a

migraine. Sinemet and DBS, they all stop working. We don't need to look any further.

And with all due respect, we're doing as patients all we can right here today. And all the patients that are present on the Internet, and all the others that could not travel to be here because of mobility reasons.

So we're here to ask the FDA, what else can you do for us? We're here to do whatever we can. We're here to participate in trials. We're here to advocate. We're here to step up and raise our hands. We speak about our experiences. Our experiences are all the same. We're all past or present and our future. But we need to do -- we need more than a medication that was found in 1967.

Also, many resources have been spent on so many other things. Man has been to the moon, and how many of us are going to go to the moon? So we want a medication, something better other than 1967. I was born in 1964. And I'm still waiting for something.

So please help us.

MS. GIAMBONE: Thank you so much. And your name?

MS. GARRIDO-REVILLA: My name is Claudia Garrido-Revilla.

MS. GIAMBONE: Thank you so much.

MS. GARRIDO-REVILLA: Thank you.

MS. GIAMBONE: Would anybody else like to share? Yes, we have a comment back there.

MS. McCLEARY: Hi. My name is Kim McCleary, and I'm here in two roles, one on behalf of my mother, Karen Burk, who is 72 and has lived with Parkinson's for 25 years. And what struck me, I took some notes from her on Sunday about how she would answer some of these questions.

And the motor symptoms is such a big basket of issues in Parkinson's. And you've got rigidity and dyskinesia, freezing, tremor, all of these things that are kind of wrapped up in the idea of motor symptoms, but I think would be more varied among the people here in the room and probably on the Web to describe, you know, what

their most problematic things are.

And certainly, over the course of her 25-year experience, it has shifted, as the woman who just spoke was saying, that some are in the past and some are in the future. But maybe we could delve a little more into that particular issue.

MS. GIAMBONE: Thank you, Kim.

We have one more comment here.

MR. KWOK: Yes. My name is Kevin Kwok. One of my concerns is the actual diagnosis and definition of our disease here. If we look towards using motor symptoms, which is the primary marker of disease, generally by the time we're diagnosed it's far too late, because many of the other symptoms have progressed so far.

And so what my concern is, or urging to researchers and to the patient community, is to talk about this myriad of symptoms collectively and use measurement tools that actually take all of them into consideration, not just motor symptoms as your first primary diagnosis. Because

I think by then, we're actually missing the chance to actually help many, many people. So, thank you very much.

MS. GIAMBONE: Thank you, Kevin.

So that's a good point. Let's expand upon this. I'd like to invite those of you who want to respond to give us your experiences with any of these issues, really. Is there a symptom here that is most bothersome to you? And why is it most bothersome to you?

(Pause.)

MS. OLSON: Hi. My name is Nancy Olson. I'm here as a patient. I don't look like a patient yet, but I am. And I'd like to challenge the FDA to think about bringing together traditional medicine with Eastern medicine, because when I started with my symptoms that were very, very slight, I'm just one of those people that's very in tune with my body. And I knew something was off.

I went to doctor after doctor after doctor, and for years, and nobody could tell me

what was wrong. I finally went to the Myrna Brind Center for Integrative Medicine at Thomas Jefferson University Hospital in Philadelphia, where they discovered I had an extreme overgrowth of bacteria that's present in your intestinal tract, but that doesn't belong there in large quantities. And I had so much of it that it had killed the good bacteria.

So recently, there's been some news on the Parkinson's front to suggest that perhaps Parkinson's starts in the gut. It was before my diagnosis with Parkinson's that I was treating with the Myrna Brind Center, when they discovered this overgrowth of bacteria. And once they got that under control, I felt a lot better.

It didn't prevent me from having Parkinson's, which I was later diagnosed with, because I knew that something was still wrong with the motor symptoms and the olfactory, you know, decline, and so forth. So I pretty much diagnosed myself by the time I got the clinical diagnosis.

But I think there's a lot of merit to

some of the things that are being done on the Eastern side of medicine, together with the Western side. So I would challenge the FDA and any -- I'm a retiree of the pharmaceutical industry, worked in the industry for 45 years.

I would challenge the industry and the government to bring those two thoughts and schools of medicine together, because in my experience, that was the magic bullet for me to get to my diagnosis early. And by getting to my diagnosis early, I've been able to keep my symptoms under control with no medication, simply through exercise and diet.

You may have noticed me getting up earlier and going up against the wall. The stiffness was overwhelming me, and I just don't let it do that. When I need to move, I move, whether I'm in church or at the FDA or in bed. My husband says, you know -- I won't tell you what he says.

(Laughter.)

MS. OLSON: But I get up and down at

night more than the average person. I walk around the house, and I look out the window. Then my legs are not hurting anymore, and then I go back to sleep.

So, I think there's value in those two schools of medicine putting their heads together, which I think is kind of a trend anyway in the medical field today in many arenas.

MS. GIAMBONE: Thank you.

MS. OLSON: So it's been very helpful to me, and I would just raise that as a flag and say, you know, don't forget about that piece.

MS. GIAMBONE: Um-hm. Thank you so much for that thought. Thank you.

Yes. Let's go here, this gentleman.

MR. POSTOW: I'm Elliot Postow. And I've had Parkinson's for seven years. And it seems to me that from my experience, one of the most underrated symptoms, one that bothers me a lot, is the constipation-diarrhea symptom. And that is probably not spoken about as much as others because of societal reasons and personal

control over one's topics.

But not only is it important in and of itself in its activity limitations, it is important in that it affects the rate of absorption of the L-dopa drugs that you're taking. And it seems to me that we've made very little, if any, progress in that area over that past 20 years.

MS. GIAMBONE: Thank you very much.

I'd like to ask -- I know that we heard some of you mention that, you know, stress or maybe not getting enough sleep can trigger some of your symptoms. Would somebody like to comment on additional triggers or how your symptoms change day to day? Yes.

MS. LAZZARINI: Do I have the microphone? My name is Alice Lazzarini. I've been a patient with Parkinson's for about 11 years now. I'm here in part representing the American Parkinson's Disease Association, but also on my own personal experience.

In retrospect, I think even before 11

years, my first presenting symptom was fatigue. And I would just call to the FDA's attention something that came up in this morning discussion with the Huntington's as well, which is writing off-label or repurposing a drug. I recently had trouble getting refill for a drug I'd been taking for nine years for -- it's indicated for narcolepsy, not for Parkinson's disease. But it's already been through the safety rigmarole of being FDA approved.

And I was amazed, actually, that because it's not indicated for Parkinson's disease, my neurologist had to jump through hoops after hoop after hoop to prove, in fact, that there's documented evidence that fatigue is a difficulty with Parkinson's disease. And it took me two months to get this medication.

So consider at least some things that are being repurposed or off-label would be important to bring to the fore.

MS. GIAMBONE: Thank you so much.

Looks like we have a comment back here.

(Pause.)

MR. LINDERMAN: I am Charles Linderman from Alexandria. And I want to address the other symptoms up there that you don't -- where you don't have any nomenclature for them. How would you like to walk around with this contraption on? Because the FDA has done nothing, and there is nothing in the medical community, to help those of us who have head-drop associated with Parkinson's.

And I can assure you, without this, my chin would be on my chest. And that is not something that one wants to have to live with for the rest of their life. And I find that this is an area in which the only alternative that's been suggested to me has been surgery and an eight-hours procedure at Johns Hopkins University Hospital that would take a year to recover from because they would fuse both the front and the back of the neck and put titanium plates, rods, and screws in my neck. And we've chosen not to do that.

But I want to focus the FDA not just on

that portion of this, but to focus as well on what Dan Lewis started out in his first comments, about exercise. Because over 10 years ago, I made a decision when I was first diagnosed that I was going to fight this thing with a personal trainer, and I have done so pretty effectively and still compete in the all-adaptive rowing regatta that takes place every year in Philadelphia.

MS. GIAMBONE: Thank you so much, sir. And your name? Charlie. Okay. Thank you, Charlie.

Could I check in with the Web and see if there's any comments coming in? Okay. Okay. Great.

So, let's take some more comments then. Any of you like to comment? So we've heard some mention on the fatigue, constipation, motor symptoms. Other symptoms that you'd like to share with us? Yes. Dan?

MR. LEWIS: I think we neglected to address the cognitive issues, which are very important. I suffer from very broad memory loss.

And for example, if you ask me, I wouldn't tell you what I had for breakfast. And I forget things. And it is very disruptive to a normal life. We never -- I've lost my short-term memory. And I can't recall names or places or proper nouns.

The other thing I'd like to say is stress is a killer. It really worsens all my symptoms. And a lot of people I know through my work with Parkinson's Foundation have the same problem. They get involved in responsibilities, and then their symptoms get worse. And so, the responsibility of raising enough money to keep the foundation open drove me to quit as chairman of the board, because I guess it was just haunting me and causing me to fall down, and other symptoms were accentuated.

MS. GIAMBONE: Thank you very much, Dan.

Karl?

MR. ROBB: I just wanted to reiterate that I think 60 percent of Parkinson's is stress. But I also think -- also, I'm very fortunate that

I don't suffer from depression. But depression seems very common in Parkinson's. And that's something that needs to be addressed.

MS. GIAMBONE: Thank you very much.

Let's hear from --

MS. OKUN: Hi. I'm Sally from PatientsLikeMe, Sally Okun. I wanted to just report a symptom that we haven't heard about that our patients do report on. About 32 percent are reporting severe -- moderate to severe sexual dysfunction. And again, that might be a sensitive topic that in real encounters with physicians and things might not come up. But in our community, oftentimes those types of comments are actually welcome and encouraged to be talked about.

So I think the number is high enough for us to be thinking about that as an issue. Also, the relationship -- the impact on relationships is also related to that as well. Thank you.

MS. GIAMBONE: Thank you very much, Sally.

What I'd like to do now is go over to

the phone. We do have two participants joining us on the phone today. And they were identified as panelists, but they couldn't make it here today. So we want to make sure we give them just a few minutes each to present their thoughts.

So we should have Chuck and Judy on the phone. And, Operator, it looks like we're going to start with Chuck. So, Chuck, are you there?

(Pause.)

CHUCK: Can you hear me?

MS. GIAMBONE: Yes. Chuck, we can hear you.

MR. ESPOSITO: Okay. Good afternoon. Greetings from the North Georgia mountains. My name is Chuck Esposito, and I first reported my symptoms to my PCP in the summer of 2004. And like many Parkinsonians, I was originally misdiagnosed. It was not until two years later that I was properly diagnosed with idiopathic PD.

We Parkinsonians are different as snowflakes. Although there are many similarities, no two of us are exactly alike. In my case, the

three most bothersome symptoms are fatigue; EDS, which is excess daytime somnolence; and LID, which is levadopa-induced dyskinesia. Some of you have recognized, the medications used to treat the PD are more responsible for these disturbances than the disease itself.

Despite these different symptoms, they can affect different activities. And they can vary not only from day to day, but from hour to hour. Panel participants have commented on this at the beginning.

For example, on a bad day when I'm suffering from fatigue, EDS, LID, tremors, bradykinesia, rigidity, dyspnea, which is difficulty breathing, postural instability, et cetera, I'm pretty miserable and I'm not interested in moving very far from my recliner, especially if I'm experiencing festination and freezing.

The word "festination" comes from a Latin word meaning "to hurry," which describes the quickening and shortening of a normal stride,

which can occur as a hopping or shuffling gait.

Freezing was mentioned earlier by participant Todd. This is something different altogether. And this is experienced by about a third of us. It's the sensation of suddenly becoming stuck to the floor and temporarily unable to walk. This is a potentially serious problem because it increases the risk of falling forward, which increases the risk of ending up in a hospital bed with a broken hip, which increases the risk of getting pneumonia, which increases the risk of dying, as was mentioned by Dan.

Now, under such circumstances, the proximal cause of death is generally regarded as pneumonia. But the distal cause is, in fact, PD.

On a good day, when most of these symptoms are absent or minimized, I can engage in a fair number of activities and performances. At the same time, there are some activities, for example, motorcycling, which will forever remain on the I-do-not-do-that-anymore list.

PD is a progressive disease. And, Lord

knows, Becky explained that to us. And that means that the original symptoms will worsen as time goes by. And also, symptoms which were not originally apparent begin to emerge. The good news, in my view -- and I know not everyone shares this view -- is that the progression is generally slow. The slow progression allows the time for both the Parkinsonian and the care partner to acclimate to the inevitable relentless deterioration.

My closest family members are a day's drive from here. And as my PD progresses, my endurance declines, fatigue increases and reduces how far I can drive in a day. So I just don't get together with family or visit with friends as much as I used to or as much as I'd like to.

In closing, I'd like to say I appreciate the invitation to participate in FDA's Patient-Focused Drug Development meeting. And I thank you for your attention. Bye-bye.

MS. GIAMBONE: Thank you so much, Chuck. I'm not sure if you could see, but several people

were nodding their heads as you were speaking. So it sounds like what you said resonated with several people in the room.

Okay. Next, we should have Judy. Judy, are you there?

JUDY: Can you hear me?

MS. GIAMBONE: Yes. We can hear you.

MS. WHEATON: Okay. Good afternoon. My name is Judy Wheaton (phonetic). I'm 65. And I was diagnosed two years ago with Parkinson's. I currently live in Arkansas. I've retired in Arkansas as a researcher at a college in Texas. I'd like to address three symptoms that significantly impact me on a daily basis.

The first one is constipation. And I'm not talking occasional constipation, but I'm talking constant, chronic, everyday constipation. It's more than just (inaudible). It's homebound for several days each week just to address the issue with medication and the aftereffects. I'm currently taking Amitiza twice a day in order to digest the food and pass the way.

I also have to watch my diet. I believe it was Karl, one of the panelists, that mentioned that he watches his diet. I think he said he was a vegetarian. I have to really watch meat, especially, maybe because it's harder to digest. But it will take me several days to digest and cause constipation, even with the meds.

The second symptom is not sleeping. And I've heard several people talk about this. Currently, my doctors prescribe a medication, Ambien, but warned me that insurance companies will not refill this medication on a monthly basis because it's habit forming. My insurance allows for 90 days of this medication per year. So, that kind of leaves me to cut the tablets in half and not take one every night.

And you might be thinking, why don't I take a different medication, one that can be refilled monthly? But unfortunately, I also take Ridmal for a heart disorder, and many of the sleep aids interact with this medication.

Not sleeping at night leads me to the

third symptom. And I haven't heard it mentioned yet. But it's inflammation. Currently, I have tremors in the right side of my body only. And they're controlled fairly well during the day with the Parkinson's med. I take the carbidopa-levadopa. I take three tablets a day of the 25-100.

But when I don't sleep, my right arm tremors all night. Well, after two or three nights of this, it feels like my arm and my shoulder have been severely overused. And I begin to get pockets of inflammation in my arm and up to my shoulder. The last year, I even developed an infection in the bursa of my elbow from several nights not sleeping and the constant movement in the arm and the inflammation unchecked. Sleeping at night really seems to aid in this entire inflammation problem that I experience.

Thank you for letting me share just a little bit of my Parkinson's story. And I appreciate listening to all of yours.

MS. GIAMBONE: Thank you so much, Judy.

And again, I saw heads nodding when she was speaking, also.

So, on that note, she brought up inflammation, that not sleeping increases the inflammation that she feels. Do others feel the same way? Does that resonate with others?

(Pause.)

MS. GIAMBONE: Okay. The tremor she mentioned, that not sleeping also increases the tremor. Okay.

FDA panel, do any of you have any questions that you'd like to ask?

DR. DUNN: I don't have a specific question. I want to not only thank folks, but reassure folks that a lot of what you're saying, it's familiar to us. We hear you, and it's good to hear the reiteration that things that we're aware of, particularly some of the uncommon things, or things that you may be concerned we are not attentive to, I want to reassure you that it's not the first time we're hearing much of this.

And so, that's good news, I think,

because some of these things are very difficult to detect. They're concerning. They're hard to talk about. There's a whole wide variety of them. But I know that I speak for the team because we talk about these things. These are very important Parkinsonian symptoms. And we do pay a lot of attention to these in our work with sponsors.

So, I thought I would just offer that up as a bit of what I consider to be good news, that we're all together collaboratively on the right track and trying to not just pay attention to the stand-out symptoms, but to the whole plethora of symptoms that could occur in this disease.

MS. GIAMBONE: Thank you, Billy.

Okay. So let's get back to our discussion here for a few more minutes. Anything else that you'd like to share on how you're experiencing these symptoms? Yes.

MR. CANNON: I'm Paul Cannon. I'm a patient. One of the things you asked in the questions, but didn't address in here, is social withdrawal. I think like many of these symptoms,

it's actually insidious and probably has more of an effect than we realize, especially in the caregiver, in that context. So it seems like social withdrawal and sleep can actually be insidious. They don't seem so bad themselves, necessarily, but I think it makes a lot of other things worse.

MS. GIAMBONE: Um-hm. Social withdrawal. Okay. Thank you.

Yes. Let's see. Okay. Looks like the microphone right there.

MS. ROBB: I'm Angela Robb. I'm Karl's wife. But I'm not only speaking as his caregiver, as some of the things I'm about to say are actually experience I had as a support group leader and as a speaker on care- partner issues.

I think there's a lot that isn't said about the nonmotor symptoms, particularly the problems with executive dysfunction, or -- I can't remember what the word was. But there's a lot of things that I think affect caregivers and in the workplace, that people with Parkinson's, you know,

being able to go through step by step.

If it's a 10-step task, and they get lost in about 2 or 3. And then they start over. And then they get lost again. And then they have to go back again. And then they never complete the task. Or they start a project and can never finish a project.

Also, with that, that goes with what Becky said about the anxiety. So, you know, you get to step four and you can't remember. And you go back, and you keep going and going. And then on top of that, the stress associated from in the workplace or even in a family situation with that. A lot of people who, if you aren't immediate family and living with a person with Parkinson's, you won't understand that the cognitive dysfunction or executive dysfunction has a huge impact.

People think you're doing it on purpose. Even outside of the home, some people will think that you're purposely -- because they don't understand it's actually a symptom of the disease

that's preventing you to think that way.

So I think there's a lot to be said for that par. And there's not a lot of medications and/or therapies that treat that component of the disease. Thank you.

MS. GIAMBONE: Thank you very much.

Let's take a couple more comments before we go back to the Web and the phone. So, go ahead. We'll go here. Okay.

MS. GARRIDO-REVILLA: One very important symptom that people or even doctors know very few -- well, in my time -- dystonia. Some people call it cramps. Some people call it like twitching or focal dystonia or cervical dystonia or the cramps in your feet. They're not cramps. They're dystonia.

Dystonia -- it's a disease by itself. And it also comes with some cases in Parkinson's. That's my case. It was my first symptom. And when I showed up, the doctors didn't know what was going on. I had to take a photo of my foot and show it to the doctor to see what was going on.

So one of the most important symptoms is dystonia. And September is Dystonia Awareness Month. So.

MS. GIAMBONE: Oh, okay. Good to know. Thank you very much. Thank you for sharing that.

FEMALE PARTICIPANT: To add another symptom to the others, on number I, one of the symptoms that bothers me most is blood pressure drops, so hypertension. It doesn't necessarily happen when I first stand up, but if I've been standing still for awhile, my blood pressure will drop and I feel like the center of my head is very cold and that I'm going to die.

It doesn't make me dizzy. It's not predictable, as other people were saying. It's one of the hardest things for me to manage, not knowing when it's going to happen. And so, just to add that to the list of other things that can happen with Parkinson's.

MS. GIAMBONE: Okay. Thank you. Blood pressure drops. Do others also experience that, the blood pressure drops? Okay. I see several

hands raised there. Okay. Great. Thank you.

So, let's -- so, we have two callers on the phone. Okay. Operator, could we have caller number one, please?

THE OPERATOR: Yes. Sophie, your line is open.

MS. GIAMBONE: Yes. Hello?

THE OPERATOR: Sophie Carter, your line is open.

(Pause.)

MS. GIAMBONE: Okay. We can go to the next caller then. Caller two?

THE OPERATOR: Vicky, your line is open.

MS. PERRY: Thank you, sir. My name is Vicky Perry. I've had Parkinson's for over 30 years. And when I was first diagnosed, they had a hard time diagnosing it. And online you're supposed to go for research. And I kind of question that because I felt that the quality of the patient's life should also be taken into consideration.

And so, now that is. And I'm so happy

to see that. I think there's a lot of good things that happened since I was diagnosed as far as doctors are now looking more at quality of life and the whole person. And because it improved that.

I have genetic Parkinson's. I have a sister with it. I was diagnosed when I was six months short of graduating from college. It was frightening. I had no idea what this disease was. I didn't know anything about it. But I was taken care of by good doctors, and even truly understood a little more as time went by.

And like I said, the people's studies looked more to the quality of life patients instead of saying, "Oh, it's just this. I have this. I have money. In time, you'll have a cure."

And, of course, 30 years later, that never happened. But they have really been focusing on the patients. And I think that's a very good thing.

And there's different kind of

Parkinson's. There's another form that I have. It's more lateral than it is like idiopathic Parkinson's. And what that means is my symptoms don't really appear clearly as most people. But mine is more working on the inside, both through my inner body up. So I'm now at the point that I'm having difficulty remembering words. I have lots of cognitive problems.

There's a lot of autonomic systems that become involved. I have had the sweats for no reason. I have difficulty swallowing and difficulty remembering words. But I think my neurologist is very helpful, and they're trying to stay on everything.

There's a point where I was actually put in the hospital a couple of times going into a coma because I had too much stress in my system and kind of everything fell through. And that's when I got my DBS, and I had to fight through that. And that's how I found out I had the genes for Parkinson's disease.

And now I'm -- I think we have a lot to

be hopeful for. It's not all bad. As she said, you have to look at the whole patient, I believe, now, instead of just at the disease. So, we need a cure.

MS. GIAMBONE: Thank you. Thank you so much for sharing those thoughts.

So it looks like we touched upon most of these symptoms that are highlighted here. And other symptoms that you mentioned included problems with sexual intimacy, we heard. We heard low blood pressure. We heard head drop. We heard sweats, on the phone, dystonia. So thank you for bringing up all of these really great points that are so helpful for us to hear.

So on that note, I'd like to go to break. And we will take a 10-minute break. So we'll see you all back here in 10 minutes.

(Whereupon, at 3:05 p.m., a recess was taken, to reconvene at 3:25 p.m.)

DR. EGGERS: This is Sara Eggers again, from the Office of Strategic Programs. I'm one of Soujanya's colleagues. And I will be helping

facilitate the discussion in Topic 2.

Topic 2 is focused on the approaches to treatment of Parkinson's disease. And as was reiterated this morning, you know, it goes without saying the complexity and the management of this condition. And many things were started to be raised this morning in the comments that we heard about symptoms that aren't quite being addressed as much as you would like in the current treatments, about your experiences with treatment so far.

So we're going to get into that discussion more. We are trying to focus on -- the input that we are getting today really helps FDA in our role understand how we can advise drug sponsors in terms of, where are the unmet needs? What should we be focused on? What is it important to patients about their disease and the disease management that perhaps we could better reflect in pharmaceutical treatments?

So that's what I'm going to ask some questions to try to tease that out, as well as

what you look for in an ideal treatment.

To start our discussion, we have panelists again, five, who will set the stage with their comments and sharing their experiences. And then we will move again into the open discussion.

So with that, we will start with Steve.

MR. DeWITTE: Thank you. Tough act to follow, table 1. But we'll do our best over here. Thank you to the FDA committee for allowing me to be a panelist. Tonight I present my views alongside this distinguished group of fellow people with Parkinson's. It will be my wish to capably represent our community on the current approaches to treating Parkinson's disease.

I suspect the phrase "Parkinson's disease affects everyone differently" will be used repeatedly by my distinguished colleagues. Therefore, I just wish to present treatments that I use to manage my multitude of symptoms.

I think it's important to point out that the degree of symptom relief varies moment to moment. Variables such as temperature, diet,

amount of sleep, and anxiety, like we've talked about, have an effect on the degree of symptoms regardless of the treatment plan. Therefore, there can be a high degree of self- dosing which we as PWD's will administer to get the maximum symptom relief during upcoming dose times.

As I share this treatment plan that I use, I think it's important to include some nonmedicative steps I've taken that have led me to choose the complementary medication plan that I'm under.

It begins by ensuring I'm well versed on what's being recommended by the medical community currently. One way I do this is through making myself accessible to patient-led support groups such as the Connected Advocates for Parkinson's and the Make a Different Parkinson's Alliance based in my home State of Connecticut. Go, Huskies!

(Laughter.)

MR. DeWITTE: Patients' information exchanges like Dr. Goldstein spoke of have been

very significant in my determining what treatment plan I make for myself, as well as discussions that I've had with my movement disorder specialist. I attend forums, symposiums. I listen to Webinars. And I receive the latest news from disease-specific agencies such as the Parkinson's Action Network, Michael J. Fox Foundation, Parkinson's Disease Foundation, and the Cure Parkinson's Trust of UK.

I built the treatment team that provides me counsel and prescriptions for various symptoms. They include rheumatoid specialists, an occupational therapist, psychiatrist, physical trainers and nutritionist, and others as needed.

Lastly, I gain much from my participation in clinical trials. I've enrolled in well over a dozen. I seek studies that have investigators that have a history of being transparent in their observations and their study results. Some of these studies allow me to maintain personal measures of disease progression through brain imaging or cognition testing.

All this, and I haven't even started to mention the medications that help me in my daily life. Having just passed my first decade with the disease, I've noticed that there have been some disheartening advances. I've found it necessary to increase my visitations to my movement disorder specialist.

And likewise, my medication regimen has changed. I generally take six -- my pills six times a day, 20 pills a day altogether. The medications that I'm on are the gold standard carbidopa-levadopa; ropinirole, also known as Requip XL. I take a laxative and a melatonin supplement to help me sleep.

Under the category of alternative treatments is exercise. I'm a believer in the value of the intense-interval exercise training programs, and have worked with a lot of the research centers, especially the University of Alabama in Birmingham, on passing out their gospel of intense exercise.

I recently registered with a local PD

program led by Michelle Heisler, called BP. It also is an intense exercise training program at least once a week, and provides me relief from stiffness and a greater response to my medications, which in turn allows more on-time and less tremors.

Last but not least is Tai Chi. I approached this martial art form with much skepticism. I remember it on a trip I took to Hong Kong, watching workers outside their office going through some beautiful moves that in no way resembled any Bruce Lee's movies.

(Laughter.)

MR. DeWITTE: It will often help alleviate stiffness and provide relief from poor gait. In the State of Connecticut, it's even awarded a grant to a Tai Chi instructor to help prevent falls, specifically for seniors, after seeing the cost savings that can be realized when such a discipline is adopted.

Now, believing the value of exercising, having it a regular part of my treatment plan has

been difficult, as is evidenced by my not-so-chiseled frame. But I still continue to get out there daily and get the exercise in, because I know it's not only good for me, but it has an impact on the disease.

Now, how have things changed? Well, as I move into my second decade of PD, I found it necessary to increase my medications. Some of the medications have warnings related to dyskinesia and compulsive addictive behaviors at the dosage levels. And I mention that because we've talked a lot about our symptoms, some of them driven by the medications themselves.

Every three hours, I need to take my meds. Before I leave home, I go through my checklist -- watch, wallet, phone, keys, pills. Administration of the medication is tedious and requires a lot of focus. One must ensure that daily needs are properly in hand, but not only that, making sure that you have additional, in case there's unforeseen conditions like weather, as well as airline delays, roadwork -- you may

take another pill.

With the exception of exercise, none of the treatments I have mentioned provide relief from my irregular sleep patterns. These patterns are in the forms of screaming in the night and awakening at all hours. This obviously affects me and my family's needed REM sleep, and leads to fatigue much of the following day.

I've found the most effective medication for this condition for me has been Provigil. However, Provigil is not an approved medication from my insurance provider, and it's extremely cost prohibitive.

In total, my treatment plan is not as effective as I would like. There's about two hours in any one day in which my normal functioning is halted. My family members and my friends, especially my Basset hound, Benny, becomes very frustrated by my lethargic state as we wait for my level of energy to return to help me resume my activities.

Relationships can be affected. Maybe

some of you will hear some of these remarks at your home, things like, "Dad seems lazy today. He's falling asleep in the couch." "All I asked you to do is pick up some milk and bread. You remembered to pick up your pills, but you couldn't remember to pick up family groceries?" "He's looking a little slow today. Better not give him that assignment if you want it done before the end of the day."

These are the kind of conversations that are held around us all the time.

So I have thought about the factors that prevent some of the disciplines that could prevent me from having a better quality of life. In the limited time we have left, I'd like just to address the two factors I believe are important. And that's access to PD-certified therapists to assist with valuable exercise programs and the cost to pay for it.

Most health coverages do not cover exercise programs unless justified through physical therapy. Most physical therapists and

fitness trainers fail to have specific experience with Parkinson's disease, despite growing evidence of the positive impact exercise has on managing our disease.

But I am the eternal optimist. Recently, we've had some new treatments come trickling out of the very full research funnel. I look at this as a sign that we are not far off for an ultimate disease- modifying treatment, "the magic pill."

Now, in lieu of this, I am working with some greatly admired and dedicated advocates and researchers on an exercise prescription. The ideal treatment for me might begin with the point of diagnosis. Shortly after delivering those fateful words, "You have Parkinson's disease," the MDS will present you a prescription that directs you to a certified therapist and trainer.

And a treatment plan that's covered by insurance might look like this: Three days of disciplined, intense exercise; one day of exercise alternatives, such as cycling, hiking, or dance;

two days of Tai Chi; and a little medication to round it off.

DR. EGGERS: Do you have any final thoughts, Steve, to wrap up what you would look for in ideal pharmaceutical treatments, perhaps, that they would better address?

MR. DeWITTE: I didn't address the pharmaceutical, because I thought that was a very deep subject. I thought with the medications that are out there right now, exercise is still the best option.

DR. EGGERS: Okay.

MR. DeWITTE: And I'd like to thank the FDA for taking the time to listen to us, as well as the industry and all the partners that are here. Because it makes a difference. We're going to do this together.

MALE PARTICIPANT: Exactly.

DR. EGGERS: Thank you, Steve. I was told not to call him Steven.

(Laughter.)

DR. EGGERS: Next, we will move on to

Gary.

MR. RAFALOFF: Hello. I'm Gary Rafaloff, from New Jersey. I'd like to thank the FDA for inviting me to speak today. My journey with Parkinson's began when I was diagnosed in 2012, almost four years ago. Yet looking back, my symptoms actually began about four years prior to that, in 2008.

That year, I began to have several medical problems, which I now know are classic Parkinson's pre- motor symptoms. I lost my sense of smell. I developed shoulder issues. I began to have REM sleep disorder. These were all noticeable changes for me, but not debilitating.

However, I also developed at that time dystonia in my foot, which caused extreme cramping. This was so debilitating that it became difficult for me to walk more than several blocks before I had to stop to let the cramps ease up.

I spent four years going to multiple doctors with various specialties, getting X-rays, MRI's, CAT scans, and without either being cured

or properly diagnosed. Unfortunately, although we know that Parkinson's disease begins several years prior to the onset of more classic, hallmark symptoms, we don't yet have any sort of early biomarkers to diagnose the disease and differentiate it from other neurological disorders with similar early symptoms.

And we can't properly treat those who aren't first accurately diagnosed. In my case, a simple one- half dose of levadopa was all that was needed to alleviate the symptoms that I suffered with for four years and allowed me to walk again without issue.

Like many PD patients, I use a variety of treatments to control my symptoms and hopefully slow the disease progression. I use several drugs, including Sinemet, Azilect, and amantadine for symptomatic relief. They clearly are helpful for my foot dystonia, only mildly beneficial for my tremor, and they are of no help at all for my neck and back stiffness and pain.

I also take a variety of over-the-

counter supplements and vitamins, like many, with the hope that it will either be antioxidative or anti-inflammatory, and the result have some interventional benefits and maybe disease modifying.

However, there is such a lack of research in this area, I have absolutely no evidence either through research or my own experience to know whether these supplements actually help. There is a great need for more formal clinical research in this area to help us guide in nonprescribed supplements that may be beneficial.

In addition to the drugs and supplements, I try to be very active and exercise as much as possible. I also perform Tai Chi daily and Qigong regularly. I walk several miles every day, and I try to get to the gym several times a week. Outside of taking prescribed medication at the proper time, daily exercise and activity, as mentioned by others, is by far the most important thing a Parkinson's patient can do to help control

symptoms and possibly slow progression.

As I mentioned in my previous comments, the prescribed drugs that I take only work moderately for me in controlling my major symptoms. In addition, the main treatment for Parkinson's, the so-called "gold standard," carbidopa-levadopa, has a limited life in its usefulness before the side effect, dyskinesia, becomes more of a problem than the actual symptom it is treating.

For me, this has caused an ongoing debate many PD sufferers share -- when to begin levadopa treatment. Do I start early and get the most benefit while still in my best physical and mental condition? Or do I delay as long as possible so as to put off the dreaded dyskinesia side effect?

The primary alternatives to levadopa would be treatment with dopamine agonists, such as Mirapex, Requip, or Neupro. Unfortunately, these have their own serious side effects, which can include harmful compulsive behaviors, sleep

disorders, and hallucinations.

After four years, my main problem from the drugs and supplements which I take are daily cases of mild nausea, along with repeated bowel issues of either constipation and diarrhea. I also find it difficult to constantly follow the varied time schedules, dosing levels, and routine that each drug requires.

Along with scheduling problems are also the issues of food. Some drugs are taken with food; some drugs require an empty stomach. Some drugs require not to take protein because they have a negative impact on drug effectiveness.

And of course, for many of us there's the economic side effect involved in the significant cost of taking all of these treatments. This cost may be painful, but it's even worse when you only receive a moderate, or even no relief; then the cost is exorbitant.

Looking to the future, I see two avenues for new treatments to be successful, even without a complete cure. First, I would like to see

better symptomatic treatments. Ideally, they would provide more symptomatic relief with fewer side effects, and in addition, would have ease of use that could be either oral, nasal, or sublingual, rather than intravenous or invasive. It would also have longer periods of activity so as to require more limited dosing times.

Finally, we need to realize the uniqueness and individuality of our disease, and that different treatments may affect us differently and some of us may require different items that others don't use.

Second, and for me most importantly, would be to discover disease-modifying interventional treatments that can slow the progression, if not totally cure it. As a progressive illness, patients with Parkinson's disease can usually live a normal life if taking proper treatments in the early to mid-term years. Currently, the life-altering period is probably seven to ten years, at which point changes in lifestyle become mandatory.

With interventional disease-modifying drugs, along with new symptomatic treatments and a proper exercise regimen, I truly believe most, if not all, of us would be able to live active and productive lives for many years beyond diagnosis. Thank you for allowing me to speak today.

DR. EGGERS: Thank you very much, Gary.

And now I think it's Jennifer.

MS. RAUB: All right. Can everybody hear me okay? Good. Hi. My name's Jenifer Raub. I'm a patient advocate for Parkinson's and for regenerative medicine. I have Parkinson's. I'm 57 years old. I was diagnosed seven to eight years ago. But I do remember my first symptom at 35, with the hand flutter.

I'd like to thank the Patient-Focused Drug Development Committee and the FDA for putting a spotlight on Huntington's disease and Parkinson's disease. There's approximately 7 million reasons why I am honored to speak with you today.

Parkinson's disease is a progressive

disease, and my daily routine is always evolving. Currently, I take carbidopa-levadopa, Neupro, Azilect, and a handful of supplements morning and night. I feel like my days are controlled by the disease's needs.

Like so many of us with Parkinson's disease, I've tried a plethora of therapeutics, like biofeedback, acupuncture, physical therapy, yoga, and more. I exercise rigorously daily, sometimes twice daily. That seems to work the best. I stretch throughout each day to stave off the stiffness. I try to manage life's stressors and keep my mind and body challenged and active.

Some days, these therapeutics aren't as effective as others. Every day is a struggle with the ups and downs of Parkinson's' Parkinsonian symptoms. At the end of each day, I am exhausted and sometimes frustrated, like I heard so many others in this room.

I never know what tomorrow brings. Another day filled with the same unpredictability? Can I stand? How much pain will there be? How

long will the medications that are working today continue to do so? Acceptance of this instability is often frustrating.

I have days I'm reminded of the fact that the medicines will not be effective forever. Parkinson's is progressive, as I've said. Those days I look at my children and grandchildren and wonder -- oh, God, I don't want to cry -- how long will the medications be effective? God. Sorry.

(Pause.)

DR. EGGERS: Take your time.

MS. RAUB: I'm watching you time me.

DR. EGGERS: No, no.

(Laughter.)

DR. EGGERS: I'll nudge you.

MS. RAUB: I'm onto you.

DR. EGGERS: Don't watch the clock.

MS. RAUB: My life has a new definition of "normal." Parkinson's has redefined my family, my friends, and marital relationships. Like Karl and like all of us, Parkinson's has redefined me. There is no cure for Parkinson's disease today.

And, yes, I've looked for alternative treatments for my condition.

I do not want to be dependent on medications for the remainder of my life -- medications with an undependable effectiveness and side effects. I strongly believe there is great promise in the near future for stem-cell therapy for the treatment of Parkinson's disease, specifically, induced pluripotent stem cells, which are patient-specific and DNA-matched. These cells are nonembryonic stem cells.

Stem cell therapy has been used in Parkinson's. It has a 30-year history. I'm sorry. Today, those in the study from decades ago, using fetal cells, are now dying of natural causes. And the dopamine cells at the time of death were still viable.

Fast forward 30 years, and today a simple skin cell can be made into a pluripotent stem cell and, consequently, a dopamine-producing neuron, the very thing that I'm missing and the same thing that's missing in so many of us in this

room.

As I stated earlier, I'm a patient advocate for Parkinson's, an advocate for all regenerative medical research, and for Summit for Stem Cell, working towards patient-specific stem cell therapy. Currently, there are 10 patients in a pilot study with their dopamine-producing neurons already made and waiting. Parkinsonian rodent model tests are completed, and within 18 weeks, all the rodents have regained strength and movement. It's real. It's happening, and it's happening now. Summit for Stem Cell hopes to file an application with the FDA in 24 to 36 months.

I know the risks and the side effects of the medications I take. I know the risks and the side effects of the stem cell therapy. I'm willing to take that risk. And most people I've come into contact with would rather take that risk than acquiesce to Parkinson's.

Let me, let us have the right to take that risk, the right to choose how we fight the symptoms of Parkinson's. I fight every day to

move. I am fighting for a life with my family. I'm young-ish. I want a future with -- don't laugh too hard over there.

(Laughter.)

MS. RAUB: I want a future with the simple joy of being with my husband, my children, and my grandchildren. I'm not crying -- I'm not saying that.

Time is limited for someone with Parkinson's. My time is limited. Give me a chance. Give all of us a choice. I would like to ask the FDA to consider supporting and furthering this new and revolutionary field of regenerative medicine that will change therapies and treatment, not only for Parkinson's, but for so many diseases that there is no cure for today. I'd like to thank you for your time, and I appreciate you listening to me.

DR. EGGERS: Thank you very much, Jenifer.

MS. RAUB: Here. I'm shaking too much.

(Pause.)

DR. EGGERS: Now we have Kevin.

MR. KWOK: Can everybody hear me? My name is Kevin Kwok. I'm from San Francisco. I'm 54 years old, and I am a Parkinson's patient. I was diagnosed, I would say, in my mid- to late-40s. It was not exactly sure when I started the symptoms, but I did know that I lived with it for a long time. And then, the ensuing denial was many years after.

I'd like to give you a demonstration of a fast-forward time-elapsed photography of what Parkinson's could do for you. I elected DBS a few years ago. And it changed my life. But it was one of those decisions that I thought was very harrowing at the time, and I almost backed out of it at least a dozen times.

Without DBS, as I know a couple of my colleagues on here on the panel have had DBS, I'm basically disease-free, from a motor symptoms standpoint. What I'd like to show you is what happens when I turn it off, if I can.

(Laughter.)

MR. KWOK: Is it working? The white button, right. I don't usually turn this off, because I'm fearful that I'll jam and it will not go back on.

(Pause.)

MR. KWOK: Thank you. So, this is my symptoms. I'm off medications completely with DBS for motor symptoms.

FEMALE PARTICIPANT: I think your battery is dead inside of here.

FEMALE PARTICIPANT: Uh-oh.

MR. KWOK: Is it dead? It's all right. We don't have to do show-and-tell.

FEMALE PARTICIPANT: Yeah. It would have been cool, though.

MALE PARTICIPANT: You can describe it. Some people won't see you, anyway.

MR. KWOK: I'll try to do a demonstration live. I only have bradykinesia on one side, my left side. And for the majority of my disease, that was all that really bothered me, I would say, from the motor symptoms side. But

what I'd like to emphasize, it's the non-motor-symptoms side that really drove my decision to have DBS, not the motor symptoms.

It's not working? That's all right.

So, you would normally see, if this worked -- I'm glad it's locked on, not off.

(Laughter.)

MR. KWOK: -- is that off stimulation, I would, in 30 seconds, my arm would curl almost like a claw. And you would see someone very decrepit on one side. And yet, right now, I'm fine, if you look at all the UPDS symptoms on here.

And so, I think that for me, a lot of the things that I think about are very, very different because of my staging of disease. I'm very thankful that DBS has worked. My concerns of not doing something which was considered science fiction and Terminal-Man-like, Michael Crichton-ish therapy, actually has proven to be something that has been very, very beneficial in my life.

What I think about now, however, is the

things that DBS does not work on. It does not work on many of the symptoms that I currently have. As a Californian, a Northern Californian, who is an obnoxious wine fan, I've lost my sense of smell. That is a horrendous thing to have. That's one of the least of my worries, however.

I still -- while my sleep has improved, my sleep is not nearly quite as good as it used to be. I worry about cognition, and I wonder if I'm a candidate for Lewy body disease downstream.

I've gone through episodes of treatment prior to DBS. I will tell you I was initially on Sinemet, like all of you. And then with the increasing doses, they started to add to the cocktails of therapy. And then they started adding dopamine agonists. I will tell you, for some this works; for others, it's a very, very dangerous drug.

And I actually -- many of the symptoms of aberrant behavior -- I experienced many of those things almost to the detriment of my family.

I still sense fatigue. And

occasionally, there's a dizziness when I stand. And these are still some of the symptoms that I have even after I'm off dopamine and my DBS is working fully.

The things that I think about, however, are really -- I would say I developed what I consider themes of trying to improve my therapy. So I've listed them. And these are not necessarily just pharmacologist. My primary concern right now is, how do I make these beneficial effects that I've had with DBS last as long as they can? It's really the durability.

DBS is oftentimes viewed as sort of Medieval bleeding or leeches because we don't know exactly how it works. All I can tell Is it worked for me. And so I've been involved in a clinical trial now to look at beta-oscillation and different patterns to see if there are electrical surrogate markers instead of biochemical surrogate markers.

So far, and this is something that just came up last week, there's a detection that, even

though I don't show symptoms on the UPDRS rating scale on my right side, but they're beginning to show initial gaps in the beta-oscillation.

And my neurologist asked me at Stanford, "Kevin, do you want us to power up your right side now in addition to your left side?" I was one of those patients who they said, "Well, while the house is open and being renovated with your walls open, why don't we wire for both sides, because it is a progressive disease?"

So for me, I decided at the time, let's not start dopamine and let's not begin because we don't know enough about prevention with DBS. But the delay in progression, from an electrical standpoint, is one way I look at it. From a pharmacologic -- and I think there's been a lot of conversation on exercise being all part of it. And this is the life that I live today to delay progression.

My second theme is, how do we treat and refocus on the nonmotor symptoms? I addressed this in one of my questions earlier. But I

believe that the nonmotor symptoms are as equally part of the complexities and a constellation of disease, and we have to incorporate all of these. And the current rating scales may not take into effect the nonmotor symptoms.

I think a lot about the limitations of current treatment. My experience with dopamine agonists was something that I would not want a lot of other people to experience. And I ask that we be very vigilant on some of the side effects that can happen there.

There's the aspect of prevention. I think that some of these issues on finding prodromal patients or those that have not yet phenol-converted to be a lot of emphasis to be found on how we could study and identify those patients. I know from an industry standpoint, that's not easy. But we can learn. We can learn from cancer, where we start with end-stage patients and progress to an earlier stage to show maximum effect.

And then finally, of course, we'd love

for that holy grail, and that would be the cure. But for patients like us in the room who already have significant disease, cures may not necessarily be in our horizon. But the generations that will come, thanks to aggressive research, aggressive support, and aggressive, outspoken patients like our community, I think will help us get towards this way, with the help of the FDA.

So, on behalf of all of our patients, on behalf of the different patient foundations that I'm involved with, we thank you for the audience. Because what we're doing here I think is very, very important. Thank you very much.

DR. EGGERS: Thank you, Kevin.

And finally, we have Bill.

MR. PATTERSON: Hi. My name is Bill Patterson. I am a 67-year-old retired computer programmer who led a fairly sedentary life. And I have Parkinson's disease.

From early in 2007, when I experienced micrographia, some balance trouble, and foot drop,

and through the next three years, I progressively experienced an undiagnosed and frightening reduction of motor function on my right side, despite visiting a neurologist two or three times per year.

I knew I had a serious problem, and by 2010, I was limping badly, unable to type or use a computer mouse with my right hand, and unable to use my right foot and leg to drive. My handwriting was small. I was significantly depressed at that point. My sleep schedule was chaotic, and I often would lie awake at night and sleep during the day.

But on April 22nd, 2010, to get another opinion, I went to what was, for me, a new medical facility that was 100 miles from my home, at a highly reputed medical school. I saw a neurologist there who gave me the most thorough neurological exam I can remember and gave me a clinical diagnosis of early hemiparkinsonism. This and the neurologist's prognosis scared me into thinking that I could be, worst-case

scenario, at a nursing home in a few years and possibly dead in five.

The fact that I had not been told any of this before was particularly annoying. I decided to learn as much as I could about PD. I scoured the Internet, sought support groups, and began seeing a movement- disorder specialist.

My research led me to Dr. Jay Alberts's experiments at the Cleveland Clinic on the effect of bicycling on PD symptoms. I also learned about many animal-model experiments in which vigorous aerobic exercise seemed to be neuroprotective -- that is, to slow the progress of the disease.

My movement disorder specialist started me on a medication schedule that ramped up to two tablets of 25-100 carbidopa-levadopa three times a day. A couple of weeks later, selegiline at five milligrams two times a day was introduced.

I found that, while I had more control over my movements in general, I was experiencing random writhing movements in my right leg, ankle, and foot. I also did not like the nausea and

other weird feelings that I had. Additional carbidopa was added, and it helped.

Over the next five years, different strategies were tried. And for two of those years, I was actually off of carbidopa-levadopa entirely. Today, my anti- Parkinsonian prescription medication consists of one- and-a-half tablets of 25-100 milligram carbidopa-levadopa, plus one tablet 25 milligrams carbidopa three times per day, and the selegiline at, again, the rate of 5 milligrams two times a day. This is still less than was originally prescribed in the beginning of my treatment.

I take coconut oil because some other patients advised me that it helps fine motor coordination in activities such as typing. My typing speed is often good, but it varies, and I have not isolated anything related to that variance.

PD can result in reduced saliva. And so, in consultation with my dentist, I have used and expect to resume using Biotene mouthwash

during the day for dry mouth. And I use Act mouthwash at night. I visit a hygienist every four months instead of the usual six. And by the way, I've lost a couple of teeth.

I have continued to bike on a stationary machine almost daily through the last five-and-a-half years at a cadence generally greater than 90 RPM for the 40 minutes that I stay on it. I feel very fortunate to be able to do this. I track specific measures of my exercising in a database.

I also practice Tai Chi and yoga. And I've used personal trainers. I use weight machines for strength, and I stretch regularly. Now, there are side effects from the biking. One is that I feel healthier. Another side effect is I've lost weight.

But I developed cramps in my feet, and I had to attack this myself. And I found a chapter of a book that was available on the Internet from a doctor who specialized in bicycling health. And he identified several elements whose supplementing can help. They're calcium magnesium and

potassium. I consulted with a dietician, got the right dosing for myself. Doctors wouldn't give it to me. And I started using it, and the cramps went away.

I also developed pins-and-needles feelings in my hands, and that's treated effectively with anti- vibration gloves.

Now, I think my current treatment regimen treats the symptoms fairly well. However, the number of symptoms, exercises, substances, and their interrelationships is overwhelming. At times, it is hard to tell which combinations do what.

Beyond mere symptom treatment is the hope that some of these treatments are neuroprotective. They do enable me to have a fairly full life, but not as full as I would like. During the first few years of this adventure, I was employed full time. Now I'm retired, and that makes things easier.

Importantly, I get around very well, type, use a computer mouse, and drive with my

right leg and foot. And I'm able to enjoy my family and friends. I've noticed some, but comparatively little, progression of my symptoms since my starting treatment five-and-a-half years ago when compared to the progression experienced in the first three years of undiagnosed PD. I find this encouraging and suggested that my treatments, including the aerobic exercise, have slowed the disease progression.

One downside of my current treatments is the time required, the time required for exercising and related PD activities, such as managing prescriptions and attending support groups. It's significant. Now that I'm retired, things are better.

I'm grateful for my treatment and the research that supports it. An ideal treatment would eliminate all these symptoms, and probably the motor symptoms would be the worst that I have now that would be tackled by an ideal treatment. But if my cognition were impaired as well, I would make that the first priority.

As bad as side effects of certain drugs feel, they're usually not as bad as the conditions being treated. Of course, if they were worse, you probably wouldn't use them. Now, certainly fear of the future is a real issue, and I think all of us experience that.

And it's imperative that we learn more about brain functions -- better knowledge and, importantly, better distribution of that knowledge. Remember that I went to neurologists who weren't diagnosing me. And I was presenting them symptoms.

The better distribution of knowledge may enable not only better treatment of PD, but better aging overall. And I don't think I can overemphasize the importance of exercise in my treatments. I feel good most of the time. Thank you very, very much.

DR. EGGERS: Thank you, Bill.

So I want to give a round of applause to the panelists.

(Applause.)

DR. EGGERS: As Theresa Mullin would say, you guys are experts at what it's like to live with your condition and the treatments. And that came through very clearly.

We are going to now delve into a number of the rich points that you raised. We won't be able to address all of them. But you've talked about the role of the pharmaceutical or the surgical treatments, the role of exercise, the role of all of the other therapies that you take in addition to your treatment.

And I think, really insightful, you talked about what is going on in you to make you -- - when you are deciding. You revealed to me your decision-making processes, and I think that that's really important to help us understand what's important, what you're looking for in a treatment.

So that we have a little bit of context, we are going to ask a polling question next, if you can get out your clickers.

(Pause.)

DR. EGGERS: We're going to ask the

question, have you ever used any of the following drug therapies to help reduce your symptoms of Parkinson's disease? And check all that apply. And I'm just going to let you read through this list, because you would pronounce these treatments much better than I would. So I'll give you some time to read through these. Check all that apply for you that you have tried or you're currently doing.

(Pause.)

DR. EGGERS: Okay. It's not surprising that everything, that at least some of you are taking -- everything is mentioned here. Of course, the carbidopa-levadopa being the primary one, followed, I'm not going to try to pronounce C and B.

We're not going to get into all of these treatments. But before I actually -- before we do that, are the results on the Web?

MR. THOMPSON: Results on the Web are about almost exactly the same.

DR. EGGERS: Okay. Thank you. So,

sorry. I need my alarm clock. It's the only thing that helps me keep us on time.

I'm going to actually turn to my colleagues first and see if there's any of these with what you're seeing here or represented in the room or on the Web, any treatments that you would like to ask more questions about, about their effectiveness or their downsides or their -- or what people have found, using those treatments.

DR. PODSKALNY: Sure. First, let me say, as a former physical therapist, the exercise, you're preaching to the choir. But as we see that almost everyone has taken carbidopa-levadopa in some form. And the team has worked very hard in recent months to approve drugs like Rytary and duopa.

If anyone -- and I'll throw this out there to the people on the Web, too, so we cast a larger audience, poll a larger audience. Has anybody taken these medications recently and found that they're effective in treating particular aspects of their Parkinson's disease, that we

could maybe gain some feedback and understanding of how people are finding these drugs to be effective?

DR. EGGERS: Would you like them to focus particularly on Duopa and Rytary, or any of them?

DR. PODSKALNY: Well, we hear a lot about the shortcomings of some of the drugs that have been around for 20-30 years. So --

DR. EGGERS: So these newer ones?

DR. PODSKALNY: Yeah, the drugs that are newer and maybe we have less experience with.

DR. EGGERS: Great. Thank you, Dave.

So, we'll start here.

MS. ROUDE: Thank you. I tried Rytary earlier this year. And it didn't work for me at all. It caused me to be angry all the time. I was just upset. It didn't provide any benefits at all. I didn't have any increased good time, and my bad time, my off time was just increased exponentially.

DR. EGGERS: Thank you, Rebecca.

And then, over here. Is it Kathy?

MS. HAGERBRANT: Is this on? Yeah. Lynn Hagerbrant. You know, I've been on Neupro. I'm an RN. My husband's a physician. And I've had Parkinson's since November -- I was diagnosed November of 2010.

But the Neupro that they put me on would come off. I'm a nurse. And so, it would like fall off. And then I wouldn't notice it. But then, my symptoms would be coming back. So I called the company. And they said they would mail me out a new box, that a lot of times Neupro is being stored in a warehouse over the summer and at really high temperatures, and that it would lose its ability to adhere to my skin.

So, I, ironically, had to go out to dinner with somebody that had Parkinson's in the city, and she was in really bad shape. And I asked her what medication she was on, and she was on Neupro, and her patch was falling off. So I told her to do an emergency call to her neurologist to get another medication onboard.

DR. EGGERS: Thank you.

Any other responses to Dave's question? Right here. And then we'll go back there. Go ahead, right here.

MR. DeWITTE: I just wanted to mention that Requip has been very helpful, ropinirole has been very helpful in helping with leg -- restless legs syndrome at bedtime. And it helps to sleep. Obviously, that's become a big issue.

DR. EGGERS: Okay. Thank you.

FEMALE PARTICIPANT: So, I don't take duopa or things we're talking about. But one thing that, one of my major concerns and main frustration has been that the UPD -- the medication results may be given to us as a 30 percent increase or decrease. And 30 percent of what? When we look at the UPDRS, it may be one point, two points different. I don't think most people are aware of that.

DR. EGGERS: Okay. Thank you.

Right here.

MR. CANNON: This is Paul Cannon. I

haven't taken (inaudible) yet. I'm interested in it. But apparently, the qualification requirements are still quite stringent, I think with cost being an issue as well. That's potentially why you're not seeing as much uptake of that as you might have expected to.

DR. EGGERS: Okay. So raising the point of access issues and cost issues, which we've heard throughout our discussion earlier in Topic 1.

Any of the other treatments that -- especially if the panelists didn't touch upon them, that have had a really noticeable positive effect? And when you describe it, if you could tell us what that effect was and what change you saw.

MS. ROBB: Unfortunately, my comment is not that. But I wanted to make a mention why you might not be hearing from people is because, once they have a regimen that works really well, they're not very keen in changing medications. We're going through this now with -- you know, we

want a little more on time efficacy in Karl's regimen.

And it's like a back-and-forth -- it's like a tennis match with the neurologist, debating the pros and cons of each medication and the doses, and the hesitation to change something that seems to be working, especially with the Rytary. I know because the dosing is different. Although it's a different delivery mechanism than standard Sinemet and certainly much better than I've heard Sinemet CR was, which Karl had a lot of difficulty with.

So I think you're hearing some hesitation, because once somebody finds a really good regimen, they usually stick with it until there's a major disruption and they need to change their medication.

DR. EGGERS: Okay. So let's build on this. And can someone tell us, someone who was hesitant about changing, say what was the trigger point for you? What was the disruption that caused you to seek another option? Oh, lots of

hands raising on this one. Okay, we'll start here, and then we'll go back there.

MR. PATTERSON: In the two years that I was off of Sinemet -- this is Bill Patterson -- my doctors did start me on Mirapex partway through that. But it got to a point where at one time I had a laptop computer on my lap and I was taking notes in a lecture, and I had a sleep attack and lost the laptop, which went to the floor.

I thought that was -- I was really glad that it happened there and not somewhere else, where there was more at stake. And we stopped that particular regimen and increased the Sinemet.

DR. EGGERS: Okay. Right here, and then back. And then Ellis Unger has a question.

MS. GOULD: Thank you. Hello. My name is Sherrie Gould. I actually am a clinician at Scripps Clinic in La Jolla, California. And when Rytary came out, we were very excited the FDA approved this very long-acting type of carbidopa-levadopa.

So I definitely do give patients, if

they're willing to do it, especially the ones that are very frequently dosed. As you've heard here in the room, there are many of these patients that need to take their medicine maybe even a half or a quarter every hour, every hour and seven minutes, whatever the case is.

The drug has definitely helped improve the quality of their life, because they don't have to live every hour to hour on just regular what we call carbidopa-levadopa. So Rytary, I would have to say, in about 60 percent of the patients I give it to, they love it. Forty percent, it just doesn't work. You know, who knows why that is? And they felt better on their old regimen. But I just wanted to give you feedback on that.

We've not done anything -- we have no patients on Duopa. It seems a little invasive. We can't -- anyway, and it's a very tedious medication to actually prescribe. Patients seem to stay in the hospital to get titrated appropriately, et cetera. So that's not a drug that we've tried in our clinic.

DR. EGGERS: Okay. Going to the back.

MR. LINDERMAN: Following up on the comment on Mirapex, I was on Mirapex two or three years ago on a three-times-a-day times a 1.5 milligram tablet. And that put me over the edge psychologically, and I began to do some things that somebody would not want to do, impulsive behavior such as responding to Internet requests for money from India and that kind of crap.

When I -- and it also has made my feet swell to the point that I can hardly find a pair of shoes that will fit. And even now today, I'm down to three times a day, a point -- a half-a-milligram on the Mirapex, and the feet are still somewhat swollen, though the impulsive behavior seems to have gone.

And I would also stress, in terms of physical trainers, when I found my trainer, I had been with him for a couple of years before I was diagnosed. And I went to him the afternoon after I'd received my diagnosis. And my wife had not gone with me to the doctor's that morning, so he

was the first person that I felt I could trust that I could talk to about what the neurologist had said to me.

And he looked at me in the face and said, "Are you going to lie down and die with this thing? Or are you going to stand up and fight it?" And together, we have fought it for the last decade. And I can tell you, when I am doing a legs workout, I feel the difference in my body, and the dopamine production is clearly on and moving forward very aggressively. And I don't feel the same thing when we do an upper body workout as much. But working hard on the legs does do that. And I feel similarly.

The other thing the exercise has brought out is that it's given me the option, with my neurologist's blessing, to take an extra dosage of Sinemet either before or during the workout, because I was finding that the Sinemet would wear off in the middle of a workout sometimes. And when you're out in the middle of a river rowing, that's not a good thing to have happen.

DR. EGGERS: Thank you very much, Charlie.

And Ellis has a question.

DR. UNGER: I do. We heard one comment about orthostatic hypotension. And I just wondered if there were others in the audience who have had symptoms from what we call orthostatic hypotension. And if so, you know, what are the symptoms and what have you done about them?

DR. EGGERS: Okay. So, I think the comment about the low blood pressure was here -- or it was back there. Okay. So we'll let you start, if you would like to respond.

FEMALE PARTICIPANT: Well, the symptoms that I would have would happen after I had been standing still for awhile. So, they happened first -- I'm a nurse- midwife. They happened first when I was standing in the OR and when I was cooking. And what happened was, this is weird, the center of my head felt cold, and I felt like I was going to die.

I did not feel dizzy. And it took a

long time to identify it as orthostatic hypotension because it didn't have the dizziness or lightheaded, faint component to it. But finally, I just got a blood pressure cuff and started checking.

DR. EGGERS: And are you treating it in any way? Are you taking any medications for that?

FEMALE PARTICIPANT: No. I figured out sort of what the triggers are. So it's much worse when it's hot outside. So I do not stand still when it's hot outside. I've had to stop working, so I'm on disability. If I drink huge amounts of fluid before I have to do something like exercise, that helps. But then I have the problem with urgent continence. And if I increase my salt intake, that helps too.

And also, if I know I'm going to be in a position, I get out of it as soon as I can and I lie down and sleep. And that will make it go away.

DR. EGGERS: Okay. Thank you.

Anyone taking a medication?

MS. GARRIDO-REVILLA: Yes, I'm sorry. I'm not taking a medication, but I do understand what she says about orthostatic hypotension. It happens to me whenever I forget, I miss my dose of Mirapex. I feel my blood pressure down, or I completely pass out. I have landed in the ER several times because of that. And just they keep me -- they warn me, I have to remember all my doses, because that's one of the things that happen.

DR. EGGERS: Thank you.

One more comment on experience with managing the orthostatic hypotension? Oh, right here. Okay.

FEMALE PARTICIPANT: I've been treated for hypertension, just a central hypertension, with drug therapy since I was in my mid-30s. And it was always well managed with very little drug.

Prior to -- post my diagnosis for PD, there were instances where if I got up very quickly from a lying-down position or sitting, and I jerk my head, my blood pressure would drop to

the point where I would almost pass out. I would get dizzy, and everything would go kind of sort of yellow, like I was about to pass out. But if I just braced myself and kept real still for a couple of minutes, a few seconds, actually, it would pass.

And if I checked my blood pressure right after that, it was spiking high and low. So they've titrated my medication for the hypertension down a bit. And that seems to have helped it. I still have to be very careful rising up from a lying-down position too quickly.

Like when I get up in the morning, I sit up in bed, swing my legs over, and sit there before I actually stand and begin walking. Because that's when I was experiencing it the most. I would get right up, walk out of -- you know, sit up and stand up and then walk into the bathroom. And like by the time I go through the bathroom doorway, I was dizzy.

But it seems to be managed by decreasing the drug.

DR. EGGERS: Thank you so much, Nancy, right?

Okay. So, Leonard has a question.

DR. KAPCALA: Almost one-third of the respondents noted that they were using other drug therapies not mentioned. So I'd like to hear about, what are those other drug therapies?

DR. EGGERS: Okay. So if you could just briefly go through and say what those are, and why you're taking them. Anyone? Okay. We'll start here.

MALE PARTICIPANT: Thorazine, which is a calcium channel blocker normally used for hypertension. And there's been some research being done now as a possible neuroprotective use for it. So I use that.

DR. EGGERS: Okay.

MR. KWOK: I'm experimenting with -- through my neurologist with Atomoxetine for fatigue and also possibly for cognition improvement.

DR. EGGERS: Any others? Okay, one more

here, and then we'll take two more. And then Peter has a question.

MS. HOUDE: I use lamotrigine. It's to stabilize my mood, but it also helps with the dyskinesia. And I recently started Vitamin E treatment.

DR. EGGERS: Okay. Thank you.

FEMALE PARTICIPANT: Because I was improperly diagnosed initially, I was on the scopolamine patch for awhile. And I felt great on the scopolamine patch. When I was correctly diagnosed, they took me off of it and my symptoms got worse instantly. But they won't give it back to me.

DR. EGGERS: Okay. Okay. So, Peter, do you have a question? And then we're going to move on to a broader topic.

DR. COMO: Sure. A number of the panelists have told us that they have DBS systems implanted. I was just curious. A, did you experience any complications from the surgery itself? And B, are you experiencing any side

effects of your DBS stimulation?

DR. EGGERS: We heard from Kevin. Anyone else? So we'll come here, and then Kevin, and then you can.

MS. HOUDE: I had DBS three years ago. And it was originally for my dyskinesia. So my doctor, we went through the surgery. And then they decided to change the location of the probe halfway through the surgery. So the -- so there was a complication in the surgery itself. But since then, I have had -- I've had increased off times. My dyskinesia has been reduced, but with the battery, it's quite painful in my chest sometimes.

DR. EGGERS: Thank you.

MR. KWOK: It's a little humorous, but originally, because I only had one-sided disease, they got the leads switched off. And they were for the first three months innervating the wrong leads. And I couldn't understand why it wasn't working.

There is an interesting thing with DBS.

So there is a microlesion effect. So you initially feel almost like a placebo-like positive benefit that seems to go away, which should -- I think masks sometimes the efficacy of DBS in the early days.

I'm happy to report that I'm also involved in the closed-loop trials right now to look at new neurotransmitters that might actually be, you know, smart transmitters that use some sort of biofeedback. And I'm looking forward to that as being an innovation that will help, one, prolong the battery life, but, two, hopefully prolong the disease as well, the benefits on the disease as well.

DR. EGGERS: Thank you. So we are going to -- we're a bit tight on time. We do have an Open Public Comment, but I understand that we can probably cut into our Open Public Comment time. And to do so, we'll even ask the open public commenters to really stay on time with their open public comments.

So we can dig in. I think we have

probably about 10 more minutes that we can spend on this. I do want to get a Web summary, and we have a couple of people on the phone.

But before -- while we're doing that, I'm going to put up the next polling question. We don't get to talk about these, but we do recognize their importance, of the other therapies besides the pharmaceutical. So just, we won't be able to discuss them. I think there's been some really eloquent descriptions about some of these. But it would be helpful to see, in the room, what the reflection of it in the room of how important these are to you, what you're using.

So you can use your clickers. Besides your drug therapies, what other therapies have you used to help reduce your symptoms of Parkinson's disease? Check all that apply.

(Pause.)

DR. EGGERS: Okay. So, I think you're reiterated a take-home point of the afternoon is the importance of these other therapies to you. It looks like many of you are doing most or all of

these things as part of the management of your condition.

Is there any summary on the Web, anything that's been new or something we haven't heard that you can pull out?

MR. THOMPSON: Going back to Rytary, there is one person had an experience with it, said they attempted several different dosages and could never find anything that would smooth out the tremors, and also experienced a lot of dyskinesia using it. One person who was talking about Sinemet and suggesting that a lot of the symptoms that people were talking about may be side effects of taking Sinemet.

And then we had one person who was speaking about the need for better education and understanding of medical staff during hospitalization incidents or in rehab settings, because people are occasionally not receiving the correct care.

DR. EGGERS: All right. So we have time to take a couple of people on the phone. And on

the phone, we'll ask you to really focus in on something that you may think will surprise the folk -- well, maybe not the folks in the room, that would surprise FDA about your experiences with particular treatments.

Operator, can we have a caller, please?

(No audible response.)

DR. EGGERS: Operator, can we have our first caller?

THE OPERATOR: Your line is open.

MR. AIMES: Hello.

DR. EGGERS: Yes. Can we -- what's your name?

MR. AIMES: Carl Aimes.

DR. EGGERS: Hi, Carl.

MR. AIMES: How are you all?

DR. EGGERS: Good.

MR. AIMES: I am calling from Phoenix, Arizona. I am a Parkinson's patient diagnosed in early 2008. I am active in the Parkinson's community here locally and trying to get involved nationally as often as I can. I applaud all of

the participants today, along with the FDA, for getting this group together and hearing what we're experiencing. And hopefully, we can improve things.

And one thing that I'd like to suggest is that, when I was first diagnosed, I was told that it was a life sentence versus a death sentence. You can live with Parkinson's disease for a long time. So with that in mind, I obviously -- just daily challenges that we all experience with Parkinson's disease. And I think the thing we have to really be quite the fighters for dealing with it and what-not.

But with different medications that we're all taking and the ability to keep track of what's being effective, works, and what's not, I think it would be very helpful to have some type of a database link, or doctor's office, that would tie into the FDA and be able to, as we go to our doctors and we're maybe given a new prescription, we're able to record that we started our new prescription.

We're able to record, from home basically, how it's affecting us. And then when we go to our doctor's appointment, they can follow -- the doctor's appointment six months later, three months later, or whatever it is, is the ability to have more of a history of -- obviously, we're doing it from memory, because obviously our memories aren't very good.

So I think it would be very helpful to have more of -- with the technology out there to develop it, we'd have more of a link that the FDA and how we can tie in our day-to-day activities with our -- how things are helping us or not. And more like, get to know the patient more on a personal basis. And I just think that would be very, very helpful for us.

DR. EGGERS: Okay. Thank you, Carl. So, you're identifying an unmet need for support with the complex management and really linking the information together.

MR. AIMES: Yes.

DR. EGGERS: Thank you for that.

Do we have -- we can have one more caller.

THE OPERATOR: Your line is open.

SUE: Good afternoon. My name is Sue. I have had Parkinson's disease --

DR. EGGERS: Sue, Sue, I'm going to interrupt you for a second. Are you on the speakerphone?

(Pause.)

DR. EGGERS: Sue, we're having some hard time hearing you. If you're on speakerphone --

SUE: Can you hear me? Yes, I'm on the speakerphone.

DR. EGGERS: Okay. We have a little bit of a reverb. It's difficult to hear. Let's try again.

SUE: Can you hear me now?

DR. EGGERS: Yes, that's great.

SUE: Okay. I have had Parkinson's disease for 14 years. My two daughters, ages 50 and 52, also have the disease. My question has to do with not with what the FDA can do regarding

treatment, but what the FDA can do regarding prevention.

Research teams led by some of the most highly respected authorities in the cause of Parkinson's disease, including William Langston, Scientific Director of the Parkinson's Institute in Sunnyvale, California, have shown glyphosate, the main ingredient in Round-Up, and permethrin, which is imbedded in much of the outdoor clothing sold by stores such as REI, have been shown to cause Parkinson's disease.

I question why the FDA continues to allow these toxic agents to be sold.

DR. EGGERS: Well, thank you very much for your question. There we go. Thank you very much, Sue, for your question. I'm going to ask you to hang up now, Sue, because it reverberates. Okay. Thank you, Sue.

I think it is -- that's a very big question that goes a bit beyond what we can address today. But I will take this opportunity, though, to ask those questions through the docket

so that we know what is important to you. What are the big questions you have on your mind? Because they are all important, even if we can't address them all, all today or through this meeting. So, thank you.

With that, we have really concluded our Topic 2 discussion, our discussion with -- to wrap up the discussion with the participants. I want to sincerely thank you on behalf of our colleagues for the thoughts you sent in. Many of you sent in comments. We identified -- it was a tough decision to identify panelists, to folks to service the panelists. But we have all the comments you submitted, and we will be -- we have reviewed those, so that is all useful input that we will incorporate into our report as well.

I cannot emphasize enough the importance of the docket. It is your chance to, you know -- you didn't get to talk as much as you wanted to today; I know this. So the docket is your chance to make sure that your full story and your full thoughts are shared with us. And we do read

those.

There are evaluation forms at the back table. So, please let us know how we're doing on these meetings and how well you feel your voice is being heard and your perspectives are being reflected here.

And with that, I will again ask for a round of applause, especially from FDA, for your courage and your thoughtfulness and really your expertise in your condition.

(Applause.)

DR. EGGERS: Thank you.

MS. VAIDYA: Hello, everyone. I'd like to thank you all for coming here today. We're now moving into the Open Public Comment session. Please keep in mind that we will not be responding to your comments, but they will be transcribed. They will be a part of the public record.

Since we would like this process to be transparent, we encourage you to note any financial interests that you may have related to your comment.

So we've collected sign-in during registration and at the break. We have six people who have signed up and roughly 20 minutes, I believe, 15 to 20 minutes. So I suggest that we all stick to the two minutes per person comment time. And then I'll be keeping track of time up here.

I'll run through the speakers really quickly, and then we'll move on to the comment session. So first, we will have Sally Okun. Next, Paul Cannon, Sherrie Gould, Lynn Hagerbrant, Charles Linderman, and then Jeanne Loring.

So first, could we have Sally Okun, please?

MS. OKUN: Thank you very much, and let me just disclose that I am an employee of PatientsLikeMe. And I will be talking a little bit about that experience.

I just wanted to let you know that we will be submitting to the public docket a survey that really overviews about 170 of our patients who have been surveyed with the exact questions

that have been discussed here today. So we have some insights from at least over 150 patients that have really given us their deep thoughts on these questions.

But I also wanted to say that we have an ongoing community of over 10,000 Parkinson's patients that are telling us about their experiences of daily life, with symptoms and treatments and side effects, on a regular basis.

Just one comment, I was looking up the information that you asked about, some of the newer treatments. In our forum, we have a thread that's just on some of those newer treatments, with about 17 pages of posts and conversations about it, representing about 300 different individual patients talking about their experiences.

So I think there's an opportunity to systematize some of the data collection, and we'd be happy to support that in any way that we can. We will supply all of this to the public docket as well. So thank you so much for the meeting today

and all of the patients and caregivers here today.

MS. VAIDYA: Thank you, Sally.

Could we have Paul Cannon next?

MR. CANNON: So, I'm Paul Cannon. In addition to being a patient and a drug developer and a scientist, I'm also the Program Manager at 23andMe. And I've also submitted to the docket a summary of the questionnaire that we've produced of our community. It's about the same size, actually, 9,000 patients, and about 1,700 replies.

It's a document that's already in the docket. If anybody wants to look it up or if they want to contact me, I'll be happy to share it -- many of the things that we've already heard in the room today, which is consistent and good. I think it says that the community online are putting it together, an actual useful resource for patients and the outcomes, and should be used as broadly as possible. We're happy to work with people to do that.

My only other comment is, looking around the room, I think we all have to work on the

ethnic representation in the research and in the support groups. As we see, it's clearly an issue that we all have to deal with, I think.

MS. VAIDYA: Thank you, Paul.

Next, we have Sherrie Gould.

MS. LORING: Yeah, Sherrie and I are switching. I'm Jeanne Loring. I'm a professor at the Scripps Research Institute in La Jolla, California. I'm the Director of the Stem Cell Program there. And as such, I'm part of the Summit for Stem Cell Program that was mentioned earlier by Jenifer Robb.

What we're doing, briefly, is taking skin cells from patients with Parkinson's disease. We're using a technique called "reprogramming" to turn those cells into pluripotent stem cells, which are identical to embryonic stem cells, but they come from individual people. And so they carry exactly the same DNA as that person. We could do that with any of you.

We take those pluripotent stem cells and turn them into dopamine neurons, which you all

know are what die in Parkinson's disease. We're making the precise kind of neurons that is present in the substantia nigra.

Right now, we've done a great deal of the preclinical work. We've shown that cells we've taken from patients cure a rat model. So, and there are rather spectacular results. They are equivalent and, in fact, in a lot of ways better than the NIH-funded studies using fetal tissue in the 1990s and 2000s, which had mixed effects, and some patients were improved and some didn't.

Those who improved are now in -- much older, of course. And they have had 20 years in some cases without any requirement for any kind of drug therapy. They are not cured. But they have no symptoms. And they get no worse with time.

So we're hoping that we can improve upon those results by using these patient-specific pluripotent- stem-cell-derived dopamine neurons.

MS. VAIDYA: Thank you so much, Jeanne.

Next, could I have Sherrie Gould, then?

MS. GOULD: So again, my name is Sherrie Gould. I'm a nurse practitioner at Scripps Clinic. And work very closely and kind of started the Summit for Stem Cell, which is a fundraising group of Parkinson's patients that our sole purpose is to raise money for this research that brings so much hope to people with Parkinson's.

You know, sit here for a number of hours. I see, I spend my entire workday seeing nothing but people with Parkinson's disease for the last 10 years. I'm the one that prescribes over and over, and more and more and more drugs.

I really would like to have this opportunity to ask the FDA, as we approach you in a couple of years with the proper studies, et cetera, that you'll take that quantum leap to think of something outside of drug therapy, to actually fill the bucket back up, to actually replace the cells that are missing and dying in people with Parkinson's.

So, we have a lot of work ahead of us. We're working with an FDA consultant right now, so

on a monthly basis, and raising the money on our own. We've raised over $2 million, which has been fantastic, all by just community philanthropy.

So, there is hope. I'm telling this group of people out here there is hope. In the future, there is a hope for you. We really believe Parkinson's disease is the lowest-hanging fruit for this type of therapy. It has the greatest chance of success, because the main one cell type that is missing and dying in people with Parkinson's is, of course, the dopamine-producing neuron. And we can make those from your skin.

So, thank you very much. I appreciate the time.

(Applause.)

MS. VAIDYA: Thank you, Sherry.

Next, we have Lynn Hagerbrant.

MS. HAGERBRANT: I want to introduce myself again. I'm Lynn Hagerbrant. Do you mind if I sit down? I wanted to -- when I was diagnosed back in November 2010, my neurologist said to me, "Lynn, whatever you do, don't go on

the Internet and look up Parkinson's disease." And she said, "In addition, do not go to a support group."

So in my area, there was -- the face of Parkinson's is different. It was usually somebody much older than myself. So, I'm a nurse, and I knew better. I used to be a critical care nurse. And I did put my head in the sand, and I did not look on the Internet. Sometimes, after my husband would go to bed, I would sneak on and like look some things up and get really afraid.

But my mission at this point is, I turned everything around. And how I turned everything around is, about a year ago, I met a wonderful couple at Partners in Parkinson's, the Michael J. Fox event in New York City. And I met a couple that lived near me. And we formed a support group that has over 65 members of young onset. And it is one of the most significant things I've ever done in my life.

And I now know that it's very important to be in a support group. It's very important to

talk about this. And now my flyer is in a neurologist's office so that when somebody else is diagnosed like myself, they're given the information and they're given the direction to go into.

And two more quick things. The face of Parkinson's is not really apparent because there are men that are worried about losing their jobs, men and women. And there's fear in coming out about it. So I think there's a lot of issues around young onset Parkinson's. That's what I want to say.

Oh, and then one other thing. One of my members contacted me that he was -- his wife asked for a divorce. And she said that Parkinson's treatment is too expensive, and she wants to protect her assets. And so there's a lot of work to be done with the young onset Parkinson's. Thank you.

MS. VAIDYA: Thank you, Lynn.

Last, we have Charles Linderman. Charles, where are you? Oh, here.

MR. LINDERMAN: Back here with the jet pack on.

MS. VAIDYA: I see you.

MR. LINDERMAN: I hope the FDA leaves here with at least one clear message, that for the people that have spoken today, from the male side, exercise is highly important. And I would hope that if -- that in addition to all the drug therapies that you're working on, that you come out with some kind of clear protocol by which the neurological providers can look somebody in the eye and say, "This is what you need to be doing in terms of exercise to reduce the effects of this long-term degenerative disease."

And don't give me the line and malarkey that I've heard other -- Dr. Shulman over at the University of Maryland -- that you can choose any kind of exercise you want so long as you enjoy it. But rather, let's be specific and tell people what exercises, what kinds, what intensity will provide for the results that will give them relief and give them a longer life.

That, to me, is something you can do without a great deal of cost to the government. And I certainly am encouraged by what I've heard from La Jolla this afternoon. And I want to talk to you guys afterwards.

But let's focus, since cures seem a ways away yet, let's focus on what will help life rather than getting down into the microcosms and micro levels of genetics and other things, where it would seem you're simply splicing cells further and further and getting no closer to a result that will help all of us.

Thank you for this forum. I've appreciated it.

MS. VAIDYA: Thank you, Charles.

So, finally, I'd like to ask everyone to please leave the clickers on the tables before you leave. We'll pick them up afterwards. Also the evaluation forms, you can leave them on the table or outside at the registration table, and we'll pick them up later.

So lastly, could I please call Dr. Eric

Bastings to the stand for our closing?

DR. BASTINGS: Yes, good afternoon. So I'm Eric Bastings. I'm the Deputy Director of the Division of Neurology Products and the Office of New Drugs at the FDA.

I want to thank all of you for participating in the discussion this afternoon, and for sharing your personal experience with Parkinson's. There is really no substitute for hearing directly from you about the disease, about how it impacts your life, and about what aspects of the disease you believe new treatments should be targeted to.

So there was a lot of information that was shared this afternoon. And I will try to take the next few minutes to summarize some of the key information that I've heard.

In terms of symptoms, persons with Parkinson's experience a variety of symptoms. But the most disabling reported by many is the off-time, and in particular, the unpredictability of the off-time, and as a consequence, the fear of

falling and having difficulties moving and being stuck somewhere while you experience off-time.

Another big problem is, of course, dyskinesia that comes often as a complication of the various treatments.

In addition to the various motor symptoms, a lot of you mentioned the nonmotor symptoms of Parkinson's. And in particular, sleep is a problem for many people. Cognitive difficulties and memory loss are experienced by about 30 percent of people with Parkinson's. And it's certainly an important area to target for new therapies.

We heard of other symptoms, such as constipation and fatigue, and also depression and anxiety, which can be the result of some of the symptoms or could be related to Parkinson's by itself.

We also heard about sexual dysfunction and the impact on relationships of the disease. And we are aware of the impact of Parkinson's on your life, how it robs your identity, the impact

it can have on your ability to drive a car, and the fear of losing your independence. So we certainly got the message for all of that.

In terms of treatment, we discussed a number of nondrug therapies, and we certainly got the message that exercise is very important. We heard bicycle exercising is an option that's done by some of you. But certainly, various forms of exercise have been very useful to many of you.

Other nondrug treatment, hearing that yoga, support groups are very important. And most of you make a lot of use of these groups. And I really can see the impacts that it can have on your lives. Meditation, counseling, massage are other options.

In terms of treatment, many of you take a large number of drugs -- 15, 20, sometime more. And I hear some of you take it as often as every hour, sometime maybe three hours. But I hear it's very difficult to keep a routine of using these various drugs and make sure you have the drug available if needed.

So in terms of perfect treatment, beside a cure, which is certainly the goal that we all share, and I hope we get there -- beside a cure, a very important option would be to have a treatment that you take just once a day that controls most of your symptoms without too many side effects and without the fluctuations that you experience and without the off periods. So less-frequent treatments with fewer side effects are certainly desired by many.

I heard suggestion to have a dosage form, again that allows fewer dosing times. So it's really a common theme, having a treatment that you don't have to take every hour or every three hours and that works around the clock.

So again, I want to thank all of you for coming today. I think the feedback you gave us is invaluable. And I can assure you that the FDA team here will continue to do everything it can to support the research and the identification of new drugs for the treatment of Parkinson's. So, thank you for coming.

(Applause.)

(Whereupon, the FDA Public Meeting of Patient- Focused Drug Development was adjourned.)

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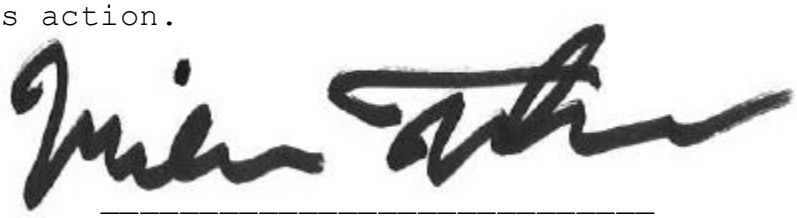
I, MICHAEL FARKAS, the officer before whom the foregoing proceeding was taken, do hereby certify that the proceedings were recorded by me and thereafter reduced to typewriting under my direction; that said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



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